



An operator verifies the status of the pulping process on the control system at the thermal mechanical pulp plant at Papiers Masson.

Feature Article



Sustainable Forestry: A Reality in Canada

In the past decade, Canada has made numerous commitments—national and international, formal and informal—to sustainable forest management. As a nation, we have accepted that forest management must evolve to encompass diverse priorities and values.

We understand that broader options are available, and we know that the old ways are not necessarily the best ways. But in the end, what counts most is not what we commit to, or what we understand, but what we do. As Canada prepares its forests to meet the needs of a new millennium, exciting changes are occurring in forest planning and on-the-ground activities. New partnerships are springing up to manage forests collaboratively, for a wide range of benefits. Innovative practices are surfacing to improve forest productivity while upholding ecological integrity. Creative policy and management approaches are taking Canada's forests in new directions. All of these changes are adding up to concrete, demonstrable progress toward sustainability.

For this edition of *The State of Canada's Forests*, we gathered a dozen wide-ranging examples of innovative forest management across Canada. These profiles of community forests, woodlot owners, companies and other forest stakeholders, as singular as they are, convey a unified message:

sustainable forest management is a reality in Canada, a reality that exists only because these groups are willing to work together to better the nation's forests for all.

What Is Sustainable Forest Management?

There is a prevailing definition of sustainable forest management which has been adopted by many: “management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social and cultural opportunities for present and future generations.”

In simpler terms, the concept can be described as the attainment of balance—balance between society's increasing demands for forest products and benefits, and the preservation of forest health and diversity. This balance is critical to the survival of our forests, and to the prosperity of forest-dependent communities in all regions of Canada.

For forest managers, sustainably managing a particular forest tract means determining, in a tangible way, how to use it today to ensure similar benefits, health and productivity in the future. Forest managers must assess and integrate a wide array of sometimes conflicting factors—commercial and non-commercial values, environmental considerations, community needs, even global impact—to produce sound forest plans.

Because forests and societies are in constant flux, the definition of sustainable forest management is not a fixed one. What constitutes sustainable forestry will change over time as values held by the public change. The examples in this feature illustrate sustainable forest management as it is being practised today, to meet current objectives and criteria.

Measuring Sustainable Forest Management

An ongoing challenge for forest planners and legislators has been how to translate the concept of sustainable forestry into real and measurable goals. We may know what sustainable forest management is, but how do we evaluate our progress toward it?

Grappling with this question led Canadian governments and forest stakeholders to develop a set of science-based criteria and indicators for sustainable forest management. Released in 1995, the criteria and indicators were not artificially constructed or imposed on Canada's forest community. On the contrary, they arose out of consultation with representatives from all levels of

government, academic experts, industry, non-governmental organizations, Aboriginal communities and other interest groups.

The criteria and indicators provide the most comprehensive, reliable framework we have in Canada to describe and measure the state of our forests, our management practices, our values and our progress toward sustainability. The framework recognizes that forests are ecosystems with many environmental, economic and social benefits for Canadians, and that sustainable forest management depends on an informed and involved public.

The framework's six criteria name the broad values that characterize the forest:

- ▶ Conservation of biological diversity
- ▶ Ecosystem condition and productivity
- ▶ Soil and water conservation
- ▶ Global ecological cycles
- ▶ Multiple benefits
- ▶ Society's responsibility

These criteria break down into measurable indicators to gauge the nation's progress toward sustainable forest objectives. No single criterion, element or indicator can measure sustainability on its own, but together they can reveal changes in forest status and forest management over time.

For a more detailed look at criteria and indicators, and for Canada's first substantive report on progress to date, see the article on page 68.



Sustainable Forestry: Making it Happen

Just as no single criterion or indicator can measure sustainable forest management, no single segment of the forest community can make it happen. Sustainable forest management is possible only with concerted efforts by all forest partners. The following case studies illustrate how some groups are contributing to sustainable forestry, and how they are contributing together.

Governments—federal, provincial and territorial—are ensuring that Canada meets its sustainable forestry commitments at local, national and international levels. Governments play many roles, from introducing legislation that preserves biodiversity and ecosystems, to creating models for public and community involvement in forest management. Governments are instrumental in tracking the nation’s progress toward sustainable forestry.

The forest industry, especially in the past decade, has transformed its operations. Ecosystem management, advanced silviculture, community involvement, and better engineering and processing techniques are just some of the sweeping changes industry has ushered into the forest. Across Canada, operators are guided by best practices for road construction, water crossings and harvesting. They are increasingly learning, through formal and on-the-job training, how their activities affect the forest environment. Wood processors are tailoring their equipment and systems to meet environmental requirements and to get better value from the wood

supply. Across Canada, industry associations have developed codes of ethics and codes of practice.

Local communities are a segment with an increasingly vocal say in how forests are managed. Communities in forested regions are tied, socially and often economically, to the health and productivity of the forest. If the industry is a major employer, these communities very survival depends on sustainable forestry. In equal measure, the survival of sustainable forestry depends on these communities, since their commitment is essential for any short- or long-term initiative to succeed.

Aboriginal people, with their enduring relationship to the land, bring a special perspective to sustainable forestry. Through their involvement in community forest projects, model forests, commercial ventures and educational programs, Aboriginal people are contributing directly to forest management in Canada. Provincial forest policies increasingly reflect management approaches that encompass traditional knowledge and use of the forest. Programs like the First Nation Forestry Program are broadening Aboriginal participation in the sector. In fact, Canada’s criteria and indicators framework names consideration of Aboriginal involvement and treaty rights as key elements of sustainable forest management.

Private forest owners, who hold some of Canada’s most productive and diverse forest land, figure prominently in the sustainable management equation. Private owners are managing their forests for a variety of benefits, from recreation to timber to wildlife. Be they individuals, communities or companies, private forest owners are educating

themselves about alternative forest practices. Many forest owners and woodlot associations have adopted sustainable management plans and codes of practice. Continuing education, field tours, stewardship conferences, and tax incentive programs for effective forest management are just a few of the resources helping these owners manage their forests.

Forest researchers are the architects of sustainable forestry. Canadian scientists and researchers are critical in determining how to quantify, predict and ensure sustainability. Besides focusing on biodiversity and ecosystem management, scientists, academics and professional foresters are delving into areas like computer modelling, tree genetics, forest mapping and the forest's role in global climate change, all of which advance sustainable forest objectives. Canada is also home to groundbreaking research in the softer sciences of forest management—disciplines like ethics, economics and the social sciences—needed to account for and measure different forest values.

Faced with the common goal of keeping the nation's forests sound, productive and beneficial, members of Canada's forest community are collectively practising sustainable management in countless new and tangible ways. The case studies that follow provide a random look at the many forms forest management is taking. Far from being exhaustive, these examples merely hint at the deep commitment and diverse approaches to forest management evident across the country.

NATIONAL ROUNDTABLE ON THE ENVIRONMENT AND THE ECONOMY

The National Roundtable on the Environment and the Economy (NRTEE) is an independent advisory body, legislated by Parliament in 1994, that explains and promotes sustainable development and provides decision makers, opinion leaders and the Canadian public with advice and recommendations for promoting sustainable development. Members are appointed by the Prime Minister of Canada and represent a broad range of regions and sectors, including business, labour, academia, environmental organizations and First Nations.

Working with stakeholders across Canada, the NRTEE identifies key issues with both environmental and economic implications, examining these implications and suggesting how to balance economic prosperity with environmental preservation. Their activities are organized into programs and each program is overseen by a task force of NRTEE members.

The NRTEE task forces commission research, conduct national consultations, report on agreements and disagreements and recommend how to promote sustainability. Their approaches are impartial and inclusive—permitting the expression of all points of view in open debate. Stakeholder roundtables are often used to ensure progress in sensitive areas.

More information on the NRTEE is available at <http://www.nrtee-trnee.ca>

CURRENTLY, THE NRTEE'S PROGRAM AREAS INCLUDE:

- Environment and Sustainable Development
- Economic Instruments Indicators Initiative
- Eco-efficiency
- Health, Environment and the Economy
- Green Budget Reform
- Sustainable Development Issues for the New Millennium
- Ecological Fiscal Reform
- Aboriginal Communities and Non-renewable Resource Development

Showing Sustainability by Example

Thanks to the exceptional practices of Laval University's forest management team, Quebec's MONTMORENCY FOREST has become healthier, stronger and more productive. The Montmorency

forest is demonstrating how maintaining the health and productivity of forest ecosystems is an important step toward sound stewardship and the sustainable development of forest lands. The work being done in this teaching

forest is conserving biological diversity while providing a sustainable flow of benefits for future generations of local communities.

When the university took over management of this 6 665 hectare forest in 1965, (of which 6 000 hectares was considered productive forest) the average annual growth rate was 1.5 cubic metres of wood per hectare. By the time of the 1992 forest inventory, that figure had increased to 2.25 cubic metres annually. This jump is due mainly to the university's innovative approaches to forest planning and operations.

In the Montmorency forest, the only large-scale natural disturbance is infestation by the spruce budworm, which tends to attack older trees. To keep the forest vigorous, managers try to create a mosaic of young and older stands. Thus, each year part of the forest is harvested, usually in small patch

clearcuts. The remaining trees are healthier and stronger, yielding more wood and providing a better mix of food and cover for wildlife like moose, deer, snowshoe hare, fisher and lynx.

The harvesting is conducted by a permanent, well-trained crew who practise careful logging. Using tracked wood-processing machines, they cut the trees and leave the branches, tops and, most importantly, tree seed, at the stump. This enables the forest to regenerate naturally. They then transport the cut logs to the roadside with tracked forwarders. Tracked machines leave a softer imprint than wheeled vehicles, which means less soil disturbance. To further cut down on disturbance, the management team is also trying other practices such as harvesting in winter, when the ground is frozen and the snow helps protect soil. Harvesting is suspended for several months in spring, when the ground thaws, since wet soils are susceptible to rutting and erosion, and tree bark is more easily damaged during this growth period.

"...the Montmorency forest provides an excellent example of how maintaining the health and productivity of forest ecosystems leads to sound stewardship and sustainable development of forested lands."

Within one year of harvest, the foresters measure tree regeneration. According to the forest management plan, no more than one-third of each



“landscape unit” (10 square kilometres each) should be in the regeneration phase at any time, which means all stands with trees under 20 years old. The managers exceed Quebec regulations, which require 60 percent of cutover areas to be restocked after harvest, by upping the requirement to 80 percent. To meet this target, they routinely plant white spruce seedlings on harvest trails, and in all understocked areas, within two to three years of cutting. The trees are then thinned eight to 12 years after harvest, which promotes overall forest growth and favours desirable tree species and superior specimens. Operators take special care to minimize the impact of tree thinning on wildlife.

The Montmorency forest managers need not show a profit, but they must cover costs. Fortunately, with income from logging and recreational user fees, the project has become self-sustaining. The provincial government built the main road into the forest; forest revenue pays for its maintenance and for the construction and maintenance of all branch roads. Undergraduate and graduate students conduct

research, gather information and help with planning, which contributes to informed decision making about the forest.

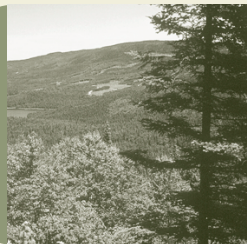
The management team’s goal is to keep Montmorency a multiple-use forest that benefits all users. Along with wood production, recreational use of the land has increased steadily in the past 35 years. Rental cabins are booked year-round, and for a modest fee, an interpretive school program is available for primary grades. The forest managers

believe that connecting with urban populations is important in raising general awareness about environmental and ecological issues.

As well, planners have set aside eight percent of the forest area, representing all ecosystems on the site, as biological reserves with no harvesting. These reserves contain both poor and fertile soils, steep slopes and level areas, and a mixture of healthy and dying trees. The reserves will help researchers study ecosystem processes in forests with little human disturbance. The forest plan also identifies “special management zones” near lakes, streams, trails, cabins and roads.

The Montmorency forest management committee has 20 representatives, each serving a three-year term. The committee includes a range of stakeholders: university faculties, the local municipality, the provincial Ministère des ressources naturelles, the forest industry, local First Nations, recreational groups, students, the area school board and others. The Dean of the Faculty of Forestry and Geomatics at Laval University gives final approval of the forest management plan.

In addition to being a teaching forest, the Montmorency forest provides an excellent example of how maintaining the health and productivity of forest ecosystems leads to sound stewardship and sustainable development of forested lands. The work in Montmorency is improving the forest environment while providing a sustainable flow of benefits for current and future users.



Mixed Uses, Multiple Benefits

HIGHVIEW FARMS* is a third-generation mixed farming operation on the Niagara Peninsula in southern Ontario. Owned by Fred and Sharon High, the 90-hectare property supports a beef operation, a variety of field crops and a woodlot. The farm is also located in the headwaters of Twenty Mile Creek. For years, Fred High has been managing the entire property—woodlot, waterways and farm fields—as one ecosystem. He has also opened up his farm as a demonstration for landowners and others to view how agriculture, woodlot management and water and soil conservation practices can coexist.

One notable feature of Highview Farms is its water and sediment control basin, which was designed using the site's natural topography. The control basin feeds into the woodlot, and eventually into the headwater tributary of Twenty Mile Creek. The woodlot serves the critical function of absorbing overflow from the control basin, especially during storm runoff. In this way, it helps prevent soil erosion around the property's waterways. The woodlot also traps pollutants from water as it passes through to the creek.



The water and sediment control basin is just one of the natural designs High has incorporated into his property to manage waterways, control soil erosion,

and improve water quality within the Twenty Mile watershed. His farm also uses a grass waterway to direct water across cropland, and rock chutes to further reduce erosion from water flow. The site features a cattail wetland and wild shrubs along its natural waterways, both of which filter soil and pollutants from runoff water. This vegetation, along with the woodlot, has the added advantage of providing habitat for small wildlife and songbirds.

All of the demonstration points at Highview Farms are low-cost solutions to common problems. “There is no sense spending a million dollars on a solution, because if it’s not affordable for the people you are showing it to, they simply won’t do it,” says Mr. High. “You have to provide your audience with a reason why—you have to show them a benefit for doing it a different way in order to get them to change.”

“For years, Fred High has been managing the entire property—woodlot, waterways and farm fields—as one ecosystem.”

Mr. High retired some of his farm fields to improve watershed management on the property, and in doing so, created a wildlife corridor between river valley and woodland habitats. A portion of former farmland is now a tree plantation, stocked with mixed hardwood and featuring the American

* Recipient of Forest Stewardship Recognition award (see page 45)

sweet chestnut, a species Mr. High also introduced into the existing woodlot. Planting American chestnuts has not only diversified Mr. High's site, it has also supported ongoing research into reintroducing the species in southern Ontario, home to the small remainder of the Carolinian Forest Region in Canada (see also the example on page 64).

In featuring agricultural areas retired for a tree plantation and for soil and water conservation, Highview Farms demonstrates the value of woodlands as a component of the rural landscape. The site provides a valuable lesson for other farmers and landowners who may be uncertain

FOREST STEWARDSHIP RECOGNITION PROGRAM

The Forest Stewardship Recognition Program (FSRP) was developed to stimulate awareness of and appreciation for stewardship, sustainable practices, and biodiversity conservation efforts in Canada's forests. The program was founded by Wildlife Habitat Canada, the Forest Products Association of Canada (formerly the Canadian Pulp and Paper Association), the Canadian Forest Service of Natural Resources Canada and the Ontario Ministry of Natural Resources. Canada's Governor General is the official Patron of the FSRP.

During its first three years, the FSRP has recognized the achievements of over 100 exceptional individuals, companies, and organizations across Canada for their forest stewardship and biodiversity conservation efforts. (Some of these award recipients are profiled on the following pages). The FSRP is seen as a key driver toward achieving the goal of sustainable forest management, and meets several of the objectives of Canada's National Forest Strategy (1998-2003) and Biodiversity Strategy (1996).

about integrating forested areas into their agricultural lands.

Over the years, Highview Farms has played a pivotal role in raising community awareness of ecosystem health. Fred High is the co-founder and co-chair of the Lincoln Waterways Working Group, a local association that brings together interested parties from agriculture, conservation groups, as well as municipal and provincial governments to work through land use and resource quality issues. Highview Farms is the official demonstration site of the Lincoln Waterways Working Group, and group members have been instrumental in making the farm the model of sustainable management it is today. Together, the group partners have contributed their ideas, expertise and time to the innovative processes used at Highview Farms.

"The site provides a valuable lesson for other farmers and landowners who may be uncertain about integrating forested areas into their agricultural lands."

In addition, the group has done much to publicize the farm and disseminate its lessons. Highview Farms has been visited by government officials from all levels, provincial and international farming organizations, conservation groups, researchers and thousands of school children. Because of High's leadership and collaboration with the Lincoln Waterways Working Group, farmers, woodlot owners and other property owners are learning practical applications for combining conservation and resource stewardship with agricultural and forestry practices.

Adopting New Forestry Practices

New Brunswick has witnessed sweeping changes in logging practices over the past 10 years. Operations are more precisely planned and more mechanized, with fewer people in the woods. Forest workers are leaving a softer footprint on the land they harvest.

As an example, New Brunswick's J.D. IRVING, LIMITED (which also has operations in Nova Scotia and Maine) is reducing site disturbance by using provincial soil maps to determine where and when to harvest. Initially intended for agricultural purposes, soil mapping has become a valuable tool for forest managers, who can schedule operations around soil condition and seasonal weather. J.D. Irving planners now know that the south end of the company's operational area has a hard granite base, suitable for harvesting in autumn, when the heaviest rains occur. Sites in the central part of the province (the Sussex district) feature deep, well-drained soils. They are consequently reserved for operations in summer, when the land is driest and the ground will be least disturbed. Northern portions of the company's territory contain wet, swampy areas best harvested in winter, when the ground is frozen and protected by a layer of snow.



Another sustainable forestry practice that J.D. Irving has long been noted for is reforestation. From 1957 to 1999, the company planted

500 million trees. Each year, staff plant more than 10 million provincial seedlings on Crown land. On the company's private land, they annually plant 15 to 20 million softwood seedlings, using seed grown in company nurseries. Since 1980, foresters at the company nursery in Sussex have been developing seed sources that improve the trees' economic traits, including growth rate, straightness and disease resistance, while maintaining their genetic diversity.

"Since joining the Fundy Model Forest, J.D. Irving has reduced the area that it clearcuts by 20 percent and has increased selective cutting dramatically."

Since 1992, J.D. Irving has been a partner in the Fundy Model Forest, one of Canada's 11 model forests (see page 47). Located in southeastern New Brunswick and representing the Acadian Forest Region, the Fundy Model Forest brings together numerous forest professionals and interest groups whose common goal is to derive social and economic benefits from the land while keeping it environmentally healthy and sustainable.

One advantage of the model forest is that it provides a forum where these diverse partners can communicate openly with one another. Dr. Kate Frego, Associate Professor of Botany at the University of New Brunswick in Fredericton, is a strong supporter of the Fundy Model Forest.

“Trust has developed among the people who consistently attend the model forest meetings,” she says. “People are able to express differing opinions in a respectful environment where their concerns are listened to and taken seriously by the other participants. I believe this has really increased the cooperation among the partnership and makes us more productive.”

The Fundy Model Forest has helped groups and citizens reach consensus on many issues and has led to more joint decision making in the forest. It has also motivated J.D. Irving to research, test and adopt new and modified practices on the ground. For instance, in partnership with the model forest, the company conducted harvesting trials to learn which methods best protect and enhance the forest’s natural regeneration. The results were fully adopted by the company, becoming part of daily operations. Since joining the Fundy Model Forest, J.D. Irving has reduced the area that it clearcuts by 20 percent and has increased selective cutting dramatically. The company has also introduced new alternatives to road building that have reduced road construction and crossings over water. These and other best practices stemming from the model forest partnership now figure heavily in the training given to the company’s woodland operators.

The model forest is just one of the tools J.D. Irving is using to make sustainable forest management a reality, says Bob Eastwood, regional manager of the company’s Sussex operations and a member of the Fundy Model Forest board. Like Dr. Frego, he emphasizes that an outstanding benefit of the partnership has been to open the lines of communication within the forest community.

MODEL FORESTS LEADING THE WAY

Spread across the nation’s forest regions, Canada’s 11 model forests are living examples of innovative sustainable management. The Model Forest Network was launched in 1992 by Forestry Canada (now Natural Resources Canada—Canadian Forest Service), which still provides primary funding, scientific expertise and administrative support, and is a principal partner in each forest. Since then, the model forests have developed, tested and shared new approaches to managing forests—approaches that satisfy economic, environmental and social objectives alike.

More than just showcases of sustainable management, the model forests are vital knowledge centres, testing new approaches and then transferring the successful results and technologies outside the program. And because the model sites represent all of Canada’s forest regions, they reflect the social, economic and ecological differences between the nation’s forest communities, making them invaluable illustrations of forest research and planning at the local level.

The real-life solutions tested in Canada’s model forests respond to both local needs and global concerns about forest management. These solutions are being shared nationally and internationally, and are helping to change the way forests are managed around the world.

Improving communication is the objective of one of J.D. Irving’s most successful New Brunswick initiatives. The “Good Neighbour Policy” is a practice the company began about three years ago, mainly to address issues that arose because people felt uninformed about activities in their own neighbourhoods. As a “good neighbour,” the company now informs residents beforehand that forest operations will start in their area. A foreman goes door to door within one kilometre of a scheduled harvest area to tell residents about the planned work. If no one is home, the foreman leaves his name and number, along with an invitation to call him. Since introducing this practice, the company has seen the number of local issues drop. “They know what is going to happen; they know what to expect,” says Mr. Eastwood. “We decided that as we were working closer to people’s homes, we wanted to do something different.”

Urban Forestry: Managing Green Spaces

Over the past 12 years, the Urban Forestry and Natural Environment & Horticulture Section of TORONTO'S PARKS AND RECREATION DIVISION* has unveiled several urban forestry and biodiversity projects that promote natural ecosystems and demonstrate the benefits of community stewardship. These projects have, among other things, enhanced wildlife habitat, increased plant biodiversity, renaturalized severely degraded sites and restored historically important areas in the city. Toronto boasts some 8 000 hectares of parkland, including waterfront along Lake Ontario, woodlands, ravines and six extensive river valleys. A full 71 percent of this area is classified as natural environment land—a significant holding compared to other municipalities in Canada.

Much of the valley and flood plain land was bought by the Toronto and Region Conservation Authority in the 1950s, to get people and industries out of the river valleys and onto safer ground following the death and damage wreaked by Hurricane Hazel. These lands are now leased back to the City for management. In later waves of development, city planners and utilities used the reclaimed areas as corridors for transportation, gas pipelines and hydro lines. Despite the high levels of disturbance associated with urban development, and



* Recipient of Forest Stewardship Recognition award (see page 45)

the consequent encroachment of a number of invasive plant species, these lands still contained pockets of relatively intact and healthy ecosystems.

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In the late 1980s, the City of Toronto recognized the deterioration of these lands and began systematically restoring their ecological balance and biodiversity. In the beginning, the work was often done by city employees and community members, on their own time. But soon the idea took hold, and by the early 1990s, the city was deluged with public requests to organize volunteer plantings. By 1994, through corporate sponsorships and other strategies, the annual number of plantings had ballooned from 1 000-2 000 at the outset to 35 000-40 000 trees, shrubs and herbaceous plants. The planting projects, funded by various contributors, targeted many sites around the city.

As the rejuvenation program evolved, so did its organization and its use of science. Restoration ecologists got involved. The projects began adopting modified planting techniques for individual plants, in combination with a "managed succession approach" to planting selected sites. The renaturalization kept gaining momentum, and the success rates kept climbing.

After such promising results, the next logical step has been to launch an interpretive program at the sites to teach residents why green space is important. With 74 percent of the country's population in urban areas, many Canadians have limited experience and knowledge of nature. Toronto's program is helping people understand that green spaces—not just those in urban centres but all parks, farmland, private holdings and public forests across Canada—are ecologically important and fragile, requiring careful and sustainable management. According to Toronto's Natural Environment Coordinator, Garth Armour, "This interpretive program to heighten the awareness of the urban population about the environment is a logical extension from the original mandate. But people need to know that the entire country is facing the same sorts of problems in the way natural resources are managed."

The message is coming through loud and clear in Toronto. The City's natural areas are valued by residents for many reasons: they moderate the city climate, provide cleaner air and water, and nurture the spirits of those who enjoy them. Moreover, the City's programs are teaching people how ecosystems function, how they should be treated, and why it is important to enhance and maintain forest lands—and indeed all green lands—not just for their aesthetics but for their ecology. The City of Toronto's initiatives are advancing sustainable forest and natural areas management by improving the health and diversity of forested ecosystems in a large urban environment.

SUSTAINABLE DEVELOPMENT STRATEGY

Now and for the Future

The sustainable development of Canada's natural resources is a crucial component of the nation's economic growth and will help to provide the highest standard of living and quality of life to Canadians in the 21st century.

Natural Resources Canada's Sustainable Development Strategy—Now and for the Future is based on a vision of the future in which the wise use of natural resources will enable the protection of health of Canadians, the environment and the landmass, while continuing to meet human needs for energy, forest and mineral-based products, and will ensure that similar opportunities are sustained for future generations. The Strategy includes a commitment to measure the vision through indicator development and reporting, which will allow the measurement of progress.

At the heart of the Strategy is a framework for advancing the vision of a sustainable future. The framework includes strategic actions that focus on six themes: climate change; corporate stewardship and accountability; innovation; knowledge and information; leadership and partnerships; and sustainable communities. Each strategic action presents: the issue or problem to be addressed; the partnership approach to addressing the issue; time-bound and measurable targets; and anticipated outcomes in the context of advancing sustainable development.

For more information on Natural Resources Canada's Sustainable Development Strategy—Now and for the Future visit <http://www.nrcan.gc.ca/dmo/susdev>

Testing a New Concept: Joint Forest Management

In Quebec, where nearly 90 percent of forest land is publicly owned, the forest regime is special. For one thing, a variety of diverse users—from municipalities to forest companies, from landowners to recreational outfitters—hold “rights” within the province’s public forests, sometimes in the same location. For another, the public forests are divided into 120 management units, where companies holding timber supply and forest management agreements (TSFMAs) are responsible for managing the forest for wood production. Overseeing the province’s public forest land is the Ministère des Ressources naturelles, which upholds the management standards for public forests. Municipalities have the same responsibility for private forests.

Since the mid-1990s, Quebec has been testing a unique approach to managing its public forests in a manner that recognizes all users’ rights. The approach, known as FORÊT HABITÉE (“inhabited forest”), is a concept of joint forest management that allows diverse users to make decisions about their local forest. According to Luc Bérard, a professional forest engineer for the forest management service of the Ministère des Ressources naturelles, “The Forêt Habitée approach resulted from public pressure. People wanted to be more involved in the management of forest lands surrounding their communities, and that is the purpose of inhabited forest initiatives.”

The concept of Forêt Habitée is being tested across the province with 14 pilot projects, all focusing on multiple use and community-based forest management. Together they cover a total area of 4 000 square kilometres. The projects are supported financially, technically and administratively by the Ministère des Ressources naturelles, which is closely monitoring the projects to determine which structures and strategies work best.

“Forêt Habitée (“inhabited forest”), is a concept of joint forest management that allows diverse users to make decisions about their local forest.”

Within each project, the groups and individuals holding rights to a particular forest tract come together in one forum, where they must reach consensus on how to sustainably manage all forest resources in the project area. Besides forest companies holding TSFMAs, the project partners may include local and regional municipalities, landowners, contractors, outfitters, tourist industry representatives, fish and game associations, and snowmobile, hiking and ski clubs, with or without official rights to the forest. Some projects include First Nations and community organizations.

Some Forêt Habitée projects cover both private and public forests; others are on exclusively public or private land. The number of partners in each project ranges from two to 18, the average being six or seven. In all cases, the partners must cooperate and prepare the project area's multi-resource development plan together. About half the partnerships are informal, while the others are set up as corporations or similar legal entities. All rights held by the legal structure, and all benefits and wealth generated from it, are shared among the partners.

At present, five of the 14 projects are making a profit or at least breaking even. For the successful projects, harvesting and selling timber are essential activities, generating most of the revenue. But in some instances, revenues from non-timber resources and services, like recreation, hunting and fishing, contribute up to five percent of the annual income. A dynamic project leader also appears to be a key ingredient for success.

Although Forêt Habitée projects unite users in the common goal of sustainable forest management, responsibility sharing remains a sensitive area. Some projects have adopted conciliation processes to help partners work through disputes, but establishing priorities and allocating costs and revenues are still sources of tension.

In most cases, projects are particularly demanding for the forest industry that supports them. Yet there are definite benefits for forest operators. By ensuring that the lands on which they operate remain healthy, balanced and productive, companies assure themselves of a reliable source of

wood supply into the future. Taking part in the projects also allows companies to defend their interests and makes forest certification (see page 78) more attainable. In addition, forest companies can secure new sources of wood from private or public lands without a timber supply and forest management agreement.



Non-industry participants gain just as much from the partnership. With an assured place at the negotiation table, they now play a meaningful role in forest management, at both the planning and execution stages. Indeed, the non-industrial, social side of forest management is a critical component of the Forêt Habitée approach. Project groups manage their forest areas for an array of non-timber values, and input from local communities—including First Nations, who are involved in two of the 14 projects—is essential. Ecosystem health and biodiversity are accounted for in all projects. In the end, each project's multi-resource development plan reflects the wide-ranging values of all its partners.

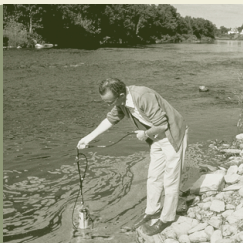
With the Forêt Habitée initiatives, some Quebecers are experiencing a new approach that is seeing fair, effective and inclusive decision making at work in their forests. These project forests are being managed for a multitude of users, with a multitude of values. By placing community responsibility and multiple use at the top of the agenda, Forêt Habitée is illustrating how healthy forests can meet many demands and produce benefits for all.

New Ideas

Though often outside the forest canopy, wood manufacturers nonetheless have an important role to play in making sustainable forest management a reality. As these two Alberta companies show, reducing emissions, being open about environmental monitoring and finding creative uses for wood byproducts are some of the ways in which Canadian wood manufacturers are proving they are responsible forest stewards.

WELDWOOD OF CANADA operates a pulp mill in Hinton, Alberta, not far from Jasper National Park. For large industrial facilities like this, environmental emissions monitoring is a normal part of operations. But in most facilities, the monitoring is

done by company staff, who report directly to the provincial government. Communities have raised concerns about the transparency of this type of self-monitoring structure.



There are no such concerns at the Weldwood mill, which has adopted a citizens' monitoring program, developed with help from the Environmental Law Centre, a non-profit group based in Edmonton. Weldwood sent citizens from its public advisory committee on a training course that taught them how to take water and air samples. Afterwards, the mill presented all committee members with a

“golden key” and invited them to enter the mill at any time to collect samples. The mill also gave the individuals names of several independent laboratories where they could submit the samples for analysis. In the end, these specially trained citizens continued as members of the public advisory committee, with the assurance that the mill is always open to unrestricted effluent monitoring.

“Weldwood sent citizens from its public advisory committee on a training course that taught them how to take water and air samples.”

By inviting local citizens to be its environmental watchdog, the Weldwood mill is sending a strong message about responsibility, trust and credibility—all essential ingredients in meeting public expectations for forest and environmental health.

Back in 1996, AINSWORTH LUMBER COMPANY LIMITED, an oriented strand board producer with its mill located near Grande Prairie, Alberta, began investigating whether the byproducts of its operations—sawdust, wood strands, bark and wood ash—could be reduced, reused or recycled. Together with the companies Canadian Forest Products (Canfor) and Manning Diversified Forest Products, Ainsworth approached Fairview College about testing agricultural applications for these byproducts. Because the

wood residues contain valuable nutrients like potassium and phosphorous, and help retain soil moisture, the idea seemed worth pursuing.

After experimenting with different byproducts and mixtures, researchers found that applications of wood ash immediately increased crop yield on test plots. And because wood ash's high pH helps neutralize the acidic soils of northern Alberta, applying it would save farmers the time and cost of liming their soil for the same result.

"Thanks to Ainsworth's resourceful efforts, wood ash was recently approved as an agricultural supplement by the Alberta government."

Across Alberta, roughly 100 000 tonnes of wood ash is landfilled each year. For companies that produce it, diverting the byproduct for agricultural use has the environmental benefit of minimizing landfill, the economic benefit of saving the associated costs, and the overall advantage of making fuller, more responsible use of the forest resource. Thanks to Ainsworth's resourceful efforts, wood ash was recently approved as an agricultural supplement by the Alberta government. Now Ainsworth and other forest companies are deciding how to distribute and possibly market the product.

Alberta Forest Care Program

Weldwood and Ainsworth are both certified members of the Forest Care Program, a forest stewardship initiative of the Alberta Forest Products Association. The association, which represents 66 Alberta wood manufacturers, introduced FOREST CARE in 1990 in response to increasing public expectations of the forest industry. Members wanted to show that they were responsible corporate citizens in three main areas: care for the forest, care for the environment and care for the community. To that end, Forest Care's principles and codes of practice are consistent with, and often exceed, government regulations, and member companies have pledged to meet these standards in their operations.

Since 1995, the Alberta Forest Products Association has been funding independent third-party audits of Forest Care members. The auditors, who review members on a three-year cycle, are not connected with the industry, and they must possess minimum qualifications and pass an exam to qualify for the role. The association's practice of using local observers to audit forest operations has gained credibility within the province over the past six years. It is showing Albertans, in a transparent and measurable way, that wood manufacturers are serious about using the forest resource responsibly, and will open themselves to public scrutiny to prove it.



Effective Smaller-Scale Forestry

Based in Courtenay, British Columbia, the NORTH ISLAND WOODLOT ASSOCIATION* is a not-for-profit organization that promotes small-scale sustainable forestry on northern Vancouver Island. Since 1986, its members have benefited from an array of workshops, demonstrations and extension services offered by the association.

The North Island Woodlot Association consists of individuals and families who own private forest land in the area, as well as holders of woodlot licences. A woodlot licence is a type of forest tenure agreement administered by the British Columbia government. The licence can be managed by individuals or companies, and it covers an area of Crown and often private forest managed for forest products and ecosystem sustainability.



Like other woodlot associations in British Columbia, the North Island Woodlot Association operates on the principle that small-scale forestry is viable and desirable. Through its

teachings and demonstrations, the association shows its members and the general public that small forest tracts, when managed properly, can support sustainable wood production and better use of forest resources while still retaining their ecological and aesthetic integrity. By taking a

balanced approach, the association tries to provide an alternative between large industrial activity and total preservation of forest lands.

“The forest supports botanical production, outdoor recreation and some timber harvesting, and has significant watershed and wildlife features.”

The association’s brand of grassroots, small-scale forestry also means more local involvement in forest management. “When I look around the Vancouver Island region,” says association president Sibylle Walkemeyer, “I see many landowners who are very enthusiastic about the small-tenure forestry our association promotes. For many of them, their woodlots have become like a farm, with the whole family involved.” Such “close to home” forest management benefits more than just the landowner, since increases in forest productivity can help diversify and support the entire local economy.

In January 2001, to make its services easier to access, the North Island Woodlot Association opened the doors of its new Forest Resource Centre. This storefront office offers many services to private woodlot owners, including information resources, seminars, on-site forest assessments, demonstrations, and contacts to local service providers and value-added producers. The Forest Resource Centre

* Recipient of Forest Stewardship Recognition award (see page 45)

is the local delivery point for Forest Renewal BC's Small Woodlands Program, a provincial government-sponsored extension program for small non-industrial woodlots. Extension specialists, foresters and volunteers work out of the centre to bring the program's activities and services to association members and non-members alike.

With urban and suburban sprawl encroaching on the forests and green spaces of northern Vancouver Island, the North Island Woodlot Association often bills itself as a promoter of sustainable forestry "in the suburban-forest interface." In the late 1990s, the association went beyond promoting this idea to making it tangible, by spearheading the Comox Valley Community Forest. Consisting of the three remaining Crown forests in the region, much of the Comox Valley Community Forest is adjacent to suburban and industrial areas. The forest supports botanical production, outdoor recreation and some timber harvesting, and has significant watershed and wildlife features. The community forest has many stated goals, among them local control of forest stewardship, and integration of social, economic and environmental values into forest management.

In securing the provincially monitored community forest licence, one of initially only seven granted across British Columbia, the association, through its business arm, the North Island Woodlot Corporation, worked closely with local citizen organizations, municipal governments and private forest owners. But since then, the reality of local control has been brought home to the forest partners. During a public consultation in October 1999, First Nations bands raised the concern that

the community forest area would disappear from their treaty negotiations. Ever since, the North Island Woodlot Corporation, the provincial government and the affected First Nations have been in discussions over how the community forest can proceed and still respect Aboriginal rights.

Local responsibility brings with it certain challenges. It is only by working through these challenges that forest managers—be they individuals, companies or communities—can together move toward sustainable forest management. In the meantime, the North Island Woodlot Association, by continuing to teach and demonstrate the principles of sustainable forestry, is making sure the journey is an informed one.



Innovative Management Approaches

Based in Meadow Lake, Saskatchewan, MISTIK MANAGEMENT is a company set up to direct the flow of wood from both Crown and private forests to two wood processing operations: a pulp mill owned by Millar Western and the province, and a sawmill owned by NorSask Forest Products.

Meadow Lake Tribal Council, a First Nations organization, is the sole shareholder of NorSask, and together with Millar Western, it jointly owns Mistik Management.



Mistik puts into practice many key principles of sustainable forestry. The first is consultation, which enables industry and community values to influence forest planning and forest operations. For several years now Mistik has conferred extensively with local communities before submitting its operating plans to the government for final approval. As part of its consultation, Mistik works with nine community-based advisory boards which bring together forest stakeholders and company foresters to discuss the location, timing and details of planned operations. These advisory boards, also known as co-management boards, represent many groups, including traditional forest users, businesses, politicians, outfitters, trappers, wild rice growers and First Nations elders. Seven of the nine

boards have significant First Nations and Métis representation.

On the economic development side, Mistik's policy is to give local residents the first right to economic opportunities from forest work. Mostly, these opportunities take the form of business contracts, supported by company training and loan programs. Mistik also creates employment by hiring consultants to train contractors in areas like heavy equipment maintenance and small business accounting. Between two-thirds and three-quarters of the contractors doing business with Mistik are owned by First Nations or Métis community members—a big change from a decade ago, when these groups were not well represented among the company's contractors.

“Mistik has conferred extensively with the local community before submitting its operating plans to the government for final approval.”

Forest research is another priority for Mistik. The company boasts an active research program headed by a science advisory board of experts from across North America. These include specialists in forest ecology, fire science, resource economics, hydrology, wildlife ecology, aquatic ecology and sociology. The science advisory board guides Mistik in many ways,

updating the company about emerging forest issues, identifying risks and knowledge gaps, and proposing worthwhile projects. The board also gives the company feedback on its procedures and practices, recommending science-based improvements when they are warranted.

With its emphasis on broadening knowledge, Mistik has conducted numerous research projects. The company is particularly focused on investigating community values and public participation processes to determine the difference public involvement makes and the best methods for incorporating community values into forest plans.



Already the company is showing leadership in these relatively new disciplines of forest management.

Mistik is also studying long-term resource sustainability, a critical area of forest research. Using multiple resource management models, the company is experimenting with different scenarios to learn how to derive the greatest benefit from the most resources. With one computer mapping tool, for instance, company foresters can create a scenario that changes habitat types over time while considering how these changes affect moose populations.

Some of Mistik's research concentrates solely on trees. For example, the company is currently assessing individual harvest areas to evaluate which trees are best left on each site to promote tree regeneration, wildlife habitat and aesthetics. Other research has led the company to improve its road-

building methods. For instance, Mistik developed ways of controlling erosion by managing water drainage along road systems. The company also began designing and building primary roads within the natural contours of the landscape. The company negotiates road issues with the co-management boards and the advisory boards, and provincial authorities have some say as well.

"The board also gives the company feedback on its procedures and practices, recommending science-based improvements when they are warranted."

Like other forest companies across Canada, Mistik has adopted seasonal harvesting to protect forest soils. The company carries out 60 percent of its operations in winter, then shuts down from the end of March until July. The sand flats on which jack pine grow are usually reserved for summer harvesting, their well-drained and stable soil being ideal for this season.

Mistik Management is putting into practice many elements of sustainable forestry. The company has taken a lead in defining society's roles and responsibilities, both in specific projects and overall forest sustainability, and has shown by example that public involvement works. It has created jobs and economic partnerships, largely benefiting local Aboriginal communities. And, recognizing that the basis of its success is a healthy and productive forest, Mistik has worked with forest scientists and researchers to maintain forest environment productivity from the ground up.

New Environmentally Friendly Alternatives

A look at the international forest company StoraEnso, whose Canadian operations are based in Port Hawkesbury, Nova Scotia, shows that it has concretely altered forest practices in recent years to address environmental concerns. From the company's point of view, these changes are not simply response-driven; the newer environmentally friendly practices also make good business sense.



StoraEnso has long been interested in forest sustainability. In 1962, it was one of the first companies in Canada to practise intensive silviculture, and by 1995 it had planted its 100 millionth seedling. But in the last six or seven years, StoraEnso has significantly changed its silvicultural practices, particularly when conducting crop tree spacing.

Before the mid-1990s, the company employed conventional spacing, which meant workers would cut down everything between crop trees at regular intervals (usually 2m x 2m, or 2.5m x 2.5m). But since then, StoraEnso crews have adopted a new approach, one that emphasizes releasing crop trees instead of creating spacings. Workers select crop trees for the new stand, making sure they are free to grow, meaning their tops are in full sunlight. Crew members no longer remove everything between the

crop trees. Hardwood trees that are less than half the height of the crop tree, as well as other softwoods, are left behind. The practice helps maintain the stand's original biodiversity and improves the soil's organic content. In addition, the softwood and hardwood mixture benefits wildlife by providing more varied habitat.

StoraEnso uses the practice of releasing crop trees in both plantations and natural stands because, as an added bonus, the sustainable practice is much more economical. There is less cutting than with the conventional procedure, requiring less labour. Also, the new method, as well as conventional spacing, improves the trees' growth rate and quality. It may also stimulate early self-pruning in the crop trees—time will tell.

"The practice helps maintain the stand's original biodiversity and improves the soil's organic content."

Another practice the company has employed to meet sustainable management objectives is the use of portable bridges. StoraEnso has helped pioneer portable bridges in eastern Canada, using them to cross numerous streams in the company's operational area. Previously, the company built log bridges or laid bundles of wood in stream-beds to traverse waterways. But as Russ Waycott,

StoraEnso's Woodlands General Manager, points out, "We very quickly found that the practice was inadequate. We began using portable steel and wood bridges, and all contractors are now required to use these structures."



Part of the reason water crossings are so critical is that the soil in eastern Canada is generally silty or contains significant clay, making it vulnerable to degradation and erosion into watercourses. Well-engineered stream crossings are important in the region to protect fish habitat and maintain water quality downstream from harvesting. All StoraEnso's operations involve wood forwarders, which are outfitted with grapple booms to move

wood to the roadside. But as an added benefit, these machines can install portable bridges from the near stream bank, eliminating the need to cross the stream before the bridge is in place. Once the bridge is

installed, workers cover the approaches to both ends with brush to prevent wheel ruts from forming in the high-traffic areas.



"The portable bridges are so successful that the Scandinavian parent company has taken the technology back to Finland and Sweden."

The new and environmentally friendly alternative of portable bridges offers many advantages. Quicker, safer and more cost-efficient than other water crossings, the portable bridges are so successful that the Scandinavian parent company has taken the technology back to Finland and Sweden. Ease of installation, combined with protection of stream beds, water quality and fish habitat—important considerations for responsible forest management—make these structures a highly attractive option for industry.

Informed **Community** Decision Making

A town of 500 people, Elk Lake lies 60 kilometres off the Trans-Canada Highway in northeastern Ontario. Before its community forest project, Elk Lake was not as well off as other resource-based communities in the Timiskaming region that had broader economic bases. In fact, Elk Lake relied almost solely on wood extraction. To compound matters, the town's survival was threatened by unsustainable harvest levels and a landbase that was shrinking because of the addition of protected areas. But residents rallied, and in the early 1990s the idea of the ELK LAKE COMMUNITY FOREST* was born.

Elk Lake has since experienced an evolution. Embracing the concepts of sustainable forest management, residents have created a bright future for the town and surrounding areas. Indeed, Elk Lake has become a preeminent example of a working community forest. Stephen Harvey, senior policy advisor for the Ontario Ministry of Natural Resources, says Elk Lake "has the clearest vision and most progressive view of any group that has promoted itself as a community forest."

When the Elk Lake group started, its members felt they had inadequate influence over decisions being made on their behalf. For one thing, contentious

land use issues in nearby Temagami had garnered national and international attention, and threatened to tarnish the local forest industry. For another, some decisions were coming from the provincial cabinet, from people with no knowledge of Elk Lake. At the same time, the Elk Lake group realized that to win a meaningful say in forest decision making, it needed to respect the province's role in local forest management.

"Community forest initiatives have helped the local forest industry stay competitive while expanding its range of products and selling those products more efficiently."

The citizens of Elk Lake could not rewrite the policies and rules governing forestry, but they were in the best position to shape local decisions because they lived and worked in the community. Terry Fiset, local reeve and board member with the Elk Lake Community Forest, recalls, "We spent a large portion of our time and resources gathering data about our forest. When you can demonstrate that you know more about the resource than anyone else, it places you in a position of control."

In the end, the Elk Lake group designed a package that was acceptable to the community and the government. The province did not hand over complete control of forest planning and decision



* Recipient of Forest Stewardship Recognition award (see page 45)

making, but the Elk Lake Community Forest secured a major role in the process. It won this role partly because its decisions were informed. “Education is the key element of anything we do here,” says Mr. Fiset. “If someone wants to express an opinion, it is our role to make sure it is an informed decision and not something that someone else has told them.”

The partners in the Elk Lake Community Forest are individuals who have made a difference to sustainable forest management in the region. Each one is a volunteer, and some have worked on the project since 1992. The members represent a broad cross-section of environmental, forestry, First Nations and municipal interests. “We keep the dialogue going,” comments Mr. Fiset. “For the most part, we deal with land use issues and we have become an effective lobby.”

The Elk Lake Community Forest has contributed to sustainable forestry in Canada by broadening the usefulness and productivity of the forest. Community forest initiatives have helped the local forest industry stay competitive while expanding its range of products and

selling those products more efficiently. The project has also made it possible and desirable for the industry to reinvest income in the forest and in the community, to support both economic and social needs. In this way, Elk Lake has drawn attention to the forest’s capacity to provide sustainable timber and non-timber benefits.



and selling those products more efficiently. The project has also made it possible and desirable for the industry to reinvest income in the forest and in the community, to support both economic and social needs. In this way, Elk Lake has drawn attention to the forest’s capacity to provide sustainable timber and non-timber benefits.

“These decisions have shaped the local harvest levels, the allocation of natural resources, and the economic, cultural and spiritual well-being of this forest community.”

Other successful projects include a four-credit course, called the Terra program, which the Elk Lake Community Forest developed for the New Liskeard high school. Now in its seventh year, the program teaches students about the forest they live in. Students have participated in duck banding and developing a 15-stop demonstration forest tour. For Elk Lake, teaching youth about resource management is a sound investment in the community’s future. It encourages young people to remain in the area and helps them take greater responsibility in the business community, whether in tourism, forestry or related support industries.

The efforts of the Elk Lake Community Forest have led to fair, effective and informed decisions by community and non-community members. These decisions have shaped the local harvest levels, the allocation of natural resources, and the economic, cultural and spiritual well-being of this forest community. The community forest has also introduced local residents to a range of other economic opportunities less dependent on consumption of the region’s natural resources. The Elk Lake project has thus brought a greater understanding of the social and multiple-use elements of sustainability.

Exchanging Ideas

and Using the Resource Efficiently

One of North America's largest producers of forest products, WEYERHAEUSER operates from coast to coast in Canada. With operations in British Columbia, Alberta, Saskatchewan, Ontario and New Brunswick, the company is faced with regional variations in forest type, provincial legislation, ecological profile and socio-economic factors. Weyerhaeuser has dealt with this diversity by setting company-wide standards that work in all jurisdictions.

As well, Weyerhaeuser relies for consistency on its "sustainability improvement team," a group of company foresters representing regional operations from New Brunswick's Miramichi River to the British Columbia coast. The group meets by phone and in person to discuss issues that affect all of Weyerhaeuser's forest operations—for example, common environmental standards and environmental management systems. Team members visit each other's sites to observe operations and share improvements.

Weyerhaeuser has formed other "improvement teams" to deal with specific topics like roads, growth and yield, biodiversity, and forest information systems. The teams have become a proven communication method that broadens the knowledge, skills and experience of all company staff.

"Weyerhaeuser has dealt with this diversity by setting company-wide standards that work in all jurisdictions."

Weyerhaeuser's regional operations provide some distinct examples of how this Canada-wide forest company is adopting sustainable forest practices on the ground.

In New Brunswick, Weyerhaeuser's road-building practices have changed greatly over the past 10 years. The company now constructs logging roads with a minimum of soil disturbance in the right-of-ways. It also builds roads with excavators rather than bulldozers, meaning fewer gravel pits are needed to supply roadbed materials. Furthermore, the company's water crossings are more carefully planned and constructed than in the past, with particular emphasis on bank stabilization to protect water quality and fish habitat downstream.

In Dryden, Ontario, Weyerhaeuser's sawmill takes part in resourceful trading arrangements that make better use of the local forest supply. The sawmill diverts large-diameter logs, which only slow down its production, to small, independent sawmills that need the logs for specialty products and frequently



suffer from unreliable supply. Conversely, Weyerhaeuser gives its small-diameter spruce trees and treetops to Abitibi for use in that company's Kenora newsprint mill. In exchange, Abitibi sends Weyerhaeuser the sawlogs that it harvests but has little demand for. The net effect is that all facilities get the right product mix, costs are improved, a smaller area of forest is harvested, and there is less waste material to dispose of.

Wapawekka Lumber, near Prince Albert, Saskatchewan, is an independent joint venture between Weyerhaeuser and the Lac La Ronge, Montreal Lake and Peter Ballantyne First Nations. Wapawekka operates a \$22 million sawmill that has created 40 jobs, most of them filled by Aboriginal workers. The joint venture is the second step in a relationship that began when the three First Nations secured a logging contract in Weyerhaeuser's forest management licence area. The Wapawekka sawmill features a small log line that can saw small, crooked trees which formerly went to the pulp mill. Wood remaining after a board is extracted is still chipped and sent for pulp. The sawmill operates on the principle of extracting greater value from the wood supply rather than using more wood.

In Alberta, where woodland caribou is an endangered species, Weyerhaeuser has developed a caribou habitat management policy, as well as a strategy and set of long-term principles. These policies dictate how the company must adapt its forest management activities in the Grande Prairie area to the caribou's habitat and winter range needs. The company now operates in dispersed harvest sites in the region, while maintaining significant amounts of old growth for caribou habitat.

In the interior of British Columbia, Weyerhaeuser recently completed a comprehensive analysis of 20 watersheds. The project, which covered roughly 250 000 hectares, was conducted in partnership with the provincial forest and environment ministries, Forest Renewal BC, First Nations communities, local community groups and landowners. The analysis looked at the cumulative effects on streams of forestry, farming and mining, considering such factors as soil erosion, nearby roads, development projects, irrigation, domestic water use and terrain stability. Results of the watershed analysis will help Weyerhaeuser plan and manage its forest operations with better scientific knowledge about local water and soil conservation.



Finally, on the British Columbia coast, Weyerhaeuser is phasing in the practice of variable retention silviculture on all 1.1 million hectares of public and private temperate rainforests in which it operates. When harvesting, Weyerhaeuser now leaves behind individual trees or small islands of trees within cutover areas. The type of uncut trees and the degree of retention vary, depending on ecological conditions and specific site objectives. Variable retention is an important component of ecologically based forest management, since retained vegetation provides habitat for many species of insects, birds, mammals and other plants.

Private Woodlot Owners

Taking Action

Sassafras, black walnut, American sweet chestnut, sycamore, tulip tree—in Canada? The Carolinian Forest Region contains tree species common to parts of the United States but rare in Canada. These species grow only in the southernmost part of Ontario, mostly on the northern shore of Lake Erie. The unique mix of climate and moist yet well-draining soils in the Carolinian-Canada life zone allows for a surprising array of deciduous trees in the region. Osage orange, redbud, sycamore, sassafras, and tulip tree can grow here, but almost nowhere else in Canada



While these species were common in southern Ontario at the time of European settlement, there are now few representative examples of the Carolinian forest left in Canada.

Hundreds of years of development and population growth have left the remaining woodlots in the area severely fragmented. However, 87-year-old DANIEL WHITING LATHROP* has ensured the preservation of a 22 hectare block of undisturbed Carolinian forest in the village of Fonhill, on the Niagara Peninsula. The forest, which sits conspicuously on the highly developed, discontinuous landscape, has been permanently designated a wildlife preserve, a gift from Mr. Lathrop and his wife Margaret—who

purchased the land in 1959 and lived there until the late 1990s—to the Nature Conservancy of Canada.

“The Carolinian Forest Region contains tree species common to parts of the United States but rare in Canada.”

Mr. Lathrop has devoted much of his life to stewardship of the forest. Among other things, his passion has had a profound effect on wildlife in the area. With abundant fruit from six species of oak, four hickories and other fruit-producing trees like black cherry, Mr. Lathrop’s forest has been a haven for wildlife trying to survive in an increasingly urbanized region. While he owned the land, Mr. Lathrop planted more than 40 hectares’ worth of trees to increase the forest interior and create wildlife corridors that help link non-developed lands in the area. As well, he was one of the first landowners to reintroduce the wild turkey into the Niagara region.

“Mr. Lathrop’s forest has been a haven for wildlife trying to survive in an increasingly urbanized region.”

While the peaceful preserve offers a shrine for those who want to experience one of the last remnants of a forest common here only 200 years

* Recipient of Forest Stewardship Recognition award (see page 45)

ago, the property—one of the most uniquely biodiverse land tracts in the area—is exceptionally valuable as an area of study. Numerous research projects have been conducted in this forest, including site-index studies and disease studies. Mr. Lathrop's own assessment and inoculation of the Canadian sweet chestnut over ten years earned him recognition and a commendation from the Canadian Chestnut Council. The forest is a training site for the Niagara Community Woodland Steward Program



and the Niagara Woodlot Association. Furthermore, many groups have toured the forest for educational purposes, and the site is to become a future demonstration forest.

Mr. Lathrop has not only preserved one of the most biodiverse land tracts in the area and conveyed it to Canada; he has also preserved and conveyed the principles of forest stewardship to his family, friends and community. His influence is most notable with his daughter, Anna Lathrop. Today, she is a member of Land Care Niagara and manages 100 hectares of woodland in the Niagara area using the forest skills and principles handed down from her father. Daniel Lathrop has demonstrated a lifelong voluntary commitment to sustainable forest management, and Canada's forest diversity is the richer because of him.

Conclusion

The concrete and innovative activities illustrated in these case studies are but a fraction of the whole picture of sustainable forest management in Canada today. The responsible stewards helping our country to sustain its forest resources to meet changing demands, values and benefits are too numerous and too diverse to categorize, let alone profile.

As these examples have shown, Canada is entering the new millennium with a firm commitment to forest sustainability, dynamic

partnerships in the forest community, advanced research and technologies, and a demonstrated willingness to innovate. But it is only because we have turned our commitments into realities that we can now speak of Canada as a living, practical model of sustainable forest management. With our country's proven progress, and with diverse real-life examples showing us the way, we can look ahead with confidence, knowing that Canada can face the forestry challenges of tomorrow.