CANADIAN MODEL FOREST NETWORK

Private Woodland Owners —

MEETING THE STEWARDSHIP CHALLENGE

MODEL FOREST NETWORK
RÉSEAU DE FORÊTS MODÈLES

Prepared by
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Natural Resources Canada
Ressources naturelles Canada

Canada

CANADIAN MODEL FOREST NETWORK

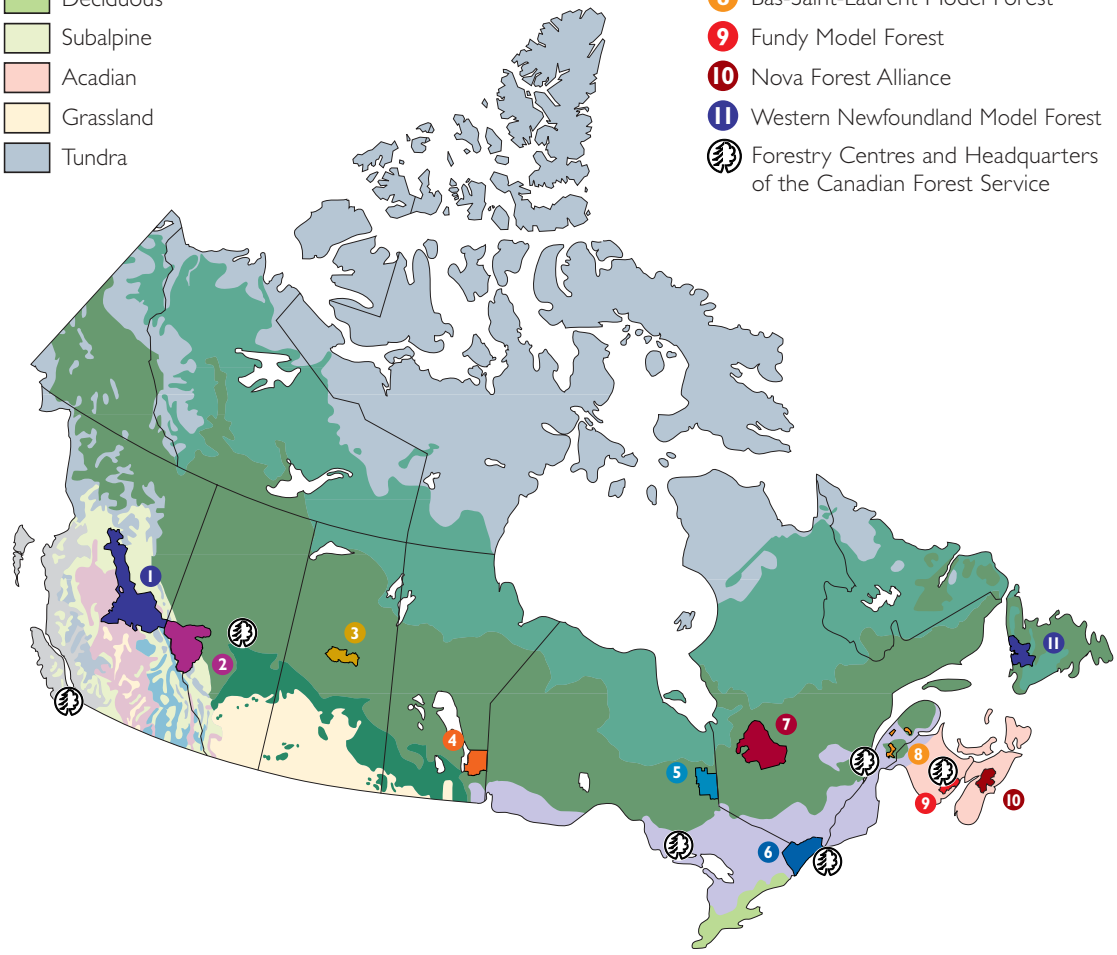
Forest Regions of Canada

- Boreal — Predominantly Forest
- Boreal — Forest and Grassland
- Boreal — Forest and Barren
- Great Lakes — St. Lawrence
- Montane
- Coast
- Columbia
- Deciduous
- Subalpine
- Acadian
- Grassland
- Tundra

Canadian Model Forest Network

1. McGregor Model Forest
2. Foothills Model Forest
3. Prince Albert Model Forest
4. Manitoba Model Forest
5. Lake Abitibi Model Forest
6. Eastern Ontario Model Forest
7. Waswanipi Cree Model Forest
8. Bas-Saint-Laurent Model Forest
9. Fundy Model Forest
10. Nova Forest Alliance
11. Western Newfoundland Model Forest

Forestry Centres and Headquarters of the Canadian Forest Service



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This report is dedicated to all woodlot owners across Canada who have placed a priority on caring for their woodlots, allocating time and money to retain the multiple benefits their land provides. The stewardship efforts of Canadian woodlot owners, as demonstrated in this report, are exemplary and are making a difference locally and provincially, and continue to contribute to Canada's enviable international conservation record.

The Canadian Model Forest Network through its Private Woodlot Strategic Initiative and the Canadian Federation of Woodlot Owners are working together to advance woodlot stewardship and the sustainability of Canada's woodlot sector. Several projects have been initiated under this partnership to improve the information available on the woodlot sector, its membership, its objectives and current successes and activities. Other projects have been initiated to develop practical tools to better connect members of the woodlot owner community, both with each other, and with relevant information. Efforts are also being made to improve communication with a much higher percentage of landowners who are currently not members of the traditional woodlot owner community. These efforts, along with those of the landowners themselves, will ensure that the woodlot owner community is positioned to face the challenges ahead.

The Private Woodlot Strategic Initiative steering group consists of representatives of the woodlot community across Canada. Participation of this team in the development of initiatives, including this report, ensures projects are relevant to the needs of the woodlot owner community, and are linked to both provincial and national stewardship agendas. Additionally, Model Forests across the country are to be commended for providing the innovative partnerships and for acting as the catalysts for trying new approaches to private woodland stewardship on the ground. The dedication of these local partnerships will play a key role in addressing the challenges outlined by this report. The active participation of the Canadian Federation of Woodlot Owners (CFWO) in this project is appreciated and will ensure that the findings are transferred throughout the woodlot community and beyond.

Finally, the authors would like to acknowledge the input provided by the many provincial, industry, academic and non-government organizations and individual woodlot owners who took the time to share their stories with the writing team, and who remain committed to the development and delivery of programs that support woodland stewardship. Natural Resources Canada through the Canadian Forest Service has generously provided funding through the Canadian Model Forest Network for the production of this report.

PREFACE

The Canadian Model Forest Network created the Private Woodlot Strategic Initiative to assist individuals and woodlot organizations across Canada in the challenge of achieving sustainable forest management on private land. There is a strong consensus amongst the steering group members for this initiative that the great diversity within woodlot owners' interests and activities needs to be understood before embarking on new networking and information activities, and potentially marketplace incentives to encourage stewardship activities as outlined within the new National Forest Strategy (2003–2008). Clearly the extent and resilience of private woodlands across Canada is the result of past and current stewardship activities. The objectives of this report as defined by the steering group are therefore:

- to highlight woodlot owner contributions to stewardship across the country; and,
- to provide background information for further discussion within the woodlot community of where we are today and what the challenges are for the future.

A draft of this document was used to stimulate discussion at the National Woodlot Workshop in Kemptville in February 2004. This final report includes the results of the workshop discussions. The published report will be distributed across the country as the first national endeavor to assemble available information on stewardship activities by private woodlot owners in Canada. The intent is to foster new partnerships that improve landowners' capabilities to carry out stewardship activities. This should ensure that the woodland community is positioned to pro-actively respond to public and government environmental expectations, and to participate actively in the development of new incentives for afforestation, biodiversity conservation and provision of ecological services.

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INTRODUCTION

What is a Woodlot?

Past and current National Forest Strategies recognize the mix of social, economic and environmental values associated with private woodlots within Canada's southern landscapes. Historically, private woodlots have been associated with the production of pulpwood and sawlogs for the forest industry, and maple syrup on farms. At present, the role of woodlots is much more complex. The term woodlot is generally associated with non-industrial private forests. These forests tend to be small in area, often use small-scale management methods and are normally a stand-alone business not associated with a sawmill or pulpmill.

There is a growing public recognition that of the six percent of Canada's forests owned by over 450,000 landowners, only a portion of the owners currently use their woodlots for personal revenue. For example, the 2000 Environics "Survey of Farmers, Ranchers and Rural Landowners" demonstrated that only half of Ontario landowners with holdings over 10 hectares derived any income from their own land. Yet 81% of active farms and 92% of non-active farms had significant forest areas on their property (averaging 27% and 74% of their total land respectively). Only a third of all these Ontario rural landowners allow commercial logging on their property. Nationally, 69% of farmers and ranchers reported that a portion of their land was occupied by trees with an average of 41 hectares or 13% of their landholdings. Landowner interest and commitment to retaining treed cover is significant. So is their recognition of the importance of treed areas, including riparian buffers, treed swamps, beaver pond complexes, and shelterbelts. Based on both the extent of these areas and acknowledgement of their value, the term 'woodland' is often used as a comprehensive term.

For the purposes of this report, private woodlots will refer to private non-industrial owned properties that include tracts of treed land of any size, whether planted or naturally occurring. These areas, including natural and plantation forests, wooded riparian corridors, bluffs and shelterbelts, are closely interrelated to other habitats, and are part of a larger ecological system within forested, agricultural and urban landscapes.

Private Woodlots in Canada's New National Forest Strategy: 2003–2008

The fifth National Forest Strategy — A Sustainable Forest: The Canadian Commitment — has recently been developed by the National Forest Strategy Coalition, a group that includes government, industry, Aboriginal, private woodlot and other non-government interests. The group has defined realistic targets and activities that will address key priorities and directions for the stewardship and sustainable management of Canada's forests. Private woodlots' contribution to sustainability is one of eight strategic themes, with a focus on increasing "the economic, social and environmental contribution by Canadian woodlot owners to society through a concerted effort to strengthen policies and services" (Natural Resources Canada 2003).

What is Woodland Stewardship?

The concept of woodland stewardship, the retention of the health and productivity of the land for future generations, is well understood by landowners (Environics 2000). However, there is a mix of underlying reasons that landowners practice stewardship, from conservation of the natural environment, to sustaining economic viability. Sustainability has many definitions, but in the 1990s the term became associated with retaining ecological viability and use of the land within a balance of social, economic and environmental values. In all cases, successful landowner stewardship strategies require a mix of an intimate knowledge of the land, the establishment of objectives, and a long term commitment.

The conservation of our current woodlands is the result of stewardship activities by many generations of private land owners. Woodlot owners and other rural landowners have demonstrated outstanding dedication to improving their natural environment and have a long history of carrying out voluntary conservation efforts to ensure the long term health of natural systems. Their contribution is very significant because while only 6% of Canada's forests are privately owned, these areas provide a disproportionate amount of Canada's critical habitat for some ungulate species and many rare species of plants and animals. For example, 85% of the remaining forests in the Mixedwood Plains Ecozone (including remnant Carolinian Canada forests) are in private ownership. Similarly, an estimated 16% of aspen parkland remains on the prairies, found primarily on private land.

Stewardship efforts by private landowners in these regions, and others across Canada, provide an array of benefits not only to landowners and their neighbours, but also to local communities. This report identifies the breadth of these efforts as well as their direct and indirect benefits — from soil and water conservation, to habitat protection, and to recreational, social and aesthetic values. The provincial summaries identify a range of stewardship activities from the scale of individual woodlots, to landscape and watershed initiatives where woodlot owners are working together to achieve broader stewardship goals. Many landowners are actively engaged in sustainable management activities, rehabilitation and enhancement, while many others have adopted a custodial strategy to stewardship.

Over the past few decades conflicting land uses and financial pressures on private woodlot owners have created adverse environmental and/or social impacts within some regions of Canada. This has been further complicated by land use planning programs which have encouraged urban and rural sprawl onto prime agricultural land and surrounding forests and wetlands. At the same time, the Canadian and global public have voiced rising expectations for the management of private lands for a multitude of values that include biodiversity and watershed considerations. As a result, conservation organizations and more recently federal agencies, have developed stewardship programs that recognize and provide incentives for additional stewardship efforts by landowners. This report also recognizes the support of these agencies to private woodlot management.

"Canada is diverse in many ways — ecologically, socially and culturally. Within this diversity, stewardship in agriculture, forestry, fisheries and wildlife management and other natural resource sectors is a fundamental component of wise use of Canada's natural legacy. Stewardship is also part of the broader voluntary effort in which Canadians share a commitment to improve the quality of life and to foster vibrant, healthy communities."

— Canada's Stewardship Agenda — Naturally Connecting Canadians Federal-Provincial-Territorial Stewardship Working Group 2002

A Woodlot Owner's Perspective

Does my Woodlot Benefit Society at Large? Personal Reflections in a Vernal Pool

by Gary Nielsen

I do not come from a long family tradition of land ownership in Canada. As the son of immigrants who worked hard and made good in this country, I suppose I represent somewhat of a throw back to previous generations of landholding ancestors in Scandinavia who knew what it was to work, play, hunt, and live on the land. I know there is something elemental about land ownership that seems to define me as a person. I can only assume that this elemental thing is inherited. The genetic programming is compelling, it cannot be denied, and it seems to override all of the benefits of common sense and a higher education.

"If you let me buy that land, I promise you can make every major decision for the rest of our lives"… I actually said those words and she, being the brighter half of this pairing, hesitated only long enough to make me think she was actually giving in. We already had a small woodlot on the rural property we live on but this was different. This woodlot took in just under 200 acres of Canadian Shield country near Charleston Lake. It is a wildly rugged mix of swamp and granite outcrop which is impossible to traverse in a straight line. The forest is dominated by oak and pine, craggy, windblown "works of art" on the ridges and huge "logs in waiting" in the valleys. Access is limited and as productive land it is almost useless but she has become as attached to it as me. It was, and is, perfect for us.

Why do we own forest land? Why does anyone own land unless they farm it. The very fact of ownership is a foreign concept to the first nations people who walked here first. I think they have a point. It is clear to me that even today, we are better described as land holders than land owners. How can you think otherwise when standing on rocks that are 450 million years old? I often think about the others who have "owned" the land we now call ours and wonder if they asked the same questions when they stood on the same rocks. I often hope that our descendants will do the same in the future.

Investment, income, recreation, heritage or conservation; reasons for owning forested land are as varied as the people involved. For most of the woodlot owners I know, the truth lies in some combination of the above. Since we have the privilege of paying tax on two properties, we have tended to separate our activity according to the opportunity afforded by each woodlot. A Christmas tree farm, a shiitake mushroom venture, fuelwood cutting and small scale maple syrup production are carried out on the home front while the more passive pursuits of hiking, skiing, hunting, and birding are carried out at the lake. The home property is included in the local demonstration areas catalog and long term forest bird monitoring is carried out at the lake. Both woodlots have management plans to guide our use of them under the Ontario Managed Forest Tax Incentive Program (MFTIP). We are active stewards of the land and we derive a great deal of enjoyment from the activities mentioned above but there are also benefits that accrue to society at large.

The benefits to society from private woodlots are not hard to enumerate. Wildlife habitat, protection of species (I think we have seven species known to be "at risk" on our land), ground water protection, and air quality enhancement are the most significant environmental benefits. As the vast majority of the land in southern Ontario is privately

"owned", it is fair to say that the health of the environment here depends completely on the stewardship ethic of the people who own it. Environmental benefits accrue broadly from the decisions we make on the management of our woodlot. On the other hand, the economic benefits, of the taxes we pay, the investments we make, and the products we sell, are felt more locally. How to actually measure the societal benefits from land stewardship and woodlot management is a matter of current debate. It is a discussion that interests me a great deal on a professional level but to tell you the truth it concerns me very little on a personal level.

The ways in which owning a woodlot sustains me are easy to measure… I love birding in the spring and hunting in the fall. I love knowing which vernal pool houses the wood frogs in April and I love knowing I can usually find a Northern Waterthrush in the same spot three weeks later,… every year. I like being the "country family" that city friends come to visit to get away from it all (even though we are just as busy as they are). I like the gang of philosopher naturalists who call themselves the Donaldson Bay Hunt Club even though they shoot more bull by night than deer by day. I like to heat the house and the cottage with wood. I like being outside when it's minus 20 because I'm well dressed and working hard. I actually like having a sore back and calluses on my hands. I like the Christmas tree customers who come to cut a tree every year and I like the taste of our maple syrup better than any one else's even though it will never win prizes until "smokey" becomes a judging criterion.

So where do we go from here. In one way, we are fortunate in that we do not depend on the woodlot for our income (others might say that this only means that we spend too much time working away). At any rate we can afford to be somewhat philosophical about the land. We may be more willing than some to accept tree cutting bylaws or restrictive planning designations that would limit our choices in the name of societal gain. If one accepts the principle that we need to keep something in the order of 30% forest cover on the landscape, one must also accept the fact that land may be identified for conservation one day. For us, at this time, the woodlots are like a family investment, the plan is to keep them forever but they are always there to be sold off in time of dire need. If we are lucky enough to arrive at old age in good shape financially with children established in successful careers, we may consider a conservation easement. An easement that allows management but not development would keep these places special forever but, for us, that decision is 40 years away. I don't think we are so different from most other woodlot owners in these respects.

At the end of the day, I like being a woodlot owner. If I can do what I do, and if that also provides economic and environmental benefits to the people of Ontario then I suppose it's OK by me.

Gary Nielsen owns two woodlots and works for the Ontario Ministry of Natural Resources as the Stewardship Coordinator for Leeds County near the Thousand Islands in south eastern Ontario.

A CROSS-CANADA PERSPECTIVE OF WOODLAND STEWARDSHIP

Woodland Contributions to Canadian Life

In Canada, there are over 450,000 individual woodlot owners (Dansereau and deMarsh 2003). The proportion of private ownership is highest in the Maritimes where 94%, 47% and 30% of the forested land base is in non-industrial private ownership in Prince Edward Island, Nova Scotia and New Brunswick respectively (Natural Resources Canada 1998). The proportion decreases moving further west, with less than 10% in Quebec and Ontario and less than 5% in the western provinces. The largest number of woodlot owners are concentrated in Ontario and Quebec at 67% of the total, with 19% in the Atlantic provinces and 14% in the western provinces (Natural Resources Canada 1998). Private land ownership in Canada can generally be associated with the pattern of land settlement and clearing for agriculture (Blair and Duinker 2001). Private woodlots tend to exist along the agricultural/forest interface and as components of farms, rural communities and urban areas. Private ownership also extends into forest dominated landscapes, generally located around communities with natural resource economies and in cottage communities.

"Small woodlot owners and private forest landowners have excellent first hand knowledge of their land; are proud of their stewardship and work in their forests and are committed to continuing to improve their knowledge and abilities in sustainable forest management... They see their woodlots as an excellent venue for promoting innovative practices or experimenting with new approaches to further the principles of sustainability and stewardship and their practice on the ground."

— Canadian Model Forest Network — Private Woodlots Compendium. 2001.

Private Woodlot Owners: Managing Habitat at a Landscape Scale in Quebec

In Quebec, private woodlot owners have been actively involved in partnerships with the Bas-Saint-Laurent Model Forest, the Est du Lac Temiscouata Forest Group, the Fondation de la faune du Quebec and the Ministry of Environment with the goal of managing wildlife habitat on their properties. Under a variety of partnership programs, landowners have been involved in:

- *testing different silvicultural treatments for deer wintering grounds;*
- *preparing and implementing a management plan for woodlots at a landscape level prescribing adapted silvicultural treatments to improve food and cover for deer; and,*
- *voluntary wetland conservation.*

(Canadian Model Forest Network — Private Woodlots Compendium 2001)

While only a portion of Canada's woodlot owners use their properties for personal revenue, the harvest of wood products from private woodlots is economically very important, creating jobs in rural communities and providing a portion of the wood supply in all regions. Although private forests (including private industrial holdings) represent approximately 6% of Canada's forests, they represent 10% of Canada's forest land capable of producing commercial timber (Natural Resources Canada

1998). These forests are concentrated in Canada's highly productive southern forest regions. Approximately 19% of Canada's industrial roundwood (logs, bolts and pulpwood) is harvested on private forests including a large proportion of the high value hardwoods such as oak, maple, cherry and butternut (Natural Resources Canada 1998). These areas are also responsible for 77% of Canada's maple syrup, 79% of the fuelwood and firewood, and essentially 100% of Canada's Christmas trees (Natural Resources Canada 1998). These woodlots are increasingly being managed for multiple values, with a goal of long term economic gain, and the associated responsibilities of environmental stewardship and biodiversity conservation which are inherent to woodland health and productivity.

Woodlot owners also enjoy many benefits from their land through hunting and fishing opportunities, and other recreational activities such as cross country skiing and wildlife watching. These activities along with the aesthetic value of woodland habitats on rural properties offer significant socio-economic benefits from recreation and tourism in Canada's rural regions.

Canada's woodlot owners have a variety of motivations for ownership, with most managing for multiple values including social, environmental and economic benefits. In a 2001 compilation of Quebec woodlot owner surveys, results indicated that entertainment and recreational values were important reasons for owning woodlots for 66% of the owners. Fifty percent also indicated the desire to leave an inheritance (Nadeau 2001). Approximately 92% of the owners harvested firewood from their properties, with 30 and 31% respectively harvesting

New Brunswick Woodlot Owner Manages for Multiple Values Through Low Impact Forestry

Girard Gagnon owns three woodlots totalling 110 hectares in north central New Brunswick. The three areas consist of a balsam fir and poplar woodlot, an area of low lying land with black spruce, and a maple sugar bush. Gagnon manages his woodlots as uneven aged stands, relying on natural regeneration. His management philosophy is to keep the areas wooded and able to provide income from year to year. He has management plans completed for each woodlot and now has 1,500 to 1,700 taps in his sugarbush. In 1995 he received the Woodlot Owner of the Year award from the North Shore Syndicate. (Low Impact Forestry 2003)

British Columbia Woodlot Owner Donates Land as a Contribution to Fisheries Habitat Enhancement

An individual landowner in the Cowichan Valley on Vancouver Island is making a difference for salmon habitat. Bill Robertson, a managed forest landowner, agreed to donate some of his land along the Robertson River for a salmon rearing and spawning channel. Project partners include Pacific Forest Industries, Fisheries and Oceans Canada and the Lake Cowichan Salmon Enhancement Group. Pacific Forest Industries donated machinery, logs and culvert material. The results have been rewarding with growing numbers of returning coho salmon (Private Forest Landowners Association 2003).

"Woodlot operators contribute stability and leadership within their communities, create local employment, produce a wide variety of products from the forest, offer environmental products, and generate additional landscape values from the pride they take in their operations."

— Canadian Model Forest Network — Private Woodlots Compendium, 2001

Private Woodlot Owners Work in Partnership for Ecosystem Management Planning in New Brunswick

The Pollett River Watershed Management Project is a landscape level planning initiative operated through a partnership between local woodlot owners, the Greater Fundy Ecosystem Research Group and the Southern New Brunswick Woodlot Cooperative. Almost 50% of the watershed is in private woodlot ownership with a large proportion of intact forest. A watershed area forest management plan has been developed with specific objectives for maintaining wildlife habitat, water quality, and ecological processes. Individual management plans incorporating landscape level objectives have been provided to participating woodlot owners, along with financial assistance. (Greater Fundy Ecosystem Research Group 2003)

lumber and pulpwood (Nadeau 2001). In a 1999 survey of woodlot owners by the Woodlot Association of Manitoba, the majority of woodlot owners indicated that their property management objectives were oriented towards conservation, with the most important long term objectives being environmental stewardship, and appreciation or enhancement of wildlife habitat. Similarly in Ontario, of 10,000 properties that are registered in the Managed Forest Tax Incentive Program, 48% ranked environmental protection as their primary objective (Chapeskie 2003). Of the participants, 29% indicated that they were planning a commercial harvest, and 51% planned to harvest trees for personal use (Chapeskie 2003). It is important to note that these surveys look at only a portion of the woodlot owner community. Many woodlot owners are not associated with organizations or programs for woodlot management. These owners often fall into the category of custodial managers. There is value in both approaches for conservation, however informing and engaging the many custodial managers has not been a priority for many woodland stewardship programs.

Societal expectations are increasing with greater awareness of the role of private woodlots in protecting public values including wildlife habitat, water quality and landscape aesthetics. Because of the close proximity of these lands to rural communities and urban areas, demands for additional conservation measures will continue to increase. Woodland stewardship, the retention of the health and productivity of the land for future generations, is recognized as a responsibility by most rural landowners. However, stewardship efforts have not always been actively encouraged through proactive property tax legislation or long term extension programs.

The Woodland Community

Canada's woodlot owners range from rural landowners, farmers and ranchers, to cottage owners and acreage or small lot owners living on the outskirts of urban centres. Land ownership has changed considerably over the last 30 years with the pressures of urban sprawl fragmenting woodlands and changes in farming technology leading to amalgamation of farms into larger holdings, often at the expense of natural habitats. Of the over 450,000 woodlot owners in the country, only a small portion are members of woodlot organizations. There is definitely a need to reach other owners with woodland stewardship messages.

There are woodlot associations in every province in Canada with the exception of Newfoundland. These organizations have the primary role of representing the interests of woodlot owners to government. The organizations also promote sustainable forest management and stewardship, often provide extension services including workshops, training, walk and talk services, consultation for forest management planning and best management practices information. In eastern Canada there are also woodlot group ventures, cooperatives, and marketing boards that play a role in negotiating prices for their members, and may also represent group interests in debates over sector policy. In Quebec and New Brunswick, the marketing boards are obligated to represent the interests of all woodlot owners. Many provinces also have other woodlot products associations representing the interests of groups such as maple syrup producers and Christmas tree growers. The Canadian Federation of Woodlot Owners represents the provincial woodlot associations at a national level.

Nova Scotia Forest Company Enters Stewardship Agreements With Province and Private Woodlot Owners That Supply Their Mills

StoraEnso was the first company in Nova Scotia to enter into a stewardship agreement with the province and private woodlot owners that provide wood to its mills. The agreement is a Joint Management Plan, which funds forest management and silvicultural treatment on partnering private lands. The goal of the program is to help ensure the sustainability of private forest resources in Nova Scotia (StoraEnso 2003). Partnerships between industry and private woodlot owners exist in other provinces as well. In Ontario, Domtar, Cornwall and Norampak, Trenton operations work in partnership with woodlot owners providing full service woodlot management including planning and operations. In return Domtar commits to sustainable forestry practices while optimizing returns for the landowner (Canadian Model Forest Network — Private Woodlots Compendium, 2001).

Private Woodlot Owners are Key Volunteers in Ontario Stewardship Program

Individual woodlot owners are involved in the Ontario Stewardship program as active volunteers on the 40 regional community stewardship councils. Councils discuss environmental priorities for their region, support projects, and link landowners to funding and expertise with the support of the MNR and a Stewardship Coordinator. Annually Ontario Stewardship engages 11,000 volunteers who contribute 170,000 volunteer hours working with over 2,000 registered partner organizations and individuals. Monetary value of the in kind effort from these partners reaches over $6.5 million and total levered dollars $14.5 million. This adds to a total of $21 million in contributions and effort for natural resources in Ontario. When MNR's investment in staff and support to the community is included the total is over $24 million. (Steve Wilkins, Provincial Stewardship Coordinator)

Alberta Woodlot Extension Program

A three year woodlot Extension Pilot Program was developed in Alberta and sponsored by the federal and provincial governments, various forest companies, Ducks Unlimited, the Alberta Conservation Association and the Woodlot Association of Alberta. This program aimed to reach a broad audience including municipal politicians, industry, the public and landowners with the goal of increasing awareness of the economic and environmental implications of forest management in Alberta's agricultural regions. The program also aimed to increase landowner participation in sustainable woodlot management and encouraged cooperation between landowners, land managers, municipalities and counties (Alberta Agriculture 2001). The Alberta Woodlot Extension Program now has three new partners and stable funding for the next four years, which will provide new woodlot extension resources at both the technical and strategic planning levels.

Private Woodlands Provide Key Parkland Habitat Corridor Linking Riding Mountain National Park and Duck Mountain Provincal Park

The Parkland Habitat Partnership provides the opportunity for private landowners, Parks, government, industry, NGO's and volunteers to work together with the goal of restoring connectivity in the Riding Mountain Biosphere Reserve. While the program is still in its formative stages, current goals are to continue landowner contact, encourage stewardship of aspen parkland and riparian areas, and secure critical habitats for species at risk. (Parkland Habitat Partnership 2001).

Provincial governments have variable roles with private woodlot owners. Generally they provide technical assistance through extension materials and information on woodlot management planning and stewardship. Programs may also be available to encourage silviculture, and monitor harvest levels. Tree planting programs are also common through government agencies such as Conservation Authorities in Ontario, and the Prairie Farm Rehabilitation Administration of Agriculture and Agri-Food Canada. Private woodlot management is regulated in some provinces, with the most intensive regulations in British Columbia. The Private Forest Land Practices Regulation requires managed forest land owners to protect water quality and fish habitat, practice soil conservation, maintain critical wildlife habitat and reforest harvested areas. Woodlot license holders are regulated under the Forest and Range Practices Act. Municipalities in British Columbia and Ontario can also limit activities on private forest land by enacting municipal tree cutting bylaws. The identification of ecologically 'significant woodlands' under municipal plans in Ontario is another mechanism for regulating activities such as development on private lands. Prince Edward Island has legislation protecting all riparian areas in the province. Federal fish habitat legislation and the Species at Risk Act also have implications for private woodlot owners. Some provincial governments also provide incentive programs for woodland management. For example, Ontario has the Managed Forest Tax Incentive Program, Quebec has a tax rebate program for recognized wood producers and Manitoba has a riparian tax credit program.

The agricultural sector is also involved with private woodlot owners. Given that a large number of private woodlots are associated with farms and ranches, an integrated approach to habitat stewardship has evolved in the agricultural sector. The management of woodlots, wetlands and wildlife is an element of environmental farm planning, delivered by farm-based organizations. Environmental Farm Plan worksheets emphasize best management practices including the development of a woodlot management plan, management of wildlife habitat and livestock access, and retention and enhancement of riparian areas and buffers between wetlands and farm fields to reduce erosion and nutrient contamination from runoff. Stewardship incentives for small woodlands, riparian habitats, wetlands and native prairie are often delivered through single programs. Provincial agricultural departments may also be involved in woodlot extension, workshops, and demonstrations. Because private woodlots are part of the agricultural/forestry interface, they are affected by both agricultural and forest policies, which occasionally have conflicting goals.

Stewardship programming is delivered by a variety of organizations within the environmental community with a number of specific biodiversity conservation goals. Programs range from landowner recognition for stewardship achievements to technical and financial incentives, legally binding agreements, and direct acquisition/purchase. Recognition and incentive programs concentrate on maintaining the habitat base of woodlands and wetlands on farms and other rural holdings. Habitat management and enhancement are often elements of these

"We have been trying to make the forest fit the mills. What we need to do now is manage the forest for the health and vigour of naturally occurring species and design an industrial strategy to make best use of and maximize employment from the products of this natural forest."

— Andrew Clark, President of the New Brunswick Federation of Woodlot Owners (Low Impact Forestry 2003b)

Province of Quebec Has Long History of Support for Private Woodlot Stewardship

In 1976, Quebec established provincial support programs for private woodlot management. The current annual budget dedicated to the private forests silvicultural program in Quebec includes $35.5 million in provincial government support and $8 million from industry. Most of the money is used either to finance technical support or for cost sharing of silvicultural treatments with landowners. Silvicultural treatments cover 50,000 ha/year on average. Since the inception of the provincial support programs, more than 1.2 billion seedlings have been planted, 80,000 ha have had pre-commercial thinning, and there has been an increase of 33% in the annual allowable cut. (J.P. Dansereau)

Manitoba Landowner Expands Wildlife Habitat on his Family Farm Through Tree Planting

Bob Hysop has converted 130 hectares to wildlife habitat through seeding cultivated lands to forage and planting shelterbelts and small blocks of trees throughout his hay lands. He has planted over 50,000 seedlings with assistance from the Manitoba Habitat Heritage Corporation's Woodlot Program. Planted species include green ash, Scots pine, spruce, bur oak, white cedar, Walker poplar and basswood along with a variety of shrubs for wildlife. Although the main goal of his activities is enhancing wildlife habitat, he has used agro-forestry principles in some of the plantings, cropping hay between tree rows, and the planted trees will offer the potential for an alternative timber crop (Manitoba Habitat Heritage Corporation 2003b).

programs. Land acquisition and legally binding agreements such as easements are another tool for conservation, and are often used to protect habitats with particular ecological significance or rarity.

Many of these organizations work in partnership to achieve conservation and stewardship goals at the level of individual woodlots and the regional landscape. Four of the eleven Model Forests in the Network have a significant private ownership component, including the Fundy Model Forest, the Nova Forest Alliance, Bas-Saint-Laurent Model Forest and the Eastern Ontario Model Forest. These model forests have developed a variety of programs from extension to landscape level planning, involving private woodlot owners in partnership with governments, First Nations, industry, academics, the environmental community and other stakeholders.

Stewardship in all working landscapes has always been a fundamental component of wise and sustainable use of natural resources in Canada. Recognition of landowner stewardship efforts by government agencies and NGO's has proven to be the mechanism of choice for engaging private landowners in solutions to complex wildlife habitat conservation issues in Canada. The woodland community is actively involved in encouraging private woodlot owners to pursue stewardship through a variety of mechanisms. Woodlot owners and other rural landowners have demonstrated outstanding dedication to improving their natural environment, and have a long history of carrying out voluntary conservation efforts to ensure the long term health of natural systems. In return, these systems sustain those who choose rural lifestyles, emotionally and spiritually, while providing for their economic well being.

Woodlands in Agricultural Landscapes

In most regions of Canada, private woodlots are associated with settled areas, including areas around farms and rural and urban communities. Within this context they are often remnant patches of native habitat within a matrix of other natural features, cropland, pasture and developed areas. In the agricultural landscapes of Canada, these remnant woodlands including forest patches, treed fencerows, wooded riparian areas and bluffs, along with other native habitats such as grasslands and wetlands, provide habitat resources for most wildlife species at some part of their life cycle.

Variations in stand age and tree species composition within and amongst woodlots are important for species dependent on different successional stages. Early successional stands on the east slopes of the Alberta Rockies provide critical winter feeding areas for elk and bighorn sheep for example. In eastern Canada, patches of mature eastern white cedar and hemlock provide wintering habitat for white-tailed deer with protection from deep snow. Other habitat features including cavity trees, downed woody debris, mast trees, seasonal ponds and seepageways provide valuable cover, food, water and breeding habitat to a variety of species including many mammals, birds, amphibians, reptiles and fish. For example many prairie raptors use woodlands for nesting or hunting purposes. Mature and old-growth forest conditions also provide valuable habitats for species such as the marten, spotted owl and red shouldered hawk.

The ability of woodlands to provide habitat resources to specific species changes with woodland size and position in the landscape. Larger un-fragmented woodland patches are critical for many 'forest-interior' species such as

Ontario Landowner Manages Entire Property — Woodlot, Waterways and Farm Fields — as One Ecosystem

Fred and Sharon High own a 90 ha farm in southern Ontario which supports a beef operation, a variety of field crops and a woodlot. The farm has a water and sediment control basin that flows into the woodlot which is at the headwaters of Twenty Mile Creek. The woodlot absorbs overflow, helps prevent erosion and traps pollutants. The Highs also have a grassed waterway and rock chutes to reduce erosion. The woodlot, a wetland and riparian areas provide wildlife habitat, and plantations of mixed hardwoods and the endangered American Chestnut provide wildlife corridors. The farm provides demonstration sites as well as being involved in ongoing research on the American Chestnut.

(Natural Resources Canada 2001)

Saskatchewan Centre Helps Farmers Plant Trees for Habitat and Soil and Water Conservation

The Prairie Farm Rehabilitation Administration's Shelterbelt Centre in Indian Head, Saskatchewan has distributed over 150 million trees since 1981 primarily to farms and small rural holdings for local and regional tree planting programs for soil and water conservation and habitat enhancement. About 65% of the trees were distributed to Saskatchewan, with the remainder distributed primarily in Manitoba, Alberta and BC. (Kulshreshtha and Knopf 2003)

Towards a Forested Landscape Network at the Intersection of the Appalachian, Atlantic, Boreal, Carolinian and Great Lakes Regions in Eastern Ontario

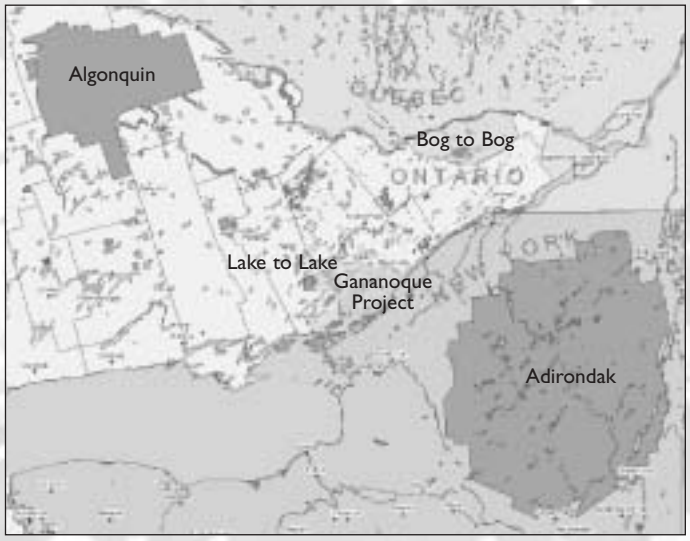
Eastern Ontario has been described as an ecological tension zone and biodiversity hotspot where plants and animals from several forest regions and geographic areas are intermixed at the limits of their natural distribution. It is bound by the Frontenac Axis, connecting the Canadian Shield to the Adirondack Mountains, and the upper St. Lawrence and lower Ottawa River corridors — an area of 1.5 million hectares. These are three of the strongest landscape corridors in Eastern North America. Watershed linkages exist from the highlands in the north, towards the Gulf of St. Lawrence in the east, into the Lake Champlain watershed in the south and to the forests of Vermont, Maine and the Appalachian Mountains. As broad linear features, these corridors 'act ecologically to move matter and energy across the landscape'.

A bird's eye look at the forest cover map of eastern Ontario reveals a quilted system, scattered with woodland blocks amidst an agricultural backing, but lacking in sashes. It reveals an excellent opportunity for the protection and sustainable use of existing forest habitats and the restoration and enhancement of those lands that are reverting from farmland to bushland to forests. The building blocks exist, many of which are remnants of the provincial Agreement Forest Program. A vision has emerged for Eastern Ontario of a physical network of linked and buffered woodlands, wooded watercourses and wetlands contributing to the overall ecological health of the region — and an essential ingredient for a sustainable future. A hierarchy of local, regional and international scale habitat conservation initiatives has sprung up in Eastern Ontario in support of this vision.

At the local level there are three first-step landscape connectivity projects that exemplify the concepts of cores and corridors. The Bog to Bog conservation initiative is working with landowners to help connect significant natural areas, Mer Bleue Bog, Alfred Bog, Larose Forest and the Voyageur Provincial Park, with a series of forested corridors. The Lake to Lake conservation initiative is designed to restore the ecological integrity of the landscape between Irish Lake and Belamy's Pond, a distance of 10 kilometers. Forty willing private landowners are making management choices on their adjoining lands to demonstrate that they can live and work on the land in ways that do not reduce the opportunities and environmental quality for future generations. The Gananoque River Connectivity Project targets the strategic watershed connection to the St. Lawrence River that remains relatively broad and natural, and an important wildlife corridor. These three projects help landowners understand how their properties fit into a larger natural landscape.

The Eastern Ontario Model Forest and the Thousand Islands-Frontenac Arch Biosphere Reserve are initiatives that encourage partnerships for conservation values and planning at a regional landscape scale. The Algonquin to Adirondacks Conservation Initiative looks at an even larger region between Algonquin Park in Ontario and Adirondack Park in New York State, with the goal of restoring, enhancing and maintaining ecosystem function and native biodiversity, while respecting sustainable human land uses.

The nesting of these projects, at all scales, demonstrates that by being mindful of the larger pattern of landscape, landowners can manage the lands, forests, wetlands and waters collaboratively to maintain the integrity of the landscape as a whole for all species and for all generations to come. With a rare regional and international framework in place, dovetailed with a partnership environment, the shift towards a forested landscape network in eastern Ontario and northeastern North America is at hand.



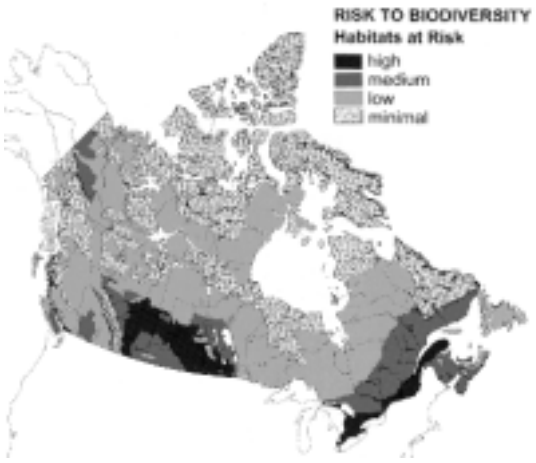
thrushes, wood warblers and vireos that are susceptible to predation and nest parasitism in forest 'edge' habitats. Forest interior is often defined as the area that is greater than 100 m from the nearest 'edge' or surrounding land use. In southwestern Ontario, where less than 10% forest cover remains in many counties, populations of forest interior bird species are estimated to have declined by more than 50% since 1961 (Federation of Ontario Naturalists 1999). Some efforts have been made to determine the threshold level of woodland habitat for woodland species in southern Ontario. Cadman (1999) found the number of forest interior bird species in an area of 10 km^2 continued to increase to approximately 35% forest cover. Villard (1999) found occurrence of woodland songbird species increased dramatically when woodland area increased to between 10 and 20% of the agricultural landscape. Forest fragmentation — a process where large forest blocks are divided into smaller isolated blocks — continues in the agricultural landscape, with increased pressures from development around urban centres.

The position of woodland habitats in the agricultural landscape also affects the availability of habitat resources in a region. Species use different portions of the landscape to meet their range of habitat needs, and the ability to access all needs is critical to their survival. Many species do thrive at the forest edge, where food resources (crops, pasture) are plentiful with nearby native habitats providing water, cover, breeding habitat and other seasonal needs. Some of these species such as white-tailed deer and blackbirds can become a nuisance to landowners, causing damage to crops, stored hay and livestock. However for some species landscape features such as croplands and pasture may act

Prince Edward Island Forest Enhancement Program — Providing Alternatives for Woodlot Owners

The Forest Enhancement Program was developed by the Prince Edward Island Department of Agriculture and Forestry to provide incentive for forest management planning and selected non-clearcut silvicultural treatments. The program's activities are cost-shared between woodlot owners and government. The goal of the program is to increase awareness of beneficial management practices in woodlots for timber quality, as well as recreational and wildlife values (PEI Department of Agriculture, Fisheries, Aquaculture and Forestry 2003).

Current Risks to Wildlife Habitats in Canada — High- to medium-risk areas are generally associated with private land ownership.



Courtesy of Wildlife Habitat Canada

as physical or behavioural barriers. Linear woodlands such as shelterbelts, wooded riparian areas and fencerows can provide habitat corridors for many of these species, linking larger woodlands to other resources. Wooded riparian areas have the added value of providing water to many species, as well as habitat requirements for species such as fish, amphibians and many invertebrates.

The most vulnerable and threatened habitats in forested areas are associated with Canada's southern forests and private woodlots. Seventy percent of Canada's species at risk reside within the southern margin of land that lies along the border between the United States and Canada. These areas are very productive due to rich soils and suitable temperate climate regimes, and much of the area has been cleared for agricultural activities. The extent of woodlands in this southern belt has been considerably reduced with associated impacts on native species. For example, only 1–5% of the original Garry Oak savannah remains in the world, with most of the residual examples on southern Vancouver Island and the Gulf Islands. At this time 91 species of plants, mammals, reptiles, birds, butterflies and other insects, and an earthworm, are currently listed as at risk of extinction in Garry Oak and associated ecosystems (Garry Oak Ecosystem Recovery Team 2003). Similarly in Carolinian Canada, over 124 species are considered vulnerable, species of special concern, threatened or endangered (Hamilton Conservation Authority 2003).

Woodlands provide other ecological benefits to the agricultural landscape, performing a variety of ecological functions. They are part of regional water cycles, absorbing rainfall and holding moisture more readily than surrounding fields. They also are important in soil conservation, reducing rates of wind and water erosion and the potential for water contamination from nutrients and pesticides in runoff. Many woodlots provide valuable shade and shelter to livestock, but may also come under grazing pressure. Woodlands also sequester carbon and moderate local climates.

Woodlot owners are the stewards of most of the existing forest habitat in agricultural regions, and the forest that remains in these areas today is often the result of their past stewardship efforts. Many woodlot owners are meeting the stewardship challenge and finding innovative ways to sustain and improve their properties for woodland conservation values. There is a need in this landscape to stress the importance of maintaining the forest cover that currently exists, with afforestation/habitat enhancement as a secondary tool to improve wildlife habitat and other ecological benefits. Clearing of woodlands is still a common practice in most agricultural regions of Canada and the focus should be the recognition (through stewardship or incentives) of the value of this habitat. Small linear woodlands such as those in treed fencerows and wooded riparian areas surrounding wetlands are particularly susceptible. We need to expand our definition of woodlands to include these patches as they are currently considered of little value and unrecognized for the services they provide.

Woodlands in the Urban Landscape

The urban forest is defined as "a series of treed plant communities that span both natural and built environments and which contribute important ecological benefits to the region" (Gye 2003). It has also been described as a continuum extending from forested rural watersheds to the densely populated urban core (Gye 2003). In Canada, 78% of the population lives in urban areas with 85% of this urban population living along the Quebec City/Windsor corridor (Statistics Canada 2000). These areas on average are 19% forested, with much of the forest continuum on private land (Statistics Canada 2000).

The benefits of urban woodlands and trees to residents are immense and include economic, social and environmental values. They soften visual impacts, provide recreational value, increase property value, moderate temperature and decrease costs of heating and cooling, act as wind breaks, filter air pollutants, reduce runoff and the need for erosion control structures (van Wassenaer *et al.* 2000).

Urban sprawl and amalgamation of cities continues to bring natural habitats such as wetlands and woodlands, as well as farmland, into this urban landscape. This has led to increased fragmentation of ownership of woodlands at the rural/urban interface. In the Regional Municipality of York in Ontario, the changes at this interface have been enormous over the past 30 years. The population of the area increased from just under 166,000 to 540,000 from 1971–1994. Over the same period, forest cover in the area was reduced from 22% to 15% and fragmented into over 3500 woodlots (Puric-Mladenovic *et al.* 2000).

This fragmentation is typical of many areas across Canada undergoing unbanization, but has recently been the focus of considerable debate in the greater Toronto area with concern over development of the Oak Ridges Moraine. The moraine is a large natural corridor which provides a variety of habitats and is home to species at risk including American ginseng, Jefferson's salamander and the red-shouldered hawk. The moraine also contains the headwaters of 65 streams and rivers and continued development has obvious implications for water quality and watershed function. Both legislation and a land use plan for the region now protect

Camrose, Alberta — A Community Partnership for Stewardship at the Watershed Scale

The city of Camrose, Alberta is surrounded by a typical agricultural landscape where farmland mixes with aspen parkland and prairie pothole sloughs. The Battle River flows south of Camrose into a lake which supplies the water for approximately 15,000 residents. Driedmeat Lake is a large prairie slough with high nutrient loads requiring a complex water treatment system. In 1998 the City formed a unique partnership with the County of Camrose for cooperation between rural and urban residents in watershed stewardship initiatives. Many other partners including the Alberta Conservation Association, Alberta Environmentally Sustainable Agriculture and the Community Riparian Program provided funding. This led to water quality surveys, riparian health assessments by the Cows and Fish Program and demonstrations and technical and financial incentives for riparian habitat management (Cows and Fish 2002).

approximately 62% of the area in natural cores and corridors (Federation of Ontario Naturalists 2003). Thirty-five percent of the moraine is covered by forest, divided into many private woodlands. Private woodlots, riparian areas and associated habitats in watersheds surrounding urban areas are increasingly becoming the focus of stewardship recognition and programming, as the general public becomes aware of their importance to water quantity and quality.

Urban forests and woodlands are generally the first areas to be affected by introduced species. Recent insect threats include the Emerald Ash Borer, the Brown Spruce Long-horned Beetle, and the Asian Long-horned Beetle. Cities and private woodlots will generally be the first point of attack for these invasive species and woodlot owners are being urged to report sightings. In the case of Emerald Ash Borer, they are encouraged to help control the spread by restricting movement of ash trees, nursery stock, logs, firewood and wood chips. Other species such as glossy leaved buckthorn and garlic mustard follow similar paths of invasion. Garlic Mustard is now a significant threat to the endangered wood poppy and American ginseng in the woodlands of southwestern Ontario.

A challenge for the future will be to incorporate an ecosystem approach to urban forestry, considering values and services over the landscape. This will include many private woodlots, and recognition of the existing stewardship efforts and the level of services that this small area of Canada's forest is expected to provide to urban communities.

Ecological Services From Woodlands

As productive ecosystems, forests provide many benefits to society. Their roles in hydrological and nutrient cycles, flood and erosion control, climate moderation, carbon sequestration and biodiversity conservation are only beginning to be recognized in comparison to their values for timber, firewood, maple syrup, mushrooms, medicinal plants, and recreational opportunities. These natural processes which purify air and water, mitigate floods and droughts and renew soil fertility are often referred to as ecological services.

Generally forests and other ecosystems are valued for their economic productivity. It is difficult to put an economic value on an ecosystem such as a forest. There are no direct market values for many services such as clean water, maintenance of biodiversity and flood control. Yet there is a growing recognition that these services do have a real economic value, and are fundamental in land use planning processes.

However it is difficult to reconcile that 89% of the original Carolinian forest has been converted to urban landscapes and farm land, 1–5% of Garry oak savannah remains in the world primarily in small patches on Vancouver Island, and only 1% of Nova Scotia's old growth forest remains in scattered isolated patches. On the prairies, soil organic matter has declined by about 50% since settlement as a result of cultivation. From 1800 onwards, approximately half of Canada's southern wetlands have been drained or converted, with many others degraded. These natural resources and the processes that their ecosystems support have values other than those associated with consumptive uses.

"Canadians value nature for many reasons: not only does it have aesthetic and spiritual aspects, but it also provides us with clean air and water and other ecological services on which our economy, environment and quality of life depend. These ecological services are increasingly being seen as a natural form of capital that has economic value. This realization is creating a new economic case for nature conservation around the world."

— National Round Table on the Environment and Economy — 2003

Ecological Services Provided by Wildlife

Some effort has been made to quantify the major role wildlife plays in the health and functioning of ecosystems. Songbirds for example, consume insects (including many pests), disperse seeds and pollinate flowers. Control of insect outbreaks by songbirds has been estimated to be worth as much as $5,000 per year for each square mile of forest land (Robinson 1997). Although $20 billion is spent on pesticides per year, parasites and predators in natural ecosystems are estimated to provide 5–10 times the amount of pest control (Pimental et al. *1992). Insect pollinators are responsible for the pollination of 40 crops in the US valued at $30 billion (Pimental et al. 1992). Many of these species depend on woodlands and other native habitats for part of their life cycle.*

"Most of the private forestland in Canada exists in close proximity to the most densely settled portions of the country, so the majority of Canada's citizens would form their main impressions about forest management by what is occurring on privately owned land. Further, because of this physical nearness, Canadian citizens reap forest benefits from private woodlands in large disproportion to their share of the total forest area."

— K. Blair and P. Duinker — 2001

Value of Manitoba's Riparian Areas to Landowners and Fish and Wildlife

A survey of Manitoba producers using rotational grazing and riparian management practices across the prairies revealed that most herds were benefiting from better forage quality and clean drinking water. These benefits were associated with greater average weight gains (Chorney and Josephson 2000).

A Manitoba Partners In Flight analysis of riparian areas showed that Manitoba' s riparian areas provide habitat for 130 species of birds. Ninety six of the species use riparian habitats for nesting, 75 use the habitats during migration, 21 use the habitats in winter, and 61 were neo-tropical migrants (Manitoba Habitat Heritage Corporation 2003a).

The economic importance of some of the ecological services from private woodlots and trees in the urban landscape has been studied, with localized estimates of the values of reductions in airborne pollutants, heating and cooling costs, erosion control, and reductions in flow and contaminants in storm water systems. In Calgary for example, city trees and shrubs are estimated to be responsible for the removal of 502 metric tons of pollution in a year, an estimated $2.75 million value when considering other means of removal (Western Woodlot Conservationist 2001). Health benefits of trees in urban landscapes have also been identified including reductions in stress, reducing ground level dust, and filtering UV rays. On a larger scale, the value of unimpaired headwater forests, healthy stream buffers and wetland functions related to water quality, could be calculated based upon the cost of building and maintaining treatment infrastructure to perform the same functions.

Ecological services from woodlands in the agricultural landscape are being assessed, and information has been presented to the agricultural community to promote wise economic choices of conservation activities. Grass and wooded riparian zones along streams and wetlands have been shown to trap high proportions of sediment, phosphorous, nitrogen and pesticides in runoff, reducing impacts on water quality. Programs promoting the maintenance and enhancement of riparian buffer

zones, as well as other on-farm projects such as alternate livestock watering sources and nutrient management can make a clear case for associated economic values. Cleaner water results in healthier livestock, greater average weight gain, as well as cleaner water for downstream communities. An indirect and less tangible benefit which is a product of this economic valuation is the impact on fish and wildlife in the region.

These values are equally important, but more difficult to measure monetarily, an understandable concern when landowners are considering their bottom line. Shelterbelts and windbreaks also protect water quality by reducing wind erosion, trapping snow and moisture, moderating runoff in spring, and filtering drift of spray aerosols. In a recent report examining public-goods-related benefits from shelterbelts planted from trees distributed by the PFRA Shelterbelt Centre over a period of 20 years, estimated benefits from reduced soil erosion were $8–122 million, the value of reductions in greenhouse gas emissions was estimated at $56–417 million, and the value of consumptive wildlife based recreation was estimated at $29 million (Kulshreshtha and Knopf 2003). Many public goods were identified, but valuation proved difficult with many data gaps and the complexity involved in connecting shelterbelts and other habitats to socio-economic and ecological values.

The value of ecological services from woodlands has not been as actively promoted in the woodlot community as it has in the agricultural community for several reasons. The benefits and ability to communicate actions to the landowner may be less direct than putting figures on economic losses due to soil erosion, and economic gains from improved water quality. We are all familiar with the message that a managed, healthy productive woodlot is good for both economic and ecological productivity. The return on the investment in sustainable forest management and corresponding ecological services may be more difficult to see over the short term for woodlot managers than it is on farms. The ecological value of woodlands for wildlife in both agricultural and urban settings is also immense, however habitat is a difficult concept to value. Most efforts have concentrated on recreational values and costs for recovery of species at risk.

At a broader scale, woodlot owners and other private landowners are providing a collective public service. Wildlife, water and aesthetics are public values which are impacted by actions on private land. The depletion and conversion of forest resources can often be linked to a failure to account adequately for their non-market environmental values in development decisions. Economic valuation can be a powerful tool to aid and improve wise use and management of our forest resources by providing a means of measuring and comparing the various benefits of woodlands. However, the current limitations of forest inventory information on private lands minimizes appropriate recognition and protection of these woodlots in municipal land use planning.

Profile of Stewardship Activities by

BRITISH COLUMBIA WOODLAND OWNERS

Some Woodland Facts:

Number of BC Woodlot Owners:
20,000 with holdings greater than 20 ha[3]

Area of Province in Forest: *60.6 million ha*[8]

Area of Forest in Private Land Ownership:
1.2 million ha in private non-industrial woodlots[6]*,*
900,000 ha private industrial

Average Size of Woodlots: *53 ha*[6]*; range from 2–8,000 ha*[5]

Private Land as a Percentage of Total Harvest: *10–12%*[3]
(private non-industrial woodlots — 5%[6,14]*)*

Private Forest Sector Contributes*: > 9,000 direct jobs,*
and ~18,000 jobs in spin-off activities[10]

Other Harvested Forest Products: *Christmas trees and boughs, berries, florals, birch and broad leaf maple syrup, mushrooms*

Woodlot Organizations: *Federation of BC Woodlot Associations (representing 27 local associations), Private Forest Landowners Association*

There are an estimated 20,000 non-industrial woodlot owners in British Columbia with holdings more than 20 ha[3]. The total area of privately owned forest is reported as just over 2 million ha[3,10], however the actual area may be as high as 4 million ha. Approximately 920,000 hectares of BC's private forests are assessed as 'Managed Forest' for taxation purposes. This classification protects the right to practice forestry, and is intended to encourage investment in reforestation and forest management[9]. Ninety-eight percent of this area is owned by industrial owners[11]. Private forest land is also classified as 'Unmanaged Forest' and 'Residential Forest' covering approximately 555,000 ha[11]. Because classification as forest land has a higher tax rate than agricultural land, woodlands on farms and ranches are generally reported as part of the Agricultural Land Reserve. Estimates on the number and area of these 'unofficial' woodlots range from 400,000 to 2 million ha[11].

Key public values on Managed Forest land are regulated in B.C. through the Private Land Forest Practices Regulation which requires managed forest owners to protect water quality and fish habitat, conserve soil, recognize and, through agreement with the provincial government, protect critical wildlife habitat where it cannot be supplied on Crown lands alone, and reforest harvested areas. This regulation affects approxi-

mately 716,000 ha in the Forest Land Reserve and 32,000 ha in the Agricultural Land Reserve[9]. Private woodlot owners can also bid for a woodlot license. These are periodically offered by the province. The license agreement allows them to harvest and manage up to 600 ha of crown forest land along with their own private woodlot. The agreement requires both the crown and private land be managed under the Forest Act and new Forest and Range Practices Act (replacing the Forest Practices Code). A woodlot license management plan is required which includes planning for riparian reserves, wildlife tree retention, ungulate winter range and critical wildlife habitat, water quality, fisheries, soil conservation and reforestation. Because of their small size, these woodlot licenses do not need to meet the objectives for old-growth and connectivity, although most retain old growth stands as part of their management plans. There are over 800 of these licenses in BC[3].

Only 6% of British Columbia is in private ownership, however many of these lands provide valuable habitat as a result of their location along river valleys, watercourses, deltas and shorelines. Some of these areas have high numbers of species and habitats at risk because of forest conversion for residential development and agriculture. For example, some of the best residual fragments at the northernmost range of Garry Oak occur on private land at the southern

BC Woodland Owners Win Stewardship Honours

Awards for Innovation — Woodlot Product Development Council: *Leanna and Craig Mann won the award in 1999 for innovation for improvement and maintenance of wildlife habitat on their woodlot license. Their 600-ha woodlot license is a critical wildlife habitat area for moose and a winter range site for mule deer. Some techniques used for habitat enhancement include cutting alders at 1 metre for suckering providing food, encouraging birds and providing nesting sites for hawks[13].*

Forest Stewardship Award — Woodlot Product Council (2000) and B.C. Cattlemen's Environmental Stewardship Awards (2001): *The 2500 ha Bridge Creek Estate in 100 Mile House was recognized through a number of awards for stewardship on its ranch and woodlot properties. Forest and ranch operations are planned with sensitivity to fish and wildlife habitat and water quality[1].*

Countryside Canada Stewardship Award: *The Chilako Watershed Council won this award in 2002 for its effort in working with land-owners, industry and government to protect the Chilako River and its fish habitat from stream degradation caused by erosion, livestock and forestry. Stream and bank restoration have focused on improving riparian areas by planting cover grass, willows and cottonwoods as well as installing fencing and crossing mats for cattle[4].*

Forest Stewardship Recognition Program: *Jim Trebett, a forest consultant and owner of a 12 hectare woodlot south of Nanaimo, received the award in 2001 in recognition of his life-long commitment to promoting and demonstrating sustainable forestry.*

end of Vancouver Island. Nine birds, three mammals and two reptiles considered as threatened, endangered or of special concern, are associated with Garry Oak woodlands, which extend down the western North American coastline as far as California[2]. Private woodlot owners are often responsible for the stewardship of large portions of these remnant habitats. Many residents and landowners in the municipality of Saanich are involved in a Garry Oak Restoration project. Similar efforts to protect species at risk are ongoing in the Okanagan valley. Under the Riparian Restoration of the Oxbows and South Okanagan-Similkameen Conservation Programs, private landowners are improving and restoring woodland riparian habitats for the endangered yellow-breasted chat and other bird species.

Associations of woodlot owners in the province actively encourage the ongoing stewardship efforts of private woodlot owners through extension and demonstration. The North Island, Quesnel, and Tatlayoko Woodlot Associations are all involved in community partnership ventures with the Department of Fisheries and Oceans with the goal of restoring degraded pacific salmon habitat and improving habitat protection. Stewardship coordinators, employed by the partnerships work with volunteers for salmon habitat protection. The South Cariboo Woodlot Association has provided wetland classification and raptor nest identification for the woodlots of members, with the goal of providing a stewardship tool to integrate aspects of the Forest Practices Code and the habitat needs of various wildlife species in developing a woodlot management plan[12].

The Private Forest Landowners Association worked with federal and provincial agencies, forest owners and other resource experts to publish *The Handbook of Best Management Practices for Private Forest Land in British Columbia*. The handbook was produced as part of a larger program including landowner and logger education and training, site reviews and monitoring and evaluation to assist and encourage responsible stewardship of private land. The program was designed for Managed Forest owners and PFLA members, but is available to all interested landowners.

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Profile of Stewardship Activities by

ALBERTA WOODLAND OWNERS

Some Woodland Facts:

Number of Alberta Woodlot Owners: *12–15,000*[11]

Area of Province in Forest: *38.2 million ha*[13]

Area of Forest in Private Land Ownership:
1.535 million ha in private non-industrial woodlots[9]*,*
25,000 ha private industrial,

Average Size of Woodlots: *88 ha, ranging from 2–2,000 ha*[9]

Private Land as a Percentage of Total Harvest:
between 10 and 20% of timber supply[2]

Private Forest Sector Contributes: *timber resources for $500–$700 million in timber products*[2]

Other Harvested Forest Products: *Christmas trees, firewood*

Woodlot Organizations: *Woodlot Association of Alberta*

Most of Alberta's privately owned woodlands are located throughout the agricultural landscape. In this area about 1.5 million ha are forested[1]. Private woodlots range from small aspen bluffs in the parkland/grassland transition, to continuous forest in the foothills or boreal region. Landowners range from rural residents who make a partial or full livelihood from their land and are driven by farm/cattle cultural traditions, to urban residents who own rural woodlots that generally focus on recreational and environmental values.

The aspen parkland is the most impacted natural region of Alberta, with intensive agriculture, industrial activity, residential and commercial development contributing to loss or degradation of over 90% of the native habitat[4]. Ninety-five percent of the region is privately owned and the stewardship of remaining parkland habitats is largely the responsibility of private land owners, without any compensation or recognition of public value by either the government of Alberta or the public at large. The loss of native woodlands has had a dramatic impact on the environment. Woodlots and riparian areas provide key ecological services including: filtering and buffering water supplies, soil conservation, trapping carbon, providing shade and forage for livestock, and decreasing risk of flooding and erosion[10]. They also provide habitat for a variety of fish and wildlife species. For example, raptors use woodlots as both nesting sites and hunting habitat. In aspen parkland, most raptors need large woodlots to survive.

The Parkland Stewardship Program of the Alberta Fish and Game Association uses a strategic approach to identify locally significant habitats, evaluate potential for future habitat loss and support landowners with technical and financial assistance for habitat conservation. The program has agreements with 100 producers averaging 65 ha each including wetlands,

woodlands and native and tame grasslands. The total area under landowner conservation agreements is approximately 8,100 ha[15].

The Landowner Habitat Program (LHP) of the Alberta Conservation Association is a stewardship initiative developed to encourage retention and enhancement of wildlife habitat in the Parkland region with a focus on large blocks of native aspen parkland. Landowners sign a long term agreement (20 years), and are compensated with an annual financial incentive. From 1986–97, landowners signed 222 LHP agreements totaling approximately 21,850 ha, of which 15,625 ha were in native aspen parkland, with the balance in native grassland, riparian, dense nesting cover and other uplands. Landowners also signed 40 agreements (maintained by the LHP) under the Riparian Habitat Program for the stewardship of approximately 4,045 ha[12].

The North Raven River Habitat Restoration Program, a partnership between Alberta Fish and Wildlife, private landowners and Trout Unlimited Canada, is an example of a successful habitat restoration program on a significant trout stream in the Saskatchewan River basin. Improvements to riparian vegetation, stream banks, and the watercourse have successfully rehabilitated fish and wildlife habitat[14]. The program also led to the development of similar initiatives covering much of the east slopes.

A large number of community watershed initiatives have also been formed in these areas, with a predominant interest in protecting watercourse quality through riparian management and managing livestock access. Thirty four local watershed groups are currently active in the province, and private landowners are active in a variety of programs conserving and restoring

Alberta Woodland Owners Win Stewardship Honours:

Master Woodlot Stewardship Award — Woodlot Association of Alberta: *There have been four winners including: Pieter van der Schoot — for woodlot management, active reforestation, demonstration and recreation opportunities; John and Linda O'Brien for management of their woodlot property; The Elkhorn Stock Ranch for an integrated ranch management plan incorporating forest and riparian area management, and trout habitat protection; Dan Reesor for woodlot management on his cattle ranch in the Cypress Hills.*

Environmental Stewardship Award Winner — Alberta Beef Producers: *The Chinook Ranch received this award in 2003 for environmental actions on their ranch which also provided economic benefit. Actions included seeding permanent cover, developing a grazing management plan for the range, and protecting habitat values including riparian areas associated with streams and wetlands, and upland habitat which provide quality cover and forage for wildlife species[3].*

riparian woodlots and strips for soil and water conservation[5]. The Cows and Fish Program works to foster awareness about riparian areas and watersheds (including the woodlot component), and demonstrate how improvements in management can enhance landscape health and productivity for the benefit of landowners and others who use and value these areas. Since 1992, over 22,000 participants from across Alberta and Western Canada have attended Cows and Fish presentations, field days and workshops with the goal of increasing awareness for informed decision making regarding management actions in the riparian zone[8].

The Woodlot Association of Alberta worked in partnership with the Prairie Farm Rehabilitation Administration, Natural Resources Canada, industry (Alberta Pacific Forest Industries — Alpac) and the Government of Alberta to complete the Alberta Settled Area Woodlot Inventory. Value-added use of the information from the inventory on the extent and location of woodlots in central Alberta was promoted to counties, municipalities and industry for use in broader stewardship activities including landscape planning and enhancement of wildlife habitat in the region[7].

A three-year woodlot Extension Pilot Project, sponsored by the provincial and federal governments, industry, Ducks Unlimited Canada, the Alberta Conservation Association and the Woodlot Association of Alberta, formally concluded in December 2003. The program provided technical information and demonstration sites, and facilitated workshops and seminars on woodlot management planning for over 5,500 landowners as well as connecting them to other interested groups[6]. Encouraging efforts are underway to establish an ongoing Extension Program which will continue to promote sustainable forest management on a province-wide scale.

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Profile of Stewardship Activities by

SASKATCHEWAN WOODLAND OWNERS

Some Woodland Facts:

Number of Saskatchewan Woodlot Owners: *15,000*[1,3]

Area of Province in Forest: *35.5 million ha (12.9 productive)*[2]

Area of Forest in Private Land Ownership: *400,000 ha, all in private non-industrial woodlots*[3]

Average Size of Woodlots: *27 ha ranging from 20–2,000 ha*[3]

Private Land as a Percentage of Total Harvest: *11%*[3,12]

Other Harvested Forest Products: *firewood, fence posts, wild berries and mushrooms, Christmas trees, building materials*[5]

Woodlot Organizations: *Farm Woodlot Association of Saskatchewan*

Private woodlands in Saskatchewan account for approximately one percent of the total forested area in the province, with ownership by 15,000 landowners. The majority of the woodlot owners in Saskatchewan are farmers and ranchers (roughly 90%[9]). However a higher percentage of woodlots that are actively managed are owned by rural residents who are not involved in farming or ranching[5]. These woodlots are generally small in size, fragmented, and occur over a wide geographic area in the Aspen Parkland and Boreal Transition ecoregions. Hardwood species, primarily trembling aspen and balsam poplar, dominate 80 to 90% of the private land woodlots[11]. The loss, through fragmentation, of boreal transition woodlots is of particular concern. They represent a significant level of local biodiversity, providing wildlife habitat corridors and staging and nesting areas for birds, as well as potential economic opportunities[7].

The Prairie Farm Rehabilitation Administration (PFRA) offers a number of tree planting programs on the prairies for soil and water conservation and wildlife habitat restoration. The PFRA Shelterbelt Centre in Saskatchewan has distributed over 150 million trees since 1981, primarily to farms and small rural holdings[8]. Approximately 65% of the trees were distributed to Saskatchewan, with the remainder distributed primarily in Manitoba, Alberta and BC[8]. The PFRA

also delivers a number of programs that facilitate tree planting on private lands to increase woodland habitat on farm properties including the Shelterbelt Program, Shelterbelt Enhancement Program, Wildlife Habitat Tree Planting Program, and the Wildlife Shelterbelt Program. In the past 10 years over 3,000 landowners and 70 community organizations have participated in these programs, resulting in 816 km of shelterbelt and wildlife plantings[16].

The Farm Woodlot Association of Saskatchewan is a grass roots organization comprised of woodlot owners. The Association is dedicated to promoting the sustainable management of woodlots located in the agricultural sector of the province. The Association currently offers management planning assistance to woodlot owners and managers on a fee for service basis. The planning approach focuses on the management goals of the landowner and the ecological feasibility of those goals. In partnership with Saskatchewan Environment, the Association distributes appropriate native species of tree seedlings to its members for woodlot and afforestation plantings[5]. Through its history of partnerships, the Association has supplied extension services to over 2,000 landowners and has supplied more than 340,000 tree seedlings for planting on privately owned and provincial wildlife lands in the province[6].

Saskatchewan Woodland Owners Win Stewardship Honours

Forest Stewardship Recognition Program: *Fred Shawaga was recognized in 2001 for his long-term stewardship commitment to a small parcel of land in Saskatchewan, as well as for his dedication to furthering the knowledge of local landscapes and sustainable forest harvesting. He donated his land to the Fish and Wildlife Development Fund, administered by Saskatchewan Environment, just prior to his passing[4].*

The Saskatchewan Forest Centre (SFC) is a not-for-profit organization that receives provincial and federal funding. The SFC focus is technology transfer which is facilitated through three units: Agroforestry, Value Added, and Fire/Forest Ecosystem. The SFC offers technical information on management planning and workshops to landowners on the value of trees to the landscape through sustainable forest management or afforestation efforts. Saskatchewan Environment partnered with the Saskatchewan Forest Centre to survey forested lands within the forest fringe. The Forest Fringe survey includes the band of forest mixed with farmland south of the provincial forest, and is collecting data from Crown land areas and private woodlots. The information will be used to assess opportunities for management and conservation in the region[13].

The Prairie Stewardship Program of the Saskatchewan Watershed Authority encourages stewardship through voluntary agreements with landowners for conservation of both riparian habitat areas and native prairie. A total of 1,090 landowners are enrolled in the program as stewards of riparian areas on 277 km of streams, as well as 180,000 ha of native prairie and 4,896 ha of wetland habitat[14]. The Saskatchewan Wildlife Federation also encourages voluntary stewardship of native habitat in Saskatchewan through agreements with private landowners. Currently over 161,870 ha are enrolled in the program[15].

Tools for the acquisition and donation of lands for the conservation of wildlife habitat are well developed in Saskatchewan compared with other provinces. The Fish and Wildlife Habitat Development Fund managed by Saskatchewan Environment and the Saskatchewan Wildlife Federation Habitat Trust Program have secured approximately 76,900[10] and 20,235 hectares[15] respectively. More than half of this area is covered by forest.

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Profile of Stewardship Activities by

MANITOBA WOODLAND OWNERS

Some Woodland Facts:

Number of Manitoba Woodlot Owners: *13,500*[1,3]

Area of Province in Forest: *26.3 million ha*[9]

Area of Forest in Private Land Ownership: *987 000 ha, all in private non-industrial woodlots*[3]

Average Size of Woodlots: *73 ha ranging from 4–4,000 ha*[3]

Private Land as a Percentage of Total Harvest: *17%*[5]

Other Harvested Forest Products: *Christmas trees, firewood, Manitoba maple syrup, mushrooms, berries*

Woodlot Organizations: *Woodlot Association of Manitoba, Manitoba Christmas Tree Growers Association*

Private woodlands in Manitoba are concentrated in the southern region of the province, and include both mixed wood forests dominated by aspen with white spruce, jack pine, oak, maple and elm, and smaller forest stands in the prairie landscape. These woodlands are generally small in size and fragmented by agricultural activities or urban development. Approximately 90% of the prairie ecozone has been converted to cropland, range and pasture from its original composition of native grasslands, aspen parkland and wetlands. In Manitoba's southeastern and south central regions, conservation of remnant native habitats is primarily the responsibility of private land owners. Aspen parkland covers approximately 20% of this area[4].

Many woodlot owners in the province have taken an active interest in managing their properties for multiple values, ranging from economic returns from logs and firewood to the conservation of wildlife habitat. Approximately 950 owners have management plans in the province, and interest in woodlot management is high with an estimated 6,000+ attending workshops/field days[5]. The Manitoba Forestry Association offers a Woodlot Program in all but the southwestern region of the province. The program offers a site visit to determine management objectives as well as woodlot management recommendations. Nine hundred

landowners, with a total of 29,000 forested ha,[5] have taken advantage of this opportunity. More than 900 landowners and 10 community projects have planted 3 million trees and shrubs with the help of this program[12].

The Manitoba Habitat Heritage Corporation has a complementary program, offered in the southwestern agricultural region of the province. The Agro Woodlot Management Program was developed to encourage woodlot management and harvesting within the context of the organization's mandate of fish and wildlife habitat conservation. The organization provides a variety of services and has prepared over 143 management plans for woodlot owners, and provided management advice for over 8,500 ha of private woodlots[7]. Landowners have also planted over one million trees with the corporation's assistance on a variety of projects including alley cropping, livestock shelter, snow management, manure management and odour control[7].

Under the Canada Manitoba Agreement on Agricultural Sustainability (CMAAS) Fund (1993–97) landowner groups and private landowners were able to establish 1,000 km of shelterbelts, as well as gain funding for shelterbelt maintenance projects[6]. During the same period, private landowners and local conservation groups were able to establish 600,000 trees and shrubs for a total of 185 km of wildlife corridors in southwestern Manitoba with CMAAS funding, the Manitoba Agro Woodlot Program and other partners[6].

Woodlot owners in Manitoba have also secured the long term conservation of native habitats through land donations and conservation agreements. The Manitoba Habitat Heritage Corporation holds title to 49 sites, with a total of 4,213 ha through acquisition and donation,

Manitoba Woodland Owners Win Stewardship Honours

Habitat Stewardship Award — Manitoba Habitat Heritage Corporation: *Roy and Ruth Farley received the award for the retention of 50 unbroken hectares as native habitat on their farm. The couple signed a Habitat Stewardship Agreement as a voluntary pledge to retain native habitat on their property[6].*

Habitat Stewardship Award — Manitoba Habitat Heritage Corporation: *Beat Christen received the award for his management practices and efforts in encouraging others to practice sustainable forest management on their properties[11].*

Conservation Family Award — Cooks Creek Conservation District: *Lloyd Church received the award in 2003 for management of a 17 hectare woodlot east of Anola. He has planted over 4,000 trees and annually provides trees to a local sawmill and cuts firewood. He actively manages for wildlife habitat providing bird houses, brush piles and a naturally regenerating area of wildflowers, grasses and native trees[2].*

as well as 30 sites and 925 ha under conservation agreements under a variety of programs including the North American Waterfowl Management Plan and Critical Wildlife Habitat Program[8]. The organization also leases 325 sites with 15,231 ha. Cooperative agreements on wetlands, woodland and riparian habitats total 1,746 sites with 21,901 ha[8].

The Parkland Habitat Partnership provides the opportunity for private landowners, parks, provincial and federal governments, forest industry (Louisiana Pacific), the Manitoba Habitat Heritage Corporation, the Nature Conservancy of Canada and volunteers to work together with the goal of restoring connectivity in the Riding Mountain Biosphere Reserve. While the program is still in its formative stages, current goals are to continue landowner contact, encourage stewardship of aspen parkland and riparian areas, and secure critical habitats for species at risk in the region[10].

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Profile of Stewardship Activities by

ONTARIO WOODLAND OWNERS

Some Woodland Facts:

Number of Ontario Woodlot Owners: *169,000*[4]

Area of Province in Forest: *70.4 million ha*[9]

Area of Forest in Private Land Ownership: *4.795 million ha in private non-industrial woodlots*[4]*, 744,000 ha private industrial,*

Average Size of Woodlots: *28 ha ranging from 10–4,000 ha*[4]

Private Land as a Percentage of Total Harvest: *20%*[11,13] *(private non-industrial ~ 14%*[4,14]*)*

Private Forest Sector Contributes: *The maple syrup industry generates $25 million annually and private forests contribute 20% of province's industrial roundwood (75,000 jobs worth $3.6 billion/year)*[11]

Other Harvested Forest Products: *maple syrup, Christmas trees, mushrooms, nuts*

Woodlot Organizations: *Ontario Woodlot Association, Ontario Maple Syrup Producers Association*

Private woodlands in Ontario represent approximately 11% of forest ownership with about half of these woodlands in southern Ontario[9]. This ownership is highest at 95.2% in the southern Mixedwood Plain ecozone, 37.1% in the Algonquin-Lake Nipissing ecoregion of the Boreal Shield, 6.1% in the Boreal Shield and 0.1% in the Hudson Plains[1].

Private lands in Ontario are important to both the environment and economy, with an estimated 70% of white-tailed deer populations, 80% of the province's sport fishing opportunities, 40% of the province's Areas of Natural and Scientific Interest, and a diverse agriculture and forest products sector[12]. Private woodlot owners in southern Ontario are the stewards of most of the remaining native habitat in the region. These habitats continue to be pressured by growing populations, with the area of urban land in Ontario increasing from 327,000 to 411,600 ha (25.9%) from 1981 to 1996[10].

Woodlot owners in the southern-most Carolinian forest region of the province have been working with conservation agencies for decades to preserve and enhance remaining pockets of native forest habitat. Only 11% of the original Carolinian Forest remains in Ontario with 124 species at risk in the region. Under the Carolinian Canada program, private landowners have worked in partnerships to conserve over 6,070 ha in 38 priority sites through voluntary agreements and secure another 809 ha through purchase[2]. The partnerships are now extending into Big Picture Project, where private land stewardship of woodlands, wetlands, riparian habitats, permanent cover crops and other habitats will form a series of habitat corridors to connect and enhance the larger habitat blocks.

Twenty-four landowners in southern Ontario are taking part in a restoration project for the American Chestnut, a species at risk which used to occur in large numbers in Ontario forests

before becoming diseased by an introduced blight. Landowners have worked in partnership with the Ontario Soil and Crop Improvement Association, other farm groups, wildlife and conservation organizations, and government departments to plant and maintain 950 healthy chestnut seedlings along with 9,000 other trees (including various pines, oaks, maples and ash)[11].

The stewardship of watersheds for the benefits of wildlife habitat, water quality and water supply is also largely the responsibility of private land owners in the southern Ontario region, with large populations relying on these benefits. Many landowners are beginning to take part in landscape level initiatives aimed at watershed conservation. For example, over 500 private woodlot owners and farmers in the Hamilton region are participating in the Hamilton Halton Watershed Program, with the goal of protecting and restoring the Western Lake Ontario Watershed and associated areas of native habitat. Landowners have stewardship agreements covering 6,500 ha with 120 km of riparian habitats and 3,000 ha of wetlands and upland habitats protected[8]. Similarly, in Renfrew county, landowners along the Bonnechere River planted over 12,000 trees per year in 2001 and 2002 on a 50/50 cost sharing agreement through the Community Fisheries and Wildlife Involvement Program and the town under the Bonnechere River Watershed Project[13]. Conservation Authorities also provide incentives and expertise to landowners for projects aimed at restoring riparian woodlands and habitat.

Individual woodlot owners are also involved in the Ontario Stewardship Program as active volunteers on the 40 regional community stewardship councils. The councils are each supported by a stewardship coordinator and use an ecological approach to determine priorities for their region, as well as linking landowners to

Ontario Woodland Owners Win Stewardship Honours

Carolinian Canada Conservation Award: *The award was presented to the Natvik family in 2003 for their conservation activities on their swine and crop farm in the Carolinian forest region. The family restored extensive areas of their farm to native species, worked with neighbors to make 'natural linkages'. They operate a native plant nursery and practice eco-friendly farming[3].*

Forest Stewardship Recognition Award: *The award was presented to Fred High in 1999 for his efforts to integrate agriculture, woodlot management and soil and water conservation practices on his property, and for his willingness to promote these values to local, provincial and international farm organizations, and the public[7].*

Forest Stewardship Recognition Award: *The award was presented to George Drummond for his leadership in promoting sustainable forest management on private land. He owns the oldest sugarbush in continuous operation in Ontario, a 200 year-old business. The property was extensively researched following the 1998 ice storm and has been used for educational tours[6].*

funding information and expertise. The council network is involved in more than 600 projects each year ranging from natural resource education, water conservation, wildlife habitat enhancement and forest-related community generated projects.

The Managed Forest Tax Incentive Program (MFTIP) offers a reduction in property taxes for woodlot owners who develop a woodlot management plan and commit to stewardship. The plans are reviewed, and management actions are assessed periodically. Approximately 10,000 woodlot properties with a total of 600,000 ha are currently managed under a MFTIP plan[9]. The Conservation Land Tax Incentive Program (CLTIP) offers a similar reduction in property taxes for landowners that agree to protect natural features such as provincially significant wetlands and woodlands, with approximately 15,000 landowners currently participating[9].

With the help of the Eastern Ontario Model Forest (EOMF) Program, woodlot owners in the region have had the opportunity to work collectively to achieve stewardship goals. The Bog to Bog, Lake to Lake, and Algonquin to Adirondack initiatives all focus on conserving and improving existing ecological corridors through private land stewardship. A group of 35 woodlot owners representing over 5,058 ha has also had the opportunity to work together with the EOMF, Domtar, the Ontario Woodlot Association, the Ontario Ministry of Natural Resources and the Forest Stewardship Council to test the feasibility of certification of small woodlot groups for sustainable forest management[5].

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Profile of Stewardship Activities by

QUEBEC WOODLAND OWNERS

Some Woodland Facts:

Number of Quebec Woodlot Owners: *125,000*[4]

Area of Province in Forest: *83.9 million ha*[9]

Area of Forest in Private Land Ownership:
6.8 million ha in private non-industrial woodlots[4]*,*
1 million ha private industrial,

Average Size of Woodlots: *54 ha ranging from 4 to 2,000 ha*[4]

Private Land as a Percentage of Total Harvest: *21%*[4]

Private Forest Sector Contributes: *private woodlots generate revenues of $800 million annually, $500 million of this is from wood products*[8]

Other Harvested Forest Products: *maple syrup (Quebec produces on average 70% of the world's production), Christmas trees, firewood*

Woodlot Organizations: *Fédération de producteurs de bois and fifteen wood marketing boards, Regroupement des sociétiés d'aménagement du Quebec and 44 joint management organizations, Quebec Maple Syrup Producers Federation, Association des producteurs d'arbes de Noël*

Private woodlots represent 11% of the timber productive forests in Quebec[8]. These 7 million ha are held by 125,000 property owners, of which 50,000 to 60,000 are actively managing their land for wood products[5]. Many of these private woodlots are less than 50 ha in size. Private woodlands are the most productive forests in the province, situated primarily in the southern settled region. They are the cornerstone of economic and recreational development in many rural communities, generating revenues of $800 million annually, of which $500 million originates from the production of wood products. Firewood, maple syrup and Christmas trees are other common products. Recreational hunting and fishing occur in as many as 50% of the private woodlots[8]. Approximately half of the deer winter range in Quebec is in private woodlots.

Thirty-eight thousand woodlot owners have registered management plans which are mandatory to access provincial management support programs, cost sharing of silviculture, land tax rebates and loan guarantees for woodlot purchasing[5]. The private forests silvicultural program has an annual budget of $35.5 million from the province and $8 million from industry, financing technical support and cost sharing of silvicultural treatments (20% paid by the woodlot owner)[5]. A separate $7–8 million per year is dedicated to the municipal tax rebate program for silvicultural treatments[5]. Special funding is also available, through the Fondation de la Faune du Québec (FFQ) for wildlife conservation including deer habitat management. A best management practices guide, championed by the Federation of Wood Producers of Quebec and the regional producers syndicate of Saguenay-Lac St. Jean (40,000 copies produced), is available to woodlot owners and encourages stewardship in private woodlots for the benefit of wildlife, water resources and forest values. The Federation has

also produced best management practices guides specifically for wildlife habitat in collaboration with the FFQ. Fifteen regional marketing boards, 17 regional private forest development agencies and 44 joint management organizations offer services to woodlot owners including extension, advice on management planning, provincial and national representation, product marketing, and technical/financial assistance.

Woodlot owners in the Bas-Saint-Laurent Model Forest are involved in a number of innovative stewardship projects. Based on a landscape level management plan which sets priorities for white-tailed deer wintering habitats, woodlot owners have adopted silvicultural treatments to improve cover and food sources. As a result, their approach has been adapted for neighboring regions. The Model Forest also has a voluntary wetland conservation program involving 45 private landowners and 25 significant wetlands and associated upland forests. The program, which plans for wetland protection at a landscape scale, has been expanded to the Rimouski River watershed[3]. Through their organizations, woodlot owners in the Model Forest have also taken part in the development of a 'Vision for the future', which includes a commitment to the stewardship of their regional forest heritage. The Bas-Saint-Laurent Model Forest has been instrumental in helping the Groupement forestier de l'Est du Lac Témisouata achieve FSC certification in May, 2002.

Quebec Woodland Owners Win Stewardship Honours

Countryside Canada Stewardship Recognition Award: *In 2002, Ferme Ben-gi won an award for establishing a treed buffer strip to protect streams and wetlands and protect fish and wildlife habitat on an area of the Ruisseau des Sapins watershed[2].*

Forest Stewardship Recognition Award: *In 2001, André Boisvert received the award for his efforts on the reforestation and stewardship of agricultural fields on his family farm. On his own, he has planted over 10,000 seedlings, and with the help of the local forestry association planted another 22,000. His plantings include oak, red pine, maple, spruce, yellow birch and beech. He also manages a sugarbush on his property[6].*

Private land owners are also participating in conservation programs developed by the Fondation de la Faune du Québec (FFQ) in partnership with other conservation organizations. The Forested Wetland Program protects 60 wetlands (approximately 300 hectares) and associated upland habitats annually for the benefit of waterfowl and other species dependant on forested wetland edges. Over 300 landowner conservation agreements protect 2,000 ha of productive wetlands and surrounding forests[7]. Sixteen organizations partner in program delivery under the endorsement of the Eastern Habitat Joint Venture. The FFQ has been the catalyst for integrated habitat management planning on private lands at a watershed scale and a proponent of integrated forest and wildlife management planning in woodlots.

In Mont Rougemont, the local community of woodlot owners, farmers, rural residents and tourism/recreation interests have developed a long-term vision for their region with the help of Nature-Action Québec. The vision encourages activities compatible with the conservation of fragile environments and biodiversity within the represented forest ecosystems without compromising traditional land use. Nature-Action Québec facilitated the development of a regional land use plan, is assisting in the preparation of a an environmentally sensitive regional forest management plan and will assist rural land owners in property management planning.

The Appalachian Corridor Project is a stewardship initiative of the Ruiter Valley Land Trust in cooperation with the Nature Conservancy of Canada and other local organizations with the goal of protecting the natural corridor extending from the Green Mountains in Vermont through the Sutton Mountains to Mount Orford in Quebec. Most of the Sutton Mountains region is privately owned and under pressure from over harvesting and real estate development. The conservation strategy has been developed by private land-owners and ensures the protection of wildlife habitat, old growth, exceptional forests and species at risk, while respecting economic and social values.

Based on three provincial forest inventories, including woodlot data collected over the past 35 years, 17 comprehensive regional/watershed level forest land use plans have been developed. Three-hundred-and-seventy-five 'exceptional forest ecosystems' sites have been identified on private land (13,000 ha) including rare or scarce forests, tree species or stands, old growth, or habitat of species at risk[1]. Landowners are working with the Ministère des Ressources naturelles, de la Faune et des Parcs and regional woodlot management agencies to define appropriate actions and incentives for the continued stewardship and maintenance of these sites.

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Profile of StewardshipActivities by

NEW BRUNSWICK WOODLAND OWNERS

Some Woodland Facts:

Number of New Brunswick Woodlot Owners: *40,000*[3,13]

Area of Province in Forest: *6.1 million ha*[8]

Area of Forest in Private Land Ownership:
1.785 million ha in private non-industrial woodlots[13],
1.21 million ha private industrial

Average Size of Woodlots: *45 ha ranging from 10 to 4,000 ha*[13]

Private Land as a Percentage of Total Harvest: *51%*[13],
(private non-industrial — 25%[3, 13]*)*

Private Forest Sector Contributes*: The maple syrup industry generates approximately $10 million and Christmas trees $11 million*[11]
Woodlots: $150 million — timber and firewood

Other Harvested Forest Products: *maple syrup, Christmas trees, firewood, berries*

Woodlot Organizations: *New Brunswick Federation of Woodlot Owners, New Brunswick Maple Syrup Producers Association Inc., New Brunswick Christmas Tree Growers Co-operative*

New Brunswick's forests are predominantly Acadian forest with a diverse mix of both northern and southern, and deciduous and coniferous species. Thirty percent of New Brunswick's forest is owned in small parcels by woodlot owners. Woodlot owners in the province are organized into seven marketing boards which negotiate prices, as well as administering silvicultural programs and other services. Because of the high proportion of private ownership in the province, woodlot owners and their organizations recognize their stewardship responsibilities as part of the larger forest community.

The Southern New Brunswick Wood Cooperative and the Fundy Model Forest are working in partnership with woodlot owners under the Conservation Stewardship Project. The goal of the project is to protect ecologically sensitive sites, and offer information on protection strategies and management actions. Woodlot owners with sensitive areas and rare species register with the Board and agree to follow special management practices

Private woodlot owners in New Brunswick have been actively involved in managing for white-tailed deer habitat as part of their long-term management planning. The Northumberland Woodlot Owners Association has

a deer yard management program which now involves approximately 350 woodlot owners and close to 5,000 ha of forest[10]. The Southern New Brunswick Wood Cooperative conducted a deer wintering area survey on behalf of its membership, to identify areas of habitat use and provided the information to the Department of Natural Resources and woodlot owners for management purposes. The Communauté en Action pour la Protection de la Faune et de son Habitat (CAPFH) has a similar inventory program, with deer habitat management planning available to woodlot owners[12].

The Conservation Council of New Brunswick and the New Brunswick Federation of Woodlot Owners have been working together with private woodlot owners to promote an eco-system-based, or low-impact approach to forest management. The approach encourages stewardship of soil, water and biodiversity, while managing for higher yields and quality of wood[2] and offers solutions to higher initial costs through recreational opportunities and non-timber forest products.

Private woodlot owners in the Pollett River Watershed have formed partnerships with the Greater Fundy Ecosystem Research Group and the Southern New Brunswick Woodlot Cooperative in a landscape level planning initiative. Objectives for maintaining wildlife habitat, watershed processes, water quality and preventing fragmentation have been set out in a forest management plan for the region. The partnership is providing individual management plans and financial assistance to woodlot owners that volunteer to participate[7]. A similar partnership has been formed in the Washademoak Lake Watershed.

Watershed groups from across the province are active in protecting and restoring riparian habitats along rivers and streams. The Gaspereau River Enhancement Association has restored fish spawning and nursery habitat along feeder streams, as well as planting 20,000 trees to

New Brunswick Woodland Owners Win Stewardship Honours

Forest Stewardship Recognition Program: *In 2000, Mike and Marc Spence won the award for biodiversity conservation and sustainable management practices on their 400 hectare woodlot in Southern New Brunswick. In the same year, the brothers also received the Southeast Forest Products Marketing Board's Woodlot Owner of the Year award[5].*

Forest Stewardship Recognition Program: *In 1999, Jean Guy Comeau won the award for his efforts to restore health and productivity to a severely damaged woodlot in Miramichi. The stand is now managed for a variety of timber and non-timber values and a significant effort has been made to improve wildlife habitat[6].*

enhance the river's riparian buffer zone[4]. The Kennebecasis Watershed Restoration Committee has also concentrated efforts on re-establishing natural habitat along the Kennebecasis River in partnership with private land owners[1]. Woodlot owners in the Miramichi region are represented by their local Northumberland County Woodlot Owners Association on the Miramichi Watershed Committee.

The New Brunswick Community Land Trust is working with woodlot owners to establish conservation easements, legally binding agreements defining principles of sustainable land management for a working woodlot that future owners would be bound to follow[9]. Landowners involved are concerned with the potential for liquidation harvests, or subdivision of their properties, and the need for continued stewardship of watersheds and biodiversity.

The Canadian Federation of Woodlot Owners has developed a method for sustainable forest management certification designed to overcome the obstacles of cost and inappropriate complexity present in existing certification standards. The Pan-Canadian Woodlot Certification Program will provide affordable certification for woodlot owners whose forest management meets public expectations for sustainable management of small family forests. The program will provide recognition for good management and an opportunity to maintain access to timber markets for participating owners. The Federation and Boards are actively working to implement Pan Canadian Certification in N.B.

With strong support from the provincial Dept. of Natural Resources, a new partnership has been established in New Brunswick by the organizations representing Christmas tree growers, maple syrup producers and woodlot owners to improve the quality and availability of technical information and training to their members. INFOR Inc. is in its third year of operation and is making a significant contribution to meeting the challenge of extension services in New Brunswick.

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Profile of Stewardship Activities by

NOVA SCOTIA WOODLAND OWNERS

Some Woodland Facts:

Number of Nova Scotia Woodlot Owners: *31,000*[4]

Area of Province in Forest: *3.9 million ha*[8]

Area of Forest in Private Land Ownership: *1.78 million ha in private non-industrial woodlots*[4]*, 850 000 ha private industrial,*

Average Size of Woodlots: *57 ha*[4]

Private Land as a Percentage of Total Harvest: *92%*[13]*; 60% is private non-industrial*[4]

Other Harvested Forest Products: *maple syrup, Christmas trees, firewood, berries*

Woodlot Organizations: *Nova Scotia Federation of Woodland Owners, Nova Scotia Woodlot Owners and Operators Association, Forest Group Venture Association of Nova Scotia*

Approximately 70% of Nova Scotia's total area is covered by forest[8]. The forest is a mix of deciduous, coniferous and mixed forests typical of the Acadian forest region. Nova Scotia's forests are 69% privately owned[8], with about 50% owned by individual private woodlot owners[2].

Nova Scotia's privately owned woodlands are located throughout the province and provide wildlife habitat, soil and water conservation values and a large portion of the wood supply for the province (approximately 60%). Woodland stewardship is therefore a necessity for private landowners in the province in order to provide for the range of ecological, social and economic demands on their land.

Because of concerns over management of the large private industrial and woodlot resource in Nova Scotia, some aspects of forest stewardship are now being regulated, a recommendation of the Nova Scotia Forest Strategy. In 2002, the Wildlife Habitat Management and Watercourse Protection Regulations legislated previous guidelines for the protection of water quality, biodiversity and wildlife habitat which apply to all forested lands. A buyer-based silviculture funding arrangement has also been developed where

money is re-invested in silviculture, ensuring future timber volume is equal to that which is harvested[3].

Some forest companies in Nova Scotia have recently entered into stewardship agreements with the Province and private woodlot owners that supply their mills. StoraEnso was the first company to enter into this type of agreement — a Joint Management Plan — which funds forest management and silvicultural treatment on partnering private lands to ensure sustainability of private forest resources[13].

Private woodlot owners in Nova Scotia have formed group venture associations to overcome some of the barriers to small scale operations. These groups have had varied success since government assistance was cut in 1995, however some ventures are still thriving, offering forest management services to large memberships. The Athol Forestry Co-op in Cumberland County is one example of a successful group venture, with 215 members and 26,000 ha of woodlots managed under a forest management plans[1].

The Nova Scotia Nature Trust's Forest Legacy program works with private woodlot owners to conserve old growth forest habitat through formal protection (easements) and stewardship agreements. The program has identified 40 priority sites in Cape Breton where it hopes to negotiate easements or voluntary stewardship agreements. Currently the organization is in the process of securing the protection of 312 ha through conservation easement[11]. The North Mountain Old Forest Society is a group of private woodlot owners that also has an interest in Acadian old growth forest. The group has worked in 19 woodlots to encourage changes in species composition through selective logging and planting, as well as building nest boxes for species requiring cavity trees[9].

Nova Scotia Woodland Owners Win Stewardship Honours

Woodlot Owner of the Year — Nova Scotia Department of Natural Resources: *Richard Irving received the award in 2003 for his efforts to restore the species composition of his woodlot from an overgrown pastureland of white spruce back to Acadian forest. He also left wildlife corridors and refuges for sensitive plant life[10].*

Forest Stewardship Recognition Program: *James Drescher won the award in 1999 for the management of a small woodlot for multiple values. He uses low impact forestry techniques, which provide enough timber for his value-added wood product manufacturing business[6].*

Don Eldridge Memorial Forest Stewardship Award — Forest Products Association of Nova Scotia: *Athol Forestry Co-op Ltd. of Cumberland County won the award for the sustainable management of woodlots owned by the membership totalling 26,000 ha[1].*

Private landowners are also actively involved in riparian management to protect watersheds and conserve fish habitat. Under the Adopt a Stream program of the Nova Scotia Salmon Association, 78,700 trees have been planted along river banks and greater than 200,000 m^3 of aquatic habitat has been restored, primarily on private lands[12, 14]. Under the Clean Annapolis River Project (CARP), landowners have also been encouraged to conduct fish habitat restoration including tree and shrub planting in the riparian zone. The CARP Working and Living by Water Project is supporting private land restoration through reforestation by planting native trees and shrubs on 25,700 m^2 of stream banks[5].

The Nova Forest Alliance developed a Woodlot Opportunities Planning Program in 2000, to provide information and management planning advice to woodlot owners who were not currently managing their woodlots. The program identified options for both conservation and timber production. Fifty-one Woodlot Opportunities Reports were produced for woodlot owners under the program covering over 2,500 ha[7].

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Profile of Stewardship Activities by

PRINCE EDWARD ISLAND WOODLAND OWNERS

Some Woodland Facts:

Number of PEI Woodlot Owners: *14,000*[2, 4, 9]

Area of Province in Forest: *0.29 million ha*[3]

Area of Forest in Private Land Ownership: *238,000 ha in private non-industrial woodlots*[2]

Average Size of Woodlots: *17 ha ranging from 5 to 200 ha*[2]

Private Land as a Percentage of Total Harvest: *96%*[9]

Other Harvested Forest Products: *firewood, Christmas trees*

Woodlot Organizations: *Prince Edward Island Woodlot Stewards Co-operative Ltd.*

Unlike most Canadian provinces, the majority of Prince Edward Island's forests are privately owned. The original forests of PEI were characteristic of the Acadian Forest Region with a mix of high quality hardwoods including sugar maple, yellow birch and beech. The current forests do not represent the quality of the past with all areas harvested at least once, and much of the forested area cleared for farmland at some point in the past. Woodlands are now split almost equally between early successional hardwoods and softwoods which are under extreme harvesting pressure, exceeding sustainable levels[5]. Forest cover has increased to close to 50% on the island since the early 1900's when 70% of the island had been cleared[5].

Approximately 88% of private forest land in PEI is owned by residents of the island, with 37.4% ownership by *bona fide* farmers and 11.4% ownership by urban owners[4]. Under the recently amended Environmental Protection Act, the aquatic environment is protected through the requirement of buffer zones adjacent to surface water systems. This legislation applies to both public and private lands and facilitates the conservation and restoration of woodland

riparian habitats on farmland. The PEI government's Forest Enhancement Program encourages responsible forest stewardship by providing incentives for forest management after woodlot owners develop a forest management plan. The plan sets out goals and options for each area of the property and encourages practices that produce high quality forest products, while protecting the environment and wildlife habitat.

The recently formed Prince Edward Island Woodlot Stewards Co-operative Ltd. was developed to help woodlot owners look at long term management planning, as well as marketing products from their woodlots. The organization has 68 members and is addressing the need to consider sustainable harvesting practices and stewardship of woodland resources[1]. Woodlot owner groups will also have the opportunity to work with and partner with other agencies for advances in forest stewardship under the new Model Forest Outreach Project[7].

The Island Nature Trust has recently developed an extensive forest conservation program. More than 200 properties which potentially had characteristics of PEI's original forest and/or rare forest species were identified using GIS and the landowners were contacted for a site evaluation. Private woodlots showing these characteristics after site evaluation were contacted with information on voluntary protection, restoration programs and available stewardship incentives. So far, approximately 10% of the landowners contacted have agreed to legally protect their woodlands for their conservation values[8]. Others are involved in voluntary stewardship agreements and conservation activities promoted by the Trust.

Prince Edward Island Woodland Owners Win Stewardship Honours

Forest Stewardship Recognition Program: *In 1999, Bruce McCallum was recognized for excellence in management of his woodlot for all forest values, as well as for his willingness to work with others to improve the overall sustainability of forest practices in the province[3].*

PEI Environmental Awards — Ministry of Fisheries, Aquaculture and Environment: *In 2003, Everett and Betty Howatt received the award for their efforts at planting buffer zones of trees and native shrub along the river long before riparian legislation was introduced. They were also recognized for planting trees as windbreaks and for wildlife habitat around their orchard[6].*

The Montague Watershed Enhancement Cooperative Ltd. is a group of concerned residents with the goal of accomplishing watershed improvement activities that conserve the natural environment and wildlife habitat. The cooperative has projects that include stream rehabilitation, fish habitat enhancement, population monitoring and stocking, installing bird and bat houses, and improvements to ruffed grouse and woodcock habitats through tree planting. This program developed from the very successful Watershed Management Project in the 1980's and 1990's where 100% of landowners, provincial and municipal agencies implemented a stewardship program to restore wildlife habitat and aquatic ecosystems throughout the eastern region of Prince Edward Island.

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Profile of Stewardship Activities by

NEWFOUNDLAND AND LABRADOR WOODLAND OWNERS

Some Woodland Facts:

Number of Newfoundland Woodlot Owners: *4,000*[3]

Area of Province in Forest: *22.5 million ha*[4]

Area of Forest in Private Land Ownership:
37,000 ha in private non-industrial woodlots[3]*,*
1.668 million ha private industrial

Average Size of Woodlots: *9 ha*[3]

Private Land as a Percentage of Total Harvest: *3%*
(private non industrial woodlots = 0%)[4]

Other Harvested Forest Products: *firewood, Christmas trees*

Woodlot Organizations: *none*

Newfoundland Woodland Owners Win Stewardship Honours

Don Thompkins was profiled on CBC's Land and Sea for his efforts to carry out reforestation on 4 hectares of his 40 hectares property in Codger Valley. He participated in a trial planting of Japanese larch, Scots pine and white spruce with the support of the government of Newfoundland, with the goal of producing both fibre and building materials in an area where natural resources had been depleted. His efforts also served as a catalyst to encourage other private woodlot owners to plant fast growing species to assist in filling demands for the local pulp mill and building industry[8]*.*

The province of Newfoundland and Labrador has only a small area in private woodland ownership, with only 4,000 woodlot owners. Most woodlots are not actively managed as a result of low economic values associated with the tree species on private lands. Provincially, approximately 10,000–15,000 ha of private woodlots are suitable for long term forest management purposes[1]. An equal amount is considered unsuitable because of substandard site capability, coastal exposure and the potential threat of land use conflict (residential and commercial development and agriculture)[1]. Some legislation does exist for the protection of environmental values on private lands in the province. The Forest Act requires owners with over 120 ha of forest on their property to prepare a management plan and pay a forest protection tax, however there are very few woodlot owners in the province with woodlots of this size[7]. Approximately 90% of the private forest land is affected by protective guidelines or legislation addressing the preservation of water, fish and their habitats[2]. There is no government or industry assisted private woodlot management program or woodlot owners association in Newfoundland.

Stewardship programs in Newfoundland and Labrador have primarily focussed on wetland and coastal habitats under the Eastern Habitat Joint Venture. The Municipal Wetland Stewardship Program for example encourages municipalities with significant wetlands to sign stewardship

agreements with the province to protect the wetlands from development. Many towns are participating and raising awareness for conservation and ecological services provided by these and associated habitats. The Legacy Nature Trust works with community based stewardship initiatives primarily dealing with threatened ecosystems, oceans, species at risk and endangered species. Their focus is on local conservation initiatives, acquisition and protection of sensitive lands, and research to identify priority issues and areas[5].

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FUTURE CHALLENGES

Canada's woodlot owners are making a contribution to woodland stewardship — the retention of the health and productivity of the land for future generations. Woodland stewards demonstrate their commitment through an intimate knowledge of the land and an understanding of its ecological capabilities, establishing goals and objectives for their property often within the context of the larger landscape/community, and a long term commitment.

Stewardship Profile of a British Columbia Woodlot Owner

Jim Trebett is a retired forestry engineer and forest consultant who currently manages a 12 hectare woodlot south of Nanaimo. The land is classified as Managed Forest for tax purposes and requires a management commitment, as well as protection of key environmental values. Jim's goal is to increase the health of the forest and therefore the productivity of the woodlot. To achieve this goal there is a harvesting plan that involves periodic logging of small patches of merchantable timber to provide funds for reforestation and other silvicultural activities. Some funds are also earned by selling lumber and other products (split rails, burls) from timber that cannot be sold profitably in the domestic market. Jim's chief objective is to demonstrate to others that small scale forest management can be profitable. It is a rewarding experience that requires a long-term commitment to the land. Jim has hosted several workshops and provided demonstrations to fellow woodlot owners (D. Varney).

Woodlot owners may have a variety of reasons for land ownership including:

- economic returns from roundwood, firewood, maple syrup and other products, or as a long term investment;
- environmental considerations, including wildlife habitat conservation, restoration and rehabilitation, and protection of water quality; and,
- social considerations, including recreation, aesthetics and as an intergenerational legacy.

The four stewardship profiles in this section demonstrate this mix. In all these cases, woodland stewardship focuses on some or all of these values within the context of the underlying constraints of the ecological capability of the land over the long term.

This document has reported on the successes of many woodlot owners from across Canada, as well as identifying some of the projects, programs and agencies that have helped them to achieve their stewardship goals. It is clear that there is a deep rooted commitment to woodland stewardship in Canada, but there are a number of challenges in the future for both woodlot owners and the woodland community.

Woodlot Owners — Future Challenges for Woodland Stewardship:

- Are the range of tools available to woodlot owners managing for a variety of values/ interests associated with woodland stewardship? There is a need to help landowners realize their own unique goals.
- Can there be a balance between regulation and incentives, without affecting property rights?
- Are markets available for wood products from private land? Can income from woodlot management sustain long term stewardship goals?
- How do woodlot owners address the shifting focus from local to landscape or regional woodland management?
- Who will pay the added costs shouldered by private landowners for managing for public benefits and ecological services such as wildlife habitat and water quality and quantity?
- How will woodlot owners cope with threats to the ecological and economic productivity of their woodlots from introduced invasive species?
- How can there be longevity in woodlot stewardship and management planning within the context of both a changing landowner demographic, as well as changing societal goals and expectations?

Stewardship Profile of a Manitoba Woodlot Owner

Bob Austman has a 150 ha woodlot which has been actively managed since 1991. He owns the woodlot for fuelwood production, long term investment, wildlife viewing, stewardship and hunting. He is the past president of the Woodlot Association of Manitoba and his woodlot has been used for demonstration. Bob developed a management plan with the help of the Manitoba Forestry Association's Woodlot Program. A woodlot extension officer helped him to inventory his property, and plan forest management activities for improvement and economic return. His management activities include jack pine thinning, an aspen rejuvenation cut, release of ash, underplanting white spruce in aspen stands, along with snag retention for wildlife. Bob has also been successful in establishing a guiding and outfitting business on his woodlot.

Regional Challenges for Woodland Stewardship:

- How can we ensure longevity in stewardship programming (extension, technical assistance, silvicultural funding, tax incentives) to create an environment which encourages investment in long term stewardship of private woodlots?
- How can we engage a broader group of woodlot owners in membership organizations? Do we know who the landowners are and the key issues that they are facing?
- How can we reduce the number of mixed messages from coordinating agencies and organizations regarding conservation and stewardship?
- What are the additional benefits to landowners of a cross-sectoral approach that provides coordination and cooperation in delivery of programs?
- How do we recognize existing stewardship activities?
- Are forest contractors equipped to deal with the broad range of interests of private landowners, or is there a need for increased extension and involvement with this group?
- How do we promote that stewardship to include both conservation — the sustainable management of woodlots including harvesting by landowners — and actions of preservation, restoration or rehabilitation by custodial managers? How do membership organizations fill their tool boxes to reflect the broad range of needs of woodlot owners?

Stewardship Profile of an Ontario Woodlot Owner

Doug Drysdale is a forester who has made a full time business out of his woodlot property near Barrie, Ontario. His business has been operating for 50 years and focuses on the production of both Christmas trees and nursery stock. The Christmas tree operation covers approximately 160 hectares, and the choose and cut plantation is the largest in Canada. Doug's business is a family-run operation and he values the opportunity to pass the business on to the next generation. He hosts educational school trips as well as seasonal events at the property, and can have up to 4,000 people visiting his property in a day during the Christmas season. He manages the plantations as a renewable resource, with considerations for both long term sustainability and conservation.

National Challenges for Woodland Stewardship:

- How can society value ecological services and communicate these values to both private landowners and the general public? How can we recognize that there are costs for these public benefits that are currently shouldered solely by the landowner?
- Is there a need for a landscape level vision of the desired future condition of the land base to address issues such as forest fragmentation and biological thresholds?
- How will national and international government commitments on issues including biodiversity conservation and climate change enhance stewardship programs? How will governments engage private woodlot owners to contribute to national and international commitments?
- What is the role of certification in woodlot stewardship?
- From a landscape perspective, how important is an up-to-date forest resource inventory?

Stewardship Profile of a Nova Scotia Woodlot Owner

Bob Bancroft manages a 23 hectare woodlot near Pomquet. He is a fish and wildlife biologist working as a forest management consultant and as a writer on the editorial board of the **Atlantic Salmon Journal**, **Eastern Woods and Waters** *and* **Saltscapes** *magazines. He also has a CBC radio show where he shares his expertise. He believes that it is possible to farm, cut trees and live near water without creating as much damage to the environment as often happens. Economics is an important element of woodlot management for Bob, although it is secondary to the need for conservation. He advocates that both can be achieved through careful planning and the implementation of innovative management approaches. Bob actively manages for wildlife habitat features on his property, including cavity trees, riparian areas and downed woody debris. Species of trees and shrubs that provide food for wildlife are encouraged, and parts of the property are being restored to uneven-aged condition for shade tolerant species.*

Some of these challenges are beginning to be addressed locally, regionally and nationally through creative partnerships between woodlot owners, their organizations and other interests. These partnerships are most successful when partners share a common goal, pool resources, set clear objectives, and determine measurable milestones. The Private Woodlot Strategic Initiative is an example of a growing and successful partnership developed between the Canadian Model Forest Network and the Canadian Federation of Woodlot Owners with the long term goal of addressing some of these identified future challenges for woodland stewardship.

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PHOTO CREDIT

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The ***Federation of BC Woodlot Associations*** also allowed the use of their photos for the BC section of this document found on page 22 to 25.

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