Feasibility Assessment of Afforestation for Carbon Sequestration (FAACS) Initiative

Ontario Pilot

Establishing New Forests to Address Kyoto

FAACS Fall Focus Sessions

A Report on

Overcoming Policy Barriers to Afforestation on Private Lands in Ontario

Focus Session held in Cobourg, ON
November 5th 2003

Jointly Convened by:
Eastern Ontario Model Forest and Natural Resources Canada, Canadian Forest Service

In partnership with:
Conservation Ontario, Ontario Ministry of Agriculture and Food, Ontario Ministry of Natural Resources, Ontario Woodlot Association, and Trees Ontario Foundation.

This report was prepared by the FAACS Ontario Pilot Team at the Eastern Ontario Model Forest. This team is made up of; Sharleen Hawco, Tony Rotherham, and Martha Copestake.

If you have any questions regarding this report or if you require any further information please contact:

Martha Copestake
Eastern Ontario Model Forest
P.O. Bag 21111, Kemptville, ON, K0G 1J0
(613)258-6567
mcopestake@eomf.on.ca
www.eomf.on.ca

Executive Summary

Trees provide important social, environmental, and economic benefits. In a highly populated province, such as Ontario, societal recognition of the essential role that trees play in our natural environment is vital. The province of Ontario has a notable history of tree planting on private land. The government change in the mid-nineties initiated a shift in values with respect to natural resources. This shift resulted in the cancellation of all large-scale government tree planting programs on private land. This was done with the assumption that the private sector could maintain historical tree planting levels, but because of a lack of capacity they could not. Putting tree planting levels at a century's low.

Canada's recent ratification of the Kyoto Protocol has renewed national interest in increasing the amount of forest cover on our landscape through carbon offset activities such as afforestation and reforestation. This has brought with it several important new government initiatives including the Feasibility Assessment of Afforestation for Carbon Sequestration (FAACS). Within Ontario, the FAACS initiative is examining landowner attitudes, policy barriers, market influences, as well as funding and delivery mechanisms with respect to afforestation on private lands.

Fundamental to the success of the current initiatives and to the success of future private land afforestation programs in Ontario is the removal of existing barriers that have been hindering private land planting for years. Kyoto is providing the necessary momentum for afforestation and increasing recognition for the importance of tree cover; but government support is needed through both policy change and policy development.

By synthesizing historical information and the stakeholder input from the FAACS Policy Barriers Focus Session, it was found that the most significant barriers to afforestation on private lands are:

- A lack of long term commitment from the government
- Unfair taxation methods that are acting as a disincentive to owning forested land
- A lack of recognition for afforestation and green spaces in municipal planning
- The present seed and stock availability crisis in Ontario
- The fact that landowners are responsible for the full cost of environmental services to society
- The lack of a land use ethic within society

Action items to overcome these barriers were developed at the FAACS Policy Barriers Focus Session. They are summarized as follows:

- Public Education
- Secure a "Champion of the Cause" within government
- Establish a long term work plan to drive a long term mandate
- Creation of a centralized agency – Trees Ontario
- Recognize the value that the resource provides to society and create incentives based on that
    - Tax Incentives
    - Program Incentives
- Equitable tax treatment for forest land and farm land

It is necessary for the government to recognize the barriers that are hindering private land afforestation initiatives. It is hoped that these action items can provide the context for necessary policy changes, and that this will initiate positive action in favour of afforestation.

This report gives an overview of the FAACS Policy Barriers Focus Session, it identifies the most significant policy barriers that may hinder the success of afforestation on private lands in Ontario, and it outlines options to overcome these barriers. This work forms the policy barriers assessment portion of the FAACS initiative. This document has been developed in order to initiate governmental policy change in favour of afforestation within the relevant branches of our government.

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1.0 Introduction

Canada's recent ratification of the Kyoto Protocol has played a role in inspiring new national environmental commitments from the government. Specifically, Kyoto has renewed national interest in increasing the amount of forest cover on our landscape through carbon offset activities such as afforestation and reforestation. Trees use carbon dioxide and sequester carbon as a part of their natural photosynthetic function and because of this, increasing forest cover is considered to be one of the options for mitigating atmospheric carbon dioxide and in turn climate change. Afforestation and reforestation are therefore recognized as offset mechanisms within the Kyoto Protocol.

Under Kyoto, afforestation is defined as the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding, and/or the human-induced promotion of natural seed sources. Basically, the term refers to the planting of trees on marginal agricultural lands. In turn, reforestation is defined as the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forest land. For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on December 31st, 1989. It should be noted that here forest is defined as a minimum area of land of 0.05 – 1.0 hectares with tree crown cover (or equivalent stocking level) of more than 10-30% with trees with the potential to reach a minimum height of 2-5 meters at maturity in situ. A forest may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground or open forest. Young natural stands and all plantations which have yet to reach a crown density of 10-30% or a tree density of 2-5 meters are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes but which are expected to revert to forest. In Canada the term afforestation is used collectively for the activities defined in the Kyoto Protocol as afforestation and reforestation.

The Feasibility Assessment of Afforestation for Carbon Sequestration (FAACS) initiative was a part of the climate change efforts of the federal government. It is lead by the Canadian Forest Service and it is described as a national policy development initiative to determine whether afforestation to create new forest carbon sinks is a viable option for Canada to meet a portion of its Kyoto commitments (Hawco 2003). There are three main components of the initiative: firstly, a compilation of records of land afforested between 1990 and the present, to be used as the "backcast" data; secondly, the development of an afforestation module as a component of the national carbon budget model; and thirdly, the establishment of 5 pilot sites across Canada that will assess and test a variety of mechanisms to incite afforestation on private lands (*ibid*). The Eastern Ontario Model Forest (EOMF) was selected to run the pilot for Ontario. The EOMF is examining landowner attitudes, policy barriers, market influences, and funding and delivery mechanisms related to afforestation on private lands.

Fundamental to the success of the current afforestation initiatives and to the success of future private land afforestation programs in Ontario is the removal of existing barriers that have been hindering private land planting for years. Time is of the essence; Kyoto is providing the necessary momentum for afforestation and increasing recognition for the importance of tree cover; but government support through policy change and policy development is needed. As a component of the policy barriers assessment portion of FAACS a focus session was held in the fall entitled "Policy Barriers to Afforestation in Ontario". The purpose of this report is to give an overview of the focus session, to identify the most significant policy barriers that may hinder the success of afforestation on private lands in Ontario, and to outline options to overcome these barriers. This will be done by synthesizing historical information and stakeholder input. This work forms the policy barriers assessment portion of the FAACS initiative. This document has been developed in order to initiate governmental policy change in favour of afforestation within the relevant branches of our government.

2.0 Relevance: Historical Information & Current Context

Trees provide important social, environmental, and economic benefits. In a highly populated province, such as Ontario, societal recognition of the essential role that trees play in our natural environment is vital. The needed recognition must come from all levels of society; from the public, to the government, to the private sector and industry. Development pressures from the early settlers resulted in the clearing of vast tracts of land for agricultural production leaving little tree cover. Development pressures are increasing as our population increases and as a higher percentage of the population desires urban residency. These pressures are specifically concentrated in the southern portion[1] of the province as it is now home to more than 90% of the provincial population (OMNR 2004). Rather than conversion of forests to farmland, the pressure now is for conversion of land (farm, forest, or idle) to developments such as housing subdivisions, business parks, and shopping malls. Associated with these development pressures are increased environmental problems such as poor water quality, reduced air quality, and a lack of connected natural space. Increasing the amount of tree cover through planting tress can aid in alleviating these environmental problems while providing many other important benefits to society. The key benefits provided by planting trees include:

- Water quality and quantity improvement
- Soil and air quality improvement
- Protection of agriculture land
- Mitigation of climate change through carbon storage
- Income generation through the supply of forest products and possibly offset carbon credits
- Creation of natural spaces for wildlife habitat, ecosystem integrity, recreational use, and visual aesthetics
- Enhancement of the human connection with the natural landscape

2.1 Historical Information[2]

With the arrival of the early settlers in Ontario much land was cleared for settlements and for farming purposes, leaving little tree cover. Woodlands were confined to the less productive portions of a property as concentration was put on agricultural production. The importance of reintroducing tree cover in Ontario in order to maintain a healthy landscape was recognized in the mid to late 1800's by the Ontario Fruit Growers Association (OFGA) (Coons 1981). The lack of tree cover on the landscape was resulting in drought conditions and high winds on the growing fields. The recognition of this problem caused concern and as a result the first tree planting initiatives were born. As such, the province of Ontario has a notable history of tree planting on private land; including programs by the government, Conservation Authorities, and other smaller-scale organizations. These programs have resulted in the planting of more than 1 billion trees on private lands over the past 100 years (Puttock 2001). The majority of this success was a result of several key government efforts such as; the Over-the-Counter Nursery program, the Woodlands Improvement Act (WIA), and the Agreement Forest program. Figure 1 shows the contribution of each program, in terms of number of trees planted, from 1905 to 1996.

[1] The "southern portion of Ontario" refers to the areas commonly referred to as Eastern, South-Central, and South-Western Ontario. Figure 3 roughly outlines this portion.

[2] Both the report by C.F. Coons (1981) entitled "Reforestation on Private Lands in Ontario" and the report by David Puttock (2001) entitled "Critical Review of Historical and Current Tree Planting Programs on Private Land in Ontario" provide significant information regarding the history of tree planting in Ontario. The information in this section is a summary of relevant information contained in those reports, including specifics on the large-scale private land tree planting programs of the past.

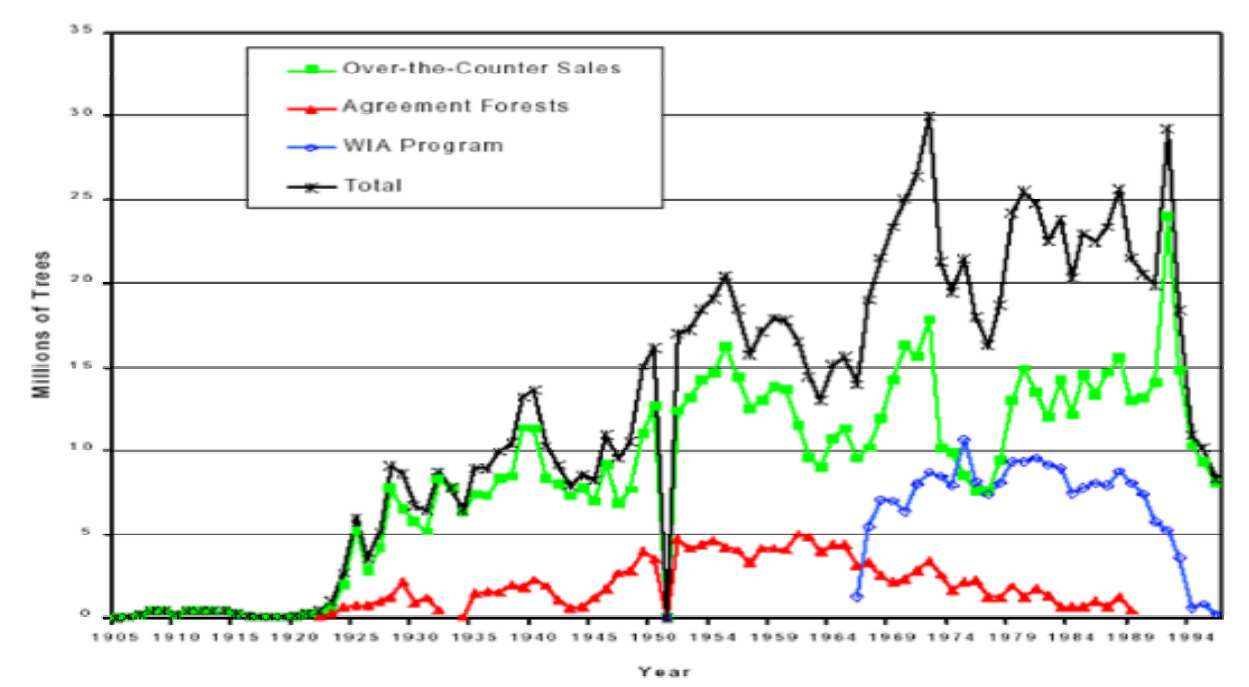

Figure 1: Private Land Tree Planting by Government Programs in Ontario from 1905-1996 (Puttock 2001)

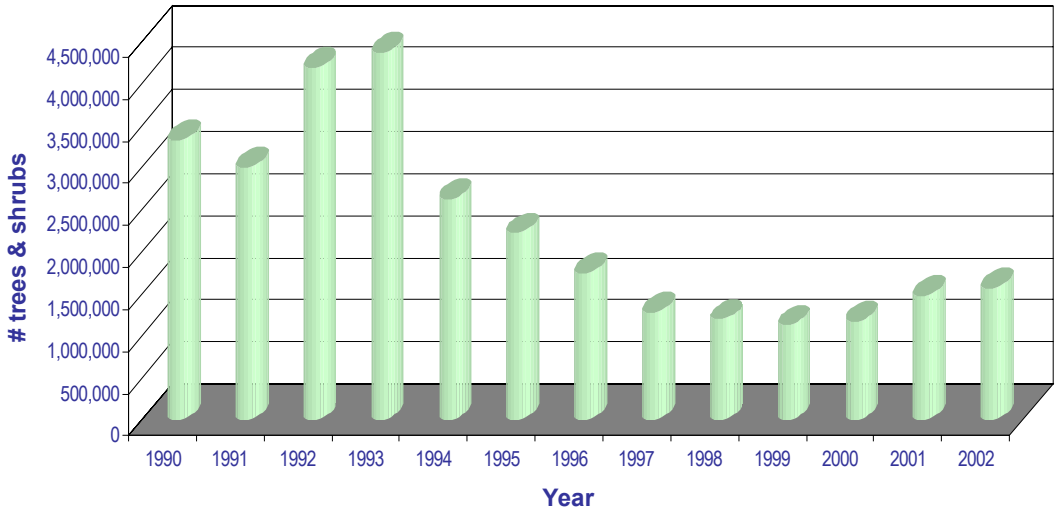

Figure 2: Trees & Shrubs Planted on Private Land by Ontario Conservation Authorities from 1990-2002 (Grillmayer 2003) [3]

[3] This data is from the "backcast" information produced by the Conservation Authorities for the FAACS initiative. The "backcast" is a compilation of afforestation records in Ontario since 1990 to determine Kyoto contributions.

2.2 Current Context

Over the past few decades there has been a shift in the culture of our province that places less importance on land use and makes less of a connection between the land itself and our lifestyles. Concentration is on urbanization and important issues are development, health care, and education. In response to the focus of society, both government dollars and government leaders are also concentrated on these issues. In Ontario's heyday of afforestation, when the WIA program was initiated and the provincial nurseries were thriving, society placed more importance on land use and specifically agriculture. The elected leaders and their interests reflected the concentration of society. A good example of this is the Premiership of E.C. Drury. Drury was the leader of the United Farmers of Ontario and was an important reforestation advocate (Coons 1981). His election to Premier of the province in 1919 was instrumental in putting reforestation on the priority list of the government. He provided the important recognition of the urgent need for a more treed landscape and the funding and the program delivery mechanisms to plant these trees on a large scale basis. In terms of tree planting on private lands, changes were made in the mid 1990's. The government change in the mid-nineties initiated a shift in values with respect to natural resources. Government priorities were modified such that direct program delivery became a method of the past and influence through policy models became the method of the future (Boysen 2003b). This resulted in the termination of the large-scale private land tree planting programs in the province and the closure of the provincial nurseries. This was done under the assumption that the private sector could maintain the same program and delivery level. Figure 1 shows that the programs were thriving up until cancellation. Despite continued efforts on the part of Conservation Authorities (CA) and other smaller-scale organizations and continued interest from landowners, the level of tree planting on private land has decreased significantly (Puttock 2001; Keen 2002). Figure 2 shows that over the past 10 years the number of trees planted specifically by CAs has decreased by close to 3 million. Contrary to the government's assumption; without more support in terms of programs, the private sector has not had the ability to maintain historical tree planting levels. The tree planting levels have not been maintained for many reasons, most of which are rooted in the lack of government commitment and the resulting funding loss. The funding source that was provided by the government has been irreplaceable thus far. Some of the important problems hindering private land tree planting are; decreased stock availability, land taxation issues, lack of capacity for program promotion, difficulties with program delivery, high costs for seedlings and operations, and a lack of incentives to the landowners. In one way or another, these problems are a result of government policies that do not fully recognize and support the importance of tree cover and in turn the environment. These policies have acted as barriers to the success of many attempted tree planting programs and have created disincentives to planting trees. To ensure the success of a new planting program, policy changes are necessary that will work to overcome the existing barriers.

There are several private land afforestation programs underway in the province. Table 1 gives a short summary of the existing private land afforestation programs and initiatives in Ontario. The majority of these programs are small-scale in comparison to the government programs of the past, but they do provide some form of incentive to the landowner. For example, the Ontario Environmental Farm Plan that is run through the Ontario Soil and Crop Improvement Association (OSCIA) provides grants of $1500 for farm plans that meet the environmental regulations of the program. In terms of afforestation, this could include tree planting efforts to mitigate erosion along streams. Another example is the Greencover Canada Program, also implemented by OSCIA; it focuses on the conversion of sensitive areas to permanent cover and shelterbelts. Lands with a high environmental sensitivity rating are targeted for program funding. Incentives to the landowner include; $20/acre for seeding or planting tame forage or trees, or $75/acre for seeding or planting native species, and $25/acre after establishing cover (Graham 2003). Both of these programs are targeted at farm owners. In order for programs such as these to be successful, the barrier caused by land assessment and taxation procedures which acts as disincentives to converting land from farm to forest must be resolved. This will be discussed in more detail further.

2.3 Landowner Interest

Despite program cancellations and changing government priorities, it has been shown that there is still significant landowner interest in tree planting. Recent surveys for the FAACS initiative indicate that approximately 75% of landowners with open land are interested in participating in a tree planting program. The surveys were done by Hardy Stevenson and Associates (2003a; 2003b) and targeted landowners in the eastern, south-western, and south-central areas of Ontario. These surveys also found that landowners have little confidence in any level of government for the delivery of a tree planting program. The highest confidence was placed on woodlot and forestry associations, Conservation Authorities, and non-governmental organizations. This is likely a result of the tree planting program cancellations and failures over the past decade. It is therefore necessary to develop a workable program that is

supported by government policy to regain the confidence of the landowner. Government support through policy for afforestation efforts can also aid in promoting the environmental importance of increasing the amount of forested area on the landscape. Figure 3 shows the Land Classification for a portion of Ontario. The afforestation potential is related to the area of pasture and abandoned fields (termed marginal land), which is indicated on the map in red. The Land Classification for Ontario indicates that there is approximately 1.2 million hectares available for afforestation in the province (Bird 2002). This estimation does not, however, account for landowner interest. It should be noted that the majority of the marginal land is privately owned (as shown by the pink areas in Figure 4) and is adjacent to active croplands indicating that it is owned by farmers (see Figure 3). By taking landowner interest into account, Woodrising Consulting (Bird 2002) has indicated that between 50,000 and 300,000 hectares of land are presently available for afforestation. These estimates were determined by incorporating results from an Environics survey of rural landowners' attitudes regarding land stewardship and the Agricultural Census.

The amount of available land is dependant on the level of incentive provided to the landowner. It was found that when the full cost of planting and tending is the responsibility of the landowner, the amount of land available is approximately 48,000 hectares. When the planting costs are fully subsidized the available area increases to 310,000 hectares. Woodrising (2002) also found that the area of land available will continue to increase as more incentives are provided, such as the addition of a payment per hectare of land afforested.

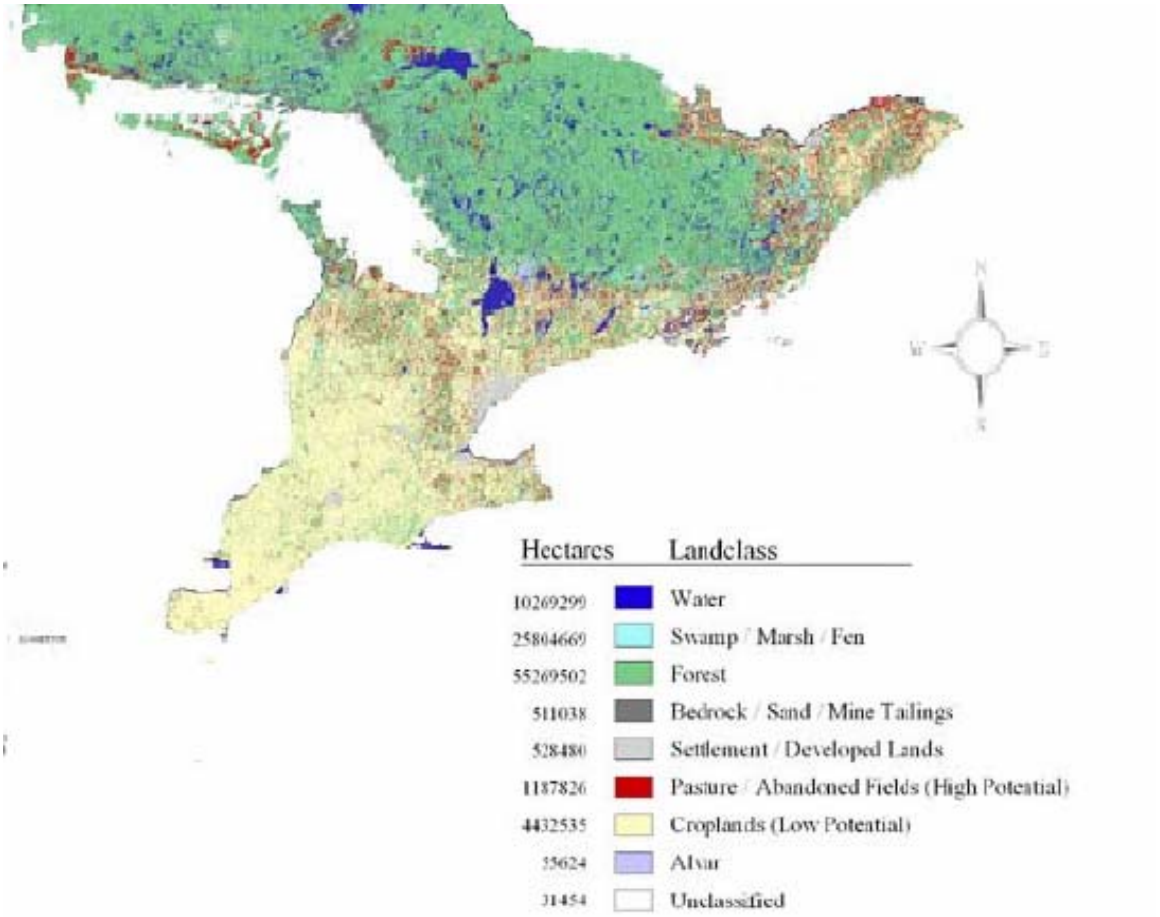

Figure 3: Afforestation Potential for Ontario (Bird 2002) [4]

[4] The data for this map is from the Ontario Ministry of Natural Resources Database (Ontario Landcover 2000). It is meant to be used for illustrative purposes only. This map may not be to scale as a result of multiple reproductions.

Table 1: Summary of Current Afforestation Programs and Initiatives on Private Lands in Ontario (Allen 2003)

Program or Initiative	Lead Agency	Objectives / Key Features	Accomplishments	Comments
Agro-forestry Programs	Ontario Ministry of Agriculture & Food	Supporting role for various industries – encouraging tree and farm crop mixtures	# of trees planted not available - see Nut Tree Industry & Maple Orchards	Targets landowners
Carbon Sequestration & Biodiversity Management Program	Ontario Power Generation	Biodiversity conservation / enhancement and carbon sequestration	450 hectares with 1,000,000 trees planted since 2000	Targets landowners and communities; duration 2000 - 2007
Conservation Authority Afforestation Programs	Most Conservation Authorities in Ontario	Watershed protection	Over 30 million trees planted since inception of CA's	Targets landowners and CA lands - subsidies and cost sharing programs
Eco-Action Community Funding Program	Environment Canada	Small scale naturalization	Number of trees planted not available	Community-based non-profit groups and organizations.
FAACS: Feasibility Assessment of Afforestation for Carbon Sequestration	Natural Resources Canada, Canadian Forest Service	Informing national policy exercise to determine if afforestation can contribute to Canada's Kyoto commitments	Assessing incentives through 5 national pilot areas, collecting historical data, & modeling carbon sequestration potential	Feasibility for policy development to be complete by March 2005
Forest 2020	Canadian Council of Forest Ministers	Conservation, IFM, fibre and carbon sequestration	Information gathering stage	Final stages, demo sights likely to be established in 2004
Great Lakes Sustainability Funding Program	Environment Canada	Habitat rehabilitation and watershed stewardship	Number of trees planted not available	$6 million annually for 5 years
Greencover Program	Agriculture Canada	Shelterbelts and permanent cover	No planting to date, anticipated planting beginning in 2004	Targets landowners, 5 years in duration
Land Reclamation Program	City of Greater Sudbury	To re-establish cover on fume-killed land area in Sudbury	3300 hectares limed and 723,000 seedlings planted from 1979-2001	Continue indefinitely, subject to funding
Maple Orchards	Ontario Maple Syrup Producers Association	Advice regarding establishing and maintaining an orchard	Estimated 30, 000 trees planted in past 10 years	Targets landowners and woodlots
Nut Tree Industry	Society of Ontario Nut Growers	Economic benefits, enhance wildlife and improve diversity of nut trees	Estimated 1000 hectares established in past 10 years	Targets landowners and industry
Ontario Environmental Farm Plan	Ontario Soil & Crop Improvement Association	Expected benefits include erosion control; stream, ditch, flood plain management; woodlands and wildlife	$10.3 million has been awarded through incentives to date	Provides $1500 grant per landowner and is based on their farm plan rating
Stewardship Councils	OMNR and Partners	Small-scale programs (education, awareness, afforestation focus) with specific local objectives developed by council members	400, 000 trees planted since 1996	Targets landowners and community groups
Tree Canada, Green Streets Canada and Greening Canada's School Grounds	Tree Canada Foundation	Encourage planting and care for trees in urban areas to help reduce effects CO_2	75 million trees planted across Canada in past 10 years	Education, technical assistance, and financial support through partnerships
Trees Ontario Foundation	Ontario Forestry Association	Business model to encourage/re-establish plantations on idle private farmlands	Program under development; target is to plant 5000 hectares or 10 million trees/year for 10 years	Provide support for community tree planting programs
Wetland Habitat Fund	Wildlife Habitat Canada, OMNR	Improve the ecological integrity of wetlands	Number of trees planted not available	Provides landowners with financial assistance

Figure 4: Private Land Ownership in Ontario (Boysen 2001) [5]

2.4 The Influence of Kyoto

Canada's commitment to reducing atmospheric greenhouse gases (GHGs) enhances the benefits of tree planting. The carbon market specifically brings an unprecedented benefit in that for the first time there is potential to profit, through the trading of offset carbon credits, from increasing and maintaining forest cover. An offset carbon credit can be defined as a credit issued following review and validation of an eligible project and based on verification of the net carbon sequestration or emission reductions. Carbon credits are quantified in units of tonnes of CO_2 equivalent, i.e. CO_2e. It is expected that rules for project eligibility and validation, and for verification and issuance of credits, will be established by a domestic offset trading system. The offset system will award offset carbon credits for verified emissions reductions or removals by eligible projects during the first commitment period. Participation in an offset trading system is voluntary. For more information please refer to Appendix VI, which contains Tony Rotherham's (2003) short paper entitled "A Short Explanation of the Role of Canadian Forests in achieving GHG Emissions Reductions under the Kyoto Protocol".

In today's society investments are not made in the absence of some tangible form of future return, explaining the difficulty in securing funding for private land tree planting. The onset of Kyoto and the global carbon market provide the needed return to secure investment in activities such as afforestation. Across the country, there are several afforestation programs underway that have been initiated by industrial players to offset GHG emissions; examples include Ontario Power Generation and Alberta Pacific Forest Industries. There are also numerous efforts on the part of the federal government to assess, on many different levels, the feasibility of a private land afforestation program for carbon sequestration. These efforts include FAACS and Forest 2020.

Forest 2020 is a federal initiative; it was developed by the Canadian Council of Forest Ministers in 1999. Its primary goal is to increase wood fibre production through the establishment of plantations composed of fast growing species (CCFM 2003). The plan fits with the goals of Canada's Climate Change Action Plan to use high yield forest plantations for carbon storage in the first commitment period of Kyoto (Natural Resources Canada 2003). A contribution of $20 million was recently announced for the Forest 2020 Plantation Demonstration and Assessment initiative (*ibid*). It is intended that the government take responsibility for the start-up costs to implement Forest 2020; this is regarded as the responsibility of the public sector. In time, however, industry and the private sector are expected to take ownership of the program and fulfill future responsibilities (Anon. 2002). The information that has been collected through FAACS is being used in the development and implementation of the Forest 2020 initiative. The Canadian Forest Service is testing, among other things, delivery mechanisms for these trial plantations. The CFS has developed a partnership with the Trees Ontario Foundation under which Trees Ontario will act as the delivery agent for a portion of the demonstration plantations in Ontario. For more information regarding the Trees Ontario program, please refer to the "Trees Ontario Market Analysis and Business Plan" by Rob Keen (2002).

[5] The data for this map is from the Ontario Ministry of Natural Resources Database (1998). It is meant to be used for illustrative purposes only. This map may not be to scale as a result of multiple reproductions.

It has been shown that Ontario has an important history with respect to tree planting on private lands and that past programs were successful. Despite the changing values and attitudes of the society and the government, there is still significant interest in afforesting private lands. Small-scale programs are providing incentives for landowners to participate in tree planting activities, but these programs are constrained by their small size and lack the capacity to maintain historical planting levels. These programs are also constrained by a lack of government commitment. Policies should reflect the importance of environmental activities such as afforestation. The bottom line is that there has been and still is a lack of understanding for the importance of increasing tree cover on a developed landscape such as that of southern Ontario. This lack of understanding is on the part of the government and society. From the government side this is seen through environmental policy development and through taxation procedures. As for society, this is and has been evident, mostly in an urban setting, from the lack of connection between the land we live on and the lifestyles we lead. Paul Aird (1980) summarized this situation well in saying:

> "*There is a crisis of understanding about the importance of maintaining forest productivity of private lands. An essential first step is to elevate private-land forestry to a position equivalent to agriculture with respect to political, environmental, social, and economic support.*"

In Ontario, this "crisis of understanding" still exists. Since 1980 the province has seen many afforestation programs come and go, therefore the main focus before attempting a new program should be to remedy this existing "crisis of understanding". Presently the province is at a fork in the road with respect to afforestation. Political commitments have been made to the environment, and in turn afforestation on private land, by ratifying the Kyoto Protocol. Positive initiatives have been developed as a result. However, there are deficiencies within government policy that prevent full support of these initiatives. These deficiencies, or policy barriers, act as disincentives to afforestation and will hinder the success of any new afforestation initiative. It is important now to develop methods to overcome these barriers in order to develop an effective afforestation program. Kyoto is providing the positive momentum needed to accomplish this.

3.0 Policy Barriers Focus Session: Establishment of Significant Barriers and Related Action Items

It has been widely accepted that there are barriers to private land afforestation and that these barriers must be overcome to ensure the successful implementation of a new private land afforestation initiative (Balsillie 2003; Boysen & Chapeskie 2003; Graham 2003; Grant 2003; Grillmayer 2003; Bird 2001). It is necessary to determine the most significant barriers in order to develop a set of relevant action items for overcoming policy barriers. Both the significant barriers and the set of relevant action items should be determined with input from a wide variety of interested parties and stakeholders involved in private land afforestation. It is also necessary to make clear the importance and urgency of overcoming the barriers. This was achieved through a focus session this fall entitled "Policy Barriers to Afforestation in Ontario"[6] which was organized and carried out by the FAACS initiative. This session is the driver for the Policy Barriers Assessment portion of FAACS and forms the basis for the remaining information presented in this report. The intention of the focus session was to get feedback from a wide variety of interested groups and individuals and to transfer this into tangible recommendations.

The goal of the session was to identify the most significant barriers to private land afforestation and to determine strategies to overcome these barriers. Secondary to this was to determine options for program and incentive building, synergies, and partnerships. This portion was not discussed at much length because the attendees are in support of the Trees Ontario Program that will fill this role. About 40 people attended the session representing a wide variety of groups and organizations with an interest in private land afforestation[7]. Appendix I shows a list of the focus session attendees.

[6] The "Policy Barriers to Afforestation in Ontario" Focus Session was held on November 5th, 2003 in Coburg, Ontario.
[7] This refers to anyone with a vested interest or with an involvement in afforestation program delivery or related policy development. This includes; landowners, representatives of forestry and agriculture associations, Conservation Authorities, Stewardship Councils, the Canadian Forest Service, the Ministry of Natural Resources, the Ministry of Agriculture and Food, consultants, etc.

The morning session was made up of presentations to bring participants up to speed on existing initiatives and related developments (see Appendix II for a detailed focus session agenda and Appendix III for the presentations).

Part 1 provided background information on climate change and afforestation.

- Russ Powell of the Central Lake Ontario Conservation Authority chaired the session and he gave the opening comments which summed up the complications surrounding afforestation over the past 40 years.
- Steve Dominy of the Canadian Forest Service outlined the role of afforestation in meeting Canada's Kyoto commitments. He detailed the basics of climate change and Kyoto and gave some relevant definitions.
- Darren Allen of the Canadian Forest Service and Sharleen Hawco of the Eastern Ontario Model Forest outlined the FAACS initiative. Darren concentrated on FAACS at a national level whereas Sharleen discussed the EOMF's role in the FAACS initiative.

Part 2 provided information on new initiatives and new developments in existing afforestation programs.

- David Balisillie then presented the latest developments at the Trees Ontario Foundation. He concentrated on the need for championing the importance of afforestation to government officials at all levels. He outlined the importance of increasing tree cover in Ontario as well as stating some significant policy barriers to afforestation such as; taxation, funding, and political will.
- Darren Allen presented an overview of Forest 2020; outlining the key principles of the initiative as well as the present stage of development. Darren and David each made reference to the partnership that has been formed between Forest 2020 and Trees Ontario.
- Rick Grillmayer of the Nottawasaga Conservation Authority then discussed the role of the Conservation Authorities in afforestation efforts. He outlined the barriers to afforestation as being the lack of funding, landowner confusion over multitude of programs available, and seed and stock availability. He made clear that the seed and stock problem is the most significant barrier to any afforestation program in the province.
- Carla Grant of the Ontario Forestry Association then discussed the Managed Forest Tax Incentive Program (MFTIP). She outlined the new valuation procedures of the Municipal Property Assessment Corporation (MPAC) and discussed efforts that are underway to remedy the problems with the taxation of forested land in Ontario.
- Dave Chapeskie of the Ontario Ministry of Agriculture and Food (OMAF) and Barb Boysen of the Ontario Ministry of Natural Resources (OMNR) gave a joint presentation on OMAF/OMNR afforestation directions. Past and present efforts of each ministry were discussed as well as their respective policy directions.
- Andy Graham of the Ontario Soil and Crop Improvement Association presented the Greencover Program for Ontario. He outlined all the relevant details surrounding objectives, application, funding, and eligibility for the program. He indicated 2 significant barriers to private land planting under the Greencover Program; the issue of revenue lost by converting farm land to forest land, and the low availability of desired tree species.

The presentations in Part 3 acted as an introduction to the afternoon's facilitated sessions.

- Martha Copestake of the University of Toronto and an intern with the FAACS initiative through the Eastern Ontario Model Forest discussed the goals of the afternoon session in terms of discussion topics. She also outlined the importance of afforestation and of overcoming the existing policy barriers to afforestation.
- Rory Gilsenan, a consultant who has done policy work for the FAACS initiative at a national level discussed incentives to afforestation. He concentrated on the pros and cons of different incentive types. He made use of case studies from around the world.
- Neil Bird of Woodrising Consulting Inc. presented his report on barriers to afforestation in Ontario. He concentrated on available land with respect to land cover and possible incentives. He discussed potential returns from afforestation for carbon sequestration under the Kyoto Protocol. He concluded that important issues to discuss are policy development, stock availability, and delivery mechanisms.

After these presentations, which set the tone for the afternoon's discussions, a series of group information sessions were facilitated to gather ideas based on the session goals. This started with a full group brainstorming session to come up with a list of any and all barriers to afforestation; these ideas could be in the form of disincentives, existing programs, or attitudes in any sector. This brainstorming method is referred to as the Open Space Technique and it is

generally used to engage a group in the relevant topic and to develop the context of the session as a whole (Evers 2003). Close to 25 barriers were indicated by the group. The barriers were then posted around the room, the participants were allotted 30 points each and were asked to rate the barriers in order to indicate the most significant. The highest rated barriers were deemed the most important to address. This method allowed the attendees to place priority on the ideas given the context of the session (Evers 2003). Six barriers were identified as the most significant in terms of the development and success of a new private land afforestation program. From there a small group interviewing process was used which permitted each participant to outline their views for overcoming each of the 6 most significant barriers. Groups of 6 were formed, where each person was responsible for interviewing on a different barrier. This technique permits all members of the group to give suggestions on each relevant idea, in this case giving suggestions on methods to overcome each significant barrier. Groups were then formed of people responsible for like barriers and the information gathered in the interviews was discussed and summarized to create action items for each barrier. Finally, the action items were presented to the large group and there was time for group commentary.

4.0 Policy Barriers

Close to 25 barriers were identified in total, and of these, 6 were deemed to be the most significant. These 6 barriers formed the basis for the interviews and the developed action items. Appendix IV contains a list of all identified barriers. The most significant barriers are outlined as follows:

4.1 Barrier 1: Government Commitment

There is a proven lack of commitment from the Ontario government towards private land afforestation. This is seen in the halting of the majority of governmental financial support for tree planting in the mid 1990's in the province. This is affecting the afforestation initiative because, as indicated earlier, the private sector has not picked up the slack left by the government. Support is needed in terms of funding, policy development, and leadership on environmental issues. It is also important to note that environmental problems and the related efforts to resolve them are long term. Therefore, government commitments regarding the environment should be long term as well. However, government commitments should not be expected to last longer than 5 years as power changes will undoubtedly bring policy changes. The commitment needed by the government must be long term and mechanisms must be created to reflect this need within the context of the environment. In addition, the commitment that is required by the government is in terms of leadership and support through both policy development and funding.

4.2 Barrier 2: Unfair Taxation

There is presently an unfair taxation procedure for forested land in comparison with agriculture land. This is acting as a disincentive for afforestation on private lands. The Municipal Property Assessment Corporation (MPAC) has recently changed their land valuation method for forested lands in Ontario. The change in valuation has increased the value of forested lands hence significantly raising the taxes on privately owned forested land in the province. The lowered tax rates that were provided through the Managed Forest Tax Incentive Program (MFTIP) are now not low enough to act as an incentive to maintain or create forest land as originally intended (OFA 2003). MFTIP is a voluntary program that provides lower property taxes to participating landowners that agree to conserve and actively manage their forests (OMNR 2003). Qualifying forested lands (excluding residences) are reassessed, classified as managed forests, and taxed at 25% of the residential tax rate. This provides savings to the landowner on two levels; in the decrease in assessment value and in the deceased tax rate. MFTIP is an important program because it is the only program in the province that provides financial incentive for maintaining and managing forested land. As well, MFTIP should act as one of the incentives to afforest marginal crop land. The most important point of this incentive is that it was intended to act in the same way that the farm tax program works. The forested property was to be assessed based on the "current use value". The "current use value" is based, in the agricultural case, on farmer to farmer sales. Therefore, in the managed forest case, it should be based on forest manager to forest manager sales. This method is indicated in the Ministry of Finance's *Assessment Act, 1990* which stipulates that managed forest properties shall be assessed "based only on the current use of the land and not other uses to which the land could be put" (Ontario Ministry of Finance 1990). Regardless, MPAC is using a "current market value assessment" for forested properties; farmland rates will not be applied to any managed forest property. With this method, the value is

based on a sales comparison of the highest valued use for a given tract of land. The resulting land tax increases diminish and, in some cases, nullify the intended MFTIP incentive.

This assessment method has many repercussions, for instance: it can act as a disincentive to participate in MFTIP; it can act as a disincentive for farmers to convert marginal land to forested land because of the associated tax increase; and it renders current forested land vulnerable to fragmentation and development. Government policy is not connecting on this issue; MFTIP was started by the Ministry of Natural Resources to promote the maintenance of tree cover, the Ministry of Finance's Assessment Act supports this, but MPAC is operating under a different set of principles – perhaps because of pressures from municipalities. Environmental policy must transcend the boundaries of all government sectors and levels. Taxation procedures for forested lands must be equivalent to those of farm lands in order for landowners to begin considering the conversion of marginal croplands to forest (afforestation).

4.3 Barrier 3: Municipal Planning Objectives

It was identified that there is a lack of recognition in municipal planning for afforestation, the maintenance of greenspaces, and the associated benefits such as water quality improvement. A current example of this is the Oak Ridges Moraine; the municipalities are supporting development over and above environmental considerations despite the environmental degradation history lesson they have in their own backyard. This issue is also closely related to the taxation problem in that it has been noted that MPAC's forested lands assessment shift is a result of pressures by the municipalities for more tax dollars (OFA 2003). Development is more attractive to a municipality than forests because of the significant associated return. It is important for municipal planners to show leadership with environmental activities and by using sound environmental methods because of their close association with the public. In addition, the benefits of afforestation will be closely tied to the community providing for community education on the important role of trees in their environment. Municipal Planning objectives must include the further creation of greenspaces through afforestation.

4.4 Barrier 4: Seed & Stock Availability

Presently, in Ontario there is a seed and stock availability crisis. As mentioned earlier, the closure of the provincial nurseries in 1996 put a lot of pressure on private nurseries in that they became entirely responsible for provincial seedling production. The private nurseries do not have the capacity to operate in the same manner as the provincial nurseries could. To put this into context; private nurseries are not operating at capacity, but they cannot increase their production until they have guaranteed purchasers, which cannot be secured until a tree planting program is underway where long term commitments can be made by a delivery agent to the nurseries (Boysen 2003a). In addition, the government's Ontario Tree Seed Plant (OTSP) now also operates on a cost recovery basis (*ibid*). This is a facility that collects, processes, and stores seed. Because tree planting efforts now are on a smaller scale than historical levels, the OTSP's collection and storage is waning. And of course, they too can only increase their capacity with long term commitments from purchasers. This crisis is also related to increased recognition for the need to use zone specific seed to produce stock (Boysen 2003a). A species' seed production in a certain zone obviously cannot relate to the seed demand in that given zone. Therefore it is difficult to predict seed availability for a given zone. The result of all this is that the province is deficient in appropriate seed and stock for many areas. The CFS is doing work on quantifying the seed and stock deficiencies within the Forest 2020 Plantation Demonstration and Assessment Initiative.

4.5 Barrier 5: Compensation for Positive Environmental Externalities

By increasing the amount of forest cover on their land, the owner is providing an important environmental service to society as a whole. However, the owner is responsible for the full cost of this service. Landowners must be compensated to some degree for the positive environmental services they are providing. It is necessary to determine how society can share the cost of tree establishment with the landowner. Shared costs would act as an incentive for landowner participation in an afforestation initiative. Societal recognition for the important role that trees play in our environment is required. This will result in acceptance of cost sharing for environmental services. An example of how society could share the costs is through lowered taxation rates for forested lands. This method of cost sharing will, however, only affect rural municipalities. It is necessary to come up with a mechanism to share the cost between rural and urban municipalities.

4.6 Barrier 6: Social Values for the Environment

Presently, society is lacking clear land use ethic, meaning that there is a lack of public civic duty and values with respect to the environment. By rekindling a civic sense of duty with respect to the environment, activities such as afforestation will be highly respected and their importance will be recognized. Benefits of this would include; change in societal values and a resulting change in government values as well as an acceptance to pay for beneficial environmental services. This will require a paradigm shift for not only citizens, but also for municipalities and the provincial government. Barriers 5 and 6 are related in that they refer to lacking public responsibility for their surrounding landscapes and ecosystems.

5.0 Overcoming Policy Barriers

To overcome each of the significant barriers, a set of action items were developed. These action items are targeted at governments and their relevant policies. It is hoped that this will create awareness, in the government, of the options available and the actions necessary. In turn, policy changes and adaptations can be made in favour of afforestation. Each barrier has an associated set of action items, but because of the overlap in the issues surrounding the barriers, there was also overlap in the action items. The extensive list of action items has been summarized in order to outline the most important ideas and details. Appendix V gives the focus session notes for each barrier with the detailed lists of related action items. The following list summarizes the most relevant action items; each one is detailed in the paragraphs below:

- Public Education
- Secure a "Champion of the Cause" within government
- Establish a long term work plan to drive a long term mandate
- Creation of a centralized agency – Trees Ontario
- Recognize the value that the resource provides to society and create incentives based on that
    - Tax Incentives
    - Program Incentives
- Equitable tax treatment for forest land and farm land

In our society, public education regarding the environment is highly needed. Social recognition for the important role that trees play on our landscape, as well as the benefits that trees provide in our economy, will aid afforestation initiatives on many different levels. Environmental education should infiltrate society at all levels; from primary school through to our government leaders. The school system should include an environmental component in each year. Successful education would result in a society that places a higher value on natural resources, in other words a society with a land use ethic. In turn our government and their decisions would reflect society's values.

A "champion of the cause" should be secured both within each relevant branch of all levels of the government as well as outside of the government. The idea is that the "champions" can promote important ideas in their branch and push policy changes in favour of these ideas. This will ensure that the benefits, goals, and policy needs of private land afforestation are continuously reiterated in policy making and decision making within the governments. E.C. Drury's premiership and his related legacies in afforestation prove that this can be successful. Another example is Councillor Joe Pantalone in the City of Toronto; he is the tree advocate for the city and his recognition for improving the urban forest along with his related stamina on the issue has resulted in the planting of a significant amount of trees throughout the city.

The idea to establish a long term work term in order to drive a long term mandate is related to how securing long term commitment from the government can be achieved. This is difficult because when it comes down to it any government funded programs can only be expected to have at maximum a 5 year life. A long term vision for the environment must be developed which includes the importance of increasing tree cover. Ideas discussed involved the creation of crown agency for the environment that could implement and monitor long term work plans. This would provide the continuum that the government has not provided and it would create the pressure needed to operate within a long term vision. Also suggested, was the creation of bilateral agreements between provinces on

environmental issues which would ensure a necessary commitment continuation when governments change. Another strategy is to link policies to longer term political issues such as; climate change, economic stability, or clean water.

There is a need to develop a centralized agency to deliver afforestation programs. This is related to the seed and stock issue specifically as it will help in estimating demand, organizing the orders, and providing the needed resources. A central agency will also provide greater capacity to smaller organizations running planting programs, such as Conservation Authorities. This will help by increasing efficiency and allowing the organizations to concentrate on landowner communications and on the ground activities rather than administration type details. The Trees Ontario program has been widely accepted as a delivery agent for any new afforestation program.

Again, there must be recognition, by the government and society, for the value that afforestation provides to society. This can be done through the creation of tax and program incentives. Some examples include; tax exemption for purchases related to forest management, per hectare monetary incentives for land planted, and the maintenance and improvement of the Managed Forest Tax Incentive Program (MFTIP).

Lastly, fundamental to the success of any new afforestation program is equitable tax treatment for forested land in comparison to farm land. Forested land must be treated, at the very least, the same as farm land in land value assessments. The government and their related agencies (MPAC) should be acting as per their legislation on this. The assessment procedures must be changed to reflect the assessment act. In addition; coordination should be fostered between the Ministry of Finance, MPAC, OMNR, OMAF, and the municipalities to avoid this type of oversight.

6.0 Conclusions

Afforestation levels in Ontario have been decreasing for close to 10 years. There is a new concentration on afforestation as a result of Canada's ratification of the Kyoto Protocol. New afforestation initiatives are underway. However, the problems that have hindered planting programs in recent history still exist. In order for any new afforestation initiatives to be successful these problems must be solved. A larger-scale private land tree planting program is needed in Ontario. With the momentum provided by Kyoto, concentration must be put on solving these problems. The problems are in the form of barriers created by government policy that does not support or integrate with environmental efforts, such as afforestation. Barriers are also created by social values, specifically the lack of social valuation for the environment and related activities to sustain a healthy landscape. Government support and leadership through policy development is important. This document outlines the most significant barriers that exist to implementing a private land afforestation program. To initiate positive policy changes that will work towards overcoming these barriers, action items have been outlined. These action items focus on increasing the support of the government and of society for the importance of increasing the forested area of our landscape. This is a two way street. Strong governmental support will initiate the creation and modification of policies to work towards a long term vision of a healthy environment. Strong public support has the potential to raise the priority of the environment in the government agenda, in turn creating the kind of long term commitment needed. Creation of widespread awareness for any issue leaves no choice but to act.

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Appendix I: Focus Session Attendees

First Name	Last Name	Organization
Darren	Allen	Canadian Forest Service
Dave	Ashworth	Earthgen International
David	Balsillie	University of Toronto, Trees Ontario Foundation
Brian	Barkley	Eastern Ontario Model Forest
Neil	Bird	Woodrising Consultants Ltd.
Barb	Boysen	Forest Gene Conservation Association
Marshall	Buchanan	Private Consultant
Don	Busch	Northumberland Stewardship Council
Nicole	Carter	Conservation Ontario
Dave	Chapeskie	Ontario Ministry of Agriculture and Food
Martha	Copestake	University of Toronto
Earl	Dertinger	Ministry of Natural Resources
Steve	Dominy	Canadian Forest Service
Ron	Evers	Ministry of Natural Resources
Bill	Gaines	Conservation Halton
Jim	Gilmour	EOMF
Rory	Gilsenan	Private Consultant
Andy	Graham	Ontario Soil and Crop Association
Carla	Grant	Ontario Forestry Association
Rick	Grillmayer	Nottawasaga Valley Conservation Authority
Sharleen	Hawco	EOMF
Wade	Knight	Ontario Woodlot Association
Anne	Koven	Trees Ontario Foundation
Bohdan	Kowalyk	Ministry of Natural Resources
Adam	Koziol	Earthgen International
Doris	Krahn	Ministry of Natural Resources
Heather	Kuntz	Ontario Ministry of Agriculture and Food
Don	Lauzon	North Sun Nurseries Inc.
Andy	Margetson	Ontario Wetland Habitat Fund
Glenn	McLeod	Northumberland Stewardship Council
John	Osmok	Ministry of Natural Resources
Stephen	Pearce	Ministry of Natural Resources
Pete	Petrie	North Sun Nurseries Inc.
Russ	Powell	Central Lake Ontario Conservation Authority
Dave	Puttock	Silv-Econ Ltd.
Janet	Shuh	Ontario Ministry of Agriculture and Food
Wayne	Smith	WayDa Gro Forestry Services
Dave	Taylor	Lands and Forest Consulting
Naresh	Thevathasan	Dept. Of Environmental Biology, University of Guelph
Tim	Trustham	Quinte Conservation Authority
Bill	Wensley	Northumberland Stewardship Council

Appendix II: Policy Barriers Focus Session Agenda

– FAACS Fall Focus Sessions –
Establishing New Forests to Address Kyoto

Barriers to Afforestation in Ontario

Nov 5, 2003, 9am to 4pm, Dalewood Golf & Curling Club, 7465 Dale Rd, Cobourg, ON

Goal of Session:

- To identify the biggest barriers to implementing afforestation programs in Ontario and to determine strategies to tackle these barriers.
- To investigate realistic options for a potential multi-agency provincial afforestation program.
- To investigate potential and present policy, tax or regulatory barriers, incentives, and program synergies.
- To determine how best to build upon existing programs and extend program partnerships in order to develop options for the implementation and framework development of a potential afforestation program that will meet the needs of landowners.

Audience: Those involved in the implementation of afforestation programs or policy in the forestry and agriculture sectors with strong links to landowners.

Partners for this session include: Canadian Forest Service, Conservation Ontario, Eastern Ontario Model Forest, Ontario Ministry of Agriculture and Rural Affairs, Ontario Ministry of Natural Resources, Ontario Woodlot Association, Trees Ontario Foundation and others.

Agenda:

Part I: 9:00 – 9:35am, Backgrounder in Climate Change and Afforestation

Welcome and Opening Comments from the Chair: Goals of the session, value of session to initiate change.	R. Powell, Central Lake Ontario CA
Climate Change Background Information: CFS / Canadian made solution • Kyoto Protocol - Canada's commitment and the Role of Afforestation	S. Dominy, CFS
FAACS initiative, National Overview and Ontario Pilot	D. Allen, CFS S. Hawco, EOMF

Part II: 9:35am – 12:00pm, New Initiatives and New Developments in Existing Afforestation Programs

Trees Ontario Foundation: Latest Developments and Potential Barriers	D. Balsillie TOF
Forest 2020	D. Allen, CFS
Conservation Authorities: Updates and Barriers	R.Grillmayer, NVCA
Managed Forest Tax Incentive Program: Updates and Program Barriers	C. Grant, OFA
OMAF and MNR Provincial perspective: Update & Barriers to a provincial Afforestation program	D.Chapeskie, OMAF B. Boysen , MNR
GreenCover: Update and Barriers to implementing GreenCover in Ontario	A. Graham, OSCIA

Part III: 12:30 – 4pm, FACILITATION OF IDEAS – Overcoming Barriers and Building Partnerships

Report on Policy Barriers to Afforestation: • Setting the stage for the discussion: programs versus social issues and incentives/disincentives	M.Copestake, Uof T R. Gilsenan, CFS
Barriers to Afforestation	N. Bird, Woodrising Consulting Inc.
Facilitated Discovery Sessions 1. Options for program and incentive building, synergies, and partnerships 2. Overcoming existing barriers and disincentives 3. Options for overcoming social issues	Facilitator R. Evers, MNR
Wrap Up: Summary and conclusions from the session and Next Steps	R. Powell , CLOCA

Appendix III: Summary of Presentations from Policy Barrier Focus Session

The Role of Afforestation in Meeting Canada's Kyoto Commitments

Steve Dominy, R.P.F, Canadian Forest Service

What is Climate Change?

- " Any change in climate due to natural variability or as a result of human activity "(IPCC 1995)
- "Changes in greenhouse gases [CO2] and aerosols, taken together, are projected to lead to… changes in temperature, precipitation, and other climate variables…"(IPCC 1998)

Kyoto Accord Basics

- Kyoto Protocol (1997)
  - requires Canada to reduce greenhouse gas emissions by 6% below the 1990 level by 2008-12
  - established international emissions trading
  - allows certain carbon sink/source activities to be included in the accounting
- Marrakesh Accord (Nov. 2001)
  - elaborated detailed rules for the Protocol
  - includes definitions and accounting rules for forest sinks/sources for first commitment period (2008-12)

Definition of a "Kyoto" Forest

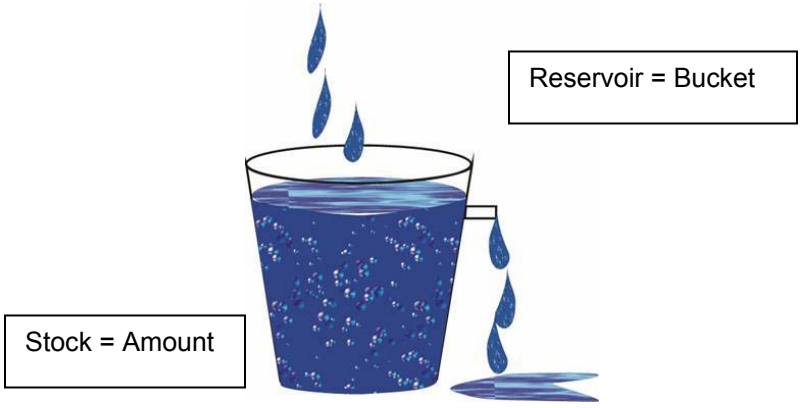
- A minimum area of land of {0.05 to 1.0} ha with tree crown cover (or equivalent stocking level) of more than {10 to 30} percent with trees having the potential to reach a minimum height of {2 to 5} metres at maturity.

ARD Definitions

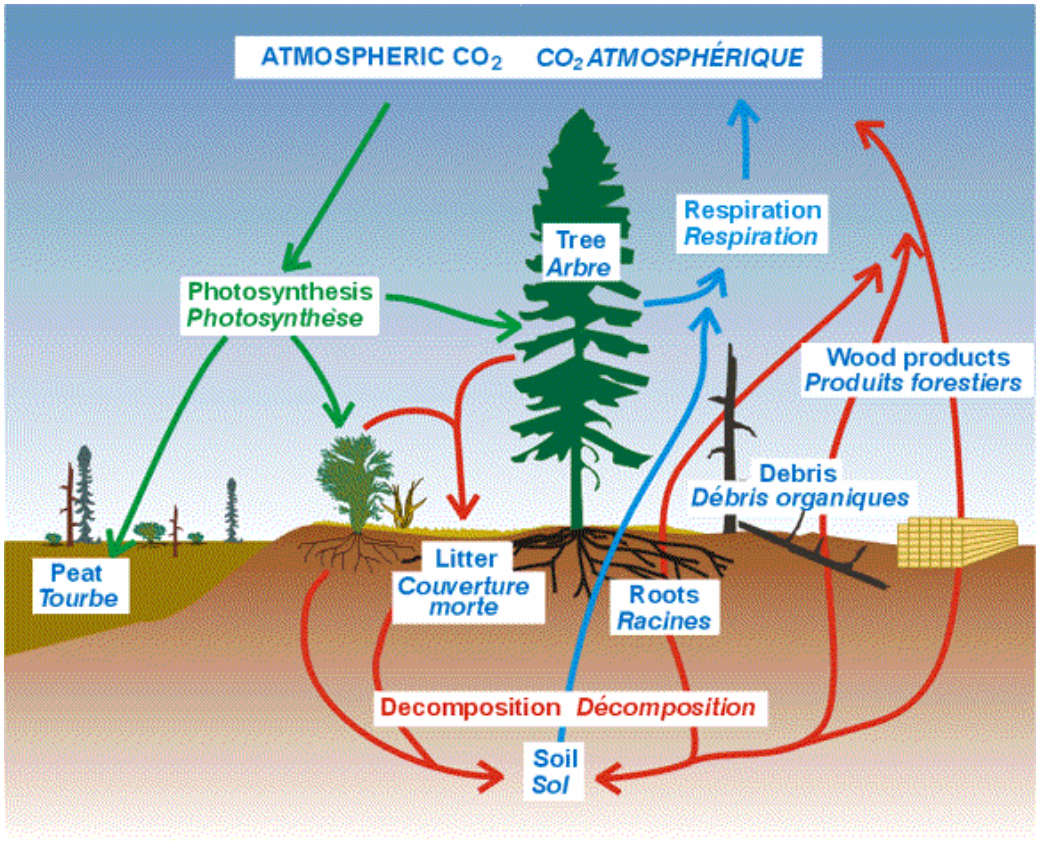
- *Afforestation (A),* is the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources
- *Reforestation (R),* is the direct human-induced conversion of non-forested land to forested land, on land that was previously forested. For the first commitment period, activities will be limited to reforestation occurring on those lands that did not contain forest on December 31, 1989.
- *Deforestation (D),* is the direct human-induced conversion of forested land to non-forested land

Sink vs. Source Terminology

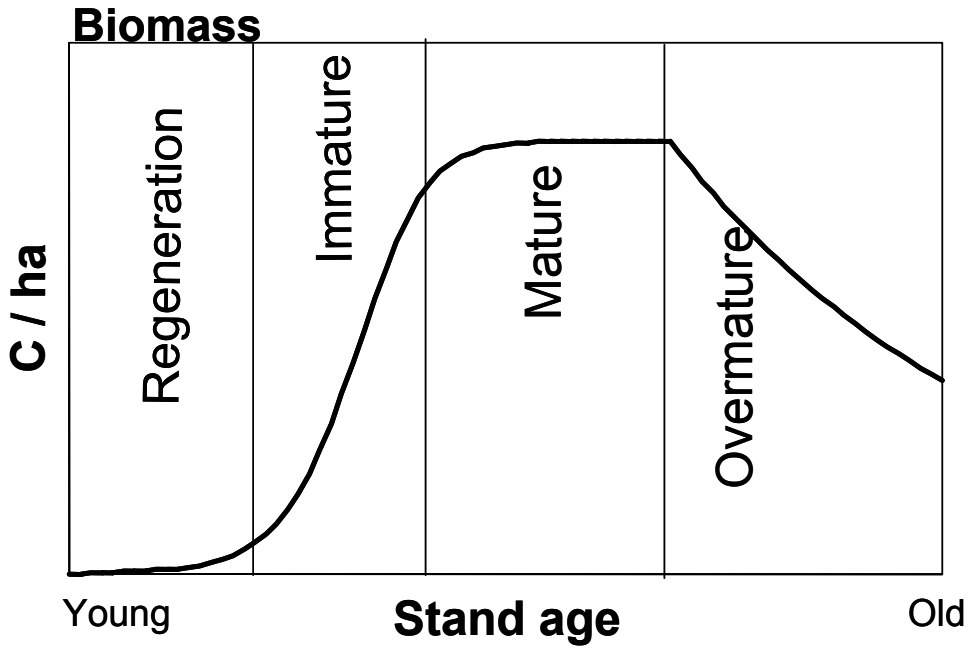
- Sink: a stock which is increasing, removing GHGs from the atmosphere. Examples: trees, peat, landfills, wood products, soils…
- Source: a stock which is decreasing, venting GHGs to the atmosphere
- Reservoir: A place where a greenhouse gas is stored. Can be a sink, a source, or neutral.



Forest Carbon Basics



Carbon Sequestration and Tree Age



The Role of New Forests in Canada

- Can be viewed as <u>one part</u> of the solution to slowing climate change and reducing pressure on natural forests
- Can be considered an interim (stop gap) measure to meeting Kyoto commitments, until source reduction actions implemented

- Management objectives, site factors, regional forest landscape ecology, and socio-economic aspects must be considered

Summary

- Climate change is predicted to effect significant impacts on Canada's forests
- Plantations (new forests) can play a role in addressing Kyoto, providing new wood fibre sources, and benefiting forest conservation
- If planned and carried out properly, the establishment of new forests on presently-bare lands can also increase biodiversity and habitat, and serve to restore permanent forest cover in the longer-term
- Landowner management objectives must be considered in designing an afforestation program

Feasibility Assessment of Afforestation for Carbon Sequestration (FAACS)

Darren Allen, Forestry Specialist – Afforestation, Canadian Forest Service, Great Lakes Forestry Centre
& Sharleen Hawco, Project Coordinator, FAACS - Eastern Ontario Pilot, Eastern Ontario Model Forest

Background to FAACS

- Oct. 2000 announcement of "Government of Canada Action Plan 2000 on Climate Change"
- $500 million investment over five years on specific measures that reduce greenhouse gases (GHG)
- Targets key sectors, i.e., Transportation, Energy, Industry, Buildings, Agricultural and Forestry
- Aimed at possibly helping Canada achieve one-third of its Kyoto Protocol emission reduction target during 2008-2012 commitment period
- Includes forestry component focusing on advancing carbon sequestration opportunities through FAACS initiative
- Forestry activities such as afforestation, reforestation, and deforestation (ARD) are presently included in the Kyoto Protocol under Article 3.3

So, what is FAACS?

- FAACS initiative is a preparatory measure intended to evaluate whether a large national afforestation effort is justifiable and, if so, how to best initiate and support such an effort.
- FAACS considers both the sequestration potential and the cost of implementing a large-scale planting program to increase forest cover in Canada as a cost-effective solution to offset GHG emissions.
- Main focus is to carry out information collection and land assessment research on private lands, as well as develop required carbon measurement and accounting infrastructure to support Canada's Kyoto Protocol reporting requirements

FAACS Goals/Timelines

- Carry out information assessment and evaluate program mechanics to explore a range of options for implementing a large scale national afforestation program
- Establishment of afforestation pilots/trials to assess interest, design, mechanics and feasibility
- Historical afforestation data collected will feed into national afforestation database - to be used to create afforestation module of the CFS Carbon Budget Model (CBM-CFS2)
- Three year timeframe 2001/02 to 2003/04

Projects Under FAACS Initiative

Nationally, under FAACS there are a total of five regional pilots, as well as national projects currently underway across the country, each contributing a regionally developed approach to national policy development in this area.

- Pacific Forestry Centre (PFC) - BC
  - Working with Federation of BC Woodlot Associations to determine the level of interest in afforestation, exchange information and to solicit input from landowners in the Prince George area.

- Northern Forestry Centre (NoFC)- AB, SK, MB
  - Working with the Manitoba Forestry Association to examine current and past tree planting programs, Prairie-wide landowner focus groups to asses their attitudes towards afforestation and to understand the required incentives for the delivery of a successful afforestation program.

- Laurentian Forestry Centre (LFC) - QC
  - With a number of partners from academia, provincial government, demonstration site owners, and other groups are establishing experimental sites for afforestation with hog manure application to solicit interest of regional stakeholders in this unique approach to promote afforestation and to dispose of the animal waste.

- Atlantic Forestry Centre (AFC) - NB, NS, PEI
  - Working in partnership with Nova Scotia Power Inc. to examine the potential for afforestation on private lands along and adjacent to Nova Scotia Power's power line right-of-ways.

- Great Lakes Forestry Centre Ontario (GLFC), Eastern Ontario Pilot Project and Eastern Ontario Model Forest Activities currently underway in Ontario include:
  - **An assessment of historical afforestation since 1990 (CFS, GLFC),**
    - Largely complete (~95%), few data sets being submitted
    - Linkage to relevant growth and yield ongoing
    - Expected completion date March 31, 2004
  - **Completion of a cost/benefit economic afforestation model (Dr. Dan McKenney, CFS, GLFC).**
    - cost/benefit information system that is designed to link the biology and the economics of afforestation for agricultural lands in Canada
    - workshop on draft model to be held November 20-21, 2003
  - **Eastern Ontario Afforestation Pilot Project (EOMF Partners)**
    - Eastern Ontario is comprised 1.5 million hectares and represents the Great Lakes St. Lawrence Forest Region. There are 1 million people in this area. This is "a *settled landscape*", with the landscape characterized as being 34% forested, 23% rural and 88% privately owned.
    - **Objectives of Pilot:**
      - **Design** and **test** potential afforestation scenarios
      - **Maximize early carbon** returns and **minimize planting cost**
      - In consideration of the **management objectives** of the **landowner**
      - Determine **landowner interest** and potential **participation**
      - Determine incentives to **maximize participation**
    - **Key Components**
      - Landowner Incentives Focus Sessions
      - Carbon Credits from Afforestation and Customer Needs Focus Session
      - Detailed look at available lands, socio-economic model
      - Involvement in Carbon Budget Model
      - Link to afforested lands and certification
    - **Next Steps**: Results from all of the sessions will be compiled to support policy development

- **Other national level FAACS initiatives include**:
  - Incentives Review and Assessment, NOFC
  - National Incentives Survey Research - Environics, NCR HQ
  - Co-benefits Research, GLFC/University of Guelph
  - Carbon Accounting Tools, PFC
  - Prototype Afforestation Project Reporting System, PFC
  - Measurement and Monitoring Afforestation Protocols/Guidelines, NoFC
  - Enhancement of Land Suitability Data, NoFC
  - FCM Pilot Series, network of industry projects

Trees Ontario Foundation – Current Activities

David Balsillie, Trees Ontario Foundation / University of Toronto, Faculty of Forestry

Organization

- Trustees: John Cary – President, Rick Monzon and Ken Armson, Looking to add 2-4 more, not yet announced
- Executive Secretary – Anne Koven (present today)
- Executive Director of the OFA – Carla Grant (present today)
- Trees Ontario Steering Committee
  - chaired by Anne Koven and Dick Hunter (Conservation Ontario)
  - members from delivery agents from across the province
  - represents various important sectors with regards to delivery (Conservation Authorities, Nurseries, Government, Model Forests, etc)
  - Business Plan has been developed
  - Ready to undertake tree planting projects

Activities – mainly related to informing and lobbying or championing the cause

- Provincial Government
  - ADM's and Deputies: MNR, MOE, OMAF
  - Minister of Natural Resources / Finance / Finance Management Board
  - Premier's Office
  - PA's – Finance
- Federal Government:
  - PM's office
  - Minister's offices
  - ADM – CFS
  - Agriculture Canada
- Partners:
  - Trees Canada Foundation
  - Ontario Federation of Anglers and Hunters
  - OFIA / FPAC
  - Consultants

Frustration

- Low interest by MNR Minister
- Changing political scene in Ottawa and Toronto

Policy Barriers

- Taxation System
  - Bottom line: Give forested land a 75% TAX BREAK
  - System to parallel taxation program for agricultural land
  - Will enhance the value of forests on private land
  - Carla Grant will discuss MFTIP issues later today
- Funding
  - Deficit in Ontario
  - Forest issues (afforestation) is behind health care and education – both of which are extremely important – big challenge
- Political Will
  - Looking to the new government

- Sending material to the Minister of Natural Resources – David Ramsay – and will follow up with visits
- Seeking to meet with new NRCanada Minister shortly after Martin names his new Cabinet

Get out the message

- Convince all levels of government of the Importance of forests on private lands in Ontario
  - Air and water quality and Water quantity
  - Watershed management
  - Ecosystem quality
  - Importance to rural economy for fiber production, tourism, jobs
  - Wildlife habitat / biodiversity
  - Spiritual and recreational opportunity
  - Sequestration of carbon
  - Personal sense of place

Landowners

- Amorphous group – varied environment across the province
- This afternoon – positive outputs of the break out groups
- Take strong messages to the upcoming 3 landowner sessions

Negotiating Partnership Agreements

- With CFS
- Outlined by Steve and Darren this morning
- Very positive step
- Pilot / demonstration project
- Show to governments / partners / landowners that we are up to the task
- Kyoto Program
  - Get trees in the ground
  - Suitable species on right sites
  - Fast growing
  - Fiber production
  - Carbon sequestration
- Measured on our success
- Spring board to further federal and provincial dollars

Final Thoughts

- Work together, don't get discouraged or frustrated, keep the faith
- Input needed this afternoon, continued commitment needed in the days, weeks, months and ultimately years ahead.
- Trees Ontario is in for the long haul.

Forest 2020 - An Overview

Darren Allen, Forestry Specialist – Afforestation, Canadian Forest Service, Great Lakes Forestry Centre

Forest 2020 Overview

- Policy driver for Forest 2020 is Canadian Council of Forest Ministers
- Promotion of sustainable forest and community development, with the additional concurrent benefit of sequestering carbon

Objectives of Forest 2020

- Conservation
- Community Development
- Intensive Forest Management
- Fibre
- Carbon Sequestration – recent addition

Vision of Forest 2020
- Increase fibre production through establishment of fast-growing tree species on idle farmlands
- Provide level of forest ecosystem conservation that is scientifically ands socially acceptable
- Provide greater community stability and self-sufficiency grounded in wise use of all forest resources
- Promote the use of all forest resources
- Maximize carbon sequestration

Key Principles
- Respect jurisdictional interests
- Involve public and concerned parties
- Opportunities for Aboriginals, woodlot owners, farmers, communities and private sector
- Implementation flexible at local conditions
- Measure and address environmental impacts
- Funding/investment mechanisms to account for conservation and production objectives and investigate role of carbon credits
- Concept compatible with Ontario's Living Legacy Accord objectives (IFM)

Forest 2020 / Greencover Overview
- Announced August 12, 2003 Government of Canada announced details of the investment of over $1 billion towards the implementation of the Climate Change plan for Canada - $20 million
- NRCan, CFS developed Forest 2020 to demonstrate the role fast-growing plantations can have in achieving Canada's climate change goals.
- CFS will also explore, with the financial sector, models and options for sustainable investment opportunities to expand planting of fast-growing trees for both fibre and climate change (carbon sequestration) benefits.

3 Main Elements to Forest 2020 / Greencover
- Establishment of fast-growing demonstration plantations
- Technical support – establishment of regionally relevant establishment and tending guidelines for fast growing forests plantations
- Research into "Vehicle for Investment" – exploration of Canadian made forest plantation derived Kyoto carbon credits

Where we're at in Ontario
- In discussions with Trees Ontario Foundation on delivery agency/CFS roles and responsibilities
- Assembling all related fast-growing information for Ontario and other related jurisdictions
- Initial stages of planning for workshop to assemble experts on fast-growing species/clones "bringing to light" most current information
- Assessment of growing stock available in Ontario
- Re-measurement of existing clonal site trials/plantations for fast-growing species across Ontario

Policy Development - Status
- Investment vehicle investigation and technical support
- Activities Underway
  - Economic assessment of fast-growing plantations
  - Refining afforestation analytical models

- Improving biophysical (e.g., G&Y) and economic information (e.g., opportunity cost of land, carbon and fibre returns) to support modeling work
- Input to the Offset Trading System Working Group
- Refining support requirements

- Implementation Challenges
  - Clarify parameters of investment vehicle investigation and analysis of options
  - Early estimates of range of growth rates to input into analysis

Preliminary Analysis: Discussion

- Preliminary Model Results / Implications
  - Economic feasibility of plantations is very sensitive to expected growth rates and carbon prices
  - Spatially-higher potential in Western vs. Eastern Canada

20 Yr MAI	$10/tonne	$15/tonne	$25/tonne	$50/tonne
	(Millions of ha)			
12 m³/ha/yr	0.3	0.5	0.8	1.2
14 m³/ha/yr	1.3	2.5	7.5	44.2
16 m³/ha/yr	27.5	34.3	52.0	61.4
20 m³/ha/yr	41.7	44.2	56.5	63.9

Next Steps

- Improve growth and yield data / building a biophysical model
- Obtain better spatial information on the opportunity cost of land

The Way Forward

	2003/2004		2004/2005				
	Fall	Winter	Spring	Summer	Fall	Winter	Spring
Plantation Demonstrations							
- Land Identification							
- Site Prep							
- Planting							
- Information Collection							
Policy Development							
- Preliminary Evaluation							
- Technical Support Activites							
- Investment Options Research							

Conservation Authorities and Afforestation in Ontario

Rick Grillmayer, Nottawasaga Valley Conservation Authority

What is a Conservation Authority (CA)?

- Community based, resource management organization.
- Partner with watershed municipalities and others on natural resource programs/services.
- Watershed boundaries.

Mandate

"Ensure the conservation, restoration and responsible management of Ontario's water, land and natural habitats through programs that balance human, environmental and economic needs."

CA Programs

- Design, specify and/or approve silviculture prescriptions
- Classification, inventory and mapping of forests
- Appraisal, evaluation or certification of forests.
- Audit of forest management practices.
- Impact assessment.
- Extension services to private land owners.
- Education programs

Value of CAs

- Longevity of programs, staff, etc.
- Public Trust
- Qualified and experienced staff
- Existing infrastructure
- Existing relationships with nursery industry
- Bulk purchasing power for nursery stock
- Forestry programs suited to local conditions
- Ease of delivering integrated programs
- Can target high priority planting sites to achieve multiple objectives (i.e. Water quality)

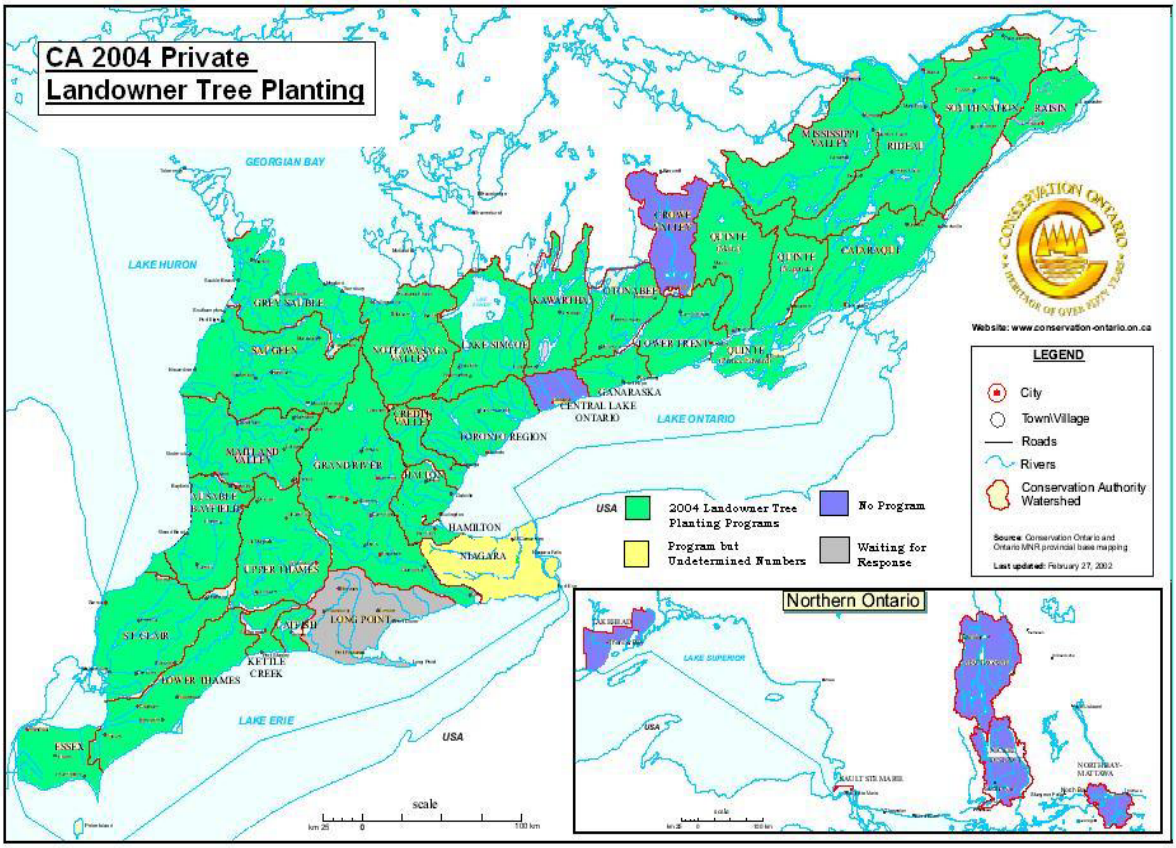
Why we plant trees

- Generally, surface water quality becomes impaired when less than 30% of a watersheds surface area is in natural cover.
- Maintenance of surface water quality requires that 75% of a streams length be naturally vegetated.
- A watershed with reduced forest cover is prone to floods of increased frequency and magnitude.

2004 Tree Planting Statistics

- 27 CA's will provide Private Land Tree Planting services in 2004
- Total Number of Landowners……..1,240
- Total Number of Hectares……876
- Total Number of Trees to be planted…1,468,120
- Total Number of Trees that could be planted given current operational capacity…2,500,000

Attachment 1.



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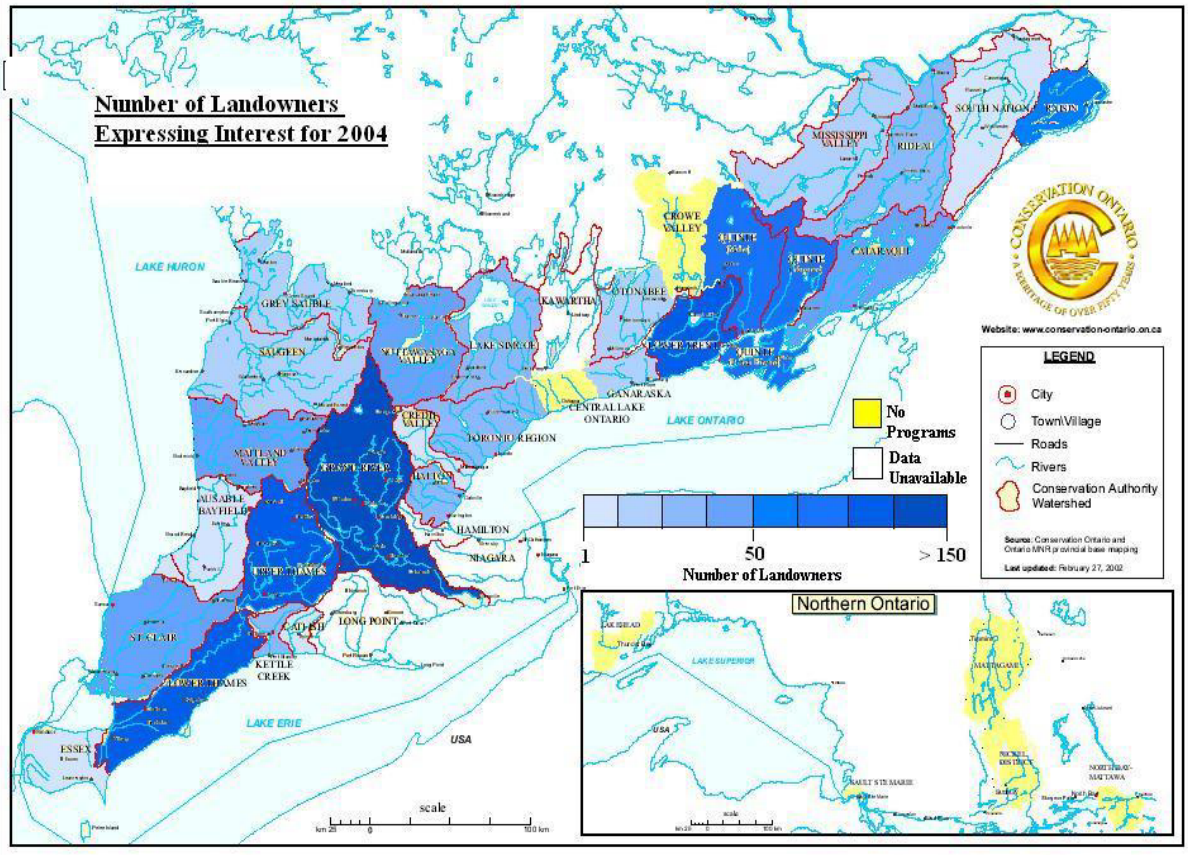

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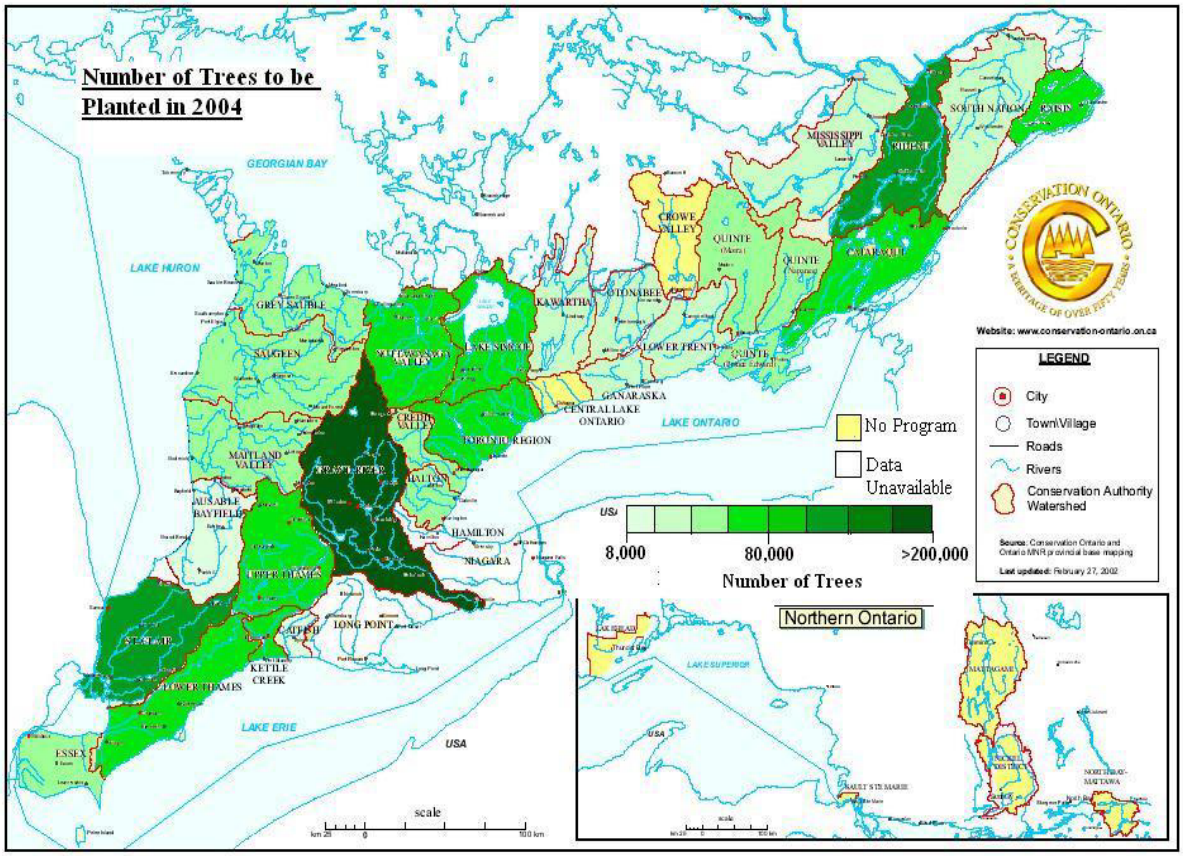
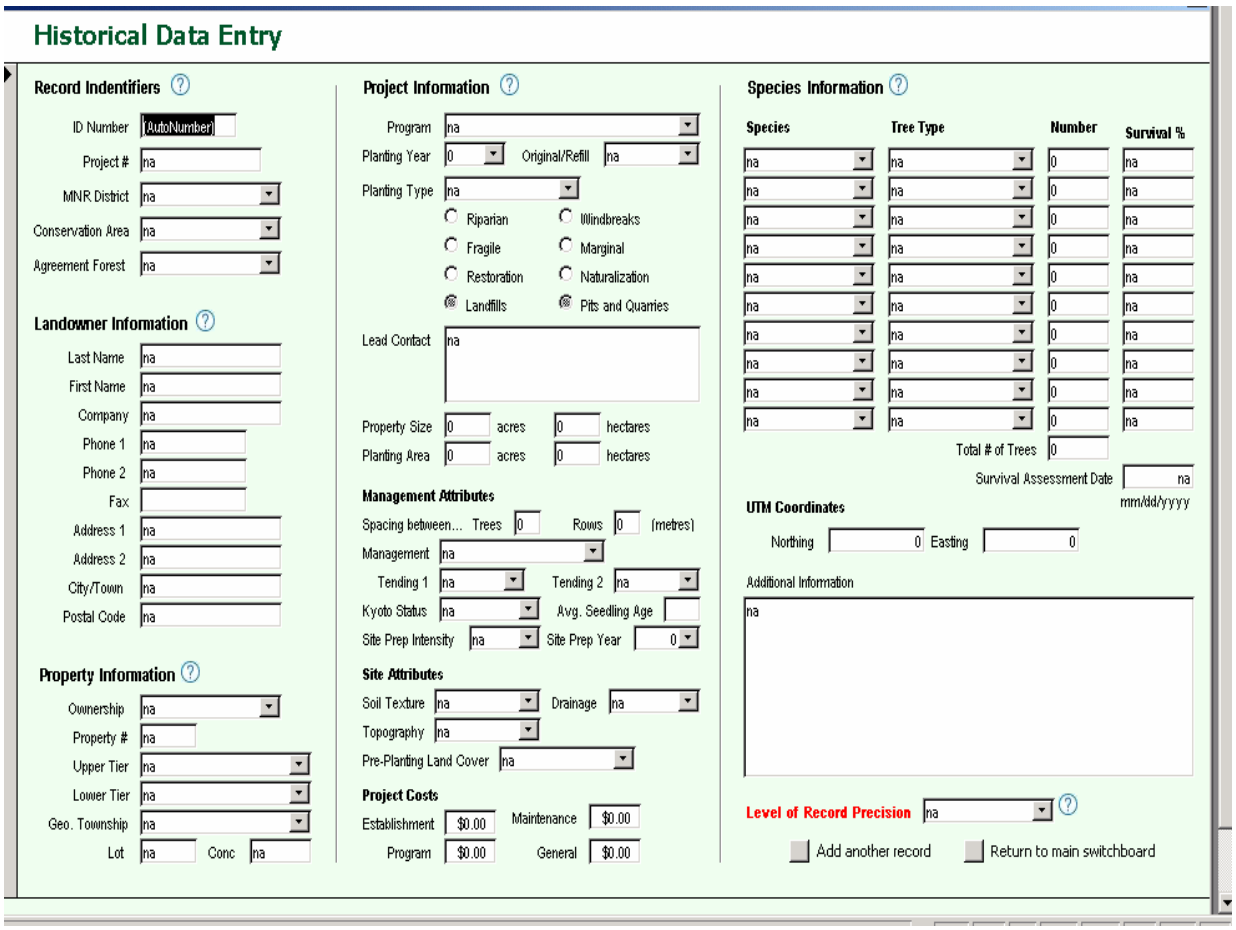


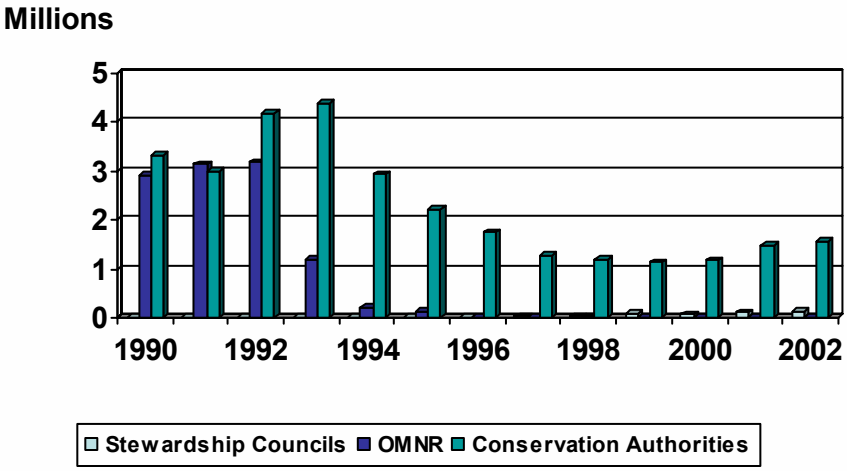
Partnerships: Multitude of programs and partnerships among CA's.

- Primary objective of most programs is to provide subsidized planting to landowners.
- Nottawasaga Valley - New Tecumseth Planting Program, Healthy Waters Program, Natural Areas Protection Program, Simcoe County Private Land Planting Program.

Historical Collection Form for trees planted since 1990



Trees Planted in Ontario 1990 - 2002



Funding

- The percentage of Levy dollars to planting programs varies from CA to CA – translating into variable tree planting costs and intensity of program delivery.
- Most CA programs operate on short 1 to 3 year timelines – making seed and stock forecasting problematic. Securing long term funding for tree planting on private lands is difficult.
- Planting costs have increased – putting large scale planting out of the reach of most landowners.

Landowner Confusion

- A multitude of programs across Southern Ontario.
- Variable grant rates and objectives.
- Many programs are short lived.
- Many landowners have developed "application fatigue"

Seed and Seedling Supply

- Reliance on private sector nurseries has meant 'true cost pricing" for tree planting.
- Gaps in seedling production – SW Ontario has difficulty in getting locally grown stock.
- The largest single barrier will become the supply of zone appropriate seed.
- Seed supply is now in critical. Example – the seed bank for zone 32 white pine is now 0. Zone 34 white pine is down to 270,000 seeds. Zone 34 red pine is now 0 , zone 32 has 9,000 seeds
- The difficulty in seed and stock forecasting for CA's makes increased seedling production and seed collection difficult for suppliers operating on business plans.

Explaining MFTIP: our common message

Carla Grant, Ontario Forestry Association

MPAC's valuation procedures

- MPAC is responsible for assessment of properties in Ontario and has indicated:
  - MF property class will no longer be assessed using farmland rates, rather assessed based on sales comparison of properties in the program
  - banding of waterfront properties is no longer occurring, rather assessed based on comparison of waterfront properties
  - apportionment issue has been corrected, these properties will now receive benefit from program
- 2004 assessment notices to be sent out mid-November
- MNR has not been informed of the $/acre value(s)
- MNR will be sending a letter to all MFTIP clients during the first week of November:
- valuation procedures have been changed
- assessment notices will reflect changes
- please contact MPAC for details

Is there a tax savings?

- MF properties will be taxed at 25% of the tax rate applied to residential properties
- Based on the assumption that entrance into the MFTIP will not increase the overall assessment of the property – this equates to a 75% reduction in property taxes on the eligible portion
- Mixed-use apportionment issue has been "mathematically" addressed
- MNR will attempt to develop a mechanism to monitor the impact of the policy change

Changes to the regulation

- The results of the 2000 program review have been presented to the MOF
- These are non-contentious stakeholder recommendations:
  - open areas
  - plan period
  - submit only portions of the plan needed for administration
  - municipalities being given the flexibility to reduce tax rate below 25%

The guides:

- A Guide to Stewardship Planning for Natural Areas is being printed:
  - landowners may find it useful to use this to prepare a plan for the MFTIP
  - MFPA's to review based on the standards and review criteria for Managed Forest plans
- New MFTIP guide will be produced when the new regs are in place
  - current rules - January 2000 MFTIP guide

OMAF/OMNR - Afforestation directions

Barb Boysen, OMNR and Dave Chapeskie, OMAF

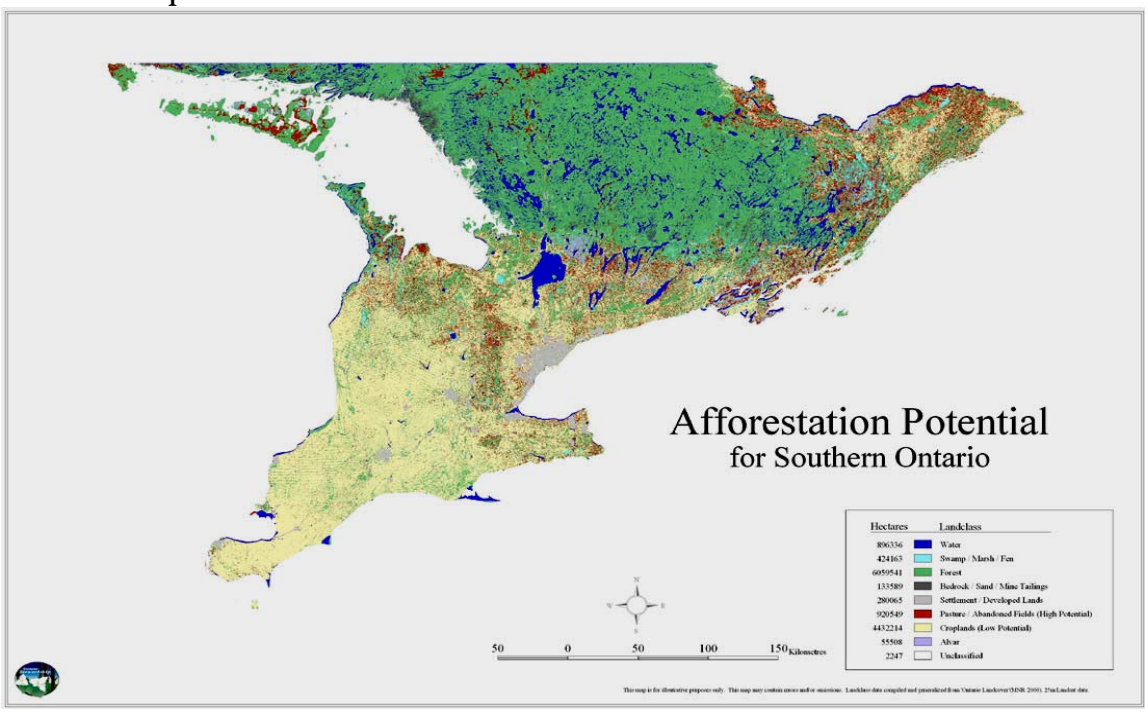
MNR Historical Activity to Afforestation:

- Agreement Forest Program: restored 130,000 hectares with significant landscape impact (e.g., Larose and Ganaraska).
- Woodlands Improvement Act agreements: 1966 - 93 and created 100,000 hectares new forest.
- Provincial nurseries (plus seed collection, extraction, storage): over 1 billion trees shipped for private lands (cost varied: maximum cost $ 0.35/tree mid 1990's).

MNR Current Activities:

- Preparing background information:
  - rural landowner surveys, etc.
  - landbase analysis of afforestation potential
  - reviewing legislative framework
- Genetic integrity of planting stock - species & seed source:
  - Forest Gene Conservation Association (FGCA) - education, coordination
  - Ontario Tree Seed Plant - seed collection, processing, storage
- Support for Reforestation Operations:
  - issues analysis - information & research - e.g. stock quality
  - Ontario Stewardship - local efforts of planning, seed collection, growing, planting

Afforestation potential



OMAF Historical Activity to Afforestation:

- Awareness and Education
  - emphasis on farm forestry, including afforestation with specialist staff (e.g. maple syrup, edible nuts, Christmas trees, windbreaks/shelterbelts)
  - specialist staff (e.g. agroforestry, land use planning, taxation)

OMAF Current Afforestation Activities

- Awareness and education and incentives:
  - production of food and other products using specialized production systems (e.g. maple orchards, edible nuts, Christmas trees, intercropping)
  - encourage tree planting on all classes of farmland to enhance productivity and provide long-term protection for the land (e.g. soil erosion, nutrient management, protection of water, conservation of energy, odour mitigation)
  - Packaging and transfer of technical information (e.g. website, publications, etc.)
  - Environmental Farm Plan
- Research Activity:
  - lead Agroforestry Sub-Committee forum and reporting
  - work with agricultural commodity groups to identify research needs (e.g. maple orchards, intercropping, information to support URMULE registrations)
  - help secure funding for research
  - technical input review and guidance for research projects
  - provide guidance to OMAF Policy staff regarding afforestation
- Input into OMAF Climate Change Working Group discussions:
  - scoping potential for expanded afforestation effort
  - critical success factors (e.g. appropriate tree supply, infrastructure for delivery)
  - awareness and education needs
  - alternative models for program delivery
  - co-benefits (e.g. nutrient management, shelter for livestock, odor mitigation, wood products etc.)
  - carbon sequestration potential of afforestation compared other options (e.g. no till) within the agricultural sector

Operational Items

- **Considerable documentation and discussion by all partners regarding operational items:**
  - before the trees go in the ground
    - seed
    - nursery items
    - site selection and site preparation (if needed)
  - when they go in the ground:
    - at time of planting quality - trees , planting method, timing
  - after they go in the ground
    - condition assessments (pre-FTG)
    - Future tending required for free to grow

OMAF/MNR will be reviewing legislation, policies and guidelines (for example)

- **Assessment Act implications:**
  - Conservation Land Tax Incentive Program (CLTIP)
    - in some situations, planting may make a property ineligible for the program
    - Example: life science ANSI's (Areas of Natural and Scientific Interest) such as shrike habitat
  - Farm Tax Policy
    - farm forest exemption allows for one acre of woodlot for each 10 acres of farm to be exempt from taxation (up to 20 acres per municipality)
    - > 20 acres/municipality sees property taxed as farmland
    - how are these procedures being handled?
  - Managed Forest Tax Incentive Program
    - current challenges discussed by the OFA
    - recognized concerns with divergence of the MF property class from the farm class

- **Municipal Act implications:**
  - zoning at the municipal level (rural and agricultural)
  - tree cutting bylaws:
    - may act as a disincentive for tree planting depending on exemptions
- **Planning Act implications:**
  - significant woodlands through the Provincial Policy Statement (PPS)
    - protection afforded to woodlands may cause concerns in some areas
    - dealt with by the Oak Ridges Moraine by indicating when a plantation had developed "significance criteria" (i.e., > 60% crown closure or 1000 trees/ha and >2m tall)
  - agricultural lands through the PPS
- **Federal income tax items to be reviewed:**
  - 2001 budget proposed - changes to the tax treatment of intergenerational transfers of commercial woodlots
  - provisions have been available to farms for many years
  - Interpretation and discussions required:
    - guidance for commercial/non-commercial operations to encourage long-term management direction
    - retiring farms – making sure that we have good understanding of the potential implications to the landowner
    - other items may be raised during discussions

Other items:

- Conservation Land Act - opportunities for securing protection of the investment through easements
- OMAF "historic" position on planting prime farmland (i.e., class 1-3 farmland):
  - policy direction
  - increasing urbanization may result in competition for land use (i.e., farmers seeing some land no longer available)
- Ontario Stewardship and their work with Alternative Land Use Services (ALUS):
  - working with the agricultural community to find options that are appropriate and recognize the opportunity cost of decision

Ontario Soil and Crop Improvement Association

Andrew Graham, Stewardship Programs Coordinator, www.ontariosoilcrop.org

Communicating and facilitating responsible, economic management of soil, water, air and crops

Conversion Component

- Objective, to convert "environmentally sensitive" cultivated lands to permanent/perennial cover.
- Activities:
  - Incentive payment for seeding costs to convert to long term perennial cover
  - $20/acre for tame forage/trees
  - $75/acre for native forage
  - 10 year land use agreement
  - additional $25/acre payment will be made to secure the commitment
  - minimum 40 acre contiguous plots

Greencover Program for Ontario

- Proposal for a program of $15 million between 2003 -2008
- Three Components: Technical Assistance, Critical Area and Shelterbelt
- Focus: Permanent Grass and Tree Buffers along Surface Water Features
  - 11,250 fragile acres retired
  - 3700 miles of buffer averaging 25 ft.
  - 10-year agreements
- Design Influences
  - Riparian Working Group
  - Past Program Experience and Follow Up Investigations / Evaluation
  - EFP Next Generation
  - OFEC

Eligible Buffer Strip Projects

- Grass Buffer Strips
  - 10 ft. minimum – 50 ft. maximum
  - No off-farm sales of hay
- Grass and Tree Buffer Strips
  - 10 ft. minimum – 50 ft. maximum
  - One or multiple rows of trees or shrubs
  - No marketable tree products within 10 years
- Enhanced Buffer Strips
  - 10 ft. minimum – 300 ft. maximum
  - Fencing, erosion control, etc.

Assembling the Incentive Proposal

- Must have EFP deemed appropriate
- 50:50 cost share
- Federal contributions may be requested by applicant to offset costs associated with:
  - planning
  - site preparation
  - establishment
  - fencing and other enhancements
  - maintenance
  - Compensation for lost revenue on land taken out of annual production

- OSCIA administers Greencover provincially
  - Financial Responsibility
  - Promotion
  - Information Kits
- Rely on program partners to:
  - provide on-site technical assistance where requested
  - establish demonstration projects
  - assist with Regional Expert Committees

Regional Expert Committees
- Builds upon existing structures to serve multiple programs
- 6-9 agency, farm and organization experts
- One or multiple counties where justified
- Will apply Environmental Benefit Index to score and select incentive proposals
- Opportunity to identify local priority resource concerns
- Attract additional funding

Targeting: Riparian Buffer Strips -> Regional Allocations -> REC and EBI

Barriers:
- Acceptance of 'Lost Revenue' as an eligible item
- Availability of desired trees

Overcoming Policy Barriers to Afforestation on Private Lands in Ontario

Martha Copestake - Faculty of Forestry, University of Toronto

Purpose: To identify the biggest barriers to implementing an afforestation program in Ontario and to determine realistic and tangible strategies to tackle these barriers.

Afforestation Issues

- Production versus Conservation / Restoration
- Carbon credit possibilities
- Program and Tax based issues versus social issues

Basket of Benefits

- Watershed, soil and air quality improvement
- Protection of agricultural land
- Mitigation of climate change through carbon storage
- Income generation through the supply of forest products and possibly carbon credits
- Creation of natural spaces
- Connecting humans with the natural landscape

Carbon Benefits

- Carbon sequestration is a permanent benefit.
- Potential for carbon market to play an important role in feasibility of conservation and restoration efforts.
- Not "an allowance to pollute"

Social Issues

- Government involvement with land
- Traditional values associated with agricultural land
- Concern surrounding the effect of government and policy change on programs
- Values surrounding the trading of carbon credits

Barriers

- Forested land taxation versus farm land taxation
- Lack of government support for stock and seed supply
- High opportunity cost for activities with conservation/restoration goals
- Development
- Government involvement with land

Discussion Topics

1. Options for program and incentive building, synergies and partnerships
    a. Trees Ontario
    b. Improvements or ideas to complement the Trees Ontario Plan
    c. Alternatives to the Trees Ontario Model
2. Overcoming existing barriers and disincentives
    a. Identify the biggest barriers
    b. Action plan to overcome these barriers
3. Overcoming social barriers
    a. Identify the biggest barriers
    b. Action plan to overcome these barriers

Incentives for Afforestation

Rory Gilsenan, on contract with Canadian Forest Service

Project Purpose: To provide a review of the various types afforestation incentive mechanisms that have been used domestically and internationally

Brief background on the research: In total, 27 countries over six continents were examined, with an emphasis put on cases involving developed countries

Grouped incentives into five classes:

1. Direct Government Assistance /Programs
2. Preferential Tax Treatment
3. Industry Partnerships and Third-Party Leasing Arrangements
4. Market-based Trading
5. Non-Traditional Incentive Mechanisms

Direct Govt Assistance / Programs,

- Description: a range of government funded incentive mechanisms that include: direct financial support for growers, providing the transfer of knowledge, and setting government policy to support forestry & forestry related industries. Comprise the majority of "traditional" afforestation incentive mechanisms employed by governments
- Pros
  - Helps landowners to get beyond hurdle of initial high capital costs (fences, seedlings, etc.)
  - allows for targeted funding by the government
  - knowledge transfer
- Cons
  - plantings on unsuitable land (e.g. Ireland)
  - involvement in program for "wrong" reasons
  - may result in an excess supply of timber
  - approach may not overcome "cultural biases"
  - may jeopardize trade agreements (subsidization)
  - can be difficult to manage on a large scale
  - can create a "dependency cycle"
- Loans, Grants or Subsidies
  - includes state financing through low interest rates or nil interest loans, subsidies, exemptions, abatements, or outright cash grants
- Technical Assistance and Extension Services
  - usually involves the transfer of technical assistance and information to communities and individuals
- Direct Government Plantings or Provision of Seedlings
  - the provision of seedlings or planting services can help landowners to overcome initial start-up barriers to the establishment of trees on their property

Preferential Tax Treatment

- Description: includes the application of lower marginal rates of taxation, favourable capital gains treatments, property tax exemptions, tax holidays and income tax deductibility of costs to encourage afforestation
- Pros
  - helps landowners to get beyond hurdle of initial high capital costs (fences, seedlings, etc.)
  - allows for targetted funding by the government (e.g. certain income groups or certain equipment)
  - can be easier to administer than many payment schemes

- Cons
  - plantings on unsuitable land (eg. Ireland)
  - involvement in program for "wrong" reasons (tax shelter)
  - may result in an excess supply of timber
  - may not overcome "cultural biases"
  - may jeopardize trade agreements (subsidization)
  - may create a dependency cycle
  - may decrease tax receipts that could have been reinvested in supporting the industry
- Examples
  - In Norway, the state mandated Forest Trust Fund requires forest owners to contribute between 5% and 25% of their timber receipts into a trust fund. Similar to an RRSP, these earnings are exempt from taxation
  - In Costa Rica, some 50,000 ha were planted under a tax exemption scheme, and another tax based initiative allowed for up to 16% of tax liabilities to be invested in reforestation

Industry Partnerships and Third-Party Leasing

- Description: under these agreements, smallholders produce wood and fibre for private enterprises on a systematic basis
- Pros
  - little or no government involvement, therefore low financial cost
  - ensures a market exists (as opposed to non-market schemes that may ignore market conditions)
  - usually includes extension services provided by company or conservation agency
  - low initial investment by landowner
  - helps companies to increase wood supply
- Cons
  - landowner effectively relinquishes control of land, thereby forgoing alternative land uses
  - dependent on continued existence of an individual company or organization
- Outgrower Schemes
  - smallholders produce wood and fibre for the forestry industry on a systematic basis
- Biomass Power
  - type of outgrower scheme where afforestation is for the purpose of producing biomass fuel
- Domestic Tradeable Development Rights
  - rights to development in areas designated for conservation that can be sold or exchanged
- Conservation Easements
  - a voluntary legal agreement where a landowner agrees to protect the natural values of land

Market-based Carbon Trading

- Description: a CO2 emitting company (or country) unable to meet anti-pollution targets can buy carbon credits from an under-polluting company or operation. The CO2 emitting company effectively pays forest owners to set aside forest for the purpose of atmospheric carbon mitigation
- Pros
  - opportunity to generate income while the trees were growing
  - low initial investment by landowner
  - permits adjust automatically for inflation and external price shocks
  - cost-effective way for companies to reduce emissions
  - opportunity to pool land
- Cons
  - unresolved issues regarding rules that govern them
  - depending on location, marketing of timber products from the planted forest may prove difficult
  - have to either re-purchase carbon credits at the time of harvest, or replant the planted forest
  - decision on whether or not to harvest will depend on the relative value of timber and carbon at the time

- no guarantee of a market for trees harvested

- Example
  - In the UK, Climate Care Warranties allow consumers to purchase carbon offsets with particular consumer goods, such as cars or airline tickets. The warranties are then guaranteed by Climate Care, which purchases offsets generated by carbon sequestration and renewable energy projects

Conclusions

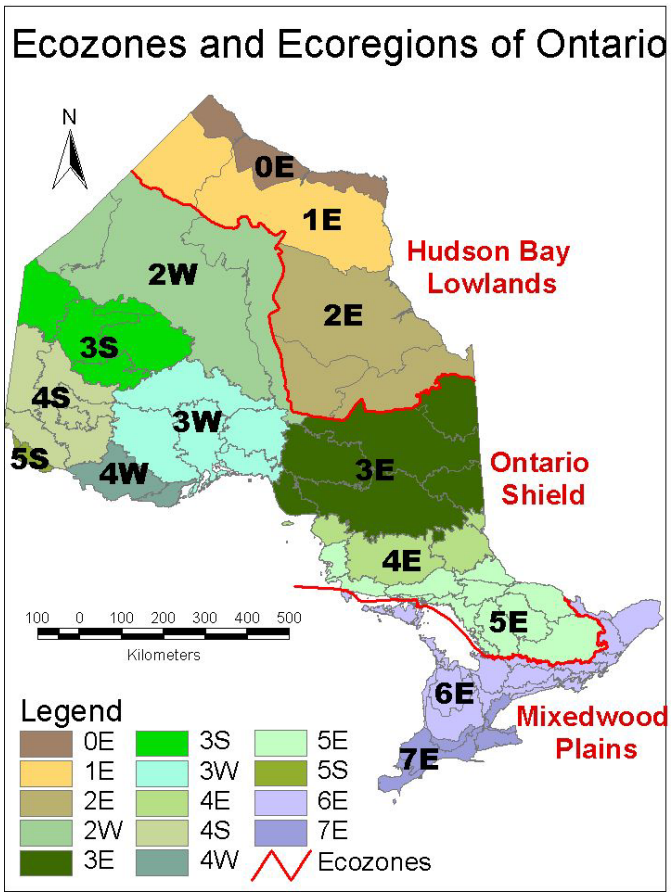
- Past Programs: Government Program / Direct Assistance seems to be the most popular mechanism used in the past
- Direction: incentive mechanisms seem to be going toward market-based mechanisms (e.g. carbon trading & 3rd party leasing)
- Next Step: evaluate past programs in terms of effectiveness and applicability to the Canadian context
- Procedural differences: different categorization (usually direct vs. indirect), usually don't contain a direct comparison of different approaches
- Requirements, benefits and issues of using new procedures

Barriers to Afforestation in Ontario

Neil Bird, Woodrising Consulting Inc.

Barriers

- Locations
- Stock
- Cost
- Policy
- Delivery Mechanism



Land Cover and 1996 Census

Region	Farmland		Difference (ha)	Non-farmland (ha)
	Land Cover Database (ha)	1996 Agricultural Census (ha)		
3e	547	20,298	-19,751	0
4e	73,404	65,645	7,759	7,759
4s	97,205	59,835	37,370	43,681
4w	30,669	16,466	14,203	14,203
5e	322,867	275,498	47,369	50,378
6e	3,920,136	3,143,631	776,505	848,114
7e	1,226,056	1,033,285	192,771	204,957
Total	**5,670,884**	**4,614,658**	**1,056,226**	**1,169,092**

2001 Census

Region	Farmland (ha)	Change (ha)	Urban Growth (ha)	Non-Farmland (ha)
3e	20,845	547		0
4e	67,518	1,873		5,886
4s	61,694	1,859		41,822
4w	16,301	- 165		14,368
5e	264,693	- 10,805		61,183
6e	3,113,693	- 29,938	17,800	860,235
7e	1,035,498	2,213		202,744
Total	**4,580,242**	**- 34,416**		**1,248,957**

2000 Environics Survey

- Historical activity
- Future activity
  - no incentive
  - if planting costs paid
  - if planting costs + $ 25/ha/yr paid
  - if planting costs + $125/ha/yr paid

Farmland

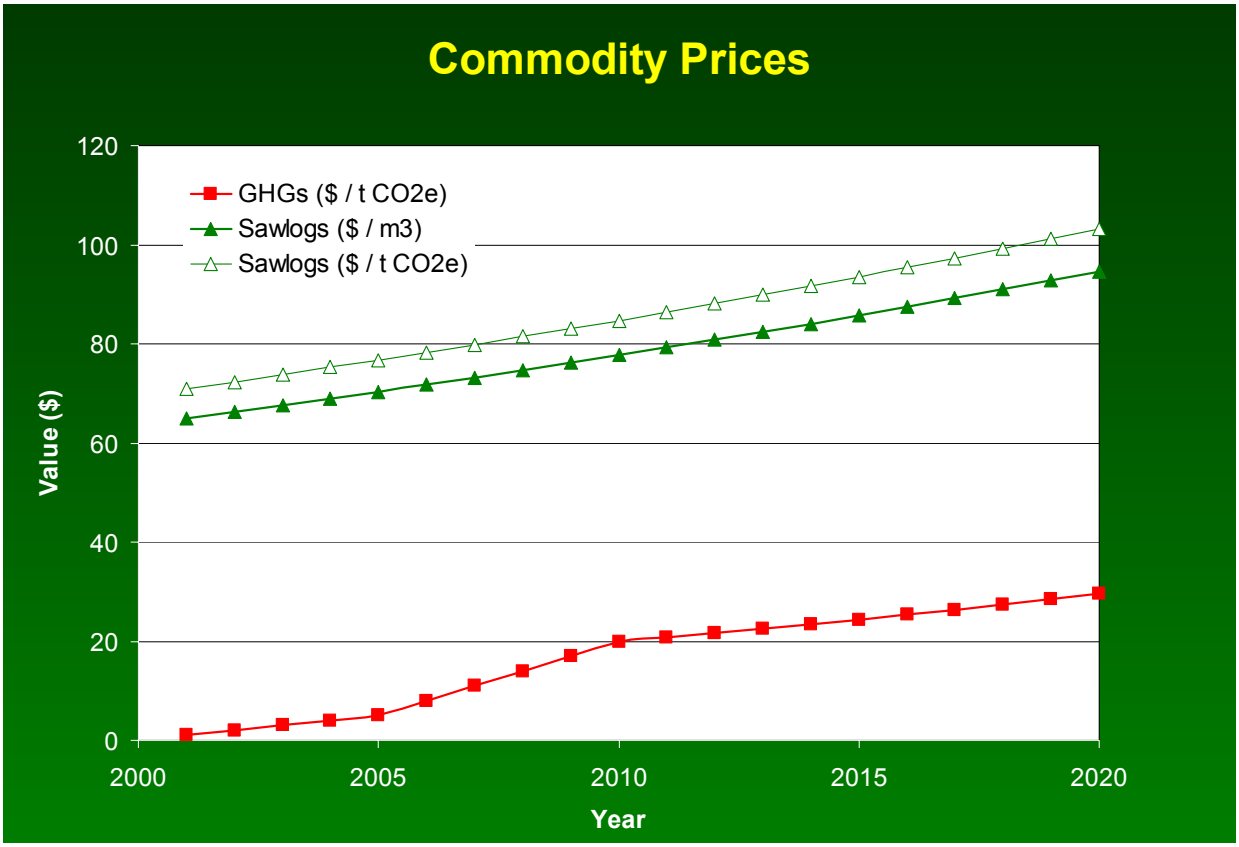
Ecoregion	Historical (ha)	No Incentive (ha)	Planting Costs paid (ha)	Costs + $25/ha/yr (ha)	Costs + $125/ha/yr (ha)
3e, 4s, 4w	712	1,416	7,153	21,500	2,665
4e	753	988	2,642	2,817	4,498
5e	1,118	4,853	11,849	16,341	17,836
6e	29,428	34,627	173,245	269,005	304,512
7e	5,600	6,177	17,513	19,082	32,239
Total	**37,611**	**48,061**	**212,402**	**328,746**	**361,749**

Non-Farmland

Ecoregion	Planting Costs paid (ha)	Costs + $25/ha/yr (ha)	Costs + $125/ha/yr (ha)
3e, 4s, 4w	4,066	12,223	1,515
4e	230	246	392
5e	2,739	3,777	4,123
6e	84,129	84,129	84,129
7e	6,312	6,312	6,312
Total	**97,477**	**106,687**	**96,471**

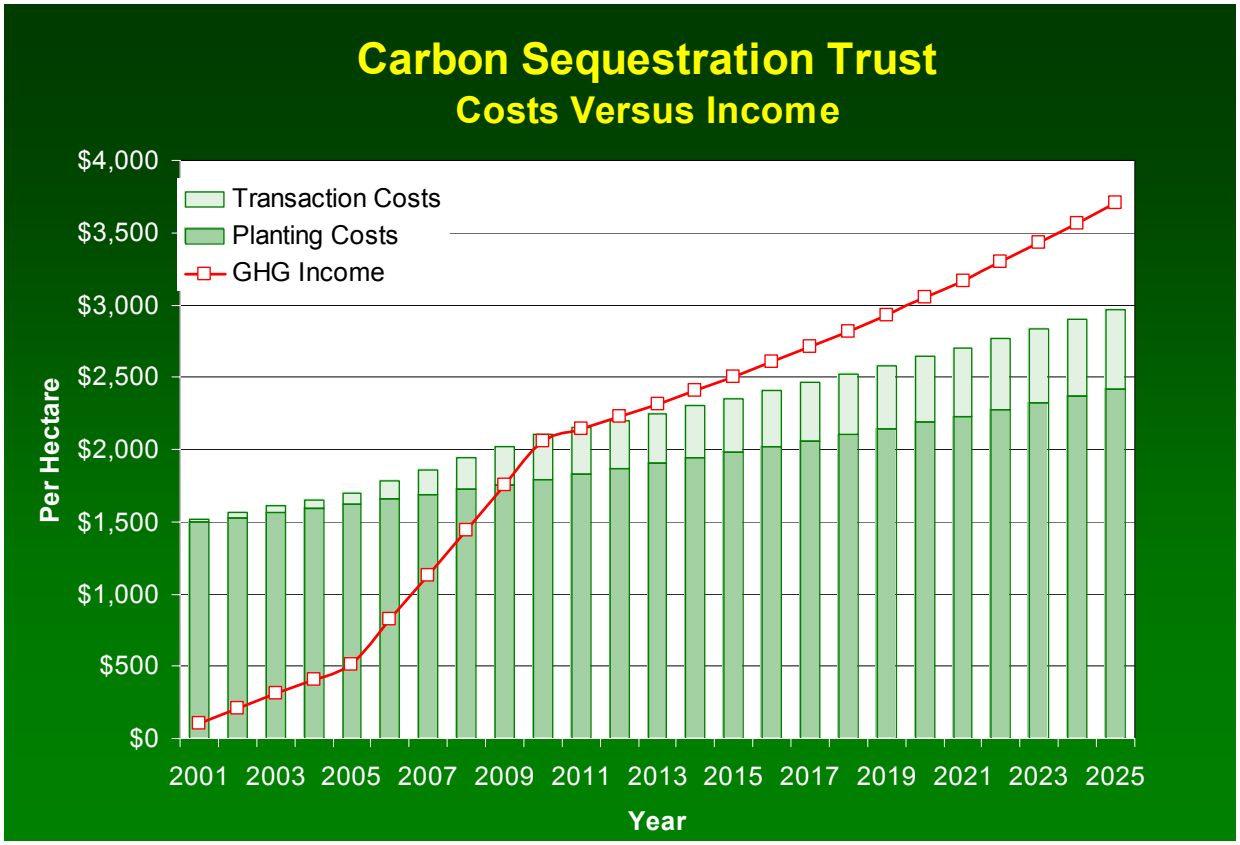
Costs

- Market
  - Current ~ $ 7.00 / t CO2e
  - Backstop $ 15.00 / t CO2e
- OPLAP
  - Kyoto Period $2,600 / t CO2e
  - Lifetime $ 8.00 / t CO2e



Financial Analysis

- Simple investment
- Investment with tax benefit
- Investment with partial timber harvest
- 7.0% < ROR < 9.5%
- *Assumed Jack Pine, 50 year rotation, $1500 / ha planting costs, 15% transaction costs, GHG benefits sold as generated*



Conclusion

- Locations
- **Stock**
- Cost
- **Policy**
- **Delivery Mechanism**

Appendix IV: Complete List of Identified Barriers to Afforestation

*Please note that the ranking is given at the end of the question

Most Important Barriers (session concentration):

1	How do we secure long term political (financial) commitment to a tree planting program?	175
2	How can we deal with the property and income tax disincentive?	50
3	How do we improve municipalities' recognition of afforestation and greenspaces in municipal planning?	80
4	How do we ramp up the entire stock availability, seed collection/storage, zones, nurseries etc?	95
5	How does society share the cost of tree establishment with the landowners?	100
6	How do we re-install or re-introduce the civic sense of duty or values with respect the environment and in turn the importance of tree cover?	75

Other Identified Barriers:

How do we overcome landowner distrust of government programs?	35
How do we overcome social barriers due to relinquishing of control of land for long term afforestation programs?	30
Provincial and Federal governments need to develop a Private Land Woodlands Policy.	30
Clarify the system of carbon credits – what is the responsibility of the landowner?	25
How do we overcome competing incentives which, in turn, act as disincentives?	25
How do we raise awareness surrounding the need for tree planting in southern Ontario (it is needed)?	25
In what way can we better coordinate policy formulation and program planning efforts regarding afforestation (ex. Government and other stakeholders)?	25
How can long term comprehensive business plans be developed in relation to agroforestry / afforestation initiatives?	20
Carbon trading cannot be meaningfully discussed in agriculture without also CH_4 and N_2O.	20
How do we overcome social stigmas associated with growing trees to offset carbon emissions of large industrial emitters (corporate giants)?	10
Agroforestry / afforestation initiatives should be created to address local environmental issues.	10
How can we effectively market an enhanced afforestation program effort to farmers on farms?	10
In which ways might we increase the "political paliability" of afforestation?	10
How can we access reasonable cost capital for investing in afforestation?	5
How do we prevent a backlash against afforestation by politicians if and when carbon credit objectives pan out?	5
How do we overcome the perceived high risk to landowners within a tree planting program?	0
How can we improve communication regarding marketing of carbon credits?	0

Appendix V: Focus Session Notes for each Significant Barrier outlining Action Items

Barrier #1: How do we secure long term political (financial) commitment to a tree planting program?

- Continued Public Education
    - Bottom up approach
    - Championing all levels (municipal to federal)
    - Mandating environmental education (top down) – i.e. Kyoto
    - Instilling sense of ownership in society (i.e. landscape and ecosystem benefits and why this is important to individuals)
    - Illustrate by example
- Establish a long term work plan
    - "Crown corporation" that lives longer than current government terms therefore will provide a continuum for long term programs.
    - Long term mandate (policy driven)
    - Bilateral agreements amongst provinces ensuring that there is a commitment to carry on
- Secure a "Champion of the Cause" within government to lobby and champion these ideas
- Bring this information (through the outcome document) to government and relevant policy makers (OMNR, OMAF) to bolster our position
    - Outcome document "signed" by a variety of different groups relevant to tree planting in Ontario
    - support with constant contact with government through phone, email, letters supporting this position
    - use information from other focus sessions as well to support our position

Barrier #2: How can we deal with the property and income tax disincentive?

- Equitable tax treatment for agriculture and forestry
- Coordination of tax between departments
- Educate financial departments (Federal and Provincial) that decisions affect the environment
- Planting trees for society's benefit (i.e. any number of benefits in addition to production) should be considered as an investment for tax purposes (for example, woodlot management)
- High tax burden forces owners to subdivide or sell; often too rich, non local persons (this is related specifically to water lot owners)
- Higher penalties for exit due to land conversion
- Working Forest Easement, but lessen the legal burden.
- Different levels of taxation and tax relief based on environmental value and duration of the commitment
- Environment / sequestration donation tax credit for personal income tax (similar to RRSP)
- Long term stability of tax treatments

Barrier #3 :How do we improve municipalities' recognition of afforestation and greenspaces in municipal planning?

- Stronger definition of "greenspace" in the provincial policy statement
    - New development should require a higher amount of conserved, sustainable, high quality, natural greenspace
- Assess and assign value to the ecological functions of greenspaces
- Don't threaten existing development. Be strategic.
- Equitable farming and forestry tax treatment (see Barrier #5)
- Acknowledgement of the sustainability and existence of a greenspace
- Take Home Messages: Provincial leadership and support to allow municipalities to do the "right thing"
    - Retain and enhance greenspace and related definitions
    - Equitable tax treatment of farm and forests

Barrier #4: How do we ramp up the entire stock availability, seed collection/storage, zones, nurseries etc?

- Creation of a central Agency that brings all the players together – Trees Ontario
    - To place orders
    - To max resources
    - To increase efficiencies in growth

    - Act as a coop to offset with some partners can't plant all ordered
    - To better estimate demand
    - Funded one third Federal, one third Provincial, and one third Private
    - Research (i.e. effectiveness of seeding hardwood rather than planting)
- Investment Fund to provide money in advance for long term planning
    - For seed collection
    - For growers
- Long Term Commitment
- High level strategic plan (long term) with corresponding lower level operational plans (short term) on a location basis
- Educational Program with communities to increases the sense of renewal importance.
    - Seed collection
- Take Home Message: This is a known operational barrier (so no excuse for not working towards a solution at this point when trees are about to go in the ground)
    - Seed source and nursery capacity are the biggest problems
- Take Home Message: Immediate Action Needed! Can't wait! Running out of seed already!

Barrier #5: <u>How does society share the cost of tree establishment with the landowners?</u>

- Government recognition of non-market benefits of tree planting
    - Through taxation, similar to GST. Examples include:
        - Property owner doesn't pay, government does (for establishment through to free to grow)
        - Tax write offs
        - Support for loss of production
        - Municipal levy (doesn't make polluters pay)
        - Tax the polluters and returns go to tree planting (problem with reallocation)
    - Supported with public education
        - Assign a long term value to trees planted (and basket of benefits).
        - Tackle this in the school systems to promote a societal acceptance.
- We hold a minority point of view (regarding the importance of tree planting)
    - Therefore more advocacy needed (education and awareness), politicians must show leadership in this realm (this goes back to finding a champion of the cause within government)
    - Philosophically the public may agree, but that needs to be transferred into actions. Education can therefore be aimed at making the connection between ideals and actions regarding the environment.
- Share Carbon Credits – the landowner has a share.
- Need to assess Fair Cost – can use current examples (farm tile drainage in eastern Ontario)
- Urban investment to rural protection
- Direct to strategic areas
- Recognize the value in the resource and the services that it provides to society. This is a service in itself, but it will also translate into actions in favour of the environment (i.e. support for tree planting).

Barrier #6 :<u>How do we re-install or re-introduce the civic sense of duty or values with respect the environment and in turn the importance of tree cover?</u>

- Need to address Rural / Urban differences
    - Education needed
- Afforestation generally accepted, NOW need to keep implementing programs
    - Need leadership
    - Will eventually happen
    - Marketing and promotion
- Education and Awareness and Promotion regarding the multiple benefits of trees and forests as a part of the Canadian identity
    - School education is the key
    - T.V., radio – keep in front of the public
    - Create a positive "poster image" for public to identify with regarding tree planting
- Infrastructure necessary to facilitate grassroots allowing us to rally enabling society to work towards a common goal.

Appendix VI: A short explanation of the role of Canadian forests in achieving GHG emissions reductions under the Kyoto Protocol

A note to the reader:
This short explanatory document has been prepared by Tony Rotherham as an aid in understanding how forests are included in the Kyoto Protocol. It is the viewpoint of the author, and should be read as a guide and not as a rule. Canadian forest management terminology has been used, rather than Kyoto terminology, for purposes of clarity. For example: two words; afforestation, and reforestation are used in the Kyoto Protocol to denote the planting of two categories of treeless land. 'Afforestation' is used here to denote the planting of trees on any eligible land (treeless land with emphasis on marginal/sub-marginal agricultural land) to avoid confusion with the Canadian forestry use of 'reforestation' which is 'regeneration after harvest'. Forests are included in the Kyoto Protocol under two general headings: Afforestation and the Managed Forest.

1.0 AFFORESTATION

Afforestation is the establishment of plantations on land that was bare of trees in 1989. There is no cap on the amount of carbon offset credits developed through Afforestation. Land being considered for a potential afforestation program is poor pasture land considered to be on the economic margins of agriculture and most is in private ownership. It is recognized that the dedication of private land to forest for long periods of time is a substantial contribution by the landowner. Other opportunities to use the land may be lost. If the eligible land is planted with trees to develop carbon offset credits, the land must remain under forest for a rotation period of 20-50 years. The length of rotation depends on the species planted. Not all species grow at the same rate. For example, hybrid poplars grow faster than conifers and are generally managed on shorter rotations.

1.1 Starting Date

In order for an afforestation project to be eligible to produce tradable carbon offset credits, the planting must not start before the official starting date determined by the government of Canada. January 1, 1990 is the earliest starting date possible and should be Canada's starting date. As of February 2004, the starting date had not been set by the government.

1.2 Carbon Accounting

Carbon accounting is straightforward. Prior to planting trees, the amount of carbon on the site is measured in order to establish a baseline. After planting, the trees are measured periodically to calculate the carbon being stored. This would include measuring the merchantable wood in the stem of the trees and calculating the amount of carbon stored in the stems, limbs, foliage, stumps, root mass, soil and litter on the forest floor. A mix of field measurements and factors will probably be used. The second step would be to subtract the baseline amount of carbon. The net carbon gain would then be converted into carbon dioxide equivalent (CO2e), using appropriate conversion factors. The result would be the amount of carbon offset credits available for trade.

Risk management strategies should be part of the management plan in order to make provision for possible carbon losses. One strategy would be to sell only a percentage of the total offset carbon credits, perhaps 70-80%, keeping the rest in reserve as insurance against loss. Potential losses could be due to natural disturbances like fire, insect attack, disease, or to silvicultural stand treatments, logging, and clearing or possible management and stewardship failures.

1.3 Leakage

Leakage is the emission of greenhouse gas (GHG) due to activities associated with the implementation of the Afforestation project. Leakage can be from clearing of other land by landowners or from the GHG emissions involved in establishing the plantation (site preparation, fertilization, weed control, seedling production, supervision, etc.) Although accounting for leakage is an important aspect, it could also be an impediment to action if measured at a highly precise scale. The management control system could cost more than the value of the 'leakage' being measured.

1.4 Permanence

Permanence is a problem. A lack of permanence can be caused by deforestation, by fire or clearing for development. Risk management strategies will help to overcome these problems. But lack of permanence gets to be less of a problem as we move up the size scale from a very small patch of trees covering 1ha, to a new forest at a landscape scale covering perhaps 100,000 ha or more. A new forest of 100,000 ha or more will tend to become a permanent forest if the land on which it is established is chosen with permanence in mind. Lack of permanence may affect price.

1.5 Ownership of Carbon Offset Credits

Ownership of the carbon offset credits is not absolutely crystal clear but landowners have the strongest and natural claim to title. Legal certainty will be required. Sale of a commodity with a clouded title will not be possible. There should be legal work done on this to provide certainty before any program starts.

There are two areas requiring legal work:

- the contract between the landowner and the buyer of carbon offset credits must be very clear;
- the removal of any provincial government title to timber on private lands that is a residual artifact of colonial times.

There may be some joint funding partnerships to establish plantations on private lands. In this case the ownership of some or all of the carbon offset credits may be transferred by the landowner to the investors.

1.6 Purchase and Sale of Offset Carbon Credits

Offset carbon credits can be sold by the owner to any customer who needs credits to meet their emission reduction targets. The price will be established by the market.

2.0 THE MANAGED FOREST

The managed forest is also included in the Kyoto Protocol. Canada has 418 million ha of forest. Approximately 210 million ha is Multiple Use Forest available for forest management. Approximately 150 million ha is now subject to active management and fire and pest control operations. It is this ~150 million ha, that Canada may designate as "managed forest" under the Kyoto Protocol. The government must designate the area of managed forest to be included in the Kyoto Protocol by 2006 if it is to be counted in the first measurement period.

2.1 Ownership of The Managed Forest

The 150 million ha of managed forest is owned by the federal and provincial governments and by the private sector. Federal lands make up a very small portion. Provincial ownership consists of ~125 million ha. The remainder of the managed forest is owned by Industry; ~8 million ha, and 450,000 Small Private Woodlot owners ~17 million ha.

2.2 Offset Carbon Credit Accounting

There is a cap on offset carbon credits from the managed forest in the first measurement period. The future status of this sink and any changes in the cap will be sorted out during negotiations for the Kyoto GHG Emissions reduction targets for the second measurement period (2013-2017), as will everything else in the agreement. The uncertainty about policy and programs after 2012 will also affect Afforestation.

The carbon accounting for the managed forest is complex as there are many factors to consider. On the debit side there is harvesting, thinning, damage from; fire, insects and disease, as well as some deforestation for development, mining etc. The situation on linear deforestation such as clearing for roads and transmission lines is still unclear and is the subject of negotiation. On the credit side of the ledger the situation for linear afforestation (e.g. shelterbelts) is also unclear but will presumably be resolved in a complementary manner. Credits will also include natural regeneration, planting, juvenile spacing and natural growth, etc. All of these activities (at their present level of implementation) and natural disturbances are considered to be Business As Usual (BAU). To develop and claim carbon offset credits we require a forest carbon measurement and inventory system that will allow us to measure change. We must also start implementing new and additional forest management and silvicultural operations and strategies (above and beyond BAU) that will increase the rate of sequestration and the size of the forest carbon sink. New or additional forest protection strategies can also be implemented to reduce the loss of forest carbon to natural disturbances like fire, insect epidemic and disease.

It is the changes in the rate of sequestration and in the volume of carbon in the forest, brought about by the implementation of these new and additional forest management and silvicultural operations as well as improved forest protection strategies that will provide the carbon offset credits. If a good measurement system is not implemented, the detection and verification of the changes will not be possible resulting in no credits being identified. The first job required of the measurement system will be to establish the carbon content baseline of the managed forest. The next task will be the measurement of changes in the carbon content of this vast forest due to the application of additional forest management and silvicultural operations and forest protection strategies. Simulation and modeling supported by sample plots to provide base data is one possibility. There is a huge task involved in getting all this done in a way that is timely, credible, verifiable and accurate enough to pass the tests that will be applied by critics and buyers of offset carbon credits. The area of forest is huge and there is a lot of diversity that must be accommodated in the sampling system. There is a huge potential, but it will not be easy or cheap. There will be substantial additional benefits to the Canadian forest sector from any such program of management strategies, silvicultural operations, growth and yield studies and forest inventory

2.3 The Ownership of Carbon Offset Credits

The question of the ownership of carbon offset credits is both politically and economically charged. To add to the complexity, Canada has a relatively small cap to be shared among the players during the first measurement period. The federal government has a strategic interest in the way managed forest carbon offset credits are used and applied. The provinces own the vast majority (~80%) of the managed forest (Crown Land) and thus would have the first claim to ownership of the carbon offset credits. Private interests own the other 20%, and also have a stake in carbon offset credits from the managed forest. The forest products companies are now doing the bulk of the forest management and silvicultural operations and are also the likely implementation agents for any new forest

management activities. Forest protection strategies such as enhanced control of fire and insect attack are generally under the control of the provincial governments. None of these players are likely to do anything extra unless they are rewarded. Another factor causing ownership uncertainty is the effects of Native Land Claims, eventually resulting in a possible change in the ownership of forest land, and ownership of any related carbon offset credits. This uncertainty may cloud the title to some carbon offset credits.

The main negotiators will be the federal and provincial governments. There are many areas to negotiate including:

- The control and management of the carbon offset credits.
- The allocation of the credits among the provinces, and the allocation of offset carbon credits to the private forest landowners in each province. It is useful to note that agreement by all the provinces may not be required for some parts of the country to move forward on developing offset carbon credits from the managed forest.
- Establishment of agreement and measurement systems in time to benefit during the first measurement period.
- Allotment of available credits: Handed out on a 'first come first served' basis or allocated? What happens if one party cannot develop all the credits allocated? Could they sell the unused allocation to another party?

A significant area (20-25 million ha) of this Multiple Use Forest land is in private ownership. Here the forest management activities are the responsibility of the private owners. About 30% of this private land is large blocks of forest land in industrial ownership. The rest is owned by 450,000 small private owners with property size averaging 40 ha. Although the presumption is that title to the offset carbon credits lies with the private owners, legal clarity will be required. A system of aggregation will be needed to bundle the credits from small private properties to create marketable volumes and reduce transaction costs. But even the private owner's access to any offset carbon credits may be dependent on agreement between the federal and provincial governments on how to share both the offset carbon credit cap and the offset carbon credit benefits from additional forest management activities in the managed forest. Needless to say there are enough questions here to provide uncertainty for a while.

2.3 Permanence

Permanence should not be a big concern in the managed forest. Most of the Crown Land is protected by legislation or policy, and will remain forested land. Only a very small percentage will be alienated to other uses over the foreseeable future. Risk management strategies, however, will have to be implemented as there is always the danger of damage and loss due to fire, insect, and disease.

3.0 CARBON OFFSET CREDITS AS A COMMODITY

Is a Carbon Offset Credit a real product with enduring value in the market? Carbon offset credits are not like wood which has a long-standing value in the marketplace. The carbon embodied in wood became a commodity due only to the negotiation and signature of the Kyoto Protocol. Before this, the carbon embodied in wood had no value, except perhaps when wood is used as a fuel; as carbon is the main component of wood that combusts and produces heat.

Carbon in wood has value as a carbon offset credit only as long as the Climate Change Convention is legally in force or is honoured by Canada. Offset carbon credits are a compliance tool for the first measurement period (2008-2012). Their value will be increased if the Canadian government states that they will also be a compliance tool for the second, third and ongoing measurement periods. The value of carbon offset credits are entirely dependent on the Canadian government supporting the Climate Change Convention or establishing a stable and long-term domestic GHG emissions reduction program based on the same general principles and reduction mechanisms. Under these circumstances it is reasonable to expect that the government of Canada would either provide assurance that the value of offset carbon credits will be maintained, or they would undertake to provide a significant portion of the investment required to establish plantations under any afforestation program, or offer an investment tax write-off program. This would serve to reduce the risk to any investment made by private land owners or others interested in the development and use of offset carbon credits.

Landowners and forest managers must understand and accept the nature and foundation of the value of offset carbon credits in their decisions to invest in the production of carbon offset credits. Landowners who invest in afforestation on marginal/sub-marginal agricultural lands may want to consider the value of a 'basket of benefits' that will result from their expenditures on plantation establishment. Some of these benefits will be more certain and tangible than others. The 'basket of benefits' will include such things as: wood, offset carbon credits, aesthetics, wildlife habitat, water and soil conservation, rural jobs and community stability. All of these are good things but with very different returns on investment. Some of these returns are enjoyed by society at large, not just the landowner. This is an additional reason for government action to provide assurances of the long-term value of offset carbon credits or to underwrite the risks by becoming an important investor or offering a tax write-off program.

Tony Rotherham R.P.F. has 38 years experience in the forest management and industry sectors in Canada, and has been involved in the development of international and Canadian forest policy and certification strategy since 1994.
