

Annual Report

-2005-

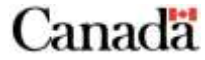
VETAC



Land Reclamation
Réhabilitation des sols



Our 2005 Partners:



2005 Highlights

Summary:

The 2005 Land Reclamation Program was a success this year creating 43 temporary positions, reclaiming over 20 hectares of barren land on a hilltop draining into Romford Creek in Coniston and planting over a quarter of a million tree seedlings throughout Greater Sudbury. With the completion of the fall plant the total number of trees planted within the City boundaries is approaching eight and a half (8.5) million.

In addition to the regular operation of the Program, various funding and in-kind contributions enabled not only the continuation of on-going projects but the development of new initiatives. Included in this category is mapping of watershed and impervious surface cover, further development of tools for assessing changes in forest canopy using satellite imagery and projects initiated by VETAC's sub-committees including the 'Ugliest Schoolyard Contest'.

Accomplishments:

Task:	2005:	To Date:
Area Limed	21.3ha	3,367.1ha
Area Fertilized	21.3ha	3,174.7ha
Area Seeded	21.3ha	3,101.9ha
Trees Planted	266,476	8,495,585

Speaking Engagements:

Sudbury Horticultural Society
 City of Phuket, Thailand delegation
 Valleyview P.S. Grades 7&8
 Université du Troisième Age
 TERA Group
 St. Paul the Apostle School
 Regional Heritage Fair
 Munich, Germany Students
 Jamaican Delegates
 University of Guelph
 Retired Women Teachers Association

Media:

Sudbury Star Articles:

Regreening 'far from complete' (Jan. 19)
 'Dust in the wind' (Aug. 25)
 'St. Paul's a lot greener these days' Coniston school wins the Ugliest School Yard Contest (Sept. 15)
 Our Opinion...Great Sudbury clean up...Thumbs up to the faculty, students and parents of St. Paul the Apostle... (Sept. 16)

Northern Life Articles:

Peter Beckett...'healer' of our landscape (Mar. 13)
 'Making the connection - climate change, air quality and trees' (May 18)
 Coniston students spruce up playground (Sept. 30)

Work Crew:

Ontario Works Participants:	20
HRSDC - JCP Positions:	20
CGS Temporary Staff:	5
CGS Summer Students:	6
Placement Volunteers:	2
Volunteer Groups:	10

2005 Partners:

City of Greater Sudbury (CGS)
 Human Resources and Skills Development Canada -
 Job Creation Partnership (HRSDC-JCP)
 Ontario Works (OW)
 Canada Centre for Remote Sensing (CCRS)
 INCO Ltd.
 Falconbridge Ltd.
 Vermilion Forest Management Co. (VFM)
 YMCA Youth Employment Service (YES)
 Nickel District Conservation Authority (NDCA)
 College Boreal
 Sudbury earthdancers
 Private Volunteers

Program Operation

Spring Tree Plant

The spring tree planting activities began on May 2nd and continued until June 9th, with 151,676 tree seedlings planted. Site selection focused on remaining sites from the 1999 to 2003+ Five Year Plan as well as sites aerially limed by INCO Ltd. in 2004 and 2003. Other sites were chosen for hemlock seedlings which were planted in plots, enabling future observation of survival rates. A total of 50,000 red and jack pine seedlings were donated by INCO Ltd. (of which 5,000 were planted in the fall), and 10,336 trees were donated by NDCA for the spring plant.

Fall Tree Plant

The fall plant began on Sept 19th and concluded on October 20th with the completion of tree donations from INCO Ltd. and Vermilion Forest Management Co. (VFM). Crown land in the Falconbridge area was the new home for 109,200 red pine seedlings donated by VFM, as part of an earlier agreement.



All terrain vehicle (ATV) used to transport trees to the tree planters. This greatly reduces walking time to reload with trees as some of the sites are over 1km from road access points.



Tree planters returning after a long day, still smiling.

Tree Planting Summary

This year, 266,476 tree seedlings were planted throughout Greater Sudbury, bringing the grand total to 8,495,585 tree seedlings planted since 1979. Refer to Map 1 for planting locations and Figure 1 for number of trees planted yearly. To date, 95% of all trees planted have been coniferous species and less than 5% have been hardwoods (Figure 2). Almost 75% of coniferous species planted have been pines (jack, red and white), and red oak accounts for 50% of all the hardwoods planted (Figures 3 and 4) to date. Tree species that are planted by the Program are believed to be the major components of the original forests in the Sudbury area, exclusive of Black Locust which was used as a nurse tree on more difficult sites.

Map 1. 2005 Tree Planting Locations

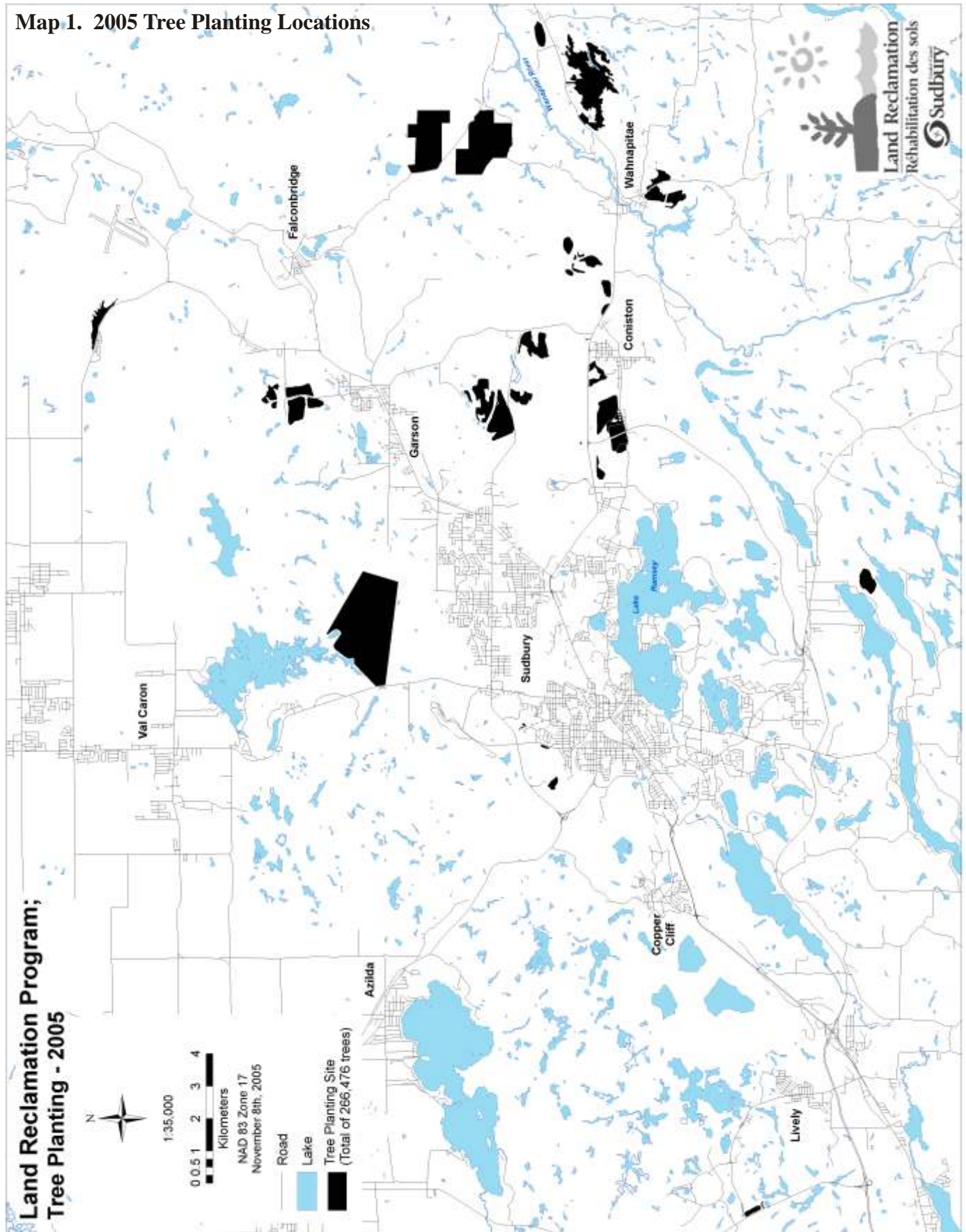
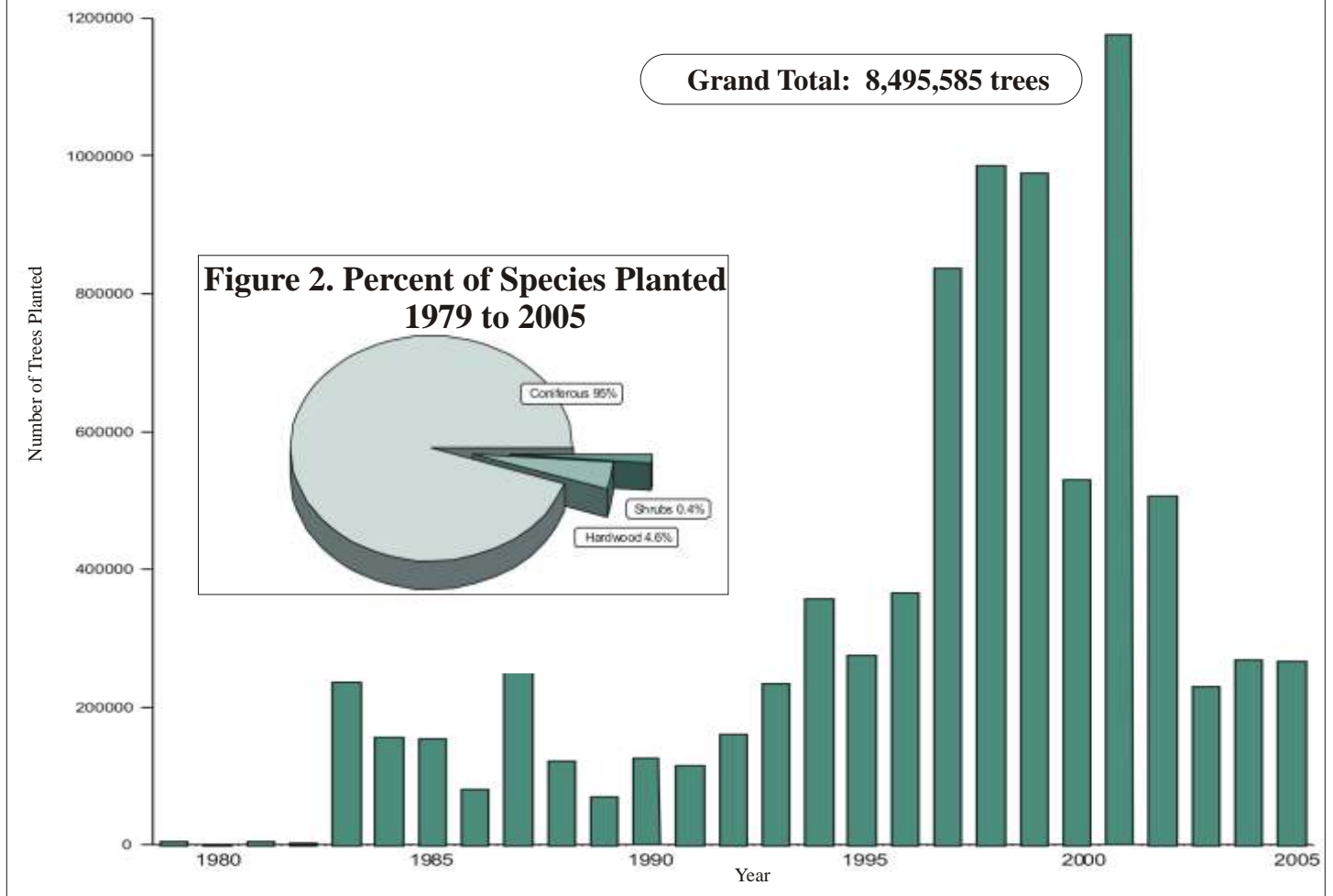
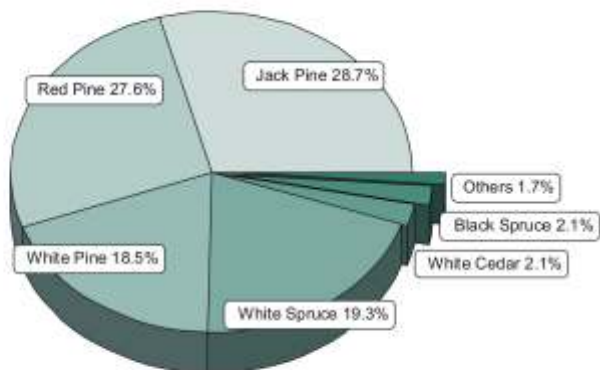
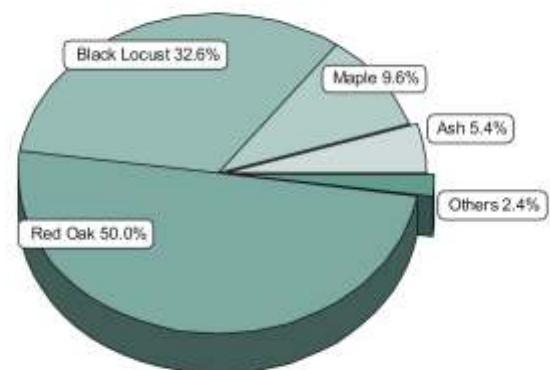


Figure 1. Number of Trees Planted 1979 to 2005**Figure 3. Percent Coniferous Species Planted 1979 to 2005**

Others Include:

Tamarack 1.2%
Norway Spruce 0.2%
Larch 0.2%
Hemlock 0.1%

Figure 4. Percent Hardwood Species Planted 1979 to 2005

Others Include:

Russian Olive 1.4%
Yellow Birch 0.9%
Bur Oak 0.1%
American Beech 0.1%

Greening Activities

Early reclamation efforts concentrated on view corridors and entryways to the City. These efforts were very successful, creating strips of vegetation along roadways. Yet, the lack of soil and thriving vegetation beyond this ‘wall’ of trees is of major concern when considering watershed health and long-term sustainability of forest ecosystems in the Sudbury area.

The crew began liming activities on June 13th on a hilltop just north of the Hwy 17 and SE Bypass intersection (Refer to Map 2 for location). Although not visible from the road, reclaiming this area will have positive impacts on the quality of water flowing off the watershed into Romford Creek, which flows through the former town of Coniston.

Once the liming phase was complete, the crews spread fertilizer and a grass/legume seed mixture on the land. The entire process wrapped up on Sept 15th. By the beginning of October, the seed mixture was already starting to grow on the newly reclaimed site.



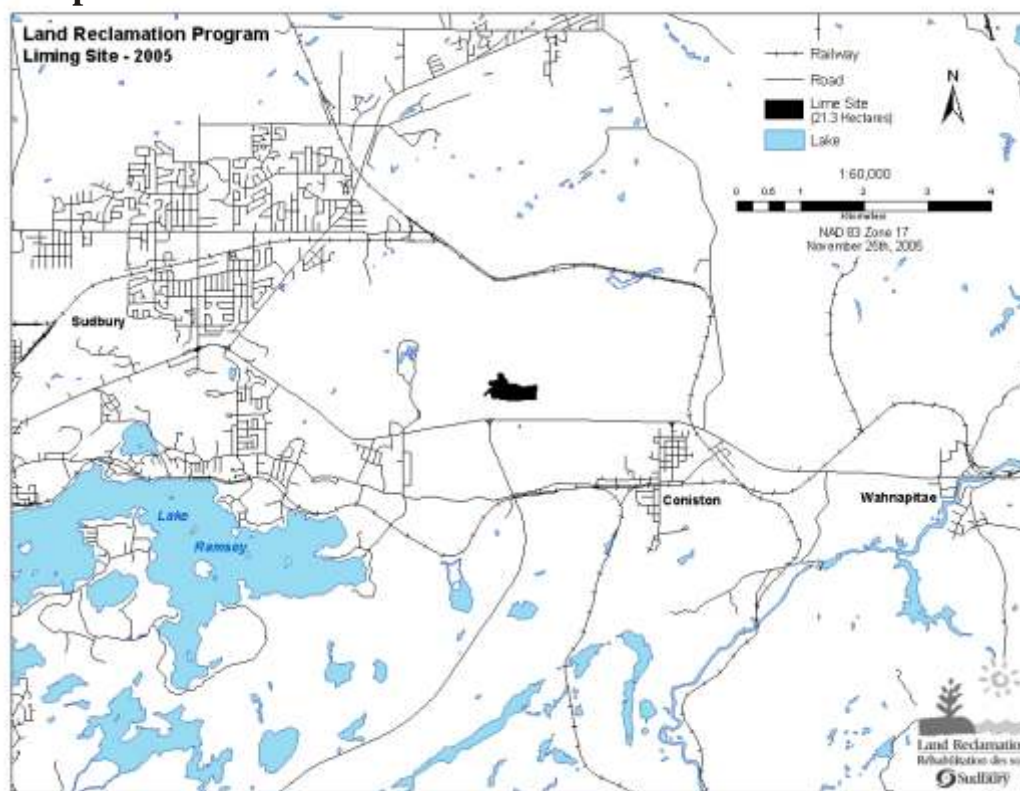
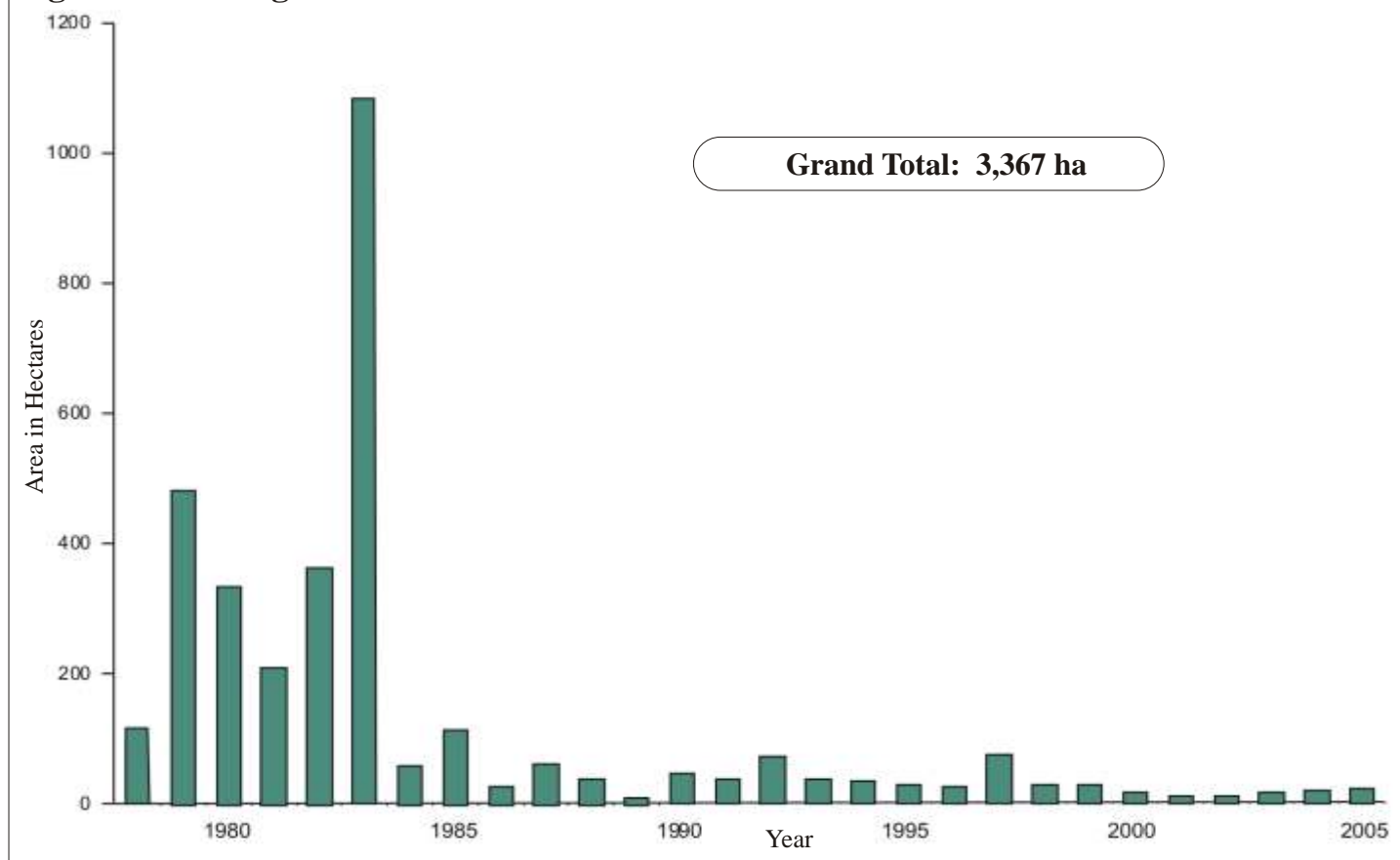
The crew exceeded our goals slightly and greened 21.3 hectares of barren land. To date, 3,367 hectares of barren land have been treated by the Land Reclamation Program (Refer to Figure 5 for yearly liming area). Given estimates of 20,000 hectares of barren land and 65,000 hectares of semi-barren land affected by past mining activities, the task of land reclamation remains daunting.



Shade structures were provided to the crew working on bagging the lime to further prevent exposure to the sun.



With a 1 km walk from the parking area to the back of the lime site, some days were spent repairing an existing dirt road so the project vehicles could transport the lime to the top of the hill, reducing the walking by half.

Map 2: 2005 Lime Site Location**Figure 5: Liming Area 1978 to 2005**

Projects

Mapping

An opportunity was created for a College Boreal co-op student to participate in mapping exercises for the Land Reclamation Program this past spring. The student was placed for a seven week period from March 7th to April 22nd. As a result of this placement, the following has been accomplished:

- 1) finalization of the pervious and impervious cover mapping for the Ramsey Lake watershed and all of its subwatersheds;
- 2) finalization of the pervious and impervious cover mapping for the Lake Nepahwin watershed;
- 3) tree canopy cover mapping for ALL of CGS's 'urban' areas; and
- 4) mapping of exposed bedrock cover over ALL barren areas and about half of the semi-barren areas.

These products will add greatly to the environmental planning activities that our division undertakes. The watershed mapping, in particular, has already generated interest from other departments at the City as well as outside agencies. These maps also serve an important link between Land Reclamation and the Lake Water Quality Program.

Canada Centre for Remote Sensing (CCRS)

The City, through the Land Reclamation Program, established a partnership in 2004 with CCRS to develop tools for assessing changes in the forest canopy in the CGS impacted by mining activities and monitoring the progress of vegetation cover using satellite imagery. This research is supported by the Sustainable Development through Knowledge Integration program in Natural Resources Canada's Earth Sciences Sector.

This year, field staff from CCRS made their way to Sudbury to conduct ground truthing exercises. One site of particular interest was the 2005 Lime Site. This site and the surrounding area offers various stages of vegetation recovery in the Sudbury area. To the south of the lime site is an area that was reclaimed and tree planted over 20 years ago and to the east is an area completely untouched, still displaying the denuded landscape of Sudbury's mining legacy. This opportunity provided the field staff with excellent examples of barren land, land that has been reclaimed in the past and land that is newly treated. They can now use the information they collected in the field to assist in interpreting satellite imagery in relation to determining relative health of vegetated areas in Sudbury.

The development of tools for assessing changes in the forest canopy in the CGS will be supplemented by monitoring techniques for determining changes in the plant species composition of the vegetation. This information will be useful in tracking the success of reclamation techniques and the overall health of the vegetative cover. We look forward to the results of this exercise as it will aid in future land reclamation planning.

City Beautification Projects

In keeping with the CGS Short-term Action Plan, VETAC and the Land Reclamation Program have been working on City Beautification projects as part of corporate priorities.

VETAC's Urban Landscape Sub-committee has been busy visiting various City owned properties to assess any improvements that can be made. The focus areas to this point have been the Kingsway, and Notre Dame St. to the Four Corners. Some of the areas in question can be planted by the Land Reclamation Program under normal operations, but others would require more intense landscaping. Further plans are in the works and will require the cooperation of various departments at the City.

The Land Reclamation Program is also developing a plan for improvements to the airport road corridor in cooperation with Airport Services.

Ugliest Schoolyard Contest

This year VETAC's Urban Landscape Sub-committee focused their efforts on involving youth in schoolyard greening activities by initiating the Ugliest Schoolyard Contest. This contest, which was available to all four school boards in the City, was highly popular with students and school staff and 21 applications were received.

Despite the excellent submissions received, the subcommittee was forced to choose only one winning school. After much deliberation, St. Paul the Apostle School in Coniston, was selected as having the ugliest schoolyard in Greater Sudbury.

School staff and students were very enthusiastic about winning the contest and immediately began planning their schoolyard greening project. Janet Rice-Bredin, an independent Landscape Designer, donated her time and expertise in designing the schoolyard make-over, and worked closely with the school's principal, teachers, and the school board's Plants Department.

The non-winning schools were forwarded additional information on funding opportunities so they could pursue greening efforts on their own. The subcommittee also compiled a resource package containing videos and books on school ground projects that are available for schools to borrow.

On September 13th, the schoolyard re-greening effort began with the planting of 36 large caliper trees donated by Canadian Tire on Regent St. Professional planting assistance was provided by Allmac Tree Service.



This project was a great deal of work and a lot of fun, but it would not have been possible without the tireless efforts of Mr. Wayne Hugli of the Urban Landscape Sub-committee and all of the generous sponsors who made it possible. Many thanks to all those involved in this project. Well done! Stay tuned, plans are already underway for the 2006 Ugliest Schoolyard Contest.



We gratefully acknowledge the support of the following organizations and businesses in the schoolyard make over at St. Paul the Apostle School in Coniston:

Landscape Design

Janet Rice-Bredin

Gardens

Adam and Eve Garden and Patio Centre
Botanix Azilda Greenhouses
Freskiw Farms
Harmony Gardens
Holla's Produce and Greenhouses
Home Hardware - Garson
Southview Greenhouse Growers
Sudbury Horticultural Society
Sudbury Master Gardeners

Tree Planting

Allmac Tree Service
Canadian Tire - Regent Street
Lopes Mechanical Ltd.

Landscaping

Ashley Landscape Supplies
Falconbridge Ltd.
Hollandia Land & Environmental Solutions
INCO Ltd.

Construction

Brown's Concrete Products Ltd.
Fisher-Wavy
Greenthumb Gardens
Lafond Contracting Ltd.
Pro-Hardware - Valley East
Pro-Hardware - Capreol
The Tire People

Refreshments

Toppers Pizza

Work Crew

Students, Teachers & Parents of
St. Paul the Apostle School

Labour

Labour

Since the operation of our Program is very labour intensive, we would not be so successful if it were not for our many sponsors donating valuable labour to the Program. Thanks to these donations, we were able to reach our targets and plant the trees that were donated to the Program..

The Program staff included three supervisory positions and eight worker positions, six of which were filled by summer students, and were partially funded by YMCA Youth Employment Services. Ontario Works provided a total of 20 individuals to work two days per week from May 2nd to October 20th. They were engaged in both the spring and fall planting activities as well as the greening activities during the summer months. Human Resources and Skills Development Canada (HRSDC) through a Job Creation Partnership (JCP) provided 20 positions for a 19 week period. These individuals began on June 13th and participated in the greening activities and the fall tree planting activities. A private volunteer also participated over a 17 week period from May 16th to September 7th putting in over 200 hours of work planting trees and spreading lime.

In addition to the field operations, a student from College Boreal participated in a co-op placement for a 7 week period, engaged in the completion of various mapping exercises.

This year, 43 temporary positions were created (Refer to Table 1). To date over 4,400 temporary positions have been created (Refer to Figure 6).

Table 1. Labour Summary

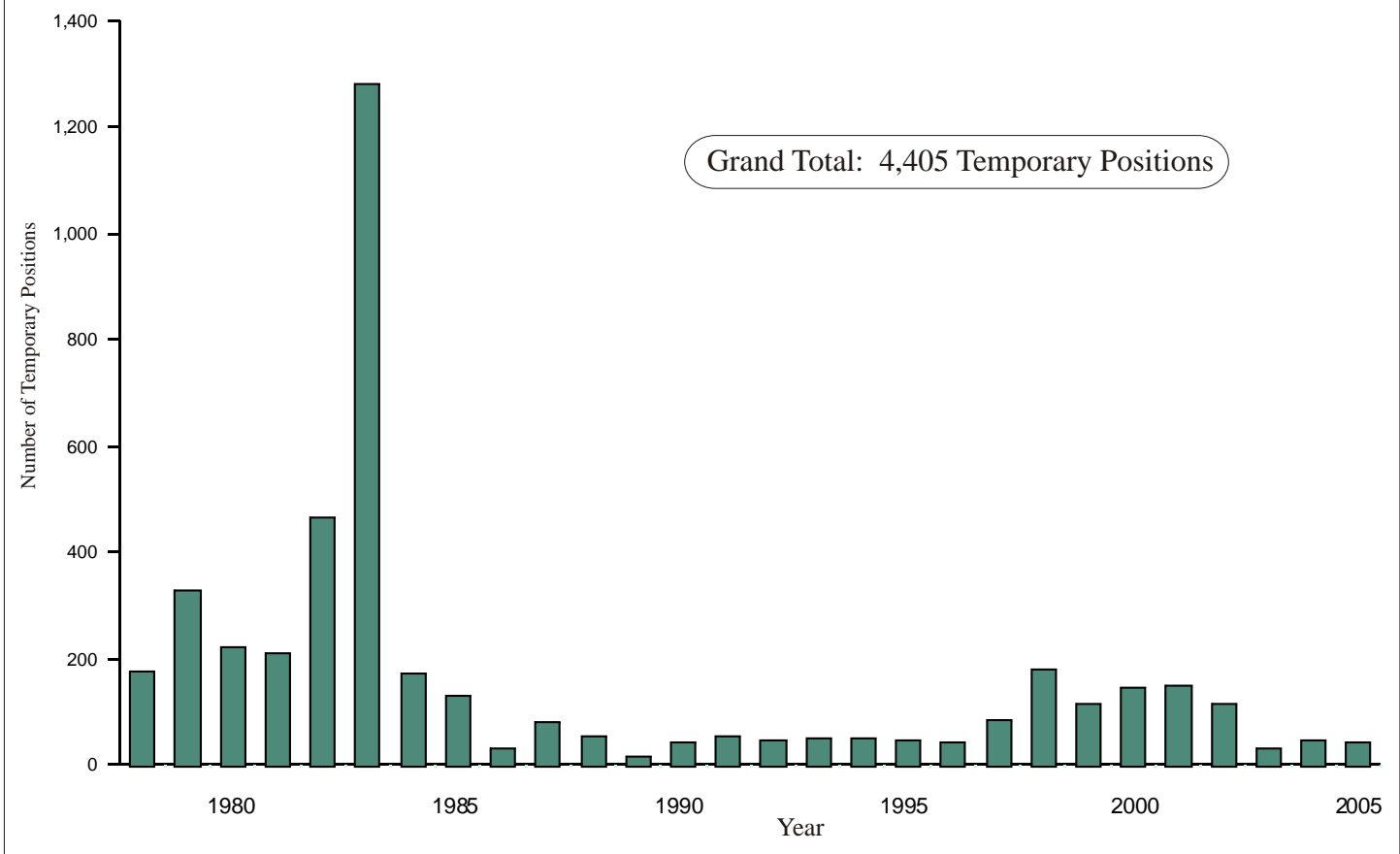
Program	Positions	Weeks	City Cost	Activity
CGS Temporary Employees	5	26 26 25	100%	Foreperson (2) Crew Foreperson (1) Worker (2)
YMCA - YES Summer Students	6	17	82%	Tree planting, liming
Ontario Works	10	25	Nil	Tree planting, liming
HRSDC - JCP	20	19	Nil	Liming, tree planting
Private Volunteer	1	17	Nil	Tree planting, liming
College Boreal	1	7	Nil	GIS Mapping

TOTAL

43



Field Crew 2005

Figure 6. Temporary Positions 1978 to 2005

Volunteers

Volunteers also participate in land reclamation activities by planting trees. This year ten volunteer groups participated in tree planting activities. In total, 189 volunteers planted over 7,000 tree seedlings throughout Greater Sudbury. The following is a list of the groups that participated in tree planting activities this spring:

Finnish Historical Society
Gatchell School
Sudbury Game and Fish
Friends of the Grotto
Finnish Retirement Home

Redwood Acres School, Hanmer
McFarlane Lake Group
Ministry of Environment (MOE) and FedNor
Friends of NDCA
VETAC members

The volunteer program provides educational opportunity on environmental issues, information on the City's Land Reclamation Program, tree planting experience as well as a sense of community pride and ownership of the natural environment. Many thanks go out to these volunteer groups that acknowledge the importance of trees to our local environment and in assisting the Land Reclamation Crew in this year's planting activities.

To date, 7,510 volunteers planted 273,772 seedlings throughout Greater Sudbury.

Funding

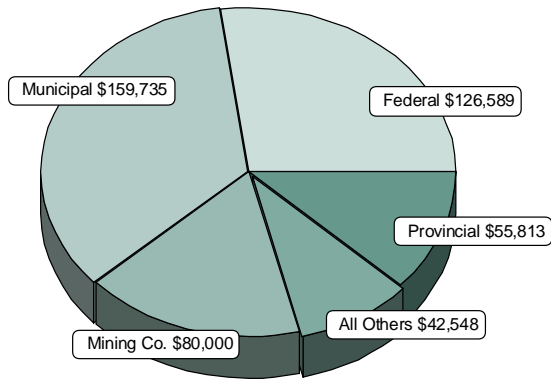
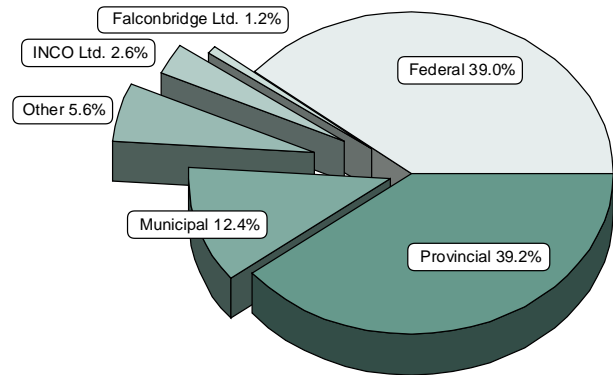
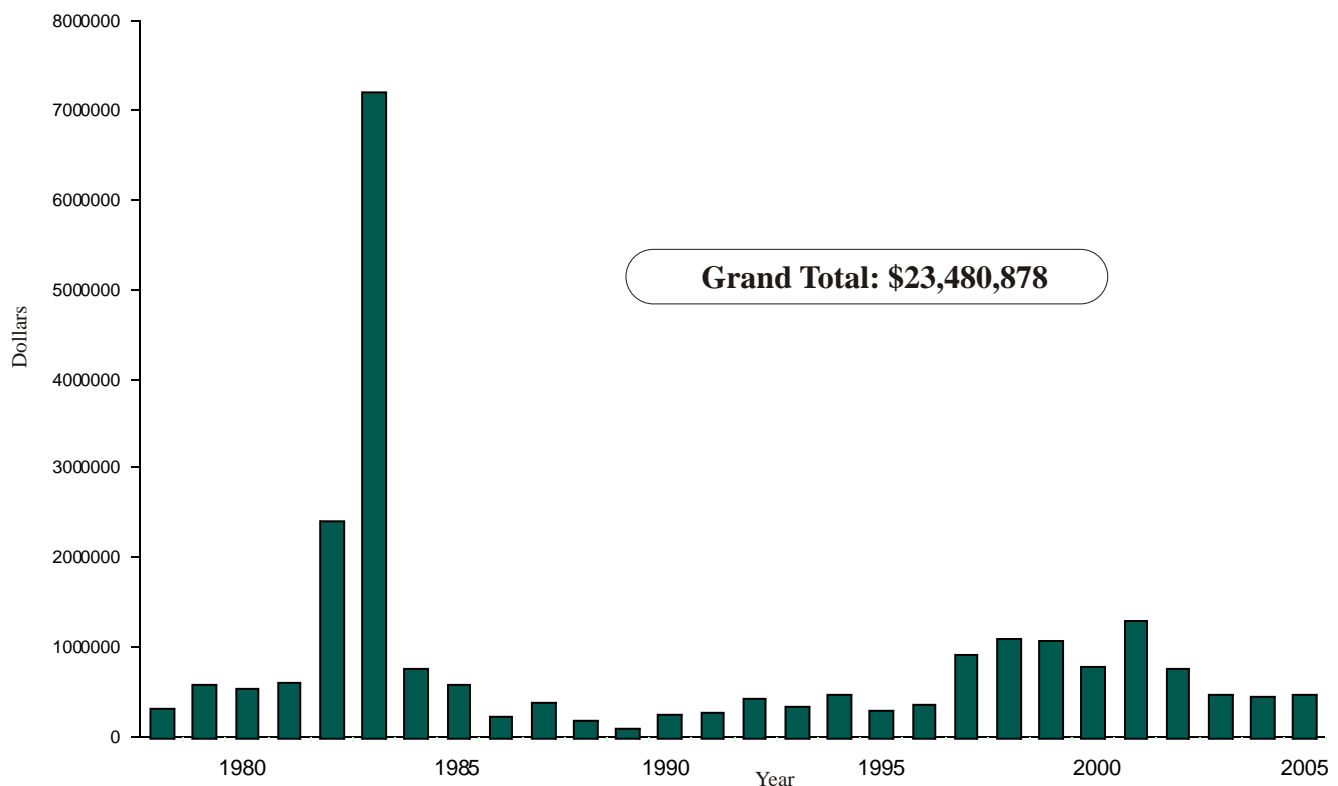
Funding Summary

The Land Reclamation Program relies on donations to operate the yearly Program. Many successful partnerships have been developed over time and new opportunities are always being investigated. In 2005, with donations of labour, funds, materials and other in-kind contributions, the Program cost exceeded \$450,000 with 66% of the total being donated from outside agencies, and only 34% of the cost being contributed by the City. Table 2 below outlines the financial contributions for the 2005 season and Figure 7 (next page) provides a breakdown of contributions by funding source.

Table 2. Funding Contributions 2005

Program Contributors	Weeks	Number	Source	Amount
LABOUR				
Ontario Works Program	25	20	Provincial	\$25,773
YMCA - YES	17	6	Provincial	\$5,040
HRSDC - JCP	19	20	Federal	\$76,589
College Boreal	7	1	Private	\$2,702
Volunteer	17	1	Private	\$2,536
CASH				
Ontario Works			Provincial	\$25,000
INCO Ltd.			Mining Co.	\$25,000
Falconbridge Ltd.			Mining Co.	\$40,000
Sudbury earthdancers			Private	\$1,450
MATERIALS (trees)				
Vermilion Forest Management Co.		109,200	NGO	\$32,760
INCO Ltd.		50,000	Mining Co.	\$15,000
NDCA		10,336	Private	\$3,100
IN-KIND				
Canada Centre for Remote Sensing			Federal	\$50,000
SUB TOTAL				\$304,950
City of Greater Sudbury				\$159,735
GRAND TOTAL				\$464,685

Since 1978, the City's contribution to the Program has averaged 12.4 % of the total with 87.6% of the Program funding has come from outside sources (refer to Figure 8). To date, the Program costs exceed \$23 million dollars (refer to Figure 8 for yearly Program cost summary).

Figure 7. Funding Contributions 2005**Figure 8. Percent Funding Contributions by Source 1978 to 2005****Figure 9. Yearly Program Costs 1978 to 2005**

Events**Garden Festival**

The Lung Association, in conjunction with the Sudbury Horticultural Society and the Sudbury Master Gardeners hosted the first annual Gardening Festival on April 8th, 9th and 10th at Market Square downtown. The Land Reclamation Program Display board was set up with many pamphlets and was manned by various VETAC members over the course of the weekend. For additional information on gardening choices we made space available for the Lake Water Quality Group's shoreline planting guides. The Program display board was well received with many visitors commenting on the difference the Program has made to this community. Many stories of the past landscape were shared with us.

Tree Giveaway

The annual 'Towards a Greener Sudbury' show was held at the New Sudbury Shopping Centre on Saturday, May 28th. Over 5,000 tree seedlings were distributed to the public, including white cedar, white spruce, hemlock, red pine and white pine. Public donations to the Program were very generous this year, exceeding \$800.00.

Alexander Predon, a 6th grade student from St. Charles Elementary, completed a Heritage Fair project on Land Reclamation. Alex went on to win 4th place in Sudbury and was one of 10 Sudbury area students that headed to the Provincial Fair in Hamilton on May 18th - 22nd. VETAC invited him to showcase his display at the Tree Giveaway and everyone was very impressed with his fresh approach to capturing the zest of Land Reclamation in the Sudbury setting.

Falconbridge Limited generously provided free pH testing for anyone bringing soil samples. Of the 48 garden and yard soil samples analyzed, the lowest pH value was 5.6 and the highest was 7.6 with an overall average of 7.0 which is neutral.

The Lake Water Quality Program was also in attendance at this event, offering information on community monitoring programs and healthy lakefront living.

Other Events

The Land Reclamation Program also had a presence at the Clean Air Sudbury Forum and the Sudbury Basin Environmental Networking Initiative (SBENI) official release of the "Keen to be Green" Environmental Guide. This guide is a handy directory of environmental groups, clubs and services throughout Greater Sudbury. The Land Reclamation Program and VETAC are featured in this guide under section 2 entitled "Government Groups and Advisory Panels for the City of Greater Sudbury".

VETAC

...for the preservation, protection, restoration and improvement of watersheds, forests, and ecosystems within the City of Greater Sudbury

Members List 2005:

Chair	Dr. Peter Beckett	Laurentian University
Vice-Chair	Bill Lautenbach	City of Greater Sudbury, Planning Services
Members	Sue Brierley	Private
	Cheryl Faggioni	Sudbury and District Health Unit
	Tony Fasciano	Private
	Enzo Floreani	Master Gardeners
	Wayne Hugli	Horticultural Society
	Jim Ilitski	Private
	Mark Kuhlberg	Laurentian University
	Shirley Makela	Private
	Tina McCaffrey	City of Greater Sudbury, Land Reclamation
	Dr. Stephen Monet	City of Greater Sudbury, Env. Planning Initiatives
	John Negusanti	Ministry of the Environment
	Mike Peters	INCO Ltd.
	Tom Peters	Private
	Paul Sajatovic	NDCA
	Jim Savage	Private
	Graeme Spiers	MIRARCO
	Dr. Mark St. John	Private
	Marty Todd	Falconbridge Ltd.
	Ben van Drunen	Hollandia Nursery Sod

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