

Regreening Program

Annual Report 2014

regreening
GREATER SUDBURY



2014 Partners

Regreening Program



Ugliest Schoolyard Contest

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2014 Highlights

This was the fourth year in the implementation of the **Biodiversity Action Plan** through the **5 Year Plan 2011-2015**.

In 2014, the Regreening Program created 30 temporary employment opportunities, reclaimed 3.8 hectares of barren land north of Wahnapiatae and planted over 70,000 tree seedlings and over 45,000 shrubs/understory trees throughout Greater Sudbury. External funding, material and in-kind contributions enabled the implementation of the fourth year of the **5 Year Plan 2011-2015**. The table below outlines the various Regreening components followed by the 2014 achievement and the accumulated total since the Program began in 1978.

Regreening Component	2014	To Date (since 1978)
Tree Planting	70,694	9,494,925
Shrub Planting	45,138	204,634
Area Limed	3.8 ha	3,449 ha
Area Fertilized	9.8 ha	3,227 ha
Area Seeded	9.8 ha	3,155 ha
Forest Floor Transplants	0.22 ha	1.28 ha
Program Cost	\$823,075	\$29,283,744
Temporary Employment Opportunities	30	4,650
Awards	—	14
Number of Schoolyards Regreened	2	36
Volunteer Tree Planters	351	11,062
Trees Planted by Volunteers	2,746	365,900
Trees Provided for Residential Plantings	685	425,491

VETAC's Urban Landscape sub-committee continued with the 10th annual "Ugliest Schoolyard Contest". The grand prize winner was Immaculate Conception Catholic Elementary School in Val Caron. In all, 13 local businesses, corporations, special interest groups as well as numerous private citizens provided funding, materials and offered services to complete the schoolyard Regreening project. Corporate funding from Sudbury Integrated Nickel Operations (Sudbury INO), a Glencore Company, in the amount of \$50,000 enabled the Committee to extend the prize package to a runner-up school: Levack Public School in Levack. Schoolyard transformations occurred from late August until the end of October.

The operational-scale, forest floor transplant project proceeded again in 2014 thanks to continued partnership with KGHM International that is developing the Victoria Mine site near Fairbank Lake. This year, 8 sites (129 plots) received understory forest floor mats totaling an area of 0.22 ha.

Field Interns continued to explore the flora of barren and semi-barren areas and conducted additional plant community succession investigations. A Flora of Greater Sudbury Project was also initiated in collaboration with the Laurentian University Herbarium. Bird monitoring was also undertaken at various locations this year.

Tree Planting

Spring and fall planting activities resulted in 70,694 tree seedlings and 45,138 shrub/understory trees planted throughout Greater Sudbury. Since 1978, a total of 9,494,925 trees and 204,634 shrub/understory trees have been planted by the Program.

Tree Canada provided funding for 65,000 trees and shrubs this year and Vale donated 22,904 seedlings (jack pine, red pine, and white spruce).

A total of nine species of deciduous understory trees, eighteen shrub species and nine tree canopy (conifer and deciduous) species were planted. Of these, six new species were added to the mix this year to increase plant diversity throughout Greater Sudbury including showy mountain-ash (*Sorbus decora*), American mountain-ash (*Sorbus americana*), black chokeberry 'Viking' (*Aronia melanocarpa* 'Viking'), flowering raspberry (*Rubus odoratus*), Canada yew (*Taxus canadensis*) and American hazel (*Corylus americana*).

Vale aerially limed and seeded 210 hectares of barren land located 4.5 km south of Falconbridge in the fall of 2013, which was the main planting site for the crew this spring. Species planted included the typical first phase planting mix of jack pine, red pine, white pine, white spruce and green alder.

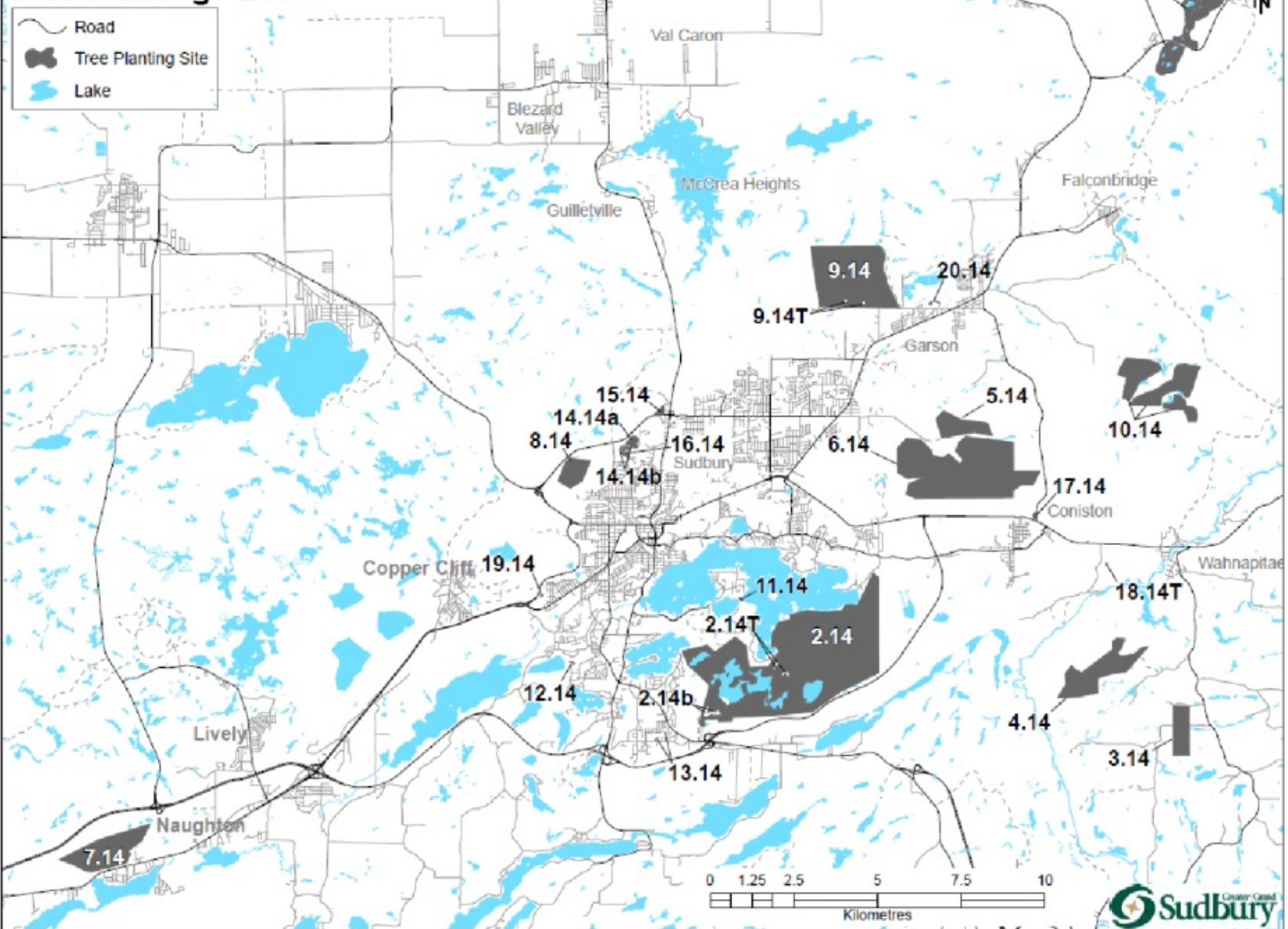
Working from the **5 Year Plan 2011-2015**, other planting sites included the Kettle Lakes, Penny Lane, Finni Road, Lasalle/Savannah swamp, O'Neil Drive, Lake Laurentian Conservation Area (LLCA), Walden Ski Club and Frood Road.

Refer to the tree planting map on the next page for locations of the planting sites.



Planting crew loading up with seedlings to plant. The rainy year was great for the seedlings, but tough on the planters.

Regreening Program; Tree Planting - 2014



Edible Berry Project

This year, a new project was initiated involving the introduction of trees and shrubs that produce edible berries into unmanaged (i.e. non-manicured) areas of city parks. The main purpose of this project is to provide a source of edible berries for the general public to forage, promote awareness of native edibles and enhance plant and animal biodiversity in urban areas.

Eight parks were selected for planting including: Bethel Lake, Pond Hollow, Terry Fox Complex, Robinson Playground, Lorne Brady Park, Joe McDonald Memorial Park, Selkirk Park and the Jane Goodall Reclamation Trail. Four edible berry producing species were planted including: black chokeberry 'Viking' (*Aronia melanocarpa* 'Viking'), staghorn sumac (*Rhus typhina*), showy mountain-ash (*Sorbus decora*) and American mountain ash (*Sorbus americana*). In total, 2,510 trees and shrubs were planted.

This project is planned to continue into the coming years and additional native edible species will be added to the list as available.

Survival & Quality Assessments

Collège Boréal partnered with us to provide Tree Canada with survival assessments of past planting sites. Assessments were conducted in September. Overall, tree survival rates are in the 90th percentile range for 1 year, 2 year and 5 year old plantations.

Tree Canada also now requires that funded plantations be evaluated by a quality assessor to ensure the trees are

planted at locations specified and they are planted up to industry standards. The quality assessor visited the planting crew on-site both in the spring and in the fall. Overall, he found the crew to have a 97% accuracy rate for all species planted.



Collège Boréal student taking measurements at past planting site. Photo: Collège Boréal.

Volunteer Tree Plants

The Regreening Program is able to offer seedlings, planting equipment and guidance to any local group wanting to participate in the regreening effort. The volunteer program provides educational opportunity on environmental issues, information on the City's Regreening Program, tree planting experience as well as a sense of community pride and ownership of the natural environment.

This year, nine volunteer groups involving over 350 individuals planted almost 3,000 tree seedlings throughout Greater Sudbury. The following is a list of groups that participated in tree planting activities this year:

- Toronto area schools visiting Dynamic Earth
- St. Paul School, Lively
- McFarlane Lake Stewardship Group
- Silver Lake Stewardship Group
- Junction Creek Stewardship Committee (JCSC)
- BioSki Club
- Walden Public School, Lively
- Wahnapiatae First Nation
- Stantec

The Regreening Program also assisted Conservation Sudbury, formerly known as Nickel District Conservation Authority, with their TD Tree Days planting event on September 28 by delivering seedlings and lending planting bags and shovels.

Stantec's Sudbury Office holds an annual Community Day Challenge to engage their employees in worthwhile community projects. This year, participating Stantec employees planted

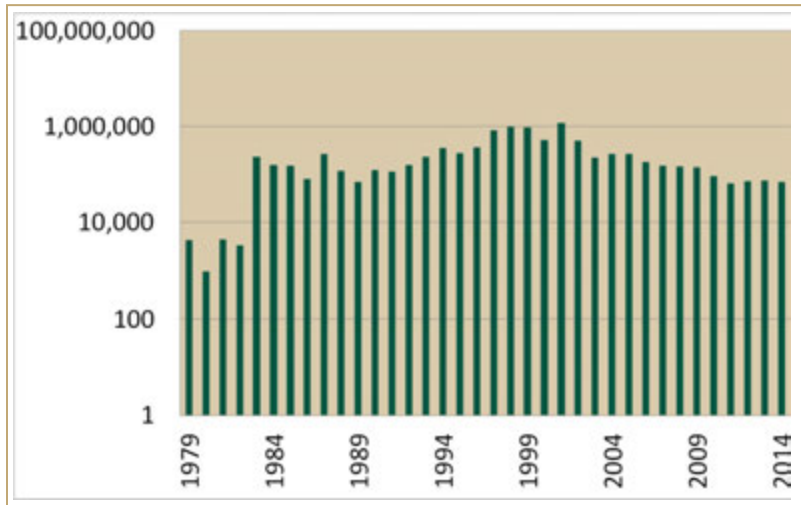
300 mountain ash seedlings at Lorne Brady Park in Garson on September 15 as part of the Regreening Program's new Edible Berry Project.



Stantec employees take a break from their volunteer tree planting to pose for a group photo.

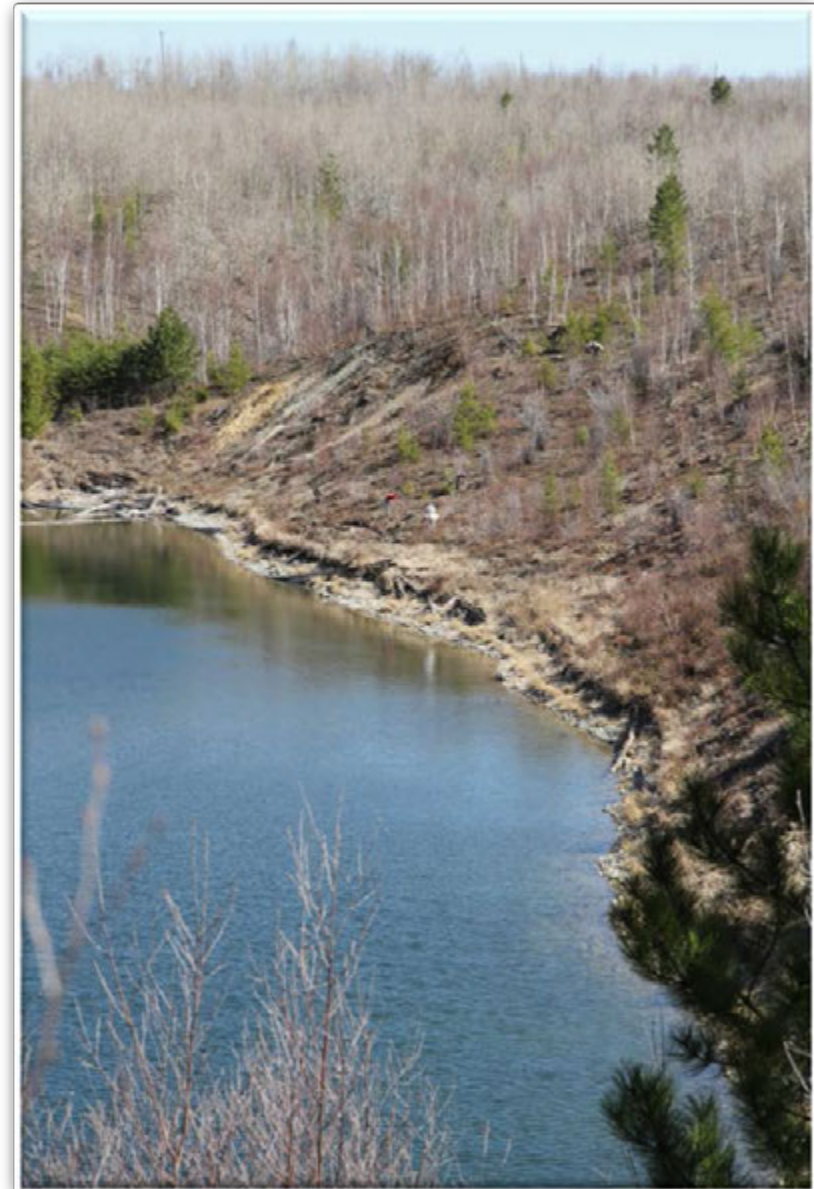
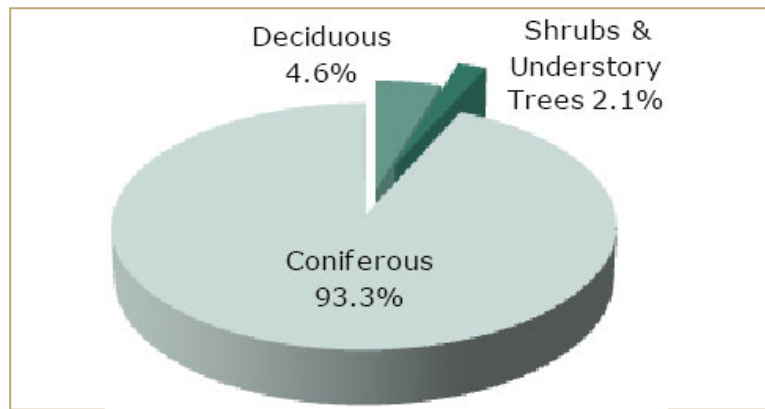
Number of Trees Planted 1979 to 2014

The bar graph below indicates the number of trees planted each year since 1979 for a grand total of 9,494,925 trees.



Percent of Species Planted 1979 to 2014

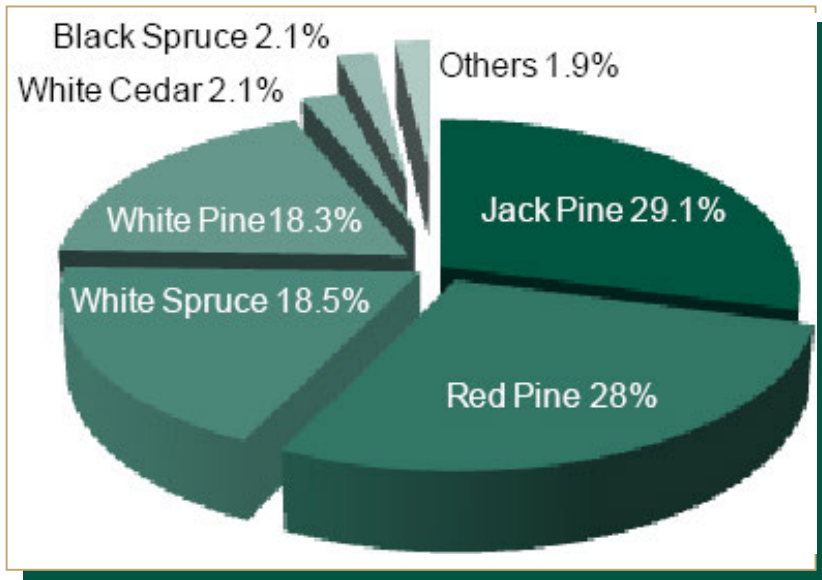
The pie graph below illustrates the percentage of each type of species planted since 1979 for a grand total of 9,699,559 plants.



Crew planting at Kettle Lakes site.

Percent Coniferous Species Planted 1979 to 2014

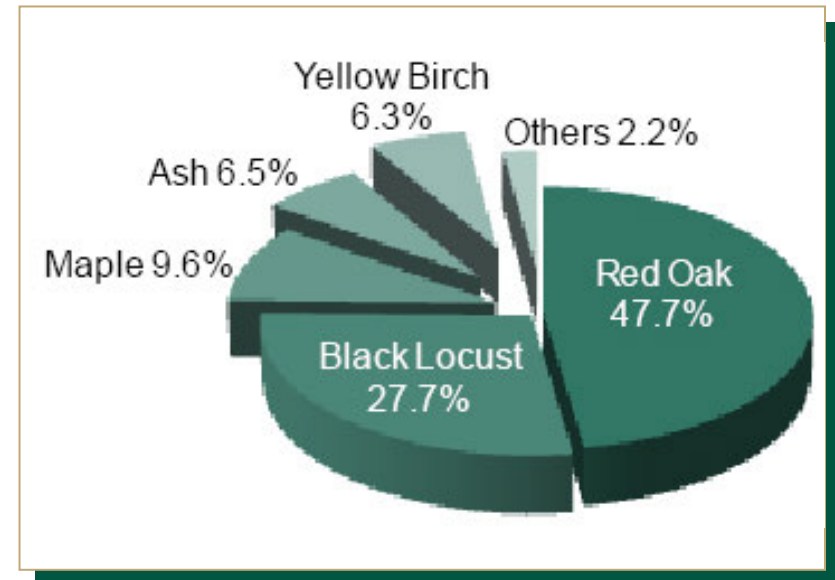
The pie graph below illustrates the percentage of each coniferous tree planted since 1979 for a total of 9,051,097 trees.



Others Include: tamarack 1.3%, Norway spruce 0.2%, larch 0.2%, hemlock 0.1%, balsam fir 0.1% and Austrian pine <0.1%.

Percent Deciduous Species Planted 1979 to 2014

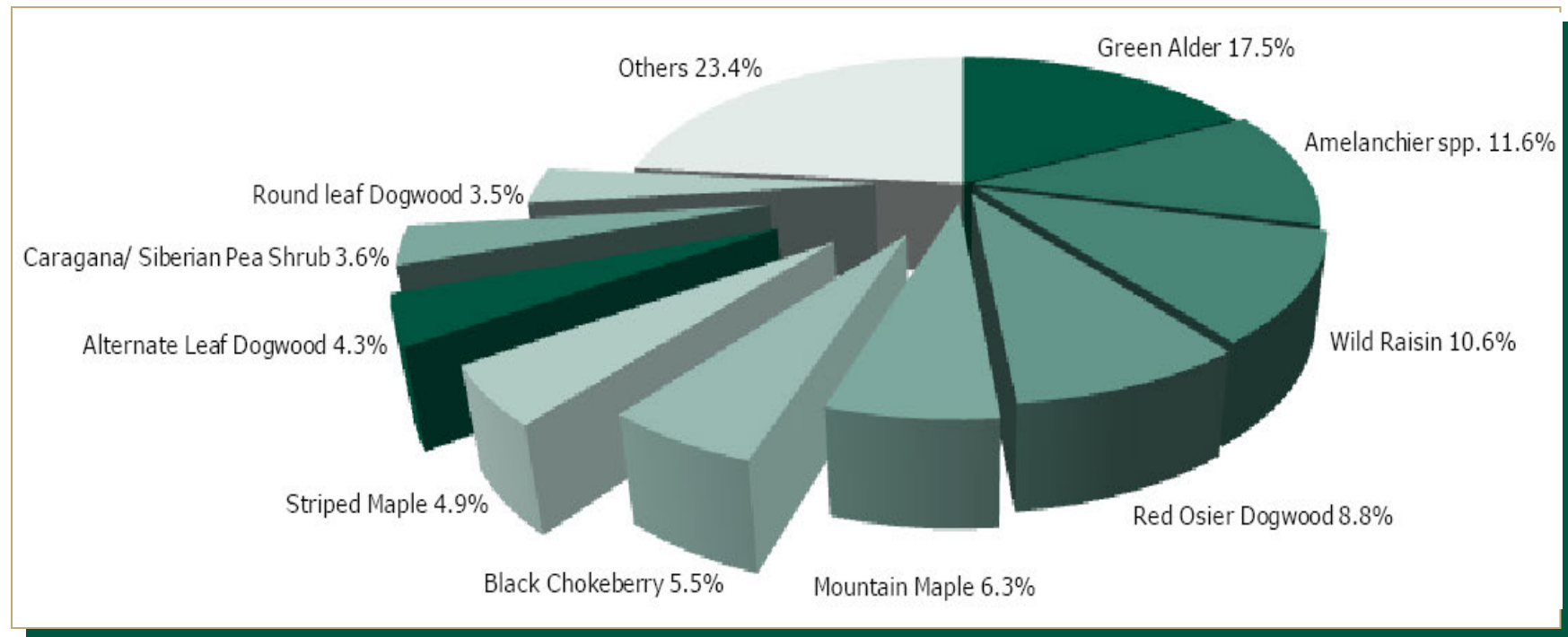
The graph below illustrates the percentage of each deciduous tree planted since 1979 for a total of 443,828 trees.



Others Include: Russian olive 1.2%, bur oak 0.5%, ironwood 0.3%, bitternut hickory 0.1%, American beech 0.1%, white oak <0.1% and basswood <0.0%.

Percent Shrubs and Understory Trees Planted 1979 to 2014

The pie graph below illustrates the percentage of each type of shrub or understory tree planted since 1979 for a total of 204,634 plants.



Others include: bush honeysuckle 2.9%, red elderberry 2.9%, mountain-holly 2.6%, bearberry 1.5%, highbush cranberry 1.5%, common elderberry 1.1%, common juniper 1.1%, mugho pine 1.0%, staghorn sumac 0.9%, winterberry holly 0.9%, nannyberry 0.8%, hardhack 0.6%, ninebark 0.5%, American mountain-ash 0.5%, buffalo berry 0.5%, showy mountain-ash 0.5%, black chokeberry 'Viking' 0.4%, Canada yew 0.4%, hobblebush 0.4%, pin cherry 0.4%, narrow-leaved meadow-sweet 0.4%, swamp rose 0.4%, buttonbush 0.2%, flowering raspberry 0.2%, prickly wild rose 0.2%, broad-leaved meadow-sweet 0.2%, sweet gale 0.2%, choke cherry 0.1%, smooth wild rose 0.1%, wintergreen 0.1%, sandcherry <0.1%, Canada plum <0.1%, American hazel <0.1%, and purple-fruited chokeberry <0.1%.

Assisted Migration

The intent of assisted migration in the context of the Regreening Program is to plant native species a little farther north than their current growing range in anticipation of climate change effects on vegetation.

Over the past few years, species that are found occasionally in the southern part of this growing zone which extends as far south as Parry Sound were selected for assisted migration including: white oak (*Quercus alba*), bitternut hickory (*Carya cordiformis*), buttonbush (*Cephalanthus occidentalis*), hobblebush (*Viburnum alnifolium*) and American basswood (*Tilia americana*). Other species selected whose northern limit is at or just to the south of Greater Sudbury include: black chokeberry (*Aronia melanocarpa*), alternate-leaved dogwood (*Cornus alternifolia*), round-leaved dogwood (*Cornus rugosa*), common elderberry (*Sambucus canadensis*), swamp rose (*Rosa palustris*) and hardhack (*Spiraea tomentosa*).

Transect plots are established to monitor these species for survival as part of the Regreening Program. This year, three new shrub transects were established for: American hazel (*Corylus americana*), buttonbush (*Cephalanthus occidentalis*), and hardhack (*Spiraea tomentosa*). Being planted in the spring and assessed in the fall, the initial survivability for these species was 100%. Monitoring will continue for all species planted over the past few years and new species will be added to the list as deemed appropriate.

Diversity of Plantings

In addition to the assisted migration species, other species that should be more numerous in the Sudbury area such as common juniper (*Juniperus communis*), flowering raspberry (*Rubus odoratus*) and ironwood (*Ostrya virginiana*) were planted in transect plots as well. They will be monitored over the next few years to determine their suitability to the Sudbury area. Adding these three new species to the list of plantable species increases the biodiversity of the plantings.



Ironwood
(*Ostrya virginiana*)
seedling in a
transect plot,
ready to be
inventoried.

Seed Collecting

Staff collected seeds/berries from six species this year including serviceberry (*Amelanchier sanguinea*), bristly sarsaparilla (*Aralia hispida*), bearberry (*Arctostaphylos uva-ursi*), mountain maple (*Acer spicatum*), mountain-holly (*Nemopanthus mucronatus*), and alternate-leaved dogwood (*Cornus alternifolia*). New collection sites were located this year and additional areas will be scouted in the future to prevent over-harvesting or depleting seed from a single source. All collection sites have been recorded in a database to improve future seed collection projects.

Seeds/berries were shipped to the propagator to grow for future regreening efforts. Collège Boréal was also provided with some of the bristly sarsaparilla (*Aralia hispida*) berries so they could try to grow them with their students.



A collection of handpicked seeds and berries including mountain maple and alternate-leaved dogwood.

Crushed Limestone, Fertilizer and Seed

The liming activity this year focused on an area of barren land located just north of Wahnapiatae and was a continuation of 2013 liming activities. In total, 3.8 ha of barren land were manually limed using crushed dolomitic limestone. Fertilizer and seed (90% fall rye and 10% alsike clover) was applied to approximately 8 ha of land which included portions of the 2014 and 2013 liming sites.

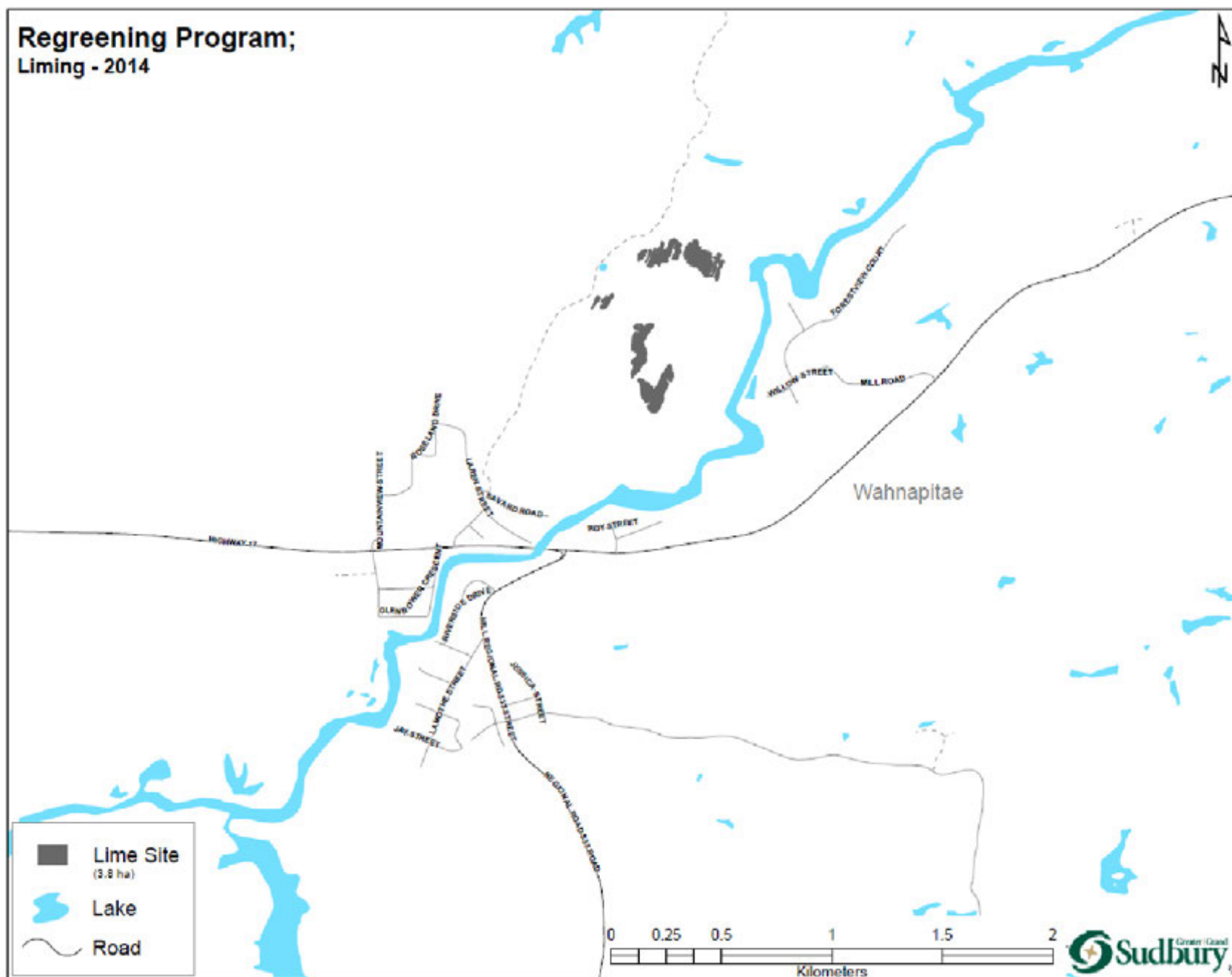
Refer to the following page for lime site location.

To date, 3,449 ha of barren land have been treated with crushed limestone by the City's Regreening Program.



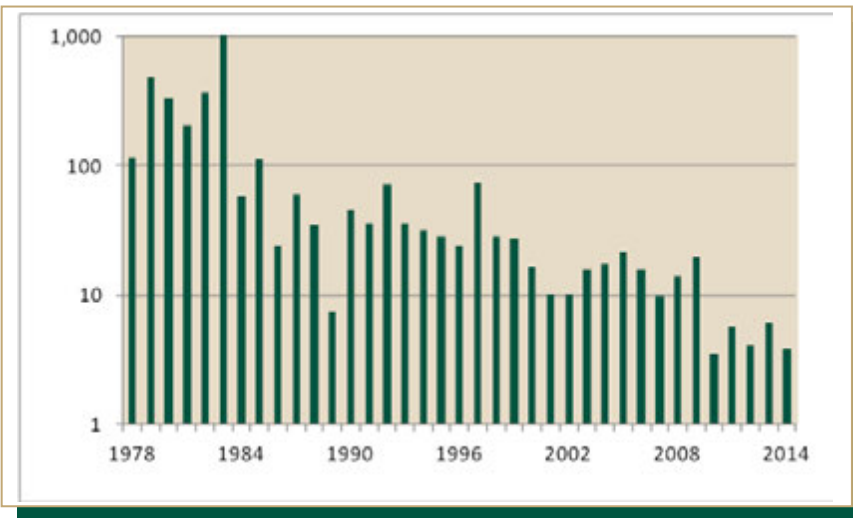
Lime bags lie on barren ground ready to be spread.

**Regreening Program;
Liming - 2014**



Area Limed 1978 to 2014

The bar graph below indicates the area in ha per year that was limed by the municipal Regreening Program since 1978 with a grand total of 3,449 ha limed to date.



Vale is committed to following the recommendations set out in the **5 Year Plan 2011-2015** and again aially limed and seeded barren land in two locations; north of Coniston and south of the Coniston Hydro Dam. The area covered exceeded the normal treatment area by 100 ha, and measured in at 273 ha.

A seed mixture, half of which is composed of native species, was selected once again this year and consists of:

- 40% Fall Rye (*Secale cereale*)
- 30% Canada Wildrye (*Elymus canadensis*)
- 20% Slender Wheatgrass (*Elymus trachycaulus*)
- 10% Alsike Clover (*Trifolium hybridum*)



Area aially limed and seeded by Vale in 2013.

Forest Floor Transplants

Continued partnership with KGHM International allowed for the ongoing forest floor transplants in 2014. From June to October vegetation was harvested from the Victoria Mine site near Fairbank Lake.

As in the past, Regreening crews dug up the top 10 cm of soil containing plants, seeds, microorganisms and invertebrates from the donor site. The vegetation was then watered over night and transported to reclamation (receptor) sites in Greater Sudbury for transplanting. The focus this year was understory sites, for shade tolerant species.



Forest floor vegetation harvested and placed into trays for transport.

Criteria for selecting receptor sites for the understory transplants included sufficient canopy cover, low understory species diversity, sufficient soil depth and organic layer (>5cm) and large enough areas to allow the species to spread. Plots were established measuring approximately 4m by 4m.

In 2014, approximately 0.22 ha of understory material was transplanted into 129 plots, using 6,153 trays of plant material. Approximately 65 different species were reintroduced. A total of 8 sites received transplants. The locations were mainly within the barren and semi-barren zones. Over the last 4 years of this program, a total of 112 sites have received understory transplants covering a total area of approximately 1.13 ha and 19 sites received exposed transplants covering an area of 0.15 ha. With a grand total of 1.28 ha, this is comparable to moving just over one and a half Canadian football fields of plant material into the CGS region.



Biodiversity Inventory

Plant Community Succession

In 1978, Brian Amiro, a researcher from Laurentian University, conducted a study of the plant communities in Greater Sudbury and the surrounding area. The main purpose of his Masters study was to provide a base for future vegetation studies in terms of the successional pathways of plant communities in areas impacted by industry and development. A total of 142 sites were examined and importance values were determined from quantitative vegetation data for each species encountered in three different layers (i.e. tree, shrub and herb stratus). Based on his findings from the tree stratum analyses, he identified nine major community types that reflected the dominant tree species present.

Andrea Sinclair performed a follow-up study 15 years later (1993) in which she re-examined 46 of Amiro's original sites and also added 22 new sites. Sinclair only identified six main community types and these communities, similar to Amiro, reflect the dominant tree species present. She found that red maples (*Acer rubrum*) were far less abundant across the plant communities. In addition, changes were observed in the tree layer due to planting of conifer seedlings and the vegetation within the herb layer had changed over time due to revegetation efforts (i.e., seeding).

Beginning in 2012, the land reclamation program conducted assessments of the same sites 34 years following Amiro's study in 1978. These assessments seek to answer the following three questions:

- 1) Are plant communities changing over time, if so, how?
- 2) Does site location in relation to the three smelter impact zones continue to affect plant species present?
- 3) Are re-greening activities affecting plant communities, and if so, how?



Area that received initial treatment (lime, fertilizer and grass seed) in 2013 and tree planted in 2014. Photo: Sudbury INO

Analysis reveals that plant communities are changing overtime. The majority of change is occurring within the shrub and herb layer, where the number of species almost doubled. Over the last 36 years species that existed within the region in 1978 are increasing in importance, and new species are coming in. In total, 29 new species have appeared since 1978. The increase in importance values in 2014 can be attributed to emission reductions and re-greening activities. Site location in relation to the impacts zones is also affecting community composition within the region. The most prominent changes are occurring within the barren zone. When comparing differences in impact zones alone, it was found that importance values were lowest for barrens and highest in non-impacted zones. This is likely because despite extensive re-greening efforts over the past 40 years, species richness in sites closer to historic and current smelters remain low as a result of high metals, low pH, low nutrient, and low organic matter that characterize soils at these sites.

Within each zone, sites in 2014 generally had species with greater average importance values when compared to sites in 1978. New species have also appeared within each of the impact zones over the past 36 years, with greatest changes in richness occurring in the barren zone, followed by semi-barren and non-impact zones. Changes within each zone in 2014 are likely the result of re-greening activities which has allowed not only colonization of new species into these sites but also increases the percent cover of stress tolerant species previously occupying these sites.

A Flora of Greater Sudbury

Herbariums are archival collections of plants that have been pressed, dried, mounted, and labeled. Herbarium specimens serve as a reference to verify identification of plant species and are a permanent, historical record of where a particular species has been found.

Working collaboratively with Dr. Peter Ryser and Dr. Sabah Nasserulla of the Laurentian University (LU) Biology Department, a Regreening Field Intern worked at the LU Herbarium cataloguing new and verifying existing herbarium specimens collected within the City of Greater Sudbury.

This work will update the records at the LU Herbarium to include plants collected by Field Interns over the past few years and serve as a Flora of Greater Sudbury database. This will assist in tracking vegetation changes over time. Once finalized, the information collected will be added to the Northern Ontario Plant Database.



Dried and pressed herbarium sample.

Bird Monitoring

Birds are an important part of ecosystems due to their ability to disperse seeds, create habitats, and control certain pests. In addition, many bird species serve as good indicators of the overall status of ecological recovery due to their very specific habitat requirements (e.g., snags, uprooted trees, dense young conifers, etc.).

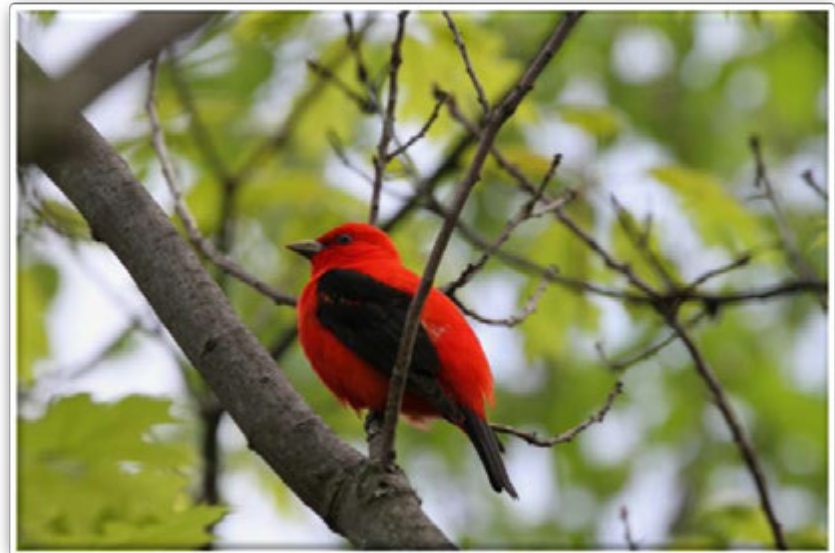
Bird recording devices were used in 2012 and 2014 to during the breeding season to obtain data on species presence in various habitat types throughout Greater Sudbury. These devices were installed in both industrially impacted and undisturbed areas and were set to record in early morning, evening and overnight.

These investigations will provide important information regarding these three points:

- 1) Changes in bird species assemblages in response to environmental recovery
- 2) Bird species still missing in industrially impacted areas.
- 3) Provide a baseline for future long-term monitoring projects

Although the 2014 recordings have yet to be processed, those from 2012 reveal the presence of 75 bird species. With the exception of habitats containing exposed bedrock, there were no great differences in species richness in similar habitat types located in differing zones of smelter damage. Barren sites in CGS had on average 10 less species per site when compared to areas with exposed bedrock on Kukagami Road. This is likely because Cu –Ni smelter damaged areas having less

food and nesting habitat than undisturbed areas. Species richness in mixed wood forests were similar, ranging between 23 – 28 species per site for historically smelter disturbed sites and 18 to 25 species for sites not disturbed by smelter emissions. A similar trend was seen in wetlands, with wetlands having approximately 24 species per site regardless of whether they had been disturbed by smelter emissions in the past.



The Scarlet Tanager, one of 75 species recorded during the 2012 bird monitoring exercise.

Ugliest Schoolyard Contest

The Canadian Biodiversity Institute and Earth Day Ottawa initiated the Ugliest Schoolyard Contest in 1998 in Ottawa. VETAC's tenth annual version of this Contest was another overwhelming success thanks to the tireless efforts of Mr. Wayne Hugli, Co-chair of VETAC's Urban Landscape Subcommittee and the generous support of numerous sponsors. Sudbury Integrated Nickel Operations (INO), a Glencore Company, provided the major cash donation in the amount of \$50,000 to run this contest again in 2014.

In addition to the Sudbury INO funding, all schools also received a voucher for the purchase of concrete materials from Brown's Concrete Products, and topsoil donated by Vale.

The winner selected by VETAC was **Immaculate Conception Catholic Elementary School** in Val Caron and the runner-up was **Levack Public School** in Levack. Preliminary plans were made with both schools prior to the end of the school year.



Large caliper trees unloaded and ready to plant.

Grand Prize Winner – Immaculate Conception Catholic Elementary School, Val Caron

In early June, VETAC members met with the school principal, a teacher at the school, and the Manager of Facility Services from the Sudbury Catholic District School Board to begin planning for the project. This preliminary planning helped to ensure that the work done met with the approval of the Board and the needs of the school, as well as maintaining a focus on VETAC's greening mandate. A working plan for the project was approved in early August.

In mid-August, Southview Greenhouse Growers planted fourteen large-caliper trees (lindens, silver maples and serviceberries) in large raised planters created with concrete stones supplied by Brown's Concrete Products and Jetty's Landscape Supplies. Discounted pricing from these three businesses was a much appreciated contribution to the project. Topsoil for the tree planting was donated by Vale.



Planting large caliper trees.

Once the tree planting was completed, a work crew from SMS Rents constructed eleven shrub beds using plastic edging and topsoil provided by Hollandia Land and Environmental Solutions. All of the labour and equipment for this part of the project was donated by SMS Rents.



SMS Rents employees and equipment were volunteered to assist with the construction of planting beds.

When the students and teachers returned to school in September, Jenny Fortier from Northern Wildflowers provided a presentation about the native wildflowers that would be added to the tree beds. In early September students, teachers, and parents joined volunteers from the Sudbury Horticultural Society and Sudbury Master Gardeners to plant wildflower seedlings. The plantings included black-eyed susan (*Rudbeckia hirta*), wild lupine (*Lupinus perennis*), wild columbine (*Aquilegia canadensis*), wild bergemot (*Monarda*

fistulosa), purple coneflower (*Echinacea purpurea*), wild geranium (*Geranium maculatum*) and silver sage (*Artemisia ludoviciana*). After a brief workshop about planting, students from kindergarten to grade six planted approximately 500 seedlings. Each bed was then covered with cedar mulch provided by Futurescapes Landscaping Supplies at a generous discount.

During the same day, older students in grades three to six were involved in planting native shrubs and understory mats in the new shrub beds under the guidance of Stephen Monet and Tina McCaffrey from the City of Greater Sudbury's Environmental Planning Initiatives Section and with the assistance of Horticultural Society and Master Gardener volunteers.



The Regreening Program staff also assisted with spreading topsoil and general clean up.

Planting with the students provided an important educational experience and also helped to ensure that the school community has a sense of ownership. In the future, these young gardeners will assume responsibility for the ongoing maintenance of the new vegetation that has been added to the schoolyard.



Large trees placed around play structure will offer shade in the hot weather.

By mid-September, a once-barren yard covered in gravel and asphalt received a major make-over which will provide students with outdoor seating and shade, as well as gardens filled with native wildflowers and shrubs that will offer new educational experiences in the future.

Runner-up Winner – Levack Public School, Levack

VETAC members met with the school principal in June to discuss the project. The school community was very excited about the changes to be made. In July we partnered with Azilda Greenhouses to plan the project. Work began in August with donations rolling in. Vale donated topsoil, Southview

Greenhouse Growers, Canadian Tire on Regent Street and Azilda Greenhouses all donated shrubs. Large trees were installed by Azilda Greenhouses. Concrete Stones were purchased at a discounted price from Brown's Concrete. Equipment was supplied by Bill Day Construction and Vale.



Large trees planted at Levack PS will provide shade to the stone seating.

Azilda Greenhouses planted 8 large trees (silver maple, autumn blaze maple and linden), constructed 2 planters, planted shrubs and placed large concrete stones. Students, teachers and parents later planted all the donated shrubs and the City's Regreening crew installed the tree guards. The tree guards were re-purposed from Walden Public School, where the trees were sufficiently established and no longer required them. This re-use translated into cost savings of approximately \$2,000.



One of the garden beds created and freshly planted.

Past Contest Winners and Runner-ups

In 2012, the selection committee decided that any remaining funding from the Contest would be used as an incentive to past winners to keep up with the maintenance of their existing project. It was agreed that in the Spring of 2013, past winning schools would be visited by members of the selection committee. The school or schools that have shown the best commitment at maintaining their recently regreened schoolyard would be eligible to receive a cash reward to continue with their efforts. Although all the funding was used in 2012, the City ensured funds were available in the spring of 2013 to fulfill this request by the selection committee.

This initiative was continued this year, with six (6) past runner-up schools visited by VETAC in July. Two schools were selected as potential winners of cash reward, depending on funding availability once the 2014 school projects were complete. Walden Public School and Alexander Public School both were awarded a \$2,000 cash prize to assist with their ongoing regreening efforts.

It is hoped that these visits will continue to encourage past winning schools to maintain their schoolyards into the future.

A Schoolyard Maintenance Manual was developed this year to assist schools in maintaining their planted areas throughout the four seasons. The Manual includes year-round activities for all grade levels and covers the topics of maintenance, tree supports, watering, weeding, mulching and pruning. The Manual is available on-line at www.greatersudbury.ca/regreening/maintenancemanual and copies were sent to all past contest winners and runner-ups.

Sponsors

Generous funding from Sudbury INO and the additional donations received for this project enabled VETAC to provide greatly improved environments for the students and teachers at these schools.

Since the inception of the contest, thirty-six schools have been provided support for their Regreening projects and VETAC looks forward to assisting more schools in the future. Generous financial support and donations from local businesses and organizations in our City will ensure the continuation of this Contest well into the future.

Media

A communication strategy was implemented to promote the Contest; information was posted on Facebook and Twitter, and announcements were made on CTV Broadcasting and Closed Captioning. On June 2, the City issued a News Release announcing the winning schools for the year, which can be found [here](#).

On April 14, Tina McCaffrey was interviewed by KICX 91.7 radio station (Morning Show Co-Hosts Brad and Leanne Hulme) regarding the 2014 Ugliest Schoolyard Contest.

During the first week of December, newspaper ads were published in the Sudbury Star, Northern Life and Le Voyageur thanking all sponsors of the contest, pictured to the right.



Ugliest Schoolyard Contest

The Immaculate Conception School community gratefully acknowledges the support of the following organizations and businesses in their schoolyard regreening project:

- Azilda Greenhouses
- Brown's Concrete
- Canadian Tire on Regent Street
- Futurescape Landscaping
- Greater Sudbury Land Reclamation Crew
- Jetty's Landscape Supplies
- Northern Wildflowers
- Sudbury Horticultural Society
- Sudbury Master Gardeners
- Southview Greenhouse Growers
- SMS Rents
- Vale

Special thanks to our major sponsor:

**SUDBURY
INTEGRATED NICKEL
OPERATIONS**
A GLENORE COMPANY

To view the results of the schoolyard regreening effort, visit www.greatersudbury.ca/VETAC





Labour

Program staff included one foreperson, four crew leaders, four field interns and fifteen worker positions. There were a total of six summer students involved in regular reclamation activities as well. Three student positions were partially funded by YMCA Summer Job Service for a period of 10 weeks.

A Field Intern was hired for a 9 week period to organize historical images of the Regreening Program. All images have now been scanned and archived.

In total 30 temporary positions were created in 2014. To date, 4,620 temporary positions have been created.

The table below outlines the temporary positions created and the number of weeks worked, with a total of 30 positions created in 2014.

Program	Positions	Weeks	Cost to City	Activity
CGS Temporary Staff	24	32 30 9 32.5 31 25	100%	Foreperson (1) Crew Leader (4) Field Intern (1) Field Intern (1) Field Interns (2) Workers (15)
CGS Summer Students	6	17	95%	Tree planting, liming, transplanting
Total Positions	30			

Volunteer Placements

Working with the City's GIS mapping staff a list was compiled of GIS activities that required attention for the Regreening Program. A volunteer placement for a Collège Boréal student was created to update the files. The placement ran from March 3 to April 18 (7 weeks) and the student completed the task of updating Regreening Program mapping projects.

A volunteer opportunity was provided for 7 high school students and their 2 supervisors through the MNR's Ontario Rangers Program. The team worked alongside the Regreening Crew digging up vegetation mats and transplanting them as well as participating in liming activities. They participated for a one week period from July 14 to 17.

Partners

The success of the Regreening Program depends heavily on the support of its many partners. Long-time support from the two major mining companies, Vale and Sudbury INO, through in-kind and financial assistance has grown substantially since the release of the Sudbury Soils Study in 2009. Tree Canada has been a partner since 1997 contributing over 3.7 million trees to the Program. The Sudbury earthdancers have contributed over \$28,000 in cash since 1999. MTO and KGHM International have provided access to some of their properties for Regreening crews to salvage forest floor plants. Collège Boréal has been conducting survival assessments on trees sponsored by Tree Canada and is participating in the creation of a local seed bank of native trees and shrubs. Laurentian University has provided support to the Regreening Program's

Field Interns in terms of expertise and use of facilities.
Conservation Sudbury continues to allow long-term vegetation monitoring plots to be established in the LLCA and

occasionally is able to provide financial assistance towards the purchase of trees. The YMCA has been offering partial financial support of student wages.

Funding

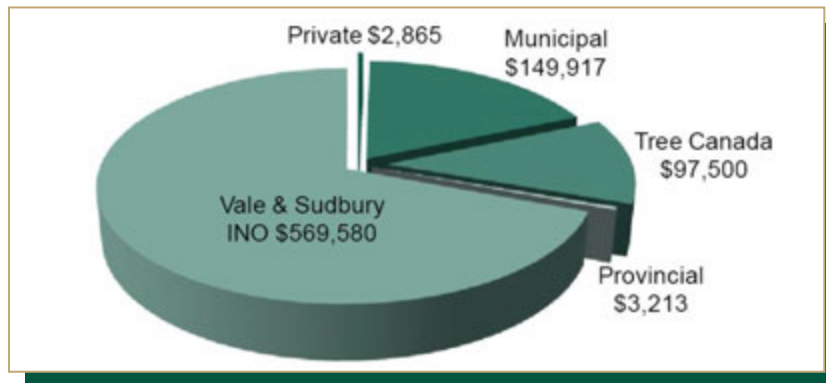
The Regreening Program relies on donations to operate the yearly Program. Many successful partnerships have been developed over time and new opportunities are always being investigated.

The table below outlines the program contributors and the dollar amount associated with their contributions in 2014.

Program Contributors	Weeks	Number	Source	Amount
Labour				
YMCA - SJS	10 weeks	3 students	Provincial funding	\$3,213
Cash				
Vale			Mining Co. funding	\$250,000
Sudbury INO, a Glencore Company			Mining Co. funding	\$265,000
Sudbury earthdancers			Private funding	\$2,015
Materials				
Vale		22,904 seedlings	Mining Co. funding	\$4,580
Tree Canada		65,000 seedlings	Private funding	\$97,500
Ugliest Schoolyard Contest (Does not include material, equipment and other in-kind donations provided by other sponsors)				
Sudbury INO, a Glencore Company	Cash Contribution		Mining Co. funding	\$50,000
Sudbury Horticultural Society	Cash Contribution		Private funding	\$600
Sudbury Master Gardeners	Cash Contribution		Private funding	\$250
Sub Total				\$673,158
City of Greater Sudbury				\$149,917
Grand Total				\$823,075

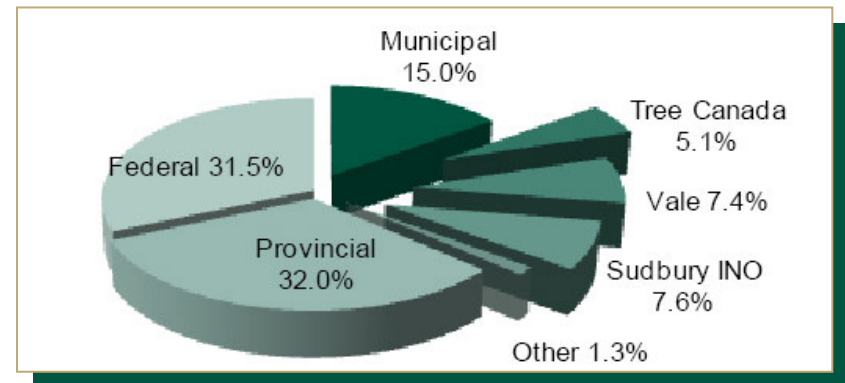
Percent Funding Contributions by Source 2014

The graph below illustrates 2014 funding contributors by source.



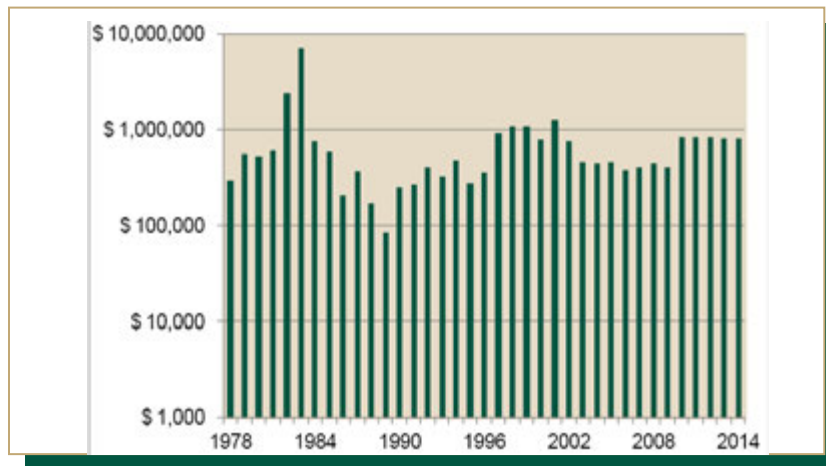
Percent Funding Contributions by Source 1978 to 2014

The graph below illustrates funding contributions in percentages by source from 1978 to 2014.



Yearly Program Costs 1978 to 2014

The bar graph below indicates yearly program costs from 1978 to 2014 with a grand total of \$29,283,744.



Since 1978, the City's contribution to the Program has averaged 15% of the total costs with 85% coming from external sources. To date, the Program costs exceed \$29 million.

Events

Annual Tree Giveaway

The Tree Giveaway was held on May 30 at the YMCA as part of the Horticultural Society's Annual Garden Festival. Over 600 seedlings were distributed to residents consisting of smooth serviceberry (*Amelanchier laevis*) and wild raisin (*Viburnum cassinoides*). Both these species produce edible berries and were selected as part of the edible berries project.

TC/CN Event

An event was held Oct 9 at the Jane Goodall Reclamation Trail to thank Tree Canada and CN for their donation of 60,000 seedlings. This was the second year in which CN contributed seedlings to the City's Regreening Program.

Attendees at the event included Mayor Marianne Matichuk; Peter Beckett, Chair of VETAC; several VETAC members; Lindsay Fedchyshyn, CN representative and Theresa Knorz, CN Police Constable; 19 Regreening Program staff; and a reporter from Le Voyageur newspaper who interviewed all dignitaries.

Announcements were heard on several local radio stations during regular news announcements and an article appeared in [Northern Life on-line](#).

Stephen Monet was interviewed afterwards by Radio-Canada (reporter Louis Garon) regarding the CN donation of 60,000 trees.

A tree planting activity followed speeches and included planting 10 each of American mountain ash (*Sorbus Americana*), showy mountain ash (*Sorbus decora*), green alder (*Alnus crispa*), staghorn sumac (*Rhus typhina*), flowering raspberry (*Rubus odoratus*), black chokeberry (*Aronia melanocarpa*), and common juniper (*Juniperus communis*) along the trail. The Mayor and dignitaries participated in the plantings.

Peter Beckett led a trail tour afterwards. Below is a group photo from Lookout 2 showing the untreated black hill in the background, and a fully treated (lime, fertilizer, seed and tree planting) hill to the left. From this point onlookers can get a real sense of the difference Greater Sudbury's Regreening Program has had on the environment.



Lookout 2 along the Jane Goodall Reclamation Trail.

Sudbury INO Open House

On October 1, Sudbury INO hosted an Open House to students and the general public at the Onaping Community Centre. Both the City's Regreening Program and EarthCare Sudbury Program hosted a booth to pass along environmental messaging to visitors. In total, 223 visitors, including 170 students from 3 schools in Levack and Dowling attended the Open House.



Sudbury INO open house draws students and residents. Photo: Sudbury INO

Cities and Subnational Government Biodiversity Summit 2014

Since the ninth meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD) in Bonn in 2008, ICLEI – Local Governments for Sustainability has partnered with the Secretariat of the CBD and host governments, to organize one of the largest events associated with the COP: a summit for local and subnational governments. These Biodiversity Summits unite local and subnational governments from around the world in a high-level

setting, to share ideas, discuss challenges, and showcase their contribution towards implementing the CBD.

Held in Pyeongchang, South Korea, in parallel to the CBD COP 12 on October 12 – 14, Paul Baskcomb, Acting Director of Growth and Development was invited to discuss the City of Greater Sudbury's contribution through its Biodiversity Action Plan. The passion exhibited and the incredible work showcased by local and subnational governments from around the world at the Biodiversity Summit was certainly inspirational.

The Gangwon/Pyeongchang Resolution for Cities and Subnational Governments on Biodiversity was a very strong outcome of the Summit, and it is the hope to build on this in 2015, strengthening the global biodiversity agenda through support for local/subnational implementation.



Group photo at the Biodiversity Summit 2014.
Photo: Biodiversity Summit

Communications

Communicating the successes of local greening efforts continues yearly, to both local audiences and groups abroad. Media coverage was widespread with positive comments on initiatives associated with the Program and VETAC. Presentations, tours and field trips were also provided to a wide range of audiences.

Publications

Healing the Landscape

The third printing of **Healing the Landscape** occurred this year with an update on the forest floor mat initiative. Copies are available to purchase from the Citizen Service Centre at Tom Davies Square for \$39.95 plus HST.

The first printing of 5,000 copies in 2001 sold out, warranting the second printing of 3,000 copies in 2008 which also sold out. This latest run was for 1,652 copies. Each reprint featured an update on new greening initiatives.

Presentations/Tours

- April 10 – Stephen Monet presented on ecological risk management as part of special risk assessment course given through Laurentian University.
- May 31 – Stephen Monet presented on edible wild berries at the Sudbury Gardening Festival.
- June 5 – Stephen Monet, Peter Beckett and Tina McCaffrey hosted a greening talk and tree planting activity for 80 Toronto area students at Dynamic Earth.

Several VETAC members were in attendance to assist with the planting.

- May to June - Jennifer Babin-Fenske visited seven schools with a local guest speaker to talk about owl ecology, small mammal morphology, biodiversity and predator-prey interactions. These schools were also recipients of owl pellet dissection kits.
- June - Jennifer Babin-Fenske visited four schools to talk about insect ecology and biodiversity while bringing the children outside to collect insects and explore the natural environment in the schoolyard.
- July 9 – VETAC members and staff toured six past Ugliest Schoolyard Contest winners and runner-ups to assess their maintenance commitment and chose two winners for additional funding.
- July 23 – Jennifer Babin-Fenske gave a presentation on biodiversity and the natural environment to children at Larch Street Kids Daycare.
- July 24 – Tina McCaffrey arranged and participated in a site visit of the 2013 Aerial Lime site for Quentin Smith of Vale, Moe Moreau of Sudbury INO and Stephen Monet to assess the aerial seeding program's success with the more native seed mixture.
- August 5 – Jennifer Babin-Fenske gave a presentation on biodiversity and the natural environment to children at MacLean and Twin Forks Playgrounds.
- August 13 – Peter Beckett and Tina McCaffrey presented the greening program and biodiversity initiatives to the Ontario Stone, Sand and Gravel Association at their AGM. The following day the pair

led the group on a tour of the Jane Goodall Reclamation Trail.

- August 15 – Jennifer Babin-Fenske gave a presentation on biodiversity and the natural environment to children at Adamsdale and East End Playgrounds.
- August 19 – Jennifer Babin-Fenske gave a presentation on biodiversity and the natural environment to children at Laurentian Child and Family Centre daycare.
- September 4 – Tina McCaffrey arranged a second field visit to the 2013 aerial lime site for Peter Beckett and Stephen Monet.
- September 10 – Stephen Monet led a group of LU Architecture students on a tour of local vegetation communities at the Lake Laurentian Conservation Area.
- September 18 – Eight VETAC members were taken on a field trip lead by Tina McCaffrey and Stephen Monet to see past understory mats, shrub plantings and lime sites within the Lake Laurentian Conservation Area (LLCA) to assess the progress and/or challenges of the Program's work. The group took the opportunity to broadcast some poverty oat grass seed collected by the Regreening Program crew earlier in the season.



VETAC spreads poverty oat grass seed at LLCA.

Newspapers

- May 17 - "It's gardening time... finally" by B.A.J JONES, The Sudbury Star (announcing the Garden Festival and Tree Giveaway), page C5.
- September 15 – "Mulch to brag about" photo by John Lappa, The Sudbury Star, page A5.
- October 2014 – "Off to a fresh, green start!" Onaping Oracle, Volume 3 Issue 10, page 14.
- September 30 – "Tree planting adds diversity to Sudbury forest?" by Lindsay Kelly, NorthernLife.ca.
- September 30 – "David Miller praises Sudbury's environmental record" by Jonathan Migneault, NorthernLife.ca.
- October 9 – "Tree Canada, CN boost regreening in Sudbury" by staff, NorthernLife.ca.
- October 16 – "60,000 seedlings Regreening gets a boost" by staff, Northern Life Newspaper, page 14
- October 16 – "Cause and Effect and Good Karma; Meteor Impact and Re-Greening" by Bill Steer, North Bay Nugget, page 4.
- November 19 – "Sudbury PoV: Superstack can teach us lessons" by Don MacDonald, The Sudbury Star.com.
- November 21 – "Roots run deep in Sudbury's reclamation efforts – Still lots of work to be done, though" by Lindsay Kelly, NorthernLife.ca.

Television

- October 10 – "Aerial Seeding Program", NEWS AT SIX (CTV-NO), CTV Northern Ontario, Time: 06:21pm, Length: 00:02:04, Ref# 2047E90-22, Anchor/Reporters: M Tonner/T Ryma, Tamara Ischenko

VETAC Members 2014



Chair

Dr. Peter Beckett, Laurentian University

Co-Vice Chairs

Dr. Stephen Monet, CGS, Environmental Planning

Sarah Woods, Junction Creek Stewardship Committee

Members

Jacques Barbeau	Councillor, Ward 2
Tony Fasciano	Citizen
Enzo Floreani	Master Gardener
Jim Found	Citizen
Jennifer Harvey	Landscape Architect
Marc Hebert	Collège Boréal
Wayne Hugli	Horticultural Society
Jim Ilnitski	Citizen
Carl Jorgensen	NDCA
Terry Kett	Councillor, Ward 11
Lisa Lanteigne	Vale
Lisa Léger	Sudbury INO, Science North
Bill Lautenbach	Citizen
Tina McCaffrey	CGS, Regreening Program
Samantha McGarry	Sudbury INO
Moe Morreau	Sudbury INO
John Negusanti	Citizen
Mike Peters	Citizen
Dr. Madhi Ramadoss	Ministry of the Environment
Paul Sajatovic	NDCA, Citizen
Kierann Santala	LU Graduate Student
Dr. Graeme Spiers	Laurentian University
Ben van Drunen	Hollandia Land & Environmental Solutions

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