



Annual Report 2012-2013

In 2012-2013 the word was succession. Our Board has talked about it for a few years but this year we took action. It is an urgent issue as many of our very experienced colleagues are threatening to retire from active service in the forest, on the planting sites, from seed collecting! Forest conservation and management is not for those desiring instant gratification. And learning through someone else's 40 years of experience is a way to avoid working till you're 100 to see it all yourself. These people saw that now-thinned plantation when it was just a sandy site, or that high value, diverse forest when it was a high-graded stand, now improved by tree marking and improvement cuts. And they problem solved through many challenges along the way. By shadowing these people, documenting their expertise, their thought processes no less, we can avoid mistakes and build on their successes.

In many cases their experience was built in a large operational program that no longer exists - at least not in MNR. It is great to see other organizations expanding their forestry departments. It is greater to see these local and regional people share information, expertise and succession strategies.

Such sharing is going on in PLANT- *Program for Local Afforestation Network Training*. PLANT is a five year provincial initiative, led by Trees Ontario (TO) with help from Conservation Ontario, the FGCA and Sir Sanford Fleming College, and supported by the Trillium Foundation. It got underway this winter with workshops to build graduating students' interest in 3 6-month positions with TO Program Delivery Agents. This spring, 3 PLANT trainees experienced an almost normal spring plant, seed forecasting workshops, and assisted migration trial monitoring. Tending, tree marking, seed orchard management, seed collection and planting plans are ahead.

Succession is also going on more directly in FGCA. In 2012 summer intern Melissa Spearing spent 10 weeks with us as a required placement from her studies at the Niagara Parks School of Horticulture (NPSH). Her amazing enthusiasm and work ethic got several of our projects well underway and she got the opportunity to learn from Ron Thayer, Brian Swaile and Terry Schwan to mention just a few. We are repeating this great experience this year with Kristen Sandvall also from NPSH.

This past year the Board tried to focus our (my) efforts on a few versus many projects. They included the seed manual revision, butternut archive and grafting manual, white pine seed orchard management, seed collection area network, assisted migration trials and general promotion of gene conservation principles. The Board's passion and support for our work cannot be overestimated. But you be the judge of our/my focus as you read further (...there's always next year!).

As always I look forward to working with all FGCA members and associates in the coming year. The challenges continue as do opportunities to collaborate and achieve success.

Barb Boysen, FGCA Coordinator

This report is presented as per the Goals in the *FGCA 5 year Strategic Plan 2010-2014*:

- I. Biologically Appropriate Reforestation:** Increase quality/quantity of source-identified, native species seed
- II. Gene Conservation Principles Integrated in Forest Management Programs** - Increase awareness and use of genetic resource management principles to help conserve and improve existing native forests
- III. Species Conservation & Restoration** - Increase awareness of native species diversity and threats to their status, and develop programs for recovery
- IV. Communication of Gene Conservation Principles** - Increase awareness of FGCA program among forest management and conservation sectors.
- V. Effective, responsive, fiscally viable organization** - Maintain a NFP corporation and serve its membership.

Our programs could not succeed without our many partners; these **people** are bolded and their organizations underlined. Contact Barb Boysen if you want more detail on any of the programs described briefly below.

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I. Biologically Appropriate Reforestation

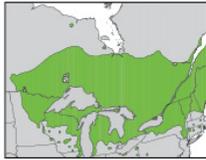
Ontario's Natural Selections (ONS) Seed Source Certification Program

- Certified Seed Collector (CSC) workshops were held with 94 students, led by **Brian Swaile** and **Ron Thayer** in partnership with Trees Ontario and the Ontario Tree Seed Plant at the Seed Plant. **Melissa Spearing**, current CSC and horticulture student/grower and **Tim Gray**, Trees Ontario Field Advisor assisted as part of the FGCA Succession plan.
- Many SeedWhere analyses were completed to help direct use of source identified seed and stock to collectors, growers and forest industry and planting agencies.
- The Seed Manual for Ontario and ONS workshop curriculum revisions are ongoing with significant input from **Brian Swaile**, **Ron Thayer**, and **Melissa Spearing**.

White cedar excerpt

Trees Ontario (TO) and 50 Million Tree Program

- Representation on the OMNR/Trees Ontario 50 million Tree Program Advisory Committee was maintained to address seed management, grower standards and climate change.
- Participated in TO's Trillium Foundation supported 5 year Program for Local Afforestation Network Training (PLANT). The work started in 2012 with a review of the training needs of TO's partners and stakeholders. It ended with a comprehensive

Eastern White Cedar, Eastern Arborvitae	
<i>Thuja occidentalis</i> L. Cupressaceae – Cypress Family	Cw 022
Quick ID Common evergreen favouring naturally moist areas, often planted in the landscape. Leaves, scale-like in 4 rows, flattened, yellowish-green. Resin glands conspicuous. Sprays of foliage held horizontal. Seed cones with 5 or 6 pairs of scales. Looks Like <ul style="list-style-type: none">• *<i>T. plicata</i> (Western Redcedar)• *<i>Platyclusus orientalis</i> (Oriental-Cedar)• *<i>Chamaecyparis</i> spp. (False Cypress)	
Flowering Periodicity: 3 – 5 years When: late April – early May <ul style="list-style-type: none">• monoecious• pollen strobili are very small (4 mm) on branchlets near base of foliage spray• female strobili also very small, on tips of new branchlets	Forecasting When: last week of June – first week of July What to look for <ul style="list-style-type: none">• small, green cones near the end of new growth• do not confuse previous years' cones with current year's crop• seed development difficult to assess early; recheck closer to collection time as cones enlarge• cones mature more slowly if trees are near large bodies of water
	
Male pollen strobili and an old cone. Photo by Brian Swaile	Photo by Melissa Spearing

strategy to transfer experience and knowledge of impending retirees to the next generation of forest restoration practitioners, involving an innovative co-op and mentorship based training model that targets students in post-secondary forestry related programs. PLANT will provide students with strategic hands-on training opportunities and includes an intensive training course, a six month co-op placement, and a series of mentoring sessions led by experienced forestry practitioners. FGCA assisted with the introductory winter workshops at Fleming College and is planning opportunities in seed forecasting and collecting, seed orchard management, butternut archive management and assisted migration trial establishment and monitoring.

- Assisted TO with a comprehensive Seed and Stock Management Plan to support long term supply management including succession planning for expertise.

Seed Collection Area Network - SCAN

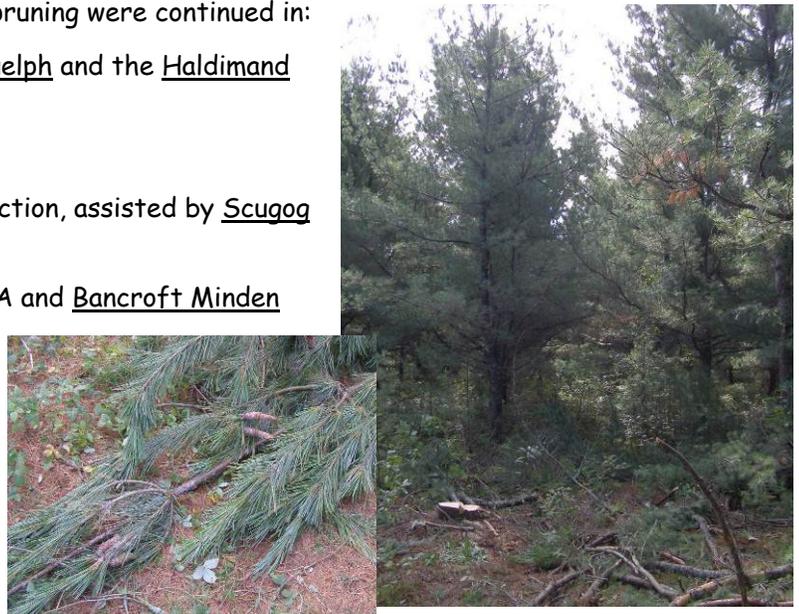
- FGCA collaborated with Trees Ontario and the 50 MTP seed management program and OMNR's Climate Change Initiative. Over 700 sites were identified across southern Ontario's seed zones (28 to 38) with many of them ground-truthed. Future efforts will include working with landowners on seed crop forecasting, collection and site management.

White Pine Seed Orchard Management

Project Funds were received from FGO, Trees Ontario and the 50 Million Tree Program's Seed management program, and OMNR Forest Health & Silviculture Section (FHSS) to support the following:

- Crown Management via remedial topping and pruning were continued in:
 - Cayuga (7E) by **Terry Schwan**, OMNR Guelph and the Haldimand and Area Woodlot Association,
 - Glencairn by **Brian Swaile**,
 - Scugog (6E w) by FGCA during cone collection, assisted by Scugog Island First Nation
 - Snowden (5E) during collection with FGCA and Bancroft Minden Forest Company Inc (SFL)

Snowden thinning and topping during cone collection August 22 2012



- Crowe River (5E) in late fall with North Hasting High School's Northern Outdoor Studies Program



➤ 2012 Seed Collection

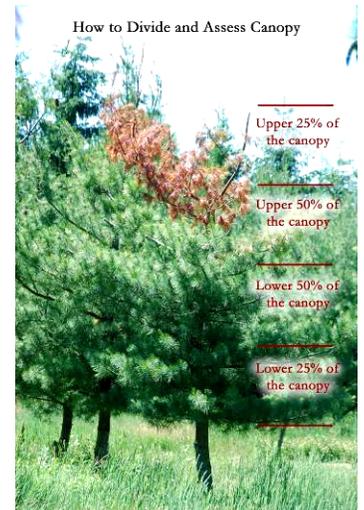
This was a poor year with only a light crop ripening early in mid-August, with collection facilitated for the first time by squirrel activity in

- Scugog (6E w) where Barb Boysen managed contractors to collect about 20 hl of cones for OTSP and Trees Ontario starting Aug 13.
- Snowden (5E) where Barb Boysen managed contractors to collect 20 hl of cones for Bancroft Minden Forest Company Inc (SFL) starting August 20th.

➤ Climate Change Monitoring Project supported by MNR FHSS and FGO

2012 efforts were continued in Glencairn (6E w) and Cayuga (7E) and expanded to include Scugog (6E w) to determine differences in phenology and seed production by clone origin and to eventually inform clonal roguing and seed use strategies.

- Clone pruning and field labelling for ease of assessment
- Clonal origin UTM database
- Draft tree assessment
- White Pine Seed Orchard CC Monitoring Manual produced by **Melissa Spearing** aided by **Terry Schwan, Brian Swaile and Brie-Anne Breton**.



Excerpt from Pw SO CC Monitoring Manual

➤ White Pine Realised Gain Trials

- Support was provided to **Pengxin Lu** of OMNR's Ontario Forest Research Institute (OFRI) OFRI and **Barry Davidson** of Westwind Forest Stewardship for their expertise in maintaining 3 trials which were established in 2008 and 2009.

Climate Change

➤ Assisted Migration and Seed Production Area Trials - FGCA worked with Trees Ontario, the OMNR Climate Change Initiative and local partners:

- Maintained the 2010 red and white oak trial with an Oxford County landowner **Phil Holst** assisted by **Dave Depuydt, OMNR Aylmer**. Growth and survival were assessed in December, and are excellent.



Pennsylvania Ow on left (poorer stock quality initially) vs. local Ow (SZ 37) on right.

- Maintained a 2011 bur oak trial with Oxford County, with plots of local hardwoods to diversify the site, assisted by **Dave Depuydt, OMNR Aylmer**. A survival assessment was done in December.

- Established a 2012 bur oak trial including plots of mixed hardwoods from SW Ontario for diversity. FGCA worked with **Rick Knaption** of Cataraqui Conservation Authority, Friends of Lemoine Pointe, **Linda Touzin** of MNR Kemptonville District, **Gary Nielsen**, OMNR Peterborough and **Wade Knight, Brian Swaile and Tim Gray** of TO

Lemoine Pointe Trial planting April 2013



- Planned a bur oak trial with Simcoe County for April 2013 planting
 - Several groups in central and southwestern Ontario are interested in similar trials.
 - Melissa Spearing** developed an FGO supported draft assisted migration trial assessment protocol: *Oak Assisted Migration Trial Monitoring in Southern Ontario*.
- Used SeedWhere climate analysis program to guide questions from consumers and growers about seed movement under climate change.

II. Forest Conservation & Management

- Participated on OMNR's Forest Forum and Southern Ontario Forest Task Team

III. Species Conservation

CONFORGEN

- Participated in the CONFORGEN 2012 Native Tree Species Genetic Conservation Survey asking forest managers across Canada for their input regarding the status and threats to local native species. See <http://www.conforgen.ca/CAFGRIS.html>

OMNR & Endangered Species Act 2007

- Provided input re role of hybridization in species recovery, for example, American chestnut and potentially butternut. Argued against precedent setting versus judging the needs of individual species, i.e. chestnut's is a very different species than butternut as is the threat and its current status.
- Provided advice to butternut Regulation development:
- Reviewed proposed amendments to streamline overall benefit activities.
 - Supported communications with hundreds of OMNR designated Butternut Health Assessors (BHA) regarding assessment protocol
 - Promoted a process to ensure use of source identified, non-hybrid butternut seed and stock for ESA permit and landowner stewardship plantings.
 - Participated in development of a draft Habitat Addendum to the National Recovery Strategy to then adopt it as an Ontario Strategy.

- Reviewed tree removal permit conditions that would require planting or cloning of trees to result in an overall benefit to the species (ESA, 2007, Section 17 - 2c)
- Proposed expansion of grafting/archiving as an option for Overall Benefit Permits
- Facilitated several Overall Benefit Permits re grafting/archiving.

Butternut Conservation & Recovery:

- Butternut Research Collaboration - Supported by FGO;
 - Collaborated with **Dr Keith Woeste** (USDA/Purdue) and **John McLaughlin**, MNR OFRI on an FGO supported Project: *Butternut Genetic Diversity II - use of chloroplast microsatellites*
- Collaborated with **Danijela Puric-Mladenovic & Julia Buck**, MNR Southern Science on an FGO supported project: *Butternut Digital Data Mining in eastern Ontario* to discover many butternut located during other field work which can now be assessed.
- FGCA Butternut Recovery Program
 - Received funding from ESA Permit holders to archive 6 putatively resistant trees
 - Collaborated with Ferguson Forest Centre on a new facility dedicated to butternut grafting
 - Collaborated with Humber Arboretum with a butternut recovery meeting in December, a plan to host new small archive site and plans for vegetative reproduction research
 - Received a \$47,695 grant from OMNR Species at Risk Stewardship Fund to continue a program to build ex-situ recovery efforts with Central Ontario and Eastern Ontario partners and potential new provincial partner, Trees Ontario. **Rose Fleguel**, **Greg Bales** and **John Osmok** played critical local management roles
 - Re-assessed retainable trees for seed crops and putative resistance.
 - **Glenna Halicki-Hayden**, OMNR OFRI DNA tested trees selected for seed crops and putative resistance to avoid working with hybrid trees.
 - Seed Collection totalled 17,000 seed from 13 trees, kept separate by seed tree.
 - prepared black walnut rootstock for grafts which were kept in cold storage at FFC and the OTSP.
 - Collected Scions from 12 putatively resistant trees from eastern and central Ontario, inspected and ranked for grafting by **Rose Fleguel** and **Greg Bales**.

COBA scion collection March 2012



- **Rose Fleguel** with some assistance from **Barb Boysen**, **Greg Bales**, **John Osmok** and **Karen Dykxhoorn** produced over 300 grafts at Ferguson Forest Centre; introduced several local people to grafting/graft care.
- Located several putatively resistant trees in eastern and central Ontario to be grafted in 2014;
- Planted, tended and pruned grafts in the Eastern Ontario and Central Ontario Butternut Archives.



Eastern Ontario Butternut Archive - Sept 2012



Pruning EOBA grafts March 25 2013 for crown health and regrafting

Other SAR and Trees in Trouble

- Assisted Chestnut Recovery Partners with interpretation of ESA Regulations
- Continued discussions with Trees Ontario re a long term Trees in Trouble foundation.
- Supported an FGO and FGCA funded project: Beech bark disease in Ontario: Its dynamics, impacts and management led by **Dr John McLaughlin** of OMNR OFRI with southern Ontario forest management partners including Simcoe County and Westwind Forest Stewardship.
- Circulated information re ash conservation and management in the face of the Emerald Ash Borer, along with information on the Elm Recovery Program at The Arboretum, University of Guelph.



The canker-free tree on the left is resistant to beech scale.
 The tree on the right is heavily diseased.
 Taken from OMNR OFRI Forest Research Note #71 2012:
*Beech Bark Disease in Ontario:
 A Primer and Management Recommendations*
 John McLaughlin and Sylvia Greifenhagen

IV. Promotion:

Presentations & Displays:

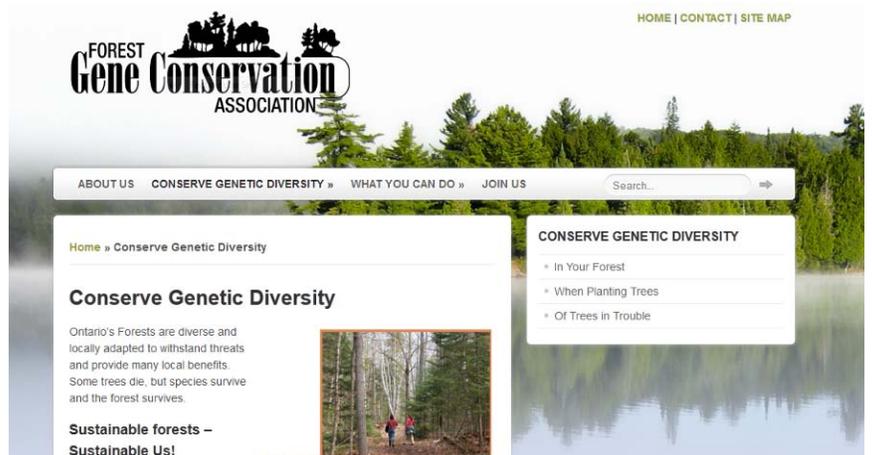
- FGCA Display at Lindsay Woodlot Conference
- FGCA Display at Guelph MNR District Office hosted by Terry Schwan

E-mail Distributions

- Dozens of articles and news items were distributed to FGCA members and associates

Website

- maintained www.ontariosnaturalselections.org and continued the revision of www.fgca.net to be active August 2013.



Meetings:

- June 2012 FGCA AGM in Angus:
 - Presentations:
 - Ontario Biodiversity Strategy - Strengthening the focus on Genetic Diversity
 - Seed forecasting & Seed Collection Area Network
 - Butternut grafting and archiving in Central Ontario
 - Ash Conservation - working with EAB ash survivors
 - Practitioners' Guide to Climate Change Adaptation Planning for Ontario Ecosystems
 - Simcoe County Field Tour:
 - Simcoe County Oak and Shagbark Hickory plantation
 - Glencairn Orchard - Pw SO management, crop forecasting & CC monitoring
 - Butternut archive
 - Tree Seed crop forecasting
 - Butternut grafting program at the Ontario Tree Seed Plant
 - Beech Bark Disease Surveys
 - Assisted Migration Site

V. Administration

FGCA Board

- Meetings and decisions were made via conference call and email

FGO

- FGCA Directors Gary Nielsen, Brian Swaile and then Steve Munro participated in FGO meetings and calls
- The FGCA Board contributed to reviews of FGO organizational structure with Mike Willick
- Barb Boysen prepared gene conservation presentation to MNR Assistant Deputy Ministers re review and potential renewal of MNR - FGO agreement
- Barb Boysen participated on the Provincial Technical Forum via conference calls

NFP Corporation

- Minutes were kept; Financial Reports reviewed, and Insurance maintained.