



the Bluestem Banner



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Tallgrass Ontario

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To achieve the identification, conservation, management and restoration of tallgrass prairie, savanna and related ecological communities in Ontario

Tallgrass Ontario thanks:

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Kenesserie Tallgrass Prairie - A 2011 TgO high diversity prairie creation



Go to www.tallgrassontario.org to download the Bluestem Banner in colour.

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Our new [website](#) is now on-line. Some pages are still under construction. Watch for further improvements coming soon!

Prescribed Burn Training Opportunities

Tallgrass Ontario is providing an **email network** to communicate with interested qualified Low Complexity Prescribed Burn Workers (RX100). Information will be **shared** about **upcoming P.B.s** and additional training opportunities.

If you are an L.C.P.B Worker, or know of someone who is, **email Tom Purdy** at tom.purdy@rogers.com with a valid email address.



Tallgrass Ontario is looking to host an **RX 100 Low Complexity Prescribed Burn Worker** course in late November for those in need of the training for Spring 2012 prescribed burns.

Please let us know at info@tallgrassontario.org if you know anyone who might be interested. Just send their name and email address and Tallgrass Ontario will send them the details.

This is a call for interest only and a course will only be held if there are enough candidates. The location is to be determined and a rough cost estimate is \$375 for the course



Tallgrass Ontario now has a presence on [Facebook](#).

The page is called [Tallgrass Ontario Supporters](#) and is open for all those interested in tallgrass prairies to join. We will post upcoming events, links to interesting articles and provide a forum for asking questions and sharing ideas about all things "prairie".

Join up today!

In Search of the 100 Acre Grassland –Kyle Breault

When prairie people talk of prime examples of a tallgrass community, the few sites that inevitably get mentioned have one thing in common, size and species diversity. These sites in Ontario are few in number and for the most part are well known to those who study and work with grasslands. Most notable of these are the Alderville Black Oak Savanna on the Alderville First Nation in the Rice Lake Plains, Ojibway Prairie near Windsor and of course Walpole Island First Nation on the delta of the St. Clair River.

Unfortunately, the list of these large diverse sites almost stop at the first three named. Outside of these examples of tallgrass communities, the remaining sites seem to have asterisks attached because of the issues surrounding them. While at one time these other sites may have been of significant size and diversity, they have been reduced to just fragments hanging on to existence. This fragile state might be due to their location or they cling to life thanks to the work of a few dedicated people looking out for their well being. Native tallgrass communities are typically less than a few hectares in size and are surrounded by development, infrastructure or land uses that make enlarging these sites difficult to say the least.



Over the past few years, many groups have worked with these remnants and have done an admirable job in protecting them, adding diversity and enlarging them where the opportunity exists. The difficulty in adding critical size to these grasslands is simply due to the limited potential for enlargement and the enormous price tag that comes with a large scale restoration project.

Costs for restoration of any grassland, whether it's a remnant or a creation project, can run into the thousands of dollars per hectare, and that's just for the physical restoration (site prep and seed). Where the project requires land acquisition the overall costs of restoring and enlarging a site generally becomes out of reach and so the site sits idle, remains small and usually unmanaged. Given that many of our Species at Risk in Ontario require much more than a few hectares of habitat (a covey of Bobwhite quail requires an average of 35 hectares for survival) the potential for

these small parcels of grasslands to ever have the desired impact of returning some of these species to self sustainable populations is unrealistic.



There are groups in Ontario that have focused on creating larger more continuous blocks of grassland habitat. There are several sites in the province where significant blocks of grassland have been planted (Sheldon Prairie in Kent County and the McKellar Tract in Lambton County come to mind). These sites and others created by some of the county Stewardship Councils do have the potential because of their size to support some of the more notable Species at Risk. The limiting factor to creating these large blocks of grassland surprisingly is not the availability of land, but rather the high cost of a high diversity seed mix needed to create the grassland. Tallgrass Ontario routinely has landowners approach them with large tracts on which they wish to establish grasslands. Unfortunately, at an average cost of \$5000 per hectare for a high diversity seed mix, the opportunity to work with these landowners seldom if ever develops. Current annual funding sources for the organization combined would not allow for a single large tract to be planted and managed.

Tallgrass Ontario has recognized this limiting factor for some time. Also recognized is the very large number of small restoration and creation areas that exist in southern Ontario where TGO has seed collection opportunities and where annual seed collection will not have a negative effect on the tallgrass community. The opportunity exists to collect large quantities of seed from these sites and use that seed to establish large grassland projects at a fraction of the normal costs.

Enter Tallgrass Ontario's newest program that will be launched in October 2011. The Ontario Grassland Initiative is foremost a focused fundraising program aimed at soliciting support from a larger demographic of Ontario's population than what normally contributes to tallgrass conservation. The Ontario Grassland Initiative is designed to raise substantial funds on an

annual basis and will not only solicit funds from previous tallgrass supporters, but will also reach out to the hunting community. Ontario has almost 600 000 individual hunters and thanks to other conservation groups like Ducks Unlimited and the National Wild Turkey Federation; these individuals have become accustomed to financially supporting habitat projects. Hunters have realized that without habitat the opportunity for hunting is greatly reduced.



This approach of an outstretched hand to the hunting community is a departure from TGO's past practices. TGO's past supporters are typically from academia, government agencies and a few select individuals that understand the importance of the tallgrass ecosystem. The reality is that the number of supporters from this demographic has never been great enough and likely never will be great enough to achieve the financial support required for anything but very small scale projects. The Ontario Grassland Initiative attempts to bring the two demographics together for one common cause, putting grassland habitat back on the landscape for the greater good of the species that rely on them. Whether those species are game animals, songbirds, insects or the plants themselves is irrelevant.



Funds raised through the Ontario Grassland Initiative will finance a very large scale seed collection program. Seed will be collected using paid labour, hand collecting a wide diversity of grassland forbs. Hand collecting forbs by trained collectors is economical according to trials undertaken by TGO over the past

couple of years. Hand collecting grass seed is not economical, so funds raised by the OGI will also be used to purchase cleaned grass seed from a number of suppliers in Ontario that produce good quality Ontario genotype seed.

TGO will also use a portion of the funds raised through the OGI to hire staff that will work with private landowners, agencies and groups that wish to establish tracts of grassland or enlarge remnants where opportunities exist. TGO will offer its expertise through these outreach staff to ensure projects are designed and implemented properly and ensure the best ecological principals are used. Continued management of these sites will also be a cornerstone of the OGI program, as any grassland project will require ongoing management to ensure it survives.

It will take several years for the OGI to become fully functional, but the first step is to introduce it to a new audience. The OGI will be launched to 1500 pheasant hunters during their travels to Pelee Island for the annual pheasant hunt. Pelee Island Transportation, the operator of the MV Jiimaan Ferry running between the mainland and Pelee Island, have been gracious enough to allow TGO to set up an information booth on the boat each Wednesday before the three hunts. The hour and forty five minute boat ride is a great place to talk with committed upland hunters to introduce the program. Many more outreach opportunities will follow.

The ultimate goal of the OGI is to help local groups interested in grassland conservation to create larger more significant projects at a reasonable cost. These large projects have a chance to help multiple Species at Risk and put upland habitat back on the landscape, something both groups of grassland supporters can get behind. For more information on the Ontario Grassland Initiative, visit the OGI pages located in the new TGO website at www.tallgrassontario.org. You can donate on-line to the OGI or you can make a tax deductible donation by sending a cheque made payable to Tallgrass Ontario OGI to Box 1732, Ridgeway, Ontario. N0P 2C0. Each \$50 contributed to the OGI will collect and process enough seed to plant 1/8 ha of grassland habitat.

Kyle Breault is Program Coordinator at Tallgrass Ontario. For more information about the Ontario Grassland initiative, Kyle can be reached at: 519 674 -9980 or by e-mail at bluestem@execulink.com

Branton Cundick Park - A Tallgrass Prairie and Wetland Restoration Project - Cass Stabler

Driving along the St. Clair Parkway between Bentpath and Wilkesport Lines, in July or August, you may have noticed a newly established tallgrass prairie and wetland at Branton Cundick Park. The bright yellow blooms of the Black-Eyed Susan, Tall Coreopsis, Grey-Headed Coneflower, and Tall Sunflower are hard to miss; by August, some of these wildflowers towered over everyone. Taking a closer look, you would see the open wetland area in the centre of the tallgrass prairie. Providing this open-water habitat will hopefully encourage Northern Pike to return to spawning in this outlet as they would have decades ago. The tallgrass prairie surrounding the wetland ensures that the water is filtered of contaminants from incoming water and provides habitat for a variety of species. It's difficult to believe that this tallgrass prairie was planted in late summer 2009, only two growing seasons earlier.

At one point, this area was a low-lying outlet that drained water from the mainland into the St. Clair River. This natural drain would have provided habitat for many plants, birds, insects, and mammals, and spawning area for fishes from the St. Clair River. Over time, as the surrounding landscape was altered by settlement and agricultural practices, this low-lying area became a drain for farm fields and parkland. The water flowing through this region now carried sediment from eroding farmland and the surrounding vegetation was removed from the banks of the drain to make space for expansive lawns. This sediment was continuously deposited at the outflow area between the road culvert and the river until it eventually prevented the flow of water almost entirely and removed the habitat from the landscape.



Branton Cundick Park, March 2008. Due to surrounding land use pressures, this drain has become ineffective; very little water is able to flow through the drain to the St. Clair River. Natural vegetation has also been removed from the banks of the drain so it only provides poor quality habitat.

Land management problems, such as this one at Branton-Cundick Park, have accumulated over the past

decades in Lambton County to such a degree that the St. Clair River was recognized, in 1987, by the governments of both Canada and the United States as an environmental Area of Concern. Since this designation, many organizations and individuals have worked to try to restore habitat, biodiversity, and ecosystem functions throughout the region. The sedimentation in this drain now presented an opportunity for local groups to come together, work to reverse the problem, and restore a functioning wetland, fish spawning habitat, and tallgrass prairie ecosystem.

The objective of this project was threefold. The partners aimed to improve fish and wildlife habitat, to protect water quality by filtering water that drained from agricultural areas into the St. Clair River, and to increase the public's enjoyment, use, and knowledge of natural areas and their importance in ecosystem protection and health. Though this objective was broad and complex, this project was an example of what many partners can achieve by working together.

The restoration project was planned and coordinated by the Rural Lambton Stewardship Network. This local, grassroots organization, comprising of a dedicated board of volunteers and staffed by the Ministry of Natural Resources, works with any interested landowners to protect and enhance natural resources throughout Lambton County. For this project, the Rural Lambton Stewardship Network acquired funding from some long-standing and supportive partner organizations including the Department of Fisheries and Oceans, Ministry of Natural Resources, Great Lakes Sustainability Fund, and Ducks Unlimited Canada.

The Township of St. Clair was also a very important partner in this project. As the landowner, the Township provided the space to restore habitat, biodiversity, clean water, and an appealing park area for its residents and visitors to enjoy. This type of in-kind contribution (which can come from any interested landowner: companies, local organizations, and individuals alike) is essential in the continued efforts to conserve the landscape through these types of restoration projects.

Restoration of the tallgrass prairie and wetland in this area took several steps to complete. First, the low-lying area was excavated to provide a deeper water catchment. The sides of the new wetland were carefully graded to create a gentle sloping bank. This bank would eventually be transformed into the diverse littoral zone of the wetland. This design provided habitat for emergent aquatic plants and many places for fish and wildlife to hide. Some of the excavated soil

was spread around the wetland to create an area for the tallgrass prairie to be planted. Generally, all of the soil is spread around the edge of created wetlands, but in this case, additional excess clay was transported via 52 dump trucks (carrying 22 tonnes each) to the nearby Lambton Ontario Power Generation Plant, another long-standing partner of the Rural Lambton Stewardship Network. They were able to use this clay to cap one of their cinder piles. As the last step, the sediment was removed from the outflow of the low-lying drain to reconnect the wetland to the St. Clair River. The wetland was designed to act as both an inflow and an outflow, draining water from the surrounding landscapes at times of high precipitation and allowing water to maintain the wetland levels during times of summer drought.



In August 2009, excavation for the restored tallgrass prairie and wetland area at Branton Cundick Park was completed. This allowed a large amount of water to be held in the landscape, protecting water quality and providing habitat for many species.

The areas surrounding the wetland were planted with native tallgrass prairie vegetation in order to minimize erosion, act as a riparian buffer and provide wildlife habitat. In total, six native grass species and twenty seven native forb species, all of which are representative of local tallgrass prairie vegetation communities were seeded.

Many native tallgrass prairie vegetation species require multiple growing seasons to establish. During establishment, the majority of their energy is dedicated to increasing the underground root system. These large, complex root systems grow about two and a half meters underground, depending on the soil conditions. This process is currently taking place at Branton Cundick Park and over the next few growing seasons more vegetation species will most likely appear in the prairie. All of this root material holds a large amount of soil in place and prevents wetland bank erosion. As these plants establish, their stems and leaves will also slow the water flowing over ground, preventing sediments from reaching the wetland, and allowing more water to infiltrate into the ground.

The mixture of grasses and forbs planted in the tallgrass prairie will also provide an effective buffer around the wetland, protecting water quality. If contaminated water flows through the prairie, excess nutrients and potential pollutants will be taken up by the plants. This prevents the contaminants from reaching the wetland and affecting the quality of the water.

Beyond their more functional qualities, tallgrass prairie grasses and forbs also provide an attractive display of flowers, seeds, places to perch, and places to hide throughout the growing season. This attracts many birds, butterflies, pollinators, and other beneficial insects. Even though the Branton Cundick Park prairie is planted at the edge of the St. Clair Parkway, all you can hear in the tallgrass prairie are the singing birds and buzzing insects as they go about their daily activities.



The newly established tallgrass prairie and wetland at Branton Cundick Park in July 2011.

Another important partner in this project, the St. Clair River Trail Committee, provided funds to support the installation of a walking bridge to allow the St. Clair River Trail to continue across the excavated outflow. This bridge was constructed from a self-weathering material high in nickel. Upon installation, the bridge turned a deep rusty red colour. The bridge was also designed to allow the maximum sunlight possible to reach the newly cleared outflow stream. This makes the stream more attractive to Northern Pike and other fish species that might use the wetland as spawning habitat. It also provides a point of interest for trail users who may stop to view the river and the wetland from the bridge.

Come see and hear the tallgrass prairie and wetland for yourself. There is a small parking lot beside the restored area and Branton Cundick Park is a point of interest when walking along the St. Clair River Trail. In total, 0.8 hectares of wetland habitat, 1.2 hectares of native tallgrass prairie, and 500 metres of wetland

buffer were planted. This brings diversity, habitat, ecosystem functioning, and aesthetic appeal to the area. All of this has established in only two growing seasons and we're look forward to what will come next: which wildflowers will grow, which species will show up over the next several years, and who will be able to enjoy and learn from this valuable site.

Cass Stabler is an Assistant Stewardship Coordinator with the Rural Lambton Stewardship Network. If you have any comments or questions, or would like to find out how you can become involved with land stewardship in Lambton County please contact her at cassandra.stabler@ontario.ca or 519-809-5763.

Tallgrass Prairie Species List

These vegetation species are common in native tallgrass prairie ecosystems and were planted at Branton Cundick Park.

Grasses	Common Name
<i>Andropogon gerardii</i>	Big Bluestem
<i>Elymus canadensis</i>	Canada Wild Rye
<i>Elymus Virginicus</i>	Virginia Rye
<i>Panicum virgatum</i>	Switch Grass
<i>Schizachyrium scoparium</i>	Little Bluestem
<i>Sorghastrum nutans</i>	Indian Grass
Forbs	Common Name
<i>Allium cernuum</i>	Nodding Wild Onion
<i>Anemone cylindrical</i>	Thimbleweed
<i>Asclepias incarnate</i>	Swamp Milkweed
<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis
<i>Coreopsis tripteris</i>	Tall Coreopsis
<i>Echinacea purpurea</i>	Purple Coneflower
<i>Eupatorium maculatum</i>	Joe Pye Weed
<i>Helianthus giganteus</i>	Tall Sunflower
<i>Heliopsis helianthoides</i>	False sunflower
<i>Hibiscus moscheutos</i>	Swamp Rose Mallow
<i>Liatris aspera</i>	Rough Blazingstar
<i>Liatris spicata</i>	Dense Blazingstar
<i>Lobelia siphilitica</i>	Great Blue Lobelia
<i>Monarda fistulosa</i>	Wild Bergamont
<i>Penstemon digitalis</i>	Smooth Beardtongue
<i>Penstemon hirsute</i>	Hairy Beardtongue
<i>Pycnanthemum virginianum</i>	Virginia Mountain Mint
<i>Ratibida pinnata</i>	Grey Headed Coneflower
<i>Rudbeckia hirta</i>	Black-eyed Susan
<i>Solidago nemoralis</i>	Grey Goldenrod
<i>Solidago ohioensis</i>	Ohio Goldenrod
<i>Solidago riddellii</i>	Riddell's Goldenrod
<i>Solidago rigida</i>	Stiff Goldenrod
<i>Tradescantia ohioensis</i>	Ohio Spiderwort
<i>Verbena stricta</i>	Hoary Vervain
<i>Vernonia missourica</i>	Missouri Ironweed
<i>Veronicastrum virginicum</i>	Culver's Root

Culver's Root (*Veronicastrum Virginicum*) - Catherine Stewart-Mott

Many people think of wild plant species as little more than obnoxious weeds. But beauty is in the eye of the beholder. In this issue of the Blue Stem Banner, our featured native beauty takes on an attractive candelabra appearance when in full bloom. It has also been incorporated as a staple feature in traditional residential and native residential gardens. As one of my lawn ornaments indicate, one person's weed is yet another person's wildflower!

Culver's Root, an herbaceous perennial wildflower, is most at home in a sun-lit tall grass prairie setting, but it is also well suited to savanna and lightly shaded woodlands. It favours a moist sandy-loam soil, but displays the ability to establish itself in less than ideal soil conditions. The physical range for Culver's Root is quite far reaching. It can be found in Southeastern Manitoba (the northwestern edge of its range), Southern Ontario, and it peppers the landscape of 36 American states. Although its range is quite large, it is none-the-less an elusive flower that has been declared a threatened species in many locals, including here in Ontario.

Culver's Root (*Veronicastrum Virginicum*) is a generally hardy plant with deep-green sharp toothed leaves arranged in whorls of two to seven up the length of its many stems. The top of each stem is crested with several slender white spikes which occasionally show a hint of mauve; the flowers usually emerge sometime in July and can bloom until late August or even early September, dependent upon where it is situated within its range. When at full seasonal maturity, Culver's Root can stand at an average height of 90 to 182 cm (3 to 6 feet).

If you were an insect aiming for a first class dining experience, you might encounter some competition at the floral buffet, as bumblebees, honeybees, masked bees, butterflies, moths, wasps and some fly species are also patrons during the flowering stage. A nice feature of the plant is that even after it is done flowering, it assumes a second phase of beauty as the flower spikes transform into a proliferation of tiny brown seeds which offer up a food source for birds in September and October. And let's not forget its appeal to some of four legged fauna; deer have also been observed



enjoying a feast of Culver's Root as they graze the landscape.

Culver's Root will happily share its habitat with other native plants such as Meadow Blazing Star, New England Aster, Purple Coneflower, Golden Rod, Wild Bergamot, and Sweet Black-Eyed Susan, among many other flowers, grasses, shrubs and trees species. Whether found in a natural tall grass prairie setting, or one strategically designed to reestablish or increase tall grass prairie habitat, Culver's Root is definitely a plant which adds distinction, diversity and value to its surroundings! Speaking of value, the plant's name hints at yet another of its benefits.

What exactly is the 'root source' of the name Culver's Root? There is apparently more to this plant than the beauty one observes above the surface of the soil. Culver's Root is quite possibly named after a Dr. Coulvvert, although definitive records are hard to come by. It is believed Dr. Coulvvert was an American physician during the late 17th and early 18th centuries who utilized the plant's root system for treating liver issues and constipation. Even today, Coulvvert's Root can be purchased as a natural health and medicinal product. Yet another way to enhance our well being is by incorporating native species such as Culver's Root into our residential landscapes, and by observing their splendor within a flower arrangement where it is mixed with other native species.

Why is it so important that we recognize the beauty and diverse value of this native plant? The combined impacts of urbanization, forestry and aggregate use, as well as industrial and agricultural development over several decades, have significantly reduced the percentage of tall grass prairie and savanna habitats, particularly here in Southwestern Ontario where such practices are quite intense. As many of these remnants are under private property ownership, Tallgrass Ontario's Save Ontario Savannas (SOS) program is aimed at inspiring both habitat expansion and plant diversity within these areas.

Catherine Stewart-Mott is a member of the City of Woodstock Environmental Advisory Committee and is on the Board of Directors for Stewardship Oxford.

Blue Lake Savanna- David Clemons and Graham Buck

History of the site:

Blue Lake is approximately 20 km. south of Cambridge, ON. It is on private land and cannot be seen from the road. It is a marl lake, many of which are found across the Mid-west of North America (Michigan, Wisconsin, N. Dakota) and Ontario. They appear to mark the southernmost extent of glaciers in the most recent Ice Age, about 13 thousand years ago. Depressions in the land surface may have been made by remnant chunks of ice. The depressions accumulated marl, a clay comprised mainly of calcium carbonate leached by rainfall out of the limestone moraine left by the glaciers. The clay, being almost impervious, made a good bottom for a lake, and the amount of marl increased over the last thirteen thousand (13,000) years. Since the mineral leached out of the limestone was carried to the lakes in streams or springs, and since it was and is a very fine suspension in the water, the lakes tend to be bright blue or turquoise in summer when the springs have brought a lot of clay into the lakes, and darker blue in winter. They are also called "colour changing lakes" for that reason.

Although there is archeological evidence of human settlement about 5 thousand years ago at Blue Lake, it was not settled in the modern sense until the 18th Century. Even then, the lake was kept apart as a recreational place for farmers in the area. The marl had accumulated considerably by 1875. The Grand Trunk Railway from Toronto to Chicago passed just south of the lake, and a group of enterprising businessmen from Brantford saw an opportunity. They bought the lake, brought coal in by rail, dredged the marl from the lake, dried and pulverized it. They shipped it to market by rail for use as plaster for the interior walls of the many houses and buildings being constructed in the booming 90's.

The plant closed in 1915 when the marl had been mostly removed. In building the drying plant, dormitories, laboratory buildings etc, not to mention the railway ties needed for the small railway built around the lake which hauled clay from dredges on the lake up to the plant, the company denuded the hills around the lake of most of the trees. From 1915 to 1945 the 100 acre lot passed through several owners who did little with it until one family built a boathouse and set up a picnic site. In 1946 two men who had grown up together in St. George and had swum and fished in the lake as boys, bought the 100 acres and built cottages on opposite sides of the lake. In 1949 the rehabilitation of the lands took a more active course. It began with a major White Pine planting, using the help of schoolchildren from St. George. In 1969 more trees

were planted with white oak, white pine, black walnut, silver maple (on good loam rolling land) white cedar, white birch, and poplar (in low swampy areas) which covered much of the open land aside from the arable land between the oak savanna and the railway right of way. George Clemons gradually acquired more land parcels to add to his piece. In 1996 there was a major downdraft which destroyed a swath of about 200 trees.

Restoration of the Oak Savanna:

About 60 years after the plant closed the restoration of the environment at Blue Lake took a different turn. In the 1970s there was growing interest in the Ontario's tallgrass prairies and oak savanna. From the mid 70s, when Larry Lamb of the University of Waterloo began visiting Blue Lake for field trips, through the Tallgrass Ontario Save our Savannas campaigns and finishing in 2005 with the Brant Resource Stewardship Network, the importance of the Blue Lake Savanna was realized.



White Oak-Pine woodland at Blue Lake

The Blue Lake savanna is actually a combination of two similar ecosystems; oak savanna and oak woodland, sometimes called closed savanna. The dominant tree in the savanna-woodland is White Oak. White Oak savannas are uncommon in Ontario, because in Ontario most oak woodlands grow in deep acidic sands and therefore are composed of Black Oak. Examples of Black Oak Woodlands are found at Turkey Point, Wasaga Beach, Pinery-Port Franks and in Northumberland County (Rice Lake Plains). The Blue Lake savanna is found on a limestone rich soil, which is why the dominant oak is White Oak and not Black Oak. The limestone based soil at Blue Lake is also why there are close to 1000 American Columbo plants, which is endangered in Ontario and Canada, growing there. Some of the other unusual plants found at Blue Lake are One-flower Cancerroot, Hoary Puccoon (S3 vulnerable), Kalm's Lobelia, Bluets and Smooth Sumac. There are two historical records for two plants that are no longer found at the site: Fernleaf Yellow False Foxglove (S2 imperiled), and Prairie Dock (S1 critically imperiled).

At Blue Lake Savanna White Oak with varying amounts of other species, such as Pignut Hickory, White Pine, Black Oak and Northern Pin Oak/Hill's Oak are the dominant trees in the canopy. There is significant shrub layer, usually because the sites have not been burned recently, composed of some or all of the following species: Gray Dogwood, Choke Cherry, American Hazel, Downy Arrowwood and occasionally Round-leaved Dogwood, Summer Grape, New Jersey Tea and various species of Serviceberry/Juneberry. The dominant herbaceous plant is Pennsylvania Sedge. Other species of sedges are sometimes found, such as Muehlenberg's Sedge and Stellate Sedge. Typical wildflowers are Woodland Sunflower, Poke Milkweed, Robin's Plantain, Parlin's Pusseytoes, Yellow Pimpernel, Mayapple, False Solomon's Seal.

Ontario. Counts of the plants have shown that there was a population high of 1250 plants after the first burn in 2006. Since then the number of seedlings has reduced as they have thinned out but the total number of plants is just below 1000; which is up from the number counted before the first burn.



White Oak Tree with American Columbo in foreground

In 2005 the Brant Resource Stewardship Network made contact with the current landowners of the Blue Lake Savanna and together they have worked to restore the oak savanna habitat by cutting out invasive shrubs and using prescribed burns in 2006, 07, 08, and 10. The burns took place in different sections around the lake to avoid burning the entire community.

The restoration has had an immediate impact on the savanna plants. Some of the fire dependent plants, such as Big and Little Bluestem, and Poke Milkweed have increased significantly. Also interesting has been the response of American Columbo, because this population is the only one to ever have been burned in



After the first burn



David Clemons with MNR staff completing a burn at Blue Lake

*David Clemons has held posts with the Canadian Diplomatic Corps as well as executive positions in the private sector. He is a land steward in Brant County and is the owner of Blue Lake. **Graham Buck** is a Species at Risk Biologist with the Ministry of Natural Resources and is the current President of Tallgrass Ontario.*

Evolution of a Grey County Prairie - Lorraine Brown

My husband and I started a prairie project back in 2000 at our home 12 kilometers north of Owen Sound. We had two ponds dredged and the mountain of silt spread a few feet thick over a grassy field made a new planting bed. We applied Round-up herbicide twice in hopes of getting rid of the alien invasive weed species, and in December, 2000, planted an Ontario tall grass prairie seed mix from Limestone Creek Nursery in Campbellville, Ontario. Since then, we have burned the prairie every few years to keep out the woody plants and to give the prairie species a bit of a leg up over the competition from alien plants.



This past spring, both the old and new sections of prairie were burned

The original seed mix we purchased contained the following plants:

Grasses

Big Bluestem (*Andropogon gerardii*)
 Little Bluestem (*Schizachyrum scoparius*)
 Canada Rye Grass (*Elymus canadensis*)
 Indian Grass (*Sorghastrum nutans*)

Forbs

Long-fruited anemone (*Anemone cylindrica*)
 Sneezeweed (red and yellow) (*Helenium autumnale*)
 Dense blazing star (*Liatris spicata*)
 Round-headed bush clover (*Lespedeza capitata*)
 Grey-headed coneflower (*Ratibida pinnata*)
 Wild bergamot (*Monarda fistulosa*)
 Purple coneflower (*Echinacea purpurea*)
 Evening primrose (*Oenothera biennis*)
 Butterfly-weed (*Asclepias tuberosa*)
 Virginia Mountain Mint (*Pycnanthemum virginianum*)
 Black-eyed Susan (*Rudbeckia hirta*)
 Woodland sunflower (*Helianthus divaricata*)
 Culver's root (*Veronicastrum virginicum*)
 Showy tick-trefoil (*Desmodium canadense*)
 White beardtongue (*Penstemon digitalis*)



Our ¼ acre prairie planting (older section toward the back, newer section in front) is surrounded by a hay field in the background and lawn in the foreground.

The plants came up in an interesting succession. The first year almost none of the plants appeared and we feared our project was a failure. The next year came black-eyed Susan and wild bergamot. Other species came in subsequent years. It was great fun to go into the prairie, find new plants, and figure out what they were. Some of the plants in the mix never appeared including little bluestem, round-headed bush clover, purple coneflower, evening primrose, butterfly-weed and Culver's root.

I added a few other species that I thought were appropriate: maximillian sunflower, green-headed coneflower and a type of sunflower-like plant whose genus and species are unknown to me. All of these have done very well.

But this area still has a lot of plants we don't want in there. Timothy and other alien grasses, a few species of thistles, purple vetch and Queen Anne's lace are common. In the past few years, spotted knapweed has also begun invading. Knapweed comes in from the edges and establishes itself quickly and mercilessly.

I had hoped that the prairie species, with their deep root systems and ability to withstand tough conditions would eventually win out over the alien invasive weeds but this has not happened. Some prairie species are doing okay. There is still plenty of wild bergamot and the big bluestem has spread modestly. Indian grass is just holding its own, as are sneezeweed and Virginia mountain-mint. Woodland sunflower puts on a tall impressive display in late summer and is spreading. The black-eyed Susan that completely dominated the prairie in the first few years, is uncommon now. Perhaps that's part of the prairie succession. The anemone, white beardtongue and showy tick-trefoil have yielded to the competition and disappeared, and the once-common Canada rye grass is now rare.

In 2008 we started increasing the size of the prairie by converting lawn to new strips of prairie, adding the last strip (about 30 feet wide and 100 feet long) in 2009. We now have an estimated quarter acre in prairie plantings.

The newer strips, planted with seed that I collected from the original planting and to which I added evening primrose, coneflower, vervain and culver's root, is now looking better than the original prairie ever did. Perhaps we'll have better luck here, but we'll only know as the years go by.



*The author collects seeds from cup plants (*Silphium perfoliatum*) in her butterfly garden in the fall.*

The new strips are full of colour and species diversity. Canada rye grass and panic grass are both doing very well, and I'm hoping to see big bluestem and Indian grass beginning next year. Flowers include coneflower, woodland sunflower, bergamot, black-eyed Susan, and vervain. Fall will bring New England aster and sneezeweed. Virginia mountain-mint and butterfly-weed I hope to see in coming years.



Planted in 2009, the new area shows a great diversity of forbs and grasses by summer 2011.

Evening primrose created a complete monoculture in the first new strip during its first summer. Now, it has

completely disappeared. Does it play the role of a nursery species in a new prairie? Philadelphia fleabane is also common in the new plantings. I didn't plant it there, yet it's thriving. It never appeared in the original prairie.

It's been interesting to watch these areas evolve. Will my prairie species win out over the farm weeds in another decade? We'll just have to wait and see!



In the background is the original prairie area just after it was burned in 2005. The lawn in the foreground was planted in prairie species in 2008 and 2009.

Lorraine Brown and her husband **Andrew Armitage** manage their prairie and other wildlife plantings on their farm north of Owen Sound, Ontario. Lorraine was the founding president of the Owen Sound Field Naturalists and now edits the club's newsletter.

Hurry Up and Wait! –Jack Chapman

If you are in the business of suppressing wildfires, you certainly are familiar with the phrase “Hurry up and wait”. If you are in the business of starting fires, you often hear the same comment coming from a Prescribed Burn Team.



Jack Chapman providing a morning briefing to his fire crew

On April 12th 2011 the weather forecast for April 14th called for North West Winds at 15 kilometres per hour, Relative Humidity 60%, with a mix of sun and cloud. Chance of light rain showers was forecast on the morning of April 13th. As you know, the spring of 2011 was wet, cold and the burning window was nearly closed for these two high priority sites that we had targeted to burn. The first burn site had a high mix of cool season grasses and was greening up on an hourly basis. There wasn't a concern of green up on the second burn site due to the high component of warm season grasses; however the presence of species at risk could be an issue if the site wasn't burned within the next few days or so. Timing was critical.



Weather station set-up

Burning a site is usually a three day event. On Day One you have to analyze the 3 day weather forecast to see if

you will be within your prescription range. Notification of a possible burn begins by contacting numerous organizations and neighbours within the burn site area.

Day Two is the time for logistical preparation of resources and further analysis of the weather forecast for the following day. On this day, the Burn Boss needs to feel confident that the weather forecast for the next day will be accurate. The winds and relative humidity on burn day need to be in a specific range and are two of the major causes that could shut you down, especially if the weather that was forecasted does not materialize on Day Three.

When everything comes together over the three days it is very rewarding to a Burn Boss. However, it does not always work out your way. At any time during the three days the burn can be postponed or cancelled for many reasons, ranging from a concerned neighbour to failure to submit the paper work on time. Relying on the weatherman's forecast and a committed burn team is also key factors to a successful burn. Of course anything can change in three days and when the burn boss postpones the burn, the other phrase you may hear is that the Burn Boss is “Crying Wolf again”. You can see why a Burn Boss needs to have thick skin.



Waiting

Day Three April 14th, the controlled burn operation was scheduled to go. That morning prescribed burn workers and forest fire suppression equipment was organized and the wheels were set in motion at 7:00 a.m. to travel to the first burn site.

When we arrived at the site everyone had assignments in preparation to conduct the burn. An on-site Davis weather station was set up, ignition/suppression gear organized, and staff walked the perimeter of the burn block. Phone calls were made to appropriate authorities, pre-burn briefings were held and the list goes on. The activity is high and has to be conducted as set out in the Prescribed Burn Plan with no exceptions. Once all the conditions of the plan are met, then the

ignition stage is good to go. On this morning, we all did well in meeting the schedule to start ignition. Conducting the *Briefing* was the final step. When that was finished, one last check on the actual weather on site was made. A phone call was made to see if there was any change in the forecast since the night before.



First burn site

The problem we faced that morning was that we were having more cloud than sun. The solar radiation effect and lower relative humidity that we were relying on did not occur as predicted. Burning a site with a high component of cool season grass requires that both of these key weather elements be within a certain range to have an effective burn. We were now in a “wait mode”. We had to wait for at least a 5/10 cloud cover that would reduce the humidity and enhance the effect of solar radiation. About two hours later, we got a break in the weather but the wind started to pick up. All of a sudden a decision was made to ignite before we were facing another problem with wind. Now we were back in “hurry up” mode.



Hurry Up!

The wind helped move the fire across the burn block in a timely matter, overcoming the anti-fuel (green grass). The fire behaviour itself wouldn’t even attract a moth, as it was smoky with low flame heights. Results of the

burn as you probably would expect (burning in greening up conditions) did hurt or kill the cool season grasses. Blackening the site allowed the warm season grasses to get a jump and spread.

Once we were in the OUT stage, we were back in “hurry up” mode. We demobilized and headed across the county to the shores of Lake St Clair.



Second Burn Site

When we arrived at the second burn site late in the afternoon, we faced a different problem. The radiation effect from the day’s sun was welcomed, but the wind speed off the lake picked up to the point that it put us out of prescription. There we were again in the “wait mode”. Once we completed our regular routine we were on standby hoping that the wind speed would decrease as it usually does as evening approaches. The wind speed did drop, but the humidity started to increase. This wasn’t a real concern compared to the previous site since this site had a high component of warm season grass.



Waiting a bit more

At sun set, the four ignition lines were tied in. Our only assignment after that was to monitor the burn until the fire extinguished itself. With the sun’s disappearance,

fire spread was creeping at best. Again, the slow moving fire met the objective of the burn.



Monitoring

There is a lot of planning and scheduling in conducting a burn. On the surface, doing the actual burn looks pretty simple because your planning has paid off. A good plan will allow everything to fall into place and the only thing that a burn boss needs to do is to constantly monitor the updated weather patterns. Any breach in the three day ordeal can cause you to postpone or cancel a burn. As you get closer to the ignition time, the more expensive it will be to postpone the burn due to unforeseen circumstances. Not following a plan will create unnecessary risk. Money can be replaced, but people cannot. **Safety** is the utmost importance of a successful burn. If you have an incident because you side stepped or diverted from the plan, that will be the end of your burning days!

The following is an example of prescribed burn procedures

Prescribed Burn Plan Section 4.4		Fire Prescription
The prescription has been developed to meet the objective of the burn and is based on the Canadian Forest Fire Danger Rating System.		
Prescription	Low	High
FFMC	70	84
ISI	1.5	4.5
BUI	NA	NA
Wind Speed	5	15
(Maximum wind speed on a given day will depend on the FFMC. The high ISI value will not be surpassed)		
Wind Direction: Wind direction is restricted. No winds (Cardinal wind directions) from the North, North East, East.		
Other prescription for a successful burn: Slightly unstable Atmospheric air conditions		



Unstable atmospheric conditions

Jack Chapman is a burn boss and a Director with Tallgrass Ontario.

Watch for the next burning article called **“What If”** in the **2012 Spring Edition of the Blue Stem Banner.**

Pictures for this article were supplied by **Ian Cameron** of the Ontario Natural Resources Rural Lambton Stewardship Network.

2011 Tallgrass Ontario Annual General Meeting

Tallgrass Ontario hosted the Annual General Meeting on Friday June 24, 2011 at the Backus Mills Heritage Education Centre. This year's theme was Plant Genetics- How Local is Local Enough?

Summary of accomplishments:

Seed and Plug Production

Tallgrass Ontario in partnership with MAAAP (Management of Abandoned Aggregate Site in Ontario) and local delivery agencies has taken the first step towards creating seed producing prairies. Once established these seed prairies will provide a basic mix of prairie species seeds on an annual basis to support the creation of new tallgrass prairies. The prairies will be comprised of a mix of species that are indigenous to that specific county. The prairies will be planted in 2011 and later years on sites that can be secured through long term agreements with landowners and where the prairie can be managed by TGO volunteers. In subsequent years a management plan is to be created for each seed producing prairie and a volunteer force will be assigned to it and trained in prairie management.

Prescribed Burn Workshops

Tallgrass Ontario, through the support of Ontario Stewardship Councils in south western Ontario delivered Low Complexity Prescribed Burn Worker Training Courses. In support of this initiative Tallgrass Ontario board members created a system to connect those doing the burns with the trained workers looking for sites. The RX-100 system is now being used by Tallgrass Ontario to keep people who are involved in prescribed burns informed.

Biofuel

At the May 2010 AGM a day long discussion was held on biofuel. Since that time Tallgrass Ontario has worked with partners to implement the first steps of an Ontario tallgrass prairie biofuel initiative. A partnership between Tallgrass Ontario, Ontario Soil and Crop Improvement and the Lower Thames Conservation Authority will see the planting of a biofuel plot near Ridgetown Ontario.

Mapping Project

Tallgrass Ontario, in partnership with the Nature Conservancy of Canada, Ministry of Natural Resources continued work on a GIS based mapping project of all naturally occurring tallgrass prairies, oak savannas and oak woodlands remaining in Ontario. This work was started in 2007 and is continuing. It is hoped that a finished product will be completed in 2011. In 2010

Tallgrass Ontario started working with Sir Sandford Fleming College to look at the potential for mapping the historical range of tallgrass in Ontario, with an eye towards finding the best sites for re-establishing prairie in the future.

Website Update

2010 saw Tallgrass Ontario take a big step forward towards updating the website. Work is ongoing in 2011, with the goal of launching a new website in the fall with more updates coming as time and funding allows.

Lake Simcoe Clean-up Fund

Tallgrass Ontario embarked on a new initiative in the Lake Simcoe watershed. Historically there are areas in the watershed with tallgrass prairie such as Degrassi Point. This project is not a restoration but instead is using native tallgrass prairie buffer strips along creeks and rivers and drainage ditches in order to reduce the amount of non-point source run-off that enters Lake Simcoe. Funding from Environment Canada's Lake Simcoe Clean Up Fund allowed TGO to work with landowners, coordinate the signing of agreements, secure seed and physically plant the tallgrass prairie buffer strips.

Eco Action Projects (Pearson and Rankin)

Environment Canada also supported Tallgrass Ontario, this time through Eco Action, to plant seed prairies in Brant and Chatham Kent Counties. The sites chosen were made possible due to 2 private landowners – Steve Rankin (also a new board member in 2010 and current editor of the Bluestem Banner) and Murray Pearson.

Oak Park Road Railway Prairie - Brantford

This prairie habitat was created by the City of Brantford in 2004-05. However it is very low diversity, consisting of mainly Switch Grass. In 2010 Tallgrass Ontario received funding from the Grand River Conservation Authority to plant 800 wildflowers plugs, of species indigenous to the area, to create a more diverse and beautiful tallgrass prairie. This prairie is strategically located close to existing prairie and savannas and along a public trail. Funding in 2011 saw an additional purchase of plugs to further beautify the area.