the Bluestem Banner

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Tallgrass Ontario will identify and facilitate the conservation of tallgrass communities by coordinating programs and services to provide assistance to individuals, groups and agencies.

Tallgrass Ontario thanks:
The Ontario Trillium Foundation,
Habitat Stewardship Program,
Endangered Species Recovery Fund,
HIVA Environmental Fund,
Ministry of Natural Resources,
Environment Canada &
Our members for their generous support.

Wild Lupine/Lupinus perennis

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

Inside the Bluestem Banner

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Opportunities to establish tallgrass prairie ecosystems on post-extractive aggregate sites - *Maria Jawaid and Danielle Aulenback*

Aggregates, which are defined as gravel, sand, clay, shale, limestone, sandstone, marble, and granite are a non-renewable resource used to process and manufacture a variety of construction and other materials. In Ontario alone, over 184 million tonnes of aggregate are consumed annually. This material is extracted from over five thousand pits and quarries across the province. Because aggregate is a fairly common commodity with very low unit value, and relatively high handling costs, most aggregate sites are located in proximity to their market. As a result, a majority of the province's aggregate pits occur in southern Ontario and are coincident with suitable tallgrass prairie habitat.

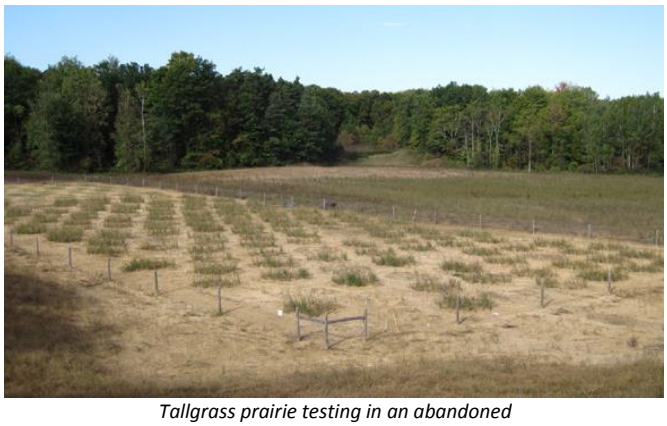
In Ontario, aggregate extraction is regulated by the Aggregate Resources Act (ARA) which is administered by the Ministry of Natural Resources. Under the ARA, there is a requirement for depleted aggregate pits and quarries to be rehabilitated in order to facilitate pre-determined after-uses. Typical after-uses include: residential lots, ponds, and agriculture. A number of sites are also donated to local conservation authorities for protection. While the Act requires rehabilitation generally, details on what the rehabilitation is to look like, and how it is to be achieved on any site, are governed by the site plan associated with the licence/permit. Site plans are legally binding documents and the licensee/permittee is required to comply with the specifics detailed on the site plan.

The rehabilitation prescribed on a site plan usually represents a minimum requirement to achieve a prescribed after-use. Primary objectives for rehabilitation usually include stabilizing and "greening" the side slopes and pit floor. While there are instances where specific vegetative planting regimes and species compositions are prescribed directly on the site plans, this is usually avoided as this specificity can be difficult to regulate for compliance (MNR inspectors are not all qualified to inventory plant species, and it is not uncommon for initial plantings to fail due to poor soil conditions or other environmental parameters).

In order to meet the site plan requirements to "green" depleted pits and quarries, aggregate operators typically use legumes (*Fabaceae*) to establish initial vegetation. Plants in this family include: beans, fetch, clover and alfalfa, and are ideal because they can grow quickly to control erosion, and grow in soils with very low nutrient levels, such as aggregate pits and quarries. It is important for aggregate sites to plant species that need little maintenance and can be self-sustaining. In addition, harvesting seeds from sources near the pit/quarry site, helps preserve characteristics that make the plants well adapted to the local environment and conditions.

While legumes represent a good initial vegetative cover, opportunities exist to use depleted pits and quarries to establish tall grass prairie habitat. In 2008, The Ontario Aggregate Resources Corporation (TOARC) released a document entitled: *Best Practice Guidelines for Aggregate Rehabilitation Projects: Extracting the Benefits for Species at Risk and Rare Habitats*. This document outlined the suitability of aggregate sites for establishing rare habitats, including tallgrass prairie.

In Ontario, most of tall grass prairie remnants are situated on sandy soils that facilitate drainage. Suitable locations for these ecosystems are becoming increasingly limited as development, agriculture, reforestation and limitations on naturalized fire management inhibit the success of these ecosystems. That being said, depleted aggregate extraction sites represent good candidates for prairie restoration because they: are open and unforested, have dry and porous substrates, and have the ability to be easily managed and adapted to meet growth requirements. Given the scarcity of locally harvested tallgrass prairie seed, rehabilitating pits and quarries to this ecosystem can be a costly endeavour. That being said, aggregate companies typically incorporate rehabilitation into the operating costs and use rehabilitation both on and off sites to improve their environmental stewardship and corporate image and identity.



Tallgrass prairie testing in an abandoned aggregate pit. Photo –Brian Ohsowski

One of the challenges in using aggregate sites for tallgrass prairie plantings is that licensees and

landowners wishing to surrender their aggregate licence or permit want the site to be "greened" as quickly as possible to accommodate future land uses. Unfortunately, many prairie species take time to establish. Prairie seeds often germinate the following spring after initial seeding, and although they establish an extensive root system in the first year, full size plants do not usually grow until at least the second year (Minnesota DNR). This lag makes it necessary to incorporate cover crops to prairie restoration sites. The cover crops, such as oats and wheat, or even legumes, can protect slower germinating seedlings during the first and second year until they are replaced (Minnesota DNR).

Aecon-Pinchin pit (Caledon) following extraction and awaiting rehabilitation planting treatment. Photo – Maria Jawaid

Given depleted aggregate pits and quarries meet the habitat requirements for tallgrass prairie in southern Ontario, efforts should be undertaken to seize the opportunity for establishing these ecosystems on these sites. This can be achieved by:

1. Using various stewardship techniques to promote tallgrass prairie; coordinating efforts with MNR to educate aggregate landowners, licensees/permitees and associations (such as the: Ontario Stone Sand & Gravel Association) on the importance of tall grass ecosystems.
2. Providing cost-effective seeding options that are readily available and have proven success on extractive sites.
3. Contacting hydro-seeding and vegetation companies to discuss incorporating locally harvested tallgrass seeding options in their line of products.
4. Soliciting existing pits/quarries nearing depletion to use seed mixes and techniques that facilitate tallgrass prairie species growth.
5. Working with MNR to include potential habitat types on site plans (instead of specific species compositions), to encourage aggregate operators to incorporate a variety of habitat types in their rehabilitation efforts and advance past the minimum requirements.
6. Providing maintenance and support for new prairie restoration sites; ensuring landowners or licensees are aware of what is required to maintain the ecosystem (mowing/burns) once the aggregate licence/permit has been surrendered.

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Photo, Page 1 - Wild Lupine/Lupinus perennis in bloom on May 29th, 2014 at Kenesserie Tallgrass Prairie, Chatham-Kent. Wild lupine is the host plant for the Karnerblue Butterfly/Lycaeides melissa samuelis. Photo Credit – Steve Rankin

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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 info@tallgrassontario.org with a valid email address.

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Tallgrass Ontario's Goals

1. Ensure Organizational Capacity;
2. Facilitate the creation and restoration of tall grass communities;
3. Increase public awareness and stewardship of tall grass communities;
4. Identify and secure existing and potential tallgrass communities across the province;
5. Promote research and knowledge transfer of tall grass communities.

Membership

Tall Grass Ontario is always actively seeking individuals that would like to learn the roles of a TgO board director and work to achieve a position on the board.

The first step in the TGO volunteer path is to become a member. A General Membership is $20 per calendar year, a Student Membership is $10.00 annually and a Lifetime Membership is $100.00. All memberships entitle the member to voting rights in the organization.

You can donate to Tallgrass Ontario by visiting https://www.canadahelps.org/dn/13376
You can become a member by visiting our website at
http://www.tallgrassontario.org/memberships.html

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Please visit the Tallgrass Ontario web site at http://www.tallgrassontario.org/index.html

We provide comprehensive information about the creation and care of tallgrass prairie - how to plant, establish and maintain and information on Ontario native plants.

Pollinator Packs: Please help our bees. The pollinator crisis is caused in part by loss of habitat and lack of floral diversity. You can make a difference by planting native bee friendly flowers in your garden and encouraging your friends to do so as well.

Support Monarch Butterflies – Buy a TgO Pollinator Pack today
TALLGRASS ONTARIO SELLS POLLINATOR SEED PACKS –INDIVIDUAL SPECIES OR SPIECES MIXES. PLEASE VISIT OUR WEBSITE AND PLACE YOUR ORDER ON-LINE.