

# Canadian Reclamation



An official publication of the Canadian Land Reclamation Association /  
Une publication officielle de l'Association canadienne de réhabilitation des sites dégradés

SPRING/SUMMER 2026

## **The Rise of Micromeadows in Urban Restoration**

The Story of  
Hamilton's Rock Garden

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lagoon became a living wetland

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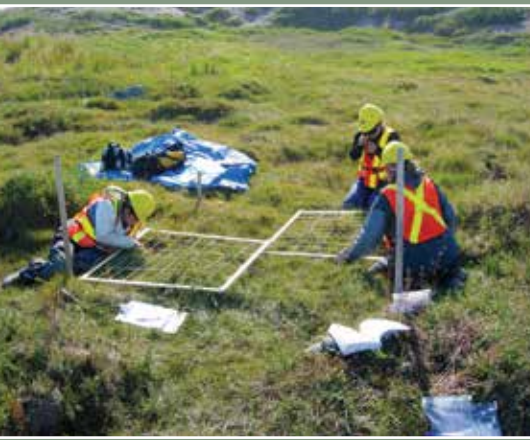
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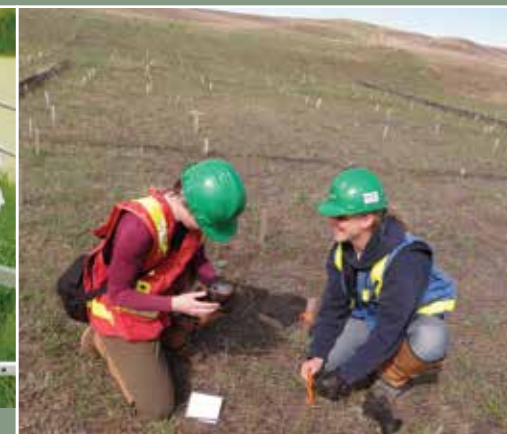
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## National president's message

# **KELLY ZADKO, B.Sc., P.Ag.**

**A**s we move into Spring 2026, it's hard to believe I am entering my fourth year as the President of the National CLRA. I am humbled to get to work with such an amazing community of volunteers that continues to grow and evolve, driven by the shared commitment to advance reclamation practices across the country.

This spirit was clearly demonstrated at the recent CLRA Alberta Chapter Conference, held March 3–5, 2026, in Edmonton. With over 900 attendees, the conference was an outstanding success, bringing together industry leaders, practitioners, researchers, and students for several days of learning, networking, and meaningful discussion. The quality of presentations and the level of engagement reflect the importance of reclamation work and the dedication of those involved in it. A big shout out to all the board members and volunteers that made it happen!

I would also like to take this opportunity to recognize Shannon King, who leads our Magazine Committee. Shannon's hard work, attention to detail, and commitment to showcasing the voices and achievements within our community are evident in every issue. This publication continues to be an important platform for sharing knowledge and celebrating innovation in reclamation, and we are grateful for her leadership.

Finally, I want to extend my sincere thanks to all CLRA volunteers across the country. Your time, energy, and expertise are the foundation of our organization. From organizing conferences and events to contributing to committees and supporting initiatives at both the chapter and national levels, your efforts make a lasting impact.

As we look ahead, I am excited about the opportunities before us and confident in the continued growth and success of the CLRA.

*Warm regards,*

*Kelly Zadko, B.Sc., P.Ag.*

*President, Canadian Land Reclamation Association* ♻️



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with CLRA CORRESPONDENT  
**Chad Green**



## WHAT'S UP (REG)DOC(S)?

“What’s up Doc?” greets self-assured Bugs to his foe woefully underestimating the rabbit’s tenacity. Canadian pipeline discussions inevitably get political with mixed polarizing perspectives and connotations. This is all an expression of the human condition and our awkward, perilous attempt at governance. And because of that, the last major transmission pipeline construction project in this country might possibly be the last indeed. I hope not. As rhetoric continues for and against new major projects, we know some precedents have been set and some confidence has been earned that we can build pipelines within the most stringent regulatory requirements.

While visiting Vancouver in 2019, I was walking along the Stanley Park seawall when I was coincidentally hired to work on the Trans Mountain Expansion Project (TMEP). I took the call while watching tankers in Burrard Inlet sitting high above the waterline. Their prominent freeboard indicated empty hulls waiting for a turn to load oil at Westridge Terminal. After a dramatic and tenacious application, consultation, ownership change, regulatory hearing and approval process, TMEP had just been approved with many unprecedented conditions imposed. Everyone underestimated how complex and expensive the project would become – by a tremendous amount – and it proceeded.

TMEP was overbudget, behind schedule, extremely complex, and it spooked industry, potential investors, and policy makers. Despite that, there were enough successes to make a business case for another transmission pipeline and marine export terminal. If (accenuate *if*) a proponent proposes a new major project, they can learn what they are getting into. If it were Bugs preparing a new transmission and export pipeline project description and proposal he would stoically ask “What’s up REGDOCS?”.

REGDOCS is the online public repository of regulatory docu-

ments prepared for and by the Canada Energy Regulator. There is also the online BERDI search tool. BERDI stands for Biophysical, Socio-economic, and Regional Data and Information. REGDOCS and BERDI contain thousands of documents from the application and approval process, assessments of environmental features and detailed mitigation plans and a plethora of correspondence.

Some of these mitigations were expensive, complicated, and probably unnecessary while others were sensible, reasonable, and effective. From A to Z, here are some TMEP topics you might search (and there’s much more than this): amphibians, archeology, aquifers, birds, bats, caribou, contamination (historic), cryptogamic crust, (acid rock) drainage, emissions, fluvial channel protection, greenhouse gas estimation, human impact assessment (socio-economic), hydrology, hydrogeology, industrial brownfield development, Jasper National Park, Kamloops Terminal, light emissions, marine mammal protection, noise mitigation, old growth management areas, post construction monitoring, question responses (information requests), reclamation, soil studies, trees (cultural, protected, and timber salvage), underwater noise and underground trenchless boring and tunneling, vegetation (rare plants and weeds included), waste, watercourses, water wells, wetlands, wildlife, consultations with indigenous communities such as SHXWHA:Y VILLAGE, and a wildlife refuge zoo which provided an interim home for snakes being salvaged, protected, and relocated back to their habitat along the pipeline right of way.

TMEP was a lot. It created a lot of controversy, concern, and defense. It cost a lot. It required a lot of time and a lot of great people to get it built. The precedents, documents, and experience are resources for future projects. Use them.

*In science,  
Chad* ♡

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# BRIDGING KNOWLEDGE SYSTEMS:

## Innovation Through Integrating Traditional Knowledge and Cultural Competency

By Carol Crowe, Environmental Professional

I remember it vividly: my dad carrying home a snapping turtle, its shell cracked from a car tire, all of us certain it wouldn't survive. He turned our family wash basin, our everyday space for scrubbing clothes, into its healing home, tending it daily with water, herbs, and a touch of aspirin. Weeks later, we walked to the river and watched it glide back into the current, alive. That was my childhood, watching my dad mending birds with popsicle-stick splints, now passing that caring instinct to my own kids. Today we have wildlife rescue organizations, but we need more. And with equal urgency, land reclamation that truly heals the earth we all share.

Through training over 650 Indigenous Environmental Monitors, I've felt that same tender care in every shared lesson. These monitors go beyond just studying the land; they hold it as a living relative, connected by language, ceremony, and generations. Their stories unveil seasonal rhythms and subtle truths no data alone can reveal, truths that gently invite us closer because we care.

### BUILDING CULTURAL COMPETENCY: RECLAMATION AS RECONCILIATION IN ACTION

Cultural competency is our bridge to reconciliation, and reclamation makes it real. It's a lifelong practice of listening deeply, learning humbly, and dismantling

the systemic racism that has shaped how we've viewed land and Indigenous knowledge in Canada. In reclamation, this means educating ourselves on local Indigenous histories, treaties, governance, and protocols; investing in long-term relationships rather than transactional consultations; co-designing projects where Indigenous voices frame the questions and shape the outcomes; and supporting Indigenous-led initiatives like land guardians and youth training. These steps build far more than skills – they awaken our shared humanity, helping us overcome colonial blinders to see Indigenous ways of knowing not as “alternative” but as vital medicine. Just as my father's herbs healed that turtle, these knowledge systems can heal our lands, and, in turn, heal us as Canadians walking the path of reconciliation together.

My own reclamation projects are few, but the passion I've witnessed ignites possibility. Imagine designs born from what communities cherish: lands blooming with medicines, traditional foods, sacred travel routes, and places for teaching our young. Picture monitoring born of partnership, where monitors stand shoulder-to-shoulder with scientists, measuring not just pH levels but the land's readiness to embrace life again. Envision sacred agreements ensuring Traditional Knowledge stays sovereign, protected, shared only on the Nation's terms.



We can do this. Bring Indigenous Environmental Monitors, knowledge holders, hunters, trappers, Elders, those who read the land like an open book, into reclamation from day one. Let them help shape the questions, make sense of the results, and define what success really looks like, imagining key species coming back, safe harvesting, and always starting with ceremony. Rooted in the wisdom of generations from this land, woven with Western science, doesn't just restore dirt and roots; it mends a deeper wound, echoing that family circle around a broken turtle, choosing life over loss.

Let's be that generation grounded in wisdom, knowing that both Traditional Knowledge and Western science is a transformative way to restore the land, delivering more than regulatory compliance. Together, let's create resilient, meaningful reclamation that endures for generations. Like that family gathered around a broken turtle shell, choosing life over loss, industry partnerships can choose restoration that endures.

Let's reclaim with that same unyielding heart. Our lands and our shared future depend on it. 🍄

# Note from Maria Kudienko, CLRA National Award Committee Coordinator

On behalf of CLRA National, I thank everyone who submitted their award nominations. We are impressed with high-quality submissions and appreciate the time and effort nominees put into this.

Winners will be announced in April, and awards will be presented at Atlantic Chapter Conference on October 8, 2026 in Quispamsis, NB.

Thank you for your support.

*Maria*



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# CLRA ALBERTA MIXER CONNECTS MEMBERS, STUDENTS, AND CORPORATE PARTNERS

By Raymund Del Rosario

The 2025 Freeze Up Mixer, hosted by the CLRA Alberta Chapter, brought together industry professionals, students, and corporate sponsors for an evening of networking and collaboration on November 25, 2025, at Saltlik in downtown Calgary. Open to both company members and students, the event aimed to foster meaningful connections while highlighting emerging opportunities in Alberta's land reclamation sector.

Attendees represented a wide range of backgrounds, including environmental professionals, early- and mid-career practitioners, post-secondary students, and representatives from sponsoring organizations. By creating a shared space for dialogue, the mixer encouraged cross-generational learning and collaboration across land and energy, oil and gas, reclamation, sustainability, and education.

My involvement with CLRA began during my final semester as an Energy Asset Management (EAM) student at the Southern Alberta Institute of Technology (SAIT). While enrolled in an Abandonment and Relinquishment course, our class attended a guest lecture by CLRA's Shannon Carla

King titled "The Art of Reclamation". King, a Canadian reclamation, preservation, and conservation artist with over 30 years of experience in the energy industry, shared how her work celebrates the natural beauty of reclaimed landscapes and highlights the impactful efforts of the Canadian energy sector to promote land conservation and reclamation. Her lecture followed a well-attended exhibit of the same name held in January 2025 at the Johnson-Cobbe Energy Centre, home to SAIT's MacPhail School of Energy, and resonated strongly with students, inspiring many of us to become CLRA members and support the association's mission. That is why I was especially excited to learn that the Edmonton-based CLRA would be hosting its annual Freeze Up Mixer in Calgary this year.

Throughout the evening, attendees networked while enjoying Saltlik's flavorful dishes and fine champagne generously sponsored by GDM Inc. Brian Hall, President & CEO of GDM Inc., emphasized the importance of supporting industry associations like the CLRA:

"GDM looks to build trustful relationships with and show our commitment to the as-

sociations that are vital in supporting the Canadian energy industry. Associations are great in that they provide members opportunities to network to talk about experiences, find mentors, and generally connect with their peers to learn more about what they are mutually passionate about. As a solution provider for land reclamation professionals, we are more than happy to support those opportunities for members to connect with the CLRA, especially in our back yard."

GDM representatives Vicki Robinson and Adrianna Duran were also present and reflected positively on the atmosphere of the event:

"It was a great opportunity to be in the same room with CLRA members, and for us to welcome everyone face-to-face as the champagne sponsors. The association did a great job in welcoming everyone in style, and you could see how CLRA members were enjoying themselves. There were a lot of warm smiles, we got a lot of curious questions, and in general the vibe at the event was fantastic. The conversation flowed as readily as the champagne! We are looking forward to more moments like these with CLRA."

## THANK YOU TO OUR EVENT SPONSORS



Corporate sponsors played a key role in the success of the mixer by supporting the event and engaging directly with attendees. This year's Gold Sponsor was 360 Engineering & Environmental, with Thatchwood Ventures Ltd. and Tri Jet Services Inc. as Silver Sponsors, and H3M Environmental, Closure Liability Management Inc., and Swamp Dodgers Water Hauling as Bronze Sponsors. Cole Rippe, Project Manager at 360 Engineering & Environmental, shared:

*"We really value what the CLRA does to bring people together, and the Freeze Up Mixer event was a perfect example of that. Supporting it felt like a natural fit for 360—it created space for real conversations and new connections that go beyond day-to-day project work."*

A highlight of the evening was connecting with first-year SAIT EAM students Misha Davies, Gabrielle Elmaleh, and Joaquin Gavino. Although still early in their academic programs and several semesters away from their Abandonment and Relinquishment course, they attended with the goal of learning from professionals already working in land reclamation.

For these students, the mixer provided an early career touchpoint. Conversations with professionals helped them understand the wide range of roles across the reclamation lifecycle, including technical, environmental, regulatory, and project management pathways—many of which are not always visible from a classroom perspective. The openness of CLRA members and willingness to share candid career experiences made the industry feel more accessible, helping students envision potential career paths and the steps required to achieve them. Early exposure, mentorship, and real-world context were repeatedly cited as key takeaways.

Overall, the 2025 Freeze Up Mixer reinforced CLRA's mission to foster collab-

oration among industry, academia, and corporate partners to advance land and waterway reclamation efforts and promote environmental excellence across Canada. By bringing together students, established professionals, and sponsors in a welcoming setting, the event demonstrated the power of collaboration in shaping a stronger, more resilient future

for reclamation and remediation.

*Raymund Del Rosario is a Student Member of the CLRA and a recent graduate of the Energy Asset Management program from SAIT, where he graduated as Spring 2025 Valedictorian. He now works in the oil and gas sector as a Mineral Land Analyst for a Canadian energy company. 🍷*

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(L-R): Raymund Del Rosario, Vicki Robinson (GDM Inc.), Adrianna Duran (GDM Inc.)



(L-R): Raymund Del Rosario, Joaquin Gavino (SAIT student.), Misha Davies (SAIT Student.)



(L-R): Raymund Del Rosario, Gabrielle Elmaleh (SAIT student.), Cole Rippe (360 Engineering & Environmental.)

# CLRA ATLANTIC FALL RECLAMATION SYMPOSIUM IN SACKVILLE



*Group photo at Converse Marsh with CBWES*

The CLRA Atlantic Fall Symposium was held on October 16th, 2025, at Mount Allison University in Sackville, New Brunswick. In the morning, four presenters covered a variety of topics focused on the Chignecto Isthmus, the narrow stretch of land which connects New Brunswick and Nova Scotia. Attendees learned about the history of the area, the role of archaeology within wetland restoration, the shorebirds that call the isthmus home, and what wetland restoration looks like in the Tantramar. Just before lunch, the audience was presented with a case study on the Converse Marsh, one of the field tour sites that they would be visiting later in the day. Special thanks to presenters Jonathan Fowler (Saint Mary's University), Heather Polovyk (Birds Canada), Jeff Ollerhead (Mount Allison University), and Kayla Williams (CB Wetlands and Environmental Specialists), who engaged our audience and were able to pass on their knowledge.

In addition, there were two field tours held in the Chignecto Isthmus in the afternoon.



*Converse Salt Marsh*



*Fort Beausejour Field Tour*

The first was at the Converse Salt Marsh, a restoring 15.4 ha tidal wetland. The dyke in front of the former tidal wetland was experiencing substantial erosion, and the decision was made to realign the dyke infrastructure and restore tidal wetland habitat. Portions of the eroding dyke were removed in December 2018 and are now vegetated and progressing toward a stable salt marsh environment. Attendees were guided through the site by Tony Bowron of CB Wetlands and Environmental Specialists who spoke of the pre-restoration condition of the site, the trials and tribulations of construction, and was able to provide a demonstration of one of the sampling methodologies for sediment accretion with the team working on site that day.

From Converse, attendees then met with Adam Campbell and Nic McLellan of Ducks Unlimited Canada (DUC) at Fort Beausejour. This site provided a unique vantage point to learn about several of the DUC projects going on in and around the Chignecto Isthmus. Adam and Nic spoke about older DUC projects, such as waterfowl impoundments, and their most recent projects, such as improvements to fish passage through fish ladders on their properties and collecting fish data. Attendees were able to ask questions and inquire about future projects and better understand the goals of DUC into the future.

We want to thank our participants, who came from numerous backgrounds with the common goal of learning more about the importance of the Chignecto Isthmus. In addition to local Chapter members, we want to acknowledge the students from New Brunswick Community College (NBCC) as well as participants who travelled from Ontario and Alberta. We also want to thank our generous sponsors who contributed to the success of our fall symposium - WhiteCap, Maritime Hydroseed, Ecometrix, Envirem Organics and GeoMorphix (lanyards) 🍷



Attendees at the Presentations, Mount Allison University



Mike Fawcett (l) and Randy Nason (r) representing sponsor WhiteCap



Bill Dashwood (l) and Chris Thomson (r) representing sponsor Maritime Hydroseed

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# RESTORING BALANCE

How a decommissioned sewage lagoon became a living wetland



By Chris Thomson, CHP, Certified Hydroseed Professional, Maritime Hydroseed

PHOTO CREDIT: DAVID HOYT

**T**his project entailed the decommissioning and ecological rehabilitation of a former municipal sewage lagoon that historically serviced the Village of Hampton, New Brunswick. The lagoon was located immediately adjacent to the Kennebecasis River, within a high-use recreational corridor. The client required that the site be restored to a stable, self-sustaining natural condition and visually integrated with the surrounding landscape.

To deliver on these objectives, the client retained Fundy Engineering & Consult-

ing Ltd. of Saint John. The scope of work included recontouring and stabilization of the lagoon footprint, along with the development of a site-specific vegetation plan. A native seed mix was prescribed to re-establish ecological function, improve biodiversity, and provide long-term resilience against erosion and invasive species encroachment.

Maritime Hydroseed of Saint John was engaged as the certified applicator for surface stabilization and revegetation. The primary technical challenge involved both the sourcing and application of an

appropriate native seed mix within a hydrologically dynamic floodplain environment. A Fibre Reinforced Matrix (FRM) hydromulch was specified to provide erosion resistance, suppress invasive weed germination, and maintain seed-to-soil contact through overwintering. The FRM's high-strength fibre structure ensured slope stability during the late fall rainy season and enhanced germination success of dormant seed in the spring.

The project area comprised approximately eight hectares (17 acres) of environmentally sensitive terrain. Site grad-



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Figure 1



Figure 2



Figure 3



ing was designed to maintain a natural, rough-finish surface condition consistent with surrounding wetland topography (Figure 1). A 15-metre slope (2:1 grade) was recontoured to achieve stable geometry and visual integration. The prescribed slurry formulation consisted of FRM-enhanced hydromulch applied at 3,900 kg/ha (3,500 lb/acre), a custom wetland seed mix applied at 25 kg/ha (22 lb/acre), and a 15-25-15 NPK fertilizer blend at 375 kg/ha (335 lb/acre) to support early establishment (Figure 2).

The seed palette emphasized wetland-adapted species to maximize ecological function. Target species included *Calamagrostis canadensis* (Bluejoint Reed), *Glyceria grandis* (American Mannagrass), *Juncus effusus* (Soft Rush), *Scirpus cyperinus* (Woolgrass), *Eupatorium perfoliatum* (Boneset), and *Verbena hastata* (Blue Vervain). These species were selected for their native status, tolerance to fluctuating hydrology, and wildlife habitat value.

Slurry application was executed using a Finn T330 Hydroseeder with high-pressure pump capacity. Due to environmental access restrictions, the hydroseeder remained on the roadway right-of-way (Figures 1 and 3). Slurry delivery required pumping over 1,500 feet to access the far reaches of the site, while tower-spray application was employed for proximal slopes. The high viscosity of the FRM slurry necessitated continuous agitation and pressure regulation to ensure uniform coverage across the project footprint.

The vegetation phase commenced in mid-September, a period characterized in Atlantic Canada by declining daylength, reduced soil temperatures, and increased precipitation. By late November, the project area experienced significant flooding events followed by

Figure 4



ice cover through the winter season. In spring, recession of floodwaters revealed that the FRM-protected seed mix had overwintered successfully. Dormant seeds germinated, establishing uniform vegetative cover (Figures 4 and 5).

Site monitoring at one month, three months, and six months post-flooding recorded germination rates exceeding 85 per cent across seeded areas, with mean vegetative cover of 70 per cent achieved by June and over 90 per cent by late August. Slope stability monitoring indicated no surface rilling or soil loss, validating the FRM's performance under high-flow conditions. By early summer, the site presented a naturalized appearance consistent with adjacent wetlands, with wildlife recolonization observed shortly thereafter, as shown in the photograph at the beginning of this article. 🐾

Figure 5



# ESTABLISHMENT OF FOOD ORCHARDS TO PROMOTE FOOD SECURITY AND SOVEREIGNTY

Food insecurity is a serious cultural and public health issue across Canada (Power 2008), with cultural implications that are particularly significant for Indigenous communities. For those communities, food security is closely tied to the availability of traditional foods (Power 2008). Cultural food security is achieved when individuals have access to culturally important foods harvested using traditional methods, and who also have the means to prepare and share these foods (Power 2008; Alonso et al. 2008; Wright et al. 2021). Food sovereignty, in turn, is achieved by supporting individuals in defining their own food systems and reducing dependency on urban-centered food sources (Skinner et al. 2013; George et al. 2021). One of the ways that we can support communities in achieving food security is through community orchards used to grow a variety of trees and shrubs that produce nutrient rich fruits that are culturally significant (World Food Summit 1998; Power 2008).

In 2023, the Northern Alberta Institute of Technology (NAIT) Centre for Boreal Research (CBR) partnered with Paddle Prairie Métis Settlement and Peavine Métis Settlement to establish an orchard in each community. We supported the project by providing research ideas, technical expertise, and hands-on training in planting and weed management. Community partners are involved in every phase of the project, including species selection, seedling planting and orchard management.

Together, the project partners decided that strawberries (*Fragaria virginiana*), blueberries (*Vaccinium myrtilloides*), choke-



Figure 1: Site preparation at Peavine Métis Settlement orchard (top photo). Planting in rows of film mulch (bottom).





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cherries (*Prunus virginiana*), and saskatoons (*Amelanchier alnifolia*) would be grown – species that are culturally important to both communities. In each community, a site of approximately one hectare in size was identified by the settlements. Both sites had heavily compacted soil and thus were ripped and disced to de-compact and help control weeds. The on-going maintenance of the site, such as watering and weeding, was done by community members with assistance from NAIT CBR.

At Peavine Métis Settlement, the site was divided into 16 experimental plots, with each plot containing one species (i.e., four plots per species). At Paddle Prairie Métis Settlement, the site was divided into 12 experimental plots (i.e., three plots per species). We examined whether fertilizing the plots with natural fertilizer (cow manure purchased from stores) could increase the growth and survival of native boreal plants. Four fertilizer treatments were applied on



Figure 2 Out planting of native strawberry seedlings grown at NAIT CBR.

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the different plots: Control (no fertilizer), F1 (one cup – 250 mL), F2 (two cups– 500 mL) and F3 (three cups – 750 mL). Within a single plot, a fertilizer treatment would be applied to 48 plants. Experimental outcomes of the projects were evaluated using metrics such as height (blueberries, saskatoons, and chokecherries) and per cent cover (strawberries). Strawberries and saskatoons were planted in 2024 (two growing seasons), while chokecherries and blueberries were planted in 2025 (one growing season).

At both sites, saskatoons had significant height growth from 2024 to 2025. In contrast, strawberries had similar cover in both years. Survival at the end of 2025 were high in the four treatments at Peavine Métis Settlement; blueberries (90-95 per cent), chokecherries (95 per cent-97 per cent), saskatoons (88-94 per cent), and strawberries (99-100 per cent). Likewise, survival at

the end of 2025 were high in the four treatments at Paddle Prairie Métis Settlement; blueberries (92-96 per cent), chokecherries (80 per cent-91 per cent), saskatoons (97-99 per cent), and strawberries (99-100 per cent). This high survival indicates that the plants were well-established. Without the site preparation, the soil would have been too compact for root development.

We compared treatment effects for all species at the end of 2025. There were no significant differences for saskatoons, chokecherries, or strawberries. Interestingly, blueberries at Peavine Métis Settlement that were fertilized with three cups had lower height increases compared to the other three treatments (Fig. 3A), but no differences were observed for Paddle Prairie Métis Settlement (Fig. 3B). Blueberries have been known to thrive well under slightly acidic condition, and increased manure addition may increase

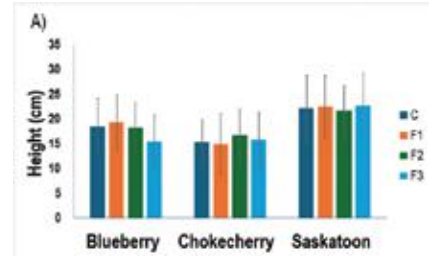
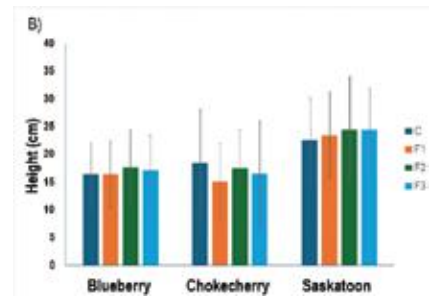


Figure 3 Plant height of blueberries, chokecherries and Saskatoons at the end of 2025 in A) Peavine Métis Settlement, and B) Paddle Prairie Métis Settlement. C = control, F1 = 1 cup of organic fertilizer, F2 = 2 cups of organic fertilizer, F3 = 3 cups of organic fertilizer.



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soil pH, and have negative impact on the growth of this species. The Paddle Prairie Métis Settlement site might not have seen this effect as the soil here was richer in sulfur and thus acidic. For strawberries, there were no significant differences based on the fertilizer treatment at Peavine Métis Settlement (Figure 4A) and Paddle Prairie Métis Settlement (Figure 4B).

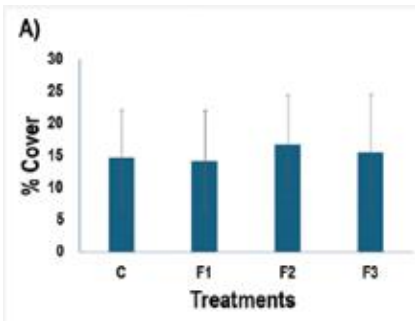
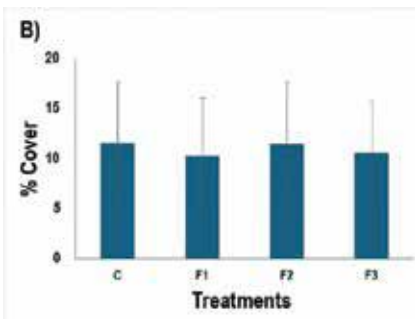


Figure 4 Percent cover of strawberries at the end of 2025 in A) Peavine Métis Settlement, and B) Paddle Prairie Métis Settlement. C = control, F1 = 1 cup of organic fertilizer, F2 = 2 cups of organic fertilizer, F3 = 3 cups of organic fertilizer.



The project is entering its third growing season, and we hope that these orchards make it easier for people to access traditional foods. The abundance and yield of strawberry fruits in both 2024 and 2025 (Figure 5) and increases in plant growth over time is promising. Each Spring, NAIT holds a community engagement session with each community, where we discuss project updates and receive feedback and suggestions from community members. Volunteer commitment is important for the success of these orchards, as members of public will have to work together to



Figure 5 Strawberries grown and harvested from the food orchards.

maintain the orchard. This project is one step toward turning abandoned and unused land into productive areas that help address food security and sovereignty.

We would like to thank Natural Sciences and Engineering Research Council of Canada for funding this research through a College and Community Social Innovation Fund grant. We also thank Peavine Métis Settlement and Paddle Prairie Métis Settlement for their partnership and support on this project.

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# From Gravel Pit to Renowned Landscape

## THE STORY OF HAMILTON'S ROCK GARDEN

By David Galbraith

The Rock Garden in Hamilton, Ontario, is a beautiful example of the reclamation of post-extractive land in an urban area. The story of the creation of the Rock Garden illustrates progressive thinking about the importance of landscape beautification in early 20th Century Canada.

The Rock Garden is located on the Burlington Heights, an historic landscape<sup>i</sup> consisting of a sand and gravel bar created by wave action on Lake Iroquois, the post-glacial precursor to Lake Ontario. By the early 20th Century, several gravel pits were in operation along the northern 1.5 km length of the Burlington Heights, which separates Cootes Paradise Marsh from Hamilton Harbor. The landform is on the route into Hamilton, part of Highway 2, or York Boulevard, (the principal road connecting Hamilton and Toronto before the construction of Highway 403). It was a pivotal British military outpost during the War of 1812. By 1920, the largest gravel pit covered 5.5 acres and was a maximum of 35 feet deep, close to the northern end of the peninsula. Operation of the pit was closed that year and garbage started to accumulate.

Hamilton started to consider options to beautify the Burlington Heights at least as early as 1917<sup>ii</sup>. In 1926, the city purchased 55 acres at the northern end, including the large, abandoned gravel pit. It then launched a landmark competition for architects across Canada to design this entrance to the city<sup>iii</sup>. The specifications included art galleries, lookout points, gas



*Rock Garden under construction, 1931*



*Aerial view of Rock Garden and drive, 1932*



Prior to rejuvenation, 2010



2010

stations, and other amenities. Interestingly, details of the required landscape features were not included in the call for submissions. Among 12 design proposals, only the winning entry from Wilson, Bunnell and Borgstrom of Toronto suggested placing a rock garden in the abandoned gravel pit. Other proposals suggested an amphitheatre, a duck pond, and a playing field. Hamilton's Board of Park Management, led by lawyer and politician Thomas Baker McQuesten, worked with the company and its principal designer Carl Borgstrom to finalize the design. Borgstrom's company was given the contract to build the landscape features, which also included various terrace and memorial garden areas in addition to the Rock Garden.

An important challenge in converting the gravel pit into a garden was that there is no native stone on site. To build the garden,

10,000 tons of weathered limestone was quarried from three sites along the Niagara Escarpment<sup>iv</sup>, including at King's Forest, 12 kilometres from the garden. Quarrying began in late November 1929, and construction was completed about two years later. Planting was concluded in early 1932. The garden opened for public visitation as a city park.

Originally, the Rock Garden was designed to be enjoyed on foot or by car. The landscape design on the peninsula, of which the Rock Garden was about 10 per cent, included parking areas and looping driveways on the upper level. A road into the "bowl" of the Rock Garden allowed cars to enter and park within the garden. A report on the front page of *The Hamilton Spectator* on Monday, 30 May 1932 stated that the day before, more than 15,000 people visited the new garden<sup>v</sup>. This represents approximately

10 per cent of the population of Hamilton in 1032 and could only have been accomplished by most visitors experiencing the garden from the comfort of their cars.

The Rock Garden became a cherished Hamilton landmark. In 1941, the gardens on the Burlington Heights, as well as hundreds of acres of additional parks and natural lands, were transferred to the newly established Royal Botanical Gardens. RBG itself was started as a project of the city's Board of Park Management. It was incorporated as a not-for-profit organization in April 1941 by the Province of Ontario, making 2026 RBG's 85th anniversary.

Over time, the horticultural management of the Rock Garden changed. Its microclimate became warmer and more sheltered as large trees around the crown matured. What was originally an alpine garden,



2017



2017



2016 Reopening Gala



Visitor Centre at night, 2016

featuring plants from high latitudes and high altitudes, later became a horticultural showcase for annuals and perennials. In some years, over 125,000 tulips were planted in massive, colourful beds.

After over 80 years in operation, the garden was due for significant infrastructure repairs. In 2015, RBG undertook rejuvenation of the Rock Garden with support from the Province of Ontario, the Government of Canada, and private donors led by David Braley and Nancy Gordon, with the Daghish Family Foundation. The rejuvenation included a redesign of the garden beds, water features, and pathways by Janet Rosenberg & Studio, following the “new permaculture” philosophy of Piet Oudolf. A new visitor centre was built beside the bowl, designed by CS&P Architects. Respecting the historical and horticultural features of the garden, the major-

ity of the original limestone was retained, and only two mature trees were removed, with many new woody specimens planted. The renewed garden opened to the public in 2016. Both the garden redesign and the visitor centre have won awards for sustainability and innovation in urban design. It is hoped that this garden, nearly a century old, will be delighting visitors well into the 22nd Century.

## FOOTNOTES

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<sup>iii</sup> “Awards in the Competition for a North-Western Entrance to the City of Hamilton.” *The Journal*, Royal Architectural Institute of Canada, April 1928: Pg 131-145.

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<sup>v</sup> “Many Attracted by Rock Garden: Over Fifteen Thousand Saw Display of Flowers”, Pg. 1, *The Hamilton Spectator*, Monday 30 May 1932, Vol. LXXXVI, No. 126. ♻️



2019

# NOT IF, BUT WHEN

By Tyler Adam and Tiffany Adair, Groundcubed Landscape Architects

Many of Canada's award-winning reclamation projects share this common ground: the wielding of landscape architects as collaborative partners, integrating aesthetics, culture, and ecology from early planning stages through to completion.

## THE AESTHETIC DIMENSION

Community acceptance of major landscape changes often determines project success and research shows that detrimental visual impacts consistently outweigh other variables in public decision-making around mining. As an example, the Geraldton Mine tailings pile in Ontario – which consisted of 14 million tons of con-

taminated soil at the town's main entrance – blocked economic redevelopment. Martha Schwartz Partners redesigned it into sculptural landforms with native grasses and trails that became an inviting community gateway.

Similarly, the Sullivan Mine in B.C. built trust with the local community through a Public Liaison Committee bringing together Kimberley City Council, environmental groups, and Ktunaxa Kinbasket Tribal Council. This enabled the town's transformation from a corporate town to a resort community. The geomorphic landform design delivered visual appeal while meeting BC's regulatory require-

ment for reclamation “consistent with adjacent landforms.”

Dale Hodges Park in Calgary, Alberta demonstrates design integration at scale. O2 Planning + Design led the transformation of a contaminated gravel quarry into stormwater infrastructure, treating runoff from 1,775 hectares while serving as public parkland. The project won national and international awards, increased property values, and transformed ecological liability into a community asset.

## THE CULTURAL DIMENSION

Landscape architects facilitate design that reflects Canada's cultural diversity – from Indigenous reconciliation to mining heritage preservation to contemporary multicultural communities. The Canadian Society for Landscape Architecture (CSLA) adopted UNDRIP in 2023, establishing a Reconciliation Advisory Committee currently chaired by Grant Fahlgren (Wabigoon Lake Ojibway Nation) and Naomi Ratte (Peguis First Nation). The Saugeen First Nation's Creator's Garden and Amphitheatre Restoration Master Plan, by Brook McIlroy, exemplifies this commitment to reconciliation and sovereignty in landscape design. The 100-acre restoration plan was co-designed with community members, strengthening economic viability while recovering land-based knowledge. It earned a 2021 CSLA Award of Excellence.

Beyond Indigenous engagement and reconciliation-focused design work, landscape architects interpret cultural landscapes shaped by European settlement patterns, industrial heritage, and immigrant communities. Reclaimed sites become op-

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portunities for cultural expression: commemorative landscapes honoring mining history, gathering spaces for diverse community festivals, intergenerational parks serving multicultural neighborhoods. With training in community consultation and cultural sensitivity, landscape architects ensure designs reflect local values – whether preserving heritage structures or creating inclusive public spaces.

## THE ECOLOGICAL DIMENSION

Working across disciplines has never been more important. Landscape architects bridge design and ecological science. Sudbury's Regreening Program, overseen by Stephen Monet (Ontario Association of Landscape Architects), exemplifies this. Operating since 1978, the program has revegetated over 3,400 hectares in the greater Sudbury area and planted more than 10 million trees through VETAC, a committee facilitating collaboration between the City of Greater Sudbury, mining companies, universities, and volunteers.

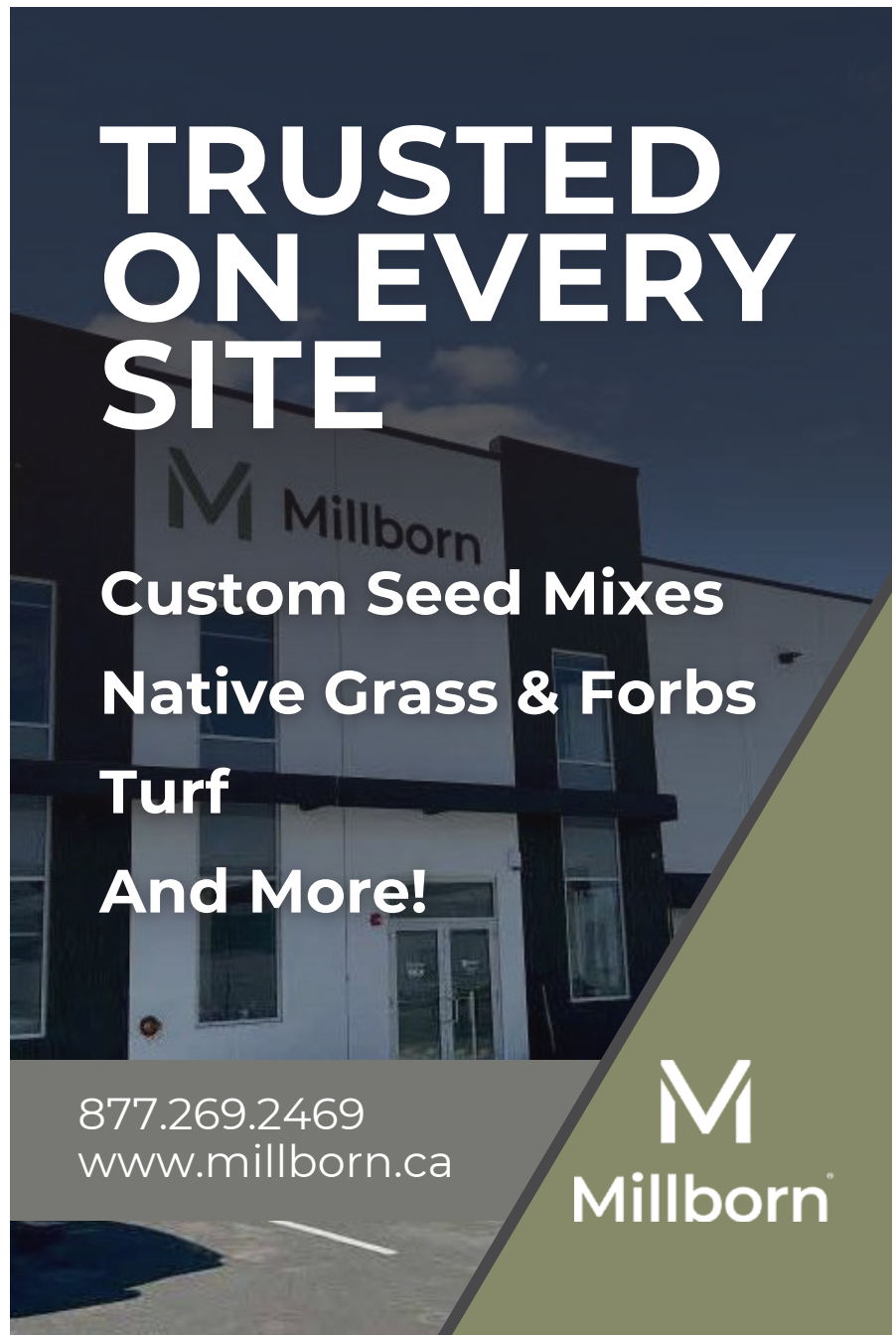
The "Sudbury recipe" was developed through this initiative, which includes agricultural lime, grass establishment, and progressive tree planting. These integrate soil science, plant ecology, and succession planning. This 45-year commitment demonstrates what landscape architects understand: that plant selection methodology must consider genetic material matching, seral stages, and climate adaptation, among other important factors.

Landscape architects are also some of the best equipped to handle the challenges of climate change, particularly in urban settings. Climate-informed restoration now addresses regulatory requirements for long-term landscape function. Testing warm-adapted populations, assisted migration, and maintaining genetic diversity and native biodiversity are examples of practical responses to changing conditions rather than theoretical exercises.

This technical expertise complements remediation and soil science work. Constructing forest layers with appropriate living material, understanding preferential flow patterns, utilising stormwater runoff in favour of ecological flourishing, and designing wildlife corridors that increase species diversity are examples of specialized knowledge that integrates with and facilitates multidisciplinary teams.

## CONCLUSION

Landscape architects contribute systems thinking across scales, professional accountability, coordination capacity, and planning for multi-decade outcomes. These projects extend beyond reclamation certificates toward self-sustaining ecosystems, making the question facing reclamation teams when, not whether, to integrate landscape architecture as standard practice. ♻️



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# Gravel pit reclamation in the Edmonton River Valley

## FROM EXTRACTION TO LANDSCAPES PEOPLE LOVE

By Willian Gowdy

People generally don't realize it, but much of the Edmonton River Valley was once former sand and gravel operations. Sitting adjacent to the North Saskatchewan River, it's now defined by the multiple parks, extensive trail systems, and recreation areas which form the city's broader Capital City Recreation Park system. The river valley's abundant naturally deposited fluvial sands and gravels were a convenient source of construction material for building roads, bridges, and neighbourhoods throughout the 20th century. As these gravel pits were depleted, the community began to reimagine their future – reclaiming them as parks, natural areas, and community spaces. When gravel is extracted, a volume of material is removed, and one very recognizable present-day feature of the former gravel pits are the depressions now occupied by wetlands or waterbodies in floodplains in proximity to the North Saskatchewan River.

One of the earliest and most beloved examples of this transformation is William Hawrelak Park. Originally a large gravel pits along the river, the land west of downtown was acquired by the City and transformed into an urban park beginning in the late 1950s. Construction of the park's lakes began in 1959 and was completed around 1964, with the official opening on July 1, 1967. What had been industrial excavation became a 68-hectare park with beaches,

picnic areas, and water features central to summer festivals and year-round recreation.

Further east, Gold Bar and Rundle Parks were worked for river-deposited gravel through much of the early and mid-20th century, supplying material as Edmonton expanded. Over decades, pits filled with groundwater and surface runoff and were gradually integrated into green space. Today, Gold Bar Park is known for its trails, picnic spots, and off-leash areas that meander through ponds and wooded terrain. Landforms left behind by extraction have become features of the park experience.

To the west, Terwillegar Park illustrates another reclamation area. Originally agricultural land, portions of the site were used for gravel extraction between about 1949 and 1986, based on aerial-photo analysis of the area's development. After extraction ceased in the mid-1980s, vegetation slowly recolonized the disturbed ground, and by the 1990s, the naturalizing landscape was ready to be shaped into a public park. In 1981, the area was designated as parkland, and over the next decades trails, off-leash areas, and informal ponds embraced the land's past contours. Hermitage Park is a river valley park in the northeast part of Edmonton, featuring walking trails, picnic areas, ponds, off-leash zones, and river access.



Hawrelak Park



Legends Golf Course

Further downstream, northeast of the city, golf courses have been created through the reclamation of former gravel pits. The former gravel pits exhibit gentle undulating landscapes with depressions that form waterbodies that both challenge and frustrate golfers. Legends Golf Course is one of the premier facilities in the Edmonton area. Mined in the 1980s, it's now a 27-hole course that opened in 1994. The Quarry Golf Club (hence, the name) is in northeast Edmonton, two kilometres west of Legends. The Quarry was designed by famed Canadian golf course architect Les Furber. The first 18 holes opened in 2012, and an additional nine holes were added in 2013.

Much of what we now enjoy was not originally conceived as parks or recreation spaces; rather, the land's physical character with depressions filled with water, rolling reformed soils, and early plant growth guided planners and residents toward uses that reflected the post-mining landscape. Whether a former pit became a pond in Hawrelak Park, gentle hills and paths in Terwillegar, or for golf courses for recreation, reclamation has lent itself to land uses that fit the community's needs while embracing the land's new topography.

In Edmonton's River Valley, gravel pits have come full circle from vital extractive sites supplying building materials to valued public spaces where people walk, bike, paddle, and watch wildlife respecting landscapes for both human use and natural recovery. ♻️



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Pictured: Sonja Shank, Sturgeon County Landholder. 5,379 seedlings planted with AWES.

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# Native Prairie by the Roll

## INSTANT VEGETATION FOR GRASSLAND RESTORATION

By Nathan Gill, Owner, EcoLogic Horticulture Ltd.

*“We set out to grow sod with native grasses, but what we’ve developed couldn’t be further from traditional sod.”*

In 2017, we started seeking the answer to the question of whether native grasses and wildflowers can be grown and installed in a sod-like format. Since then, years of trial and error have gone into developing our method to produce and deliver native plants on a roll.

### AT THE ROOT OF THE CHALLENGE

Unlike turf grass species, native grasses and wildflowers have deep, complex root systems that won’t allow their roots to be cut during

harvest. This meant we had to design a method to grow them above the soil. Using a proprietary barrier on the soil, we provide our plants with a shallow layer of growing media on top of a biodegradable fibre blanket. This shallow soil profile means that, unlike traditional sod, our plants can be quite stressed during production.

It also means that once the plants are installed and have access to a deeper soil profile, they establish vigorously and require a fraction of the water that turf grass does. Instead of a polished look on the day of installation, it takes NaturesTurf® several weeks to wow clients, but it’s worth the wait.

### ESTABLISHING DIVERSE PLANT COMMUNITIES

The development of this product was inspired by areas that are challenging to vegetate with seed such as steep slopes, sites with varying water levels and high-traffic areas. What we discovered along the way was that we could also deliver a much more diverse plant community in a short period of time in comparison to areas seeded with the same species.

Our focus for the last three seasons has been increasing the diversity and density of forbs in NaturesTurf® and we’re excited about the plant communities we’ve been able to establish using this method.

### UNIVERSITY OF CALGARY CAMPUS

The University of Calgary has a vision to naturalize their entire campus. As part of this vision, a native grassland aesthetic was desired for the landscape surrounding Mathison Hall. In the Summer of 2022, 3,800m<sup>2</sup> of custom produced NaturesTurf® was installed and a diverse plant community was established including forbs such as Prairie Smoke and Blanket flower.

*Designed by O2 Planning + Design. Installed by BlueGrass Landscaping.*



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## CALGARY ZOO POLAR BEAR HABITAT

The Calgary Zoo was facing a short timeline to prepare their new polar bear habitat to receive the bears and didn't have time to wait for native grass seed to establish. In 2023, 9,500m<sup>2</sup> of NaturesTurf® was installed and a heavy watering protocol was used to encourage fast establishment in just three weeks.

*Designed by Scatliff + Miller + Murray. Installed by Rimrock Landscaping.*

## DEPARTMENT OF FISHERIES AND OCEANS NOSE CREEK OFFSET WORK AT THE CONFLUENCE OF NOSE CREEK AND THE BOW RIVER

At the Confluence of Nose Creek and the Bow River in Calgary, a 700m<sup>2</sup> Riparian area was overrun with invasive species and in need of restoration. After several seasons of treatment to remove the weeds, NaturesTurf® was installed in 2023.

The NaturesTurf® was held in place on the 3:1 slope with hardwood stakes and the combination of the quick-to-establish plant roots and built-in erosion control blanket prevented bank erosion during establishment.

*Designed by ISL Engineering. Installed by Leaf Ninjas.*

## NATIVE GRASSES ON LIVING ROOFS

NaturesTurf® is also an effective method for establishing native grasses and wildflowers on living roofs.

### *Arris Condominium*

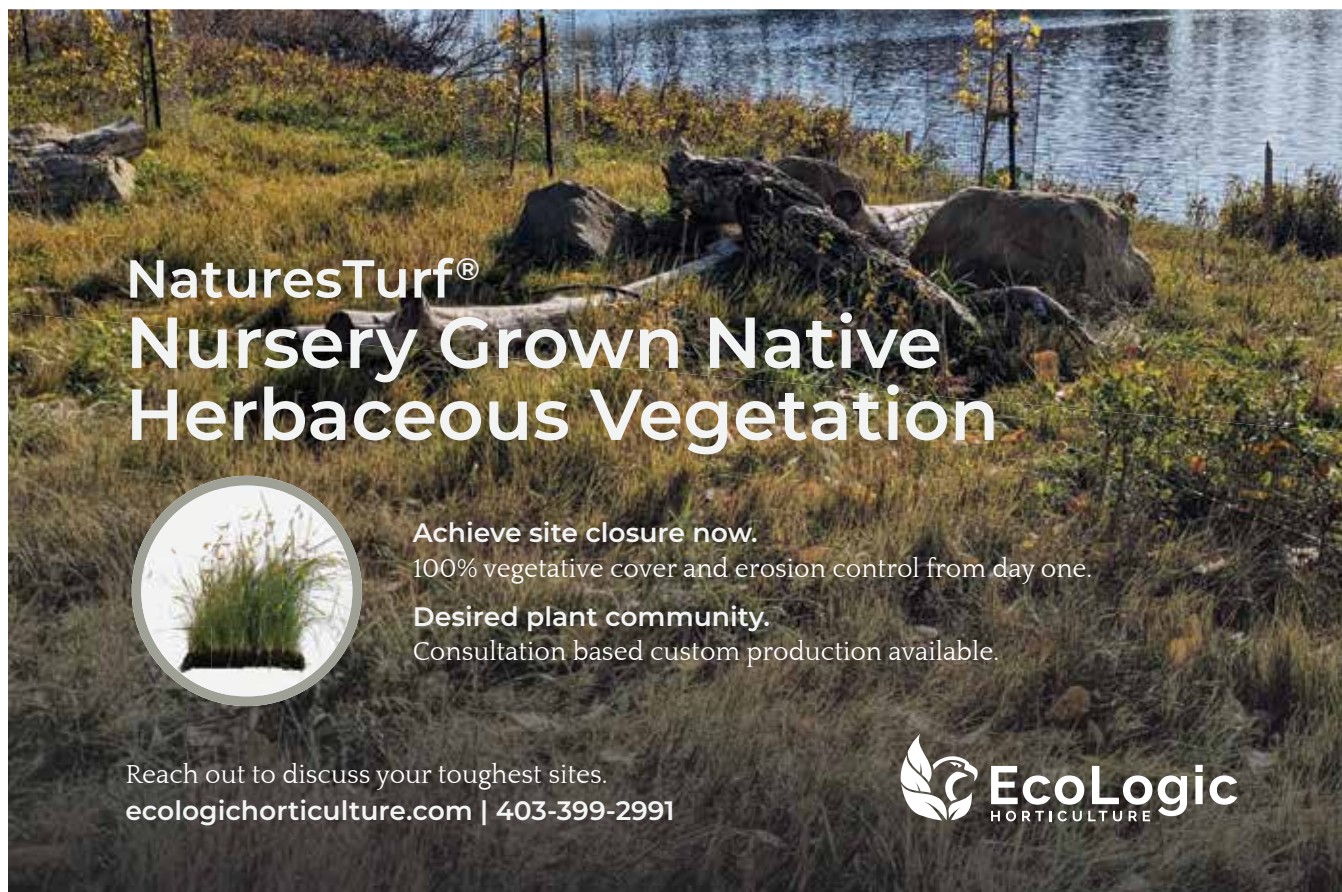
In 2021, a 5,000m<sup>2</sup> native grassland was established on a green roof on the Arris Condominium building in Calgary's East Village, using NaturesTurf®. This was an exceptionally complex design project as native grasses require a deep soil profile, and the living roof was designed with variations in depth to simulate the rolling hills of the prairies.

*Designed by groundcubed. Installed by Saunders Landscaping.*

### *Fort Edmonton Park Ice House and Horse Stables*

In 2025, new living roofs, grown with native grasses and sedges, were installed on the Ice House and Horse stable buildings at Fort Edmonton Park. These buildings previously had sod roofs that needed repair and waterproofing before the new modules could be installed.

*Designed by Dialog Design. Installed by Land Tec Landscape Contractors.* ♻️




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# Cultivating Excellence

## PVMA'S LASTING IMPACT ON VEGETATION MANAGEMENT IN CANADA



**F**ounded in 1978, the Professional Vegetation Managers Association (previously the Industrial Vegetation Management Association of Alberta) emerged as a response to growing public concerns about environmental issues. Initially, the association functioned as a collaborative platform for addressing problems, but it now adopts a proactive stance toward vegetation management.

As government bodies, private individuals, and businesses increasingly prioritize effective environmental management, the relevance of the PVMA continues to expand. The association serves several groups including:

- industries involved in vegetation management,
- government agencies focused on industrial vegetation management,

- the general public (those impacted by industrial vegetation management activities).

Currently, PVMA members include contractors, government representatives, and industry professionals from sectors such as power, transportation, petroleum, railway, forestry, and chemicals.

### MISSION STATEMENT

The PVMA aims to offer communication and educational resources on vegetation management to industries, relevant agencies, and the public.

### OBJECTIVES

The objectives of the PVMA are to:

- foster communication among user groups,

- educate stakeholders,
- uphold environmental responsibility.

To achieve these goals, the PVMA commits to:

- facilitating opportunities for members to collaboratively address vegetation management challenges,
- promoting awareness, understanding, and proper practices within vegetation management,
- educating members, industry participants, and special interest groups about best practices,
- establishing and monitoring ethical and technological standards for the industry,
- advocating for industry interests with government,
- keeping members informed about legislative changes and public concerns,

- creating forums for environmental and other agencies to share their perspectives,
- acknowledging achievements that enhance the environmental impact of vegetation management through awards,
- collaborating with other Canadian vegetation management associations.

## KEY ACCOMPLISHMENTS

- launching and maintaining the Utility Tree Trimmer and Worker Program at Olds College, which is the province of Alberta's sole certifying body for utility tree workers and tree trimmers.
- developing the Alberta Industrial Vegetation Management Manual
- publishing the *Field Manual for Rehabilitating Soils Affected by Residual Herbicides*
- partnering with government for joint problem-solving and contributing to official documents
- hosting biennial seminars that provide up-to-date information and address concerns of the vegetation management sector (including a mix of credits offered for pesticide applicators in BC, Alberta, Saskatchewan, and Manitoba as well as ISA credits).
- offering several scholarships with a focus on students either enrolled in fields related to vegetation management or currently working within the vegetation management industry
- offering bursaries to the dependants of PVMA members currently enrolled in post secondary education.

## LOOKING TO THE FUTURE

The PVMA has a 48-year history and a growing membership that reflects our evolving industry. In recent years, we have taken proactive steps to involve high school and college students in initiatives aimed at increasing awareness of vegetation management. The field offers diverse

career opportunities, from seasonal jobs for students to long-term professional roles, and the demand for skilled workers continues to increase as the industry expands.

While our roots started in Alberta, we are committed to excellence and leadership across the Canadian industry. Our Utility Tree Trimmer/Worker Program is acknowledged in multiple provinces,

while our biennial seminars offer educational opportunities recognized by our neighboring counterparts such as The Integrated Vegetation Management Association of British Columbia, IVMA Man/SASK and the International Society of Arboriculture. We continue to actively pursue opportunities for collaboration and knowledge sharing with partners nationwide. ♠



# Professional Vegetation Managers Association



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- Developing operating standards.
- Consulting with government on regulatory issues.
- Communicating industry changes to members



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# THE NEW ERA OF LIABILITY MANAGEMENT IN WESTERN CANADA

By Jason Taylor

Liability management in Western Canada has changed more in the past decade than in the previous three combined. Alberta's Liability Management Framework, British Columbia's strengthened closure requirements, and Saskatchewan's evolving expectations for site restoration have collectively reshaped how operators and consultants plan, execute, and document reclamation work. What was once treated as an end-of-life obligation is now a continuous responsibility that begins the moment a disturbance occurs. This shift is redefining the

role of reclamation professionals across the region.

The most significant change is the expectation that liability must be understood and actively managed throughout the entire lifecycle of an asset. In Alberta, mandatory annual closure spending targets and more rigorous inventory tracking now requires operators to demonstrate measurable progress on inactive liabilities. British Columbia's enhanced closure planning requirements and increased scrutiny around security have heightened the need for defensible cost estimates and trans-

parent documentation. Saskatchewan's risk-based approach to prioritizing sites has similarly encouraged earlier planning and more consistent reporting. Across the region, regulators expect operators not only to understand their liabilities, but to maintain credible, well-supported plans to address them.

This evolution has elevated the importance of high-quality data. Accurate inventories of disturbances, infrastructure, and environmental conditions are no longer optional, they are foundational. Cost estimates must reflect realistic assumptions



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about access, equipment, soil handling, vegetation establishment, and long-term monitoring. Closure plans are expected to be living documents, updated regularly and aligned with changing site conditions. Meeting these expectations requires a cultural shift within organizations, where reclamation is integrated into operational planning rather than treated as a distant obligation.

Western Canada's geography adds another layer of complexity. Remote sites in the Foothills, muskeg conditions in northern Alberta and British Columbia, steep terrain in the Interior, and short construction seasons across the Prairies all influence reclamation strategy. These variables make cost estimation more challenging and reinforce the importance of early-stage assessments. A site that appears straightforward on paper can become significantly more complex once access, hydrology, soil structure, and seasonal constraints are fully understood. Effective reclamation planning now demands deeper integration of technical expertise, field knowledge, and operational awareness.

The evolving frameworks have also introduced new pressures. Operators must balance production priorities with closure obligations, often amid budgets and com-

peting demands. Consultants are navigating increasingly complex regulatory requirements while delivering practical, implementable solutions. Regulators are working to ensure consistency and fairness while responding to public expectations for transparency and environmental accountability. These pressures can create friction, but also drive innovation, discipline, and continuous improvement.

One of the most notable outcomes of this shift is the growing emphasis on defensible cost estimation. Regulators expect closure cost estimates to be evidence-based, technically supported, and subject to regular review. This expectation has elevated the importance of standardized assumptions, technical oversight, and clear documentation. It has also highlighted the value of reconciling estimated and actual costs, learning from variance, and refining planning methodologies over time.

Another important trend is the integration of Indigenous partnership expectations into liability management. Across Western Canada, Indigenous communities are increasingly involved in closure planning, monitoring, and long-term stewardship. Their knowledge and leadership bring cultural context and practical insight to reclamation strategies, reinforcing the need for

early engagement and transparent communication. As these partnerships continue to strengthen, they are reshaping how reclamation is conceptualized and delivered.

Ultimately, the evolution of liability management frameworks across Western Canada is advancing the industry toward greater discipline, transparency, and accountability. It's encouraging earlier planning, stronger data, and more deliberate decision-making. It is elevating the role of reclamation professionals and reinforcing the importance of credible, defensible work. As these frameworks continue to mature, the organizations that embrace them proactively, rather than reactively, will be better positioned to manage risk, build trust, and demonstrate leadership in responsible land stewardship.

Reclamation planning in Western Canada is no longer a back-end activity. It's a strategic function at the core of responsible resource development. The companies that recognize this – and invest in the people, processes, and data required to meet these expectations – will define the next generation of environmental leadership in the region. ♻️



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# A PROJECT FOREST UPDATE FROM THE EXECUTIVE DIRECTOR

By Mike Toffan, RPF, Executive Director, Project Forest

The Canadian Land Reclamation Association (CLRA) is one of our oldest and most important partners. The CLRA has supported Project Forest through both in-kind and financial contributions. One hundred percent of the CLRA's financial support has been directed to the Siksika Nation Community Shelterbelt Project. To date, this investment has funded the planting of 16,000 seedlings and has provided Project Forest with a valuable platform to share our work and inspire the CLRA community. We are deeply grateful for the Project Forest-CLRA partnership.

The CLRA's investment has helped kick-start what will ultimately become Project Forest's largest initiative. By 2030, we are scheduled to plant more than 1 million seedlings across Siksika Nation. This work includes the development of two distinct types of shelterbelts:

1. Community Shelterbelts
2. Transportation Shelterbelts

While both appear to look the same, multiple long rows of trees designed to block the wind, the benefits they provide to Siksika Nation members are quite different.

**Community Shelterbelts** consist of three to five rows of trees and shrubs, spaced five metres apart. There will be a Community Shelterbelt constructed around each of the five communities throughout Siksika. These shelterbelts are designed to reduce winter winds, provide summer shade, reduce highway noise and increase privacy. Each five-row shelterbelt will include two rows of food-bearing, medicinal, and cul-

turally significant plants, identified and requested by the Nation. Beyond improving daily quality of life, these shelterbelts will create long-term opportunities for traditional food and medicine harvesting as the plants mature and begin to bear fruit.

**Transportation Shelterbelts** consist of three rows of trees, spaced five metres apart, that are planted along the roadways. In many places throughout Siksika Nation, members live in rural locations where roads are not regularly maintained during winter. Following storms, snow drifts can reach four to six feet. When an emergency happens after a winter storm, the ambulance or fire truck must follow the grader to their destination. Simply by planting trees, these shelterbelts will make travel throughout the Nation much safer.

At Project Forest, our guiding principle has always been to plant the right tree, in the right place, for the right reason. Alongside this approach, we are committed to best practices in protecting historical and cultural resources. We work closely with Ember Archaeology to identify areas of high archaeological potential. When such areas are identified, field crews are deployed to ensure artifacts are preserved in place or responsibly excavated and catalogued. While the findings and full scope of this work remain confidential, because Siksika's story is not ours to tell, it is important to recognize the careful planning and respect that takes place long before any site preparation or tree planting begins.

Project Forest celebrated its fifth anniversary in October 2025. As we prepare to plant our one-millionth seedling at Siksika

Nation this spring, I am thrilled to invite our supporters and partners to join us in marking this milestone. To stay informed, follow us on LinkedIn or sign up for our newsletter.

Finally, I am excited to announce the launch of Building Capacity Together (BCT). In partnership with Westwillow Environmental and Lakeland College, this initiative delivers post-secondary education directly to Indigenous youth within their own communities. The first cohort will begin at Frog Lake First Nation, with 15 students earning up to 12 post-secondary credits upon completion. Course offerings include Introductory Soils, Limnology, Traditional Knowledge, and Environmental Mapping & GIS. BCT supports education and skill development by creating tangible, accessible, hands-on learning opportunities. These experiences will lead to meaningful employment, informed decision-making roles, and progress toward an environmental degree.

As we continue to surpass milestones, grow forests, and create training opportunities for Indigenous youth, I am immensely proud of our team and our community. Project Forest's work is only possible because of the trust and commitment of our partners. I often say that we are simply the facilitators, the true heroes are the companies that support this work and the land stewards who can see the forest through the trees.

If you have questions about what we do, please reach out and say hello. You can email us at [info@projectforest.ca](mailto:info@projectforest.ca) or call 780-222-7947. 🍄

# Preparing for a career outdoors

## **GAINING EXPERIENCE IN THE FIELD, LAB AND CLASSROOM**

**N**estled above the coulees, the Lethbridge Polytechnic campus and surrounding area are home to an abundance of species and a diverse ecosystem. For Environmental Science instructors like Amanada Fernandes and Josh Bishop, it's the perfect setting to teach students the skills they'll need for their future careers while promoting learning in the field, lab and classroom.

At the beginning of the fall 2025 semester, Fernandes took more than 70 first-year Natural Resource Compliance students to Lethbridge's river valley. There, students contributed hundreds of plant and animal observations to a growing community database.

The field lab, in partnership with the Helen Schuler Nature Centre, introduced Ecology students to the area's unique ecosystems and the iNaturalist app, a global citizen science tool that helps identify and track plants, animals and other organisms.

"So far, students have uploaded more than 305 observations identifying 89 species along the trails in the river valley," says Fernandes. "It's been exciting to see them continue talking about and even using the app in other classes since the field lab."

While field trips to the nature centre have been part of the Ecology curriculum in the past, this was the first time students used the iNaturalist app to blend citizen science with field learning.



“A definite highlight of the trip was being able to use the iNaturalist app to help identify different animals and plants that call the area home,” says student Jaxon Johnson. “All you had to do was take a quick picture of whatever you wanted to identify and within seconds, the app would recognize it! The app is something I would highly recommend when taking part in an outdoor endeavour.”

Fernandes says she plans to make the trip a regular field lab for the first week of every future Ecology cohort.

“The combination of ecosystem exploration, community partnership and citizen science was a great way to kick off the semester,” she says.

Bishop takes a similar approach in the fall semester, leading third-year Bachelor of Ecosystem Management students into the coulees as part of his Environmental Water Quality course.

Throughout the course, students develop a water sampling proposal, based on the initial results of samples collected from groundwater monitoring wells located on campus and surface water samples from Six Mile Creek. Focusing on zones that could have contaminants or elements impacting water quality, students return to the lab throughout the semester to test their samples and analyze results. From *E. coli* to nitrates and phosphorus, students record their findings and compare results with their hypothesis.

“It builds throughout, not only in the lab, but also in the lecture material,” says Bishop. “We’re talking about the whole process and how they inform decision making, not only on the business side, but also on land use and such.”

Students are encouraged to take on the role of a consultant or professional and provide an analysis and justification for their final proposal and budget, while

learning industry protocols – all essential skills they’ll use in their careers.

“Water sampling is expensive and not readily available to everyone,” says Hanah Marthaller (Environmental Assessment and Restoration 2025), a third-year Bachelor of Ecosystem Management student. “Being able to gain hands-on experience in all stages of water sampling has given

me more confidence and experience in examining water quality.”

At the end of the semester, students are equipped with the science of nature and real-world experience to step into their future careers with confidence.

For information about Lethbridge Polytechnic’s School of Environmental Sciences, visit [lethpolytech.ca/nature](http://lethpolytech.ca/nature). ♻️

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# Reclaiming Small Spaces

## THE RISE OF MICROMEADOWS IN URBAN RESTORATION

By Jenny Fortier

In recent years, micromeadows have gained momentum as a way to transform small urban spaces into thriving pockets of biodiversity. For homeowners, they offer a simple way to replace lawn with habitat. For restoration practitioners and land managers, they represent something more: a practical, scalable tool for introducing ecological function into highly constrained urban environments.

### WHAT MAKES A MICROMEADOW?

A micromeadow is a small-scale wildflower meadow designed to fit into limited or fragmented spaces – from urban yards and balconies to rooftops, boulevards, and institutional sites. The goal is to replicate the structure and ecological function of meadow or prairie habitats in miniature form: diverse plant communities, layered vegetation, seasonal blooms, and long-term resilience.

For restoration practitioners, micromeadows function as micro-habitat patches that contribute to broader urban ecological networks. They provide stepping-stone habitat for pollinators, increase plant diversity in simplified landscapes, and introduce native genetic material into built environments. These plantings

also offer high visibility and strong community engagement value, making them especially effective in public-facing projects.

### WHY PLANT A MICROMEADOW?

**1. Biodiversity in built environments** - Traditional turf and ornamental plantings provide limited ecological value. Micromeadows replace low-function landscapes with diverse native plant communities that support insects, birds, and urban wildlife. Even small sites can supply nectar, pollen, shelter, and breeding habitat. For urban restoration projects, micromeadows help rebuild fragmented habitat networks and strengthen ecological connectivity.

**2. Climate and site resilience** - Native plants are adapted to local soils, rainfall patterns, and seasonal variability. This makes micromeadows naturally more drought-tolerant, flood-resilient, and low-input than conventional plantings. In urban settings, they support stormwater management, reduce heat island effects, improve soil health, and contribute to carbon storage — all while requiring fewer chemical inputs and less irrigation.

**3. Low-maintenance, high-impact** - Once micromeadows are



well established (a process that generally takes three to five years), they require minimal intervention. Intervention may include seasonal cutbacks, invasive control as needed, and occasional reseed-ing. This makes them ideal for municipalities, institutions, and de-velopers seeking low-maintenance, long-term vegetation solutions that still deliver ecological and visual impact.

Micromeadows are increasingly used in:

- Rights-of-way and corridor revegetation
- Public parks and naturalized urban spaces
- Schoolyards and campus greening projects
- Institutional and healthcare landscapes
- Infrastructure and post-construction stabilization
- Community-led restoration and engagement projects

## HOW TO CREATE A MICROMEADOW

**Select appropriate native species** - Use regionally appropriate wildflowers and grasses adapted to site conditions (sun exposure, soil type, moisture). Restoration-focused mixes should prioritize functional diversity, bloom succession, and structural layering. Full-sun, drought-tolerant species often perform best in urban meadow systems. Pollinator-focused meadows typically favour higher forb diversity (about 40–50 per cent grasses and 50–60 per cent forbs), while restoration and stabilization projects prioritize structure and resilience (about 70–80 per cent grasses and 20–30 per cent forbs). Urban and high-visibility sites often use a balanced mix (50 per cent grasses/50 per cent forbs), and naturalized lawn conversions commonly fall around 60 per cent grasses and 40 per cent forbs to blend structure with biodiversity.

**Prepare the site** - Remove existing vegetation and loosen the soil. Small areas can be cleared of existing vegetation manually or with sod cutting, which offers precision but requires more labour. Sheet mulching is well suited to small urban and public spaces. For sites

with adequate sun exposure and flexible timelines, solarization can be effective in reducing weed seed banks as well. On larger or more disturbed sites, shallow mechanical removal may be appropriate, provided follow-up weed management is planned. On sites with high invasive pressure, persistent perennial weeds, or particularly challenging conditions, targeted chemical vegetation control may be an appropriate and practical tool for site preparation.

**Seed appropriately** - For small sites, mechanical or hand broad-casting is the most common means of application, however, hy-droseeding or drilling are great options for steep or large sites. Pay careful attention to the application guidelines as most native forbs germinate best when applied at the soil surface. Temporary irriga-tion may be needed during establishment. Planting timing should reflect species dormancy and stratification needs – fall planting is often preferred for native species.

**Support establishment and continue to monitor over time** - Early-stage maintenance focuses on weed control and establishment support. Site monitoring and intervention is common in the first few years of establishment. Some native species are long-lived while others readily self-seed, which allows micromeadows to de-velop into dynamic, robust plant communities over time.

## SMALL SPACES, REAL IMPACT

Micromeadows demonstrate that urban restoration doesn't have to be large-scale to be meaningful. These plantings create func-tional habitat, support biodiversity, and bring ecological processes back into built environments.

By integrating micromeadows into urban projects, practitioners aren't just greening spaces – they're restoring ecological function, strengthening resilience, and creating visible, living examples of how cities and nature can coexist. ♻️



# URBAN NATURALIZATION – CONSIDERATIONS AND LEARNINGS

By Elizabeth W. Murray, Mitchell E. Alberts, Craig Nicolay, Kent Cryer, and Adam Dunn,  
Earthmaster Environmental Strategies Inc.



*Figure 1. Naturalized area on an urban roadway median in SE Calgary.*

**E**arthmaster has worked with the City of Calgary to naturalize multiple areas to support The City's biodiversity strategic plan to naturalize 20 per cent of municipal open spaces<sup>1</sup>. The areas included roadsides and medians with existing agronomic turfgrass<sup>2,3</sup> as well as bare areas following pathway construction<sup>4</sup>. The goal of these projects was to re-

place non-native manicured turfgrass normally found in these areas with a mixture of native and non-native grass and wildflower species to restore the ecosystem, increase species diversity, and support the pollinator population. Implementation of this type of vegetation change in urban settings is not without its challenges.

## LOCATION CONSIDERATIONS

Naturalized vegetation areas use native species that require less regular maintenance including little to no mowing. This is a key consideration for selecting the location. Increased vegetation biomass will bring with it a significant change in appearance (Figure 1) as well as increased pests including mosquitoes and rodents. Choosing locations that are not potential play areas and away from residential homes will make acceptance of the “unmaintained” appearance and the associated pests more likely. Roadside, gore, and median areas along larger high speed streets in industrial areas or areas physically separated from residential neighbourhoods are ideal<sup>2,3</sup>. Note that areas with a thin topsoil layer over compacted roadbed will be extremely difficult to get native species established on (Figure 2) and areas that are regularly driven on and compacted will not sustain naturalized plant growth.

## PLANT SELECTION

Native seed can be significantly more expensive and difficult to source in large quantities. Advanced planning by one to two growing seasons is often required to be able to procure enough seed to revegetate areas larger than one to two hectares. Includ-

ing annuals in the perennial seed mix will introduce a colourful cover crop in the first year and set the expectations for the site as it transitions to native perennial flowering species that can take several years to establish. This also avoids the site potentially looking like unmowed turfgrass in the first year. In addition, prepare for some plants to disappear from the site as often flowers are removed by people, especially when sunflowers are included.

When selecting plant species, include species that will tolerate the physicochemical characteristics of the site. If the site is along a major roadway that will accumulate salt in the soil, salt-tolerant plant species should be included. This also applies to site conditions such as pooling water, arid slopes, and contaminated or degraded soils (e.g., soils with elevated heavy metals). Consider including non-native annual and perennial species to address these specific physicochemical challenges and other challenges due to climate change.

## TIMING OF PLANTING

Fall/winter planting is the best time to install naturalization seed mixes, especially in areas that can be dry and prone to early spring heat spikes. Utilizing spring moisture for germination





Figure 2. Urban roadway median showing good species diversity (left) and reduced diversity due to underlying compacted road bed (right).

as soon as temperatures and snow cover allow is the best way to get plants established before being stressed by drought and high temperatures.

## WEED MANAGEMENT

Management of undesirable species and noxious weeds is much

more difficult in a naturalized area that contains wildflowers. Blanket spraying will no longer be an option once wildflowers are introduced so labour intensive spot spraying or hand removal will be required. To minimize the establishment of weeds, plant into existing non-viable turfgrass stubble or use a quick growing cover crop in areas with bare soil.

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## COMMUNITY ENGAGEMENT AND ACCEPTANCE

Selecting the right location as well as initiating education campaigns and advanced engagement with communities will increase the understanding and acceptance of introduced naturalized areas. Engaging with local schools to use the areas as teaching tools will also increase acceptance. Be prepared for complaints about the “unkempt” appearance and continued engagement with communities for several years as naturalized areas develop and mature.

## CONCLUSIONS

Naturalized vegetation areas containing native and non-native grasses and wildflowers are growing in popularity in urban areas as cities look to increase resiliency and diversity of planted areas, reduce maintenance costs, and support pollinators. There are challenges that come with transitioning from manicured grass to naturalized species but proper advanced planning and engagement can reduce the negativity often associated with these changes.

## ACKNOWLEDGEMENTS

Earthmaster would like to thank Mathis Natvik as well as the project teams from the City of Calgary for all their assistance with these projects.

See the Earthmaster website at [www.earthmaster.ca](http://www.earthmaster.ca) for more information.

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# RESTORING CALGARY'S LANDSCAPES: CREATING RESILIENT URBAN NATURE

## How naturalization helps care for Calgary's living landscapes in a changing urban climate

By Jason Weiler, CERP, P.Biol, Parks Ecologist, City of Calgary

Calgary is located at the transition between the Canadian prairies and the foothills of the Rocky Mountains. Its natural ecosystems evolved under drought, grazing, fire and highly variable winter weather due to frequent chinooks. As climate change drives hotter summers, drier soils and more intense storms, restoring diverse plant communities adapted to these conditions is increasingly important. Caring for these systems is long-term stewardship work, not a one-time design decision.

At the same time, Calgary is a rapidly growing city of approximately 1.5 million residents. In urban settings, trees and forests provide important ecological services that influence microclimate, hydrology, biodiversity and overall human well-being. Having resilient urban communities depends not on selecting a single ecosystem type, but on restoring and stewarding appropriate plant communities in the right locations and effectively managing them over time.

The City of Calgary manages approximately 10,000 hectares of parks and open spaces, over half of which is currently being maintained as mowed turfgrass. Turf provides limited ecological function and requires ongoing inputs, such as mowing, irrigation, and weed control, especially across such a large land base. In response, The City is expanding its naturalization

program, restoring indigenous or climate-adapted plant communities to improve ecosystem function, reduce maintenance and increase climate resilience.

### NATURALIZATION: A NATURE-BASED SOLUTION

Naturalization is sometimes misunderstood as “doing less” or leaving a site to “go wild”. In practice, it’s an active process that requires careful planning, design and long-term maintenance and monitoring. The primary objective is to replace mowed turf or other areas that are in poor ecological health with plant communities better suited to local conditions. It provides measurable improvements to ecological function and requires fewer ongoing inputs over time as it establishes. In short, naturalization is managed, intentional, and ongoing.

Across Calgary, naturalized sites have provided opportunities for residents to connect with nature, improved stormwater infiltration, increased pollinator habitat and aesthetic diversity, while supporting lower long-term maintenance costs. These outcomes align with municipal policy, including *Connect: Calgary's Parks Plan*. *Connect* identifies an ambitious target of restoring 1,000 hectares of the parks system by 2035. Naturalization also supports Calgary's designation as a Bee City by expanding pollinator habitat across the urban land-

scape and educating the public about the importance of pollinator conservation.

Two pilot projects illustrate how very different habitat establishment techniques – meadow restoration and small-scale urban forest planting – can be strategically applied across varied urban conditions.

### MEMORIAL DRIVE WILDFLOWER MEADOW NATURALIZATION

Beginning in 2019, and amid the constant movement of traffic along Memorial Drive, a 0.6-hectare mowed roadside beside the Bow River was transformed into a native meadow. The project site was highly visible, adjacent to a major transportation corridor next to downtown. Existing site conditions presented challenges to the design process, including utility rights-of-way, mature boulevard trees, and a policy restriction on herbicide use.

#### *Site Preparation and Installation*

Crews manually removed existing turfgrass using a backhoe. Root protection zones were established around mature boulevard trees to avoid damage. Following turf removal, additional topsoil was placed to improve seedbed conditions.

Three native seed mixes were developed and applied by broadcast seeding: a dry slope mix, mesic grassland-wildflower mix and a salt-tolerant roadside edge mix.



*Memorial Drive*

Seed was lightly raked in, and the site was sprayed with a tackifier to reduce erosion and seed movement. Native shrubs and a limited number of trees were installed to increase structural diversity. To optimize the timing of seeding, local weather conditions and forecasts were carefully monitored to take advantage of anticipated early summer rainfall.

#### ***Establishment and Maintenance***

Without the use of herbicides, successful establishment required careful timing and active early management. Crews monitored weather, germination timing and competition from the existing seed bank. Early maintenance focused on promptly removing emerging weeds and supporting native species establishment through re-seeding, as needed.

In 2021, approximately 1,500 native wildflower plugs were added to increase species richness, strengthen establishment and extend flowering phenology. Temporary fencing and signage were installed during establishment and removed in 2023.

#### ***Monitoring Results***

Vegetation monitoring conducted by The City and pollinator surveys completed by the University of Calgary (2021) documented substantial ecological benefits:

- Vegetation species richness increased from approximately 10 non-native species pre-restoration to more than 45 native species post-restoration.
- Pollinator species richness increased from 0–7 species in adjacent turf to over 34 species on site. Observed taxa included solitary bees, ants, flies, butterflies and moths.

Additional outcomes included reduced invasive species pressure, reduced emissions from mowing and increased drought tolerance associated with deeper-rooted native vegetation.

#### ***Lessons Learned***

The project demonstrated how naturalization can be used in an urban setting to support biodiversity and build ecological resilience, while providing

seasonal interest for commuters. Herbicide-free meadow establishment is feasible in urban environments when manual site preparation, precise timing and sufficient aftercare are applied. However, this approach is more costly than conventional methods and is best suited to smaller sites. Manual turf removal and intensive early maintenance limit scalability. Herbicide-based approaches may still be necessary for larger projects or where budgets and timelines are constrained.

The project also highlighted limitations related to urban infrastructure. Despite buffering around known utilities, the site may be affected by future utility upgrades that were unforeseen at the time. This reinforces the need to plan buffers around major infrastructure where possible, while recognizing that long-term protection cannot always be guaranteed in urban settings. Adaptive management and acceptance of future disturbance are essential considerations in urban restoration.

## MINI FOREST PILOT PROJECT

While prairie naturalization is appropriate for open, sun-exposed sites, tree canopy is critical in many contexts. To explore a new method for rapid forest establishment in a semi-arid urban environment, The City piloted the Miyawaki method at five neighborhood park sites in communities of: Mayland Heights, Temple, Hawkwood, Haysboro, and Marlborough. The Miyawaki method, named for the Japanese botanist Dr. Akira Miyawaki who developed it, is an afforestation method being used around the world to create urban forests. It involves densely planting a diversity of native species into carefully prepared soil. The method encourages trees to grow upward, sharing resources, while the dense structure promotes accelerated growth.

### *Site Preparation and Installation*

Sites were previously mowed park spaces and not frequently used by the public, with limited tree cover. Working with Mount Royal University, soil conditions were assessed and amended where required. Preparation included soil loosening, compost addition and mulch application. Trees and shrubs were planted using a dense, multi-layer planting approach (approximately four plants per square metre). Forbs were included to increase diversity and pollinator resources. Sites were fenced and signed during establishment.

### *Establishment, Maintenance and Monitoring*

To test the range of possibilities of the method, early plantings included a higher proportion of conifers to see if they could benefit from this approach. As anticipated, monitoring showed poor performance of many conifer species under open, windy conditions. The approach was adapted to focus on hardy



*Marlborough*

deciduous species better suited to prairie exposure, including trembling aspen, willows, balsam poplar, saskatoon, rose, and raspberry.

With regular watering and maintenance, many sites achieved rapid growth. Within three to four years, vegetation reached two to four metres in height, beginning to influence microclimate and create shade. Areas with poor drainage or early plant loss were more susceptible to turfgrass re-invasion, highlighting the importance of site preparation and timely maintenance. Following the Miyawaki method closely, no herbicide was used for this pilot project; however, herbicide use may have been beneficial to reduce initial competition.

### *Key Findings*

Miyawaki-style forests can be effective in Calgary under specific conditions but are not universally applicable. They perform

best on well-drained sites with some existing shade, require active turf suppression during establishment, and thrive with species selection appropriate to open prairie environments. In some locations, the forest plantings did not survive due to site conditions so converting portions of the site to meadow vegetation was the better option for long-term outcomes.

## EXPANDING NATURALIZATION EFFORTS

These pilot projects demonstrate that urban naturalization requires a range of tools tailored to site conditions, scale and objectives. Small, intensively managed projects can deliver high ecological value, but trade-offs exist related to cost, infrastructure constraints, and long-term disturbance risk.

Naturalization is a key part of The City's Parks and Open Spaces business unit's long-term approach to caring for urban



Mayland Heights

landscapes as living systems. The City of Calgary is developing a 10-year naturalization implementation plan to expand this work across multiple habitat types, including prairies, meadows, shrublands, stormwater facilities and urban forests. Planned future work includes integrating naturalization into capital projects, improving plant and seed supply, refining methods to scale to larger sites and strengthening public communication.

Diversity is essential for building resilient cities. By restoring nature in multiple ways, such as establishing meadows in open spaces and planting forests where they will thrive, we can enhance the benefits that urban green spaces provide. Naturalization is a proactive management approach that prioritizes adaptability, ecological function, and long-term care, making nature a vibrant and lasting part of Calgary's urban landscape. ♻️

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# REWILDING ... IT'S A THING!

By Chris Powter, Enviro Q&A Services, Edmonton

This is a summary of a longer article, complete with references, appearing as the inaugural RecTalk blog on CCLM.

As if it isn't hard enough for us to have a conversation about our work, given the differing and sometimes concurrent jurisdictional uses of reclamation/restoration/rehabilitation (the 3Rs), now some genius has coined a new term: rewilding. Not satisfied with that, more geniuses decided to subdivide rewilding into specialities (e.g., guerilla rewilding, urban rewilding and even Pleistocene rewilding). So, what are these all about? Do they differ from our beloved 3Rs? And why does it matter?

Let's answer the last one first – unclear terminology makes it hard for practitioners to communicate effectively with each other and especially with non-technical stakeholders. Nowhere is this more important than in the regulatory world, where terms are defined in legislation and used with specific intent in policies, authorizations, criteria, standards, etc. For example, in Alberta the regulatory term used to describe actions taken to return disturbed land covered by the *Environmental Protection and Enhancement Act* is reclamation. Restoration should be reserved for activities not covered under the legislation such as seismic lines. They are not interchangeable!

**Guerilla rewilding is often criticised as presenting "risks...to species, conservation, dialogue and democracy".**

## DEFINITIONS

After a brief foray into the literature, I found 11 rewilding definitions, often reflecting the focus of the author or organization (e.g., wildlife, wetlands), but embrace some key concepts (e.g., to maintain, or increase, biodiversity, while reducing the impact of human activities through the restoration of species and ecological processes) (Figure 1).



Figure 1. Sign at De La Republique Provincial Park, New Brunswick.

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## SIMILARITIES AND DIFFERENCES

As can be seen from the definitions, there are some similarities to the 3Rs – a focus on human disturbances and an emphasis on ecological function – and a common goal of the recovery of ecosystems following anthropogenic degradation. The primary difference is that the 3Rs as we use them tend to focus on active intervention on industrial disturbances (mining, quarries, energy, etc.) by regulated parties, whereas rewilding often involves less active intervention done voluntarily on land disturbed by non-industrial human actions (agriculture, urban development).

Some authors distinguish rewilding (restoring degraded habitat) from conservation (saving the intact places; protecting and restoring current habitats and wildlife populations). Other authors relate the two; for example, “Rewilding is a progressive approach to conservation”.

Often the term rewilding is used in conjunction with restoration; for example:

- “All existing ‘rewilding’ definitions fit within existing definitions of the long-established field of restoration.”
- “Rewilding and restoring both influence biodiversity, and common management actions such as species reintroductions

(e.g., beavers or wolves) can be integral to a rewilding project. However, in contrast with restoration, rewilding has lower fidelity to taxonomic precedent and promotes taxonomic substitutions for extinct native species that once underpinned the delivery of key ecological functions.”

Guerilla rewilding is often criticised as presenting “risks...to species, conservation, dialogue and democracy”, though there is acknowledgement that there may be some potential benefits, including the publicity it generates for rewilding in the media.

## CANADIAN REWILDING PROGRAMS AND EXAMPLES

Urban rewilding projects include Rewild Vancouver’s wilderness recovery strategy that aims to help the built environment work more closely with the natural world; Parc Jean-Drapeau in Montreal and Corktown Common in Toronto are other urban examples.

Project Forest is restoring degraded land in regions impacted by agricultural expansion to increase forest cover, enhance biodiversity, and promote the sustainable use of terrestrial ecosystems. ♻️



The image shows a vertical banner for Evotek. At the top is a white logo consisting of two interlocking curved shapes. Below the logo is the word "evotek" in a lowercase, sans-serif font. The background of the banner is a photograph of a frog on a log in a natural setting. Below the company name, there is a list of services: "Environmental Site Assessments", "Soil and Groundwater Assessments", "Remediation", and "Reclamation". At the bottom, there is contact information: "Fort St. John • Grande Prairie", "Medicine Hat • Calgary • Edmonton", "Lloydminster • Regina and beyond", and "Contact us today to get started www.evotek.ca • (587) 887-0010".



The image is a horizontal advertisement for KenCo Environmental. At the top is a logo featuring a stylized mountain range with green hills and trees in front of it, all within a diamond-shaped frame. Below the logo is the text "KenCo Environmental" in a large, serif font, followed by "Serving Alberta" in a smaller, bold, sans-serif font. Below this, there is a list of services: "• Industrial vegetation management", "• Light reclamation", and "• Spraying". The background of the advertisement is a photograph of a green field with a tractor in the distance under a blue sky with clouds. At the bottom, there is a dark green banner with white text: "Check out our website @ [www.kencoenvironmental.ca](http://www.kencoenvironmental.ca) 587-419-5995 | [info@kencoenvironmental.ca](mailto:info@kencoenvironmental.ca)".

# GROWING IMPACT THROUGH LAND RESTORATION

By Randall Van Wagner



In 2025, Tree Canada planted more than 4 million trees across the country through its National Greening Program. As they grow, each of those seedlings represents restored habitat, stabilized soil, improved water quality, and the beginning of long-term ecological recovery in landscapes that need it most.

For decades, Tree Canada has worked with partners across the country to plant trees where they can have the greatest im-



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pact. From lands affected by wildfire and insect outbreaks to areas disturbed by human activity, reforestation plays an important role in restoring ecosystems and rebuilding resilience. Achieving that impact at scale requires collaboration with the people who know the land best.

## PLANTING WITH PURPOSE

Every project supported through the National Greening Program begins with a careful assessment of where trees can make the greatest ecological difference.

Tree Canada works closely with local authorities, Indigenous communities, and private landowners to identify sites suited for reforestation, afforestation, or biodiversity restoration. Once a site is selected, each project follows a silvicultural prescription approved by a registered forestry professional. This ensures the right species, planting density, and site treatments are used to support long-term forest establishment.

Successful restoration depends on long-term stewardship. Landowners participating in National Greening Program projects commit to maintaining planted areas for decades, ensuring the forests established today continue to grow and benefit future generations.

## EXPANDING THE IMPACT OF RESTORATION

While planting trees remains the foundation of Tree Canada's work, we are also expanding how we think about ecological restoration.

Through a new biodiversity-focused funding stream within the National Greening Program, Tree Canada is supporting projects that intentionally prioritize biodiversity at every stage of development. Although all our planting projects deliver ecological benefits, these initiatives go a step further by targeting biodiversity, planting native species, and designing projects to fit into the surrounding landscape to ensure greater ecological success.

From site selection and planting prescriptions to ecological monitoring, these projects are designed with biodiversity outcomes in mind. The goal is not only to establish trees, but also to help rebuild healthy, functioning forest ecosystems that support a wide range of native species.

By looking beyond tree counts and focusing on indicators of ecological recovery, such as improved habitat diversity and stronger ecosystem resilience, we can

help ensure that restoration projects contribute to thriving landscapes for years to come. Strategic land restoration that creates corridors to existing protected areas or natural features helps support wildlife, beneficial insects, pollinators, and other species that migrate and move throughout the landscape.

## GROWING THE WORK AHEAD

Restoring forests across Canada is an ambitious task, and the need for this work continues to grow. From lands recovering after wildfire to areas disturbed by human activities, tree planting remains one of the most practical tools we have to help landscapes recover.

Meeting that challenge requires partners who are ready to help scale this work, from planting contractors and landowners to organizations and funders committed to supporting restoration efforts.

I believe the impact of reforestation grows with every partnership formed and every project completed.

Learn more about the National Greening Program and how you can get involved by visiting <https://treecanada.ca/reforestation/>. 🌱



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# WHO IS WESTERN SKY LAND TRUST?



By Mary Jane Block, Director of Rural Development and Conservation

**W**estern Sky Land Trust is a non-profit, charitable organization offering tools to help landowners across southern Alberta safeguard our most precious client: nature. To date, we have nearly 26,000 acres protected forever.

Alongside perpetual conservation, we have also assisted landowners with offsite watering, exclusion fencing, and range management plans, and we've removed dozens of bags of invasive plant species, monitored bats, and surveyed for rare plants!

In 2025, we signed three new Conservation Easements totaling 2,700 acres, continued our restoration work on the historic Alequiers Cabin along the Highwood River west of Longview, and hosted the Grand Opening of the Gray Park Natural Area that lies along the Sheep River in the town of Diamond Valley.

## ALEQUIERS HISTORIC CABIN RESTORATION – PHASE 2

In 2021, as part of the overall condition assessment, a visual inspection of the cabin logs was performed. In Phase 1 of the project (roof replacement), the condition assessment was qualified by opening portions of the logs and found that several needed to be replaced around the foundation of the cabin. Phase 2 of the project included using a helicopter to haul the bundles of new logs in and bags of refuse out across the Highwood River. The cabin now has a great roof and new foundation logs all the way around – it will last another 100 years!

## GRAY PARK NATURAL AREA

The Grand Opening of Gray Park Natural Area was held in June 2025. Representatives from Western Sky, the Town of Diamond Valley, and the Gray Family gave heartfelt presentations showing their excitement for the park's opening. The

generosity of the Gray Family has shaped the construction of the park, the development of education programs and resources, ongoing maintenance, and studies that ensure the natural capital of the park will be well stewarded for many generations to come.

Following the Grand Opening, Gray Park has focused on community educational opportunities and guided interpretive walks. A Facebook page was created for Gray Park to engage with the local community forums, a helpful step in getting the word out for park programming. As preparations for the new school year began, a group of enthusiastic nature-based teachers joined our education coordinator for a guided tour of the park where they learned about local plants, observed fascinating beaver-built infrastructure, and tried out activities from each of the four Gray Park programs using our resource kits. The energy was contagious – the teachers were excited about using



this self-guided programming with their classes. Gray Park educational programming will continue to explore different avenues to reach both communities and classrooms.

### UPCOMING FOR 2026

In 2026, Western Sky will help farmers and ranchers place another 2,200 acres into permanent protection, and we'll focus our efforts on raising funds to safeguard Alberta's remaining native grasslands, currently one of the most altered and endangered ecosystems on the planet. Between 2016 and 2021, approximately 735,000 acres of Alberta grasslands were converted. This equates to over 400 acres – or, if you're sports-minded, 305 football fields a day. Those who work in restoration and reclamation know that native grass restoration is difficult and costly. Only 1.3 per cent of Alberta's grasslands have official protection, and so we are committed to helping those who live on and steward these lands find ways to safeguard these important ecosystems in perpetuity.

### THANK YOU!

Much of Western Sky Land Trust's work is only possible with care from organizations such as the CLRA, and we are ever so grateful for your continued support for nature! 🍀


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