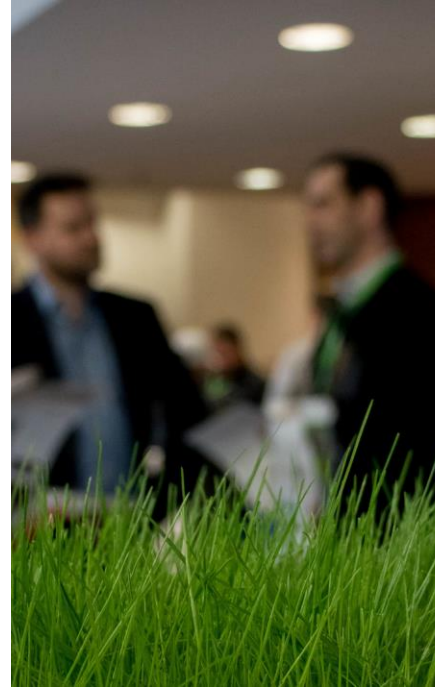


**33rd
Ontario
Turfgrass
Symposium**



SUMMARY OF PRESENTATIONS

OTS 2024: The Leading Edge of Information

Feb 21–22, 2024
University of Guelph
Rozanski Hall



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2024 Ontario Turfgrass Symposium (OTS) Program

Wed. Feb. 21, 2024

9:00	Update from Guelph	Update from Sports Turf	Update from Nursery Ontario
9:30	Matt Legg - The Art of Application and Turf Pests in 2022/2023	Trevor Warner - Better, Safer Ball: The Tip O'Neill Reconstruction Project	Dr. Scott McElroy - Autonomous Mowers for the Sod Industry
10:30	Break		
10:45	The Hon. Rob Black, Senator for Ontario - Road to the Senate, Role of the Senate, and the Senate's study on Soil Health		
11:30	Cam Shaw - Diploma in Turfgrass Management Program Update		
12:00	Lunch		
1:30	Dr. Alec Kowalewski - Tall Fescue Integrated Pest Management Practices	Robert Heggie - BMO Field and the Road to the World Cup '26	Dr. Nancy Xiao - Fertilizer and Supplement Registration: An Industry Perspective
2:30	Break		
2:45	Dr. Eric Watkins - Improving Knowledge and Management of Winter Stresses on Golf Greens in Cold Climates	Dr. Sara Stricker - #NoMowMay and #LeaveTheLeaves, what does it mean?	Dr. Casey Reynolds - Market and Consumer Trends in Turfgrass Production
3:45	Social networking event		

Thurs. Feb. 22, 2024

9:00	Update from Ontario Turfgrass research Foundation	Update from Ontario Recreation Facilities Association	Update from Professional Lawn Care Association of Ontario
9:30	Ed McNab - A Case Study on the Effects of Long Term DMI Use on Dollar Spot Populations Jason Winter - Negotiating Employment Agreements	ORFA Panellists - We Want Sports Fields But Not in My Backyard	Dr. Eric Watkins - Turfgrass Mixtures as a Sustainable Lawn Care Strategy
10:30	Break		
10:45	Kevin Doyle & Al Schwemler - Utilizing Best Management Practices to Drive Sustainability at Your Facility and Advocate for Golf's Future	Mike Greer - Meaningful Access in the Built Environment	Al Pinsonneault - Navigating Tenders and Contracts with Impossible Standards
11:45	Lunch		
1:15	Dr. Katerina Jordan - Sustainability and the Future of Turf		
2:00	Dr. Scott McElroy - The Future is Now: Autonomous Mowers		
2:45	Break - Lobby		
3:00	Panel Discussion - OM246 for Testing Soil Organic Matter Content	Dr. Eric Lyons - Overseeding for Sports Field Victory	Michael Stangl - Regenerative Lawn Care
4:00	Closing Remarks		

Sustainability and the Future of Turf by Dr. Katerina Jordan

Looking back on the evolution of turfgrass management provides valuable insights into predicting its future. Historically, turfgrass has been cultivated with a focus on aesthetics and functionality, and early practices were heavily reliant on inputs. In recent years we have changed our practices based on client expectations, weather, regulations, and budget constraints. These changes, however, vary by sector and functional use of the turf.

In the lawncare sector, the Cosmetic Pesticide Ban passed in 2009 led to major shifts in customer expectations, including a greater tolerance for weeds, incorporation of hardscapes, and an increased interest in alternative groundcover options. In the golf sector, however, we have seen a steady increase over the years in golfer expectations (although this varies greatly by course) with a desire for increased green speeds and a focus on stimpmeter and ball roll data. Athletic field users have focused in on safety concerns regarding weed invasion and compaction, all while fields are being used more frequently and for multiple uses. As we look ahead, the lessons learned from our past will guide our efforts in creating resilient turfgrass systems that meet these changing expectations and ensure environmental, economic, and social sustainability.

The concept of sustainability focuses on three main pillars: Environmental, Economic, and Social. Environmental sustainability encompasses air and water quality, ecosystem services protection, natural resources conservation, and reduced ecosystem stressors. Over the decades, advancements in turfgrass science have led to significant progress in this area. We have developed drought-resistant grass varieties, implemented integrated pest management strategies, and incorporated the use of various blends and mixtures based on advancements in turfgrass genetics. Technological innovations such as smart irrigation systems, robotic mowers, and on-site data collection tools have further propelled us towards sustainable practices. By further tapping into the potential of precision agriculture, already in use in sod production, we can revolutionize turf management by enabling spot applications based on specific needs and incorporate advanced technology such as drones and autonomous mowers.

Economic sustainability requires measuring the value of ecosystem services, cost considerations, job creation, and financial stability. In recent years efforts have concentrated on educating turfgrass managers through conferences, symposia, continuing education credits, and professional development. By leveraging technology we can reduce labour needs, allowing for smaller crews with higher wages, thus attracting and retaining skilled workers. Sustainable practices further reduce costs and provide long-term financial stability by creating low-maintenance, climate-resilient landscapes. The turfgrass industry is also striving to enhance diversity, job security, and equitable opportunities. By fostering an inclusive environment, the industry aims to leverage a broader spectrum of talents and perspectives, driving innovation and resilience. Collectively, these efforts contribute to a stronger, more dynamic turfgrass industry that supports both economic and environmental sustainability.

Social sustainability involves human health, education, and job security within an industry that is vilified in some social circles. Educating the public about the benefits of sustainable turf is essential for widespread adoption. Community initiatives, workshops, and demonstrations can showcase sustainable practices in action, helping to shift public perception and encourage more environmentally responsible choices. Promoting functional green spaces and prioritizing the social and mental well-being of urban communities are essential to securing the future of the turfgrass industry.

Environmental stewardship is the ultimate goal for turf managers, and we aim to maximize the benefits of well-maintained turf while minimizing negative environmental impacts. The path towards environmental, economic, and social sustainability involves reducing carbon emissions, encouraging ecosystem diversity, promoting pollinators, and using low-risk products. This is a call to action for the turfgrass industry! The future of turf is undeniably leaning towards sustainability, driven by a combination of technological advances, ecological awareness, and legislative action. Adopting sustainable turf practices is not just an environmental necessity, but a socially responsible choice. By embracing these changes, we can create green spaces that are beautiful, functional, and sustainable.



Dr. Katerina Jordan is an experienced plant researcher in turfgrass science and the director of the Guelph Turfgrass Institute (GTI) at the University of Guelph. Katerina is an associate professor in the Department of Plant Agriculture, where she has been conducting turfgrass research since 2005. She has taught courses in turfgrass insects, biological control of plant diseases, research methods and statistics, plant disease epidemiology, and integrated pest management to certificate, diploma, undergraduate, and graduate students. Her primary service to the turfgrass industry is managing the GTI Diagnostic Clinic.

The Art of Application and Turf Pests in 2022/2023 by Matt Legg

There are multiple aspects of fungicide application in turf management, all of which should be understood to ensure that a product is as effective as possible. These aspects include the fundamentals of how a product works, the importance of formulation, the intricacies of tank mixing, and various tips for practical application tips, together providing a comprehensive guide for optimizing turf pest management strategies.

Fungicide fundamentals include whether the product is fungicidal (killing the pathogen) or merely fungistatic (inhibiting its growth), where the product works, how long it lasts, and how it moves through the plant. Newer active ingredients (AI) are applied at very low rates when compared with older technologies. For example, when applying a product to a 6000 square-foot green, the volume of AI applied on that green would be the equivalent of a golf ball! As such, it is important to understand how your product works to ensure that you are maximizing effectiveness following application with minimal losses.

One of the more fundamental concepts surrounding fungicide technology is that of formulation, or the product's "vehicle" to safely deliver the AI to a particular pest or pathogen. The development process for these formulations is a costly and lengthy endeavor, often taking 8-10 years and costing upwards of \$300 million, culminating in a rigorous selection process that narrows down thousands of potential compounds to the final, marketable product. Formulation of a product affects its distribution across the application area, the timing of absorption, the product's ability to be absorbed by the plant and the target pest, and the product's longevity. All of these characteristics help to reduce loss of the product during the application process and increase the AI's effectiveness against the target pest/pathogen.

A common practice aimed at enhancing efficiency and efficacy in pesticide application is tank mixing, whereby two or more products are combined to increase efficacy. The benefits of this practice include increased efficiency, reduced crop damage and improved resistance management, while the potential downsides may be physical or chemical incompatibility and application challenges such as clogged hardware or lack of application uniformity and distribution. To avoid some common pitfalls encountered with tank mixing, it is important to do thorough compatibility testing and to always adhere to manufacturer guidelines.

Some final tips for improved application efficacy and efficiency include boom configuration to ensure that the nozzles and boom are matched up and to apply at the ideal spacing, height, spray angle and pressure. As well, you can make use of various resources that are available to help with planning your application, including weather forecasts, disease forecasting programs, and other apps such as the GreenCast Turf App that help with record keeping, calculating your applications, product information and more. Proper pesticide application will help to minimize loss of your product, better protect your turf, and ensure that you apply your pesticides in the most effective and safe manner possible.



Matt Legg is the Technical Lead for Syngenta Professional Solutions, based out of Toronto, ON, where he leads all technical outreach, advanced troubleshooting, and product development on behalf of Syngenta Canada. Before joining Syngenta, Matthew worked in a golf course setting, serving in the capacity of Director of Agronomy within the private golf sector. Academically, Matt holds a diploma in turfgrass management from the University of Guelph, along with his Bachelor of Science, in Turfgrass Science, from the Pennsylvania State University. Outside of Syngenta, he provides educational outreach as a seasonal lecturer of Turfgrass Entomology at the University of Guelph, where he educates up-and-coming Turf Managers about the biology, ecology, and management of turf and landscape insect pests.

Better, Safer Ball: The Tip O'Neill Reconstruction Project by Trevor Warner

The renovation of Tip O'Neill Ball Park in Woodstock was undertaken to improve safety, functionality, and capacity. Over time, the park's playing conditions had deteriorated, necessitating upgrades to ensure player safety and enhance the overall experience. The renovation aimed to modernize the field, including improvements to the surface, facilities, and amenities such as seating, lighting, and pathways. These updates sought not only to meet current standards but also to boost community engagement by supporting increased use. This project will help by attracting regional events, reinforcing Woodstock's commitment to recreational and sports activities.

This park was named after Tip O'Neill to honor his contributions and legacy. James Edward O'Neill, known as "Tip", was a prominent figure in the Woodstock community known for his significant impact in local sports and his commemoration in the Ontario Sports Hall of Fame. Nicknamed "The Woodstock Wonder", O'Neill played ten seasons (1883–1892) for the New York Gothams, the St. Louis Browns, the Cincinnati Reds, and the Chicago Pirates. This renovation serves to remind us of this local baseball player and community hero.

This field was last renovated in 2013 and was due for updates to meet increased user demand. The installation of new shade covers over the benches enhances the experience for players by providing much-needed relief from the sun during games. These shade covers not only improve comfort but also help extend the lifespan of the new benches by protecting them from weather-related wear and tear. The new benches were selected based on feedback from players and coaches, ensuring that their design and features meet the needs and preferences of those who use them most. This thoughtful addition ensures that players can enjoy the game in greater comfort.

The new backstop fence behind home plate combines aesthetic appeal with enhanced safety, featuring a red brick design on the base, with black poles and fabric netting. This modern upgrade not only visually enhances the field but also improves player and spectator safety by providing effective protection against stray balls. A new practice batting area with artificial turf has been added, providing players with a high-quality space to refine their skills. The renovation also included the installation of new lights around the baseball field, enhancing visibility and allowing for extended playtime. These improvements are designed to meet the dual goals of increasing the park's usage and ensuring it can host both local and regional sports events.

The turfgrass installation required a germination cover, which facilitated healthy growth. Once the turf was established, the grounds team tidied up the edges, resulting in a neatly finished area. The new stands feature a well-leveled concrete base and include a wheelchair-accessible viewing area, significantly enhancing both safety and accessibility for the audience. These improvements ensure a more comfortable and inclusive experience for all spectators. The local team was pleased with the results, and we look forward to many years of baseball on this new turf.



Trevor Warner's dedication to sports field maintenance began while he was playing junior college baseball in Tennessee. He enjoyed maintaining the field and had a knack for it. He considers himself fortunate to have been able to learn from some of the best in the southeastern United States sports field construction and renovation industry. He has maintained fields for the City of Welland, for the Niagara Stars (which were part of the Canadian baseball league) and completed major renovations in Quebec for the league. He then expanded his industry awareness with Mar-Co Clay Products. He has been in the municipal environment with the City of Woodstock since 2014. Trevor is a strong believer of continual professional development and completed the Turf Managers' Short Course at the Guelph Turfgrass Institute. Trevor is a long-standing member of Sports Turf Canada and won the Sports Turf Manager of the Year in 2021. Trevor presented at the Sports Field Management Association's Conference in Florida in January.

Autonomous Mowers for the Sod Industry by Dr. Scott McElroy

Autonomous mowers are revolutionizing the turfgrass industry by offering significant improvements in efficiency and cost-effectiveness. These advanced machines operate with minimal human intervention and navigate and precisely mow large areas such as sod farms. Autonomous mowers can operate for extended hours, including overnight, maximizing productivity and reducing labor costs. Their use can help sod producers meet the high demand for perfectly cut, healthy sod.

Robotic technology is on a steady upwards trajectory when it comes to uptake, capacity, and availability. GPS and RTK (Real-Time Kinematic) navigation systems can be used to enhance mowing precision on large sod farms by using fixed position stations for dead reckoning and long-range beacons. This allows for directional and systematic mowing that can be monitored and adjusted in real-time, significantly improving operational efficiency. Autonomous mowers can be run on semi-automated or fully-automated systems, which are suitable for different operational demands. Mower types include micro-rotary, reel, and traditional rotary, and it is important to select the right mower type based on the specific needs of a sod farm which varies based on the size of the area, the terrain, and the precision required.

One challenge faced when implementing autonomous mowing systems in the sod industry is the need for continuous technological updates and maintenance. Current LIDAR (Light Detection and Ranging) and computer vision technologies show promise for precise mapping and obstacle detection, but can become impaired by dust, humidity, and varying light conditions. An integrated approach which leverages a combination of GPS, RTK, and LIDAR technologies can optimize efficiency and minimize disruptions. It is also important to carefully plan and schedule the use of autonomous mowers to maximize the benefits of automation while ensuring the longevity and reliability of the equipment.

Autonomous mowers can contribute to environmental sustainability within the sod production industry. Constant mowing from autonomous mowers improves turfgrass quality, especially at higher mowing heights. These mowers, despite being used up to ten times more frequently, consume only one-third of the energy compared to traditional mowers. Additionally, some weeds are reduced with the use of autonomous mowers; however, rhizomatous perennial weeds may improve in quality and increase in presence. Although the technology is not yet fully developed, autonomous mowers also have the potential to reduce disease incidence in turfgrass. The adoption of autonomous mowers can boost operational efficiency and support eco-friendly practices, aligning with the growing trend towards sustainable agriculture.



Dr. Scott McElroy is a Professor of Weed Science and Turf at Auburn University, Alabama. Scott holds a PhD in Crop Science and a Masters of Science in Agronomy and Soils. His research focus includes evaluation of herbicide use in turfgrass management and the use of autonomous mowers. In addition, he studies weed geonomics and herbicide resistance. He teaches, among other courses, Advanced Turf Management and Applied Weed Science Technology at Auburn University.

Road to the Senate, Role of the Senate, and the Senate's Study on Soil Health by the Honourable Rob Black, Senator for Ontario

The Senate of Canada plays a critical role in not only Canada's but also to Ontario's agricultural sector by providing thorough examination and oversight of legislation that impacts the industry. Through its committees, such as the Standing Senate Committee on Agriculture and Forestry (AGFO), senators review proposed laws, policies, and programs related to agriculture, ensuring they are in the best interest of farmers, producers, rural communities, and the environment. The AGFO committee also conducts studies and produces reports on key agricultural issues, offering recommendations for the government to act upon, and that can shape the future of agriculture. By facilitating informed debate and representing diverse regional interests, the Senate helps to promote sustainable agricultural practices, support economic development in rural areas, and protect the interests of all stakeholders within the sector. The Senate of Canada and Senators act as a critical component in the legislative process, ensuring that all regions of Canada have a voice in federal legislative process.

The Senate plays a three-fold role: representation, legislation, and investigation. Senators are appointed by the Governor General on the advice of the Prime Minister. This process allows for the consideration of diverse backgrounds and expertise, promoting representation from various professional, ethnic, and cultural communities. The legislative function involves scrutinizing bills introduced in the House of Commons or in the Senate of Canada, recommending improvements, and requiring our parliamentarian's approval for a bill to become law. The Senate of Canada investigates topics through its specialized committees, which gather information via research, expert testimonies, and public consultations. Committees also conduct site visits and fact-finding missions to gain firsthand insights. After analyzing the collected data, they prepare detailed reports with findings and recommendations, which are then presented to the Senate for further discussion and potential legislative action and are usually presented to the government for their consideration, response and follow up.

AGFO began its study on soil health in Canada in 2022. It represents a crucial effort to address the critical issues impacting agricultural productivity and environmental sustainability. The committee conducted comprehensive research, gathered expert

testimony, and engaged with farmers, industry, scientists, government and environmentalists to assess the state of soil health across the country.

The study culminated with a report, *Critical Ground: Why Soil is Essential to Canada's Economic, Environmental, Human, and Social Health*, with 25 recommendations to federal government to improve the state of soil health in Canada. One of the recommendations is for the Government of Canada help to facilitate and encourage the creation of viable and valuable carbon markets for farmers, ranchers, and growers. This initiative would directly impact sod farmers (and potentially others in the green industry) by providing economic incentives for lowering emissions and could create a carbon offset market in the future.

You can stay connected with the Senate of Canada, Senator Black, and the AGFO committee by taking a virtual tour of the Red Chamber, connect through social media, or join the Senate's eNewsletter by visiting: www.sencanada.ca



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The Honourable Rob Black has worked in the rural, agricultural, and leadership arenas for much of his working career. He worked with the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) for 15 years. Following his time at OMAFRA, he spent 5 years as the Executive Director of 4-H Ontario. Rob then accepted the role of Executive Director of the Centre for Rural Leadership, which morphed into the Rural Ontario Institute (ROI). On February 27, 2018, Rob was sworn in as a senator representing the province of Ontario. Since then, he has been working on several issues of importance to Canadians through his role as senator and Chair of the Standing Committees on Agriculture and Forestry (AGFO). He is also a member of Steering Committee for Rules, Procedures and the Rights of Parliament, and is on the Joint Committee on the Library of Parliament.

Diploma in Turfgrass Management (DTM) Program Update by Cam Shaw

The University of Guelph's Diploma in Turfgrass Management (DTM) program is renowned nationwide for cultivating professionals who pursue careers in sports field management, golf course maintenance, lawn care and more. The current program supports a diverse student body of 47, marked by a notably high retention rate. The integration of practical experiences in class and on the field play a significant role in the program's high student approval rating.

A pivotal element of the DTM program is the Summer Co-op, which spans from April to August and encompasses positions across multiple sectors in turfgrass management. Our students have experienced tremendous geographical and industry diversity in these placements, including roles in golf course management, sod production, and municipal landscaping across locations such as Ontario, Western Canada, and as far abroad as Switzerland and Ireland. The success of these placements is attributed to robust partnerships with industry stakeholders and our network of alumni. An expected change coming in the 2025-2026 recruitment cycle will be an exit from the co-op program and return to the former internship program. This change is marked by the rigid policy of the co-op program which does not suit the specialized needs of our students and industry partners.

Over the past five years, the University of Guelph has emphasized strategic initiatives in outreach and recruitment for the DTM program. We visited over 25 schools, hosted on-campus workshops, and participated in career fairs to stimulate interest among potential students. In March 2023 we participated as a keynote speaker in an online career event that drew ~1,500 high school students, providing them exposure to turfgrass management careers through interactive sessions.

The DTM program is largely built upon a mentorship model, with nearly 90% of incoming students being referred through alumni and industry connections. This network not only fosters early professional relationships but also integrates students into the turfgrass community, enhancing their educational experience and career prospects. Looking ahead, we have a promising outlook for the DTM program's enrollment in Fall 2024. The planned capacity is on target, reflecting a balanced mix of students with various career aspirations within the turfgrass industry. Stay tuned for information sessions between November to February, which play a crucial role in attracting prospective students.

This program is built on education and experience from experts in the field and a proactive approach to community building and industry integration, positioning our graduates as leaders in the global turfgrass industry.



With over 25 years' experience working with people & turfgrass Cam Shaw has built his career on being an effective communicator, educator, industry leader and passionate lover of grass and the environment. Having worked in multiple towns, provinces and countries, Cam has developed an intricate understanding of the various challenges our industry faces when it comes to legislation, public perception, and stakeholder communications. As manager of the Diploma in Turfgrass Management program at the University of Guelph, Cam spends his days planning, instructing, and preparing the next generation of Canadian turfgrass managers for a challenging, yet rewarding career.

Tall Fescue Integrated Pest Management Practices by Dr. Alec Kowalewski

Effectively managing tall fescue (*Festuca arundinacea*) involves confronting environmental conditions and pest pressures. Integrating cultural practices such as cultivar selection, mowing height, fertilization rate and timing can improve the health and resilience of tall fescue across various settings, including home lawns, municipal areas, and golf course roughs. By optimizing integrated pest management strategies, it becomes possible to enhance the overall vitality and sustainability of tall fescue stands, ensuring successful growth and maintenance in different landscapes.

Tall fescue is well known for drought tolerance and low fertility requirements, in comparison to perennial ryegrass and Kentucky bluegrass. However, the increased susceptibility to winter damage and diseases like *Microdochium* patch, net blotch, and leaf spot create unique challenges for the management of tall fescue. Our research encompasses several experiments designed to understand and mitigate these challenges.

Cultivar selection and fungicide applications are key tools for disease management. A trial with 13 tall fescue cultivars was established with Banner Maxx (propiconazole), Civitas (isoparaffinic oil), and an untreated control. No differences between fungicide treatments and the untreated control were observed. Unfortunately, there were no significant differences between cultivars for winter disease resistance and overall turf quality. The turf quality in early spring averaged a rating of 5.7, where the maximum quality score would be 9, which is evidence of general winter damage. The cultivars Talladega, Thunderstruck, Temple, Diablo, Thor, and Trinity were among the best performers for summer colour and quality.

Cultural practices can have significant impacts on tall fescue's health and weed populations. Higher nitrogen rates generally improved turf growth and colour, while raising mowing height from 2" to 3" improved turf health and decreased annual bluegrass invasion. However, early spring application of nitrogen reduced turfgrass quality in the winter months due to severe *Microdochium* patch and leaf spot disease.

Heavy fall fertilizer applications improved turfgrass quality in the winter months, with decreased *Microdochium* patch and leaf spot disease. It's important to note that this experiment was conducted in Oregon, where snow cover rarely lasts more than three days at a time. Another conclusion to come out of this research was the importance of sharpening mowing blades to improve mowing quality. Mower blades need sharpening every 15 hours of use.

Adjusting irrigation rates and frequencies can improve turf quality, prevent weed invasion, and improve water usage efficiency. Newer irrigation systems can be equipped with signaling controllers, which will then apply the calculated amount to replace only a set percentage of the water lost through evapotranspiration (ET). Setting the irrigation system to 80% ET replacement improved tall fescue summer quality but increased annual bluegrass invasion compared to 45% ET replacement. If using a TDR soil moisture probe, you can water newly established tall fescue at 20% VWC, and then maintain established tall fescue at 10% VWC. These guidelines aim to sustain turf health while minimizing water use, an essential consideration in regions prone to drought.



Dr. Alec Kowalewski has over 20 years of research experience and multiple publications on various turfgrass species obtained while employed at Michigan State University, Abraham Baldwin Agricultural College, the University of Georgia, and Oregon State University. Alec is an Associate Professor at Oregon State University and teaches several undergraduate classes in the Department of Horticulture. Alec also provides Extension material for stakeholders in turfgrass and landscape management. His primary research interest is improving the economic and environmental sustainability of turfgrass.

BMO Field and the Road to the World Cup '26 by Robert Heggie

Toronto's BMO Field is gearing up to be a host venue for the FIFA World Cup 2026. Renowned for our state-of-the-art facilities, BMO Field is no stranger to hosting major sporting events. However, preparing for this prestigious soccer tournament presents unique challenges and opportunities. Efforts to ensure that BMO Field meets the FIFA standards are well underway.

Construction of BMO Field, home for Toronto Football Club and Canada Soccer, began in 2006. A significant milestone came in 2010 with the conversion to natural grass, followed by a series of expansions and technological enhancements between 2016 and 2018, including stadium expansion, roofing over the stands (which led to the need for grow lights), and an inflatable cover for winter protection. The innovative subsoil heating system, consisting of 26 miles of pipes filled with glycol, and the use of grow lights allows for turf growth beyond the typical growing season in Ontario. These technologies allow BMO Field to provide optimal playing conditions even when faced by suboptimal weather.

Managing a multi-use grass sports field, especially during the winter months, is no walk in the park! Since the field was converted to a hybrid-turf system (approximately 95% grass and 5% artificial fibers), re-sodding the field is out of the question. This cutting-edge approach involves stitching synthetic fibers directly into the grass rootzone, creating a reinforced playing surface that combines the best of both worlds. The hybrid system enhances the durability and stability of the turf, allowing it to withstand the intense wear and tear of high-stakes soccer matches and football games. The synthetic fibers provide additional support to the natural grass, ensuring a consistent and resilient playing surface that meets FIFA's stringent standards. This blend of technology and nature not only ensures optimal performance for players but also extends the durability of the field.

We use rigorous testing protocols to ensure the turf meets FIFA's highest standards. These include measurements of vertical deformation, force reduction, energy restitution, GMAX levels, rotational resistance, ball roll and bounce, soil moisture, and weather conditions. This testing ensures that the playing surface offers safety, stability, and consistency for athletes, addressing both the physical and aesthetic demands of professional soccer and football.

Looking ahead to the 2026 World Cup, BMO Field is part of a much larger event, with each stadium offering various grass types, playing conditions, and climates. The cities hosting events include Toronto, Vancouver, Seattle, Los Angeles, Dallas, Mexico City, Atlanta, and Miami. Some stadiums have roofs and others do not. This diversity poses unique challenges for the groundskeeping teams, who are all working ensure the highest standards of playability and safety.

Collaborations with academic institutions like the University of Tennessee and Michigan State University are essential for advancing turf management practices to host an event like this. These partnerships have led to innovative solutions such as sod grown on plastic for easy installation, hybrid carpets, and the development of shock absorption

systems borrowed from artificial turf technologies. It's unrealistic to guarantee that all the hosting venues will have identical turf surfaces, but we are working to make the playing conditions as standardized as possible. The blend of technology, testing, and collaboration means our groundskeeping team will be ready provide a world-class playing surface to host the FIFA 2026 World Cup games.



Robert Heggie started his career in turf at the young age of sixteen. Before long he realized he wanted to make a career out of it. After graduating The University of Guelph for both Horticulture in 2006 and Turfgrass Management in 2008, he found himself in Barbados building Apes Hill Club, one of the top golf courses in the Caribbean. Upon construction completion, the opportunity to be a part of The BMO Field conversion from artificial grass to natural grass came up which he jumped at.

In the past 14 years with MLSE, he has built up the field from a modest pitch to one of the most technologically advanced pieces of sports turfgrass in the world. Hosting both soccer and football consecutively is no short order and in Toronto's harsh climate it requires special tools. Robert was the first to bring many technologies to Canada including, Grow Lighting, Undersoil Heating (soccer specific), Hybrid Grass, and more. He also oversaw the construction of the BMO Training Facility where all of TFC's teams practice and play out of. Accomplishments include, 2015 Sports Turf Canada Manager of the Year, 2020 Turf and Rec 10 under 40, 2015 PanAm games (72 rugby 7's games), 2016 and 2017 MLS Cup host, 2017 NHL Centennial Classic, 2016 Grey Cup, 2015 and 2017 Gold Cup 2023, and the upcoming FIFA World Cup 2026.

Fertilizer and Supplement Registration: An Industry Perspective by Dr. Nancy Xiao

Understanding the background behind product registration and legislation is crucial for the turfgrass management industry as it ensures compliance with regulations and helps us protect the environment. This guarantees the use of safe, effective products and can prevent over-application and nutrient pollution. The use of properly registered products enhances professional credibility and demonstrates a commitment to industry standards. Staying informed about new regulations and best practice can allow turfgrass managers to influence policy development for the future.

The regulatory framework for fertilizer and supplement registration in Canada is similar to the regulatory landscapes in the European Union (EU) and the US, with a few key differences. In the United States, fertilizers are regulated at both the federal and state levels. Each US state has its own set of regulations and requirements, which can vary significantly. In Canada, fertilizers are regulated under the Fertilizers Act and Regulations by the Canadian Food Inspection Agency (CFIA), which oversees product registration, labeling, and safety standards. The registration involves a detailed application and a scientific assessment to ensure safety. There are also additional provincial and regional regulations in Canada which may be different from place to place. In contrast, EU follows the EU Fertilising Products Regulation, which provides a standardized process across all countries and replaces previous national regulations. The EU regulation also aims to create a single market for fertilizers, allowing products approved in one country to be marketed across the EU. Canada, EU, and some US states require environmental risk assessments, but the EU has the strictest criteria for risks to soil, water, and non-target organisms. Provincial or state regulations can be more strict than federal, but never more lenient. The same goes for municipal and local levels of fertilizer regulations. For example, The Midwest states (Illinois, Michigan, Minnesota, and Wisconsin) have passed an act that states that phosphorus fertilizer is banned on residential or commercial lawns, unless it meets an exemption. Overall, the primary concern for the regulatory bodies in each of these regions is safety, not efficacy.

In 2020, Canada made significant amendments to its Fertilizers Act and Regulations, aimed at modernizing and improving the regulatory framework governing fertilizers. There was a focus on enhancing labeling requirements (in French and English) to provide clearer information on nutrient content and application instructions, thus improving consumer safety and product effectiveness. Additionally, the amendments strengthened environmental protections by implementing measures to reduce nutrient runoff and mitigate impacts on water quality and ecosystems. The changes also altered the registration process for phosphite, reclassifying this amendment as a pesticide instead of a fertilizer. The amendment now groups home and garden products with those of agricultural products, includes micronutrients, and expanded the definition of supplements. Overall, these amendments aimed to streamline the regulatory processes and reinforce environmental stewardship in Canada's fertilizer industry.

Innovation within the industry is advancing faster than policy can accommodate. For instance, biostimulants, which are products that enhance nutrient use efficiency and

improve stress tolerance in plants, are not currently considered under fertilizer regulations and are currently considered as “supplements” in Canada, regardless of their nutrient content. Furthermore, regulations on microplastics from polymer coated fertilizers are currently in the works and we may see new legislations starting in the EU by 2026. Ongoing working groups are updating the List of Primary Fertilizer and Supplement Materials (exemption list in Ontario), outlines rules for dual-property products (like microbials), and creating biostimulant efficacy standards.

Regulatory compliance, the process of registration, and even definitions of products are part of an ever-changing landscape. The complex regulatory environment for fertilizers and supplements requires us to jump through hoops of regulations, safety requirements, and labelling but at the end of the day our goal is to provide turfgrass managers with the tools to create healthy turf and to ensure environmental sustainability of our industry.



Dr. Nancy Xiao currently works as the research and innovation director at Ferti Technologies Inc. based in Montreal, Quebec. She works on developing fertilizer, soil, and biostimulant products, testing and bringing innovative bio-technologies to market for our business partners and customers. She also oversees fertilizer product registration and compliance in Canada. She received her PhD in plant physiology from the University of Guelph and M.Sc. in turfgrass management from Michigan State University.

Improving Knowledge and Management of Winter Stresses on Golf Greens in Cold Climates by Dr. Eric Watkins

Winter injury to turfgrasses on greens has been a longstanding challenge for golf course superintendents in cold climates. The variability of winter conditions at a single site and over the years makes understanding this stress particularly difficult. As a result, turfgrass managers often struggle to find effective, research-based solutions to prevent and mitigate winter damage. This issue not only causes significant financial strain for golf courses but also adds considerable personal stress to superintendents responsible for maintaining the turf's health and playability.

There is limited research on winter stresses on golf course greens due to several challenges. The variability of winters makes it difficult to maintain consistent conditions for study. Controlling plot conditions during winter is challenging, and there are few research facilities in regions where winters are consistently harsh. Additionally, laboratory results are difficult to verify in the field. This WinterTurf project aims to overcome these obstacles by gathering data from multiple sources, including pre-winter, weekly, and post-winter surveys from golf course superintendents, environmental sensors, satellite imagery, site management information, and weather data. If you are interested in participating in future years of data collection, you can learn how to get a sensor at z.umn.edu/sensors or [how to help collect data at z.umn.edu/interest-survey](https://z.umn.edu/interest-survey). This collaborative research effort promises to deliver practical solutions that can be implemented across diverse cold climate regions.

In the ICEBREAKER study, which was conducted with five different turfgrass species, ice cover was maintained on greens-height turf for over 12 weeks. Sensors measured oxygen and carbon dioxide (CO₂) levels, while measurements of photosynthetic action and visual quality ratings were taken to assess the impact. The results showed that velvet bentgrass was the most resistant to extended ice cover, with creeping bentgrass and slender creeping red fescue also performing well. In contrast, annual bluegrass was completely killed in both years of the study, indicating a susceptibility to prolonged ice cover. Chewings fescue experienced severe damage in both years, with some death occurring in the second year. The study suggests that the long duration of high CO₂ levels is likely a significant factor in the death of annual bluegrass, raising questions about the impact of other gases. Further research is needed to answer these questions and better understand the mechanisms behind ice encasement survival. The next project will investigate whether heavy topdressing can improve winter survival rates of golf course greens.

We invite superintendents across North America to get actively involved in the WinterTurf project. Your participation can make a significant impact, whether through completing surveys, collecting winter data, or sharing data from previous winters. Join us in advancing the science on winter stresses on turfgrass and improving management practices for golf course greens. Together, we can develop more resilient and sustainable turfgrass solutions.



Dr. Eric Watkins is a professor in the Department of Horticultural Science and vice provost for distributed learning at the University of Minnesota. Eric received his Ph.D. in plant biology from Rutgers University. Current research activities involve germplasm improvement of several turfgrass species and projects investigating approaches to reduce winter damage on cool-season turfgrasses. He is also involved with cultivar evaluation and other turfgrass science research focused on low-input systems. In his administrative role, Eric provides leadership for online educational programs across the five-campus University of Minnesota system.

#NoMowMay and #LeaveTheLeaves, What Does it Mean? By Dr. Sara Stricker

In recent years, grassroots movements advocating a minimalist approach to turf management have gained momentum, propelled by growing concerns about biodiversity loss, habitat degradation, and climate change. Despite the widespread adoption of these practices by homeowners, landscapers, and municipalities, there is a lack of scientific data to confirm their ecological benefits and address potential misconceptions.

The "No Mow May" initiative, popularized by Plantlife in the UK, encourages homeowners and municipalities to refrain from mowing greenspaces in early spring to promote the blooming of flowers, thus providing crucial early-season food for pollinators. Originating as a response to declining pollinator species, particularly in urban areas, the campaign gained traction on social media with the hashtag #NoMowMay, reflecting society's growing concern for pollinator conservation. The #NoMowMay campaign is touted as a cost-free and easy option to support pollinators. However, avoiding the key management practice of mowing during a period of excessive growth could lead to detrimental effects on turf quality later in the season.

The #LeaveTheLeaves campaign, launched by the National Wildlife Foundation and supported by the Xerces Society for Invertebrate Conservation, promotes leaving fallen tree leaves on the ground instead of removing them in the fall. This initiative aims to create overwintering habitats for beneficial insects and supports biodiversity and ecosystem health. By allowing leaves to decompose naturally, nutrients are returned to the soil, and leaf litter provides habitat and food for various organisms, enhancing biodiversity and ecosystem resilience. Removing or mulching tree leaf litter can have detrimental effects, including direct mortality of organisms, habitat loss, and disruption of insect life cycles. However, turfgrass is at risk of death or damage due to smothering under extended tree leaf coverage.

Our study addressed this gap by presenting empirical data collected over the course of one year, documenting floral resources, turf quality, and recovery associated with implementing #NoMowMay and #LeaveTheLeaves practices on a lawn-height stand of Kentucky bluegrass. By avoiding lawn mowing until June, the unintended consequences were increased weed invasion and decreased turf quality. Flower number did not differ between mowed and unmowed treatments except when counting immediately followed mowing. Unsurprisingly, dandelion heads will be removed if the stalk is taller than the height of cut. The #NoMowMay campaign can increase the number of flowers available, but the results did not match the advertised photos of wildflower meadows. Thick leaf litter over turf in the winter from #LeaveTheLeaves led to turf death followed by weed invasion (largely clover). The challenges we observed associated with #NoMowMay and #LeaveTheLeaves initiatives could be addressed by integrating science-backed practices and considering regional variations in climate and grass species.

It is important to find a balance between promoting biodiversity and managing the pest control and functional aspects of a lawn. Recommendations to come out of this research include planting mowing-tolerant flowering species into lawns, maintaining a regular mowing schedule or altering mowing timing to accommodate localized flowering, mulching tree leaves thoroughly to prevent smothering, and creating year-round floral resources and habitats. Establishing native species which provide higher quality and quantity of pollen/nectar than common lawn weeds, such as dandelion and black medic, is a more ideal strategy than #NoMowMay. Creating wood or leaf piles for overwintering insects which can be left undisturbed through fall and spring is recommended to support urban insect biodiversity. Integrating these recommendations in an urban landscape would ensure that both environmental conservation and turf health are considered.



Dr. Sara Stricker is a plant pathologist working as the Communications Coordinator at the Guelph Turfgrass Institute. She aims to make turfgrass research interesting and accessible to the industry and the public. Sara obtained her B. Sc, M. Sc, and Ph. D degrees at the University of Guelph and completed a Bachelor of Education at Western University. She has conducted research on foliar diseases including tar spot of maple, Stemphylium leaf blight of onion, and Microdochium patch of creeping bentgrass.

Market and Consumer Trends in Turfgrass Production by Dr. Casey Reynolds

Everyone wants a crystal ball to predict the future, but it's not that easy! There are several key areas that shape the current and future landscape of turfgrass production, including market trends, consumer behavior, technological innovations, and possible shifts in the industry. The main types of turfgrass that currently dominate the market include residential lawns, commercial properties, and sports fields. Supply chain fluctuations and global economic events, especially in recent years, have had a massive impact on production costs and market prices.

Much of today's research on consumers is segmented into generations, since the purchasing trends of Boomers (born 1946–1964) are vastly different than Millennials (born 1981–1996). Recent trends in consumer behavior have highlighted the growing demand for sustainable and eco-friendly landscaping solutions. There is an increasing consumer preference for drought-resistant and low-maintenance grass varieties, which is driven by environmental concerns and the desire for cost-effective maintenance. Market data and consumer surveys indicate that purchase descriptions are a key mechanism through which consumers act on their sustainability values, especially the younger cohorts. We predict that as awareness of environmental issues continues to grow, consumer demand will increasingly shift towards innovative products that align with sustainability goals. This shift is prompting turfgrass producers to innovate and adapt their offerings to meet these new consumer demands.

The turfgrass industry can leverage technological advancements to meet the needs of our consumers. By integrating advanced genetic techniques, we can develop turfgrass varieties with enhanced qualities, such as improved resilience to pests and diseases and reduced water consumption. The latest in precision agriculture tools can help producers optimize planting, irrigation, and harvesting operations, thereby increasing efficiency and reducing environmental impact.

In some instances, our industry is battling against a negative public image. We can change this narrative by communicating the value of natural grass, lawns, sports fields, golf courses, and green spaces. The U.S. Sod Checkoff program aims to raise approximately \$14 million annually for use on research and promotion of natural grass. This program was proposed in 2017 and is nearing completion and will hopefully be approved by the USDA in 2024. Preliminary efforts show that consumers particularly respond to positive messaging on the environmental benefits and safety/health benefits of green space.

Sod producers need to keep their finger on the pulse of consumer trends and technological advancements to stay competitive. Investing in research and development, particularly in areas related to sustainability and efficiency, is crucial to effectively respond to the evolving landscape of consumer preferences.



Dr. Casey Reynolds is the Executive Director at Turfgrass Producers International (TPI), a trade association that represents turfgrass seed and sod producers worldwide. He is a passionate advocate for the proper use of natural grass in urban and suburban spaces worldwide. He has been an author or co-author of over 300 publications in trade magazines and research journals and has been an invited speaker at almost 100 events. Prior to joining TPI in 2017, he was a faculty member at Texas A&M University and received his PhD in Turfgrass Science from North Carolina State University.

A Case Study on the Effects of Long Term DMI Use on Dollar Spot Populations by Ed McNab

Dollar spot disease, caused by multiple fungal pathogens in the *Clariireedia genus* (formerly *Sclerotinia homoeocarpa*), is a prevalent and economically significant disease affecting turfgrasses. In Ontario, and the surrounding Great Lakes region, this disease is primarily caused by *Clariireedia jacksonii*. Symptoms of this disease include 3-5 cm wide patches (dollar-sized) of blighted grass, “hourglass” lesions, and cobweb-like growth with heavy dew. This disease can severely impact the aesthetic and functional quality of golf course fairways, tees, and greens. Both cultural and chemical controls are crucial to maintaining the high standards of turfgrass health required course playability and appearance. But what can we do when the chemical controls do not seem to be working as well as they used to?

Fungicide resistance can occur after repeated applications of fungicides with the same mode of action and can pose significant challenges to effective disease management. Resistance occurs when fungal populations develop genetic mutations or adaptive mechanisms that reduce their sensitivity to fungicides, rendering standard treatments less effective or even obsolete. As resistant strains survive and reproduce, reduction in disease control duration and control failures can become more common. To combat the development of fungicide resistance, several integrated disease management strategies are recommended, including using fungicide with different modes of action (rotating applications and in tank mixtures), following fungicide application labels, and implementing cultural practices where possible. Currently, the dollar spot pathogen has exhibited the potential to develop resistance to benzimidazoles (FRAC group 1), dicarboximides (FRAC group 2), demethylation inhibitors (DMIs, FRAC group 3) and more recently, succinate dehydrogenase inhibitors (SDHIs, FRAC group 7). Monitoring and early detection of resistance is key to mitigate the impact of fungicide resistance on turf health and performance.

Research over the past three decades on *Clariireedia jacksonii* has revealed a progressive increase in resistance to the DMI fungicide propiconazole, which is the active ingredient in some commonly used fungicides such as Quali-pro and BannerMaxx. This prompted us to develop a kit for detecting fungicide resistance that can be used by golf course superintendents in the field. This kit can enable rapid, on-site detection of resistant fungal strains, providing crucial and timely information to guide dollar spot management practices. End-user testing of a preliminary kit, encompassing samples from 20 sites across southern Ontario, has been conducted to validate the field kit's sensitivity to detecting resistant isolates. This research not only highlights the escalating challenge of fungicide resistance but also displays the development of practical tools and strategies for turf managers to monitor and manage resistance effectively.



Ed McNab is a PhD student in the School of Environmental Sciences at the University of Guelph with an Honours Bachelor of Science degree majoring in biochemistry and a MSc in environmental sciences. Ed's masters research focused on developing a field assay for turf managers to assess the sensitivity of the dollar spot fungus in the field. In addition to the field kit, Ed is also investigating the effects of repeat fungicide use on the creeping bentgrass microbiome. Ed's PhD is on further developing his research into the effects of fungicide use on the microbiome of turf grasses, and he is also attempting to determine the genetic mechanism(s) that are responsible for DMI resistance in dollar spot, pink snow mould, and other DMI-resistant fungi in the turfgrass microbiome.

Negotiating Employment Agreements by Jason Winter

Understanding and negotiating the terms of employment agreements can be intimidating and stressful. With three decades of industry expertise, including 18 years as a superintendent, I've crafted numerous agreements and navigated multiple negotiations. When joining a new greens team, we are up against challenges unique to the turfgrass industry pertaining to the timing, delivery, and details of employment agreements.

At minimum, an employment agreement should include the position of employment, names of the parties, location of the agreement, term of the agreement, and a closing statement where parties agree to be bound. Further key details such as compensation, benefits, bonus, and vacation can be negotiated. Be sure to specify the duration of the contract and any conditions for renewal. The agreement could be fixed or indefinite. Depending on the property, you might also need to include confidentiality agreements.

Given the seasonal nature of turf management, it's essential to consider the timing of contract renewals to align with the industry's peak periods. Negotiating prior to the season opening is ideal, especially when golf course conditions are at their peak, as it enables leveraging the anticipation and excitement surrounding the upcoming season. Another good moment for negotiations is after the successful completion of an event, as decision makers may be more inclined to engage, motivated by recent achievements. Additionally, negotiations may become necessary in the event of a senior manager's departure, ensuring continuity in operations. Prior to major work or renovations, negotiating allows for aligning terms with the specific needs of upcoming projects. Identifying times when decision makers are most receptive is crucial for initiating negotiations effectively, ensuring that proposals receive due consideration.

When it comes to negotiation strategies, be prepared to listen and compromise while maintaining a clear communication channel with employers. Get ready for negotiation by doing background research, including reviewing association compensation surveys, understanding the employer's status in the region, and being aware of any upcoming events or projects that might affect the role. Taking on additional roles or significant changes in job responsibilities can also provide leverage in negotiations. Documenting your successes throughout your career is essential for demonstrating your value and contributions effectively and can add to your arsenal for negotiations.

Know your hot button terms! Sustainability, innovation, technology, labor challenges, research advancements, and strategies for reducing pesticide and water usage are increasingly relevant in the turf management industry and can influence employment negotiations by showcasing your knowledge and commitment to industry trends. It's also important to do some soul-searching before entering the negotiations. Identify your personal priorities, understand the type and term of the agreement you want, and brainstorm any non-cash benefits that could be requested. It's a win-win scenario when both parties feel satisfied with the agreement, which can be the case when both parties come to the table with flexibility and openness.

Successful employment agreement negotiations can lead to a fulfilling career, and the key components are a clearly defined job description, appropriate compensation, and a

good relationship with decision-makers. Be sure to think ahead and ensure a fair severance package and realistic expectations are set. Our industry is known for our intense work ethic, a hectic seasonal schedule, and the challenge of Mother Nature, but by negotiating clear employment terms and advocating for fair compensation we can achieve a satisfying and productive employment relationship.



A versatile individual with a passion for golf, Jason Winter has been a golf course superintendent for the past 18 years and in the golf industry for 26 years in various roles. Born and raised in St. Thomas Ontario, Jason developed his interest for the game of golf from an early age. This early passion laid the foundation for his journey in becoming a golf course Superintendent. Jason is a graduate from the University of Guelph 94A diploma program, a graduate from the 2-year certificate program at the Pennsylvania State University and currently holds the designation of Master Superintendent with the CGSA.

After working in the US for 5 years, Jason returned to Canada where he worked for Marriott Golf at the Rock Golf Club and most recently at Deer Ridge Golf Club in Kitchener. Throughout his career, a significant amount of his time has been focused on golf course construction, renovations, and several extensive projects. Outside of this, the focus for Jason has primarily been creating and maintaining championship playing conditions through sound agronomic programs and has hosted both provincial and national championships in his most recent role. Jason is looking forward to embarking on new adventures, while remaining steadfast in his pursuit of excellence and insists on having a positive impact on those around him.

We Want Sports Fields, but Not in My Backyard by Terry Piche, Tracy Eso, Brad Putnam, and Werner Schwar

Urban planning plays a crucial role as municipalities expand and strive to accommodate the increasing demand for sports fields and amenities, which are essential for play, exercise, and recreation. Developing new sports facilities helps meet the needs of a growing population and provides valuable spaces for community activities. However, this growth comes with the challenge of addressing the diverse needs of multiple user groups - such as athletes, families, and local organizations, while also considering the concerns of nearby residents. This can turn into a “Not In My Back Yard” (NIMBY) dilemma!

Balancing these demands can be complex, as sports facilities can introduce issues such as noise, light pollution, traffic congestion, excessive waste, and increased foot traffic, which may disturb neighbouring homeowners. Living near sports fields and amenities such as baseball, soccer and football fields, or the increasing emergence such as pickleball courts, can pose several challenges for homeowners. One major concern is the increased noise levels associated with games and practices. The sounds of cheering crowds, loud announcements, and the clatter of equipment can disrupt the peace and quiet typically valued in residential areas. This constant noise can be particularly bothersome during evenings and weekends when many people seek relaxation or quiet time at home.

Additionally, the heavy foot traffic and parking congestion that accompany sports events can create inconvenience for nearby residents. High volumes of cars and the influx of visitors can lead to overcrowded streets and limited parking options, making it difficult for homeowners to find space near their own properties. This can also strain local infrastructure and lead to a decrease in the overall quality of life for those living close to these bustling recreational areas. Effective urban planning must therefore focus on integrating these facilities in a way that minimizes disruption to local communities. This involves thoughtful design, strategic location selection, and extensive community engagement to ensure that the benefits of new sports facilities are maximized while addressing and mitigating potential impacts on residents.

Engaging in strategic communication with local residents and involving community members early in the planning process is essential for successful urban development projects. By integrating their feedback into the design and operational plans of sports facilities, municipalities can ensure that residents feel heard and valued. This approach fosters community buy-in, addresses potential concerns upfront, and helps smooth the path for future developments, ultimately creating a more harmonious relationship between new projects and the surrounding neighbourhoods.

Incorporating community feedback into the planning process is crucial for addressing local concerns effectively. Engaging residents through forums, surveys, and public meetings allows for their preferences to be considered in the design and operational plans. To align development goals with community preferences, municipalities can adopt several strategic compromises and technological solutions. Implementing noise-reducing construction techniques, such as sound barriers or acoustic panels, can help contain noise from sports fields and courts; while scheduling activities during less disruptive times further minimizes disturbances. Additionally, creating buffer zones with landscaping, implementing effective traffic management strategies, and designing flexible usage plans can address noise, visual, and traffic impacts. By integrating these solutions, municipalities can ensure that new sports facilities meet development objectives while fostering positive relationships with local neighbourhoods. This comprehensive approach not only addresses immediate issues but also sets a constructive tone for future projects, aiming to turn potential NIMBY opposition into community-supported success.



Terry Piche has been active in the field of recreation since 1979. Starting as a frontline practitioner with no training, he has subsequently obtained diplomas, through distance learning, in both arena management and leisure services, while working his way through the ranks of supervisor, manager, and director. This passion for life-long learning is what he strives to instill in the next generation of recreation facility professionals. Today, his work focuses on monitoring legislative change in many of the complex regulations, codes and acts that impact recreation. Further, he collaborates with key governing authorities so that they are better informed of ORFA's leadership role in the recreation sector and how the association is investing its resources to assist their respective efforts in compliance. In addition, he captures industry experiences and best practices, and develops actionable, easy-to-implement and practical solutions that comprise components of ORFA training courses, which result in professional accreditation.



Tracy Eso is the risk assessment and Solutions Specialist in the Risk Management Department at Intact Public Entities. She has over 20 years' experience in the insurance industry - with expertise in insurance claims, risk management, and captive insurance. Her focus at Intact Public Entities is to research risks that municipalities across Canada are facing, develop ways to mitigate those hazards, and educate municipal clients in best-practice solutions to create resilience in the face of an ever-changing risk landscape. Tracy is an instructor for the Insurance Institute of Canada and has spoken at various industry conferences on topics ranging from climate change to liability claims.



Brad Putnam is currently ORFA's Information and Skills Development Coordinator. He is an experienced facilities management professional with a variety of experience in municipal facility operations and systems. Brad has established supervisory experience of various staff teams as well as third-party services including contract development and management.



Werner Schwar (OALA) is the Supervisor of Parks & Open Space Planning for the Department of Parks & Open Spaces Section at the City of Thunder Bay. He has extensive experience as a landscape architect and more. Werner has led many excellent city projects including a Jumpstart Accessible Playground and the Current River Greenway; one of the biggest urban parks in Canada.

Turfgrass Mixtures as a Sustainable Lawn Care Strategy by Dr. Eric Watkins

Monocultures are out, and mixtures are in when it comes to sustainable lawn care strategies. Lawns are subjected to various stressors, including snow mold and ice encasement in winter and severe drought and heat in summer. These challenges can lead to stand loss and weed encroachment. To combat these issues, new turfgrass cultivars have been developed to endure specific stresses. However, rather than relying on a single grass species, using a mixture of species can leverage the strengths of each, creating a more resilient and adaptable lawn.

Traditionally, most turfgrass research has focused on individual cultivars. However, research on grasslands has suggested that diversity leads to improved nitrogen use efficiency, better coverage, and higher ecosystem stability. Seeding lawns and other turf surfaces as mixtures capitalizes on the positive characteristics of different grass species, such as drought tolerance, disease resistance, and cold hardiness. By combining these traits, turfgrass managers can create a lawn that is better equipped to handle various environmental conditions, ensuring a more consistent and reliable turf performance.

Research at the University of Minnesota is currently investigating the use of turfgrass mixtures for low-input landscapes. This research aims to find the best combinations of grass species that require minimal maintenance while providing maximum resilience and performance. The research on shade tolerance of fine fescue species determined that strong creeping fescue and Chewings fescue thrive under tree shade while hard fescue doesn't do as well; however, hard fescue does a better job of surviving dry conditions when surrounding trees compete for soil moisture. The fine fescue species also differed in disease resistance, salt tolerance, and ice encasement survival. A mix of hard fescue, Chewings fescue, and strong creeping red fescue leverages the strengths of each species, producing a more resilient turf that can endure various stresses. A 40:40:20 blend of these species will perform well in full sun and 20:40:40 is recommended for shade.

Research on turfgrass for roadsides, where heat, salt, and drought present significant stresses, was conducted across 14 sites across Minnesota. This study examined six monocultures, 30 mixtures, and four currently used mixtures over two years. The findings indicate that mixtures containing more turfgrass species resulted in greater coverage over time. While weed coverage tended to increase over time, mixtures with a higher number of grass species experienced less weed encroachment. This approach not only enhances the durability and adaptability of a turfgrass stand, but also reduces the need for water, fertilizers, and herbicides, promoting more sustainable and environmentally friendly turf management.

In conclusion, it's essential to identify the specific environmental stressors and performance expectations for a lawn. Select grass species that can thrive under these conditions, decide on appropriate proportions for each species (this may take some trial and error), and consult with seed vendors about available cultivars. The National Turfgrass Evaluation Program website (maps.umn.edu/NTEP) can provide data on the performance of these cultivars in or near your region. By incorporating diverse turfgrass mixtures, lawn care professionals can create more resilient, adaptable, and sustainable landscapes that stand up to environmental stressors while reducing the need for intensive maintenance.



Dr. Eric Watkins is a professor in the Department of Horticultural Science and vice provost for distributed learning at the University of Minnesota. Eric received his Ph.D. in plant biology from Rutgers University. Current research activities involve germplasm improvement of several turfgrass species and projects investigating approaches to reduce winter damage on cool-season turfgrasses. He is also involved with cultivar evaluation and other turfgrass science research focused on low-input systems. In his administrative role, Eric provides leadership for online educational programs across the five-campus University of Minnesota system.

Utilizing Best Management Practices to Drive Sustainability at Your Facility and Advocate for Golf's Future by Kevin Doyle and Al Schwemler

Golf course superintendents in Ontario are committed to protecting both the environment and their local communities. Their role involves adhering to numerous regulatory requirements, which create a framework that superintendents must follow to ensure environmental compliance and sustainability. To aid these efforts, the Ontario Golf Superintendents' Association (OGSA) and the Golf Course Superintendents Association of America (GCSAA), in partnership with the United States Golf Association (USGA), created the Best Management Practices (BMP) for Ontario Golf Courses. This comprehensive document was developed by experts and vetted by peer superintendents, OGSA associate members, and the Toronto and Region Conservation Authority. It was created to promote and expand upon the sustainability of the golf industry through practical guidelines and strategies.

The BMP document includes a planning guide and template, which can serve as a blueprint for golf courses across Ontario to integrate these practices into their operations. The topics covered include planning and construction, irrigation, nutrient management, integrated pest management, and more. It integrates current regulations regarding integrated pest management and water-taking, providing superintendents with essential regulatory information and industry expert-recommended best practices to enhance their environmental efforts. Furthermore, the BMP underscores the need for improved communication of golf's positive environmental impact amid rapidly changing regulations. The BMP document helps superintendents effectively convey this commitment to environmental stewardship.

When it comes to sustainability, we must consider people, planet, and profit. The main drivers for adopting BMPs are professional commitment, community partnerships, cost savings, and growth of the game, alongside risk management and enhanced environmental protection. This guide acts as both an educational tool and a practical resource, aimed at golf course superintendents, owners, legislators, regulators, and community stakeholders. It includes actionable information on current environmental practices and suggestions for possible alterations to enhance sustainability. The guide is designed to be accessible and includes live links to regulatory items, making it an invaluable resource for anyone involved in golf course management. The ultimate goal of a golf course should be to ensure a safe environment for staff, golfers, the community, and the environment.

By adopting and implementing these practices, golf facilities not only comply with existing regulations but also contribute positively to their communities and the environment. Golf courses are encouraged to assess their current practices, plan for immediate and future improvements, and embrace BMPs as a fundamental part of their operational strategy. This proactive approach is presented as essential for the long-term sustainability of the golf industry and the preservation of the natural environments these courses inhabit. This BMP document is available on the OGSA website and the GCSAA has created an online tool for members to create their own facility-specific BMP plan of action. By adopting BMPs, Ontario golf course superintendents can continue to be champions of environmental stewardship, benefiting their communities, the environment, and the golf industry as a whole.



Kevin Doyle graduated from the University of Massachusetts, Amherst, in 1995 with a bachelor's degree in biochemistry and embarked on a career in golf course management lasting 17 years. Kevin also earned a master's in business administration from Southern New Hampshire University in 2010. He has authored articles in various trade magazines, including GCM. He began working with, and advocating for, the members and chapters of GCSAA as the regional field staff representative in 2012.



Al Schwemler is a former superintendent and the Past President of the Ontario Golf Superintendents' Association (OGSA). He holds a BSc in Agriculture from the University of Guelph and a BSc in Geology from the University of Windsor. Al's storied career includes experience at Essex G&CC, Westmount G&CC, Board of Trade CC, Toronto GC, and York Downs G&CC. Al continues to support the turf industry by serving on the OGSA Board of Directors and spearheading the recent BMP's for Ontario project through OGSA and GCSAA.

Meaningful Access in the Built Environment by Mike Greer

Accessible design benefits everyone! Considering accessibility when designing a new sports field, or when conducting renovations, is crucial for fostering inclusivity, ensuring legal compliance, enhancing user experience, promoting social equity, and providing economic benefits. It allows people of all abilities, including those with disabilities, to use and enjoy the sports field, creating a more inclusive community. In Canada, 64% of adults have a disability or live with or care for someone with a disability. Adhering to regulations such as the Accessibility for Ontarians with Disabilities Act (AODA) helps avoid legal penalties and promotes safety by providing safe and comfortable access to facilities. This inclusivity promotes equal opportunities for physical activities, and creating inclusive spaces that accommodate everyone, regardless of their physical abilities.

The Rick Hansen Foundation is a Canadian organization dedicated to improving the lives of people with disabilities by removing barriers and promoting accessibility. Established by Rick Hansen, a renowned Paralympian and advocate for people with disabilities, the foundation works to create an inclusive world where everyone can participate fully. Through initiatives such as the Rick Hansen Accessibility Certification™ program, trained professionals measure the level of meaningful access beyond building code, based upon the holistic user experience of people with varying disabilities affecting their mobility, vision, and hearing. Additionally, the foundation invests in research and innovation, supports education and awareness programs, and collaborates with communities and policymakers to advance accessibility standards and practices. The Foundation has been active in changing perceptions towards people with disabilities, establishing National AccessAbility Week, and distributing significant funding towards access grants and the BC Accessibility Grants Program.

There are several economic and social benefits of accessibility. Research indicates that accessible workplaces could enable more Canadians with disabilities to work or work more hours, thereby contributing significantly to the economy. This argument extends to the broader societal benefits of universal design, which aims to make environments usable to the greatest extent possible by everyone, regardless of age or ability. The concept of universal design goals within a space, including awareness, personalization, wellness, understanding, user comfort, and social integration. These goals are foundational to creating environments that are truly accessible and inclusive. Examples provided in the presentation illustrate how various aspects of universal design can be implemented, such as ensuring clear signage, providing diverse seating options, and incorporating technology to enhance accessibility.

The Rick Hansen Foundation's Accessibility Certification (RHFAC) is a comprehensive rating system that measures the level of meaningful access of a site, offering a roadmap for improvements and publicly recognizing organizations' commitment to accessibility. The certification process requires checks of several criteria and different certification levels are possible. Incorporating RHFAC into new or ongoing projects and policies demonstrates leadership in equity, diversity, and inclusion, can attract more diverse staff and customers, and is an essential step in future-proofing buildings against evolving accessibility standards. Accessibility is not just a code requirement but a fundamental aspect of creating inclusive communities where everyone can participate fully.



Mike Greer is on a mission to help those with a disability have a greater voice around accessibility, in the home, office, and travel. Born with a condition called Osteogenesis Imperfecta, he learned to adapt and deal with many challenges over the course of his life. In 2020 he joined the Rick Hansen Foundation as a Sr. Engagement Specialist for the Accessibility Certification program (RHFAC) based out of the Toronto office, focusing on cultivating relationships within the public sector, municipalities, and government entities.

Mike is a past member of the City of Guelph, Accessibility Advisory Committee. He currently is a board member at Guelph Independent Living & GW United Way, plus other local civic organizations and causes. These activities have given him greater opportunities to have a voice for inclusion for all. His speaking engagements bring both knowledge and a new perspective around people with a disability by using humour and thought-provoking questions in many of his engagements to further his message.

Mike also uses his social media persona of BloodSweatandWheels, to further his ability to share in many stories and information around his personal journey and other accessibility topics and issues. He has a passion for wheelchair racing, completing his first half marathon in September 2016, and his 3rd Marathon in January 2024. He is part of a strong adaptive racing community, from all over the world that shares a common narrative around adaptive sports, as well as working with Race Directors to make races more inclusive. He wants nothing more than to share his racing story with others providing them with a deeper insight and motivation around dedication and life goals.

Navigating Tenders and Contracts with Impossible Standards by Al Pinsonneault

Landscaping and snow plowing service providers often face challenges when dealing with contracts that require unrealistic standards. The presentation included various aspects of the industry, which often feature unrealistic expectations around service delivery times and quality standards. These challenges are exacerbated by unpredictable weather conditions and the physical limitations of equipment and labour. How can you bridge the gap between customer expectations and the practical realities of snow and turf management?

When it comes to snow plowing contracts, a significant emphasis is placed on the issues of insurance and liability. Commercial properties especially face increased risks associated with snow removal, including property damage and potential injuries. This often-unreasonable burden is placed on service providers to manage these risks without adequate support or fair compensation. It is important to have comprehensive insurance coverage and to negotiate contract terms to equitably distribute liability. A formal contract should include legal counsel in drafting, reviewing, and negotiating terms to protect service providers' interests. A solid contract will include dispute resolution mechanisms and clauses that allow for flexibility and protection for service providers. For example: "If the contractor defaults in its obligations, the Manager shall give notice to the contractors, whereupon the Contract shall have two business days to correct such breach. If the breach is not corrected within the 2-day period, this agreement may be terminated."

When integrating landscaping and snow removal services into a single contract, expectations should be outlined to manage the seasonal transition between services and ensure clear definitions of work scope, performance metrics, and payment terms for both service types. If you have the opportunity to work with government or municipal properties, there are additional bureaucratic processes, public accountability standards, and the pressures of maintaining these surfaces around busy event schedules. Unique properties also require additional clauses, such as specifications on how to maintain turf without having clippings accumulate on monuments in cemeteries. One example contract included the bizarre request of using livestock in place of mowing equipment, which may or may not be a feasible request for a lawncare company.

Fostering productive relationships with the client allows for a balanced approach to public and private sector contracts. Open communication, transparency, and collaboration are key to advocating for fair contracts that recognize the practical realities of service delivery and sustainability.



Al Pinsonneault established Al's Lawn and Garden in 1981 at the early age of 18. Al's motto, "He cares" hasn't changed in 42 years of business. What started as a small lawn cutting venture driven by a young entrepreneur has grown into a full service horticultural and landscaping company. Al also serves as the President for the Professional Lawncare Association of Ontario and on the organizing committee for the Ontario Turfgrass Symposium.

OM246 for Testing Soil Organic Matter Content by Corrie Almack, Steve Mann, Jeff Stauffer, Mike Kooy, and Michah Woods

Golf course superintendents care about soil organic matter (SOM) content because it directly impacts turf health and playing conditions. Organic matter is linked to soil structure, water retention and is a source of essential nutrients. However, SOM content can turn into a "too much of a good thing" situation, especially on sand-based greens. High SOM content can prevent drainage, increase disease pressure, and lead to slower, softer greens. Overall, maintaining appropriate soil organic content ensures a high-quality playing surface with consistent ball roll and durability.

The OM246 test was developed to accurately measure the SOM at different levels within the turfgrass rootzone. Regular testing will help the turf manager to ensure that cultural practices like topdressing and aeration are supporting their goals. By understanding how quickly organic material accumulates, turfgrass managers can adjust their maintenance practices (aeration, verticutting, topdressing, fertility inputs, PGR use, etc.) by interpreting observed trends over multiple years. This method, referred to as "total organic material by depth," evaluates organic content at specific rootzone depths.

Sampling is the first step in the OM246 process. Soil cores are taken and segmented at 2, 4, and 6 centimeters below the surface. It's recommended to take multiple samples from each green and test at least three greens to ensure accuracy. This approach accounts for variability and provides a reliable average for each depth. The second step is laboratory analysis. Unlike standard soil organic matter tests, the OM246 method measures the entire sample without discarding any components like roots or thatch. The sample is burned at 440 °C, and the mass lost through burning is measured. Interpreting the results is the third step. This test tracks how total organic material changes over time, compares it to other greens, and evaluates consistency within the same property. Recommendations are then made based on data points like sand application, core removal, and grass growth. This could mean increasing sand topdressing and organic matter management tactics if the surface is too soft or reducing them if the surface is too firm. Checking the particle size distribution of sand after burning the organic material provides insights into changes in the rootzone material. Interpretation of the results will differ on a case-by-case basis and can be used to develop a site-specific agronomic plan.

Using Rosedale Golf Club in Toronto as a case study, we observed that the particle size breakdowns for the upper fraction of the rootzone did not match that of the topdressing material. In fact, the percentage of fines and very fines in the soil were higher than the USGA specs recommend and the coarse and very coarse was lower. This suggests that the larger particles were not being incorporated into the rootzone, likely being removed by machinery, leading to a buildup of finer particles over time which could result in compaction and decreased air-filled pore space. The use of other practices like verticutting and vibratory rollers could be used in this case to improve the incorporation of the topdressing material into the dense canopy.

Testing is the first step to understanding your greens. By incorporating OM246 testing, turfgrass managers can make informed decisions on sand topdressing and organic matter management, ultimately enhancing the playability and durability of the greens.



Corrie Almack is a professional agronomist and is the President and Owner of Almack Agronomic Services. He has been serving the golf and agricultural industries for over 40 years, providing soil analyses and designing nutrient management programs. Corrie holds a bachelor's degree in Agronomy and Crop Science from the University of Guelph and he serves on the Board of Directors for the Ontario Turfgrass Research Foundation.



Steve Mann has been co-consulting with DCS Agronomic Services for over a decade. He is an I.S.A. Board Certified Master Arborist with extensive experience evaluating the health, safety, and environmental significance of individual trees and stands of trees in both urban and rural settings. Steve specializes in large-scale tree inventory, evaluation, management, research, and impact studies. He has managed hundreds of projects related to the identification of important natural features and the significance and/or sensitivity of these features to development. He has developed numerous master plans, arboricultural management plans and replanting plans for golf courses, parks and municipal properties. Steve's more than twenty years of industry involvement has enabled him to interact with numerous provincial and municipal officials on matters regarding tree conservation and large-scale planning applications. He has provided education and training across Canada on arboriculture and green site evaluations and taught a course on Soils for Horticulture at Humber College.



Jeff Stauffer began working in the golf industry almost 40 years ago and graduated from the University of Guelph in 1993. Jeff's interest in maintaining golf courses while respecting the environment has included an eagerness to learn and willingness to share his own experiences to colleagues and the industry alike. During his tenures at both Rosedale Golf Club and Credit Valley Golf and Country Club, Jeff has consistently maintained a quality conditioned golf course, ensuring the fundamentals of turf management are in place to align with the expectations of a supportive membership. Throughout these many golf seasons, Jeff's philosophy of promoting healthy soils and environments has led to success in growing healthy turf while maximizing the performance of resources and minimizing the reliance on others.



Michael Kooy is an independent agronomist and Master's of Science student in the Department of Plant Agriculture at the University of Guelph. Michael has been working under the mentorship of Corrie Almack for the past year. His MSc research has focused on disease forecasting a foliar disease of onion in Ontario.



Micah Woods established the Asian Turfgrass Center (ATC) in 2006 to develop and provide turfgrass information for the golf and sports turf industry. Through the ATC, he provides turfgrass advisory and soil testing services to golf clubs, sports facilities, and select clients around the world. He has been an Adjunct Professor in the Department of Plant Sciences at the University of Tennessee since 2009, and he has been director of the PACE Turf information service since 2022.

Overseeding for Sports Field Victory by Dr. Eric Lyons

Overseeding is important for maintaining the health and playability of turfgrass on sports fields. Overseeding introduces new grass seeds into existing turf to enhance density, improve resilience, and ensure a consistent playing surface. Overseeding helps to fill in bare spots, reduce weed invasion, and repair damage caused by heavy use and environmental stress. For sports fields, which endure high traffic and intense activity, overseeding ensures that the turf remains robust and visually appealing. By integrating overseeding into regular maintenance schedules, sports field managers can extend the life of the turf, optimize its performance, and provide a safe, attractive playing environment throughout the playing seasons.

Victory in the context of turfgrass management is setting and then meeting clear standards for turfgrass quality and performance. Sports field managers need to identify their goals, understand their current field conditions, and continuously innovate to improve their turfgrass management strategies. Overseeding is a tool that can be used to achieve quality standards.

For overseeding to be successful basic turfgrass management plans must be in place including: mowing, fertilization, irrigation, and compaction management. Proper mower maintenance and mowing practices are crucial for turfgrass health and assures the new seedlings are properly maintained and not damaged by the mower. Fertilization regimes should be appropriate for the growth rate and soil type to optimize the growth of the existing turfgrass and the newly germinated seedlings. The correct timing and rates of watering are also pivotal in ensuring seed germination and early seedling growth. Aeration prior to overseeding can improve water infiltration and soil structure in addition to providing soil at the surface to further facilitating seed establishment.

Early research on overseeding conducted at Iowa State University emphasized the playability of sports fields throughout a football season and concluded high rates of seed were critical. The first overseeding work at Guelph showed the timing of seeding and its impact on weed control and turfgrass recovery, indicating that heavy and frequent overseeding can significantly reduce weed populations like dandelion, while improving turf cover and persistence throughout the entire summer playing season as opposed to just in the fall football season. Further research on overseeding is underway at the Guelph Turfgrass Institute which investigates the intersection between traffic, grass species, and iron-based herbicide.

Overseeding requires significant time and resources, so a well-planned approach that considers the specific environmental and usage conditions of their field will ensure the biggest return on investment. This highlights the importance of integrating solid agronomic practices with science-based evidence to achieve the best outcomes in turf management.



Dr. Eric Lyons is an Associate Professor in the Department of Plant Agriculture at the University of Guelph. Dr. Lyons specializes in nutrient management, stress physiology and plant competition in sports field, golf course and landscape turf. In addition, Dr. Lyons oversees extensive testing of new emerging products for turfgrass managers and focusses on outreach and education to further the turfgrass industry.

Regenerative Lawn Care by Michael Stangl

Regenerative lawn care is an approach to maintaining lawns that focuses on creating and sustaining healthy, resilient, and biodiverse ecosystems. It goes beyond traditional lawn care methods by emphasizing practices that restore and regenerate soil health, enhance biodiversity, and reduce the need for inputs like fertilizers and pesticides. I have done a deep dive into the ecological and biological aspects of soil management, driven by the adverse effects observed from conventional fertilizer and spray programs such as toxicity and soil degradation.

My philosophy of regenerative lawn care is about building resilience, health, and security by improving soil structure, enhancing microbial diversity, and reducing inputs. There are some unintended consequences of traditional lawn care practices, including soil compaction, loss of organic matter, and disruption of the natural soil microbiome. By including the role of microbial life in the soil, we can find a stable balance of soilborne bacteria and fungi that counteract these issues, leading to healthier, more resilient lawns that contribute positively to the environment.

We focus on the significance of a balanced microbial ecosystem and the detrimental impact of nitrogen-heavy fertilizers on soil biology. We use a fungal-dominated compost to create a potent extract we've called "Nature's Brew." This approach not only revitalizes the soil but also enhances plant health and reduces the need for chemical treatments. We have seen effectiveness in the field by conducting soil health assessments and have seen the positive impacts with our own eyes. Theoretically this could also improve carbon sequestration in treated lawns.

Plants can harness soilborne microbes to get nutrients, a process called the "rhizophagy cycle", and this can be exploited to boost growth and outcompete weeds. This cycle, crucial for nutrient exchange and plant health, relies on a complex soil ecosystem which can be disturbed using pesticides that kill both good and bad organisms. Regenerative practices are grounded in a deep understanding of ecological succession, the soil food web, and the need for a systems-thinking approach to lawn management.

The practical aspects of regenerative lawn care are not just theoretical ideals but are backed by real-world results. Through a mix of personal anecdotes, scientific research, and case studies, we have developed a strategy for transitioning from conventional to regenerative practices. Regenerative lawn care includes the use of microbial-rich composts, targeted mineral additions, and a commitment to understanding the unique biological needs of each lawn.



In the dynamic realm of regenerative lawn care and sustainable landscaping, **Michael Stangl** stands as a seasoned visionary with over 43 years of unwavering dedication. His journey commenced in 1981 when, at the young age of 16, he co-founded Stangl's Lawn Spray, setting the stage for a remarkable career.

With a relentless thirst for horticultural knowledge, Michael pursued a year of Horticulture at Niagara College in 1985. In 1986, he furthered his expertise by attending the 17th Annual Turf Managers Course at Guelph University, a pivotal moment in

his educational journey. However, Michael's quest for innovation didn't stop there. He embarked on a remarkable journey of exploration, delving into organic, natural, and chemical approaches to lawn care. This extensive research and experimentation culminated in his pioneering work in regenerative lawn care. In 2014, driven by a global perspective, he earned a Sustainable Ag Certificate from renowned experts Graeme Sait and Joel Williams from NTS Australia in Guelph. His global quest for knowledge continued with immersive courses, including Dr. Elaine Ingham's Soil Food Web Course and Microscope Intensive Course at Farming Secrets Australia in 2014 and 2015, respectively.

Michael's expertise isn't confined to scholarship; he's also a captivating storyteller and educator. He's graced prestigious events, such as the Innovative Farmers Association of Ontario's DIGGING DEEPER – ONline event in 2021 and the 2023 February Innovative Farmers Association of Ontario – Composting, Biosolids, and Organic Amendments – London ON. Throughout his career, Michael garnered accolades and recognition, including the Niagara This Week's Readers' Choice Diamond and Platinum Awards in 2021 and 2022, respectively. In 2023, his unwavering commitment to excellence was once again acknowledged when he received the Niagara This Week's 2023 Readers' Choice Diamond Award. Today, Michael Stangl stands as a luminary in the field of regenerative lawn care, armed with decades of wisdom and a vision for a greener, more sustainable world. Join him at the 33rd Annual Ontario Turfgrass Symposium to embark on a journey into the frontier of regenerative landscaping.