

Winnipeg Greenspace Plan and Biodiversity Policy

State of the Landscape at a Glance

September 2025

State of the Landscape at a Glance

The *State of the Landscape at a Glance* is a short report that gives an overview of Winnipeg's greenspaces, natural corridors, and biodiversity. It provides a summary of key insights to help guide the next steps and recommendations for Winnipeg's Greenspace and Natural Corridors Plan (Greenspace Plan) and Biodiversity Policy.

The State of the Landscape Report provides:

1. A vision, guiding principles and key focus areas established through a co-development process
2. An overview of Winnipeg's natural landscapes
3. An introduction to Indigenous stewardship and relationships with the natural world
4. A 're-thinking' of infrastructure
5. A methodology for redefining the value of natural areas
6. A review of potential financial and regulatory tools for protection, acquisition and restoration of natural areas
7. Key considerations for future phases

City Council has directed the public service to create a *Greenspace and Natural Corridors Plan* and a *Biodiversity Policy*. This direction comes from policies in [OurWinnipeg](#), [Complete Communities](#) and the [Winnipeg Parks Strategy](#).

The Greenspace Plan and the Biodiversity Policy are the first of their kind for Winnipeg. They aim to protect, restore, and manage greenspaces, natural areas and biodiversity as the city grows and develops—at all levels and across different areas of City operations.

The Greenspace Plan will set priorities for the planning and management of greenspaces and natural corridors in Winnipeg. As a

by-law, it will ensure natural areas and features are properly valued, protected and cared for, for the benefit of all living things, now and in the future.

The Biodiversity Policy will help reduce threats to biodiversity and make sure its benefits are considered in everyday decisions across city services.

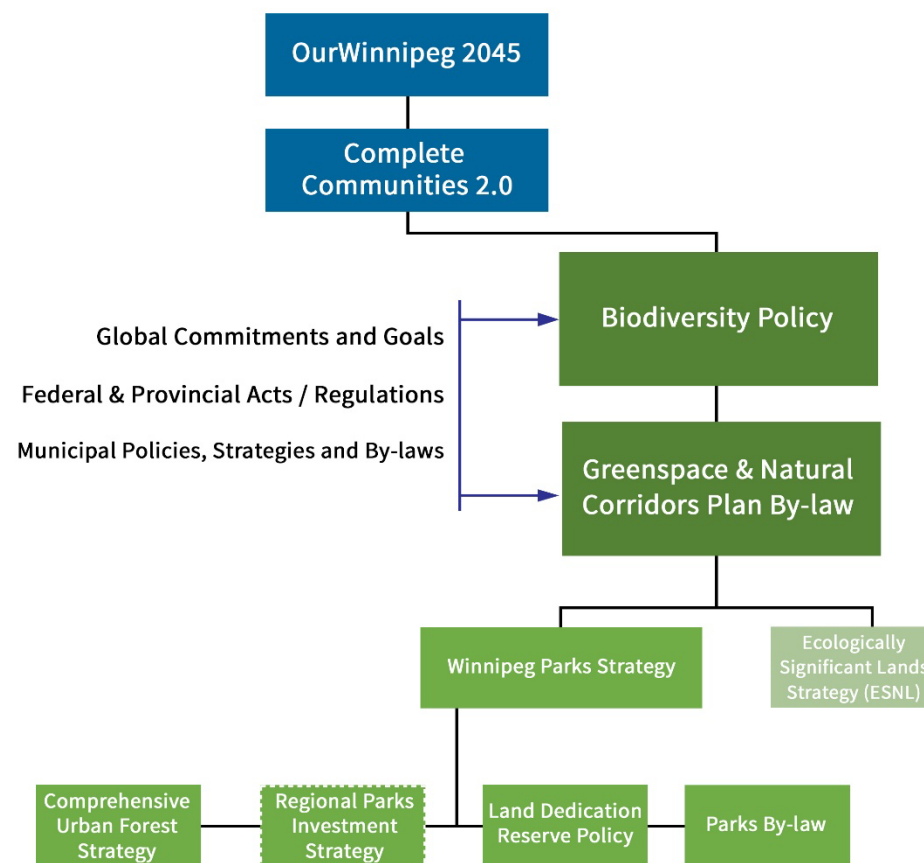


Figure 1: Biodiversity Policy and Greenspace Plan Policy Alignment

Why are greenspaces and biodiversity important for Winnipeg?

Biodiversity is vital. It supports healthy ecosystems that provide clean air and water, food, shelter, and climate regulation. Biodiversity also helps ecosystems recover from and adapt to climate change. Urban greenspaces like parks, rivers, and tree-lined streets play a key role in cities. They provide habitats and link natural areas to support biodiversity and promote the health and wellness of all living things.

Through a deep sense of kinship and respect for nature, Indigenous knowledge systems have sustained biodiversity for generations. Both Western and Indigenous science show that access to quality natural spaces improves physical and mental health, strengthens communities, and enhances overall well-being. The City plays an important role in protecting these areas and making sure everyone has fair access to them now and in the future.

Biodiversity is at risk worldwide, with species currently going extinct tens to hundreds of times faster than in the past. The main threats to biodiversity in Winnipeg include:

Habitat loss and degradation: both urbanization and disruption of natural processes are some of the threats to healthy ecosystems.

Invasive alien species: the impact of plants, animals and diseases that can outcompete native populations and degrade their habitat. Invasive species can gain a foothold when ecosystems are degraded, and when climate change creates more favourable conditions for non-native species to thrive.

Pollution: harms species directly and damages their habitats, which can change the health and presence of plants and animals in an ecosystem. For example, when nutrient-rich runoff flows into rivers, it can cause algae blooms downstream.

Climate change: affects biodiversity by altering the conditions that plants and animals need to survive. These changes can lead to impacts such as habitat loss, shifting when flowers bloom, and disruptions to migration patterns. All of these changes undermine the natural balance of ecosystems.

In response to these threats, international agencies and national governments have agreed to commitments to improve protections and restore ecosystems around the world.

The Montreal Pledge—On July 13, 2023, the City of Winnipeg (City) Council signed the *Montreal Pledge*. By signing the pledge, the City agrees to implement the 15 actions of the pledge. This commits the City to protect and restore biodiversity through governance, partnership, management, and education. Actions range in scale and scope from achieving regional goals to highly specific targets. Many of the policies within the *Greenspace Plan* and the *Biodiversity Policy* align with this initiative.

Reduce Threats to Biodiversity

Action 1: Integrate biodiversity into territorial and regulatory planning.

Action 2: Restore and rehabilitate ecosystems and their connectivity.

Action 3: Conserve existing natural environments through protected areas and other effective and equitable measures.

Action 4: Ensure the conservation and recovery of vulnerable species, both wild and domestic, and effectively manage their interactions with humans.

Action 5: Control or eradicate invasive alien species to eliminate or reduce their impacts.

Action 6: Reduce pollution from all sources to levels that do not adversely affect biodiversity, ecosystem functions or human health.

Action 7: Aim to eliminate plastic waste.

Action 8: Aim to reduce pesticide use by at least two-thirds.

Action 9: Contribute to climate change mitigation and adaptation measures through ecosystem-based approaches.

Share the Benefits of Biodiversity

Action 10: Aim to ensure that urban agriculture, aquaculture and forestry zones are accessible, sustainably managed and contribute to food security.

Action 11: Prioritize nature-based solutions to protect against extreme weather events and hazards and to regulate air and water quality.

Action 12: Increase the amount of green and blue spaces and improve equitable access to them.

Solutions, Governance, Management and Education

Action 13: Integrate biodiversity into governance framework and public policies. And increase financial resources allocated to its conservation and sustainable use.

Action 14: Through citizen education and participation, help ensure that people and businesses are encouraged to make responsible choices toward biodiversity and have the resources and knowledge to do so.

Action 15: Ensure the equitable and effective participation of Indigenous peoples and local communities in decision-making and in the process of knowledge acquisition and transmission.

Co-Development Process

Winnipeg's Greenspace Plan and Biodiversity Policy are being created through a co-development process facilitated by the [Centre for Indigenous Environmental Resources](#) (CIER). Co-development is when Indigenous and non-Indigenous governments and organizations work together to co-create laws, policies, and plans in areas of common concern, such as urban planning. Contributions from each Co-Development Team member are incorporated into the planning process and outcomes of this initiative.

Co-development of this project aligns with the Winnipeg's Indigenous Accord, United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), and the Montreal Pledge.

Participants on the Co-Development Team include:

- [Assembly of Manitoba Chiefs](#)
- [Manitoba Métis Federation](#)
- [Treaty One Nation](#)
- [Southern Chiefs' Organization](#)
- [Manitoba Keewatinowi Okimakanak](#)
- [Tunngasugit Inuit Resource Centre](#)
- [City of Winnipeg](#)

The Co-Development Team has worked together to shape the Vision, Guiding Principles and Key Focus area for the Greenspace Plan and the Biodiversity Policy.

WINNIPEG'S GREENSPACE VISION								
Winnipeg is a shining example of a healthy, sustainable, inclusive and beautiful city that is responsibly committed to meaningful truth and reconciliation through collaborative decision making with First Nations, Inuit, and Métis. By restoring ecosystems, improving biodiversity, and expanding green spaces, Winnipeg is a resilient city committed to climate adaptation and mitigation. Grounded in Indigenous and Western knowledge and science, we are committed to the wellbeing of future generations.								
GUIDING PRINCIPLES								
Urgency	Core Value	Multiple Knowledge Systems	Fair and Safe Access	Global and Local Context	Collaborative Process	Accountability	Policy Influence	Resourcing
The time to act is now	The Health of the Natural World and Human Life is intertwined and connected	Utilize the strength of Indigenous and Western knowledge, science, and lived experience	Provide all people with fair and culturally safe access to opportunities for recreation, social interaction, active living, land-based healing and education, and connections with nature	Achieve local goals while connecting to global commitments	Align with Truth and Reconciliation <<UN Declaration>> Calls to Action	Establish clear metrics and ensure ongoing monitoring, evaluation, and effective response	Ensure cohesive integration	Support action through sufficient and secure long-term funding and human resources
KEY FOCUS AREAS								
Protecting Our Water	Research & Knowledge	Spiritual Connection, Rest & Recreation	7 Generations Principle	Sacred & Culturally Significant Spaces	Native Plant Species			
Ensure that water that flows through communities is clean and safe for use downstream, and provide access to riverbanks and shorelines	Share information that can sway hearts and minds, and offer visitors an immersive and interactive experience	Provide spaces that can support health and well-being, and opportunities for spiritual connection to the land	Make decisions that plan for and invest in seven generations (150 years) from today	Ensure Indigenous histories and protocols are acknowledged, understood, and honoured in public areas	Meaningfully reintroduce native plant species into the natural landscape to restore ecosystems and for use by all			

Table 2: Vision, Guiding Principles and Key Focus Areas

An overview of Winnipeg's natural heritage

Winnipeg's location, at the confluence of the Red and Assiniboine rivers, is fundamental to its history, development, and identity. The rivers have shaped the city's geography, transportation routes, and cultural heritage from time immemorial.

For thousands of years, Indigenous people have had respectful, two-way relationships with the land we now call Winnipeg. These relationships are guided by values such as care, ceremony, and responsibility. They are rooted in teachings such as the Seven Generations philosophy and the worldview that land is not a possession, but a living relative to be respected and cared for.

Watersheds—Watersheds are areas where all surface water (rain, snow melt, etc.) drains into a common body of water, such as rivers, creeks, lakes, etc. Winnipeg is located within the Lake Winnipeg Basin, which includes major rivers such as the Red, Assiniboine, and the Winnipeg rivers. Water flows into the watersheds within the City from the south, originating in North Dakota and Minnesota, and from the west, traveling through Alberta and Saskatchewan. All of this water then flows into the Hudson Bay drainage basin. These water connections are vital for fish and bird migration, nutrient cycling and seasonal flow regulation.

There are five sub-watersheds in the Winnipeg area that form part of the Lake Winnipeg Basin: the La Salle River; the Seine River; the Lower Assiniboine; the Cooks Creek/Devils Creek; and the Netley Creek/Grassmere Creek sub-watersheds (*Figure 2*).

These river systems form some of Winnipeg's most significant natural corridors and have supported food, medicine and travel since time immemorial.

Vegetation & Ecology—Winnipeg is located within the northern extent of the Tall-grass Prairie ecosystem, which historically stretched from Winnipeg south to the state of Texas. One hundred and fifty years ago, large herds of bison, elk, and antelope ranged across the Tall-grass Prairie, which helped to maintain the ecosystem through grazing and other activity such as bison “wallows”. Wallows are made when the animals roll on the ground, create depressions that gather rainwater, which in turn provide habitat for other plants and animals. The ecosystem was also managed by Indigenous peoples through practices such as controlled burns. Today, less than one percent of the original Tall-grass Prairie ecosystem remains. It is now considered one of the most endangered ecosystems in the world.

Habitat types—The following habitat types are found within the natural areas in Winnipeg:

- **Prairie:** Rare and endangered, often found in utility corridors or undeveloped parcels
- **Forests:** Remnant forest patches such as aspen and oak forests
- **Riparian/Riverbottom Forest and Riverine Environments:** Areas of land along rivers and creeks, critical for erosion control and connectivity
- **Wetlands:** Natural and constructed (e.g., stormwater retention basins)
- **Open Water:** the area of water within rivers, ponds and wetlands where it is deep enough that plants do not cover the surface

These habitats provide everything a species needs to survive (like food, water, shelter) and provide essential ecosystem services such as flood control, air purification, and cooling within an urban setting.

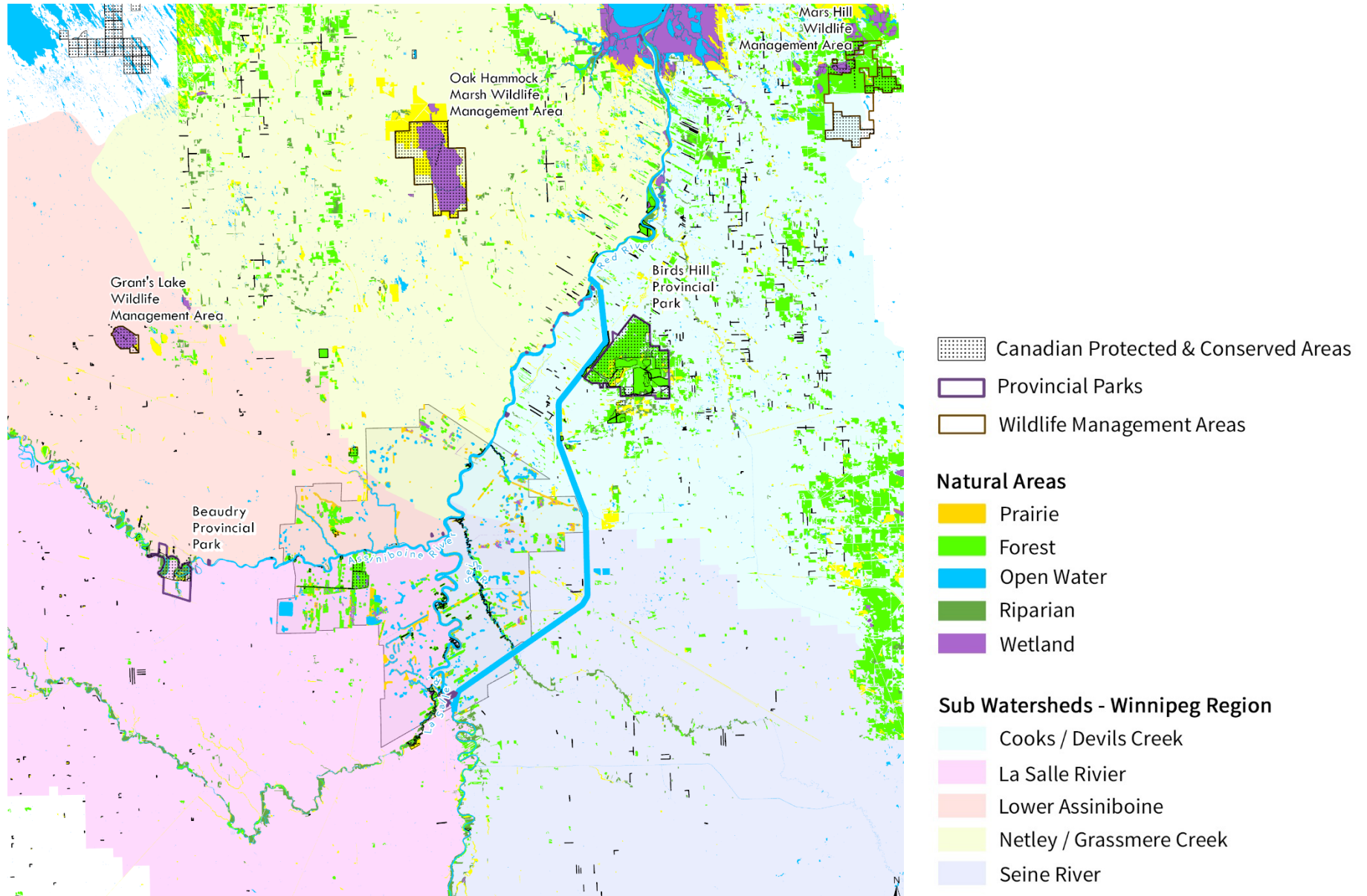


Figure 2: Sub Watersheds and Regional Natural Areas in the Winnipeg context

Natural Corridor Connectivity & Distribution—Habitat corridors are linear natural areas and greenspaces that help to connect larger habitat patches. Connecting these patches allows animals and plants to travel or spread from one area to another, which is vital to maintaining ecological integrity and supporting biodiversity.

Natural corridors include greenways (vegetated land corridors) and blueways (water and riparian zones). Their ecological function supports wildlife movement and migration, genetic diversity, habitat continuity, climate adaptation, water quality and flood control, pollination and seed dispersal, and human health and wellness.

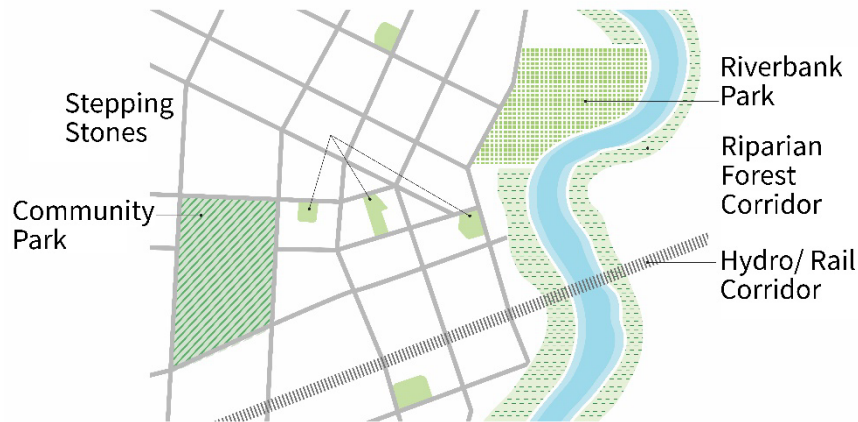


Figure 3: Greenspace connectivity through the urban environment

Smaller habitat patches may be viewed as “stepping stones” that enable some species to move between large patches. Stepping stones are particularly important in fragmented landscapes, like cities, where true habitat corridors may not be available. To support the movement of plants and animals, it is important that stepping stones are close enough to one another (Figure 4). If the critical gap between stepping stones is too far for a species to cross, the patches will remain isolated.

Therefore, even the loss of a small stepping stone can prevent movement.

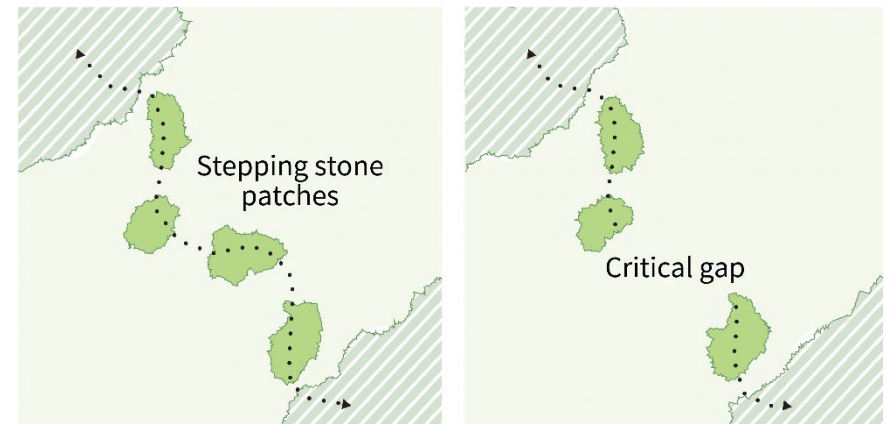


Figure 4: Connected habitat patches versus non-connected habitat patches

Winnipeg’s greenspace and biodiversity current state

City of Winnipeg inventory—The City currently has over 3,400 hectares of parks and City-owned open space lands, including golf courses, cemeteries, and leased lands. Other City-owned lands and assets that contribute to the overall greenspace and ecological network include:

- almost 300,000 City-owned trees in parks and along streets
- boulevards, drainage ditches and bioswales
- stormwater retention ponds

This network of greenspaces is supplemented by landscapes and natural areas owned and maintained by other public and private property owners. For example, The Forks, Manitoba Hydro corridors, provincial lands such as school yards and Provincial Parks, as well as

individual properties in neighbourhoods throughout the city play an invaluable role in providing greenspaces.

All these lands and waters contribute to the current ecological network within the city and beyond. They support connectivity and habitat and allow people to experience the natural environment within an urban setting.

Quantifying landcover city wide—Approximately 38% of the surface area within the city limits is occupied by living, pervious landscapes and land uses ranging from agriculture to waterways. The areas listed below do not differentiate between city owned versus other landowners (such as provincial, federal or private).

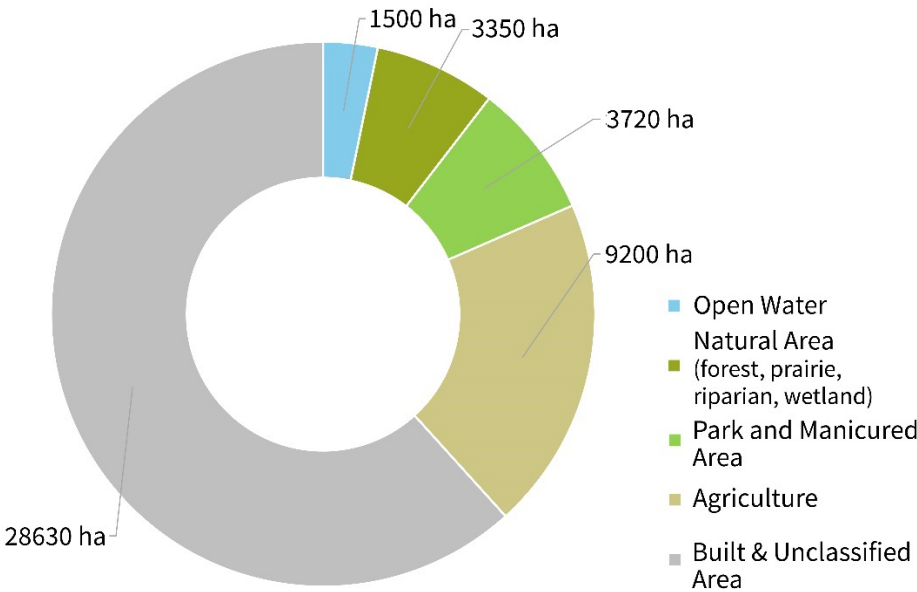
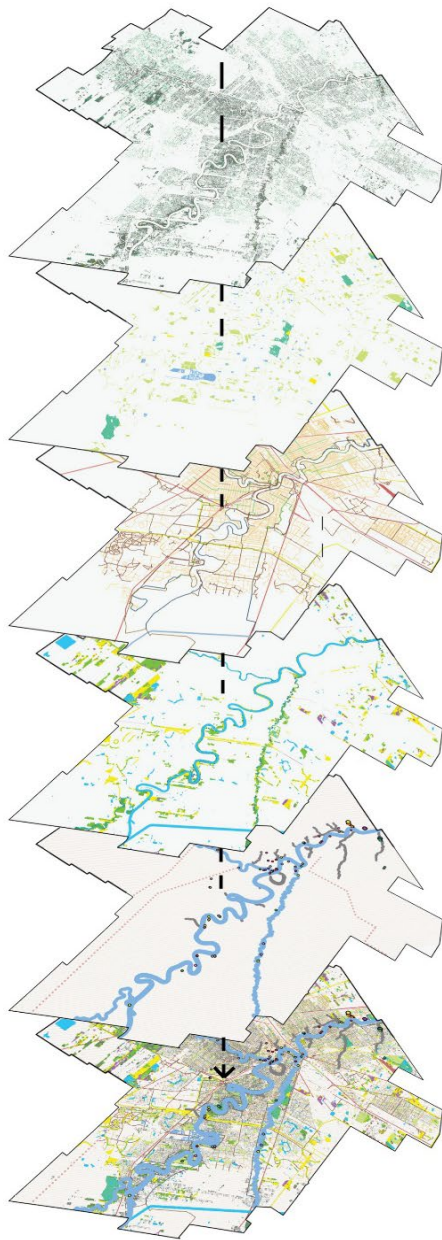


Figure 5: Landcover Types Within the City of Winnipeg

Identifying Priority Natural Corridors—The identification of natural corridors is essential to maintaining, restoring and enhancing ecological connectivity. As urban development continues to fragment natural systems, a strategic and science-based perspective is needed to prioritize areas. Protecting and restoring these areas will allow for sustained species movement, water flow, and ecosystem services.

The approach to identify a network of priority natural corridors builds on the City’s existing ecological datasets, Indigenous knowledge systems, and best practices in landscape ecology. The identified corridors are a composite of natural, cultural, and constructed features in the city. This includes the urban tree canopy; parks and manicured greenspace; urban infrastructure; natural areas; and culturally significant lands (Figure 6).



Urban Tree Canopy

- Riparian Tree Canopy
- Upland / Street Canopy

Parks & Manicured Greenspace

- Parks
- Golf Courses
- School Grounds
- Cemeteries
- Recreation Centre Grounds

Urban Infrastructure Corridors

- Enhanced Assets (rain gardens, bioswales, etc.)
- Neighbourhood Greenways
- Primary Dike System
- Hydro Transmission Corridors
- Trails & Active Transportation
- Walkways
- Red River Floodway
- Rail Corridors

Natural Areas

- Prairies
- Open Water
- Wetlands
- Forests (Upland)
- Riparian Forests

Culturally Significant Lands

Composite of All Sites

Figure 6: Layered Maps to Identify Priority Natural Corridors

Indigenous Knowledge and Stewardship

First Nations, Inuit and Métis Peoples in the Winnipeg area each hold distinct understandings of the world—how it came to be, and how to stay in proper relationship with it.

Indigenous Peoples have lived in and with these lands for thousands of years before the arrival of European settlers and their governance systems. Their communities have distinct governance systems, often rooted in kinship, oral traditions, and reciprocal relationships with the land. They have established diverse systems to organize people and resources and actively shaped the landscape through traditional stewardship practices.

Indigenous laws, governance, and stewardship practices vary across and within Indigenous cultures, and include a wide range of practices to actively influence the natural environment. Pushing back against stereotypes of pre-contact people as passive hunters and gatherers, Anishinaabe, Ininew, Dakota and Métis researchers and scientists have documented numerous historical stewardship practices relevant to this region—practices that have been adapted and adopted in current land stewardship, including:

- Managing the movement of bison and improving the soil through controlled burns
- Sustainable harvesting of plants and animals
- Agricultural practices, such as corn and wild rice cultivation
- Forest management and berry production through controlled burns

Indigenous Knowledge is dynamic and adaptive and continues to evolve through engagement with new tools and challenges such as climate change, and the impacts of technology and urbanization.

Systems Thinking and Planning Through Indigenous Lenses—

Indigenous knowledge systems are built on strong relationships and the idea that everything in nature is connected. They pay attention to the relationships between water, soil, animals, seasons, and ceremony. This systems-based view is well-suited to address complex challenges such as climate change and biodiversity loss. Indigenous science is place-based, grounded in observation, intergenerational knowledge and accountability to all living things—strengthened through storytelling, and lived experience.

Elders teach that everything is interconnected and interdependent; that all living things have a spirit and that the land and spirituality are inseparable. Land is more than just property. Land is where social systems, spirituality, culture, and relationships, among other things around us, are derived from. Hunters giving thanks to their food sources for giving their lives so that their bodies may be nourished is just one small example of the principals of interconnectedness and respect that are embedded in First Nations teachings.

The Journey So Far (2023) Laren Bill and Jim Bear

Braiding Knowledge—Two-Eyed Seeing as a guiding approach calls for equal respect and attention to both Indigenous and Western ways of knowing. Indigenous worldviews include spirit, ceremony, and the understanding that everything in nature is connected. These elements are often overlooked or misunderstood within Western frameworks. Western science, on the other hand, tends to turn things into numbers so they can be measured or counted and break things down into smaller, simpler parts to try to understand it, versus looking at the whole. This can contrast sharply with the holistic nature of Indigenous perspectives. Co-creating a plan that draws from both knowledge systems requires holding them side by side—recognizing each as valid and valuable. Elders Murdena and Albert Marshall, who introduced the

concept of Two-Eyed Seeing, describe this approach as “braiding” knowledges: weaving distinct strands together to form something new, while preserving the integrity of each individual thread.

Key lessons that may be “braided” into the planning for protection and restoration of greenspaces and biodiversity include:

- Adopt a holistic view of ecosystems, that incorporates stewardship, ceremony, governance, food systems, and cultural identity
- Acknowledge Indigenous people and communities as Rightsholders as highlighted by the UNDRIP, TRCC and MMIWG
- Adopt a perspective of being in a reciprocal relationship with the natural world (and our non-human relatives)
- Promote harvesting of plants to support reciprocal relationships with the land
- Employ and foster a sense of responsibility to the natural world
- Employ Indigenous knowledge holders and land stewards in the ongoing implementation of the plan and by-law
- Adopt an intergenerational perspective—acknowledging the past and focusing on the long-term (inter-dependent) health of people and land
- Make space for ceremony and acknowledge the sacred

Rethinking Infrastructure

The City is structured around networks of natural and engineered infrastructure. These networks deliver the goods and services required for a modern urban economy to function. Conventional ‘grey’ infrastructure (such as pipes, culverts and roads) is typically used to

deliver essential services like clean drinking water, stormwater management and flood mitigation. These technologies often result in environmental and economic impacts including greenhouse gas emissions, high embedded energy consumption, depreciation of investments, and the erosion and destruction of natural areas.

In recent years, many municipal asset managers and climate scientists have pushed to reframe natural areas and greenspaces as a form of “green infrastructure” that provide ecological, social and economic benefits in urban areas. Unlike grey infrastructure, green infrastructure uses vegetation, soils and natural processes to deliver services in a more sustainable and resilient way.

Green Infrastructure—Green infrastructure includes both natural areas and built vegetated features that mimic natural processes to provide environmental, social and economic services. This type of infrastructure provides many benefits by managing essential services like water, air quality, and temperature, while also offering spaces for recreation and enhancing biodiversity. Green infrastructure, whether natural assets like forests and wetlands or enhanced assets like rain gardens, uses biological processes to do some of the work typically performed by mechanical or ‘grey’ infrastructure.

Green infrastructure examples:

- Trees and urban forests
- Parks and open spaces
- Wetlands and river corridors
- Green roofs and walls
- Bioswales and rain gardens

Cultural Infrastructure—Foundations for Biodiversity and Resiliency



Figure 7: Rethinking Infrastructure Categories

“Cultural Infrastructure” (CI) is an important but often overlooked dimension of greenspace planning. In the context of Indigenous-led approaches, CI represents the deep interconnection between land, governance, knowledge systems, and community well-being. Unlike conventional infrastructure, which often separates building from nature, CI recognizes human-built systems as part of living landscapes—connected with ceremony, stewardship, food systems, governance, and cultural identity.

Cultural Infrastructure can be defined as human-built systems and structures deeply intertwined with cultural practices, Indigenous governance, and ecological stewardship. These systems foster the health and well-being of both communities and the land, acting as sophisticated nature-based solutions that protect and regenerate

biodiversity. This understanding is foundational to the success of Winnipeg’s Greenspace Plan and Biodiversity Policy. It bridges Western perspectives and research and Indigenous knowledge and sciences, in the interest of ensuring that land-based interventions are grounded in place-based knowledge, reciprocal relations, and sustainability. This is fundamental to protecting and enhancing biodiversity and to embedding resiliency in city decision-making.

Indigenous knowledge systems position resilience as a relational process, deeply rooted in reciprocal relationships between people, land, water, and all living beings. To effectively integrate this knowledge into municipal planning and decision-making, the City must prioritize the restoration of cultural landscapes—protecting and restoring spaces where traditional harvesting, teaching and governance practices are actively sustained.

Key elements of this approach include:

- **Climate-conscious planning:** Ensuring climate change mitigation and adaptive strategies are embedded within all phases of planning, development and restoration
- **Community governance stewardship:** Supporting Indigenous-led governance structures that uphold stewardship and relationships with the land
- **Water protection and food sovereignty:** Planning that aligns with local ecological cycles, protecting water sources and revitalizing traditional food systems
- **Intergenerational learning:** Creating opportunities for knowledge transmission that prepares future leaders to navigate environmental uncertainty with cultural and ecological wisdom

By embedding CI into each phase of ecological planning, the City not only restores and protects ecosystems, but also renews the cultural systems that have sustained them for generations. This integrated approach ensures that environmental protection is inseparable from cultural revitalization and community resilience.

Ecosystem Services Valuation

Nature located within the city provides many benefits to residents, which are often undervalued. These are life sustaining benefits such as: the control of the flow, storage and quality of water; cleaning the air; capturing and storing carbon dioxide from the air; and providing a home and food for animals, plants and other living things. Even though these ecosystem services are absolutely needed for both ecological and human well-being, they are rarely included in policy or investment decisions.

Value methodology—Ecosystem service valuation is a method used in Western science that uses money-based methods to determine how much the benefits we get from nature, such as clean water, fresh air, and recreation, are worth. These include both direct benefits (like building energy savings from tree canopy) and indirect benefits (such as improved water quality from wetlands).

Putting a value to the benefits of nature is a way to make invisible benefits visible and helps with decision making. This offers a new way of thinking to help guide city planning, biodiversity protection, and making smart investments in green infrastructure.

This valuation offers a conservative estimate of the value of nature in Winnipeg. It focuses on those ecosystem services that can be measured with available data and established economic methods.

For this report, ecosystem valuation focused on two of the four ecosystem services: Regulating and Supporting (Table 2), which are both closely linked to biodiversity. Many other important values—especially cultural, mental health, physical health, farming and harvesting—are not included but remain vital to the overall picture.

Regulating	Supporting	Cultural
• Flood mitigation and stormwater management • Air quality improvement • Urban heat regulation • Carbon sequestration • Pollination	• Habitat provisioning and biodiversity support • Soil formation and fertility	• Recreation and mental health • Cultural heritage and sense of place • Aesthetic and educational opportunities
		Provisioning
		• Urban agriculture • Medicinal harvesting

Table 2: Categories of Ecosystem Services

The study provided an estimated dollar value of the ecological services provided by natural land covers—like open water, wetlands, forests, riparian zones, and prairies—as well as maintained areas such as parks and tree canopies. See Figure 9 for details.

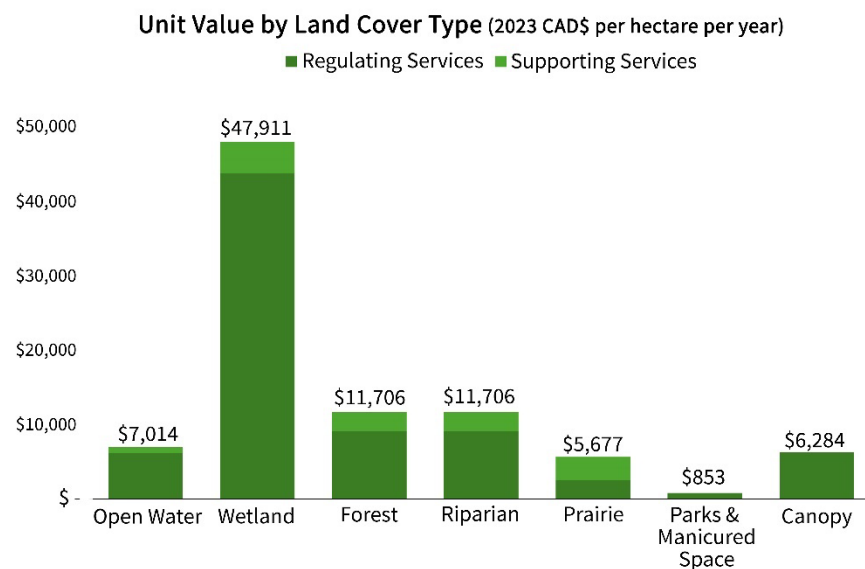


Figure 8: Unit value by land cover type (2023 CAD\$ per hectare per year)

On a per hectare basis, wetlands offer the most valuable ecosystem services of all the land cover types. This is because they play a big role in cleaning and controlling water, which is especially important in cities where roads and buildings stop rain from soaking into the ground, causing it to flow away quickly.

Forests, riparian areas and the urban tree canopy provide significant benefits within cities by capturing carbon and improving air quality.

Prairies have the highest biodiversity value, with forests and riparian areas following in second.

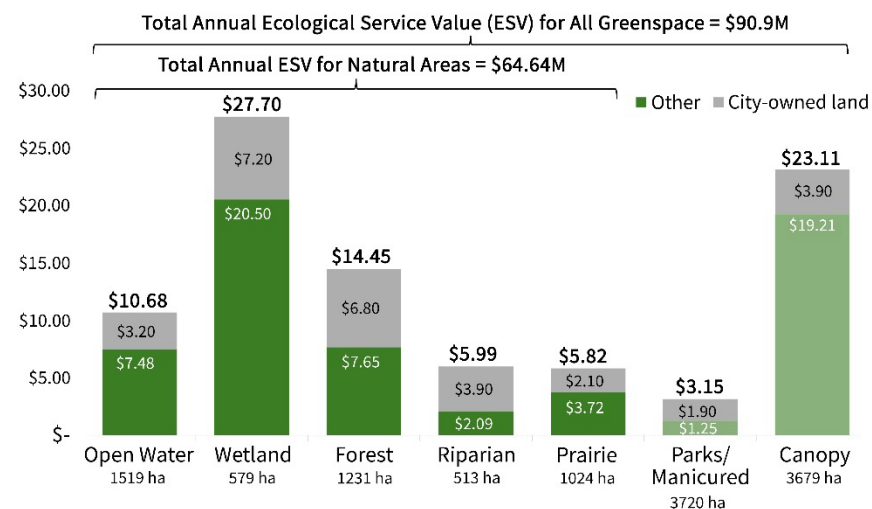


Figure 9: Total value of Regulating and Supporting Services in Winnipeg (millions CAD\$ per year)

By looking at the existing lands within the city boundaries, and using estimates of their value, the total yearly benefit of the natural and managed greenspaces within Winnipeg are estimated at just under \$91 million per year.

This includes:

- \$64.6 million/year from natural areas (open water, wetlands, forests, riparian, prairies)
- \$3.2 million/year from parks and manicured greenspace
- \$23.1 million/year from urban canopy cover

However, only 32% of these lands are owned by the City.

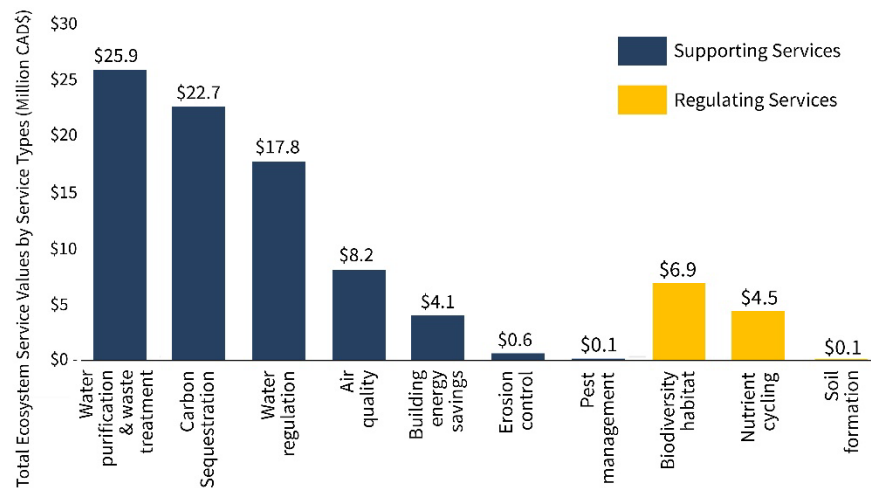


Figure 10: Estimated total annual value (in millions) of ecosystem services by type for all of Winnipeg

Ecosystem services with the highest overall values include:

- Water Purification and Waste Treatment: \$26.0 million/year
- Carbon Sequestration: \$22.7 million/year
- Water Regulation: \$17.8 million/year
- Air Quality Improvement: \$8.2 million/year
- Biodiversity habitat: \$6.9 million/year

Resulting Opportunities—Applying a value methodology to Winnipeg’s greenspace and natural areas can support key public objectives, such as:

- **Address Land Constraints Through Regional Connectivity:** With only 7.2% of Winnipeg’s area remaining in a natural condition strengthening connections to regional natural areas—such as river corridors, wetlands, and forest patches outside municipal limits—

can help support biodiversity and ecological function at the landscape scale.

- **Invest in Wetland Conservation:** Wetlands are among the highest-value ecosystems per hectare. Protecting and restoring wetlands can yield significant returns in water quality, flood resilience, and biodiversity.
- **Expand and Maintain Urban Tree Canopy:** Canopy cover delivers climate and health benefits. Tree planting, maintenance, and protection of existing canopy should be embedded in city planning.
- **Integrate Natural Assets in Planning:** Green infrastructure can complement grey infrastructure. Accounting for ecosystem services in capital planning and asset management enhances resilience and cost-effectiveness.
- **Advance Biodiversity Protection:** Prairies, forests, and riparian areas provide vital habitat. These should be prioritized in land-use decisions and connected through ecological corridors.
- **Support Community Engagement:** Awareness and stewardship of nature are critical. Programs that involve residents in tree planting, habitat restoration, and monitoring can amplify benefits.
- **Use Valuation to Help Prioritize Investments:** Ecosystem service values can help compare the relative benefits of alternative investments in natural infrastructure. This can support cost-benefit analysis, budget justification, and the strategic use of limited conservation resources.

Tools for Protection, Acquisition and Restoration

There are a number of financial and regulatory tools in use across Canada that support municipal interest in land acquisition, protection and restoration:

Financial tools for acquisition

- Tax related mechanisms
- Green bonds
- Development cost charges
- Reserve funds
- User fees
- Private and non-government funding sources
- Other programs (license plates, lotteries)

Incentives and penalties for private lands

Incentives

- Tax incentives
- Conservation easements
- Payment for ecosystem services
- Biodiversity credits
- Carbon credits
- Government and non-government funding sources

Penalties

- Penalties for environmental violations
- Tree compensation by-laws

Policy, Planning & By-law tools

- By-laws protecting:
 - trees, forest cover, and similar vegetation
 - wetlands, watercourses, and riparian areas
 - ecological corridors
- By-laws governing property maintenance
- By-laws requiring site condition studies
- By-laws enforcing zoning, yard setbacks
- By-laws restricting activities in protected natural areas

Other tools

- Purchasing of private lands for public protection
- Land exchanges
- Bonusing programs and cluster development
- Provincial protection of natural or other areas in or adjacent to cities
- Conservation easements
- Subdivision and development controls
- Transfer of development credits
- Natural asset management
- Privately owned public space
- Leadership and awareness / community, engagement, and service delivery
- Municipal operations and workforce
- Partnerships / Private Stewardship

Key Considerations

Protection

Observations & Issues

- Current policies and regulations provide limited protection for trees and natural areas on private lands, leaving many ecologically valuable sites vulnerable to development or degradation
- Existing municipal by-laws, including those governing waterways and tree preservation, are not fully aligned with biodiversity objectives and do not explicitly address sensitive habitats outside of designated parks or flood zones

Potential directions

- **Policy Integration:** Incorporate biodiversity considerations into all land use planning and infrastructure decisions, including additional weighting and consideration in the City's asset management and budget processes (business cases, multi-criteria prioritization)
- **By-law Enhancement:** Strengthen by-laws to provide explicit protection for upland and ecologically sensitive areas beyond waterway corridors. The *Zoning By-law*, which controls activities on private lands, may be key to this.
- **Permitting Reform:** Align permitting processes with biodiversity goals by requiring ecological assessments and restoration conditions where natural areas are impacted.
- **Buffer Zones:** Establish buffer zones around wetlands, riparian areas, and other sensitive natural areas to safeguard biodiversity.

- **Data-Driven Planning:** Use updated ecological mapping and site assessments to identify high-priority areas for protection and ensure these are reflected in municipal decision-making.
- **Awareness Building:** Engage landowners, developers, and residents in understanding the importance of local biodiversity and the roles they can play in conservation.

Acquisition

Observations & Issues

- Winnipeg currently lacks a dedicated and sustained capital budget for strategic greenspace acquisition
- Parkland dedication through development processes has not kept pace with the need to secure ecologically significant lands, and the Land Dedication Reserve Fund (LDR) has been limited in scope and impact
- In many areas, acquisition is reactive rather than proactive, resulting in missed opportunities to protect key natural areas

Potential directions

- **Dedicated Funding:** Establish a dedicated acquisition fund to proactively secure lands identified as high priority for biodiversity protection, corridor connectivity, and improvements to equitable access.
- **Strategic Targeting:** Prioritize acquisitions that fill geographic or ecological gaps in the city's greenspace network, particularly in under-served communities or ecologically fragmented areas.
- **Innovative Financial Tools:** Utilize tools such as development levies, density bonuses, or conservation easements to support acquisition objectives.

- **Collaborative Acquisition:** Explore opportunities for collaborative acquisition with other levels of government, Indigenous Nations, and land trusts.
- **Policy Alignment:** Integrate acquisition priorities into broader land use and secondary planning frameworks.

Restoration

Observations & Issues

- Restoration of natural areas requires sustained financial investment and institutional capacity.
- Existing restoration efforts, though commendable, are often limited in scope and constrained by competing operational priorities.
- The ecological integrity of many areas continues to be threatened by invasive species, fragmentation, and altered hydrology resulting from urban development and climate change.

Potential directions

- **Habitat Restoration:** Prioritize the restoration of degraded riparian corridors and wetlands, prairie remnants, and urban forest patches. Apply the principles of the “restorative continuum” to tailor the form and intensity efforts to the situation.
- **Connectivity Repair:** Implement restoration strategies that reconnect fragmented habitats, drawing on historical ecological patterns and current land use contexts.
- **Reduce Urban Impacts:** Use legislation to address urban wildlife stressors such as light pollution and domestic pet predation.

- **Community Stewardship:** Support community-led restoration initiatives, including Indigenous land stewardship projects and citizen science efforts.
- **Long-Term Planning:** Establish long-term restoration objectives with measurable targets to track progress and guide adaptive management.

Management and Maintenance

Observations & Issues

- There is a widespread misconception that natural areas require little or no ongoing maintenance. In reality achieving long-term ecological resilience in urban natural areas requires active, adaptive management.
- Current budgets and staffing levels limit the City’s ability to provide consistent care to these spaces, undermining their long-term ecological function.
- The management of some assets like roadside bioswales overlaps several City departments, creating jurisdictional challenges.
- Some maintenance activities such as prescribed burns would benefit from public information
- campaigns.

Potential directions

- **Management Strategy:** Develop and implement a Natural Areas Management Strategy to provide coordinated direction for restoration, invasive species control, and ecological maintenance.
- **Ecological Practices:** Expand the use of ecologically appropriate maintenance techniques, including prescribed burns, selective mowing, and targeted removals of invasive species.

- **Co-Management:** Strengthen partnerships with Indigenous communities and stewardship groups for co-management of public natural areas.
- **Service Standards:** Establish consistent level of service targets for natural areas across the city and ensure sufficient operational funding is in place to support them.

Education

Observations & Issues

- Misunderstandings and cultural biases about the value and appearance of natural landscapes in the city continue to influence public opinion and decision-making.
- Many residents and stakeholders equate ecological complexity with neglect, creating resistance to efforts aimed at naturalization and restoration.

Potential directions

- **Public Communications:** Develop communications strategies to highlight the role of natural areas in climate adaptation, biodiversity protection, and human wellbeing.
- **Interpretive Programming:** Create interpretive signage and educational programming to support understanding of native ecosystems.
- **Sharing Indigenous Knowledge:** Support programming aimed at sharing Indigenous perspectives of the land and our place within it.
- **Cultural Shift:** Promote a cultural shift in perceptions of beauty and maintenance in public greenspaces through demonstration projects and storytelling.

- **Youth Engagement:** Engage youth and schools in stewardship and monitoring activities to foster early connections to nature.

Partnerships

Observations & Issues

- Competing policy goals across municipal departments and external agencies can create tensions that limit greenspace outcomes.
- While there is strong community interest in stewardship, coordination between community-based groups, Indigenous Nations, and municipal bodies remains inconsistent.

Potential directions

- **Interdepartmental Alignment:** Formalize interdepartmental working groups (e.g., Natural Asset Management Committee) to ensure alignment across transportation, planning, infrastructure, and sustainability mandates.
- **Indigenous Leadership:** Strengthen partnerships with Indigenous Nations to support land governance and stewardship in greenspace planning and management.
- **Community Capacity:** Support the capacity of community stewardship organizations through long-term funding and collaborative frameworks.
- **Shared Stewardship:** Build shared ownership of biodiversity goals by working with local businesses, institutions, and residents on greening and monitoring initiatives.

Monitoring

Observations & Issues

- Long-term monitoring of ecological health is not systematically embedded into Winnipeg's greenspace management frameworks.
- Without regular data collection and evaluation, it is difficult to assess the effectiveness of restoration efforts, adapt to changing conditions, or communicate progress to the public and partners.

Potential directions

- **Monitoring Framework:** Establish a city-wide ecological monitoring program focused on biodiversity indicators, habitat quality, and ecosystem services.
- **Remote Sensing:** Use remote sensing technologies (e.g., NDVI) and GIS to track vegetation health, canopy cover, and connectivity over time.
- **Participatory Monitoring:** Partner with community groups and Indigenous knowledge holders to support participatory monitoring and traditional ecological knowledge integration. These activities can be celebratory and educational as well.
- **Transparent Reporting:** Report publicly on key metrics and trends to support transparency, learning, and accountability.