

Summary Report

Advancing Natural
Infrastructure Forum 2024

IISD REPORT





© 2024 International Institute for Sustainable Development
Published by the International Institute for Sustainable Development

This publication is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

International Institute for Sustainable Development

The International Institute for Sustainable Development (IISD) is an award-winning independent think tank working to accelerate solutions for a stable climate, sustainable resource management, and fair economies. Our work inspires better decisions and sparks meaningful action to help people and the planet thrive. We shine a light on what can be achieved when governments, businesses, non-profits, and communities come together. IISD's staff of more than 200 experts come from across the globe and from many disciplines. With offices in Winnipeg, Geneva, Ottawa, and Toronto, our work affects lives in nearly 100 countries.

IISD is a registered charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Province of Manitoba and project funding from governments inside and outside Canada, United Nations agencies, foundations, the private sector, and individuals.

Summary Report: Advancing Natural Infrastructure Forum 2024

May 2024

Written by Matt Mayer, Robert Nichols, Josée Méthot,
and Brittney Le Blanc

Photo: iStock

Head Office

111 Lombard Avenue, Suite 325
Winnipeg, Manitoba
Canada R3B 0T4

Tel: +1 (204) 958-7700

Website: iisd.org

X: [@IISD_news](https://twitter.com/IISD_news)



Purpose of this Report

This report provides a summary and record of the Advancing Natural Infrastructure Forum 2024, co-hosted by the International Institute for Sustainable Development (IISD), the Natural Assets Initiative, and WaterSMART Solutions in Calgary, Alberta on February 21–22, 2024. Convened as part of IISD’s Natural Infrastructure for Water Solutions initiative, 71 in-person and 35 virtual participants gathered to discuss the state of play of natural infrastructure across the Canadian Prairies, key projects and best practices, and opportunities to work with nature to help meet water infrastructure needs while supporting regional resilience.

Figure 1. Organizers of the Advancing Natural Infrastructure Forum, representing IISD, NAI, WaterSMART Solutions, and the Arete Initiative





Organizers



About the International Institute for Sustainable Development

IISD is an independent global think tank championing sustainable solutions to 21st-century problems. Established and headquartered in Manitoba since 1990, our mission is to promote human development and environmental sustainability through research, analysis, and knowledge products that support sound policy-making.



About the NIWS Initiative

Natural Infrastructure for Water Solutions (NIWS) is a 5-year initiative by IISD and partners to scale up natural infrastructure on Canada's Prairies—for cleaner water and more resilient communities. Our mission is to take natural infrastructure from novel to normal. IISD is at the forefront of promoting the adoption of natural infrastructure in Canada, advancing government, industry, and public efforts to make natural infrastructure a part of our sustainable future.



About WaterSMART Solutions

WaterSMART Solutions is a niche strategic and engineering consulting company with deep domain expertise and understanding of water in Western Canada supported by robust technical skills. WaterSMART provides a unique combination of in-house integrated water management expertise and access to a diverse external network of global and local leaders in the field. This powerful formula allows WaterSMART to identify, develop, and execute water-related strategies and projects for its clients and partners, spanning from strategic assessment and facilitation, to policy response and awareness, to technical solution development and application. WaterSMART has a successful track record of providing innovative water management solutions for key industries in the province and is an effective catalyst and champion for positive change.



About the Natural Assets Initiative

The Natural Assets Initiative (NAI) is a national non-profit organization that is changing the way local governments deliver everyday services by working with nature. Developed and led by NAI, natural asset management is a scalable, practical approach to managing nature's services alongside engineered assets, increasing the quality and resilience of our infrastructure at lower costs and reduced risks. NAI provides scientific, economic, and civic expertise to support and guide communities, governments, and watershed stewards in identifying, valuing, and accounting for natural assets in their financial planning and asset management programs and in developing leading-edge, sustainable, and climate-resilient infrastructure.



Funders and Partners

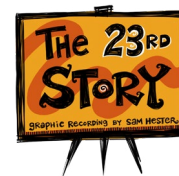
Thanks to the principal funder of the Natural Infrastructure for Water Solutions Initiative for their ongoing support:



And our thanks to our partners:



Special thanks to these groups who have made this event possible:





Land Acknowledgement

The Advancing Natural Infrastructure 2024 Forum was held on the traditional territories and homelands of the people of Treaty 7. We acknowledge the ancestral lands of the Blackfoot Confederacy, including the Siksika, Piikani, Amskaapipiikani, and Kainai First Nations; the Îethka Nakoda Wicastabi First Nations, comprised of the Chiniki, Bearspaw, and Goodstoney First Nations; and the Tsuut'ina First Nation. These are also the traditional homelands of the Métis Nation of Alberta and the five Territories of the Métis Nation under the Otipemisiwak Métis Government Constitution.

The Prairies span the traditional lands of over 200 Indigenous territories and homelands across the provinces we call Alberta, Saskatchewan, and Manitoba. We offer respect to those who have long lived and stewarded lands and waters across the Prairies, and we recognize the ongoing leadership of First Nations and Métis communities. Water is life, and we have the responsibility to listen to the learnings and knowledge held by those who have lived here for time immemorial. We encourage everyone to visit native-land.ca to learn more about traditional lands and treaties across the Prairies.



Table of Contents

- Top Takeaways..... 1**
- A Note on Terms 2**
- Forum Proceedings 3**
 - Day 1 3
 - Day 2 10
- Key Resources Mentioned..... 24**
- Looking Ahead 25**
 - Sector-Level Next Actions..... 25
 - Personal Next Actions 26



Top Takeaways

1. Projects across the Prairies are supporting water infrastructure needs for water treatment and supply, as well as flood and drought protection. There is growing momentum around implementing natural infrastructure, and communities are seeing multiple benefits across the triple bottom line. This trend is evident not only in major cities like Calgary and Saskatoon but also in rural and smaller communities like Parkland County, Alberta, and the City of Selkirk, Manitoba, among many others.
2. The network of practitioners and leaders advancing natural infrastructure—in urban, rural, and Indigenous communities—is growing across the Prairies. The Forum outlined several reasons for optimism, including federal recognition and support, Indigenous-led efforts, more standardization of designs and methods, and an increasing number of case studies that showcase resilience benefits, among others.
3. When considering infrastructure options, work “from green to grey.” Consider first how natural (or green) infrastructure can meet or support service delivery, then introduce grey infrastructure options as needed. While grey infrastructure is the norm, many small shifts toward natural infrastructure will have a noticeable impact. We must showcase more social, environmental, and economic benefits to incentivize decision-makers toward working with nature.
4. Collaborative and cross-jurisdictional efforts are needed, mainly to realize benefits at watershed scales. Understanding priority natural infrastructure locations and options—and collaborating across rural and urban boundaries—will drive progress.
5. Provincial, local, and Indigenous governments have a crucial role in prioritizing natural infrastructure backed by dedicated funding and enabling policy. Positioning natural infrastructure as a way to address multiple intersecting societal challenges—e.g., infrastructure, climate adaptation, biodiversity, and reconciliation—is essential for future work. Indigenous People are leading the way through, for example, Indigenous Guardians programs or the installation of beaver dam analogues in the face of drought.
6. There is a growing tool kit of resources to support natural infrastructure efforts, including a new national standard for natural asset inventories and technical guidance for nature-based solutions. Multiple organizations and jurisdictions offer approaches and tools to identify, quantify, and value the many benefits of natural infrastructure projects, including the NAI, IISD, Ecometrics, and others. Embedding nature and natural assets in asset management, accounting, and corporate reporting, through for example, the Task Force on Nature-Related Financial Disclosures, is also an essential avenue for scaling.



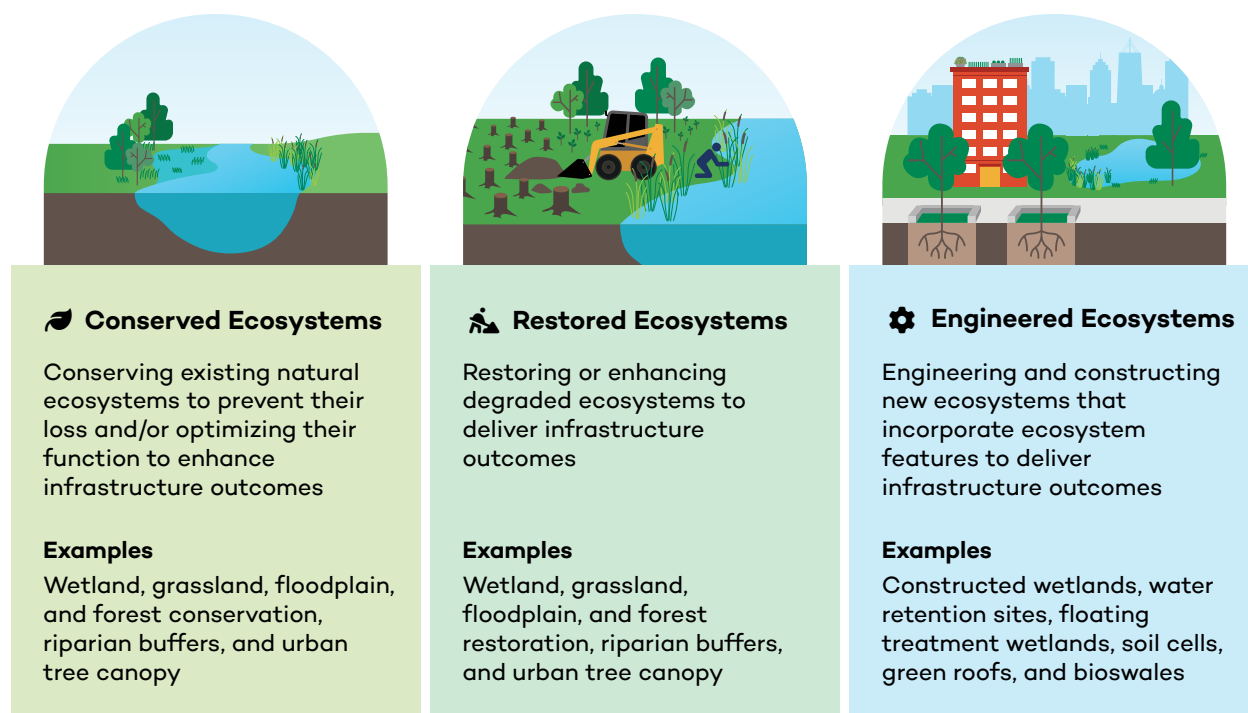
A Note on Terms

Natural infrastructure allows us to plan and work with nature to meet infrastructure needs. Natural infrastructure can be a conserved ecosystem, a restored ecosystem, or even a nature-based engineered feature (Figure 1).

While there are many definitions of natural infrastructure and related concepts, IISD adopts the definition developed by the Canadian Council of Ministers of the Environment (2021):

Natural infrastructure “uses preserved, restored, or enhanced ecosystem features and materials (e.g., water, native species of vegetation, and sand and stone) to meet targeted infrastructure outcomes while providing a range of co-benefits to the environment, the economy, community health and well-being” (p. iv).

Figure 2. Categories and examples of natural infrastructure



Source: IISD.



Forum Proceedings

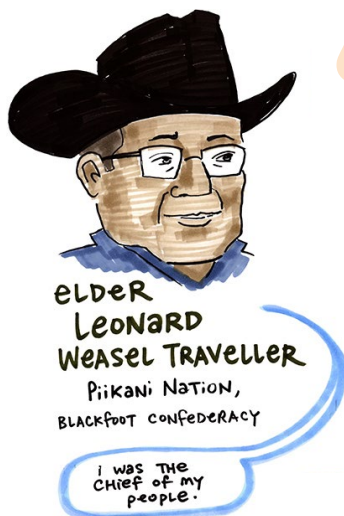
The following is a brief overview of the discussions and presentations. Illustrated graphic recordings are courtesy of Sam Hester with the 23rd Story. A list of key resources mentioned throughout the Forum can be found on page 24.



Day 1

Opening Invocation: Elder Leonard Weasel Traveller of Piikani Nation, Blackfoot Confederacy

Weasel Traveller opened the Forum in a good way, grounding natural infrastructure work in the history and significance of water to Indigenous Peoples through the symbolism of the beaver bundle to his people. Weasel Traveller recognized the acute and urgent challenges facing the Prairies, using this to underscore his encouragement of the work conference participants are doing.



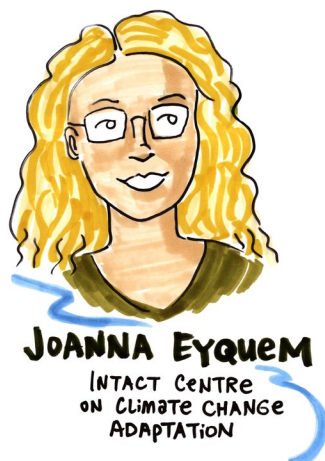
ELDER
LEONARD
WEASEL TRAVELLER
Piikani NATION,
BLACKFOOT CONFEDERACY

“ I applaud the work you are all doing here... I need it, my son needs it, we all need it.

LEONARD WEASEL TRAVELLER, PIIKANI NATION



Keynote: Joanna Eyquem, Intact Centre on Climate Adaptation



“ Restoring balance within our natural systems, working with rather than controlling natural processes, is central to our future well-being.

JOANNA EYQUEM, INTACT CENTRE ON CLIMATE ADAPTATION

As the Forum’s keynote speaker, Joanna Eyquem shared her personal and professional connection to the work of natural infrastructure, from her enduring childhood fascination with riverbanks, to her education and, finally, to her work with the Intact Centre on Climate Adaptation.

Joanna used the example of a meandering river to illustrate the concept of dynamic equilibrium—the river is in a healthy balance, but it is not static; it is moving and changing.



“ A meandering river is a stable river. We need to give nature space to move.

JOANNA EYQUEM, INTACT CENTRE ON CLIMATE ADAPTATION

Joanna recommended expanding our consideration of natural infrastructure beyond any one sector or area of society. She suggested that key issues like extreme heat, water management, homelessness, or the housing crisis are often thought about separately but recognized that these silos must be broken down, giving rise to solutions like natural infrastructure as a way to address multiple societal issues.



Joanna highlighted the importance of right-sizing natural infrastructure initiatives. She noted that when we manage natural risks, we need to work at a scale appropriate to that risk. Natural infrastructure has applications for solving larger river basin-scale issues, and results can and need to be derived from cumulative watershed-scale work.

Joanna also identified 10 reasons for optimism about natural infrastructure, as shown in the graphic recording below, including the following:

- The federal government (including Infrastructure Canada) has “taken notice” of natural infrastructure.
- The case studies of nature-based solutions (NbS) for resilience are multiplying in Canada.



- The media is helping communicate messaging surrounding natural assets and other related material.

Joanna left the group with her personal to-do list and a to-do list for the natural infrastructure sector to consider adopting more broadly.

| Joanna Eyquem's to-do list | Joanna Eyquem's to-do list for participants |
|---|---|
| <ul style="list-style-type: none"> • need to engage provinces and territories (governments) • embed natural infrastructure within (normal) decision making and infrastructure, including adoption by all levels of government • mainstream natural asset management • need to bridge natural asset accounting (public) and nature-related risk management (private) | <ul style="list-style-type: none"> • work from green to grey when considering infrastructure options • actively seek to restore natural processes (not only in appearance) • start or continue your natural asset management journey • share stories of success |

HIGHLIGHTS





Natural Infrastructure for Water: Bright Spots panel

Communities across the Prairies are turning to natural infrastructure to help manage stormwater and wastewater, reduce flooding, and support water security while providing other benefits. This session showcased leading efforts (“bright spots”) with demonstrable benefits for infrastructure, communities, and ecosystems.

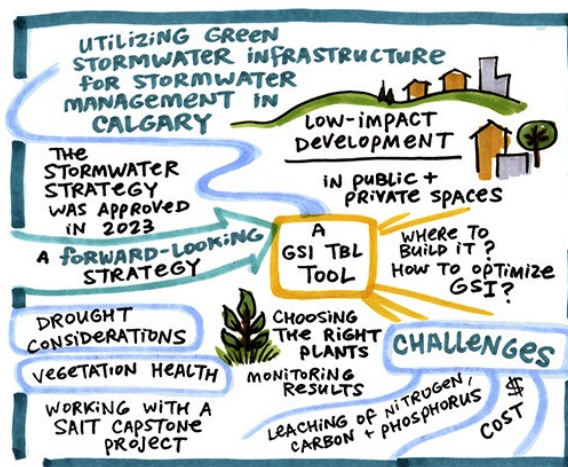


Panellists:

- Dimple Roy (IISD), Moderator
- Erica Yaholnitsky (City of Calgary, AB)
- Alvin First Rider (Blood Tribe Land Management)
- Jessie Best (City of Saskatoon, SK)
- Daniel Karran (Olds College, AB)

Dimple Roy (IISD) framed how natural infrastructure can provide benefits for water treatment, flood and drought protection, and water supply while also providing a range of social, economic, and environmental benefits to communities and ecosystems. Natural infrastructure can directly deliver infrastructure services or enhance and protect the function and lifespan of traditional (grey) infrastructure. For example, integrating green roofs and bioswales in cities can reduce the strain on stormwater drains and pipes by slowing the flow of water. Through IISD’s Natural Infrastructure for Water Solutions (NIWS) initiative, there is keen interest in learning from projects with demonstrable results.

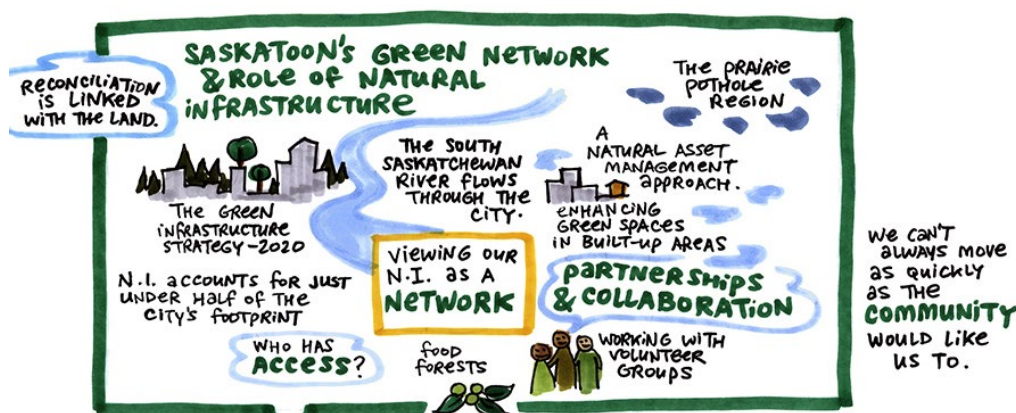
Erica Yaholnitsky spoke about the low-impact development approaches the City of Calgary has used to develop and integrate natural infrastructure with grey infrastructure through the new





Stormwater Strategy. Her team has been experimenting with different types of native plants to determine which are resilient to both saturation and drought conditions.

Jessie Best shared how taking a green network inventory approach has allowed the City of Saskatoon to assess the distribution of natural infrastructure across the city. With funding from Infrastructure Canada’s Natural Infrastructure Fund, Saskatoon bundled a range of natural infrastructure projects to be implemented over two years with a total value of over CAD 34 million in support of Saskatoon’s Green Infrastructure Strategy.



“ We’re starting to figure out the levers we need to pull to create a snowball effect for natural infrastructure implementation.

JESSIE BEST, CITY OF SASKATOON



it's THE YOUTH who will MAKE THINGS CHANGE. if THE YOUTH are DOING IT, THE PARENTS will LISTEN.

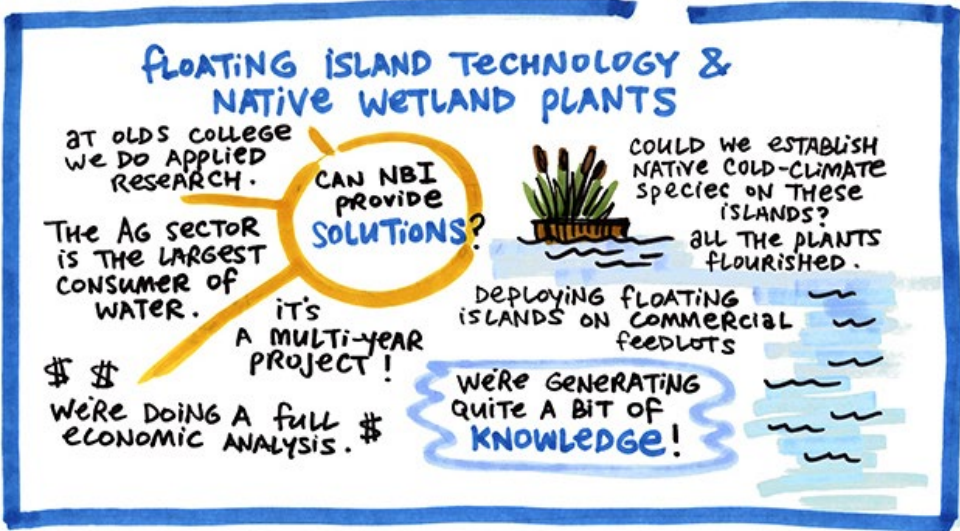


Alvin First Rider described how he and his team from Blood Tribe Land Management have constructed beaver dam analogues using almost exclusively on-site materials to slow the movement of water and retain more of it on the land. These are constructed in areas where beaver activity has disappeared from the landscape. This has been a great learning opportunity for the youth who have been engaged in building the structures. Blood Tribe Land Management is using beaver dam analogues to manage what little water it has access to as it tries to alleviate the impacts of limited water supply and drought.

“ Don’t be afraid to work with elements out there. Get back to partnering, don’t be afraid to reach out to your neighbours. Don’t always be so technical—look at things from a different lens.

ALVIN FIRST RIDER, BLOOD TRIBE LAND MANAGEMENT

Providing an agricultural bright spot, Dan Karran talked about his work at Olds College on floating treatment wetlands to treat livestock water. These wetlands help reduce nutrient loads and even heavy metals in contaminated water. They are being piloted in on-farm livestock water remediation ponds, but Dan noted that floating treatment wetlands can be installed to help with stormwater and wastewater management as well. Further testing with a full economic analysis is forthcoming.





Day 2

Opening Remarks: Roger Ramcharita, Executive Director, Alberta Environment and Protected Areas

On behalf of Alberta Environment and Protected Areas, Roger Ramcharita opened the day by acknowledging that natural infrastructure represents an exciting opportunity for water management in Alberta and that water is a key priority for the provincial government, particularly in the context of drought. Roger explained some of the benefits of natural infrastructure that are most attractive to his department: it moderates water flow and quality, it can provide wildlife and fisheries habitat and recreational opportunities, it carries less cost than grey infrastructure, and it can often be supported and maintained by the communities in which it is implemented. Roger also shared examples of provincial funding for grey and natural water infrastructure in Alberta, including:

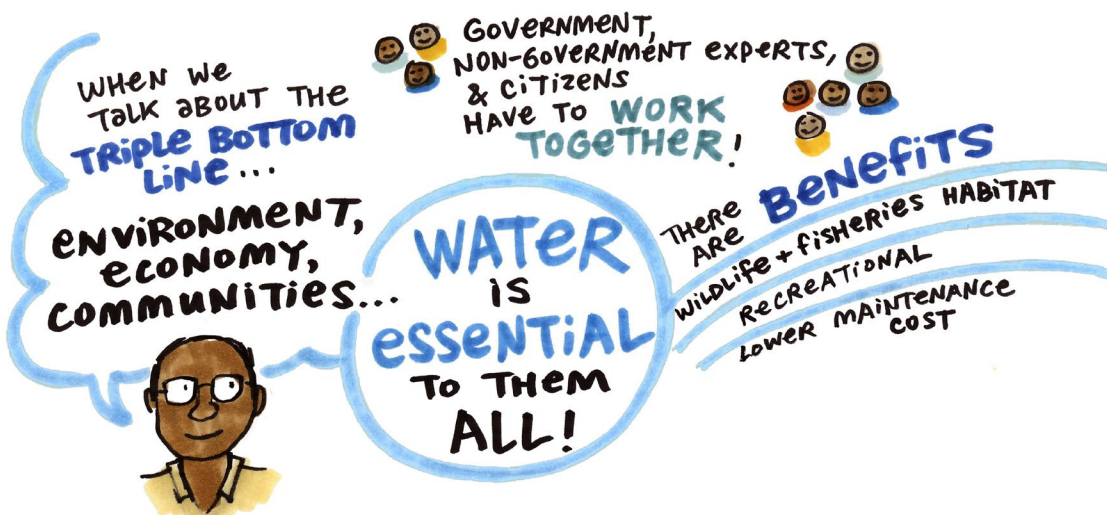
- CAD 1 billion in investment in water-related grey infrastructure has been made in the last 5 years.
- Alberta Environment and Protected Areas has a wetland replacement fund, with lots of money in it, to build new wetlands to replace those that are lost and actively pursue wetland restoration and development.



ROGER RAMCHARITA
EXECUTIVE DIRECTOR,
ALBERTA ENVIRONMENT
& PROTECTED AREAS

“ Natural infrastructure squarely hits the triple bottom line... [it] is exactly what [Environment and Protected Areas] is looking for.

ROGER RAMCHARITA, ALBERTA ENVIRONMENT
AND PROTECTION AREAS



ROGER RAMCHARITA
executive DIRECTOR,
ALBERTA ENVIRONMENT
& PROTECTED AREAS

HIGHLIGHTS



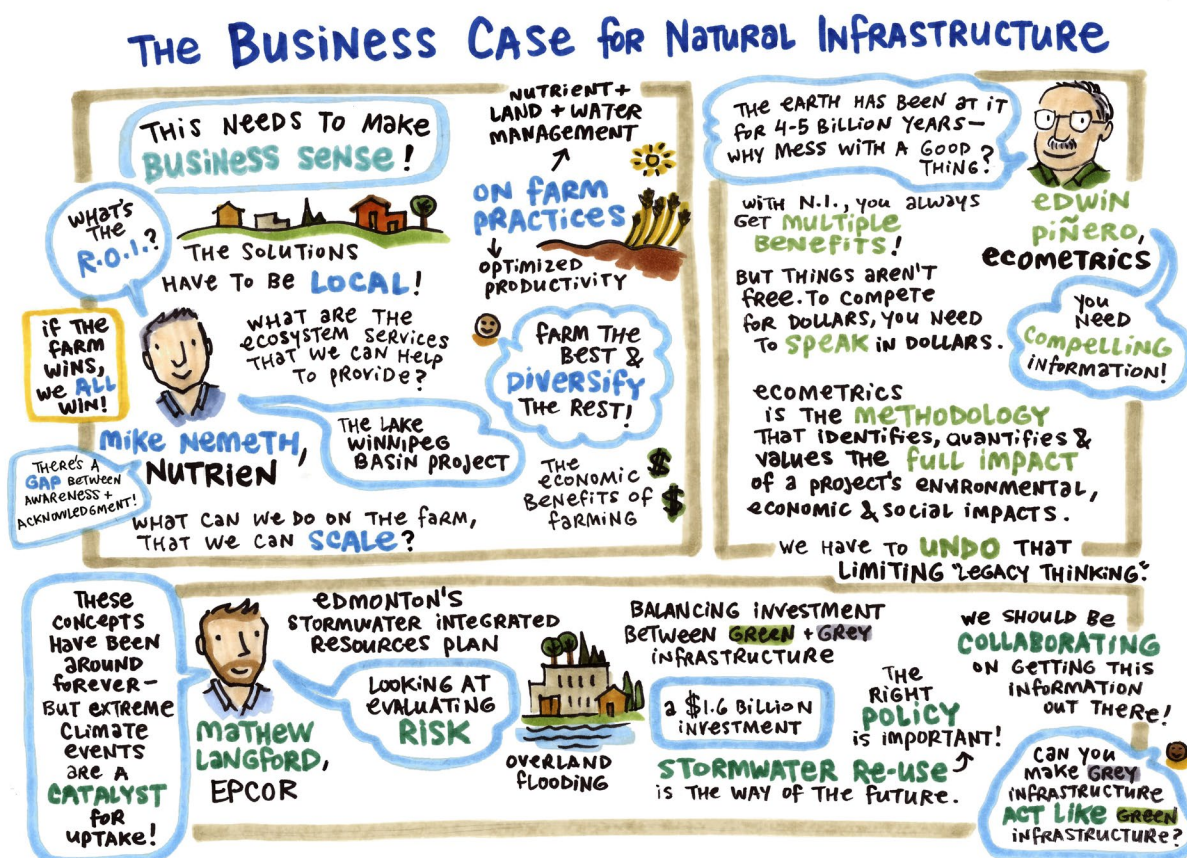


Morning Parallel Session 1: The Business Case for Natural Infrastructure

What is the business case for investment in natural infrastructure? In this session, speakers explored the value proposition of natural infrastructure for water management and how the challenges and barriers associated with making a strong business case for investment can be overcome.

Speakers/Panellists:

- Kim Sturgess (WaterSMART Solutions)
- Mike Nemeth (Nutrien)
- Mathew Langford (EPCOR)
- Edwin Piñero (Ecometrics)





The panel discussed that while natural infrastructure conceptually has been around for a while, uptake is increasing because we are experiencing clear climate impacts, and governments and the private sector are making public commitments. While there is growing awareness of natural infrastructure, the discussion highlighted the need for this to translate to more acknowledgement and tangible support.

“ To compete for dollars, you need to speak in dollars.

EDWIN PIÑERO, ECOMETRICS LLC

Speakers noted that natural infrastructure provides a range of social, economic, and environmental benefits that accrue beyond the project site. Speakers agreed that there is a need to credibly identify, quantify and value all benefits that result from natural infrastructure projects. Right now, natural infrastructure is typically thought about in a “soft, ESG way.” Internationally, there are a range of drivers (e.g., the Task Force on Nature-related Financial Disclosures, climate commitments, etc.) that are driving private industry and multinationals to pursue NbS and natural infrastructure. Nutrien, for example, is looking at natural infrastructure across the value chain and is working with local farmers on projects that match corporate commitments. It is critical to demonstrate local benefits, down to a specific acreage scale, in the context of agriculture.

Mat Langford (EPCOR) highlighted the Stormwater Integrated Resource Plan in Edmonton, a 20–30-year, CAD 1.6 billion system-wide plan where about half of the funding is dedicated to low-impact development and dry ponds. By harnessing the power of natural infrastructure/low-impact development, the plan is helping to slow the entry of stormwater into the existing drainage system and move excess water away while also being considerably cheaper than a previous plan that focused on grey stormwater infrastructure.



Morning Parallel Session 2: Local Nuts and Bolts of Natural Infrastructure

This session focused on key practical considerations facing natural infrastructure implementation at the local level, including asset management, design standards, governance, and planning. Speakers responded to the question: what tools and approaches are helping local governments, watershed stewards, and others design and implement natural infrastructure?

Speakers/Panellists:

- Roy Brooke (Natural Assets Initiative), Moderator
- Krista Quesnel (Parkland County, AB)
- Duane Nicol (City of Selkirk, MB)

This panel discussion featured leading natural infrastructure practitioners from two local governments on the Prairies. In framing the status quo, Krista and Duane agreed that municipalities are constantly faced with insufficient funding and personnel to tackle critical tasks. They also noted that grey infrastructure is the norm and that other assets, such as wetlands and riparian areas (and the ecosystem services they provide), are often overlooked. The panellists offered a counterpoint to the status quo based on work underway in their respective communities to reconceptualize nature as a vital asset.

“Natural infrastructure clearly faces barriers, but for every barrier, there is a solution, something that can be a source of inspiration.

ROY BROOKE, NAI

Despite this challenging reality, the panel explained that change is possible. Both panellists described what a new status quo would look like to them:

“We are looking for a paradigm change, to change the perspective of natural assets as a hindrance to progress [to] more of how we can integrate them.”

Krista Quesnel, Parkland County

“Recognize the value of natural assets... we will replace engineered assets with natural assets when they are demonstrated to be on par.”

Duane Nicol, City of Selkirk



The speakers observed that change is an iterative process and went on to describe some of the important steps their own municipalities have taken:

- Grey and natural infrastructure can be used side by side.
- Small changes to riparian fences, grass buffers, and wetland restoration can significantly improve water supply.
- Selkirk was the first municipality in Canada to have an [Asset Management Bylaw](#), with a section dedicated to Natural Assets, and is iteratively developing other policy measures to advance natural asset management.
- Parkland County is exploring how natural infrastructure can play a role in reducing the costs of building and maintaining roads, which are their costliest assets. The county's work won a 2022 award from the Federation of Canadian Municipalities in the natural asset management category.



Make natural asset integration boring.

DUANE NICOL, CHIEF ADMINISTRATIVE OFFICER, CITY OF SELKIRK

Strategic Approaches for Scaling Natural Infrastructure: Plenary Exercise #1

During this participatory session, participants explored the state of natural infrastructure implementation and key opportunities to scale efforts. The session design was based on the [iceberg model for systems change](#) and aimed to uncover the underlying elements and forces that a) entrench the current system or b) create tomorrow's system (assumed to be a widely known and scaled adoption of natural infrastructure).

Participants engaged with the exercise in 10 table groups. Half of the groups worked to identify the **top elements or forces entrenching today's system**, including

- general lack of perceived value of natural infrastructure
- policy and outlooks are rooted in short-term thinking
- negative misconceptions of natural infrastructure that cause opposition
- regulatory environment that actively disincentivizes natural infrastructure
- inadequate coordination at a network/watershed scale
- colonialism and western-dominated thinking
- lack of capacity to implement natural infrastructure solutions effectively



The other half of the tables identified the **top elements and forces creating tomorrow's system**. Top forces were identified as

- Resource flows: more accessible financial support for natural infrastructure projects.
- Natural infrastructure is embedded at the federal government level, and the effect is trickling out.
- Climate change is driving acceptance, public support, and funding.
- Indigenous communities are leading the way, with increasing influence.
- Local-scale projects are increasing.
- Interdisciplinary education is supporting efforts.
- Cultural forces like biophilia and the pursuit of wellness are creating support.
- Youth are engaged and engaging more.

“ Our goal is to deepen our understanding of key forces that influence the normalizing and scaling of natural infrastructure.

MATT MAYER, ARETE INITIATIVE

These lists provide insights into key forces shaping the current and future state of natural infrastructure on the Prairies and align with existing research documenting barriers and opportunities for NbS and natural infrastructure in Canada¹ and on the Prairies². Leaders in the natural infrastructure sector may want to pay closer attention to introducing or accelerating projects that will test and contribute to these forces.

¹ Anderson, V., & Gough, W.A. (2022). Enabling nature-based solutions to build back better - An environmental regulatory impact analysis of green infrastructure in Ontario, Canada. *Buildings*, 12(1), 61. https://www.researchgate.net/publication/357708760_Enabling_Nature-Based_Solutions_to_Build_Back_Better-An_Environmental_Regulatory_Impact_Analysis_of_Green_Infrastructure_in_Ontario_Canada;

Eyzaguirre, J., Crew, A., Morton, C., Tamburello, N., & Hodgson, R. (2023). *Implementation of nature-based solutions in Canada — State of play report*. Prepared by ESSA Technologies Ltd. for the David Suzuki Foundation. <https://david Suzuki.org/wp-content/uploads/2023/07/23.07.19-state-of-play-report-web.pdf>

² Méthot, J., Rawluk, A., Roy, D., Saleh, T., & Kroft, E. (2023). *The state of play of natural infrastructure on the Canadian Prairies*. International Institute for Sustainable Development. <https://www.iisd.org/publications/report/state-of-play-natural-infrastructure-canadian-prairies>



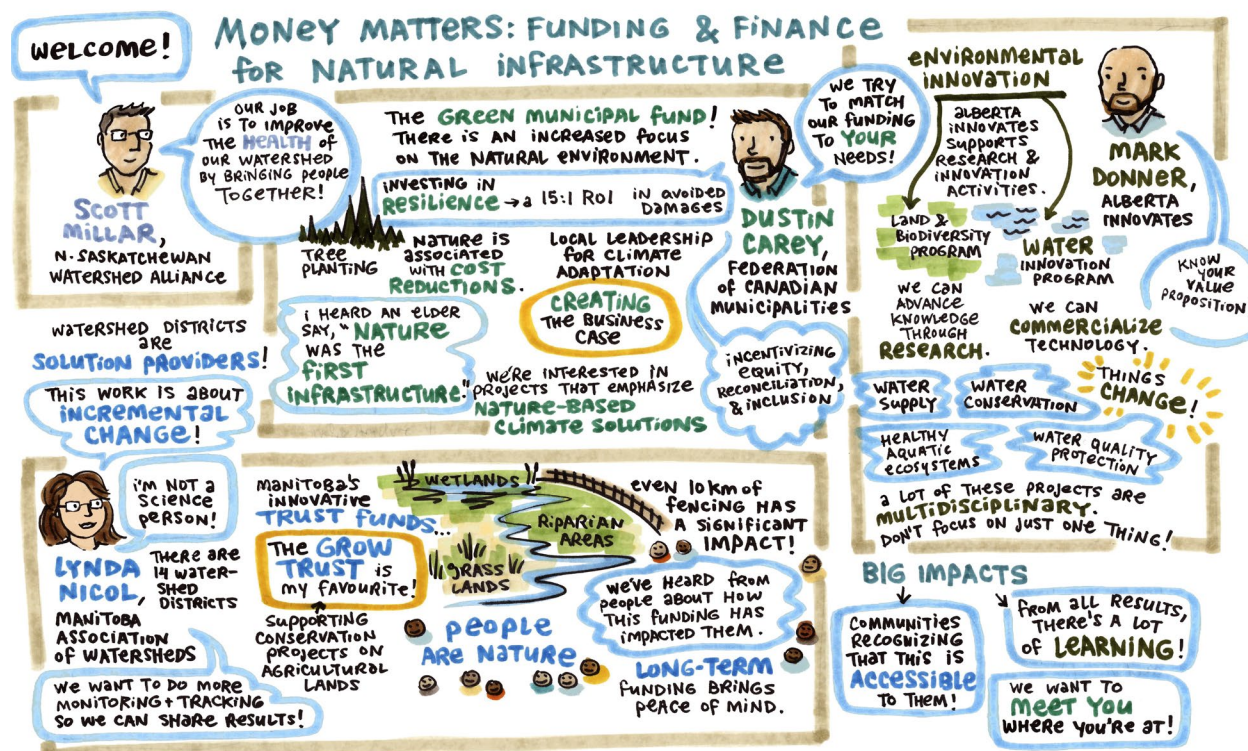


Afternoon Parallel Session 1: Money Matters: Funding and finance for natural infrastructure

Funding is a critical enabler for implementing natural infrastructure initiatives. However, Prairie communities often lack clarity on available funding sources and how to access them. The Money Matters session provided a high-level overview of current and future funding programs while also showcasing leading examples of successful Prairie projects implemented via unique funding models.

Speakers/Panellists:

- Scott Millar (North Saskatchewan Watershed Alliance), Moderator
- Dustin Carey (Federation of Canadian Municipalities)
- Lynda Nicol (Manitoba Association of Watersheds)
- Mark Donner (Alberta Innovates)





The panel discussion featured a funding announcement by Dustin Carey of the Federation of Canadian Municipalities. He introduced the [Local Leadership for Climate Adaptation](#) program, a new CAD 530 million initiative that will fund more than 1,400 municipal activities by 2030–31 that will contribute to building resilience to climate change. Projects that emphasize nature-based climate solutions will benefit from a higher cost-share percentage from the Green Municipal Fund.

Lynda Nicol of the Manitoba Association of Watersheds shared information about Manitoba’s 14 watershed districts, which work with many stakeholders and rightsholders to conserve Manitoba’s soil, water, habitat, and climate. The watershed districts are primarily funded by the province and municipalities, who participate voluntarily.

Lynda also spoke about the Growing Outcomes in Watersheds (GROW) Trust, which was established in perpetuity to support conservation projects on agricultural lands. The long-term stability of this funding source means that people don’t have to panic to submit and complete projects; they can thoughtfully plan them out. The GROW Trust’s long-term mandate has created a real sense of momentum. Manitoba’s trusts (which include the Conservation Trust, GROW Trust, and Wetlands GROW Trust) are an inspiring funding model that other provinces might consider to effectively support on-the-ground natural infrastructure across their watersheds.

Mark Donner shared that Alberta Innovates hosts the Water Innovation Program to support advances in science and technology that guide policy, de-risk technology to enable commercial application, and build capacity in post-secondary education. Examples of funded projects include

- advancing the use of beavers as a nature-based solution to manage the impacts of climate change (research project)
- Saddleridge Stormwater Kidney Retrofit (technology development)
- Clearwater County–MAGNA Omni-Processor (technology development)



According to the Canadian Climate Institute's report *Damage Control: Reducing the costs of climate impacts in Canada*,³ investing in climate change adaptation offers a 15:1 return on investment in avoided direct and societal damages. For every dollar spent on adaptation measures, Canada can save CAD 13 to CAD 15 in the long term.

Given the theme of climate adaptation that runs through the profiled funding programs, panellists highlighted the fact that investing in climate change resilience offers a 15:1 return on investment in avoided direct and societal damages. Panellists encouraged would-be applicants to reach out if they are unsure whether they qualify for funding and noted that some programs have the ability to work outside of listed boundaries.

Afternoon Parallel Session 2: Watershed- and Landscape-Scale Implementation

This panel session explored how individual natural infrastructure projects add up to landscape-scale outcomes. It featured practitioners working to design, implement, and evaluate natural infrastructure at landscape or watershed scales.

Speakers/Panellists:

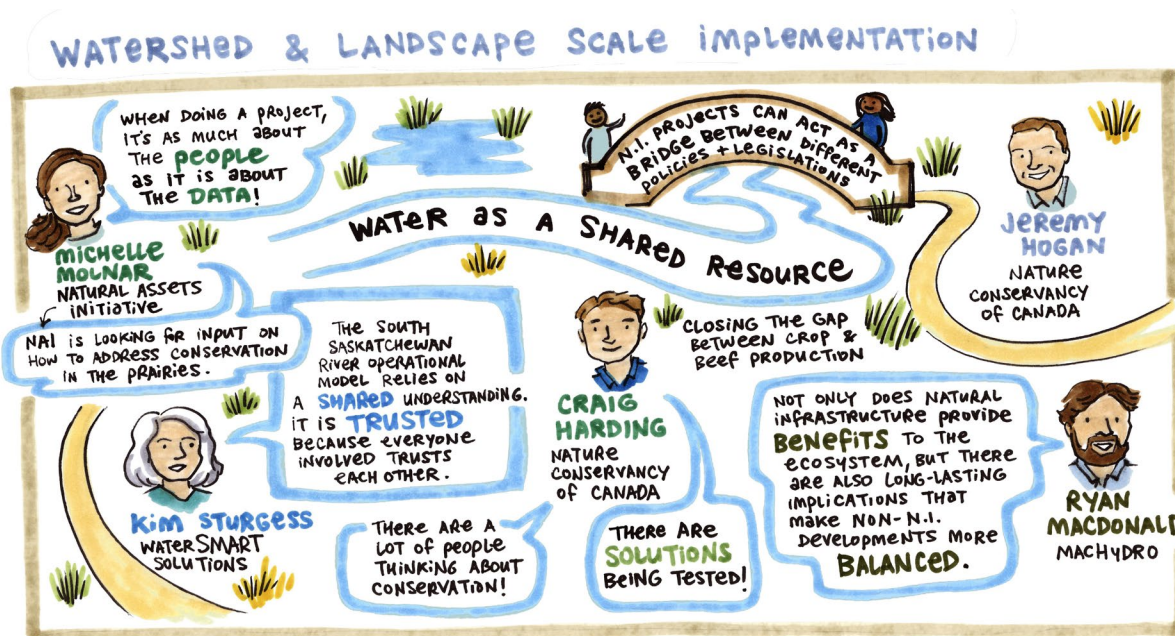
- Josée Méthot (IISD), Moderator
- Craig Harding (Nature Conservancy of Canada)
- Kim Sturgess (WaterSMART Solutions)
- Michelle Molnar (NAI)
- Ryan Macdonald (MacHydro)

A joint presentation from Kim Sturgess and Ryan Macdonald highlighted recent modelling work in the South Saskatchewan River Basin in Alberta, where there is strong interest in improving water storage and availability, particularly in the context of drought. They described priority grey infrastructure projects and the role that distributed natural infrastructure can play in supporting water availability, with smaller projects “adding up” across the landscape. Craig Harding presented on the Nature Conservancy of Canada's (NCC) Prairie Grasslands Action Plan, which aims to conserve more than 500,000 hectares by 2030. NCC's work in the Waterton Region in Alberta showcases how conservation in upstream catchments can support downstream water quality and quantity, while providing benefits to ranchers, wildlife, and carbon storage, and more. Michelle Molnar (NAI) described the multi-step approach that NAI uses to bring jurisdictions together to work on watershed-scale natural asset management. All panellists emphasized the

³ Canadian Climate Institute. (2022). *Damage Control: Reducing the costs of climate impacts in Canada*. https://climateinstitute.ca/wp-content/uploads/2022/09/Damage-Control_-EN_0927.pdf



importance of collaboration and trust. Specifically, panellists noted that including biocultural indicators and adopting a change in paradigm are required practices if Indigenous partners are to be appropriately involved.



Highlighted watershed-scale projects included:

- The South Saskatchewan River Operational Model (development motivated by the 2002/2003 drought)
- NCC Prairie Grasslands Action Plan
- Grindstone Creek Watershed Project led by NAI (natural services were valued at ~CAD 2 billion, and co-benefits at ~CAD 38 million a year)
- Waterton Reservoir Watershed (example of private land conservation; 31% of the total length of the watershed tributaries are protected)

“ Never waste a good crisis.

KIM STURGES, WATERSMART SOLUTIONS



Plenary Exercise #2: Advancing Natural Infrastructure Initiatives, Together

The second participatory session invited participants to present and collaborate on projects at different stages of scoping and development. Participants were invited to submit a project or initiative in advance that they wished to receive feedback on from their peers, using a structured feedback process:

- 5 minutes for the initiative holder to describe their initiative and issue
- 5 minutes for clarifying questions from the group
- 30 minutes for the group to provide feedback to the initiative holder, who remained silent or even turned to face away from the group

Initiatives were put forward by people from multiple organizations, including ALUS Canada, NAI, Strategic Systems Engineering, the Miistakis Institute, the North Saskatchewan Watershed Alliance, IISD, the Alberta Low Impact Development Partnership, and the Town of Okotoks. The following initiatives were discussed, with participants offering guidance and expertise to advance each initiative.

Initiative holders and participants reflected positively on the experience. Some initiative holders expressed that they received new insights on the issue they presented on, and others noted that it helped them to clarify their approach. Many participants expressed enthusiasm for this session and wanted more opportunities to collaborate using this approach.

“ 10/10 would do that again.

EVENT EVALUATION



ADVANCING NATURAL INFRASTRUCTURE, TOGETHER

INDIVIDUAL PITCHES

INITIATIVE-LEVEL WORK

CHRISTINE CAMPBELL

COMMUNITY NEEDS, INDIVIDUAL ACTION

WE'RE PAYING FARMERS FOR NATURE-BASED INFRASTRUCTURE. IT'S AN OPPORTUNITY FOR MUNICIPALITIES!

ROY BROOKE

A COMMUNITY OF PRACTICE FOR NATURAL ASSET MANAGEMENT

ENVIRONMENT CANADA IS INTERESTED IN SUPPORTING A COMMUNITY LIKE THIS... HOW WOULD WE MAKE IT WORK?

ANDREW TEFS

CARBON CAPTURE IN DITCHES: LINEAR WETLANDS

DITCHES ARE ALREADY THERE. IF YOU GROW CATTAILS IN THEM, YOU CAN IMPROVE THEM! PILOTS ARE PLENTIFUL, UPTAKE IS SLOW. HOW CAN WE HELP PEOPLE TO SEE THE VALUE?

NILO SINNATAMBY

APPLICATION OF WETLAND DATASETS TO POLICY

WE DEVELOPED WETLAND DATA SETS FOR THE BOW RIVER REGION... HOW CAN WE COMMUNICATE THAT & HAVE IT INCORPORATED INTO POLICIES & PLANS?

SCOTT MILLAR

FROM INVESTMENT TO RETURN ON INVESTMENT

HOW TO CONNECT INVESTORS & SERVICE PROVIDERS? CONNECTING INDIVIDUALS

MARY ELLEN SHAIN

PAYMENT FOR NATURAL INFRASTRUCTURE SERVICES

A NATURAL ASSET INVENTORY & EVALUATION. DEVELOPING A BROAD + ACCESSIBLE INVESTMENT PROGRAM... HOW TO BUILD IT?

ASHLEY RAWLUK

NATURAL INFRASTRUCTURE HELP DESK

OUR FUNDER HAS ENCOURAGED US TO TRY A PILOT PROJECT. WHAT DO PEOPLE NEED HELP WITH? HOW TO PRESENT THIS?

LETA VAN DUIN

CALCULATING BENEFITS FOR SITE-LEVEL ACTION

PROVIDING GUIDANCE ON THE AMOUNT OF BENEFIT TO (FOR EXAMPLE) RAIN BARRELS. WE'VE DEVELOPED AN ONLINE CALCULATOR. WHAT WILL THE UPTAKE BE FROM SMALL COMMUNITIES?

JINNY TOFFELMIRE

N.A. DEVELOPMENT EQUALIZATION TOOL

OKOTOKS HAS A NATURAL ASSETS INVENTORY. DO OUR POST-DEVELOPMENT N.A. VALUES MATCH OUR PRE-DEVELOPMENT VALUES? WHAT INCENTIVES COULD WE OFFER TO ENSURE ENHANCED NATURAL ASSET VALUES?



Key Resources Mentioned

What are some introductory resources?

- [IUCN Global Standard for Nature-based Solutions](#)
- [Insurance Bureau of Canada: Combatting Canada's Rising Flood Costs](#)
- Canadian Council of Ministers of the Environment: [Best Practices and Resources on Climate Resilient Natural Infrastructure](#)
- IISD [Nature-Based Infrastructure Global Resource Centre](#)
- NAI
 - [Natural Asset Infrastructure in BC: Barriers and Opportunities](#)
 - Town of Gibsons, BC [case study](#)

What are some accessible funding programs?

- [Manitoba Habitat Conservancy — Conservation and GROW Trusts](#)
- [Federation of Canadian Municipalities Local Leadership for Climate Adaptation](#)
- [Alberta Innovates — Funded Projects Inventory](#)
- [Infrastructure Canada — Natural Infrastructure Fund](#)

What are some Prairie-specific examples of natural infrastructure efforts?⁴

- IISD [State of Play Report for Natural Infrastructure on the Canadian Prairies](#)
- [EPCOR Stormwater Integrated Resource Plan](#)
- Parkland County, Alberta: [Natural asset modelling](#)
- City of Calgary [Stormwater Management Strategy](#)
- Resilient Landscaping (resilientlandscaping.ca)
- City of Selkirk [Climate Change Adaptation Strategy](#)
- [Beavers from Space](#) project
- Natural Assets Initiative: Natural assets [inventory](#) for the City of Saskatoon
- Town of Okotoks, AB: Natural assets [inventory](#)
- ALUS Canada: [Modeste Natural Infrastructure project](#)
- IISD [Natural Infrastructure and Prairie Prosperity Report](#)

⁴ n.b. This is not a comprehensive list.



Looking Ahead

Sector-Level Next Actions

The Forum concluded with an opportunity for participants to reflect and consider next steps. Examples of key actions suggested by Forum speakers and participants, grouped into two categories, include:

Knowledge Mobilization

- reduce duplication of effort—promote educational resources that already exist
- find a way to share case examples in a more rigorous manner going forward
- increase overall data quality, particularly if decisions are being taken based on them

Advocacy and Outreach

- make the value of natural infrastructure transparent to other people
- get a champion of natural infrastructure in each government and industry department
- keep pushing at a “grassroots” level to lead the way and show what is possible
- recognize and support Indigenous-led natural infrastructure, with acknowledgement of rights and the principles of the United Nations Declaration on the Rights of Indigenous Peoples
- promote acknowledgement of natural infrastructure, rather than just awareness

“Reach out if you don’t know if you qualify for a given funding program. These programs have the ability to work outside of the boundaries you may see on the website.

MONEY MATTERS PANEL



Personal Next Actions

Three of the invited speakers at the Forum shared their personal list of next actions or principles for natural infrastructure work. They have been included here as an example.

| To-do list from Joanna Eyquem (Intact Centre on Climate Adaptation) | Key actions from Jessie Best (City of Saskatoon, SK) | Guiding principles from Duane Nicol (City of Selkirk, MB) |
|---|--|---|
| <ul style="list-style-type: none"> • Need to engage provinces and territories (governments) • Embed natural infrastructure within (normal) decision making and infrastructure, including adaptation in all levels of government | <ul style="list-style-type: none"> • Need to protect and manage natural areas— e.g., the City of Saskatoon has partnered with a local conservation authority | <ul style="list-style-type: none"> • Incremental and consistent is better than grand and periodic • Politics isn't a dirty word. We need to understand it. |
| <ul style="list-style-type: none"> • Mainstream natural asset management • We need to bridge natural asset accounting (public) and nature-related risk management (private) | <ul style="list-style-type: none"> • We also need to create management plans... we need to enhance green spaces in built-up areas. (e.g., within flood-prone neighbourhoods) • Create food forests | <ul style="list-style-type: none"> • Focus communications on co-benefits—selling the benefit beyond the immediate project • Habit and routine are more powerful than inspiration and motivation • Think in terms of systems and long-term timeframes |



“ Pick up the nuts and bolts [tactical lessons learned from examples given] and then move on to implement them in the next 2-3 months.

ROY BROOKE, NAI

©2024 The International Institute for Sustainable Development
Published by the International Institute for Sustainable Development

Head Office

111 Lombard Avenue, Suite 325
Winnipeg, Manitoba
Canada R3B 0T4

Tel: +1 (204) 958-7700

Website: www.iisd.org

X: @IISD_news



[iisd.org](http://www.iisd.org)