



Making the Case for Nature-Based Solutions as a Cost-Effective Adaptation Measure

The role and value of natural infrastructure in Canada

Climate West Inaugural Forum

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Defining Nature-based Solutions

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IUCN Global Standard for Nature-based Solutions

*“actions to **protect, sustainably manage, and restore** natural or modified ecosystems, that address **societal challenges** effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.”*



Green or Natural Infrastructure?

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The use of preserved, restored or enhanced elements or combinations of vegetation and associated biology, land, water and naturally occurring ecological processes to meet targeted infrastructure outcomes” (CCME 2018)

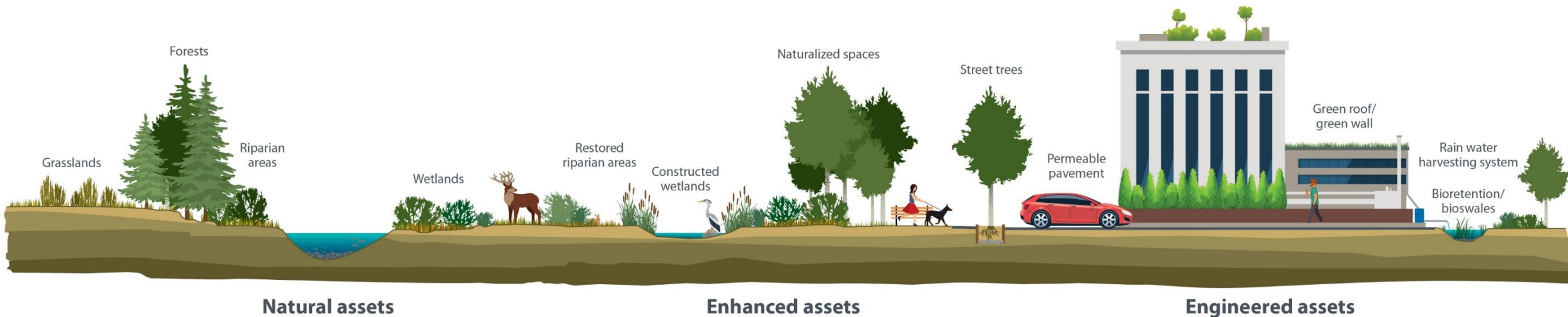
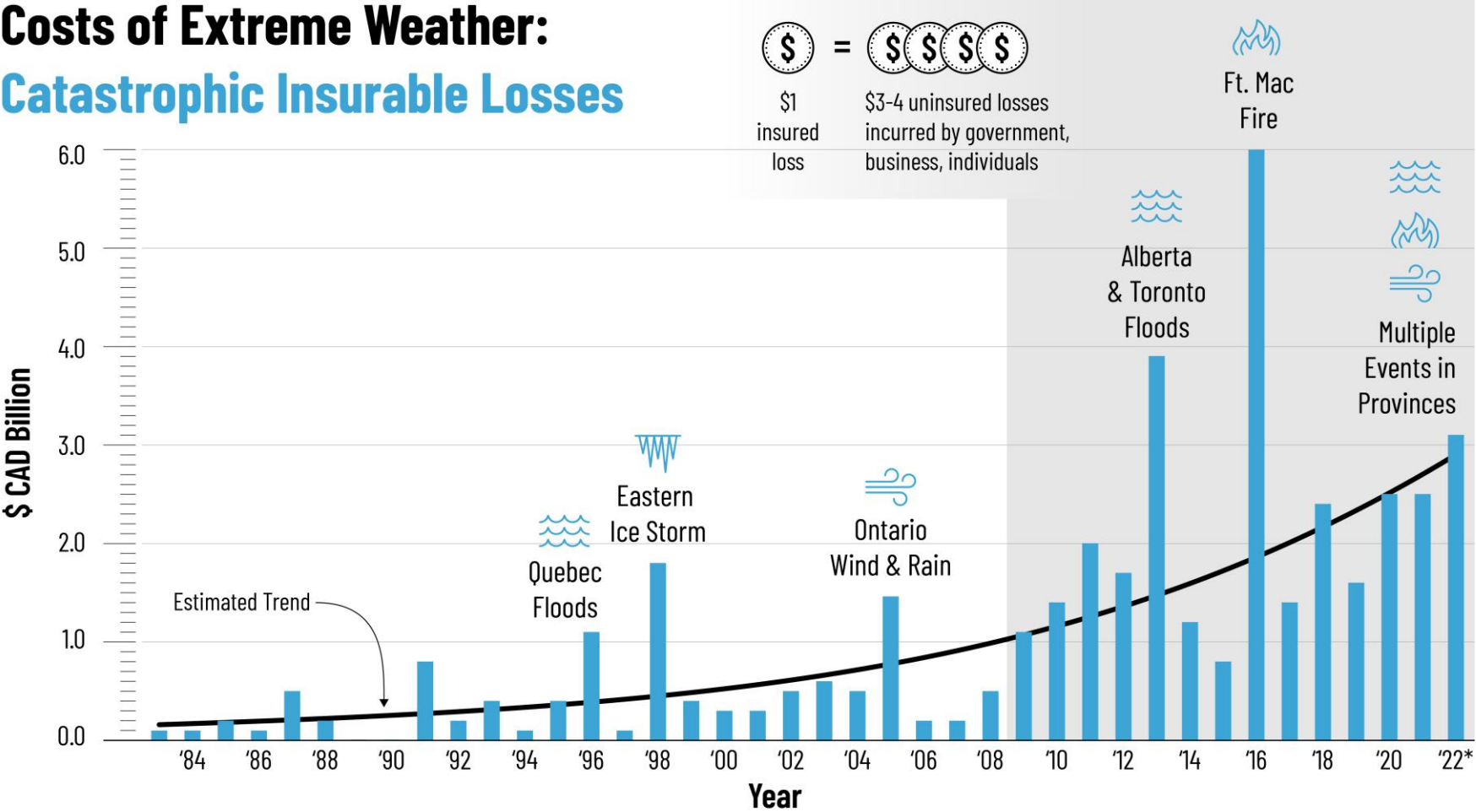


Image courtesy of City of Calgary

NbS are not « just » to tackle an environmental issue....

**Costs of Extreme Weather:
Catastrophic Insurable Losses**

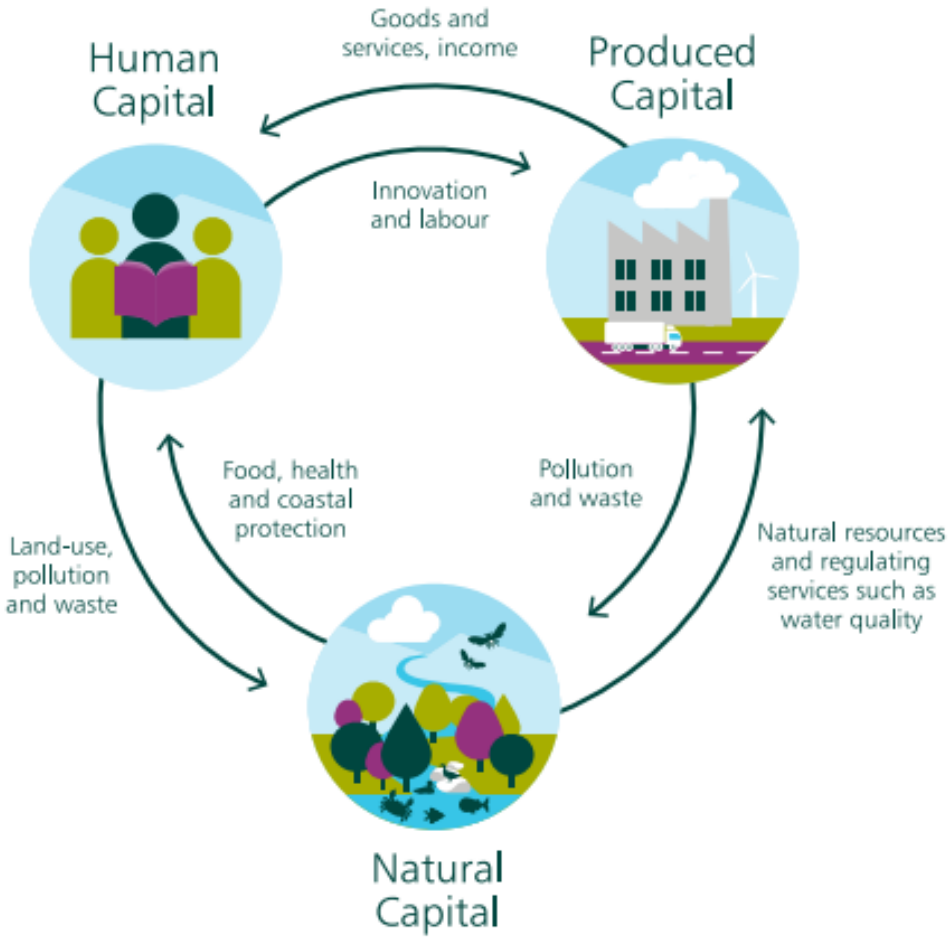
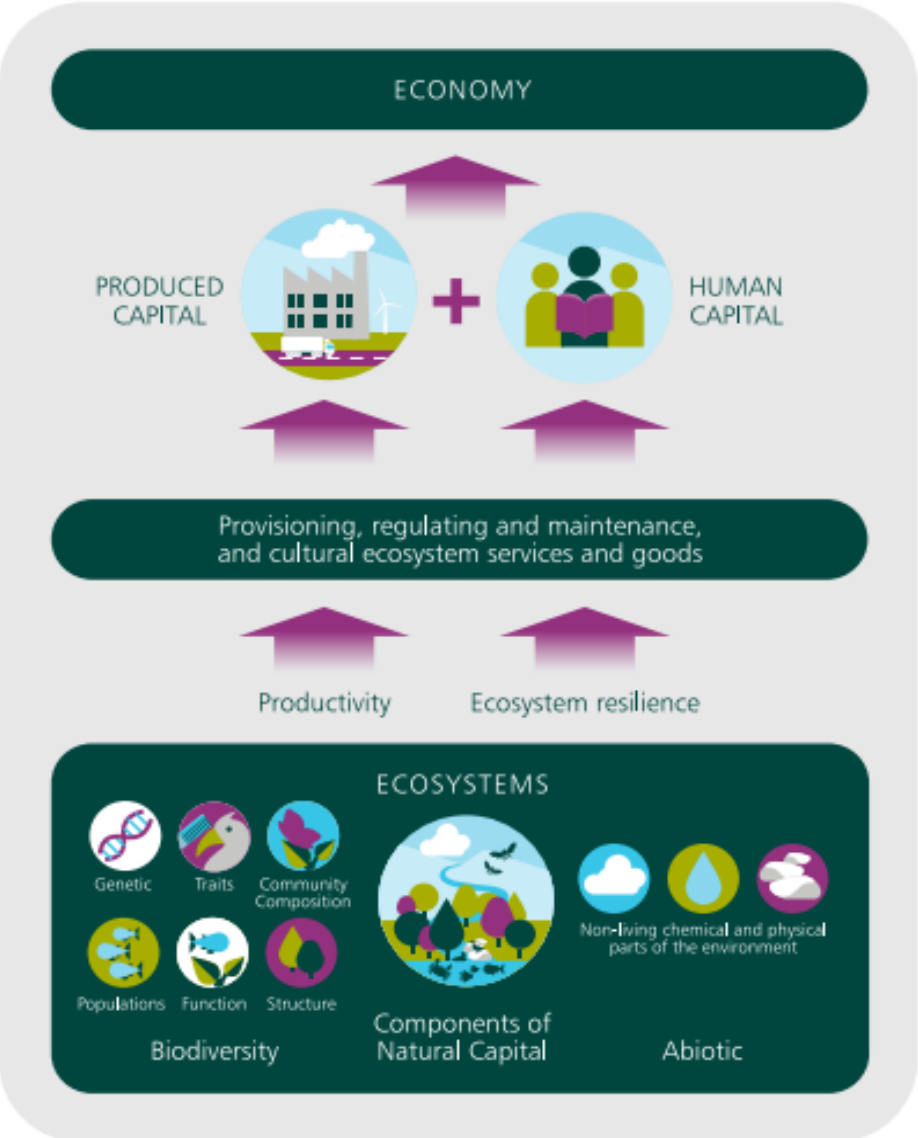


- Most recently over \$2 billion insured losses
- Most losses are not insured.
- Catastrophic losses are not all “financial”, particularly with extreme heat

Source: IBC Facts Book, PCS, CatIQ, Swiss Re, Munich Re & Deloitte

*2022 preliminary values in 2022\$ CAN, corrected for inflation and per capita wealth accumulation.

What is the Economy?



Source: HM Treasury (2021) The Economics of Biodiversity: The Dasgupta Review <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

NbS are not « just » to tackle an environmental issue....

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World Economic Forum New Nature Economy Series 2020:

“\$44 trillion of economic value generation – over half the world’s total GDP – is moderately or highly dependent on nature”.



“Our economies are embedded within Nature, not external to it”



Source: HM Treasury (2021) The Economics of Biodiversity: The Dasgupta Review
<https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

Source: World Economic Forum (2020) New Nature Economy Series 2020
<https://www.weforum.org/reports/new-nature-economy-report-series>

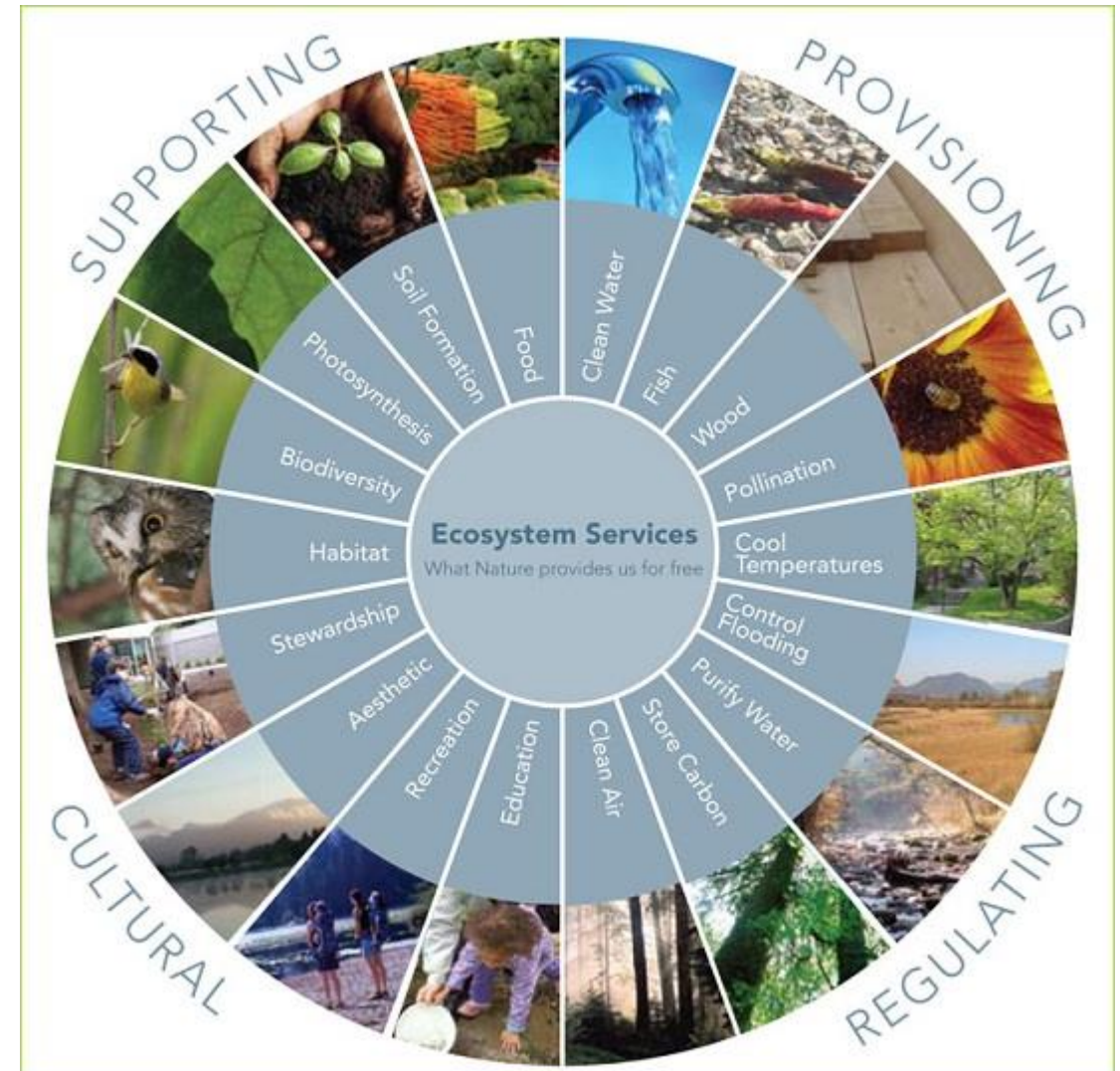
NbS Co-Benefits

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Nature-based Solutions provide
« ecosystem goods and services »

- **Provisioning**
 - Fish and shellfish
- **Regulation and support**
 - **Flooding and erosion**
 - Temperature control
 - Air and water quality
 - Carbon storage and sequestration
 - Biodiversity and habitats
- **Cultural**
 - Recreation opportunities
 - Aesthetic value

*These services are not all offered by
« grey » infrastructure*



Federal Level: Broadened View of « Infrastructure »

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National Adaptation Strategy, Nov 2022



1. Health and Wellbeing;
- 2. Resilient Natural and Built Infrastructure;**
3. Thriving Natural Environment;
4. Strong and Resilient Economy;
and,
5. Disaster Resilience and Security.

National Infrastructure Assessment



....covering all sectors
of economic, social,
sustainable **and**
natural infrastructure.

Census of Environment & Canadian SEEA-EA



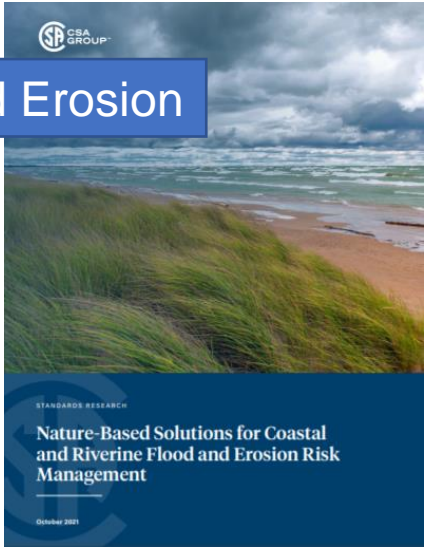
Selected progress:

- [Human Activity and the Environment](#)
- [Urban Greenness](#)
- [Ocean and coastal ecosystem extent account](#)

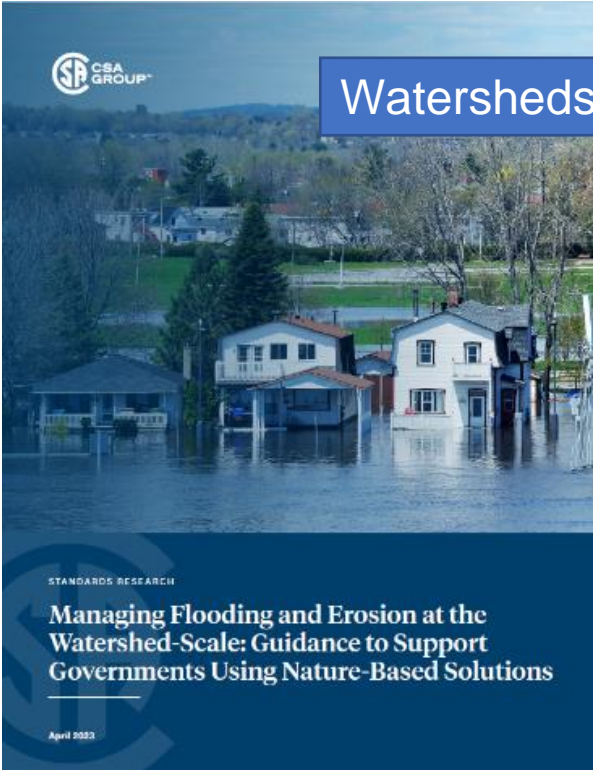
Guidance: Natural Infrastructure for Adaptation



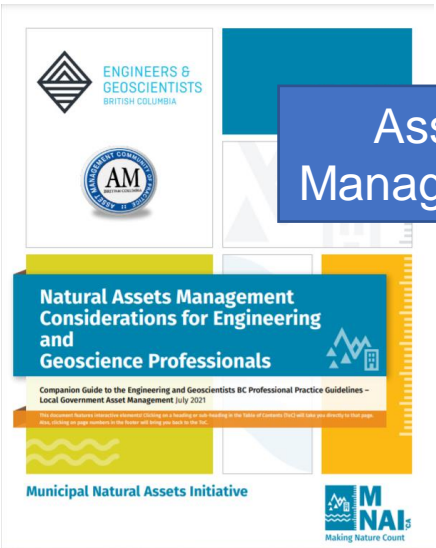
Flood and Erosion



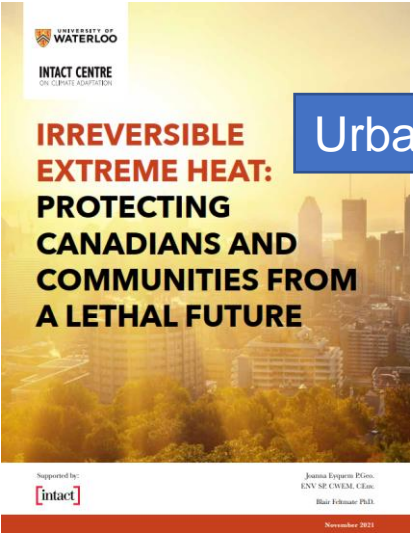
Coasts



Watersheds



Asset Management



Urban Heat

Hot Off the Press!

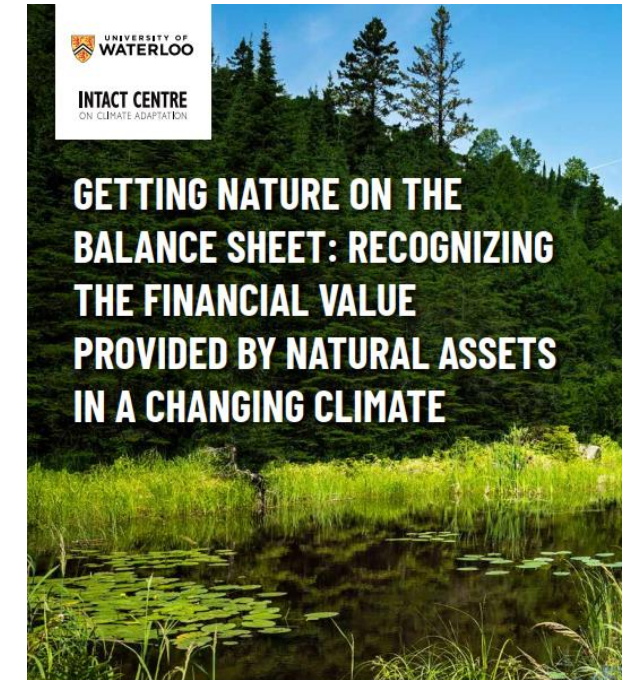
Focus for standards development

Local Level: Getting Nature on the Balance Sheet



INTACT CENTRE
ON CLIMATE ADAPTATION

Good News: Local governments are already managing and valuing natural assets - our largest cities are on board.



Supported by:



Josma Eysaem
Bailey Church
Roy Brooke
Michelle Molnar

Bad News: Accounting systems do not currently allow for reporting of financial value of services provided by nature

<https://www.intactcentreclimateadaptation.ca/getting-nature-on-the-balance-sheet/>

What's Happening?

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- **Guidance:** Voluntary, non-authoritative guidance for local governments on natural asset accounting - with Public Sector Accounting Board, CPA Canada, Local Governments
- **Standards:** New National Standard of Canada for natural asset inventory – launch by CSA Group June 2023.
- **Training:** Natural Asset Management courses



A screenshot of the Royal Roads University website. The header includes the university logo, a search bar, and navigation links for 'Create Account', 'Log in', 'Wishlist (0)', and 'Shopping cart (0)'. Below the header is a navigation menu with 'PROFESSIONAL & CONTINUING STUDIES' highlighted. The main content area shows a breadcrumb trail: 'HOME / COURSES & PROGRAMS / PROFESSIONAL ADVANCEMENT / CAREER SKILLS / NATURAL ASSET MANAGEMENT - ONLINE'. The course title 'Natural Asset Management - ONLINE' is displayed in blue. The text describes the course as a four-week online program for local governments, focusing on sustainable infrastructure and asset management. A photo of a park with trees and a path is shown on the right. The facilitator is listed as Roy Brooke, and a link is provided for more information.

Mainstreaming recognition of the value of nature's services to people....



Media Coverage

- **Globe and Mail (front cover of Report on Business), Oct 6 - [Accounting body proposes rule changes to put nature on the balance sheet](#)**
- **Financial Post (via Globe Newswire), Oct 5, [Nature in the balance: but still not on the balance sheet](#)**
- **CBC What on Earth, Oct 30, [Putting a price on nature](#) (25min podcast with partner case studies)**
- **La Presse, Oct 5, [La nature, un « actif financier » pour les villes ?](#)**
- **Canadian Underwriter, Oct 17 - [How insurers benefit from a green balance sheet](#)**
- **Le Devoir, Dec 3: [La nature, un « actif financier » comme un autre?](#)**