



INTACT CENTRE
ON CLIMATE ADAPTATION

GETTING NATURE INTO FINANCIAL REPORTING: NATURAL ASSET DISCLOSURES FOR LOCAL GOVERNMENTS

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National Workshop Agreement

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Executive Summary

Integrating natural assets—such as wetlands, rivers, forests, and coastal dunes—into financial reporting can help local governments demonstrate effective management of the financially valuable services these assets provide to communities.



wetlands



rivers



lakes



coastal
marshes



soils



forests



fields



dunes

Natural assets are increasingly recognized as infrastructure that provide financially valuable ecosystem services to Canadian communities. Services include absorbing and storing water to limit floods and droughts, reducing temperatures to shelter communities from heat waves, and storing carbon to slow climate change.

Despite these services, “natural resources and Crown lands that have not been purchased” are excluded from Canadian public sector financial statements, including the statements of all levels of government and Crown Corporations. Consequently, natural assets and the services they provide are not appropriately considered in public sector decision-making.

Leadership in proactive management and financial reporting on natural assets is emerging from the local level in Canada. Over 150 local governments are already working towards identifying, assessing, valuing and managing their natural assets, including Canada’s largest cities. Forward-thinking local governments are also including unaudited natural asset disclosures in their financial reports. However, the disclosures made are highly variable due to a current lack of Canadian standards.

The purpose of this guide is to help Canadian local governments make consistent natural asset disclosures, building on existing relevant international and national guidance and standards.

Guidelines on nature-related financial disclosures are being developed by the International Public Sector Accounting Standards Board (IPSASB) and the International Sustainability Standards Board (ISSB). This work is drawing on existing guidance from the United Nations, the Taskforce on Nature-related Financial Disclosures (TNFD), the Global Reporting Initiative (GRI), and others. A National Standard of Canada has also been published for

inventorying natural assets. This guide can support local governments in navigating and applying a wide range of existing guidance to develop their natural asset disclosures, while anticipating new standards.

Recommended Natural Asset Disclosures

The guide outlines recommended natural asset disclosures, as identified through workshops and collaboration with over 120 subject matter experts across Canada. These recommendations are intended to support local governments making unaudited disclosures, until such time as standards are issued by Canada’s Public Sector Accounting Board (PSAB). The recommendations are summarized in Table 1, with links to the relevant section of the guide.

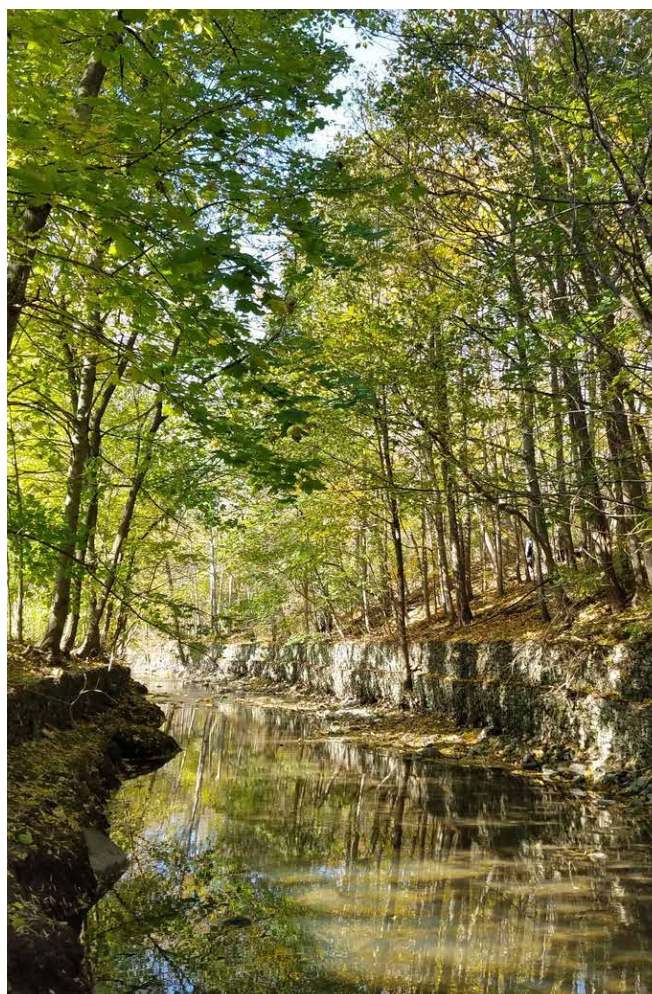







Table 1: Recommended unaudited natural asset disclosures.

Disclosure	Recommended information to be disclosed	Section
<p>Natural Asset Types/Classes</p> 	<ul style="list-style-type: none"> The type or classes of natural assets that have been identified for disclosure by the local government. Rationale for the typology and classes identified. 	Section 6.2
<p>Natural Asset Extent</p> 	<ul style="list-style-type: none"> The location of the natural asset types or classes. The spatial extent of natural asset types or classes, distinguishing natural assets owned by the local government from those owned by others. Rationale for the methods and units of measurement used to quantify extent. 	Section 6.3
<p>Natural Asset Condition</p> 	<ul style="list-style-type: none"> The condition of the natural asset types or classes, supported by quantitative and/or qualitative metrics. Description and rationale for the condition assessment approach. 	Section 6.4
<p>Ecosystem Services</p> 	<ul style="list-style-type: none"> Types of ecosystem services provided by the natural asset types and benefits to the local government. Dependency of the local government on the ecosystem services provided and identified risks. Measurement of the ecosystem services provided in physical terms using quantitative and/or qualitative metrics and the levels of service provided. Description and rationale for the ecosystem service assessment undertaken. 	Section 6.5
<p>Financial Valuation</p> 	<ul style="list-style-type: none"> Monetary values represented by identified ecosystem services (flows) associated with natural assets. Replacement/restoration costs for natural assets that are being used in asset management planning. Description and rationale for the monetary valuation approach undertaken, including where and why cost or current value has not been measured. 	Section 6.6

Disclosure	Recommended information to be disclosed	Section
<p>Disclosure of Change</p> 	<ul style="list-style-type: none"> • Changes during the reporting period and/or since the base year (for years following the initial base year), including: <ul style="list-style-type: none"> • Change in natural asset extent. <ul style="list-style-type: none"> • Additions and deductions to the extent of natural asset types (mapped and divided into managed and unmanaged entries if data permits). • Net change in the extent of natural asset types. • Change in natural asset condition as indicated by changes in the selected quantitative and/or qualitative metrics. • Change in ecosystem services provided in physical terms as indicated by changes in the selected quantitative and/or qualitative metrics and the levels of service provided. • Change in monetary values represented by identified ecosystem services. • Change in monetary values represented by natural assets. • Change in replacement / restoration costs being used in asset management planning. • Changes in risks to natural assets identified through the risk management process. • Impacts of the identified changes on the local governments financial position and service provision. • Description and rationale for the approach taken to measuring the above changes. 	<p>Section 6.7</p>

Local governments may structure unaudited natural asset disclosures to reflect existing guidance and standards on climate- and nature-related financial disclosures, and incorporate this information in existing sustainability disclosures. For example:



Governance: Governance processes, controls and procedures local governments use to monitor and manage natural assets, including the role of Council and senior local government staff.



Strategy: The approach the local government uses to manage natural assets, including asset management and financial planning.



Risk management: The processes the local government uses to identify, assess, and manage risks to natural assets and ecosystem service provision.



Metrics and targets: Physical and monetary metrics the local government uses to report on natural assets and ecosystem service provision (see Table 1).

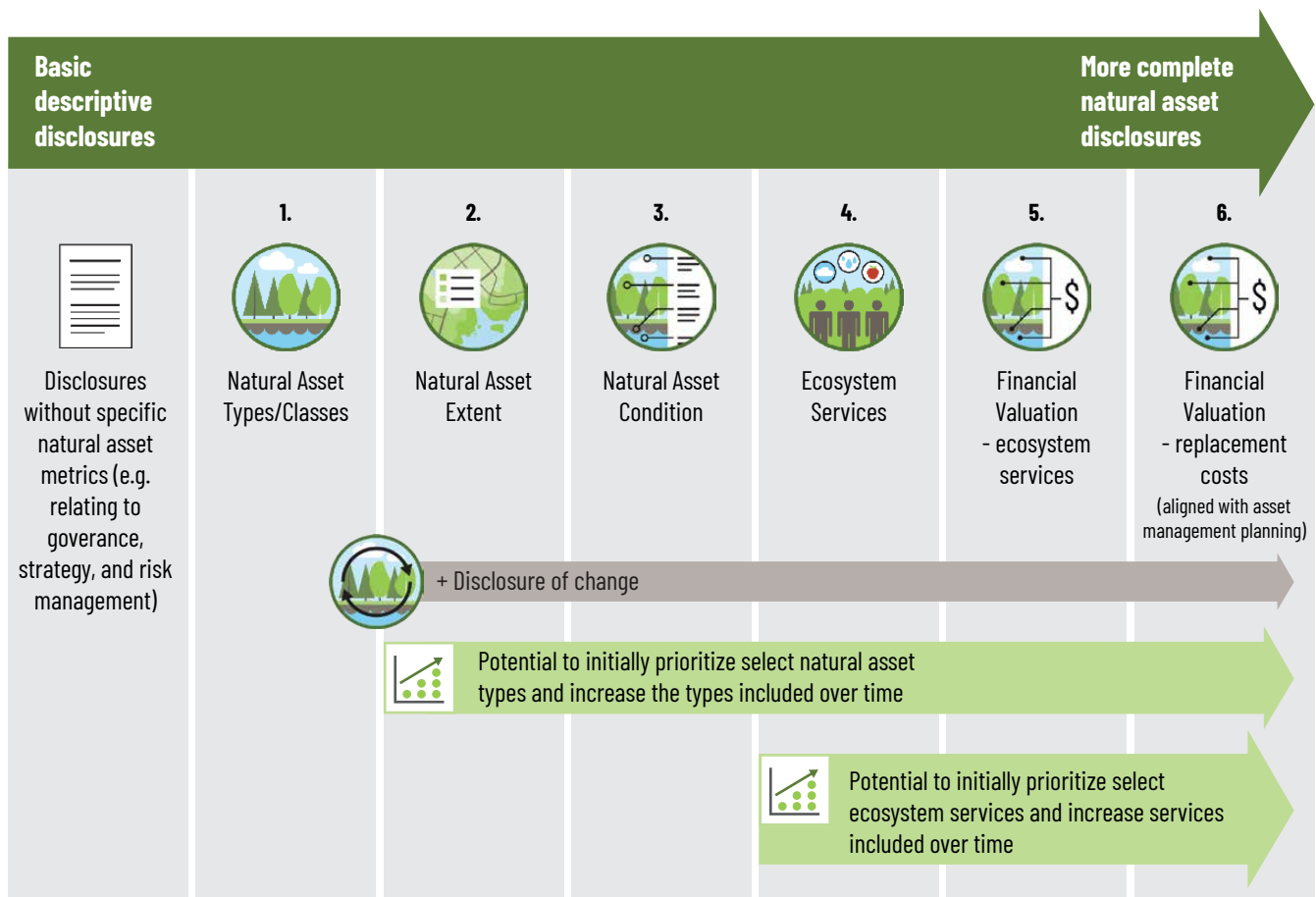


Figure 1: Incremental steps in making natural asset disclosures.

Getting Started

Natural asset disclosures provide local governments with key metrics to demonstrate effective management of natural assets.

Local governments do not need to make a complete set of natural asset-related disclosures covering all of the elements identified at once. This guide can be used to help staff identify what disclosures they can make now, and how they can make incremental improvements towards more complete natural asset disclosures (illustrated in Figure 1).

All local governments can start somewhere in improving their understanding and management of natural assets and making corresponding natural

asset disclosures in their financial and sustainability reports. This guide demonstrates the wealth of existing standards and guidance that are available and how local governments can use them.

The sooner local governments integrate nature into their management and reporting systems, the sooner they will be able to make more informed economic decisions that support the wellbeing and financial stability of their communities.

1. Introduction



There is growing recognition that people depend on nature's services in Canada, yet "natural resources and Crown lands that have not been purchased" are currently explicitly excluded from Canadian public sector financial statements (Public Sector Accounting Board, 2023). As a result, there is limited demonstrated public accountability for the services that nature provides, and changes in these services are often not appropriately considered in public decision-making.

An increasing number of forward-thinking public sector organizations, including local and Indigenous governments and watershed management agencies, formally recognize the role that natural assets play in delivering community services (e.g. water filtration, flood protection, heat regulation) and are working towards pro-actively managing their natural assets (Eyquem et al. 2022). Some local governments are also making related unaudited disclosures as part of their financial and sustainability reporting. However, these local governments are only a small fraction of the total number in Canada (less than 5%), and approaches are inconsistent.

This guide, supported by the Standards Council of Canada (SCC), is intended to assist local governments in making more structured and consistent unaudited disclosures, within the context of evolving international and national guidance and standards relating to nature and biodiversity. This guide can also be used to engage more local governments, including their finance and accounting staff, in managing and reporting on their natural assets as part of the wider process of natural asset management.

1.1 Natural Assets and Ecosystem Services

Natural assets, such as wetlands, rivers, lakes, forests, grasslands, coastal marshes, and dunes provide many critical and financially valuable services to

communities in Canada. Existing national standards define them as below:

Natural asset: 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, such as coastal hazard management, riverine flood management, local stormwater management, and mitigation of the effects of extreme heat.

Natural assets that deliver infrastructure outcomes are sometimes referred to as **natural infrastructure**.

(Source: Canadian Council of Ministers of the Environment, 2018, cited in CSA Group, 2023)

Benefits that people obtain from natural assets are termed **ecosystem goods and services**, which are typically considered in three categories (Haines-Young and Potschin, 2018):



1. Provisioning services -

products obtained from ecosystems, for example, food, wood, and fresh water.



2. Regulation and maintenance services -

services that regulate ecosystem processes and support the production of other ecosystem services, including, for example climate regulation and water cycling.



3. Cultural services -

spiritual, recreational, and cultural benefits that people obtain from nature, including for example, aesthetic enjoyment, and physical and mental health benefits.

The Kunming-Montreal Global Biodiversity Framework references these services as “nature’s contributions to people” (CBD, 2022), as identified within the conceptual framework of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (Diaz, et.al, 2018).

1.2 Natural Asset Disclosures in Canada

One of the objectives in establishing public sector accounting standards in Canada according to the Public Sector Accounting Board (PSAB) is “to meet

the needs of users of financial statements by providing the information needed for accountability and decision making” (PSAB, 2024a). Information on natural assets is needed to underpin accountability for effective management and maintenance of these assets and the ecosystem services they provide.

The good news is that over 150 local governments are taking action towards identifying, assessing, valuing and proactively managing their natural assets (Figure 2, Box 1). Some of those governments, including both small and large communities, have also made related disclosures in their financial and sustainability reports to date (Table 2).

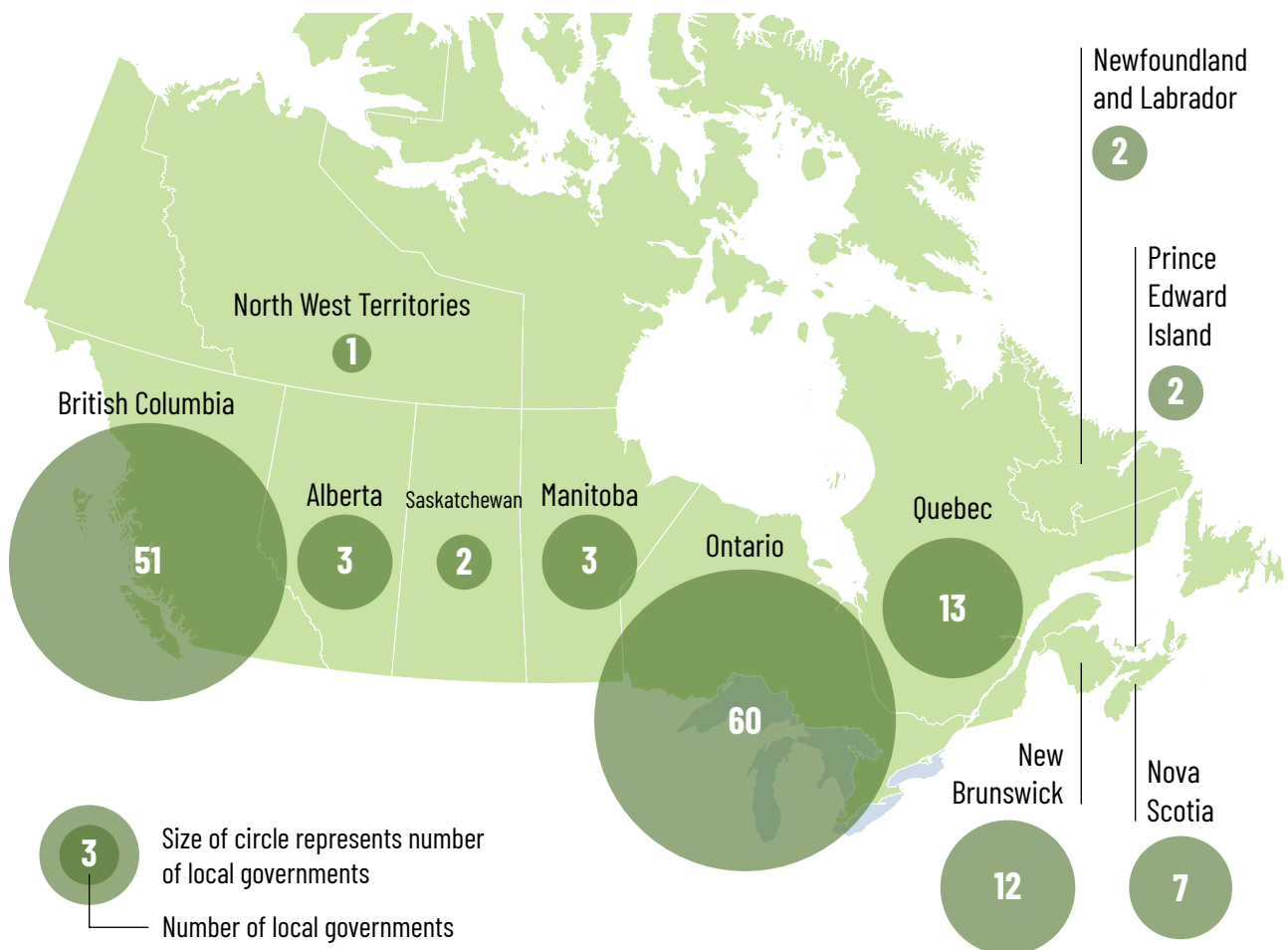


Figure 2: Local governments and watershed management agencies across Canada where natural asset management actions, such as inventory, modelling, valuation and management are being undertaken.

Box 1: Local governments across Canada where natural asset management efforts, such as inventory, assessment, valuation and management, have been undertaken.

British Columbia		38. Regional District of Comox Valley	71. City of London
1. Capital Regional District (CRD)		39. Regional District of East Kootenay	72. City of Markham
2. Clayoquot Biosphere Trust		40. Regional District of Kootenay Boundary	73. City of Mississauga
3. City of Abbotsford		41. Regional District of Nanaimo	74. City of Niagara Falls
4. City of Burnaby		42. Regional District of Squamish-Lillooet	75. City of Orillia
5. City of Campbell River		43. Resort Municipality of Whistler	76. City of Oshawa
6. City of Colwood		44. Town of Comox	77. City of Ottawa
7. City of Courtenay		45. Town of Gibsons	78. City of Peterborough
8. City of Cranbrook		46. Town of Golden	79. City of Richmond Hill
9. City of Dawson Creek		47. Town of Parksville	80. City of St. Catharine
10. City of Grand Forks		48. Town of View Royal	81. City of Toronto
11. City of Kelowna		49. Township of Langley	82. City of Vaughan
12. City of Nanaimo		50. Vancouver Fraser Port Authority	83. City of Windsor
13. City of New Westminster		51. Village of Cumberland	84. City of Woodstock
14. City of North Vancouver		Northwest Territories	
15. City of Port Moody		52. City of Yellowknife	85. Conservation Halton
16. City of Port Coquitlam		Alberta	
17. City of Prince George		53. City of Calgary	86. County of Dufferin
18. City of Rossland		54. City of Edmonton	87. County of Northumberland
19. City of Surrey		55. City of Spruce Grove	88. County of Oxford
20. City of Terrace		56. Parkland County	89. County of Simcoe
21. City of Vancouver		57. Town of Cochrane	90. Credit Valley Conservation
22. City of Vernon		58. Town of Okotoks	91. Lanark County
23. City of West Kelowna		Saskatchewan	
24. District of Central Saanich		59. City of Martensville	92. Loyalist Township
25. District of Highlands		60. City of Saskatoon	93. Municipality of Port Hope
26. District of Kent		Manitoba	
27. District of Mackenzie		61. City of Selkirk	94. Municipality of Strathroy-Caradoc
28. District of North Cowichan		62. Regional Municipality of Springfield	95. National Capital Region (Ottawa / Gatineau)
29. District of Saanich		63. Winnipeg Metropolitan Region	96. Niagara Peninsula Conservation Authority
30. District of Sparwood		Ontario	
31. District of Tofino		64. City of Barrie	97. Regional Municipality of Halton
32. District of Vanderhoof		65. City of Brantford	98. Region of Niagara
33. District of West Vancouver		66. City of Burlington	99. Region of Peel
34. qathet Regional District		67. City of Cambridge	100. Region of York
35. Regional District of Alberni-Clayoquot		68. City of Guelph	101. Tay Valley Township
36. Regional District of Central Kootenay		69. City of Hamilton	102. Toronto Region Conservation Authority
37. Regional District of Central Okanagan		70. City of Kenora	103. Town of Aurora
			104. Town of Blue Mountains
			105. Town of Caledon
			106. Town of Collingwood

107.	Town of East Gwillimbury
108.	Town of Fort Erie
109.	Town of Halton Hills
110.	Town of Lincoln
111.	Town of Midland
112.	Town of Minto
113.	Town of Newmarket
114.	Town of Oakville
115.	Town of Orangeville
116.	Town of Pelham
117.	Town of Shelburne
118.	Town of The Blue Mountains
119.	Township of Centre Wellington
120.	Township of East Zorra-Tavistock
121.	Township of Conmee
122.	Township of King
123.	Township of Ramara
Québec	
124.	Ville de Laval
125.	Ville de Montréal
126.	Ville de Terrebonne

127.	Communauté métropolitaine de Montréal
128.	Municipalité de Compton
129.	Région de la capitale nationale (Ottawa / Gatineau)
130.	Ville de Québec
131.	Communauté métropolitaine de Québec
132.	Ville de Candiac
133.	Ville de Hudson
134.	Ville de Rosemère
135.	Ville de Varenne
136.	Bassin versant de la Rivière Chaudière
New Brunswick	
137.	City of Edmundston
138.	City of Fredericton
139.	City of Moncton
140.	City of Saint John
141.	Northwest Regional Service Commission
142.	Point-du-Chêne
143.	Town of Florenceville-Bristol

144.	Town of Riverview
145.	Town of Sackville
146.	Town of Saint Andre
147.	Village of Drummond
148.	Village of Riverside-Albert
Nova Scotia	
149.	Annapolis County
150.	District of East Hants
151.	District of Lunenburg
152.	Halifax Regional Municipality
153.	Town of Mahone Bay
154.	Town of New Glasgow
155.	Town of Pictou
Prince Edward Island	
156.	City of Charlottetown
157.	Town of Stratford
Newfoundland and Labrador	
158.	City of St. John's
159.	Town of Logy Bay-Middle Cove-Outer-Cove

Table 2: Examples of disclosures in financial and sustainability reports relating to natural assets.

Local Government	Report	Overview of natural asset-related disclosures
City of Calgary	2022 City of Calgary Financial Report (City of Calgary, 2023)	Notes within unaudited climate-related financial disclosures that are structured according to the requirements of the TCFD. The notes are under “Risk management” as part of identifying and assessing climate-related risks (p. 95). They describe and provide a link to the City’s Natural Asset Inventory and Valuation and present the replacement cost (\$6.9 billion) and annual service value (\$2.5 billion) of natural assets calculated in this study.
Town of Gibsons	Financial Statements December 31, 2023 (Town of Gibsons, 2023)	Note within audited “Notes to the financial statements” under Significant Accounting Policies/Tangible capital assets (p. 10). The note acknowledges some of the roles of natural assets— the Gibsons Aquifer (water storage and filtration), creeks, riparian areas and wetlands (storm water management), the marine foreshore (natural seawall) and the urban forest (numerous social, environmental and economic benefits)—the Town’s dependency on these assets and investments the Town is making to manage them.
City of Mississauga	2022 Financial and Sustainability Report (City of Mississauga, 2023).	<p>Notes in both the financial and sustainability sections of the report. Unaudited note within “Notes to the Consolidated Financial Statements” (p. 119). The note highlights that benefits and services from a variety of natural assets reduce some need for engineered infrastructure. It speaks specifically to the role of trees and the fact that the city must invest in natural assets to maintain level of service to taxpayers.</p> <p>Unaudited section on Natural Capital included in the “Sustainability Section.” Describes priority natural assets and services, commitment to integrating natural assets into financial reporting, valuation for city trees and preliminary results of natural asset inventory (including a link to an online dashboard showing extent and condition of natural assets).</p>
City of Montreal	Annual Financial Report 2022 (City of Montreal, 2023).	Notes within unaudited climate-related financial disclosures structured according to the requirements of the TCFD (p. 94-99). Notes under “Governance” and “Strategy” describe the work undertaken by the city to contribute to guidance on natural asset disclosures. The city tracks investment in assets under five categories: urban agriculture, natural environment, greening and biodiversity, rainwater management and urban trees.
Quebec City	Rapport financier 2023 (Ville de Québec, 2024).	Note within unaudited climate-related financial disclosures structured according to the requirements of the ISSB (p. A-7). Points to adoption of a “Strategy to support biodiversity” in 2023 but does not specify that this includes natural asset management.
City of Toronto	Planning for the Future: 2023 Annual Financial Report (City of Toronto, 2024)	Note within audited “Notes to consolidated financial statements” (p. 53), under “Non-financial assets”/“Tangible capital assets”/“Infrastructure assets”. The note acknowledges that the City manages various natural assets, including ravines and urban forests, that provide services to residents and businesses and are excluded from the financial statements.
District of West Vancouver	2023 Annual Report (District of West Vancouver, 2023).	Unaudited “Supplementary Information” section on natural assets (p. 111), including description, estimated values for different types of natural asset (forests, waterways, foreshore, parks, carbon storage), anticipated next steps and a link to a public facing brochure .

1.3 Purpose

Natural asset disclosures that have been made by local governments include both audited and unaudited disclosures. The disclosures contain details concerning inventory, priority natural assets and services, condition assessment, valuation, dependencies, investments and management strategies (Table 2). Disclosures are highly variable in their content and format as this is an emerging practice and there are currently no associated standards or guidance in Canada.

This guide is to support Canadian local governments in making more consistent disclosures in the context of evolving accounting and sustainability standards. This includes “early-adopter” local governments who are already making disclosures, as well as local governments who are actively working towards this goal. The guide builds on an updated review of existing disclosure standards as well as ongoing accounting and disclosure standard development projects that are relevant to natural assets (as of December 2024).

Recommendations are intended to help local governments prepare for alignment with future standards published by the International Public Sector Accounting Standards Board (IPSASB), in particular the Board’s recent Exposure Draft on “Tangible Natural Resources” (IPSASB, 2024c). Standards issued by IPSASB will influence standard setting by Canada’s Public Sector Accounting Board (PSAB)— as set out in PSAB’s International Strategy (PSAB, 2024b), the principles of international standards are used as a basis for developing corresponding Canadian standards.

The scope of the guide identifies several exclusions where participants highlighted the need for more detailed guidance, including standards for financial valuation of ecosystem services, which are not addressed within this guide.

It is hoped that the guide will serve as an additional tool to engage with financial reporting representatives across Canada’s approximately 3,600 local governments (Commonwealth Governance, n.d.) that are yet to begin their natural asset management journey.



2. Developing the Guide



This guide is a National Workshop Agreement that has been developed through collaborative workshops, consensus and review by those listed in the acknowledgements, according to SCC’s defined process (SCC, 2020).

Over 120 contributors were directly engaged in this process, bringing experiences from across Canada, including from British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island. Workshop participants included representatives from a wide range of organizations, including federal, provincial, local and Indigenous governments, professional associations, private sector organizations, watershed organisations, NGOs, and academia. Representatives of the IPSASB and PSAB attended the workshops in an observational capacity.

Engagement was centred around two half-day, virtual workshops, held on April 18, 2024, and May 28, 2024. Materials provided to workshop participants included:

- Key background documents.
- An overview of standards, recommendations and ongoing projects relevant to natural asset disclosures ([see Section 3](#)).
- Initial content of the guide for comment.

The workshops were structured to stimulate discussion and collect information, feedback and indications of consensus using a variety of methods, including:

- Presentations from subject matter experts.
- Interactive polling activities.
- Small group activities with note takers to capture key discussion points.
- Plenary discussions.

As demonstrated and discussed through this National Workshop Agreement, there is already significant, recent guidance around nature-related disclosures at an

international and national level. The agreed approach to developing this guide was therefore to:

- Refer to existing guidance wherever possible, to anticipate international and Canadian standards development. Relevant parts of existing guidance have been signposted (and hyperlinked) for users to help them navigate and understand the source(s) of guidance that apply to different elements.
- Focus on natural assets in a way that considers IPSASB draft principles for recognizing and disclosing tangible natural resource assets in financial statements.
- Consider materiality in a context relevant to public sector entities, in particular referring to GRI’s “GRI 101: Biodiversity 2024” topic standard regarding reporting impacts, as well as the TNFD. This reflects the approach of IPSASB to Sustainability Climate Disclosures (IPSASB, 2024 and ISSB’s collaboration with GRI with regard to environmental and social materiality (IFRS Foundation, 2024a).

The content of this guide has been developed from materials presented at the workshops and consensus indicated through polling activities. Contributors were also invited to review and provide comment on this report.

3. Context: Standards, Recommendations and Ongoing Projects



Accounting and sustainability disclosure standards are rapidly evolving at an international and national level, particularly in the field of nature and biodiversity. Natural asset disclosures must be considered in the broader context of standards, recommendations and ongoing projects relating to accounting and sustainability disclosures.

To facilitate alignment, participants were provided with an overview of relevant international and Canadian resources and ongoing work ([Appendix A](#)), including:

International Resources

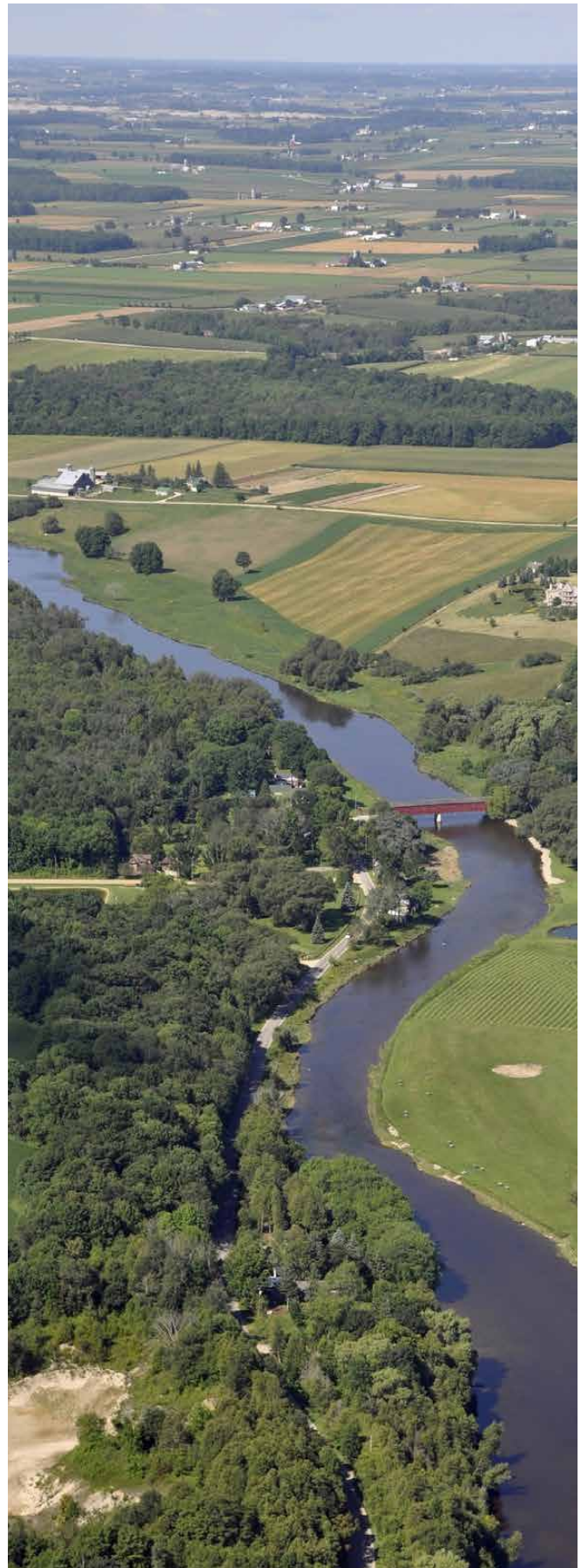
- International Sustainability Standards Board (ISSB) standards:
 - IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information Disclosures (ISSB, 2024a).
 - IFRS S2: Climate-Related Disclosures (ISSB, 2024b).
- International Public Sector Accounting Standards Board (IPSASB) projects:
 - Tangible Natural Resources Project (IPSASB, 2024a).
 - Sustainability Climate-Related Disclosures Project (IPSASB, 2024b).
- Global Reporting Initiative (GRI) Topic Standard GRI 101 – Biodiversity 2024 (GRI, 2024a).
- Taskforce on Nature-related Financial Disclosures (TNFD) Recommendations (TNFD, 2023).
- United Nations System of Environmental Economic Accounting - Ecosystem Accounting (SEEA-EA) (United Nations et al., 2021).

Canadian Resources

- Canadian Sustainability Standards Board (CSSB) resources:
 - CSSB Exposure Draft – Proposed Canadian Sustainability Disclosure Standard (CSDS) 1, General Requirements for Disclosure of Sustainability-related Financial Information (FRAS Canada, 2024a).
 - CSSB Exposure Draft – Proposed Canadian Sustainability Disclosure Standard (CSDS) 2, Climate-related Disclosures (FRAS Canada, 2024b).
- Public Sector Accounting Board (PSAB) resources:
 - Government Not-for-Profit: Capital Assets Project (PSAB, 2024b).
 - Response to IPSASB’s Consultation Paper, Natural Resources (PSAB, 2024c) (note: PSAB continues to monitor IPSASB’s Tangible Natural Resources project and will be consulting with Canadians on IPSASB’s Exposure Draft 92, Tangible Natural Resources)
- Auditing and Assurance Standards Board (AASB) Sustainability Assurance Project (AASB, 2024).
- Statistics Canada resources:
 - Census of Environment (Statistics Canada, 2024a).
 - Canadian System of Environmental-Economic Accounts - Ecosystem Accounts (Statistics Canada, 2024b).
- CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023).

In addition to these resources, there are existing standards and guidance relating to asset management, practical steps to incorporate natural assets into asset management planning and climate-related financial disclosures by local governments. The following additional resources have also been considered in developing the guide:

- ISO 55000: 2024 Asset management — Vocabulary, overview and principles (International Organization for Standardization, 2024).
- Nature is Infrastructure: How to Include Natural Assets in Asset Management Plans (Natural Assets Initiative, 2024).
- Enhancing Climate-related Disclosure by Cities: A Guide to Adopting the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) (CPA Canada, 2019).



4. Scope



The agreed purpose of this guide is to support unaudited natural asset-related disclosures made by local governments in their annual financial and sustainability reports from 2024 onwards.

4.1 Geographical Extent

The guide is designed to be nationally applicable within Canada.

4.2 Timescale

The guide is intended as interim, voluntary, and non-authoritative from the time of publication until such a time as Canadian public sector accounting standards may be issued by PSAB. This may include, but is not limited to, the following:

- a. recognizing and accounting for natural assets within financial statements
- b. disclosures relating to natural assets that are not recognized as assets under (a).

4.3 Audience

It is understood that the guide may be used by:

- Public sector financial and accounting professionals, responsible for financial management, accounting, and financial reporting.
- Public sector sustainability professionals, responsible for sustainability management and reporting.
- Asset management practitioners responsible for the management of public sector assets.

This may include, but is not limited to, people working in the public sector, Indigenous Peoples (First Nations, Metis, and Inuit people), regional authorities, communities, governments, watershed management organizations, conservation authorities, and consultants engaged to assist with asset management.

- Land managers responsible for the on-going management of natural assets.
- Others with a role in the delivery of services supported by natural assets.

Secondary audiences may include, but not limited to:

- Financial institutions and insurers interested in the risk profile of public sector entities or wishing to define and invest in the protection and management of nature and its services.
- Users and developers of Environmental, Social, and Governance (ESG) ratings.
- Professionals interested in ecosystem-based management and reversal of biodiversity loss, nature-based solutions to societal issues, climate adaptation, and disaster risk reduction.
- Others with an interest in the sustainable delivery of ecosystem services.

4.4 Exclusions

The guide does not address:

- Recognition, measurement or presentation of tangible natural resource assets in financial statements and related audited note disclosures that are addressed in IPSASB's Tangible Natural Resources Project (IPSASB, 2024a).

- Additional climate and nature-related disclosures outside the financial statements that are addressed in IPSASB's Sustainability Climate-Disclosures Project (IPSASB, 2024b).
- Methods for inventory, condition assessment, financial valuation or management of natural assets.
- Other asset management processes.
- Specific recommendations on how local governments should engage with Indigenous Peoples and address Indigenous rights and title in the context of UNDRIP as part of their natural asset work.



5. Definitions



This guide uses terminology that may be new to users. Users from different backgrounds may also be using certain terms, like the word “asset”, in different ways, depending on the context and their professional background. The definitions in Table 3 are extracted

from existing guidance and are provided to help users a) understand definitions already being used, b) compare definitions for similar terms. Further definitions and details can be found within the source publications.

Table 3: Definitions, sources and use of terminology in this guide.

Source	Key Definition(s)	Comments
CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023)	Natural asset 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, such as coastal hazard management, riverine flood management, local stormwater management and mitigation of the effects of extreme heat.	From CCME (2018) Used by those currently practicing local government-led natural asset management in Canada. Note: the word “asset” here does not denote an asset as defined in other sources.
	Natural infrastructure Natural assets that deliver infrastructure outcomes are sometimes referred to as natural infrastructure.	From CCME (2018)
	Enhanced assets The assets that occupy a mid-point on the spectrum between natural assets (ecosystem and landscape elements on the preserved or restored end) and constructed green infrastructure, providing comparable or complementary outcomes.	From CCME (2021)
Recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD, 2023a). See also TNFD Glossary . (TNFD, 2023b)	State of nature The condition and extent of ecosystems, and species population size and extinction risk, including positive or negative changes.	Adapted from United Nations et al. (2021) System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA)
	Ecosystem services The contributions of ecosystems to the benefits that are used in economic and other human activity.	From United Nations et al. (2021) System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA)
	Natural capital The stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.	From National Capital Protocol - Capitals Coalition (2016)
	Environmental assets The naturally occurring living and non-living components of the Earth, together constituting the biophysical environment, which may provide benefits to humanity.	From United Nations et al. (2021) System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA)
	Ecosystem assets A type of environmental asset that represents a specific ecosystem type characterised by a distinct set of biotic and abiotic components and their interactions.	Adapted from United Nations et al. (2021) System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA)

Source	Key Definition(s)	Comments
	<p>Ecosystem extent Area coverage of a particular ecosystem, usually measured in terms of spatial area.</p>	From United Nations et al. (2021) System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA)
	<p>Ecosystem condition The quality of an ecosystem measured by its abiotic and biotic characteristics. Condition is assessed by an ecosystem's composition, structure and function which, in turn, underpins the ecological integrity of the ecosystem, and supports its capacity to supply ecosystem services on an ongoing basis.</p>	From United Nations et al. (2021) System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA)
	<p>Ecosystem connectivity The degree to which the landscape facilitates the movement of organisms (animals, plant reproductive structures, pollen, pollinators, spores, etc.) and other environmentally important resources, such as nutrients and moisture, between similar habitats. Connectivity is hampered by fragmentation.</p>	From Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Glossary
<p>IPSAS Glossary of Defined Terms (International Federation of Accountants, 2018)</p>	<p>Assets Resources controlled by an entity as a result of past events and from which future economic benefits or service potential are expected to flow to the entity.</p>	
	<p>Deemed cost An amount used a surrogate for acquisition cost or depreciated cost at a given date.</p>	
<p>IPSASB Conceptual Framework (International Federation of Accountants, 2023)</p>	<p>Service potential Service potential is the capability of a resource to provide services that contribute to achieving the entity's objectives, without necessarily generating net cash inflows.</p> <p>Public sector assets that embody service potential may include recreational, heritage, community defense and other assets that are held by governments and other public sector entities and which are used to provide services to third parties. Such services may be for collective or individual consumption. Many services may be provided in areas in which market competition is limited or non-existent. The use and disposal of such assets may be restricted as many assets that embody service potential are specialized in nature.</p>	Referenced in Exposure Draft 92 Tangible Natural Resources (IPSASB, 2024c).
	<p>Economic benefits Economic benefits are cash inflows or a reduction in cash outflows. Cash inflows (or reduced cash outflows) may be derived from, for example:</p> <ul style="list-style-type: none"> • An asset's use in the production and sale of services • The direct exchange of an asset for cash • Extinguishing or reducing a liability by transferring an asset. 	Referenced in Exposure Draft 92 Tangible Natural Resources (IPSASB, 2024c).

Source	Key Definition(s)	Comments
IPSASB Tangible Natural Resources Project (IPSASB, 2024a)	Tangible natural resource An item which: (a) Is naturally occurring; and (b) Embodies service potential, can generate future economic benefits, or both.	Work in progress. Exposure draft of standard published for comment (IPSASB, 2024c).
	Class of tangible natural resources A grouping of tangible natural resources of a similar nature or held for a similar reason for that is shown as a single item for the purpose of display and disclosure in the financial statements.	Work in progress. Exposure draft of standard published for comment (IPSASB, 2024c).
IPSAS 46 Measurement (IPSASB, 2023a)	Current operational value The amount the entity would pay for the remaining service potential of an asset at the measurement date.	
ISO 55000: 2024 Asset management – Vocabulary, overview and principles (ISO, 2024)	Asset Item, thing or entity that has potential or actual value to an organization.	
	Asset management Coordinated activity of an organization to realize value from assets.	
	Asset management plan Documented information that specifies the activities, resources, costs and timescales required for an individual asset, or a grouping of assets, to achieve an organization's asset management objectives.	Ontarian municipalities are required by regulation to complete asset management plans (O. Reg. 588/17).
	Level of service Parameters, or combination of parameters, which reflect social, political, environmental and economic outcomes that an organization delivers.	

6. Guidance on Unaudited Natural Asset Disclosures



Guidance on unaudited natural asset disclosures has been compiled based on discussions held as part of the Workshop Agreement process. Each section identifies:

- Information that should be disclosed
- Resources
- Considerations highlighted through this Workshop Agreement

According to the agreed approach ([Section 2](#)), existing resources have been signposted and linked for users, with a clear recommendation that users refer to these resources for further guidance.

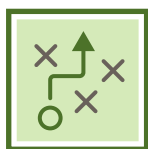
6.1 Overview

6.1.1 Structure

Local governments may find it useful to structure unaudited natural asset disclosures in a way that reflects existing guidance and standards on climate and nature-related financial disclosures (see resources in [Appendix A](#) and [Section 7.2](#)). For example, in terms of natural asset management by local governments, and adapted from the TNFD Recommendations, this may include:



Governance: The governance processes, controls and procedures the local government uses to monitor and manage natural assets, including the role of Council and senior local government staff.



Strategy: The approach the local government uses to manage natural assets, including asset management and financial planning.



Risk management: The processes the local government uses to identify, assess, and manage risks to natural assets and ecosystem service provision.



Metrics and targets: Physical and monetary metrics the local government uses to report on natural assets and ecosystem service provision, including levels of service or other targets the organisation has set or is required to meet by law or regulation.

Where a local government is making disclosures relating to general sustainability, nature or climate it may be useful to consolidate the governance, strategy, and risk management disclosures in a common section and note how the various sustainability areas, including natural assets, are managed as well as the linkages between them.

This guide focuses on natural asset disclosure metrics, and has been divided into the following elements:

- Natural Asset Types / Classes ([Section 6.2](#))
- Natural Asset Extent ([Section 6.3](#))
- Natural Asset Condition ([Section 6.4](#))
- Ecosystem Services ([Section 6.5](#))
- Financial Valuation – ecosystem services ([Section 6.6](#))
- Financial Valuation – natural assets ([Section 6.6](#))
- Disclosures of change ([Section 6.7](#))

In addition to disclosures within public financial reports, local governments may wish to make more detailed information available internally (e.g. to Councils, boards and committees), to assist in understanding and using the information.

6.1.2 Physical and Monetary Attributes of Disclosures

Natural asset disclosures can include both physical and monetary attributes. These attributes may relate to:

- stocks of natural assets
- flows in terms of ecosystem services that benefit people.

The structure of the United Nations System of Environmental Economic Accounting – Ecosystem Accounts (UN SEEA-EA), that is used by the federal government to compile Canada’s natural capital accounts, provides a conceptual view of these elements (Figure 3).

It is recommended that local governments consider both stocks and flows, including physical and monetary attributes, in their disclosures. Both stocks and flows can vary over time and these changes are an important part of disclosures.

6.1.3 Assumptions and Limitations

Within each of the sections a description and rationale for the approach taken should be included alongside the information being disclosed. Although the disclosures are not intended to be audited, the assumptions made, and associated limitations, should be outlined in the interest of transparency and accountability.

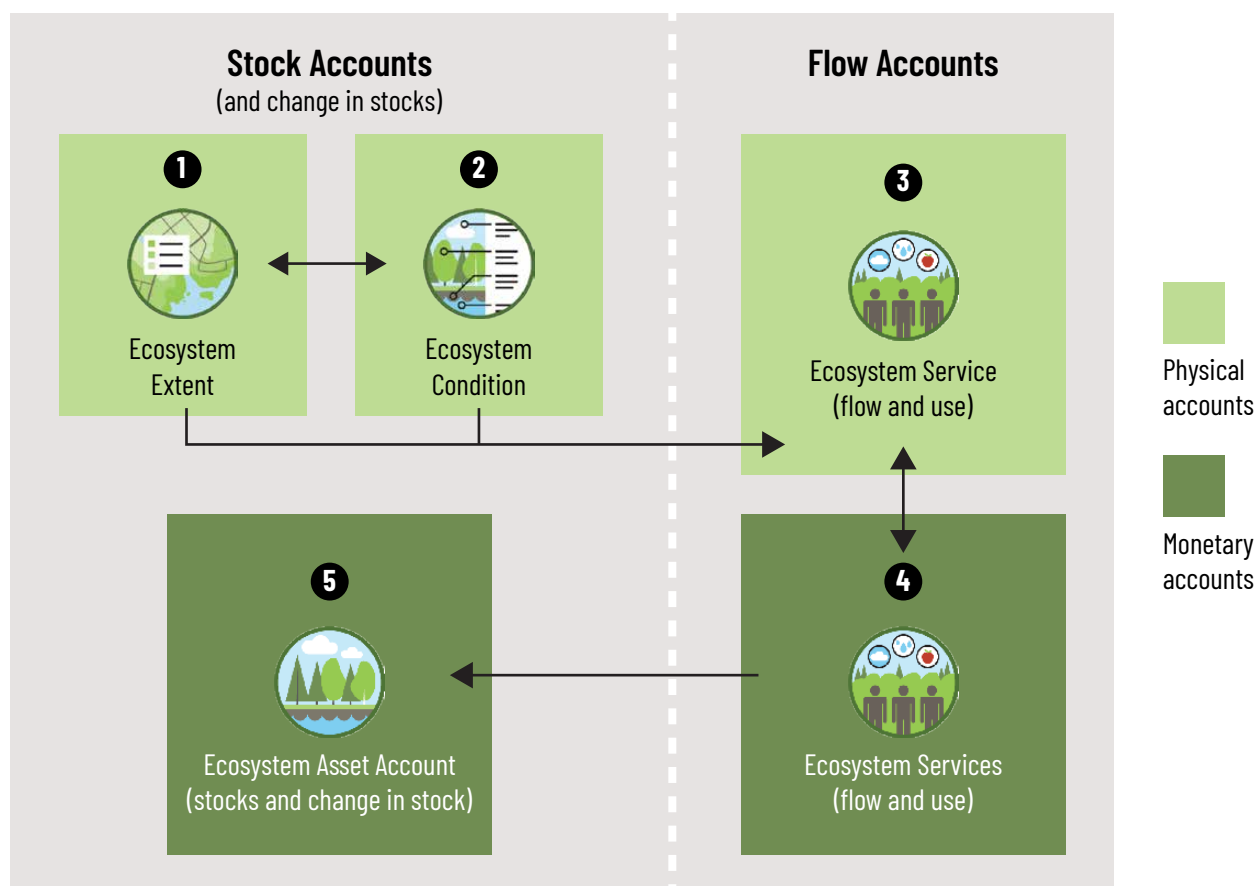


Figure 3: Ecosystem accounts and how they relate to each other (Source: United Nations, 2024a).



6.2 Natural Asset Types/Classes

Recommended information to be disclosed:

- The type or classes of natural assets that have been identified for disclosure by the local government.
- Rationale for the typology and classes identified.

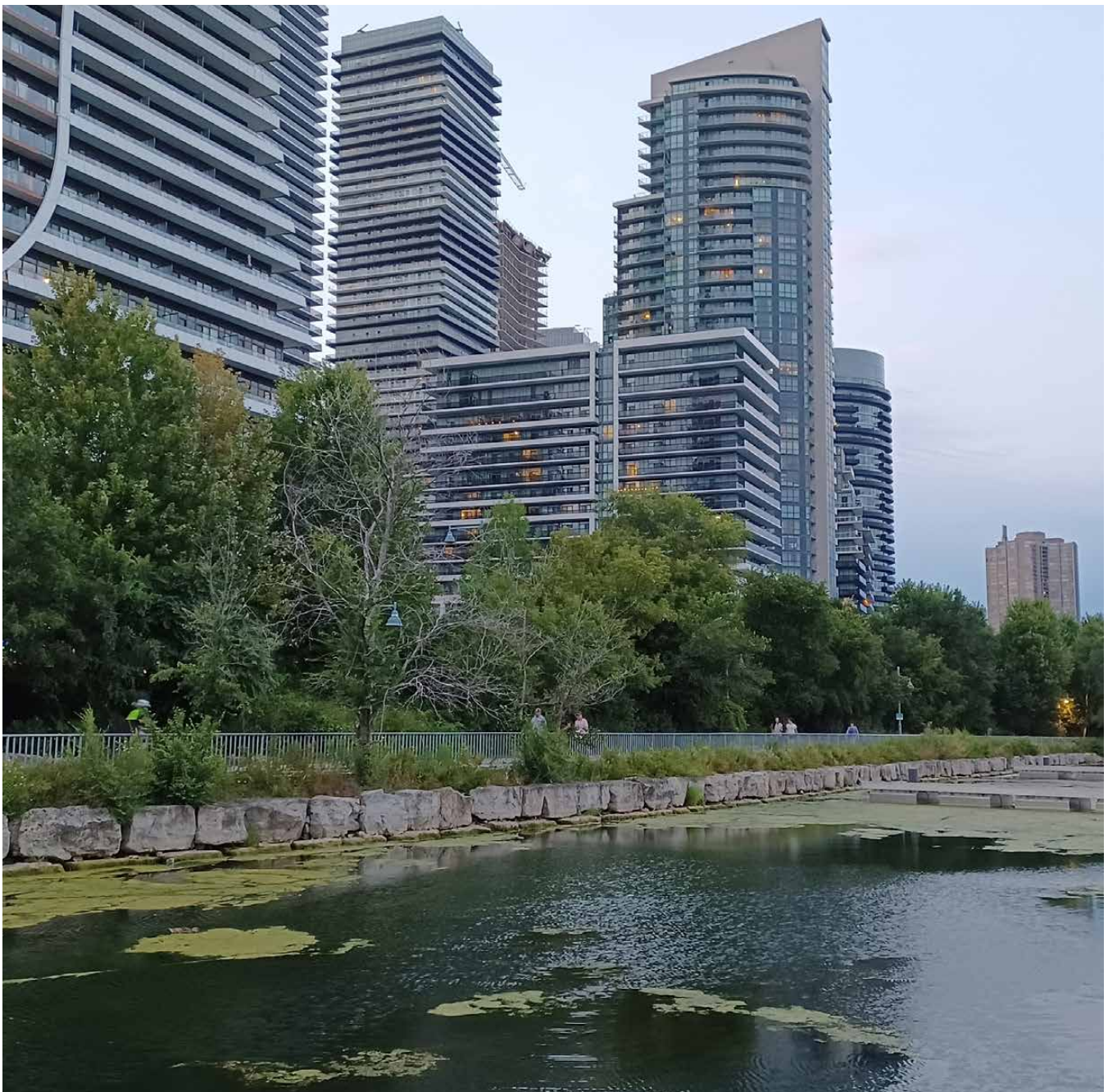
Resources:

Source	Selected Information	Jurisdiction
CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023)	Describes specifications for natural assets inventories including developing the inventory framework (sections 5.1 to 5.4).	Canada
Nature is Infrastructure: How to Include Natural Assets in Asset Management Plans (NAI, 2024)	Describes steps to scope and inventory natural assets. Presents potential asset classes for consideration, including: natural assets and enhanced assets (Table 1 in the publication), useful data types (Tables 2 and 3 in the publication) and how to establish a hierarchy.	Canada
2020 Land Cover of Canada - Class Index (Natural Resources Canada, 2024)	A national land cover dataset and class index.	Canada
Census of Environment (Statistics Canada, 2024a)	Outlines Canada's approach to national natural capital accounting - identifies forests, wetlands, freshwater, oceans and agroecosystems as key ecosystem types.	Canada
IUCN Global Ecosystem Typology (based on Keith et al., 2022)	A comprehensive classification framework for Earth's ecosystems that integrates their functional and compositional features. Referenced by UN SEEA-EA, GRI and the TNFD as an appropriate ecosystem typology for reporting.	International
IPSASB Tangible Natural Resources Project (IPSASB, 2024a)	Provides working definition of a tangible natural resource, and criteria for recognition as an asset. A class of tangible natural resources in this context means "a grouping of tangible natural resources of a similar nature or held for a similar reason."	International

Considerations for local governments, as highlighted in workshops:

- **Existing classifications:** What existing land cover and land use geospatial data can be used? Are there specific international, provincial, territorial or other applicable existing classifications? Note: no standard typology of natural assets has been specifically published for Canada. Provincial datasets, for example the [Southern Ontario Land Resource Information System \(SOLRIS\)](#) are already being used by many practitioners to map ecological features.

- **Informing natural asset management:** How do the natural asset types or classes disclosed reflect how the natural assets are already tracked, reported or managed— including in the local government’s asset management plan?
- **Staged approach:** Does the local government wish to prioritize disclosures of certain natural asset types or classes ahead of having a complete understanding of all natural asset types? Workshop findings indicated that forests, urban trees and wetlands were of highest concern to those participating.





6.3 Natural Asset Extent

Recommended information to be disclosed:

- The location of the natural asset types or classes
- The spatial extent of natural asset types or classes, distinguishing natural assets owned by the local government from those owned by others
- Rationale for the methods and units of measurement used to quantify extent

Resources:

Source	Selected Information	Jurisdiction
CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023)	Describes specifications for natural assets inventories including delineating natural assets (sections 5.1 to 5.4).	Canada
Nature is Infrastructure: How to Include Natural Assets in Asset Management Plans (NAI, 2024)	Describes steps to scope and inventory natural assets, including the need to assign at minimum the attributes of type, quantity (area or length), and location (p20).	Canada
Census of Environment (Statistics Canada, 2024a)	Provides information on extent accounts that have been compiled, including for agroecosystems (Botzas-Coluni and Andrews, 2023), ocean and coastal ecosystems (Statistics Canada, 2024c) and saltmarshes (Rabinowitz and Andrews, 2022).	Canada
UN SEEA-EA (United Nations et. al., 2021)	Guidance on assessing ecosystem extent is provided in Section 4 of the publication. An Ecosystem Condition Typology (ECT) is presented including 3 groups and 6 classes of characteristics for measuring condition (see Table 4). This is also referenced in the TNFD.	International
TNFD Recommendations (TNFD, 2023)	Identifies ecosystem extent as an additional global disclosure metric (A5.1) for dependencies and impacts on nature, with the example metric “Quantitative measure of ecosystem extent”.	International
GRI 101: Biodiversity 2024 (GRI, 2024a)	Identifies ecosystem size, or extent, within disclosure 101-7-a-ii as “the ecosystem size in hectares for the base year”.	International
IPSASB Tangible Natural Resources Project (IPSASB, 2024a)	<p>Working version of the standard identifies disclosure requirements for recognized tangible natural resource assets including information regarding the nature, location and quantity of the resource; and, if applicable, the significant judgments applied to determine the various units of account; the measurement basis, and a reconciliation of the carrying amount at the beginning and end of the period.</p> <p>The draft standard also includes disclosure requirements of unrecognized tangible natural resource assets, including the nature, location and quantity; difficulties in obtaining reliable measurement that prevented recognition; and nature of its custodial responsibilities, if applicable.</p>	International

Considerations for local governments, as highlighted in workshops:

- **Ownership:** Does the local government wish to make disclosures only relating to natural assets that they own, or extend consideration to assets that they do not own that provide services to the local government? (may include assets outside of their jurisdiction). What types of disclosure does the local government wish to make relating to non-owned assets on which they are dependent for services? (may be different from disclosures for owned assets). Does the local government have any partnerships that influence the management of natural assets that are not under local government ownership?
- **Integration of geospatial data:** How can the local government incorporate mapping or Geographic Information System (GIS) data as part of their disclosures to document the geographic location and extent of natural assets? An example may be a link to an online version of the natural asset inventory.
- **Units of measurement:** What units of extent (e.g. area or length) are appropriate to which natural asset types? For example, linear natural assets, like watercourses, may be more appropriately measured by length rather than area (see NAI, 2024).





6.4 Natural Asset Condition

Recommended information to be disclosed:

- The condition of the natural asset types or classes, supported by quantitative and/or qualitative metrics.
- Description and rationale for the condition assessment approach.

Resources:

Source	Selected Information	Jurisdiction
CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023)	Guidance on condition assessment is presented in Section 5.5 and Annex B. Condition assessment is not a requirement of this standard, but guidance has been provided as the method of condition may influence natural asset inventory design. Example criteria, indicators, metrics and measures are presented relating to landscape context, physical state and ecological state.	Canada
Nature is Infrastructure: How to Include Natural Assets in Asset Management Plans (NAI, 2024)	Guidance relating to condition assessment is provided in Section 2.3, including use of field-based, desktop and rating systems and example criteria, indicators, metrics and measures.	Canada
Census of Environment (Statistics Canada, 2024a)	Provides information on condition assessment that has been completed, including for agroecosystems (Botzas-Coluni and Andrews, 2023) and saltmarshes (Rabinowitz and Andrews, 2022).	Canada
UN SEEA-EA (United Nations et. al., 2021)	Guidance on assessing ecosystem condition is provided in Section 5. An Ecosystem Condition Typology (ECT) is presented including 3 groups and 6 classes of characteristics for measuring condition (see Table 4). This is also referenced in the TNFD.	International
TNFD Guidance on the identification and assessment of nature-related issues: The LEAP approach (TNFD, 2023c)	Ecosystem condition is identified as an important complementary measure to ecosystem extent. Specific guidance on selecting ecosystem condition metrics is provided in Annex 2, including identification of structure, composition and function as key elements.	International
GRI 101: Biodiversity 2024 (GRI, 2024a)	Identifies ecosystem condition within disclosure 101-7-a-iii - “the ecosystem condition for the base year and the current reporting period.” Identifies that living and non-living characteristics include: <ul style="list-style-type: none"> • the ecosystem’s composition, function, and structure; • the landscape characteristics (e.g., connectivity); and • the physical and chemical state characteristics (e.g., soil structure and soil nutrient levels). <p>Defines ecosystem condition as being measured against a reference condition.</p>	International

Table 4: The SEEA Ecosystem Condition Typology (adapted from United Nations et. al., 2021).

Group	Classes	Examples
A: Abiotic ecosystem characteristics	A1. Physical state characteristics: physical descriptors of the abiotic components of the ecosystem	Soil structure, water availability
	A2. Chemical state characteristics: chemical composition of abiotic ecosystem compartments	Soil nutrient levels, water quality, air pollutant concentrations
B: Biotic ecosystem characteristics	B1. Compositional state characteristics: composition / diversity of ecological communities as a given location and time	Presence / abundance of key species, diversity of relevant species groups
	B2. Structural state characteristics: aggregate properties of the whole ecosystem or its main biotic components	Mass, density, total biomass, canopy coverage, annual maximum normalized difference vegetation index (NDVI)
	B3. Functional state characteristics: summary statistics of the biological, chemical, and physical interactions between the main ecosystem compartments	Frequency, intensity, primary productivity, community age, disturbance frequency
C: Landscape level characteristics	C1. Landscape and seascape characteristics: metrics describing mosaics of ecosystem types at coarse (landscape, seascape) spatial scales	Landscape diversity, connectivity, fragmentation

Considerations for local governments, as highlighted in workshops:

- **Existing data gathering:** What quantitative or qualitative information does the local government already collect relating to the condition of different natural assets? How does this data relate to biotic, abiotic or landscape characteristics? Are there existing provincial or territorially endorsed or required condition assessment protocols for certain natural assets?
- **Alignment with asset management planning:** How is condition assessment already undertaken and reported in the local government's asset management planning?
- **Engagement of local expertise:** Who, within and outside of the local government, can provide data or expertise to help measure the condition of the natural asset types using the best available information?

6.5 Ecosystem Services



Recommended information to be disclosed:

- Types of ecosystem services provided by the natural asset types and benefits to the local government.
- Dependency of the local government on the ecosystem services provided and identified risks.
- Measurement of the ecosystem services provided in physical terms using quantitative and/or qualitative metrics and the levels of service provided
- Description and rationale for the ecosystem service assessment undertaken.

Resources:

Source	Selected Information	Jurisdiction
CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023)	Identifies the potential use of a natural asset inventory to link natural assets to their associated ecosystem services and illustrates this link conceptually (Figure 4). Indicates that ecosystem services assessments may form part of a natural asset inventory or be a subsequent step.	Canada
Nature is Infrastructure: How to Include Natural Assets in Asset Management Plans (NAI, 2024)	Provides guidance in Section 3 on how to consider ecosystem services within the framework of levels of service that is typically applied to municipal asset management planning.	Canada
Census of Environment (Statistics Canada, 2024a)	Provides information on ecosystem service assessments that have been established, including for agroecosystems (Botzas-Coluni and Andrews, 2023) saltmarshes (Rabinowitz and Andrews, 2022) and commercial provisioning services (Statistics Canada, 2024d).	Canada
UN SEEA-EA (United Nations et. al., 2021)	Provides guidance on key concepts in Section 6, including the Cascade Model on which Figure 4 is based linking natural assets, ecosystem services and benefits (Potschin and Haines-Young, 2011) and a reference list of selected ecosystem services. Provides detailed guidance for measuring ecosystem services in physical terms in Section 7.	International
Common International Classification of Ecosystem Services (CICES) (European Environment Agency, 2024)	Classification system developed by the European Environment Agency (EEA). Draft version v5.2. has recently been consulted on comprising a spreadsheet and guidance report. Referenced in UN SEEA-EA.	International
National Ecosystem Services Classification System (NESCO) Plus (United States Environmental Protection Agency, 2024).	Framework for analyzing how changes to ecosystems impact human welfare led by the EPA in the United States. Referenced in UN SEEA-EA.	International

Source	Selected Information	Jurisdiction
TNFD Guidance on the identification and assessment of nature-related issues: The LEAP approach (TNFD, 2023c)	Identification of ecosystem services is part of the “Evaluate” portion of the LEAP process. Figure 6 provides a summary of ecosystem services drawing from UN SEEA-EA and IUCN.	International
TNFD Guidance on Biomes (TNFD, 2023d)	Principal ecosystem services by biome are identified in Table 1 of the guidance.	International
GRI 101: Biodiversity 2024 (GRI, 2024a)	Identifies ecosystem services within disclosure 108 “Ecosystem Services”, which requires disclosures to a) list the ecosystem services and beneficiaries affected or potentially affected by the organization’s activities; b) explain how the ecosystem services and beneficiaries are or could be affected by the organization’s activities. Refers to TFND, UN SEEA-EA as potential method.	International
IPSASB Tangible Natural Resources Project (IPSASB, 2024a)	Working version of the standard identifies that a natural resource by definition must embody service potential or the capability to generate economic benefits. Application guidance note AG9 illustrates ways in which service potential may be provided.	International

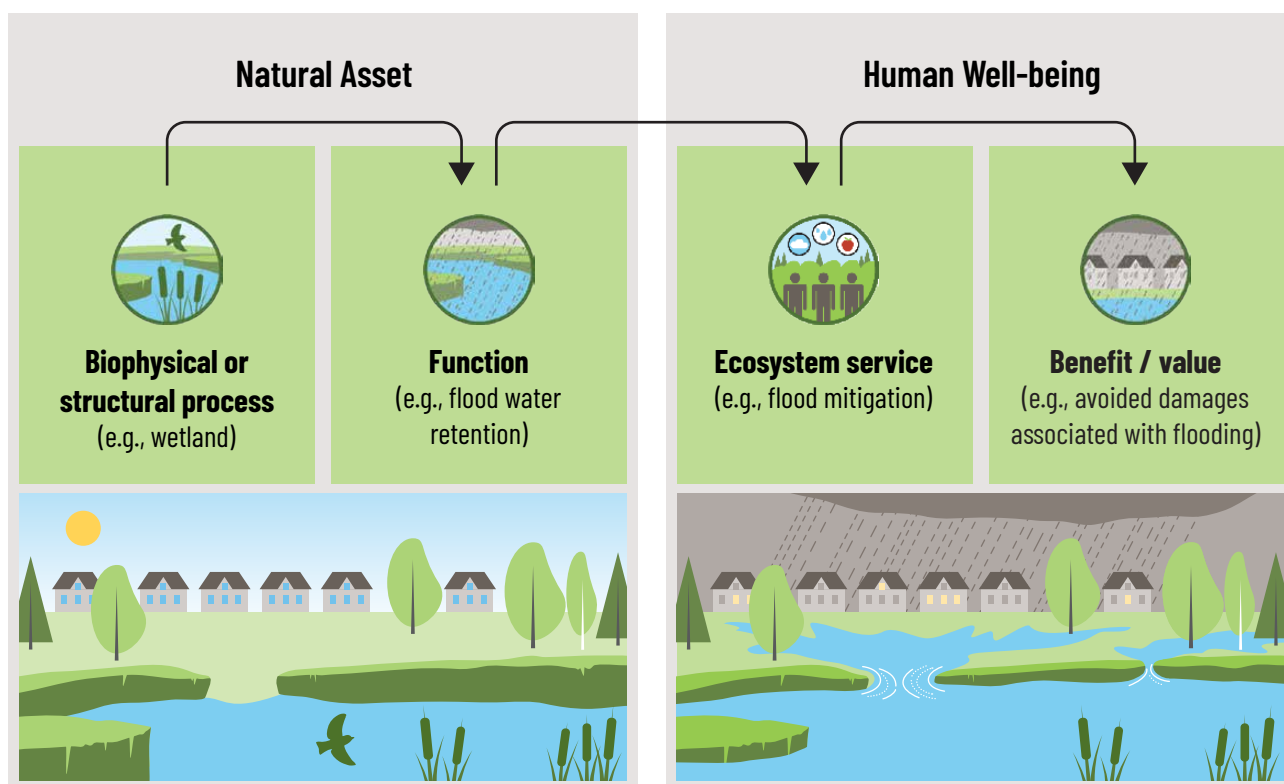
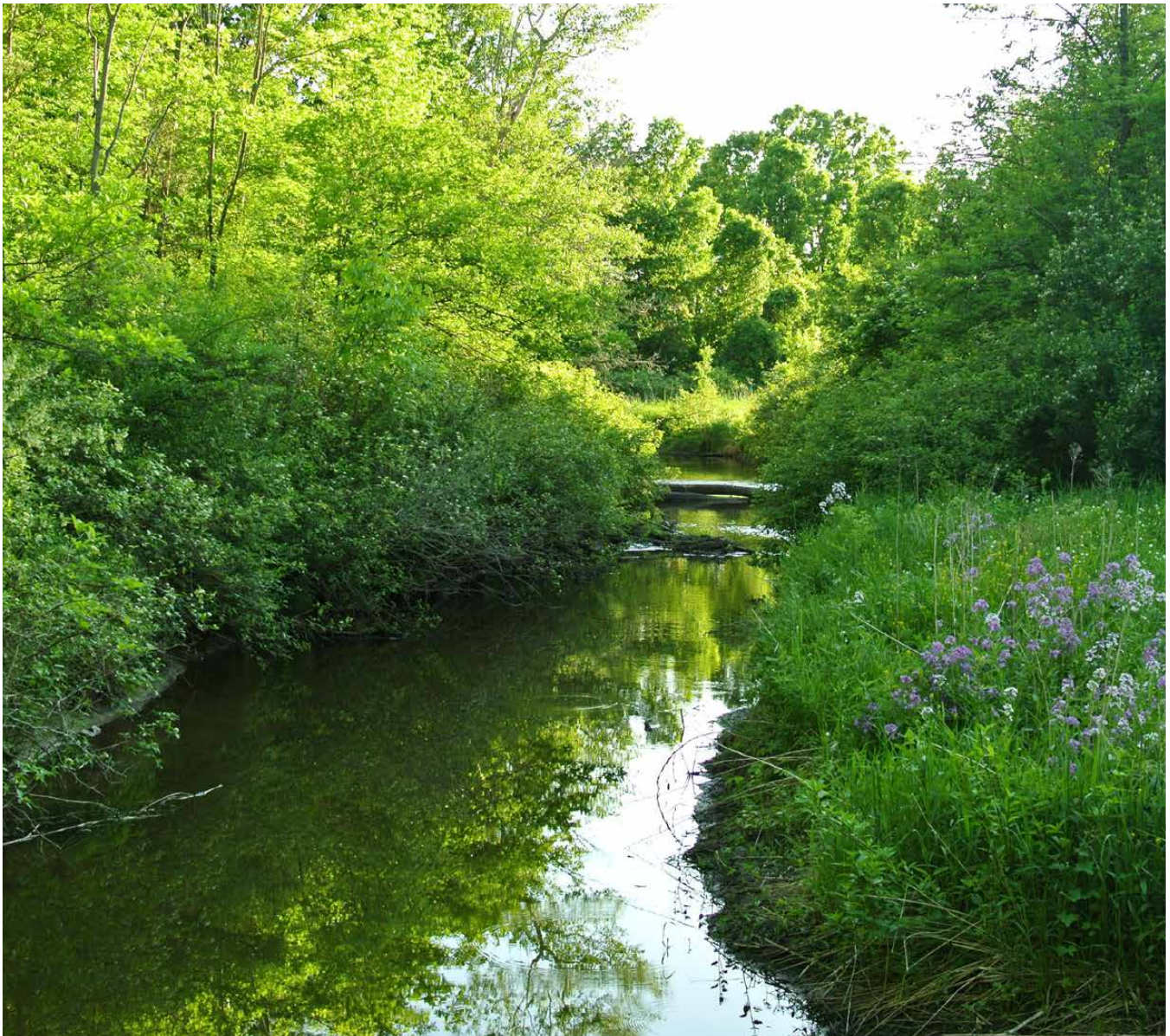


Figure 4: Illustration of the linkage between a natural asset, the ecosystem services provided and the benefits and values that flow to end users (CSA Group, 2023, adapted from Potschin and Haines-Young, 2011).



Considerations for local governments, as highlighted in workshops:

- **Staged approach:** Does the local government wish to prioritize disclosures of certain priority ecosystem services ahead of having a complete understanding of all services? Workshop findings indicated that flood and erosion regulation, biodiversity, water purification, urban heat regulation and carbon storage and sequestration were ecosystem services of highest concern to those participating.
- **Co-benefits:** What ecosystem services do natural assets provide for which the local government does not have responsibility? How will these services be documented?



6.6 Financial Valuation

Recommended information to be disclosed:

- Monetary values represented by identified ecosystem services (flows) associated with natural assets.
- Replacement/restoration costs for natural assets that are being used in asset management planning.
- Description and rationale for the monetary valuation approach undertaken, including where and why cost or current value has not been measured.

Resources:

Source	Selected Information	Jurisdiction
CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023)	Financial valuation is not part of this standard. Annex 1 provides informative information regarding assigning value to natural assets and ecosystem services, including outlining use and non-use values, different approaches to determining non-market values (revealed preference, stated preference and benefit transfer), and potential use of replacement cost values.	Canada
Nature is Infrastructure: How to Include Natural Assets in Asset Management Plans (NAI, 2024)	Provides guidance on establishing replacement cost values for natural assets (part of asset management planning) in Section 2.4. The use of restoration costs is explored including basic and more advanced approaches, stressing the difference between restoration costs of an asset vs restoration costs of an ecosystem service. Restoration costs are presented as a low-end and incomplete estimate.	Canada
Environmental Value Reference Inventory (Environment and Climate Change Canada. n.d.)	Searchable compendium of summaries of environmental and health valuation studies, including information about the study location, the specific environmental assets being valued, the methodological approaches and the estimated monetary values along with proper contextualization. Contains over 5,000 summaries of valuation studies.	Canada
UN SEEA-EA (United Nations et. al., 2021)	Provides guidance on accounting for ecosystem services in monetary terms in Section 9 of the publication using Net Present Value (NPV). This includes techniques for valuing transactions in ecosystem services and commentary on valuation of different types of services. Guidance on compiling a monetary ecosystem asset account is provided in Section 10 of the publication. In practice, the value of an ecosystem asset is obtained by estimating the net present value of each ecosystem service. Estimates of ecosystem asset lives are required, which may also be set at 100 years, or considered as infinite.	International
TNFD Guidance on the identification and assessment of nature-related issues: The LEAP approach (TNFD, 2023c)	Considers monetary valuation of ecosystem services within the dependency pathway (Section 5). Guidance is based on the Natural Capital Protocol that is primarily designed for private-sector organizations.	International

Source	Selected Information	Jurisdiction
IPSASB Tangible Natural Resources Project (IPSASB, 2024a)	Working version of the standard identifies that natural resource assets shall be measured at their cost if acquired through an exchange transaction or at their deemed cost, following IPSAS 46 Measurement, if recognized as the result of a non-exchange transaction.	International
IPSAS 46 Measurement (IPSASB, 2023a)	Working version of the standard identifies that a current value measurement basis is used to determine the deemed cost at the initial measurement. Current value measurement bases are described in paragraphs 23-31 of IPSAS 46 Measurement. These include current operational value, cost of fulfillment and fair value.	International

Considerations for local governments, as highlighted in workshops:

- **Alignment with future public sector accounting and disclosure standards:** How does the selected measurement approach reflect work on the IPSASB Tangible Natural Resources and Sustainability Climate-Related Disclosures projects, and associated discussions within Canada’s Public Sector Accounting Board. It is desirable to align disclosures with potential future standards.
- **Alignment with national natural capital accounting:** How do the methodologies to assign monetary value align with those used to compile Canada’s national ecosystem accounts based on UN SEEA-EA? Methodologies are being developed to cover different ecosystem assets and it is recommended that local governments follow this work closely.
- **Alignment with asset management planning:** Do the financial values disclosed align directly with those in the local government’s asset management planning?



6.7 Disclosure of Change

Recommended information to be disclosed:

- Changes during the reporting period and/or since the base year (for years following the initial base year), including:
 - Change in natural asset extent.
 - Additions and deductions to the extent of natural asset types (mapped and divided into managed and unmanaged entries if data permits).
 - Net change in the extent of natural asset types.
 - Change in natural asset condition as indicated by changes in the selected quantitative and/or qualitative metrics.
 - Change in ecosystem services provided in physical terms as indicated by changes in the selected quantitative and/or qualitative metrics and the levels of service provided.
 - Change in monetary values represented by identified ecosystem services.
 - Change in monetary values represented by natural assets.
 - Change in replacement/restoration costs being used in asset management planning.

- Changes in risks to natural assets identified through the risk management process.

- Impacts of the identified changes on the local governments financial position and service provision.

- Description and rationale for the approach taken to measuring the above changes.



Resources:

Source	Selected Information	Jurisdiction
CSA W128:23 Specifications for Natural Asset Inventories, National Standard of Canada (CSA Group, 2023)	Provides guidance on managing and continually improving the natural asset inventory in Section 7.	Canada
Census of Environment (Statistics Canada, 2024a)	Provides information on how changes in extent, condition and ecosystem services are proposed to be measured over time, including for agroecosystems and saltmarshes.	Canada
UN SEEA-EA (United Nations et. al., 2021)	Provides detailed guidance on documenting changes over time, indicating that this should ideally be for an accounting period of one year, with general ambition of regular reporting of accounts, for example every 3 -5 years.	International
TNFD Recommendations (TNFD, 2023a)	Identifies the extent of land/freshwater/ocean ecosystem use change (km ²) as a core global disclosure metric (C1.1) for dependencies and impacts on nature.	
GRI 101: Biodiversity 2024 (GRI, 2024a)	Requires changes to the state of biodiversity to be measured against the base year. Here, the base year is “when the organization collects baseline information on the ecosystem type, size, and condition. The base year may be the start of an organization’s activities, the date from which it owned, leased, or managed a particular site, or when it committed to halt and reverse biodiversity loss.”	International
IPSASB Tangible Natural Resources Project (IPSASB, 2024a)	Working version of the standard identifies requirements for subsequent measurement for natural resource assets, and for reconciliation at the beginning and end of the accounting period, including depreciation and impairment.	International

Considerations for local governments, as highlighted in workshops:

- **Integrating historical data:** How has the extent, condition and ecosystem services associated with natural assets already changed historically? Does the local government wish, and have the necessary data, to compare against a reference condition or historic point in time?

7. Integration in Financial and Sustainability Reporting



7.1 Relation to Financial Statements

This guide applies to unaudited natural asset disclosures made as part of financial and sustainability reporting, outside of audited financial statements.

Crown lands and natural resources that have not been purchased are currently excluded from recognition in financial statements in Canada, according to Section PS 1202 “Financial Statement Presentation” (PSAB, 2023). Users will need to look to forthcoming accounting standards for direction on recognition of natural assets in audited sections of financial statements. Some local governments have already made audited note disclosures within their financial statements. These cover high-level information, such as the existence of natural assets, the fact that the local government relies on these assets for certain services, their exclusion from the financial statements and the need to manage them (see [Table 2](#)). Such audited notes are not covered by this guidance and should be discussed with accounting and auditing professionals.

Unaudited disclosures are typically made outside of the financial statements themselves. Some local governments have included natural asset disclosures within their climate-related financial disclosures, within their sustainability section, or within a bespoke section of their financial report, outside of the financial statements (see [Table 2](#)). This is the type of disclosure covered by this guidance. The location within the report will reflect the local government’s chosen financial reporting structure—this guide seeks to suggest content.



7.2 Integration with Other Nature-Related Financial Disclosures

Local governments may be considering making financial disclosures on nature-related risks and opportunities, and/or dependences and impacts, ahead of formal Canadian public sector sustainability standards. Natural asset disclosures can, and should, be an integral part of these disclosures. The TNFD recommendations and GRI 101: Biodiversity are key resources that can help (see [Appendix A](#)).

7.2.1 Taskforce for Nature-related Financial Disclosures

The TNFD recommendations outline connections between nature-related dependencies and impacts and risks and opportunities via the state of nature and

ecosystem services (Figure 5). The connections show that understanding the state of nature and ecosystem services, and changes to their state, is integral to assessing nature-related risks and opportunities.

The TNFD's recommended disclosures, similarly to international and proposed Canadian climate-related disclosure standards (ISSB, 2024b; FRAS Canada, 2024b), are structured according to four pillars that are equally relevant to natural assets, natural asset management and associated disclosures:

- Governance
- Strategy
- Risks and impact management
- Metrics and targets

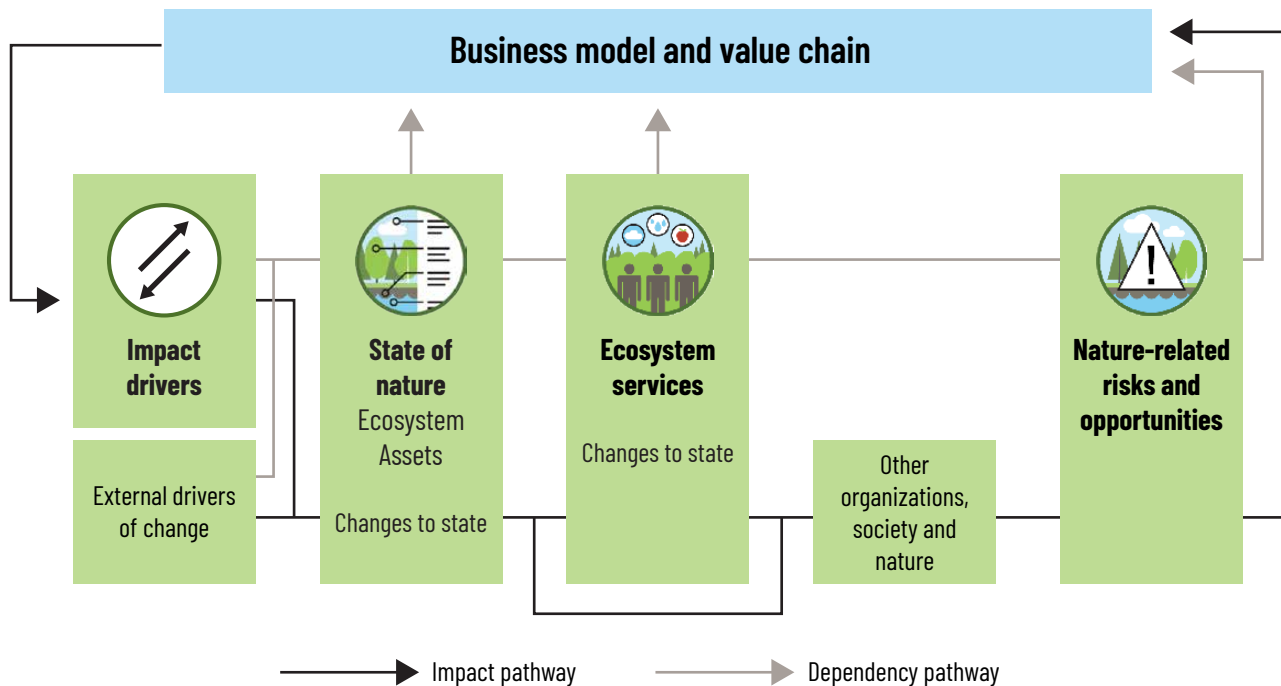


Figure 5: Connections between nature-related dependencies and impacts and risks and opportunities – impact and dependency pathways (adapted from TNFD, 2023a).

The TNFD recommendations identify core global disclosure metrics for both nature-related risks and opportunities, and dependencies and impacts on nature. These are outlined in Annex 1 of the recommendations and include:

- “Extent of land/freshwater/ocean-use change” as a core indicator (C1.1) for nature-related dependencies and impacts.
- “Ecosystem condition” as a placeholder core indicator (C5.0) for nature-related dependencies and impacts.

Additional global disclosure metrics are also identified in Annex 2 of the recommendations and include:

- The “State of nature” metric category with “Ecosystem condition”, “Ecosystem extent” and “Ecosystem connectivity” as indicators.
- The “Ecosystem services” metric category, with services the organization has an impact on, and services the organization depends on as indicators.

Disclosure of these indicators would support natural asset disclosures. Guidance on measuring changes in the state of nature is provided in Annex 2 of the TNFD’s [Guidance on the identification and assessment of nature-related issues: The LEAP approach](#) (TNFD, 2023b), and has been used to inform this guide.

7.2.2 Global Reporting Initiative Topic Standard - GRI 101: Biodiversity 2024

GRI 101: Biodiversity 2024 identifies disclosures for organizations to report information about their biodiversity-related impacts, and how they manage these impacts. These are divided into how the organization manages its biodiversity-related impacts (Section 1) and disclosures that provide information about the organization’s biodiversity-related impacts (Section 2) (GRI, 2024a).

Within Section 2, Disclosure 101-7 “Changes to the state of biodiversity” and Disclosure 101-8 “Ecosystem services” are directly relevant to natural assets, with requirements relating to sites with the most significant impacts on biodiversity (see Table 5).

Table 5: Select GRI 101 Disclosures and Requirements of Relevance to Natural Assets.

Disclosure	Requirements (extracted from GRI, 2024a)
Disclosure 101-7 Changes to the state of biodiversity	<p>The organization shall:</p> <ol style="list-style-type: none"> for each site reported under 101-5-a, report the following information on affected or potentially affected ecosystems: <ol style="list-style-type: none"> the ecosystem type for the base year; the ecosystem size in hectares for the base year; the ecosystem condition for the base year and the current reporting period; report contextual information necessary to understand how the data has been compiled, including standards, methodologies, and assumptions used.
Disclosure 101-8 Ecosystem services	<p>The organization shall:</p> <ol style="list-style-type: none"> for each site reported under 101-5-a, list the ecosystem services and beneficiaries affected or potentially affected by the organization’s activities; explain how the ecosystem services and beneficiaries are or could be affected by the organization’s activities.

By requiring information for the base year and the current reporting period, organizations are led to provide information about the ecosystem’s overall health over time. Within this context “the base year is when the organization collects baseline information on the ecosystem type, size, and condition. The base year may be the start of an organization’s activities, the date from which it owned, leased, or managed a particular site, or when it committed to halt and reverse biodiversity loss” (GRI, 2024a).

7.3 Integration with Climate-Related Financial Disclosures

Natural assets, and the ecosystem services they provide, have a key role to play in both slowing down climate change (carbon storage and sequestration), as well as contributing to the resilience of local governments to climate impacts (e.g., through regulation of flooding and urban temperatures).

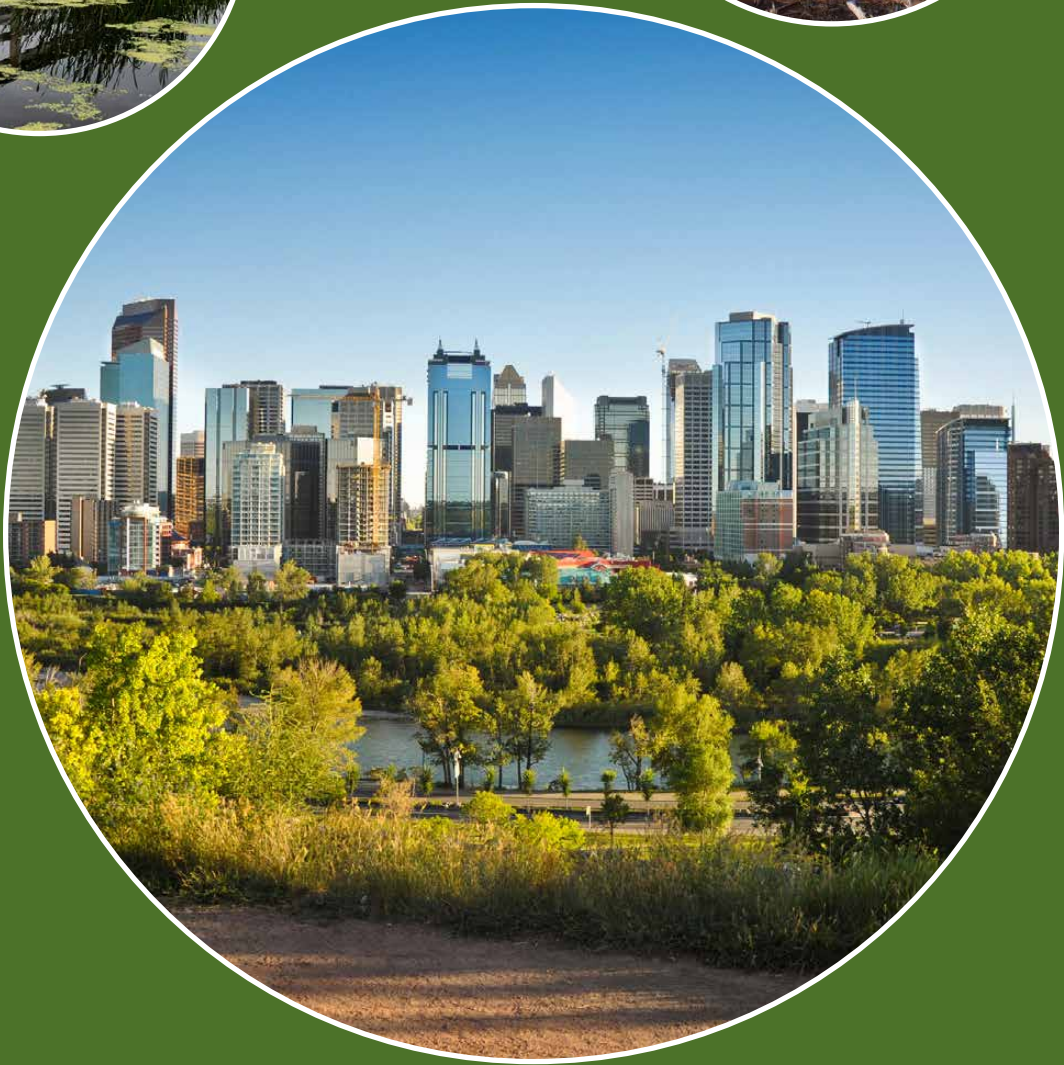
The TNFD recommendations are based on the “climate-nature nexus” as one of seven key principles, namely to “employ an integrated approach to climate- and nature-related risks, scaling up finance for nature-based solutions”. The recommendations expressly mirrored the structure of the preceding TCFD recommendations to facilitate this integration. In October 2023, following the launch of the final TNFD Recommendations, an illustrative example was published by the Tasmanian private forest manager, Forico to demonstrate how nature and climate-related disclosures could be integrated (Forico, 2023). Sustainability standards issued to date by the ISSB, and consulted on by the CSSB, do not yet mention nature or nature-related disclosures (see [Appendix A](#)). As part of ISSB’s workplan, projects are being undertaken to research disclosure about risks and opportunities associated with Biodiversity, Ecosystems and Ecosystem Services (BEES) (IFRS Foundation, 2024b). Standards may therefore evolve to integrate these disclosures,

given the inter-relationship between climate and nature-related risks.

IPSASB’s Sustainability Reporting Standards Exposure Draft (SRS ED) 1 on Climate-related Disclosures makes several links between climate risks and the natural environment within the Application Guidance and Implementation Guidance (IPSASB, 2024f). Development of a sustainability reporting standard for nature-related disclosures outside of financial statements is also part of this project, but has not yet been started (IPSASB, 2024b).

In practice, some local governments in Canada have started to integrate natural assets-related disclosures with their climate-related disclosures. Given that recommendations for climate-related financial disclosures made by the TCFD were published ahead of the TNFD recommendations, some of Canada’s larger cities have made climate-related disclosures in their financial reports over the last few years. The City of Calgary and City of Montreal have both included unaudited natural asset-related disclosures within the climate-related disclosures of their financial reports ([Table 2](#)).

8. Getting Started



The natural assets disclosures described in this guide are intended to be **voluntary, unaudited, and based on existing guidance.**

It is recognized that different local governments will have different levels of existing understanding, data, resources and expertise with which to start work towards making natural asset disclosures. As a first step, local government staff are strongly recommended to consult the signposted resources for further details.

There is no requirement for local governments to make a complete set of natural asset-related disclosures covering all of the elements identified, all natural asset types/classes and all ecosystem services at once. Rather, the guide is designed to **support local governments in determining what disclosures they may already be ready to make, and plan and**

prioritize disclosures they may wish to make in the future.

The natural asset disclosures presented in [Section 6](#) may be envisaged as incremental, since additional work is required to develop the understanding and metrics required to move from one step to the next (Figure 6). At each step, the disclosure of change represents an additional level of understanding in natural asset disclosures. Local governments may also wish to prioritize selected natural asset types and/or ecosystem services depending on their situation. Since there are currently no standards that allow the recognition of natural assets that have not been purchased in public sector financial statements in Canada, **local governments are encouraged to get started where they can and subsequently add to their natural asset disclosures as they progress.**

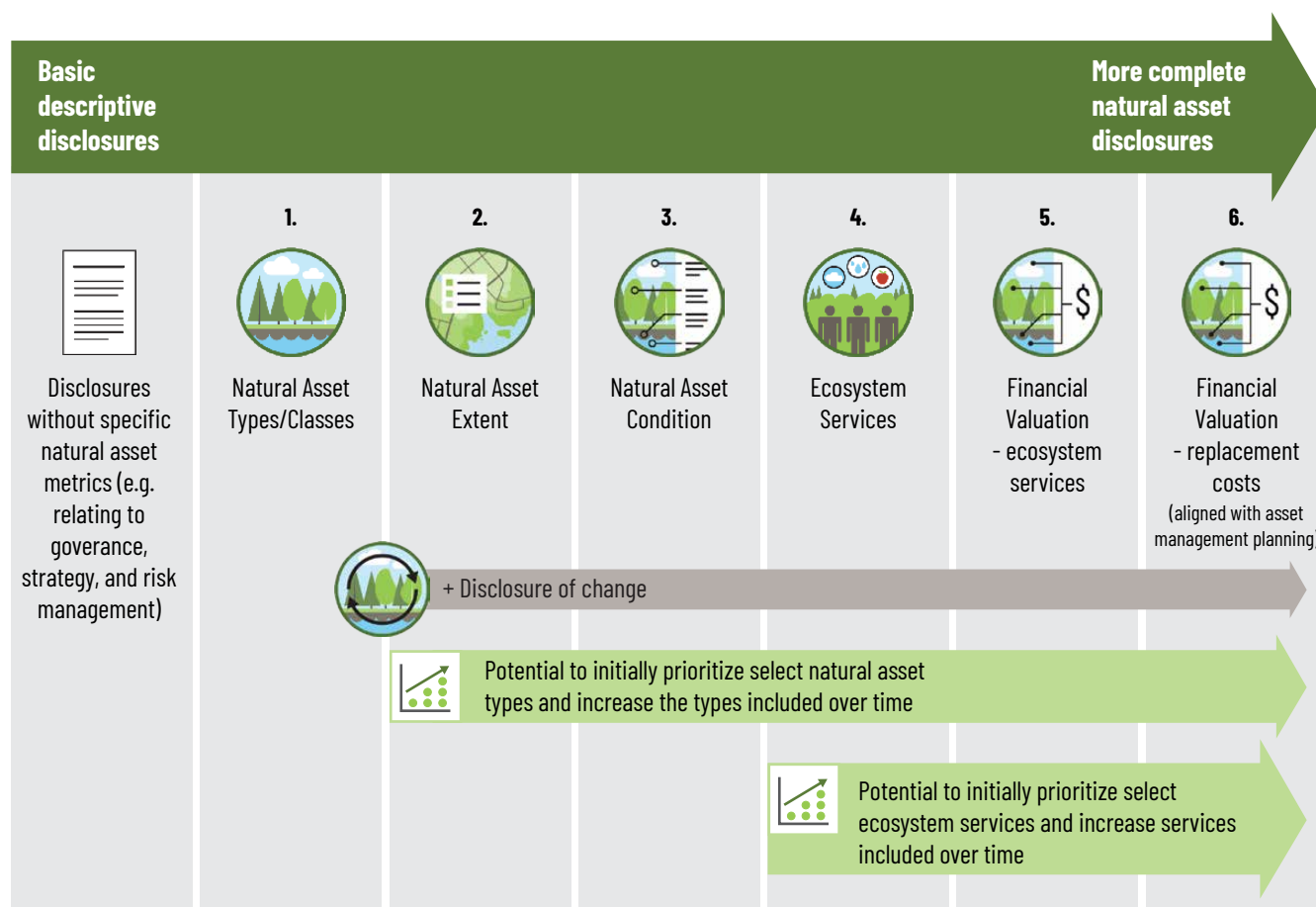


Figure 6: Incremental steps in making natural asset disclosures.

Appendix A: Overview of accounting and sustainability disclosure standards, recommendations and ongoing projects relevant to natural asset disclosures

Organization	Mandate	Key Standards / Recommendations / Projects	Comments
International			
International Sustainability Standards Board (ISSB), under the International Financial Reporting Standards (IFRS) Foundation	Development of Sustainability Disclosure Standards according to due process (International Accounting Standards Board and IFRS Interpretations Committee, 2020)	IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information (ISSB, 2024a).	<ul style="list-style-type: none"> • Sets out a general framework for disclosures – Governance, Strategy, Risk Management, and Metrics and targets. • Focused on financial materiality – risks and opportunities and their impacts on enterprise value – does not include the impact of the entity on society, economy and environment (Environmental & Social Materiality). • Does not directly refer to nature, biodiversity or ecosystem services.
	Private sector	IFRS S2: Climate-Related Disclosures (ISSB, 2024b).	<ul style="list-style-type: none"> • Builds on Taskforce on Climate-Related Financial Disclosures (TCFD) recommendations (IFRS Foundation, 2023) and industry-based SASB* Industry Standards (now part of IFRS) (IFRS Foundation, 2024c). • Local governments in Canada have previously used TCFD guidance for their climate-related disclosures (including natural assets information), which is effectively superseded by IFRS, S2. • Does not directly refer to nature, biodiversity or ecosystem services.
		Biodiversity, Ecosystems and Ecosystem Services (BEES) research (IFRS Foundation, 2024d)	<ul style="list-style-type: none"> • Projects to research disclosure about risks and opportunities associated with BEES are being undertaken in response to consultation on agenda priorities, building on previous work including TNFD and SASB Standards (IFRS Foundation, 2024e). • Will focus on financial materiality in line with IFRS S1 (IFRS Foundation, 2024d).
International Public Sector Accounting Board (IPSASB), under the International Federation of Accountants (IFAC)	Development of International Public Sector Accounting Standards (IPSAS) – international accrual-based accounting standards, for use by governments and other public sector entities (IPSASB, 2024d).	Tangible Natural Resources Project (IPSASB, 2024a).	<ul style="list-style-type: none"> • Development of IPSAS Standard on “Tangible Natural Resources.” Exposure Draft 92 published Oct 2024. IPSAS publication likely in 2025. • Exposure Draft 92 sets out criteria for recognition of a “tangible natural resource asset” and measurement for inclusion in audited financial accounts (IPSASB, 2024c) • Builds on existing IPSAS, including IPSAS 46 Measurement, and IPSAS 45 Property, Plant and Equipment. • Natural infrastructure may potentially be considered under “Property, Plant and Equipment”.
	Public sector	Sustainability Climate-Related Disclosures Project (IPSASB, 2024b).	<ul style="list-style-type: none"> • Three elements originally identified in 2022 (IPSASB, 2023b): <ul style="list-style-type: none"> a. General Requirements for Disclosure of Sustainability-related Financial Information, b. Climate-Related Disclosures (this element is being progressed first) c. Natural Resources – Non-Financial Disclosures (parallel to financial reporting guidance of the Natural Resources project). • Sustainability Reporting Standards Exposure Draft (SRS ED) 1 on Climate-related disclosures has drawn on IFRS S2 as well as the Global Reporting Initiative (GRI, 2024b) to determine material information (IPSASB, 2024e; IPSASB 2024f). • Natural Resources element currently not started.

Organization	Mandate	Key Standards / Recommendations / Projects	Comments
Global Reporting Initiative	<p>Global Standards Setting Board (GSSB) sets global standards for sustainability reporting - the GRI Standards</p> <p>Public and Private Sector</p>	<p>Topic Standard GRI 101 – Biodiversity 2024 (GRI, 2024a).</p>	<ul style="list-style-type: none"> • GRI Standards are designed to meet multi-stakeholder needs and are focused on impact of the organization on society, economy and environment (Environmental & Social Materiality) rather than financial materiality. • Users are required to report on “material topics” that represent the organization’s most significant impacts on the economy, environment, and people, including impacts on their human rights. • Biodiversity standard requires reporting on: <ul style="list-style-type: none"> • Topic management disclosures – • Topic disclosures – • Criteria for identifying ecologically sensitive areas refer to TNFD. • Likely to be relevant to IPSASB “Natural Resources – Non-Financial Disclosures” in a similar way that GRI standards have been considered for climate-related disclosures.
Taskforce on Nature-Related Financial Disclosures (TNFD)	<p>Market-led development of Recommendations and Guidance on nature-related disclosures.</p> <p>Private sector</p>	<p>Taskforce on Nature-related Financial Disclosures (TNFD) Recommendations (TNFD, 2023a).</p>	<ul style="list-style-type: none"> • Designed to align with ISSB guidance relating to risks and opportunities and their impacts on enterprise value (Financial Materiality) as well as GRI in terms of the impact of the entity on society, economy and environment (Environmental & Social Materiality). • Core metrics relate to dependencies and impacts, and risks and opportunities. The former includes “State of Nature” but does not specify metrics (TNFD, 2023a). • Additional “Guidance on the identification and assessment of nature-related issues: the LEAP approach” (Locate, Evaluate, Assessment, Prepare), draws together global information to provide definitions and guidance on (TNFD, 2023c): <ul style="list-style-type: none"> • “State of Nature” metrics, including measuring ecosystem condition. • Structure of realms, biomes, environmental assets and ecosystem services • Ecosystem service assessment metrics • Valuation guidance is focused on the “Natural Capital Protocol” which is largely targeted at corporate organisations (Capitals Coalition, 2016).
United Nations Statistical Commission	<p>Oversees the work of the United Nations Statistics Division (UNSD).</p> <p>Public sector</p>	<p>System of Environmental Economic Accounting – Ecosystem Accounting (SEEA-EA) (United Nations, 2024a).</p>	<ul style="list-style-type: none"> • Integrated and comprehensive statistical framework for organizing data about habitats and landscapes, measuring the ecosystem services, tracking changes in ecosystem assets, and linking this information to economic and other human activity. • Thematic part of the wider SEEA Framework. • Includes biophysical and monetary accounts compiled using spatially explicit data. • Five core accounts: Ecosystem extent (stock, physical), ecosystem condition (stock, physical), ecosystem services (flow, physical), ecosystem services (flow, monetary), ecosystem asset account (stocks and change in stock, monetary). • Includes for thematic accounts. • In 2023, SEEA EA was being adopted by 41 countries (including Canada) (United Nations, 2024b; United Nations Statistics Division, 2024).

Organization	Mandate	Key Standards / Recommendations / Projects	Comments
Canada			
Canadian Sustainability Standards Board, Financial Reporting & Assurance Standards (FRAS) Canada	Develop Canadian Sustainability Disclosure Standards (CSDS) that align with the global baseline standards developed by the ISSB – with modifications to serve the Canadian public interest. (FRAS Canada, 2024c)	CSSB Exposure Draft – Proposed Canadian Sustainability Disclosure Standard (CSDS) 1, General Requirements for Disclosure of Sustainability-related Financial Information (FRAS Canada, 2024a)	<ul style="list-style-type: none"> Content as per IFRS S1 apart from (FRAS Canada, 2024d): <ul style="list-style-type: none"> Effective date – The proposed standards would become voluntarily effective for annual reporting periods beginning on or after January 1, 2025. Transition relief for disclosures beyond climate-related risks and opportunities extended from one year granted by the ISSB to two years. Consultation open until June 10, 2024, after which there will be deliberation and a final pronouncement. Does not directly refer to nature, biodiversity or ecosystem services.
	Private Sector	CSSB Exposure Draft – Proposed Canadian Sustainability Disclosure Standard (CSDS) 2, Climate-related Disclosures (FRAS Canada, 2024b)	<ul style="list-style-type: none"> Content as per IFRS S2 apart from (FRAS Canada, 2024d): <ul style="list-style-type: none"> Effective date – The proposed standards would become voluntarily effective for annual reporting periods beginning on or after January 1, 2025. Transition relief for disclosure of Scope 3 GHG emissions has been extended from one year granted by the ISSB to two years. Consultation open until June 10, 2024, after which there will be deliberation and a final pronouncement. Does not directly refer to nature, biodiversity or ecosystem services.
Public Sector Accounting Board, Financial Reporting & Assurance Standards (FRAS) Canada	Establish accounting standards and provide guidance for financial and other performance information reported by the public sector. Public Sector	Government Not-for-Profit: Capital Assets Project (PSAB, 2024b).	<ul style="list-style-type: none"> Review of standards related to Section PS 4230, Capital Assets held by Not-for-Profit Organizations, and Section PS 4240, Collections held by Not-for-Profit Organizations, to determine what amendments should be proposed to Section PS 3150, Tangible Capital Assets. Amendments proposed in exposure draft did not refer to nature, biodiversity or ecosystem services. Under deliberation. Publication expected in 2025.
Auditing and Assurance Standards Board (AASB), Financial Reporting & Assurance Standards (FRAS) Canada	Set standards for quality management, audit, sustainability assurance, other assurance and guidance in Canada. Public and private sector	Sustainability Assurance Project (AASB, 2024).	<ul style="list-style-type: none"> Sustainability Assurance Committee established to support the AASB's sustainability project streams: <ul style="list-style-type: none"> International sustainability assurance standard setting Canadian way forward for sustainability assurance Exposure Draft – CSSA 5000, General Requirements for Sustainability Assurance Engagements issued in September 2023 (implementation of proposed International Standard on Sustainability Assurance (ISSA) 5000) Exposure draft did not directly refer to nature, biodiversity or ecosystem services. Under deliberation.

Organization	Mandate	Key Standards / Recommendations / Projects	Comments
Statistics Canada	<p>Canada's central statistical office, legislated by the Statistics Act to provide statistics for the whole of Canada and each of the provinces and territories.</p> <p>Public Sector</p>	<p>Census of Environment (Statistics Canada, 2024a)</p> <p>Canadian System of Environmental-Economic Accounts – Ecosystem Accounts (Statistics Canada, 2024b)</p>	<ul style="list-style-type: none"> • Designed to produce a detailed set of ecosystem accounts, based on a register of ecosystem assets, and deliver ecosystem data and analysis as a public good through an interactive, open data portal. • Provides measures of ecosystem services such as food, clean air, clean water, carbon storage, natural disaster mitigation, wildlife habitat and recreational opportunities. • Goal to deliver a full picture of the complex relationships between ecosystems, the economy, society, and human well-being in one location. • Organizes data using the System of Environmental-Economic Accounting – Ecosystem Accounting international statistical standard. • Ecosystem types have been defined – ocean and coastal, urban, freshwater, agriculture, grassland and shrubland, wetland, forest, barren and sparsely vegetated, and permanent snow and ice. • Several datasets are already available.
<p>Standards Council of Canada (Federal Crown corporation)</p> <p>CSA Group</p>	<p>Promote efficient and effective voluntary standardization in Canada, where standardization is not expressly provided for by law.</p> <p>Not-for-Profit Standards Development</p> <p>Public and Private Sector</p>	<p>CSA W218: 23, Specifications for natural asset inventories. National Standard of Canada (CSA Group, 2023).</p>	<ul style="list-style-type: none"> • First National Standard of Canada concerning natural assets. • Sets standards for natural asset inventory, the first step in natural asset management. • Framed in terms of the integration of natural assets into asset management planning by public sector entities. • Annex A of the standard (informative only) contains information on assigning value to natural assets and ecosystem services. • Annex B of the standard (informative only) contains information on condition assessment and scoring.

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