



Biodiversité Québec

**Assessing the Financial Sector's
Impact on Biodiversity with Local
Indicators**

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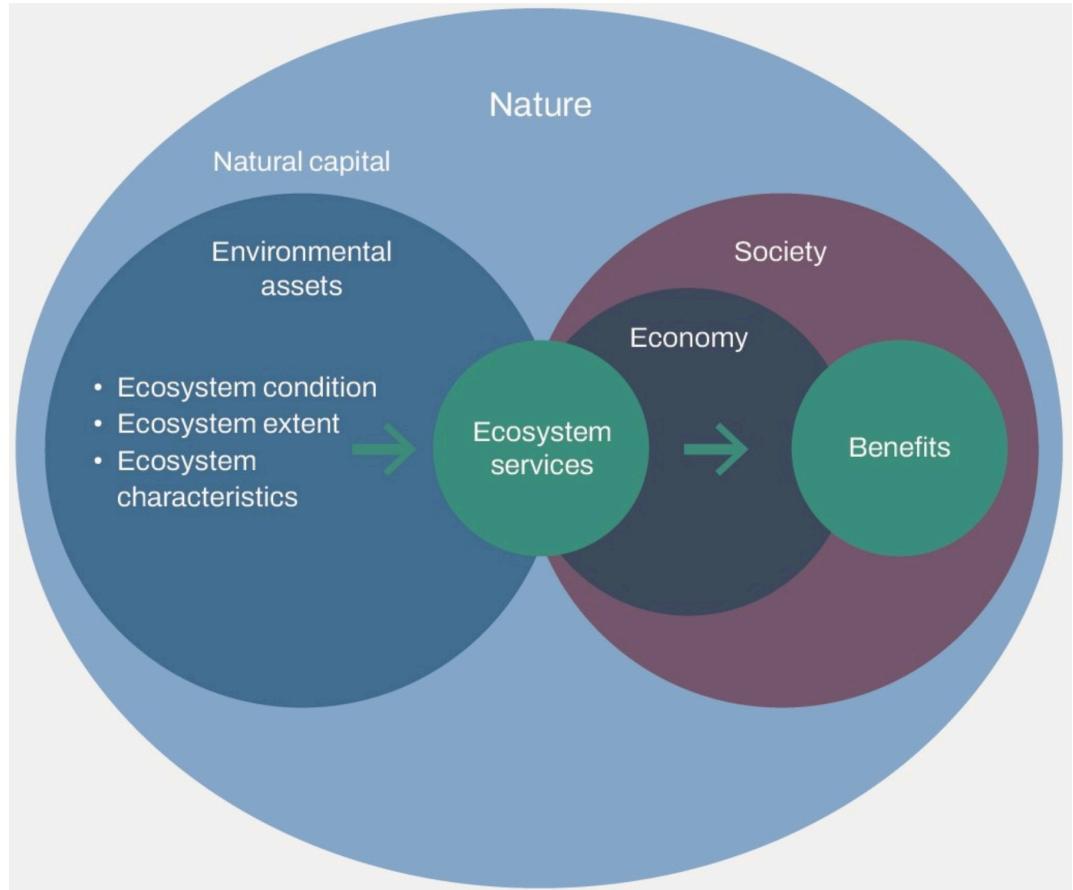
Finance and Biodiversity

THE FINANCIAL SECTOR'S ROLE IN THE BIODIVERSITY CRISIS

Dependencies, impacts, risks & opportunities

THE IMPORTANCE OF MEASURING AND THE INITIATIVES TO DISCLOSE FINANCIAL IMPACTS ON NATURE

- TNFD (Taskforce on Nature-related Financial Disclosures)
- CSRD (Corporate Sustainability Reporting Directive)



Global Frameworks, Local Blind Spots



Local pre-investment tool for biodiversity risk assessment in Québec



Université de Sherbrooke



Caisse de dépôt et placement du Québec



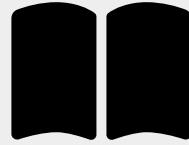
Bridging the Gap: Data, Literacy, Relevance

Data availability and accessibility



Methodology should be published and reviewed by experts

Limited biodiversity literacy



Users have varying level of familiarity with biodiversity concepts

Global indicators are maladapted



Chosen indicators must be relevant to the local context of Québec



A Case Study: Impact of Habitat Loss



Image by Google Earth (2024).



A Case Study: Impact of Habitat Loss

FROM THE SCIENTIFIC PERSPECTIVE

The indicator must include the following

- **Ecological habitat value:** the habitats' usage by species
- **Regional rarity:** the proportion of the habitat types in the region
- **Surface area:** the loss of surfaces equivalent to essential habitat sizes

FROM THE USERS PERSPECTIVE

The indicator must be

- **Understandable:** a score easy to interpret
- **Relevant:** the indicator must be meaningful for the user
- **Actionable:** the indicator must be able to guide decision-making

All indicators will be presented as a score between 0 and 1, along supplementary information.



A Case Study: Impact of Habitat Loss

QUANTIFYING ECOLOGICAL HABITAT VALUE

Value index: The habitats' usage by species

$$\text{Value index} = \frac{N_h}{N}$$

Species	Forests	Wetlands	Grasslands	Croplands	Urban
 <i>Blarina brevicauda</i>	X				
 <i>Martes americana</i>	X				
 <i>Plethodon cinereus</i>	X				
 <i>Rana sylvatica</i>	X	X			
 <i>Ursus americanus</i>	X	X			
Value index	1	0.4	0	0	0



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QUANTIFYING REGIONAL RARITY

Rarity index: one minus the regional frequency of the habitat type

$$\text{Rarity index} = 1 - \text{Regional frequency}$$

Habitat type	Regional freq.	Rarity index
Forests	0.78	0.224
Wetlands	0.004	0.996
Grasslands	0.0007	0.999
Croplands	0.15	0.853
Urban	0.05	0.951



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QUANTIFYING SURFACE AREA

Area index: the loss of surfaces greater than minimum essential habitat sizes

$$\text{Area index} = \frac{N_{H_e < H}}{N}$$

Where H_e is the essential habitat size for the species and H is the habitat area

Species	H_e (ha)	H (ha)	Loss of essential habitat
 <i>Blarina brevicauda</i>	1	170.9	1
 <i>Martes americana</i>	150	170.9	1
 <i>Plethodon cinereus</i>	0.27	170.9	1
 <i>Rana sylvatica</i>	0.5	171.4	1
 <i>Ursus americanus</i>	1200	171.4	0
Area index			0.8



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BRINGING IT ALL TOGETHER

Weighted average of the Ecological habitat values

$$\text{Habitat destruction indicator} = \frac{\sum Value_i * Rarity_i * Area_i}{\sum Rarity_i * Area_i}$$

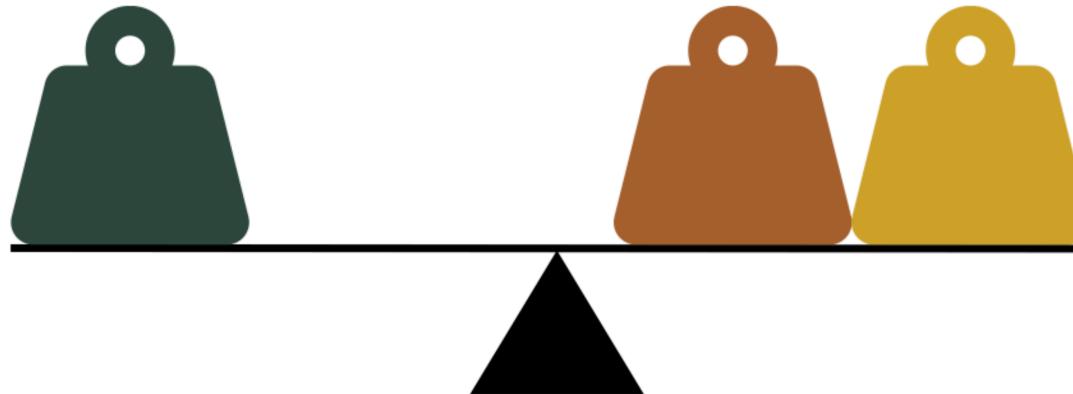


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BRINGING IT ALL TOGETHER

Weighted average of the habitat's value

$$\text{Habitat destruction indicator} = \frac{\sum Value_i * Rarity_i * Area_i}{\sum Rarity_i * Area_i}$$

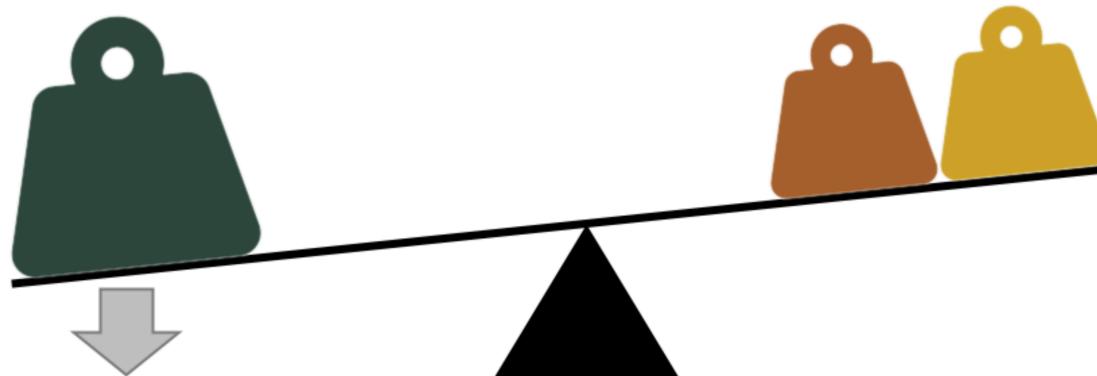


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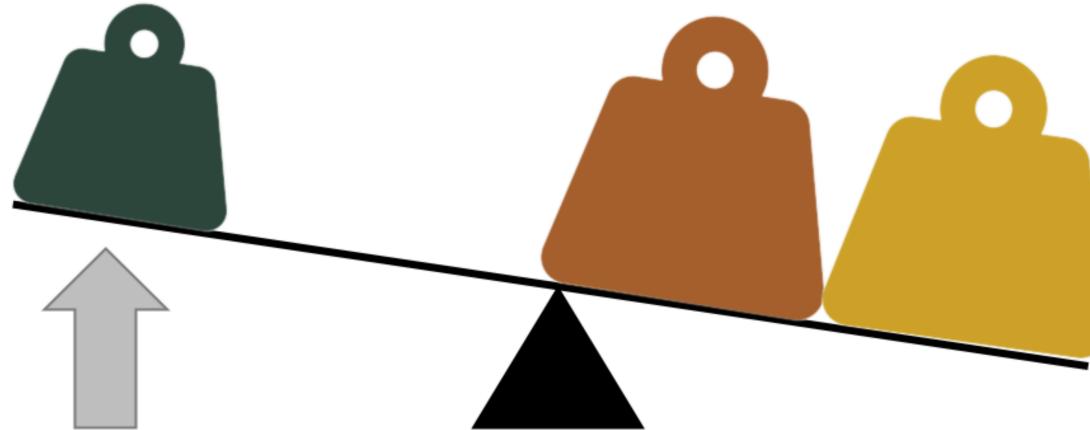


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BRINGING IT ALL TOGETHER

$$\text{Habitat destruction indicator} = \frac{\sum Value_i * Rarity_i * Area_i}{\sum Rarity_i * Area_i}$$

Habitat type	Value index	Rarity index	Area index
Forests	1	0.224	0.8
Wetlands	0.4	0.996	0.8
Grasslands	0	0.999	0.8
Croplands	0	0.853	0.8
Urban	0	0.951	0.8



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BRINGING IT ALL TOGETHER

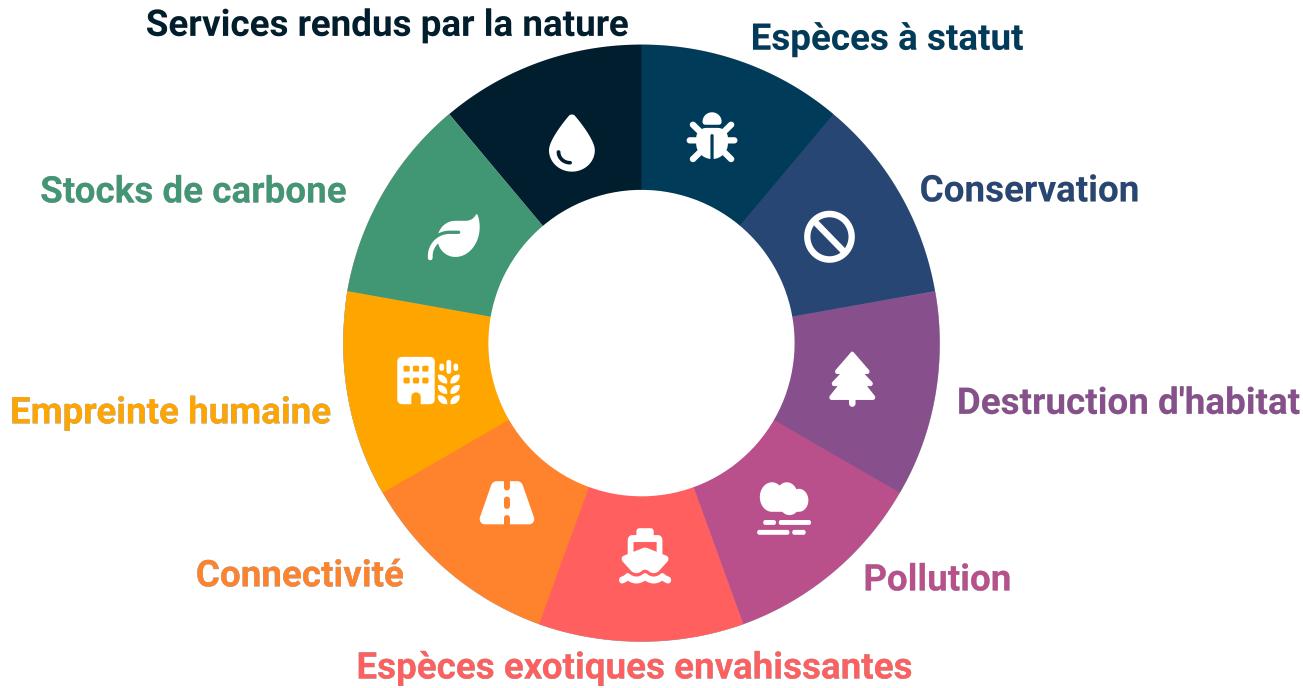
Habitat destruction indicator = 0.51

Habitat type	Value index	Rarity index	Area index
Forests	1	0.224	0.8
Wetlands	0.4	0.996	0.8
Grasslands	0	0.999	0.8
Croplands	0	0.853	0.8
Urban	0	0.951	0.8



A Local Biodiversity Finance Tool

9 INDICATORS TO ASSESS THE IMPACT OF INVESTMENTS ON BIODIVERSITY



The Path Forward

INTEGRATING BIODIVERSITY INTO FINANCE

These challenges required an **iterative development process** and **close collaboration between biodiversity experts and users.**



Reach out!

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