NATURE CONSERVANCY CANADA

RESILEINCE INDEX (RI)

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RI OVERVIEW

The **goal** of the RI is to:

1. Capture National Conservation data into a single metric
2. Enhance Where To Work site selection outputs
3. Drive What To Do management action optimizations
4. Guide Project Management Plans and Securement

RI provides a "**catch-all**" metric that aids in comparing the relationship between location and conservation impact.

RI INPUT DATA

Conservation data has been captured into 8 broad **Themes**.

A. Biodiversity
B. Carbon
C. Climate
D. Connectivity
E. Environmental Services
F. Habitat
G. Protection
H. Threats

Features (layers) that make up each theme have been **weighted** by importance.

RI FEATURES & RELATIVE WEIGHTS

POSITIVE FEATURES				
THEMES	FEATURES	SIGN	WEIGHTS	RANKS
Biodiversity	Key Biodiversity Areas	+	15	1
Connectivity	Connectivity	+	13	2
Protection	Existing Conservation	+	12	3
Biodiversity	Critical Habitat	+	9	4
Biodiversity	Endangered	+	8	5
Biodiversity	Threatened	+	7	6
Biodiversity	Special Concern	+	6	7
Climate	Refugia	+	6	7
Climate	Velocity	+	6	7
Carbon	Potential	+	5	8
Carbon	Storage	+	5	8
Habitat	Forest Landcover	+	2	9
Habitat	Grassland	+	2	9
Habitat	Wetland	+	2	9
eServices	Freshwater Provision	+	1	10
eServices	Recreation	+	1	10

NEGATIVE FEATURES				
THEMES	FEATURES	SIGN	WEIGHTS	RANKS
Threats	Human Footprint Index	-	38	1
Climate	Extremes	-	12	2

Positive weights tally up to **100**

Negative weights tally up to **-50**

RI PREP DETAILS

Each feature is **scaled** between **0** and **1** before the RI equation is executed. This step is required in order to combine features that have different units of measurement.

Scaling equation:

$$\text{Normalized feature} = (\text{feature} - \text{min value}) / (\text{max value} - \text{min value})$$

RI EQUATION

RI = (feature * weight) + (feature * weight) - (feature * weight) etc.

CP&P has provided an RI recommendation for review.

Resilience Index Equation:

(**key biodiversity areas** * 15) + (**critical habitat** * 9) + (**endangered specices** * 8) + (**special concern species** * 6) + (**threatened species** * 7) + (**carbon potential** * 5) + (**carbon storage** * 5) - (**climate extremes** * 12) + (**climate refugia** * 6) + (**climate velocity** * 6) + (**connectivity** * 13) + (**freshwater provision** * 1) + (**recreation** * 1) + (**forest landcover** * 2) + (**grassland** * 2) + (**wetland** * 2) + (**existing conservation** * 12) - (**human footprint index** * 38)

RI BUILDER

- Designed as an **engagement** tool that shows transparency in the make-up of the index.
- Users can **change** weights and update the RI in real time. This provides a means to reason with the relative importance of layers that comprise the index

Main App Features:

- Display
- RI point extractions and pop-up
- RI Download

RI BUILDER

RESILIENCE INDEX BUILDER

Biodiversity

Key Biodiversity Areas	Critical Habitat
15	9

Endangered	Special Concern	Threatened
8	6	7

Carbon

Potential	Storage
5	5

Climate

Extremes	Refugia	Velocity
12	6	6

Connectivity

Connectivity
13

eServices

Freshwater Provision	Recreation
1	1

Habitat

Forest Landcover	Grassland	Wetland
2	2	2

Protection

Existing Conservation
12

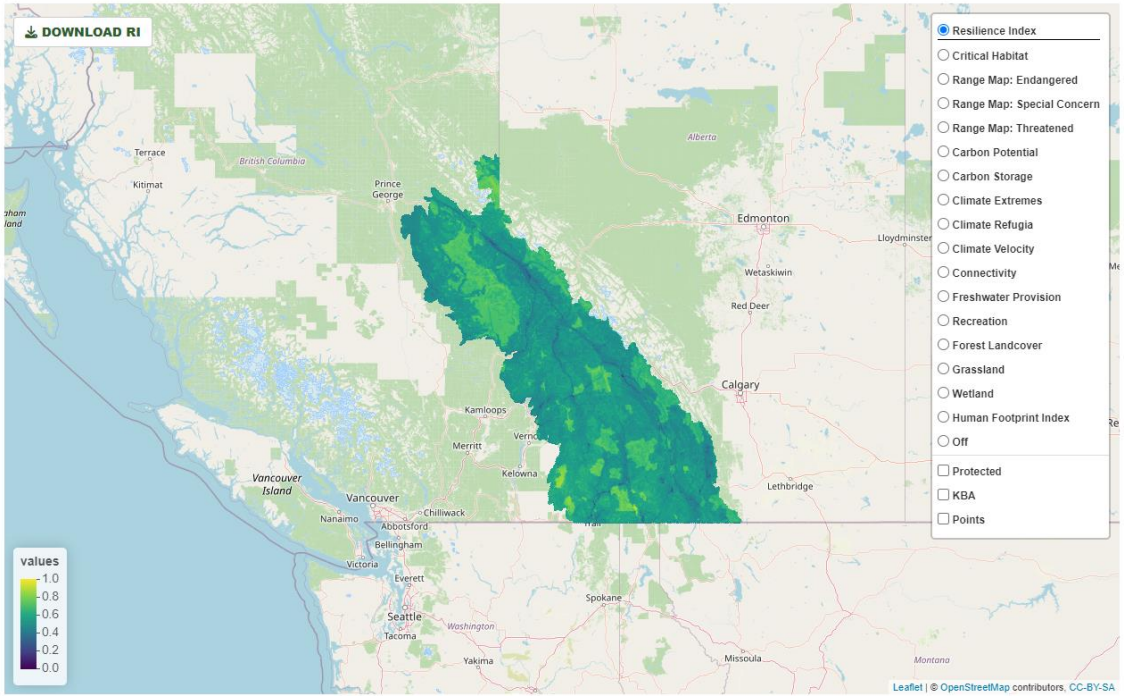
Threats

Human Footprint Index
38

Positive Weight tally: 100

Negative Weight tally: -50

RESET RI | UPDATE RI



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