

# RESILIENCE 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" **Landscape Level** 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			
<b>Habitat</b>	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	

Ranks are rationalized using the Connectivity. Adequacy.
Representativeness. Efficiency principle.

- 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:**

Normalized feature = (feature - min value) / ( max value - min value)



## **RI EQUATION**

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

### CP&P has provided an RI **recommendation** for review.

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



## RI BUILDER

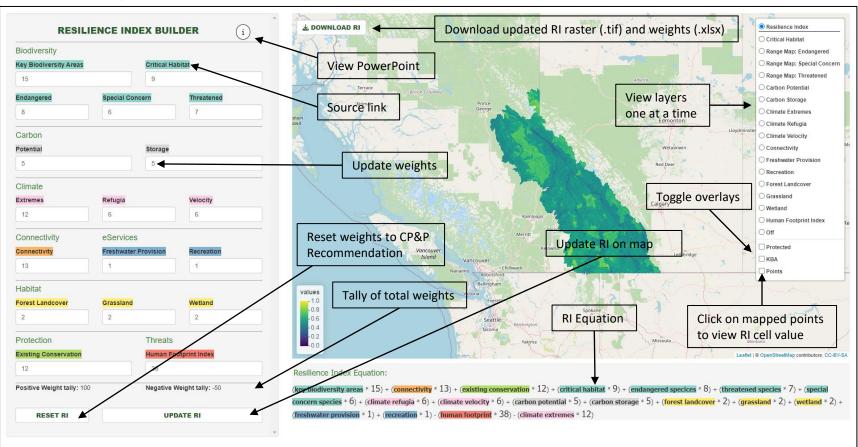
- Designed as an engagement tool that shows transparency in the make-up of the index.
- Users can change weights and update the RI in real time.
   This provides a means to reason with the relative importance of layers that comprise the index

#### **Main App Features:**

- RI map display
- · RI equation display
- RI point extractions and pop-up
- · RI download



## RI BUILDER UI



## **NEXT STEPS**

- Finding agreement on RI definition
- Finding agreement on the RI inputs
- Finding agreement on RI weights
- Communicating what RI is good at explaining and where it falls short (limitations)

