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:

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:

(key biodiversity areas * 15) + (critical habitat * 9) + (endangered species * 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

Download updated RI raster (.tif) and weights (.xlsx)

View PowerPoint

View layers

Update weights

Reset weights to CP&P Recommendation

Update RI on map

Tally of total weights

RI Equation

RESILIENCE INDEX BUILDER (i)

Biodiversity

Key Biodiversity Areas — 15
Critical Habitat — 9

Endangered — 8
Special Concern — 6
Threatened — 7

Carbon

Potential — 5
Storage — 5

Climate

Extremes — 12
Refugia — 6
Velocity — 6

Connectivity **eServices**

Connectivity — 13
Freshwater Provision — 1
Recreation — 1

Habitat

Forest Landcover — 2
Grassland — 2
Wetland — 2

Protection **Threats**

Existing Conservation — 12
Human Footprint Index — 38

Positive Weight tally: 100   Negative Weight tally: -50

RESET RI   UPDATE RI

Resilience Index Equation:

(key biodiversity areas * 15) + (critical habitat * 9) + (endangered species * 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)