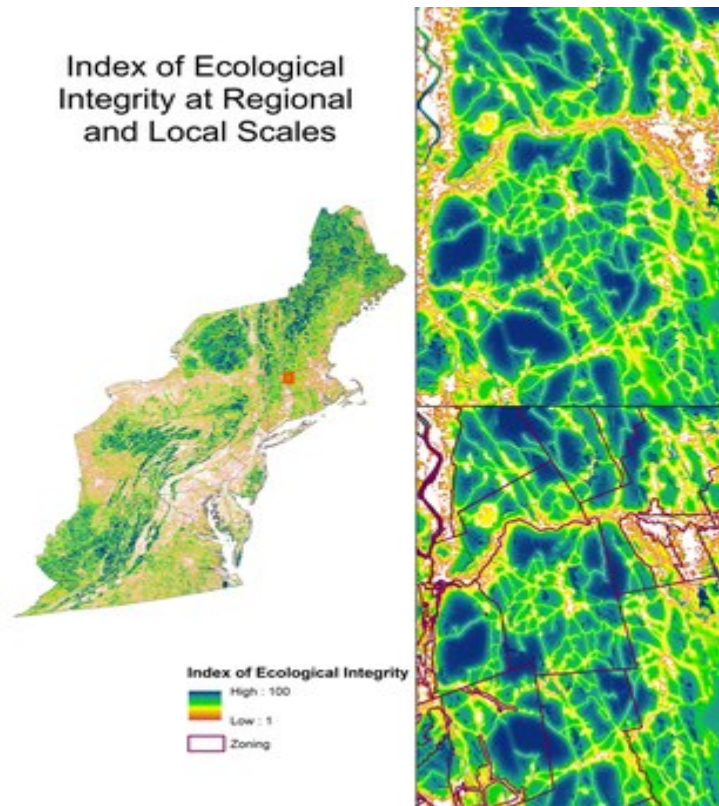


Index of Ecological Integrity



Combining a set of key metrics for intactness and resilience to measure the potential for individual sites to support biodiversity in the long term, this tool offers a way to prioritize actions intended to conserve high quality habitat by enabling users to compare the integrity of different sites of the same ecosystem type or habitat class.

northatlanticlcc.org/products/index-of-ecological-integrity

Go to the Product(s)

[Regional, state, and watershed-scale maps](#) depicting relative integrity of ecological systems on our Conservation Planning Atlas

[Technical information](#) about this product on our Spatial Data page

Technical description

The index of ecological integrity (IEI) is a measure of relative intactness (i.e., freedom from adverse human modifications and disturbance) and resiliency to environmental change (i.e., capacity to recover from or adapt to changing environmental conditions driven by human land use and climate change). It is a composite index derived from up to 21 different landscape metrics, each measuring a different aspect of intactness (e.g., road traffic intensity, percent impervious) and/or resiliency (e.g., ecological similarity, connectedness) and applied to each 30 m cell.

The index is scaled 0-1 by ecological system and geographic area, such that it varies from sites with relatively low integrity (representing highly developed and/or fragmented areas) to relatively high integrity (representing large, undisturbed natural areas) within each ecosystem type and geographic area (e.g., Northeast, state, ecoregion, watershed). Consequently, boreal forests are compared to boreal forests and emergent marshes are compared to emergent marshes, and so on for each ecosystem type within the specified geographic extent. It doesn't make sense to compare the integrity of an average boreal forest cell to that of an average emergent marsh cell, because the latter have been substantially more impacted by human activities than the former. Scaling by ecological system means that all the cells within an ecological system are ranked against each other in order to determine the cells with the greatest relative integrity for each ecological system within the specified geographic extent.

Additional Resources

[Website](#) for University of Massachusetts Designing Sustainable Landscapes project

[Expanded abstract](#) for Ecological Integrity

[Documentation](#) for Ecological Integrity

[Website](#) for the *Connect the Connecticut* landscape conservation design project, which incorporated [weighted IEI](#)

Case Studies and News Stories

[Identifying resilient sites in New Hampshire](#) - North Atlantic LCC *Conservation in Action* case study

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