

Resilient Landscapes Initiative

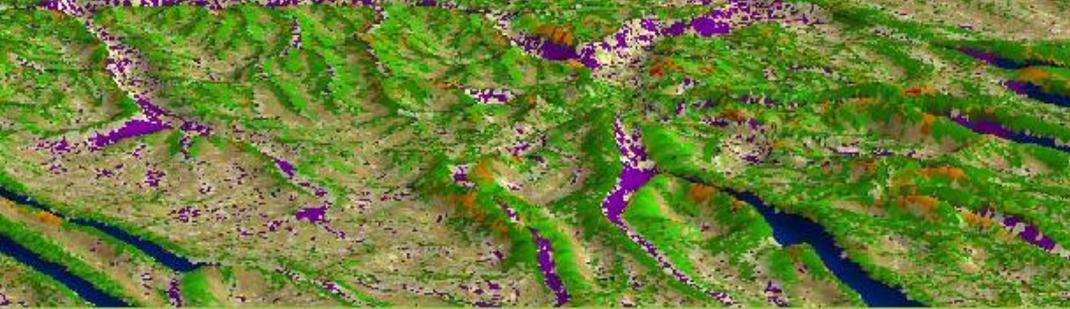
New Hampshire Land Trust Coalition

Concord, New Hampshire

March 7, 2013

Resilient Landscapes Initiative

- What role do land trusts have in responding to climate change?
- How does climate change impact conservation priorities?
- How do we ensure that the land we protect today will be important tomorrow?



Resilient Sites for Terrestrial Conservation in the Northeast and Mid-Atlantic Region

The Nature Conservancy · Eastern Conservation Science
Mark G. Anderson, Melissa Clark, and Arlene Olivero Sheldon



Download the full report and data
at www.conserveonline.org

Take Home Messages

- New resiliency science provides a key tool to enable land trusts to respond to climate change.
- New Hampshire Land Trusts have critical role to play in protecting resilient sites.
- Targeted support is available for conservation projects and technical assistance.

What is a resilient landscape?

A resilient landscape maintains ecological function and is likely to sustain a diversity of species even as species composition and ecological processes change.



Highly Vulnerable

- Limited capacity to adapt
- Disrupted function, low diversity
- Few options and alternatives

Highly Resilient

- Large capacity to adapt
- Sustain function and diversity
- Many options and alternatives

How to maintain a resilient landscape?

Landscape Complexity – Availability of micro-climates based on degree of elevation gradients, topography and moisture.

Plus

Landscape Connectedness – Connection to similar natural lands.

And

Across a diversity of geology types

Landscape Complexity

- Above average (1 to 2 standard deviations)
- Far above average (>2 standard deviations)



Local Connectedness

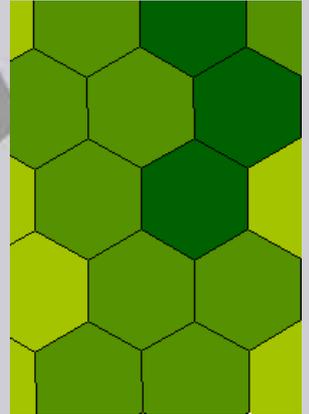
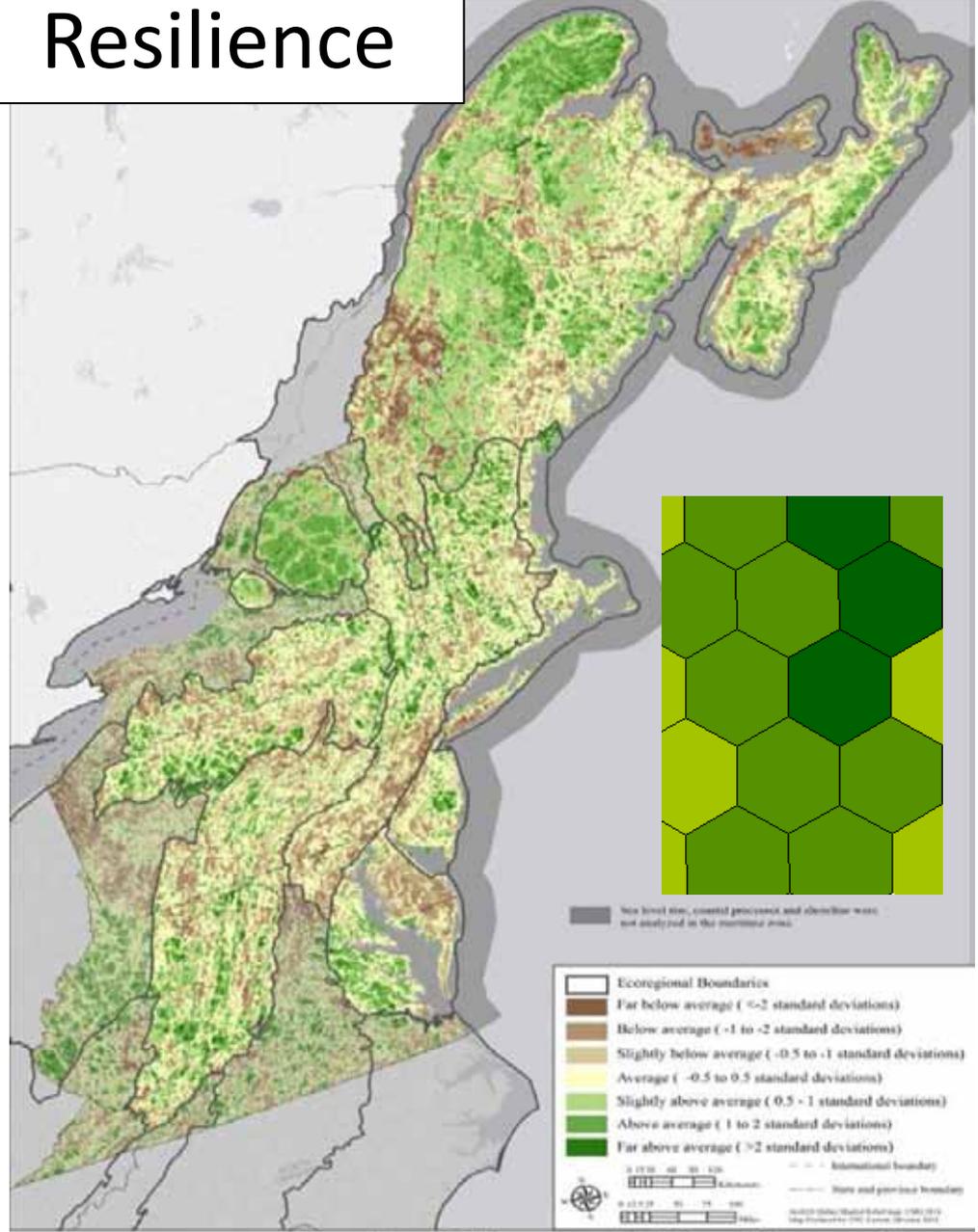
- Above average (1 to 2 standard deviations)
- Far above average (>2 standard deviations)

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Resilience



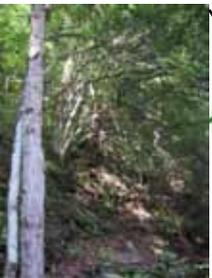
- Ecoregional Boundaries
- Far below average (<-2 standard deviations)
- Below average (-1 to -2 standard deviations)
- Slightly below average (-0.5 to -1 standard deviations)
- Average (-0.5 to 0.5 standard deviations)
- Slightly above average (0.5 - 1 standard deviations)
- Above average (1 to 2 standard deviations)
- Far above average (>2 standard deviations)
- International boundary
- State and province boundary

Regional Terrestrial Resilience Score
Stratified by Setting and Ecoregion with Regional Override

Adapted from M. Anderson

Geology and Diversity

Bicknell's thrush
High elevation
Granite & mafic



Shale barrens
Shale slopes



Serpentine Aster
Serpentine



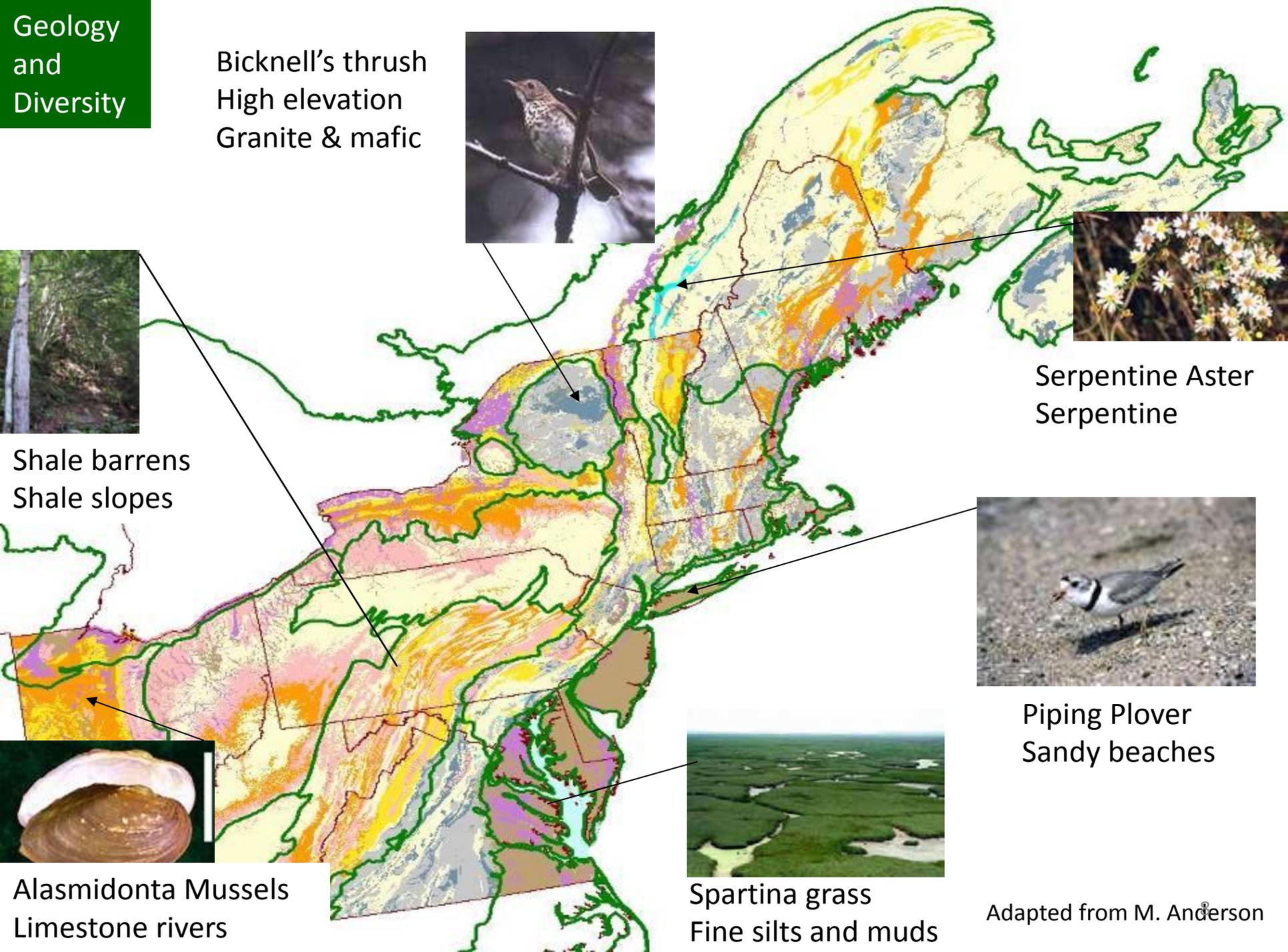
Piping Plover
Sandy beaches



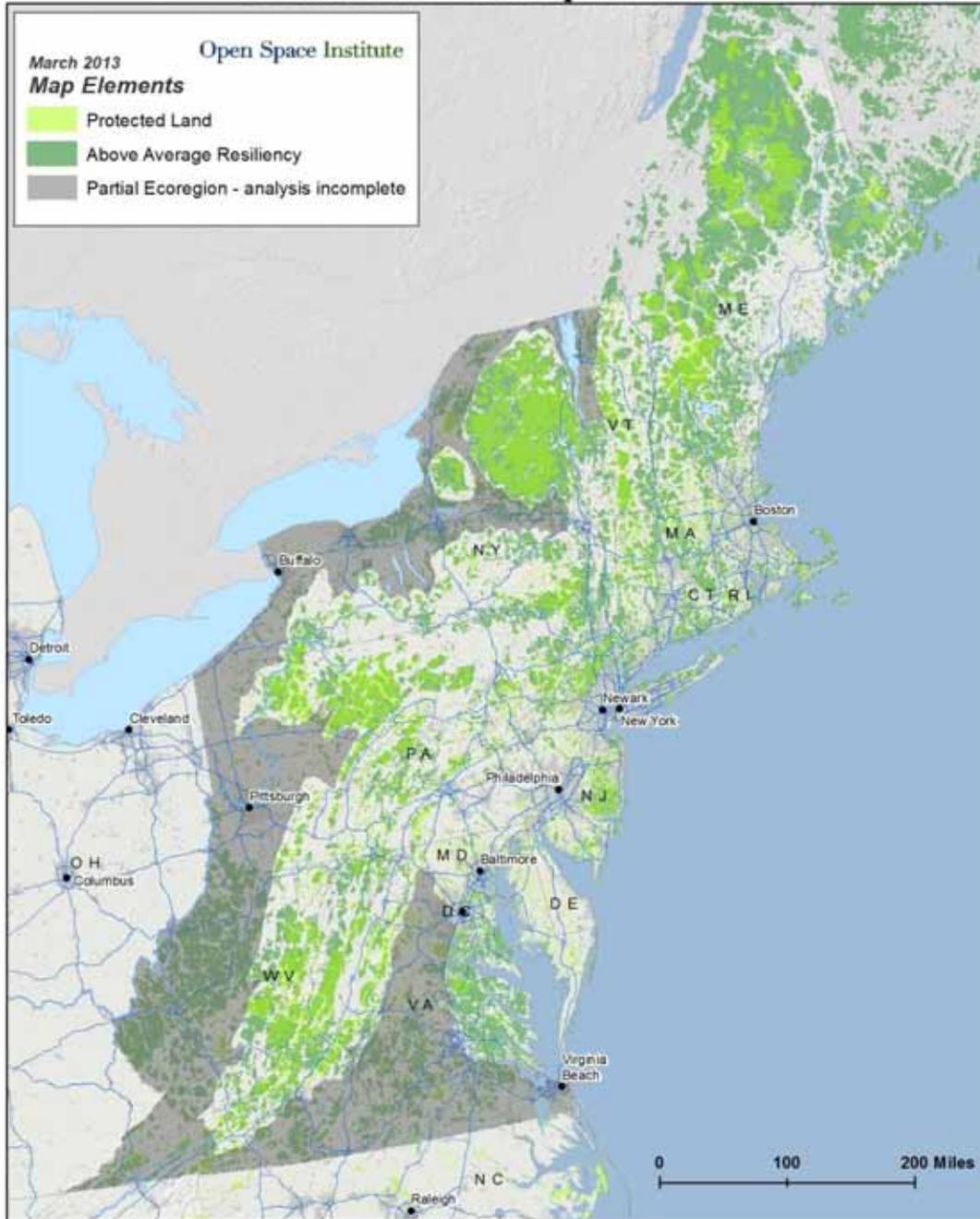
Alasmidonta Mussels
Limestone rivers



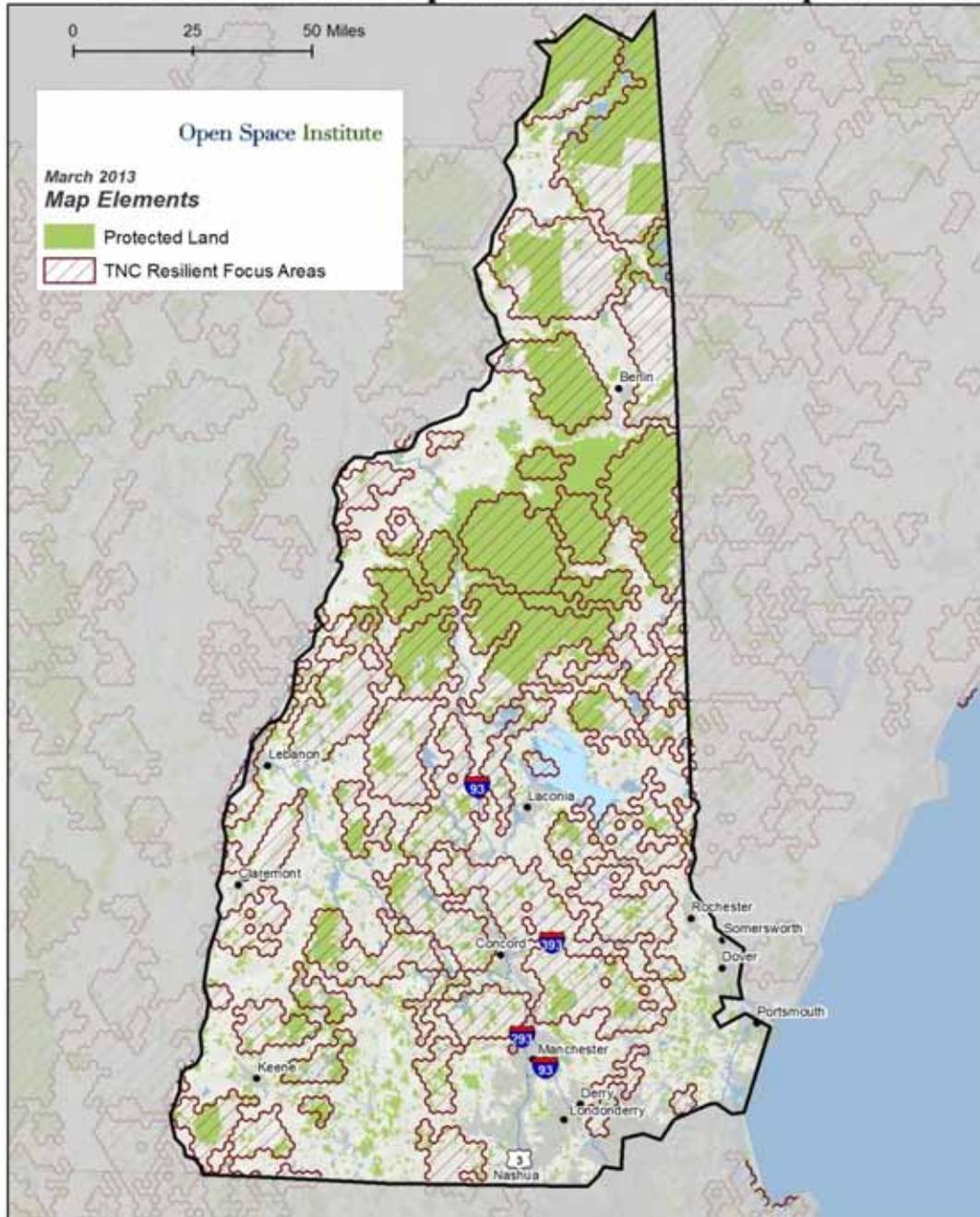
Spartina grass
Fine silts and muds



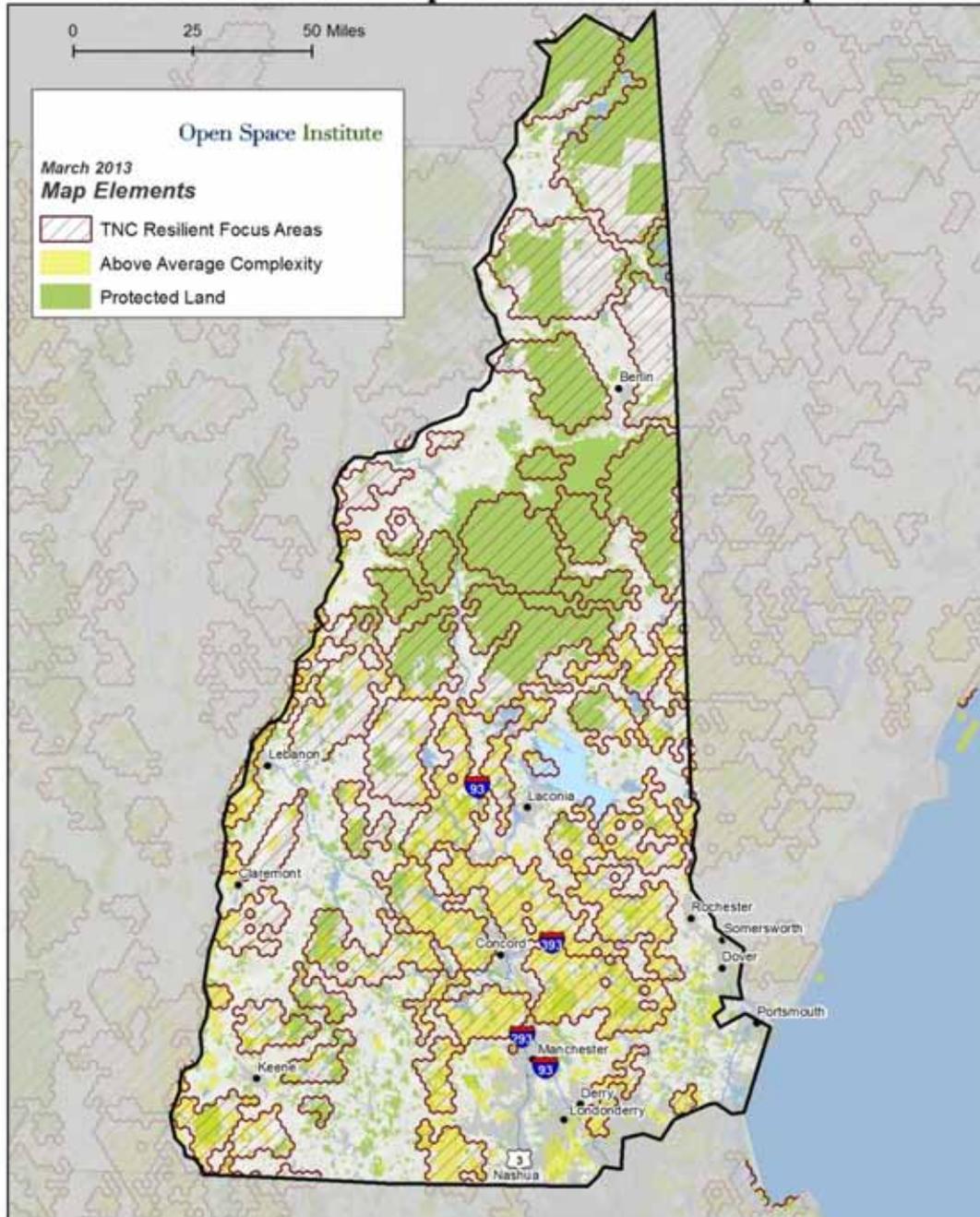
OSI Resilient Landscapes Initiative



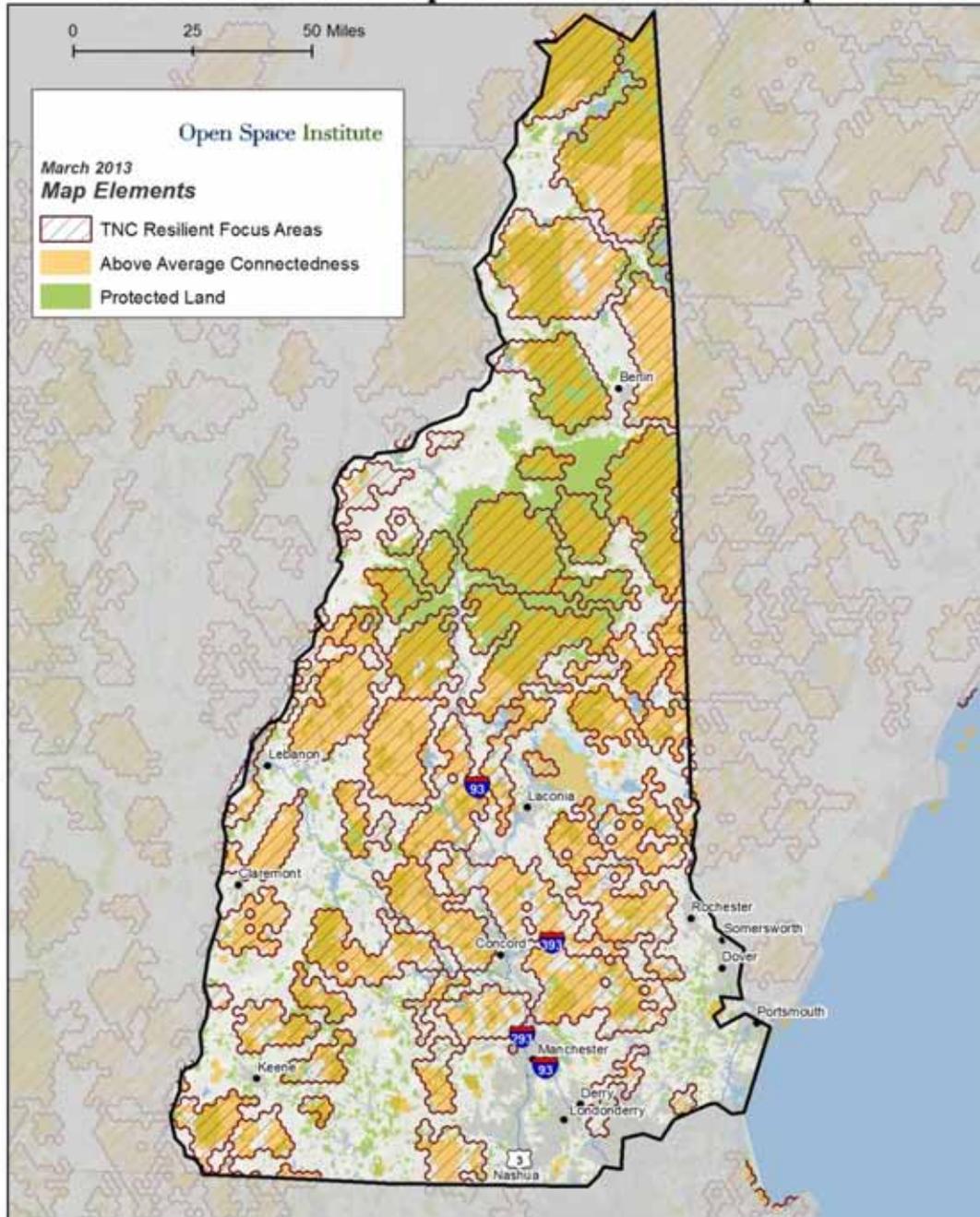
OSI Resilient Landscapes Initiative - New Hampshire



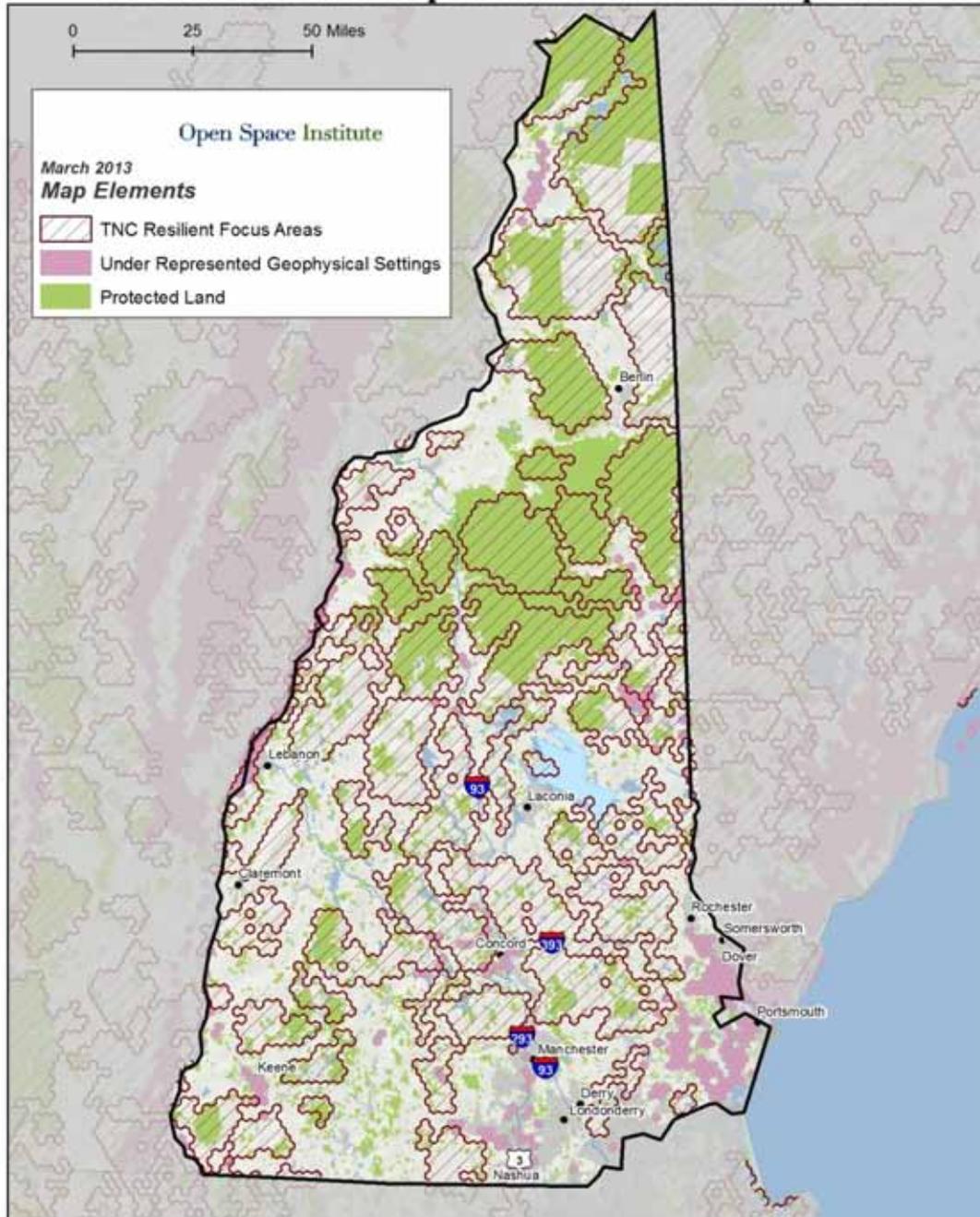
OSI Resilient Landscapes Initiative - New Hampshire



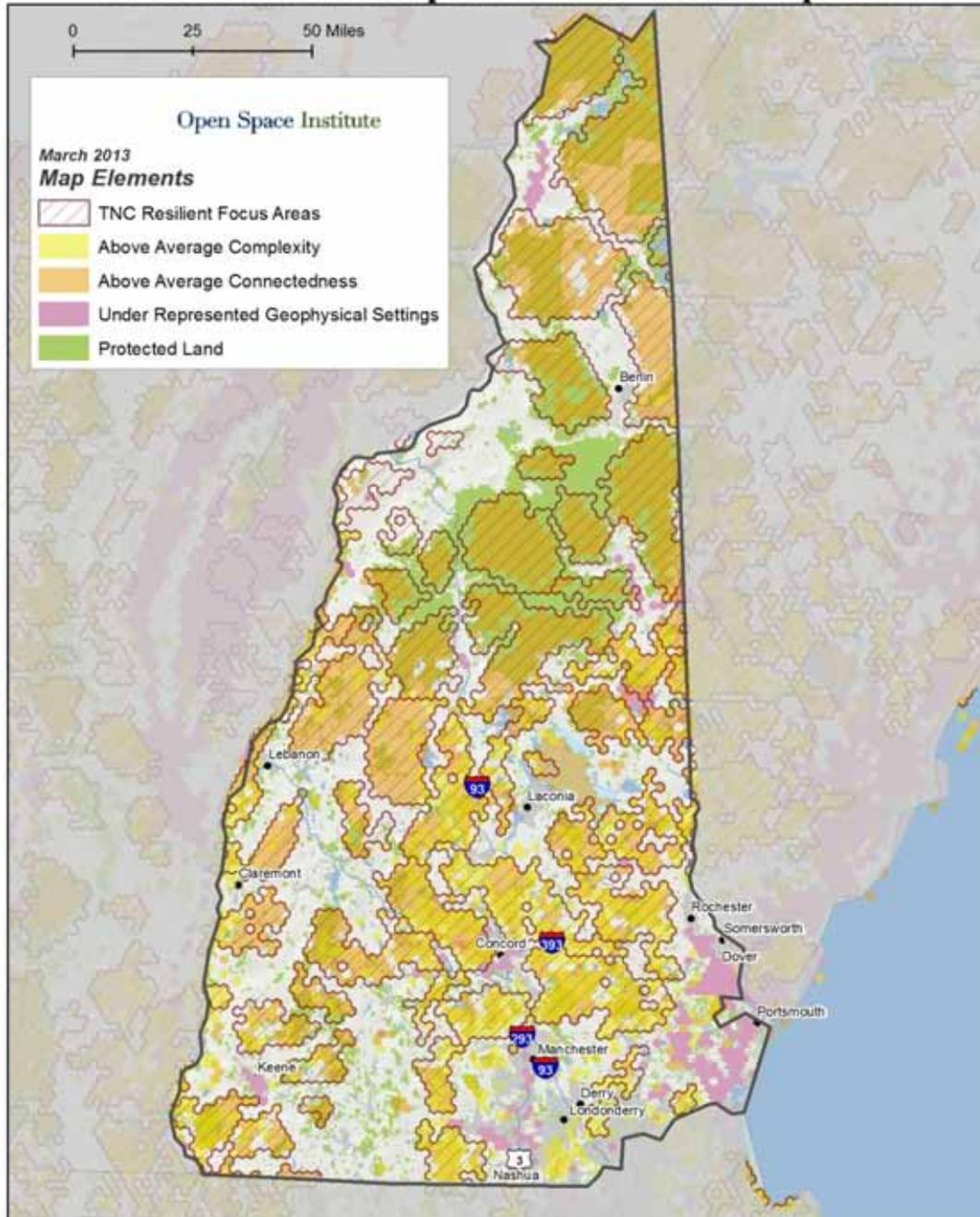
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Focal Area Selection Process

Science screen - Overseen by science advisors

Feasibility Screen

Science-based focus areas

Science-based, resilient focus areas

Key data:

- Landscape complexity
- Connectedness
- Diversity of geophysical settings
- Under-represented settings
- Protected Lands
- Existing Diversity

Hypothetical focus areas Resulting from science screen



Financial

- Private dollars directed to wildlife resiliency
- Public funding
- Ability to produce a 5:1 match

Land trust & agency capacity

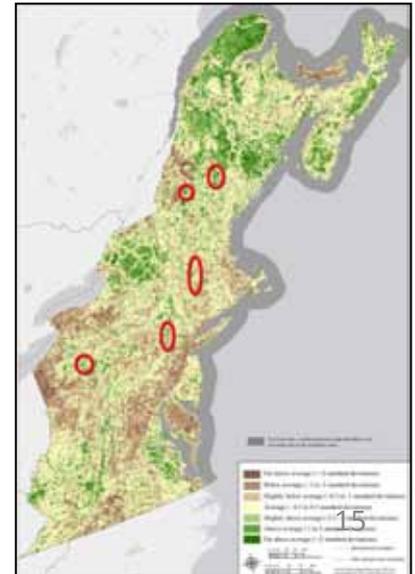
- Track record of successful transactions
- Focus on wildlife adaptation
- Presence of deals and willing landowners
- Partner local and/or state agencies

Threat

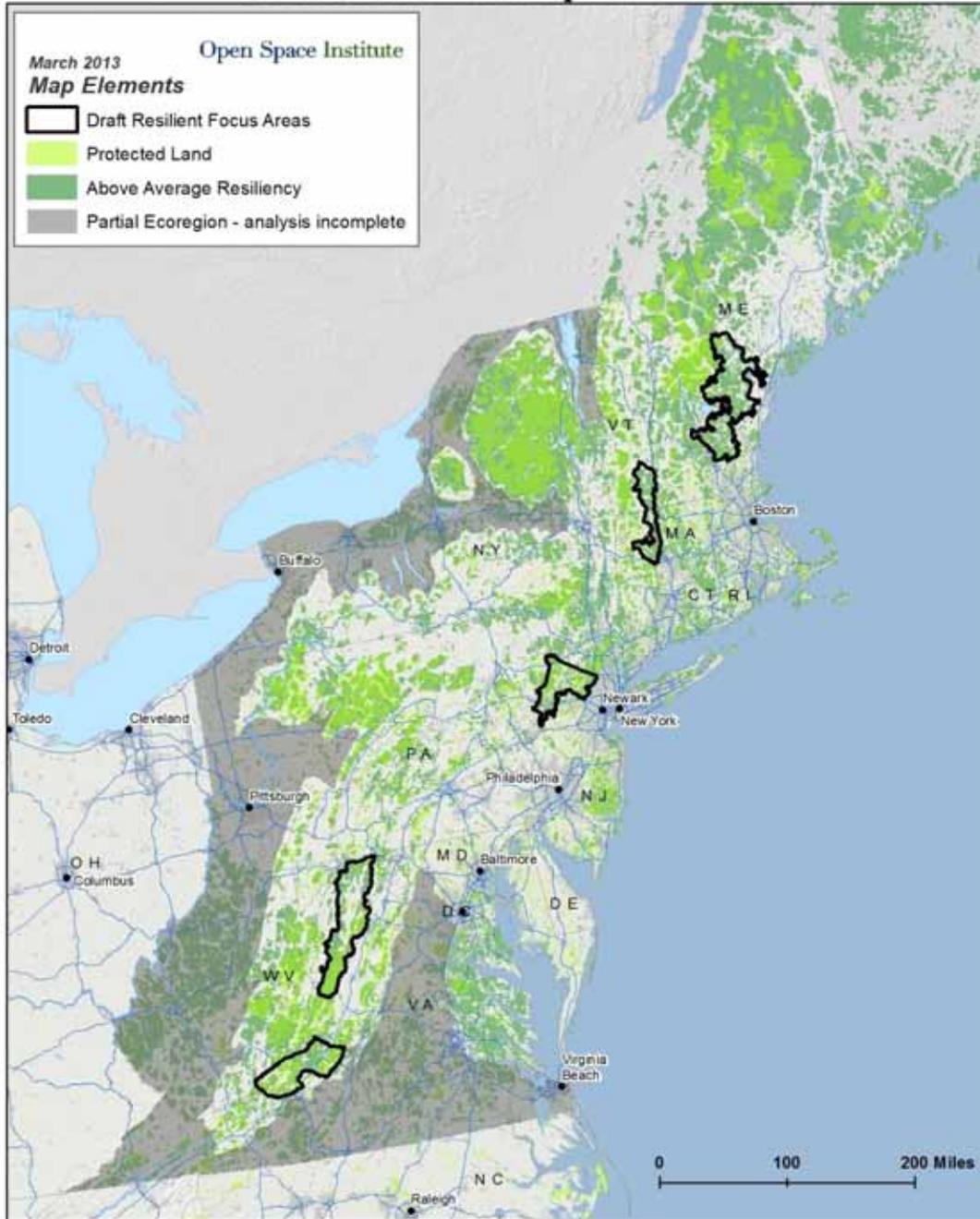
- Housing development
- Pipelines and/or transmission lines
- Major energy development (e.g. wind, shale, solar)

Two to four focus areas for grants and targeted outreach

Hypothetical focus areas Resulting from feasibility screen



OSI Resilient Landscapes Initiative



Education and Outreach

- Ensure the science is accessible to land trusts and public agencies.
- Integrate resiliency science into existing conservation planning and data sets (State wildlife action plans, regional planning efforts, land trust conservation plans, etc.)
- Document and communicate about conservation of resilient places.

Questions for New Hampshire Land Trusts

- Is your organization integrating climate change considerations into your work now? If so, how?
- Could this science mesh with your priorities and your current work?
- Are there barriers to using this information?
- What resources and assistance do land trusts and agencies need to use this science?