Open Space Institute

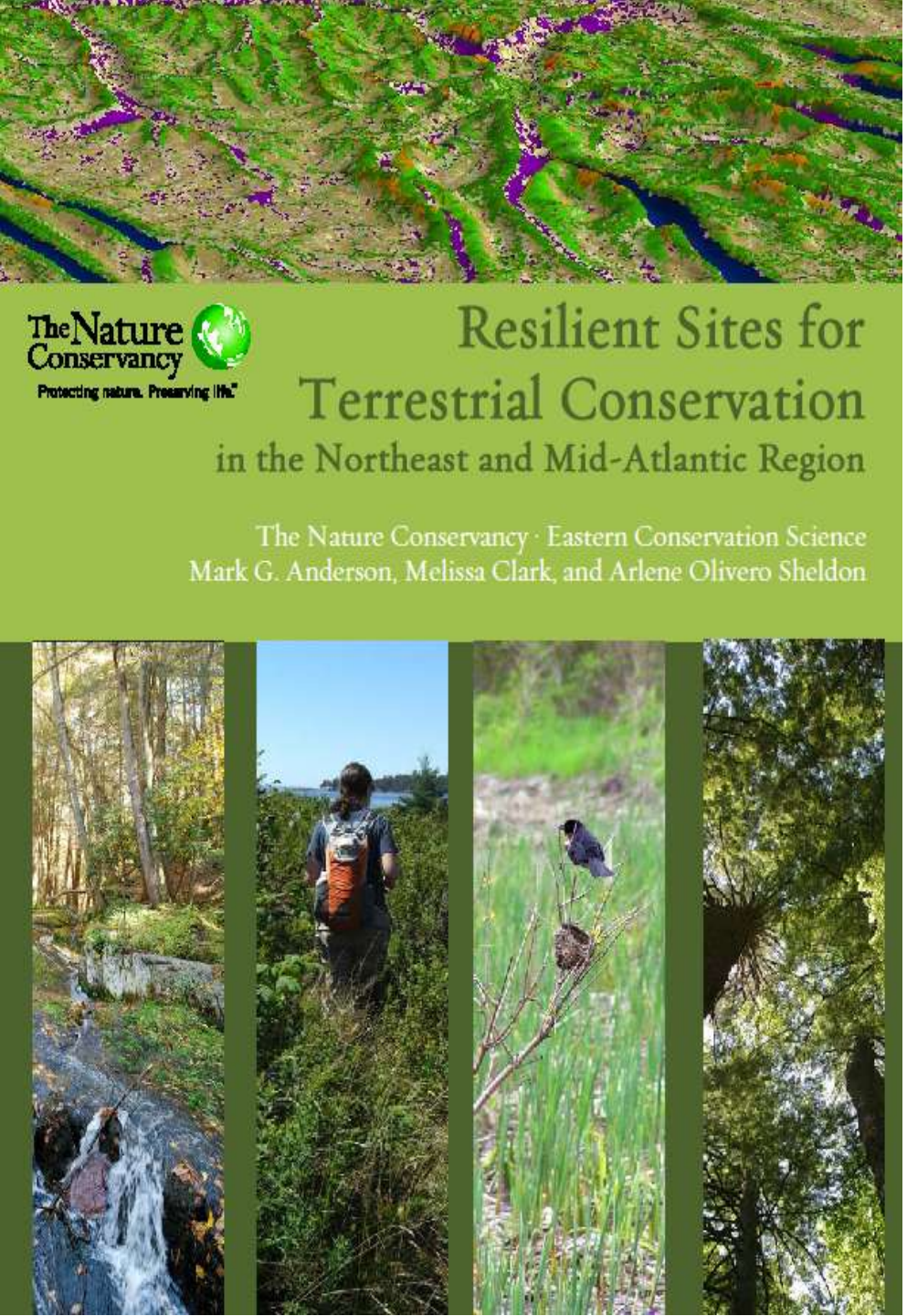
Regional Conservation Partnerships Gathering

Conservation of Resilient Landscapes

Concord, NH

November, 2012

- How can land trusts contribute to solving problems associated with climate change?
- How can we rethink conservation in a continually changing climate?
- How can we ensure that the land we protect today will still harbor wildlife diversity, healthy ecosystems and ecosystems functions as the climate changes?



- The Nature Conservancy, Eastern Conservation Science
- Mark Anderson, Melissa Clark & Arlene Olivero Sheldon
- Northeast & Mid-Atlantic Region
- Terrestrial Conservation
- Incorporates analysis from Brad McRae and Brad Compton at UMass and others
- Download full report

  conserveonline.org

What is a Resilient Site?

Characteristics that maintain ecological functions and will likely 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

Adapted from M. Anderson

What Makes a Site Resilient?

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

Plus

Landscape Connectedness (Permeability) **– Connection to similar natural lands.**

Adapted from M. Anderson

Landscape Complexity

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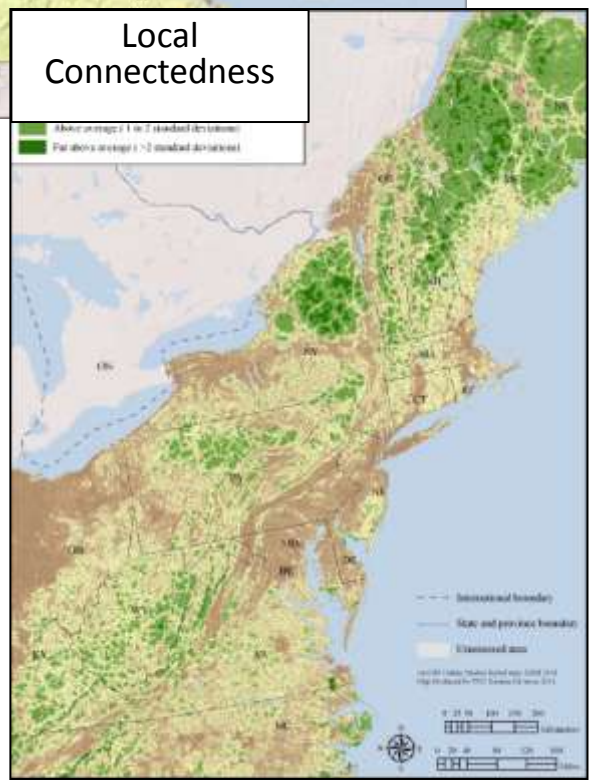
Local Connectedness



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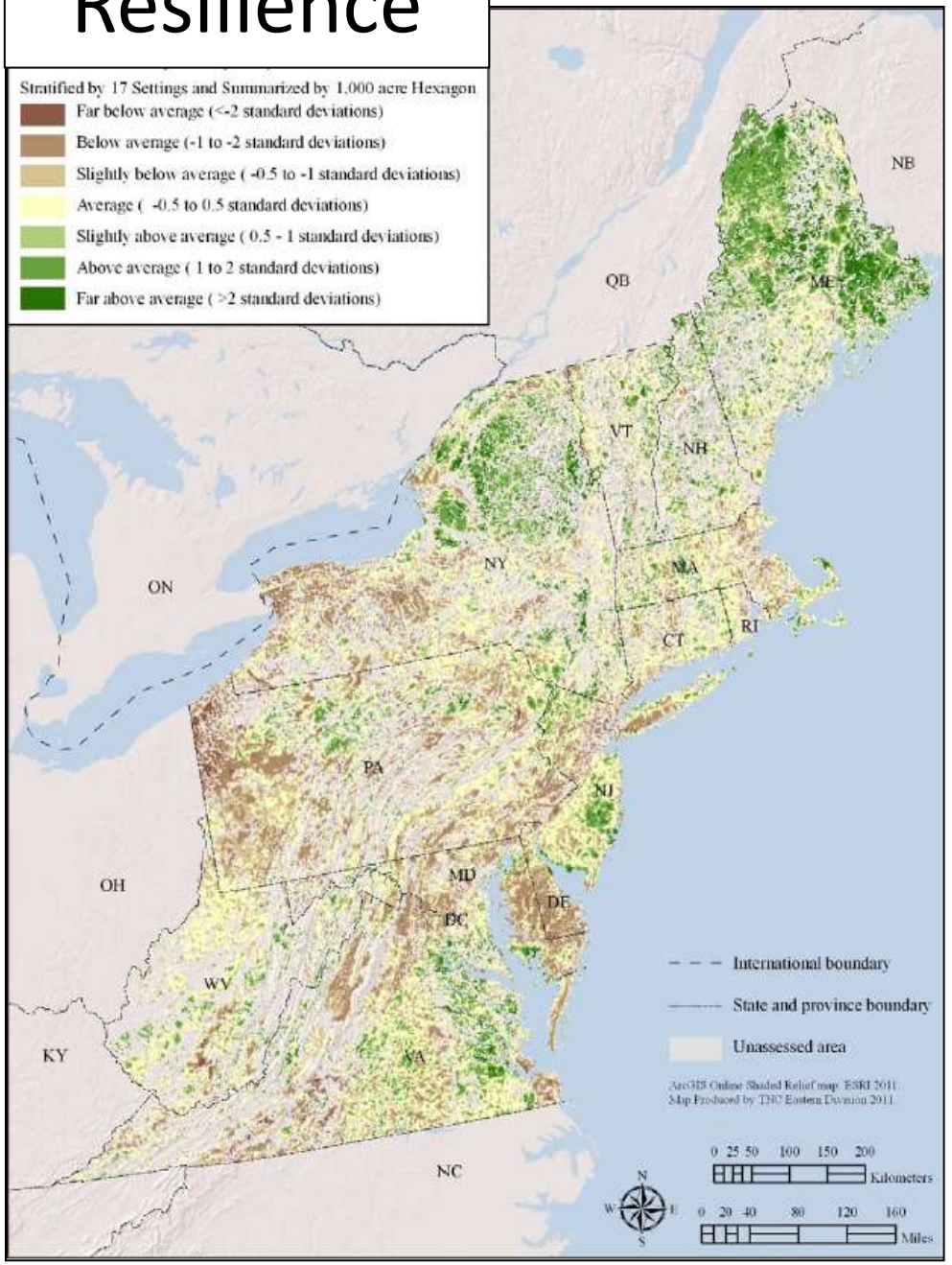
Resilience



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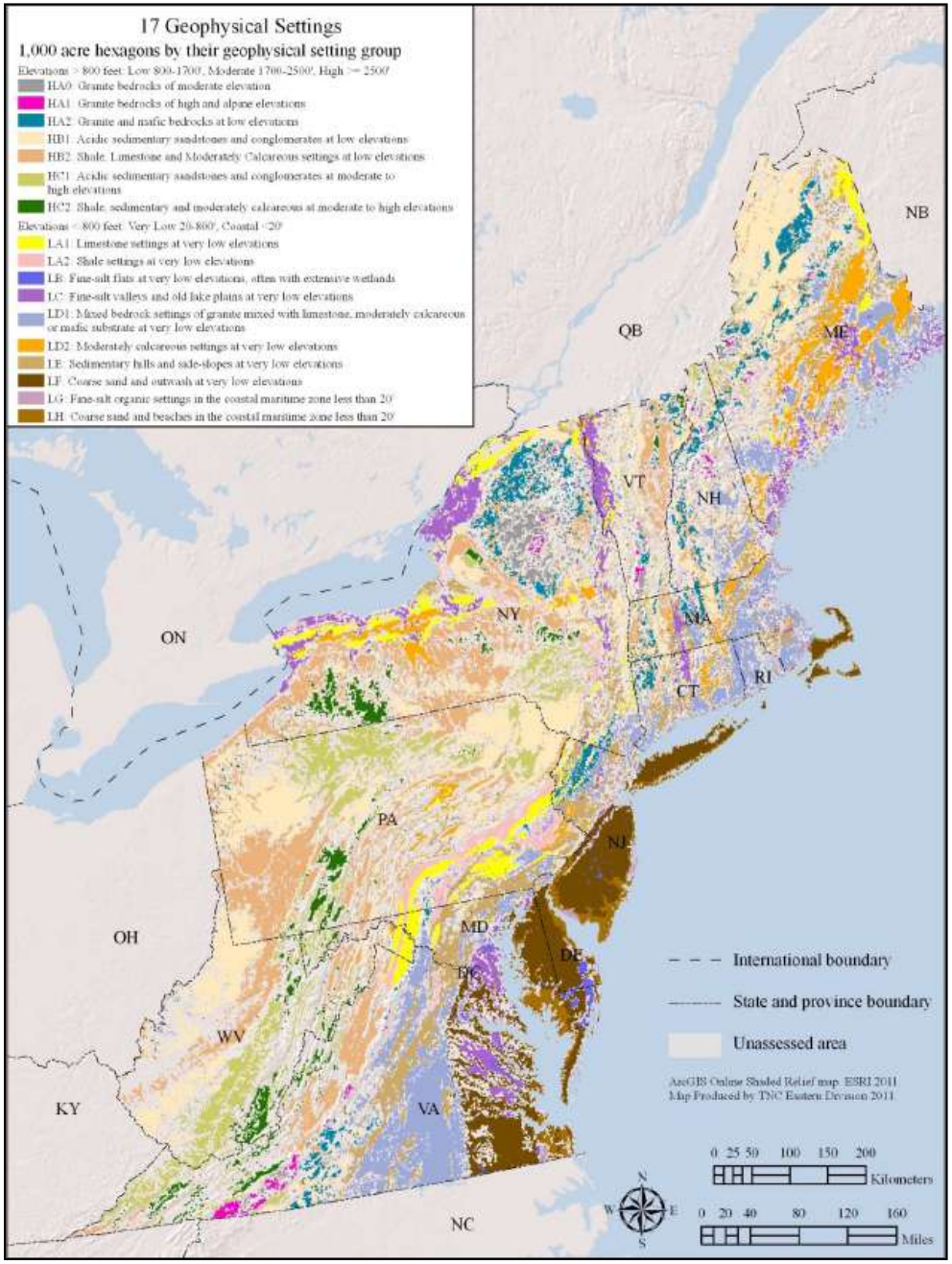
Geophysical Settings & Ecoregions

- Elevation Zones (coastal to sub-alpine)
- Geology Classes (*e.g.* shale, calcareous)
- Landform types (*e.g.* low, flat hilltop; cliff; wet flats)



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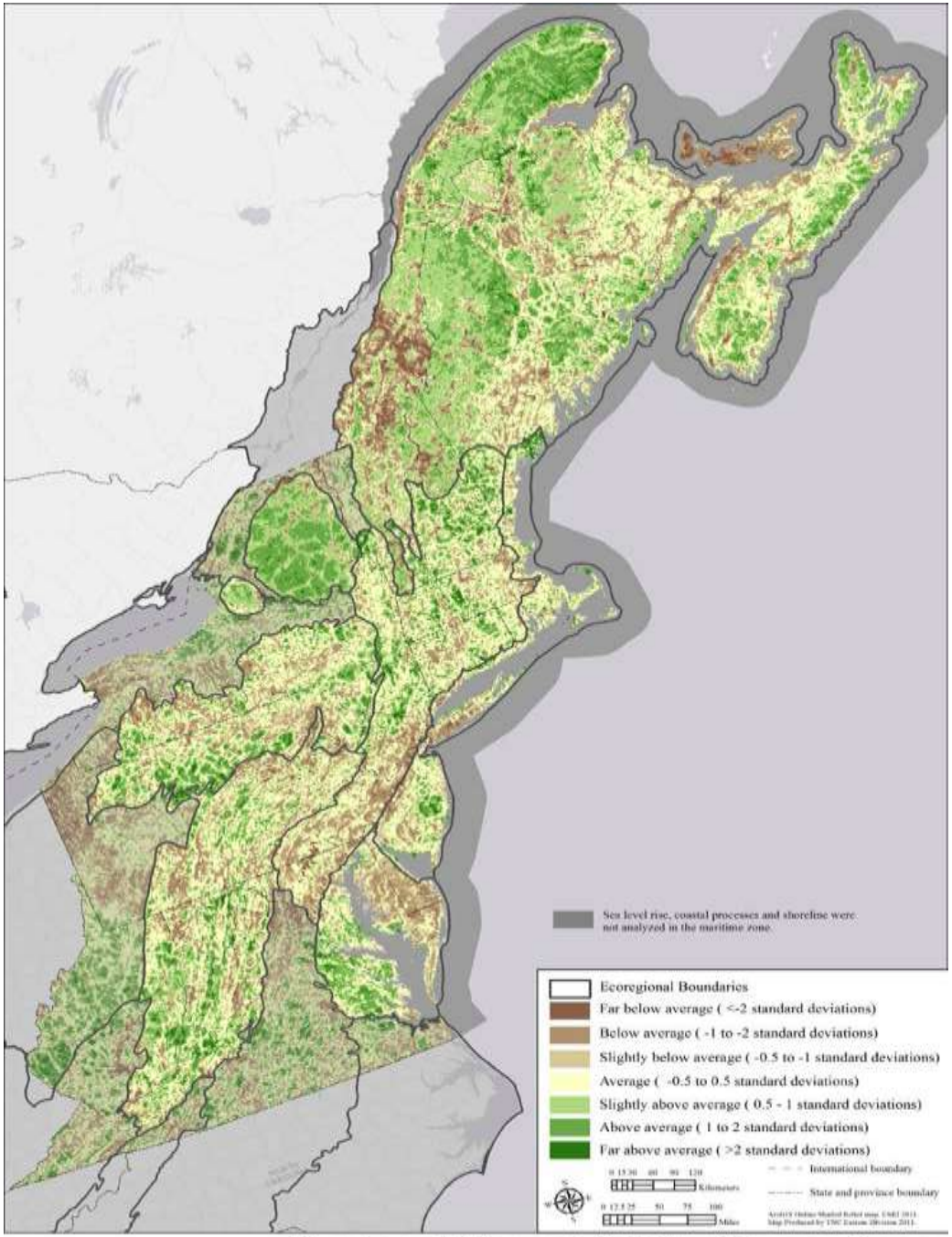


Regional Terrestrial Resilience Score

Stratified by Setting and Ecoregion with Regional Override

M. Anderson

Focal Area Selection Process

Science screen - Overseen by science advisors

Science-based focus areas

Key data:

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

Science-based, resilient focus areas

Hypothetical focus areas Resulting from science screen

Feasibility 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

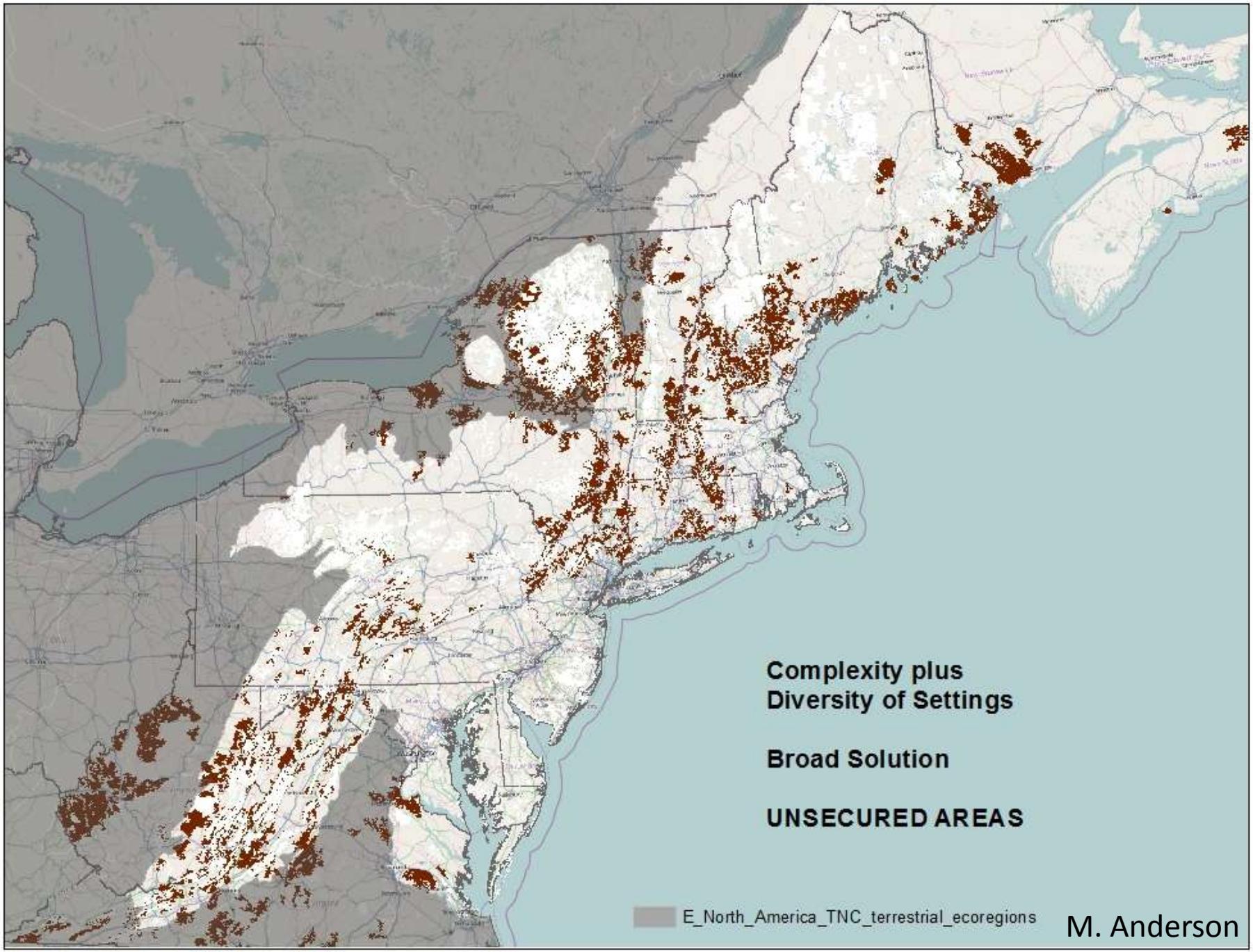
- Housing development
- Pipelines and/or transmission lines
- Major energy development (e.g. wind, shale, solar)

Two to four focus areas for grants and targeted outreach

Hypothetical focus areas Resulting from feasibility screen

Bringing Science to Ground

1. How do we prioritize among resilient sites?
2. How do we mesh the science with feasibility, opportunity and need: conserved areas; land trust & agency capacity & interest; matching $; conversion threats; existing species diversity?
3. Will land trusts and agencies integrate this information into project-level action?


Complexity plus
Diversity of Settings
Broad Solution
UNSECURED AREAS
E_North_America_TNC_terrestrial_ecoregions
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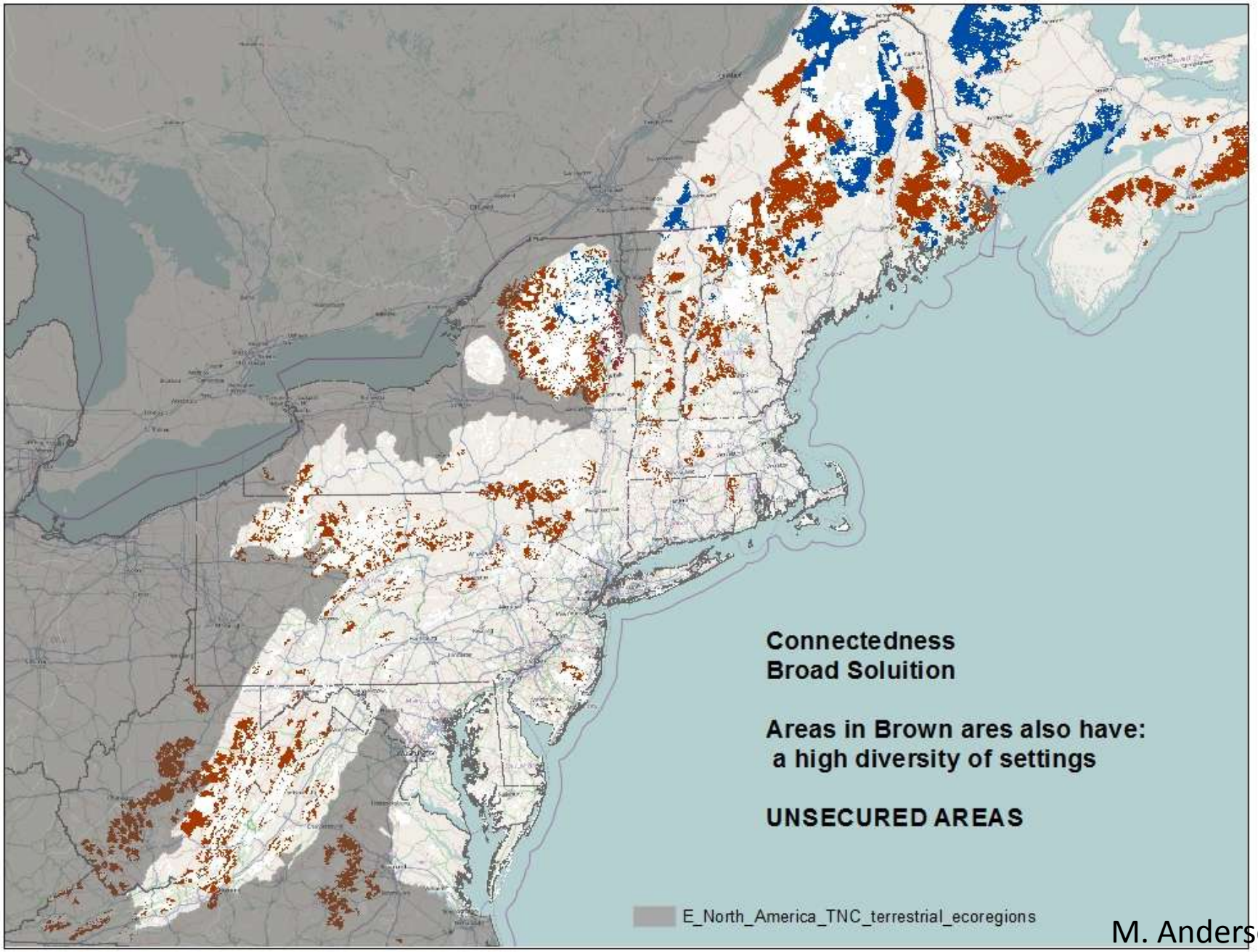
Connectedness
Broad Soluition
Areas in Brown ares also have:
a high diversity of settings
UNSECURED AREAS
E_North_America_TNC_terrestrial_ecoregions

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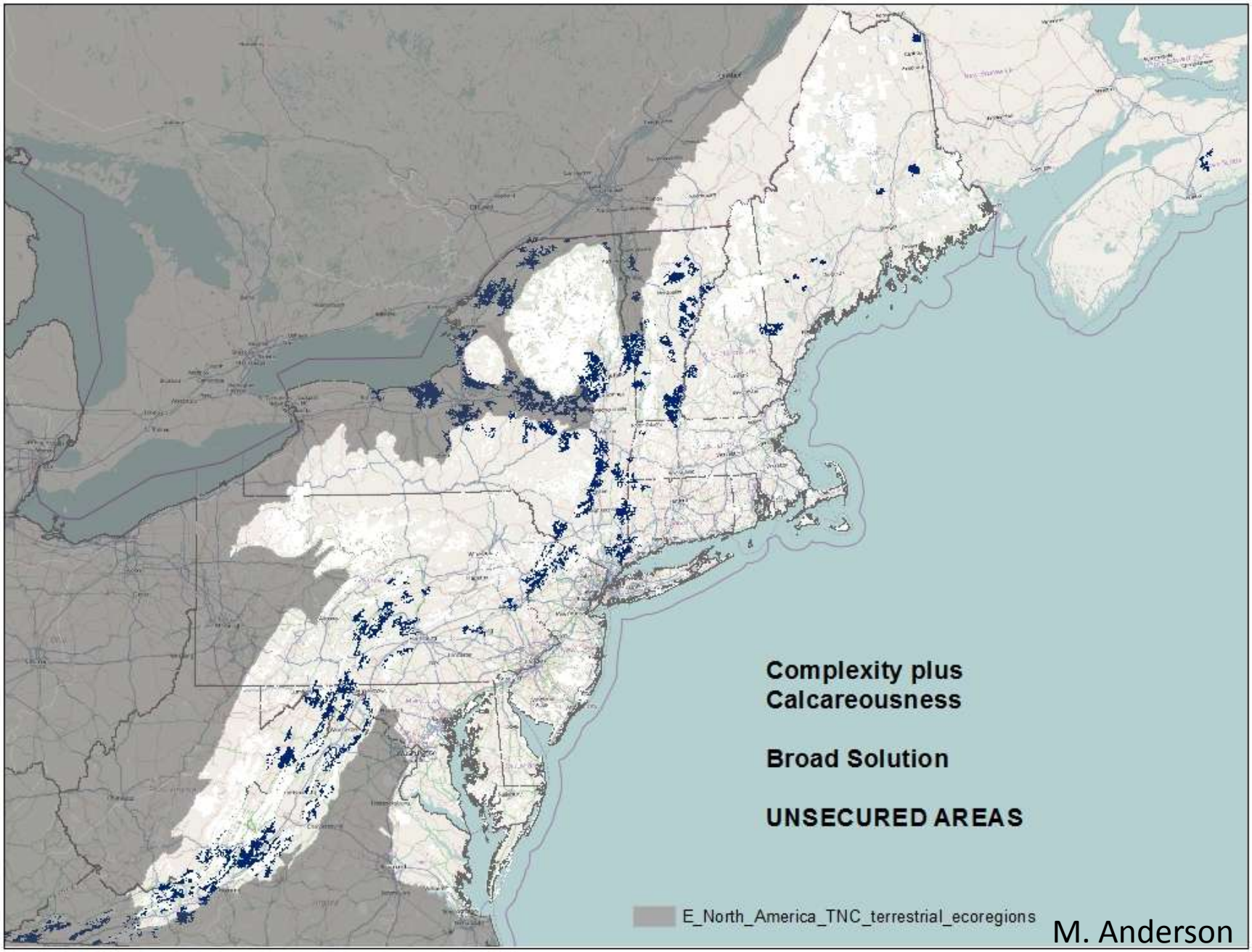
Complexity plus
Calcareousness
Broad Solution
UNSECURED AREAS
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Bringing Science to Ground

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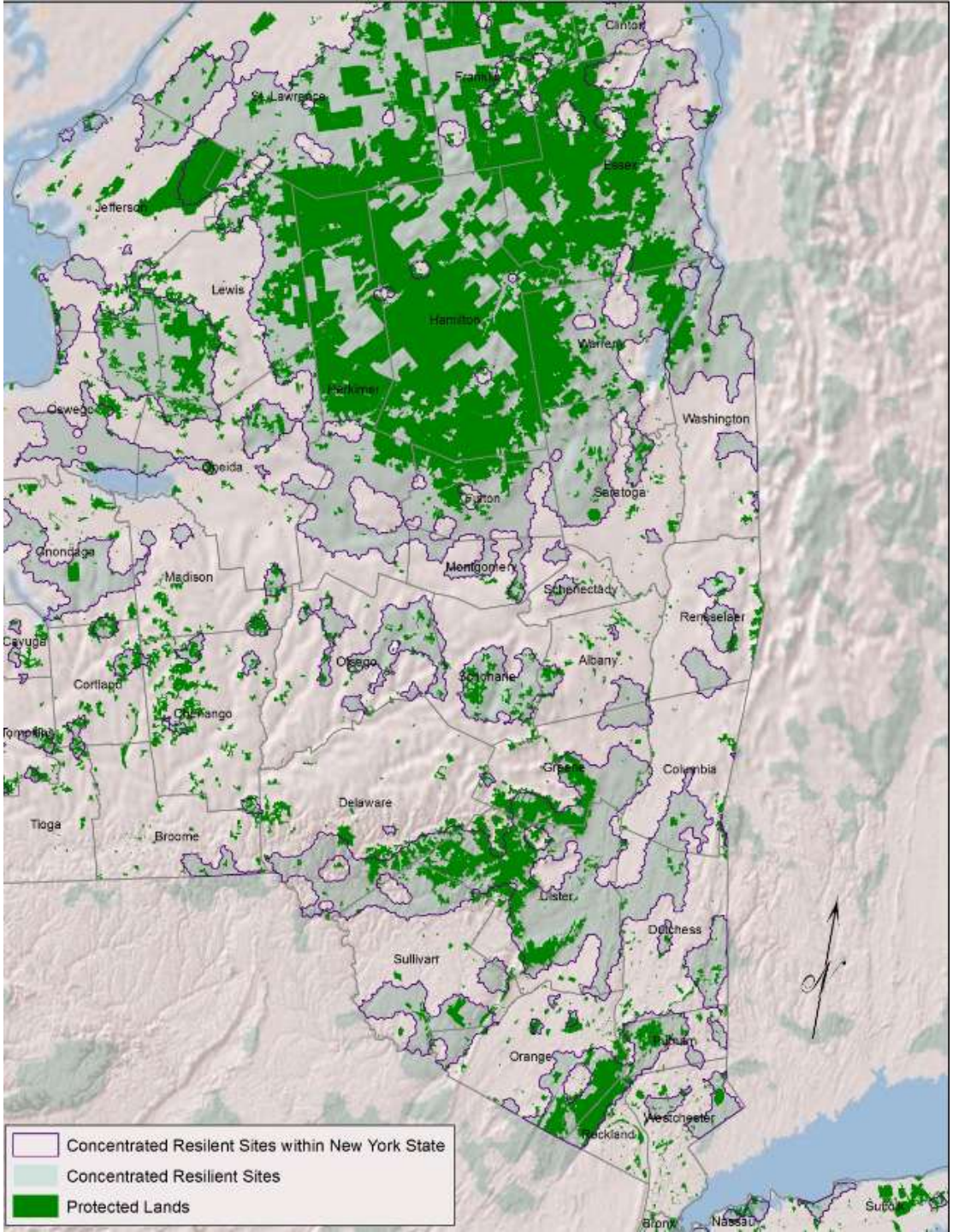
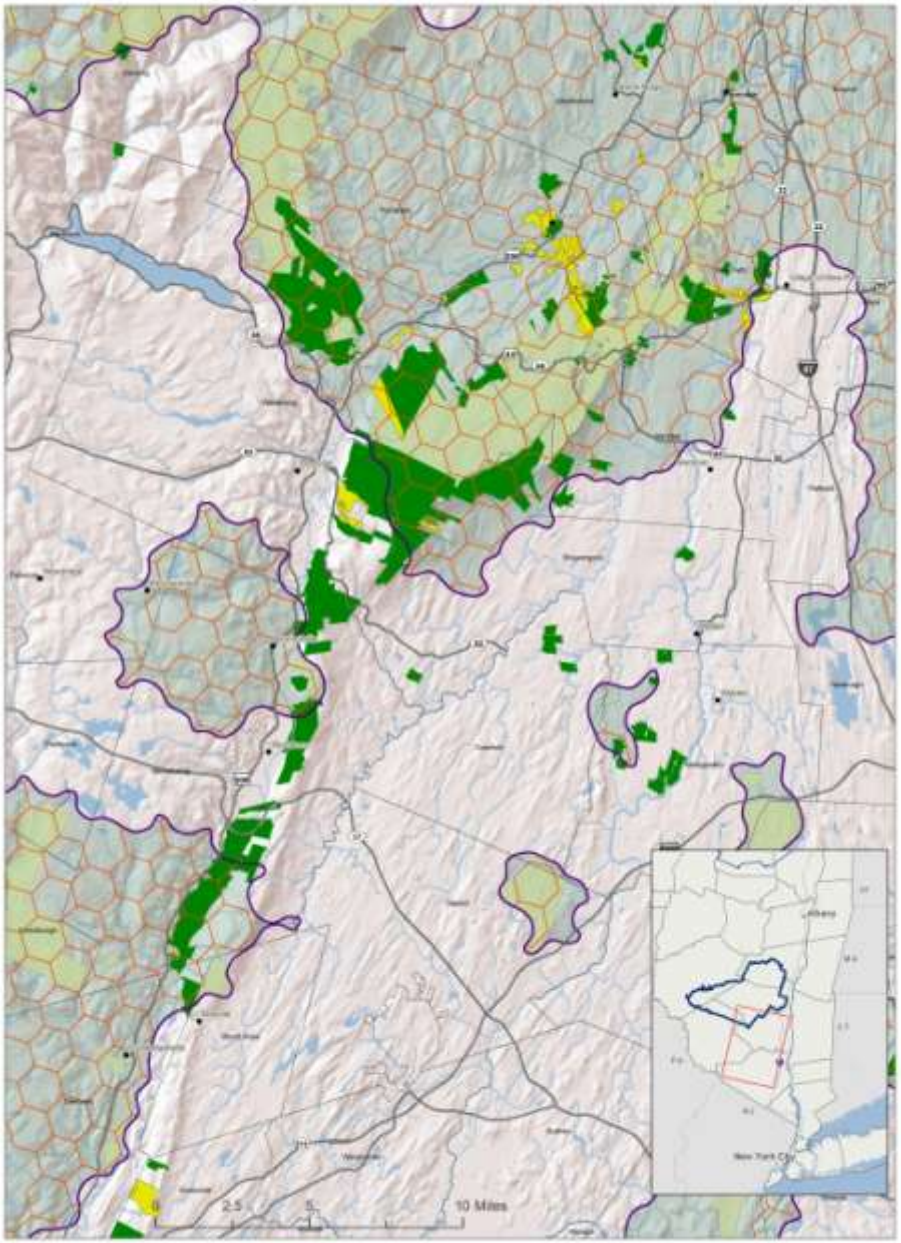

Concentrated Resilent Sites within New York State
Concentrated Resilient Sites
Protected Lands
Jefferson
Lewis
Hamilton
Warren
Washington
Oswego
Oneida
Saratoga
Onondaga
Madison
Montgomery
Schenectady
Rensselaer
Albany
Cayuga
Cortland
Otsego
Schoharie
Tioga
Broome
Delaware
Greene
Columbia
Ulster
Dutchess
Sullivan
Orange
Putnam
Westchester
Rockland
Bronx
Nassau

SHAWANGUNK RIDGE GREENWAY



Concentrated Resilient Sites
Above Average Resiliency Score
OSI Protected Lands
Other Protected Lands
OSI's Active Conservation Targets

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Bringing Science to Ground

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Questions

- 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 it?
- What resources do land trusts and agencies need to use this science?
- What assistance would you need to begin working with this new science?