

Update: The Connecticut River Watershed Landscape Conservation Design Pilot

Scott Schwenk, Science Coordinator
North Atlantic Landscape Conservation Cooperative

October 28, 2014

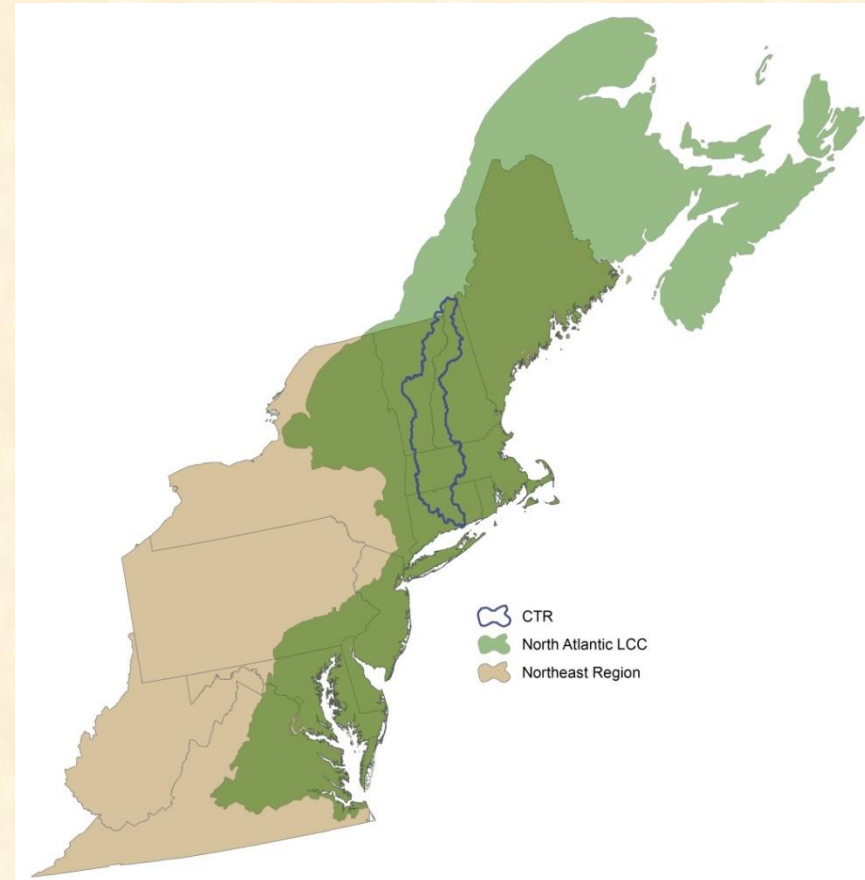


North Atlantic  Landscape Conservation Cooperative



Background & History

- Builds on 4 years of LCC conservation science tool development and 7 years of RCN program
- Nov. 2013: approved by LCC Steering Committee and USFWS NE Region leaders



Objectives for Pilot Process

1. Collaboratively prioritize places, and identify the strategies and actions, necessary to conserve ecosystems, and the fish, wildlife, and plants they support, into the future
2. Deliver information, maps, and tools with design options for prioritizing at scales and in formats needed by partners
3. Establish a process for conducting landscape conservation design that can be applied and adopted elsewhere in region



Partnership and Process Accomplishments

- Assembled leadership team (North Atlantic LCC staff, USFWS, Kevin McGarigal – UMass)
- Convened core team of more than 30 partners: state fish and wildlife; federal; NGO
- Conducted 8 monthly, in-person meetings + subteam meetings



Technical Progress and Accomplishments

- Agreed to 2 overarching goals
- Developed species (population and habitat) and ecosystem objectives
- Identified the major elements of the design
- Reached a series of collaborative decisions on the design
- Began deliberations on drivers of future change



North Atlantic  Landscape Conservation Cooperative



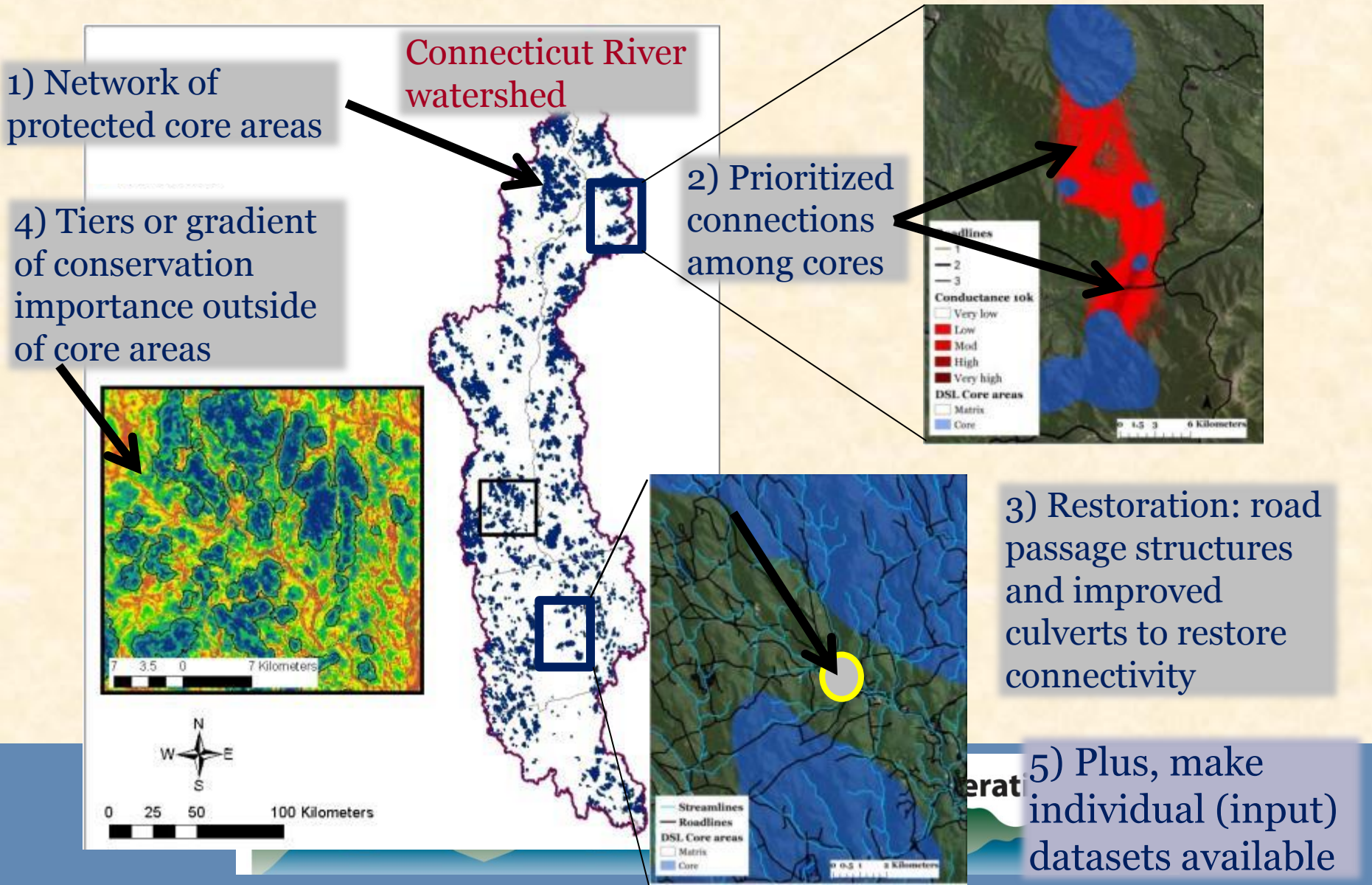
© Lloyd Spitznagel

Examples of Collaborative Decisions

- Should certain species receive elevated weight? (Yes – regional responsibility, rarity, and threat)
- Should certain ecosystem types receive elevated weight? (Yes)
- How should aquatic areas be prioritized? (Stream segment cores)
- Core areas: fewer, larger *or* more, smaller

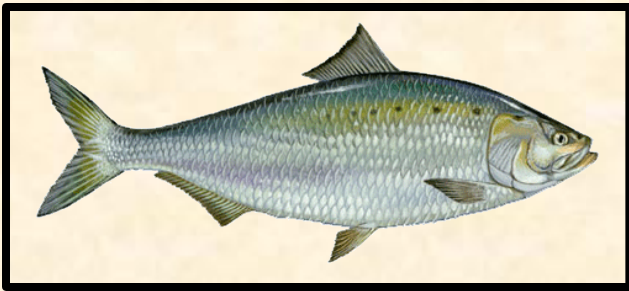


Combined Conservation Design Elements



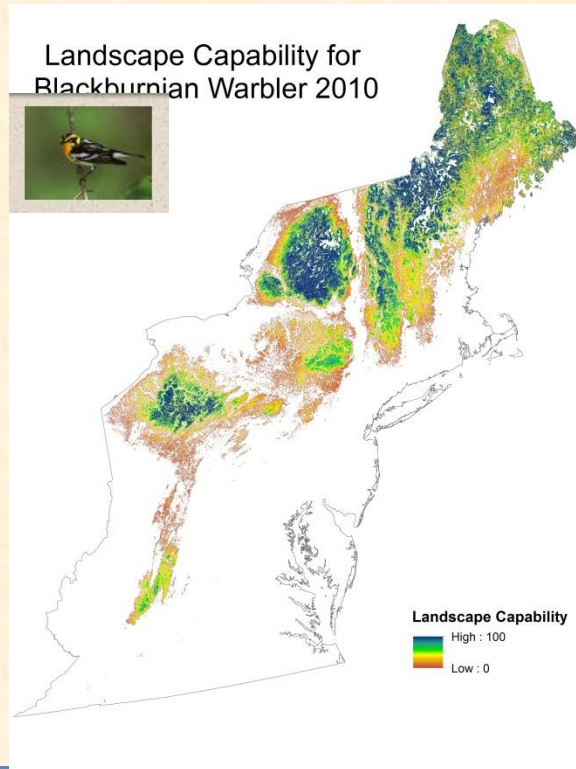
Communications Accomplishments

- Extensive project webpage
- Group workspace on Conservation Planning Atlas
- Presentations and poster
- North Atlantic LCC newsletters
- Survey of participants

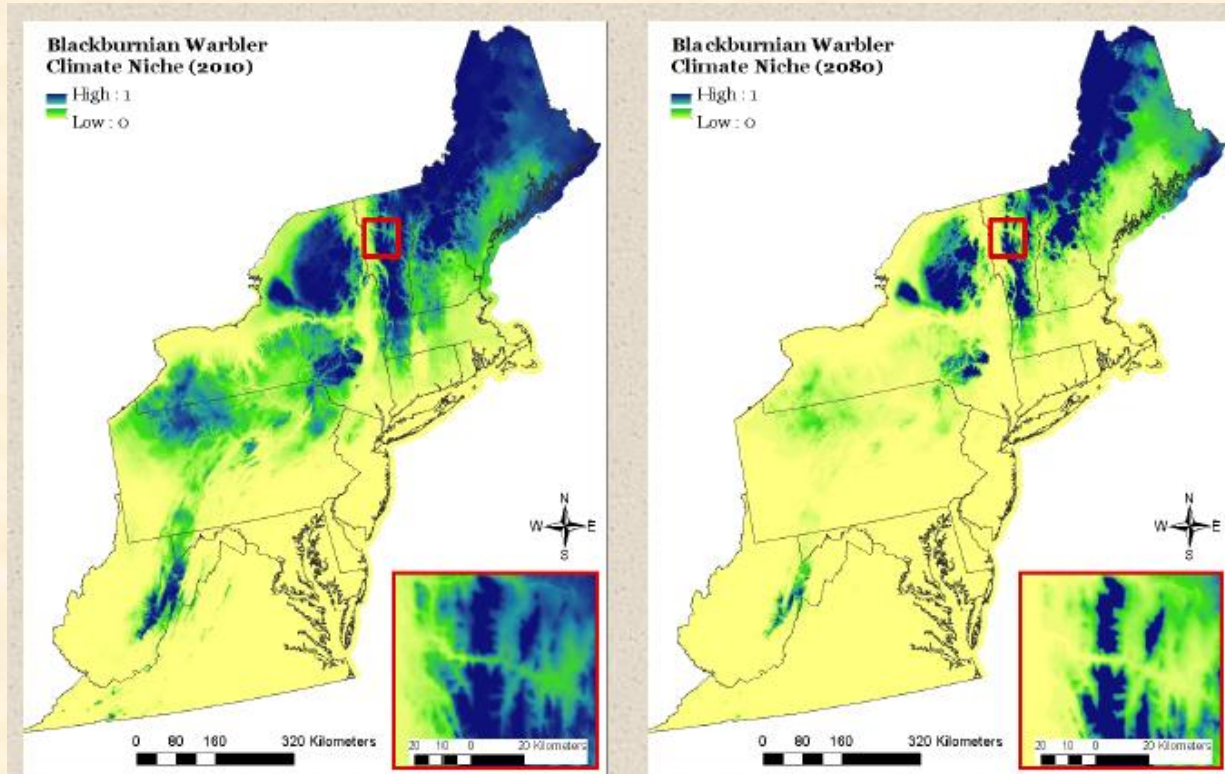


Built on Regionally Consistent Datasets – e.g., Representative (Surrogate) Species

Landscape Capability
Models based on habitat
associations, stressors
and field data



Climate Suitability Models based on current and
projected humid temperate domain



North Atlantic  Landscape Conservation Cooperative

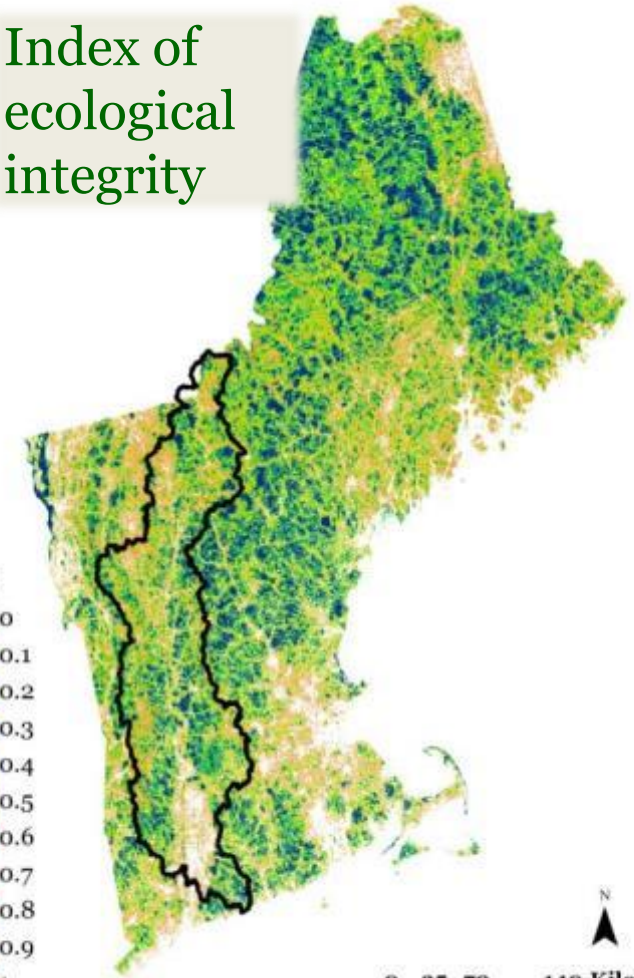
Ecosystems – Ecological Integrity (UMass)

Intactness

Resiliency

Ecological
Integrity

Index of
ecological
integrity



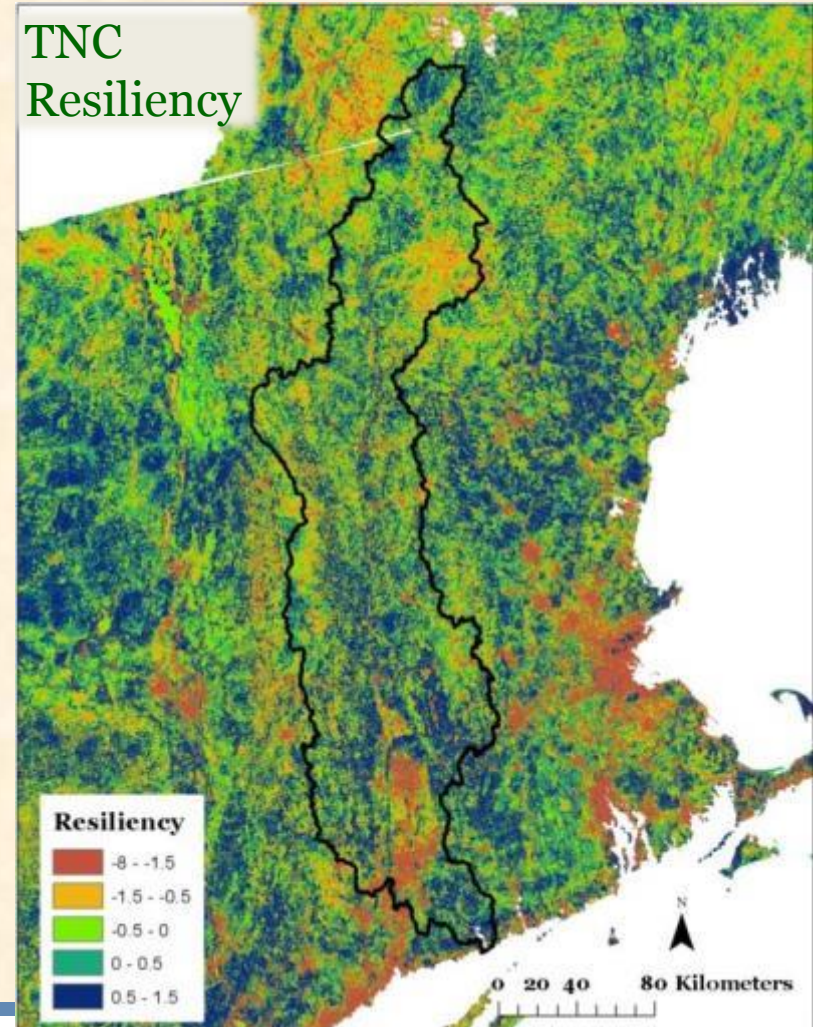
- **Intactness**...freedom from human impairment (anthropogenic stressors)
- **Resiliency**...capacity to recover from or adapt to disturbance and stress

North Atlantic  Landscape Conservation Cooperative



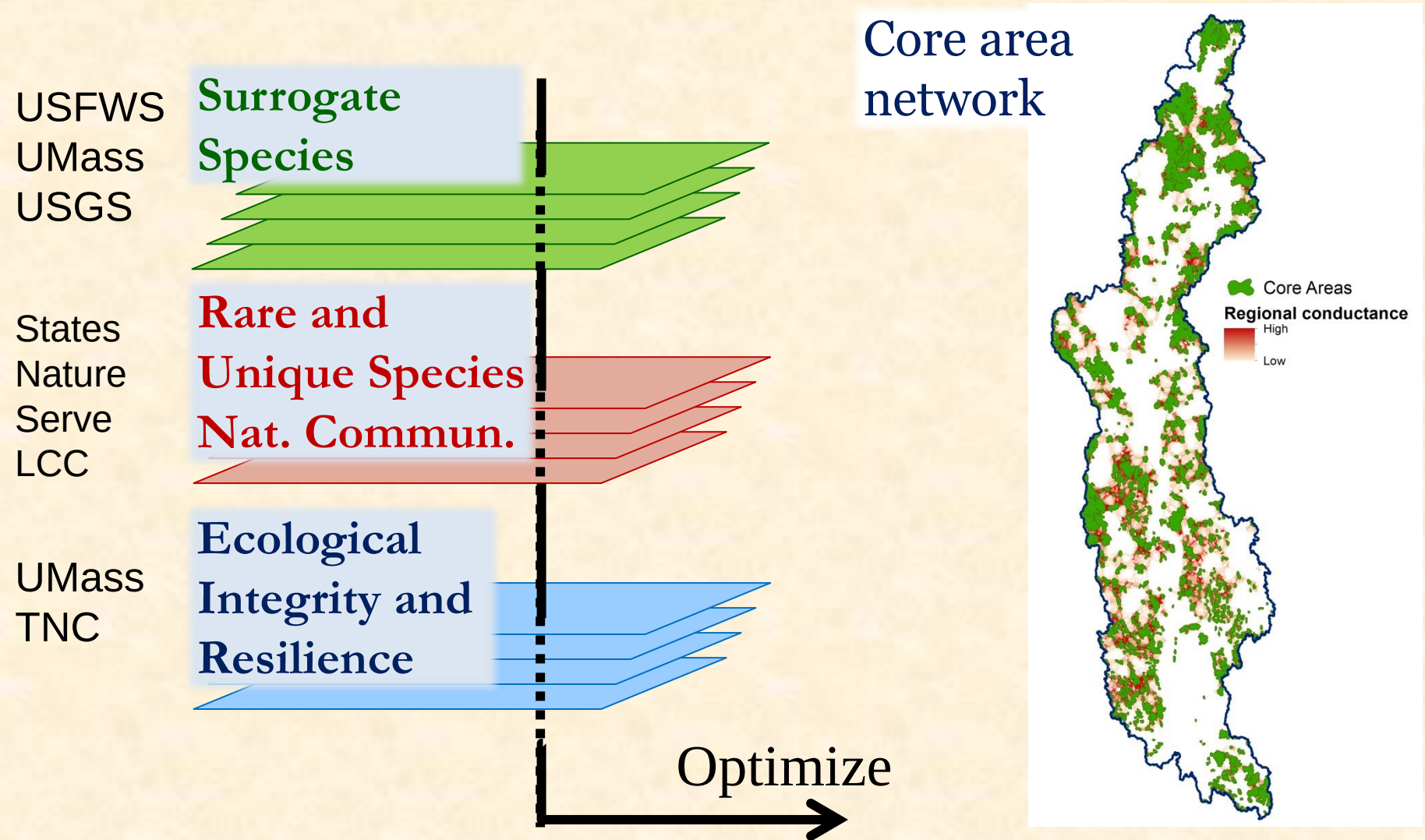
Ecosystems – Terrestrial Resiliency (The Nature Conservancy)

“Conserving the Stage” Approach



North Atlantic  Landscape Conservation Cooperative

Integrating Elements



North Atlantic  Landscape Conservation Cooperative





Next Steps



- Finalize design (e.g., integrating ecosystem and species approaches)
- Communicate and distribute results and tools
- Foster implementation
- *For discussion – helping apply approach and tools elsewhere in Northeast*





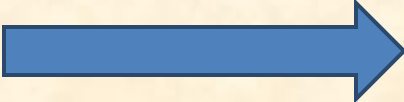
Lessons Learned – Preliminary Assessment

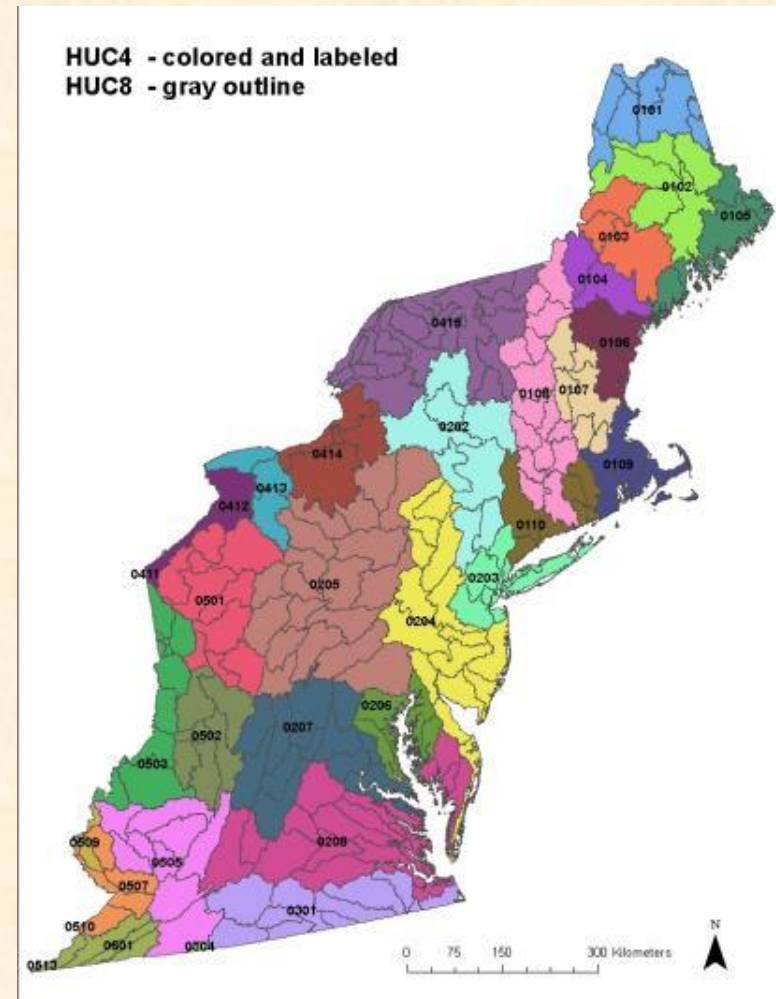
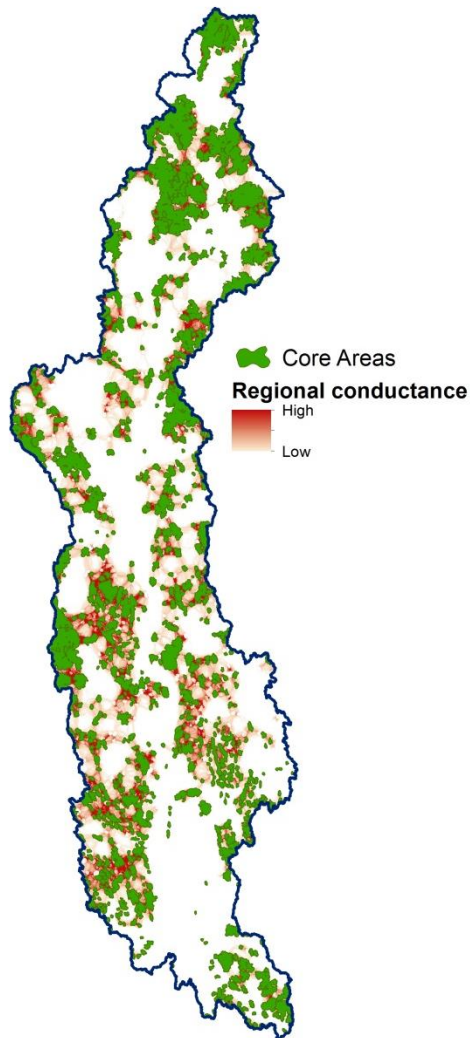


- Using LCC-sponsored tools, LCC products and other datasets can be integrated into sophisticated conservation design
- Substantial staff capacity and partner time required
- Learning may expedite applications elsewhere – to a point
- Novel aquatic components
- Limitations in data quality and availability



Apply to other watersheds/landscapes

- Learning
 - Process
 - Products
 - Collaboration
- 
- Decisions
 - Weighting
 - Simplification
 - Challenges



Thanks - For More Information

- Connecticut River Watershed Pilot partnership process and decisions: northatlanticlcc.org/groups/connecticut-river-watershed-pilot

LCC Project Lead Scott Schwenk: william_schwenk@fws.gov

- Technical components and design by UMass: www.umass.edu/landeco/research/dsl/dsl.html

P.I. Kevin McGarigal - mcgarigalk@eco.umass.edu





Next Steps

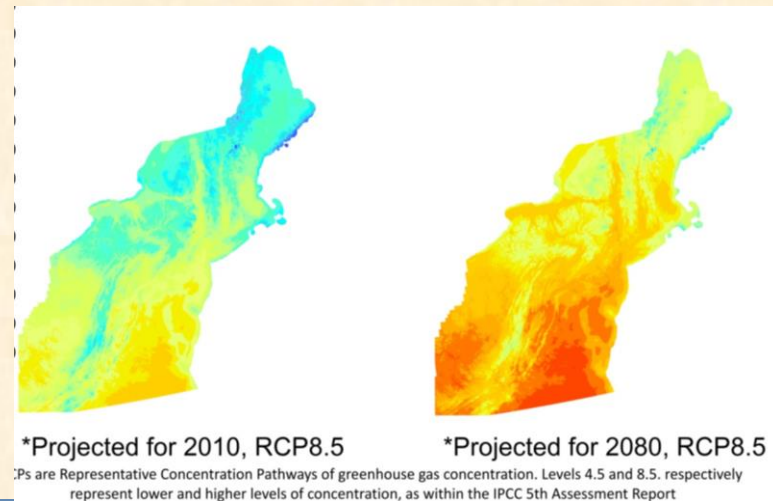
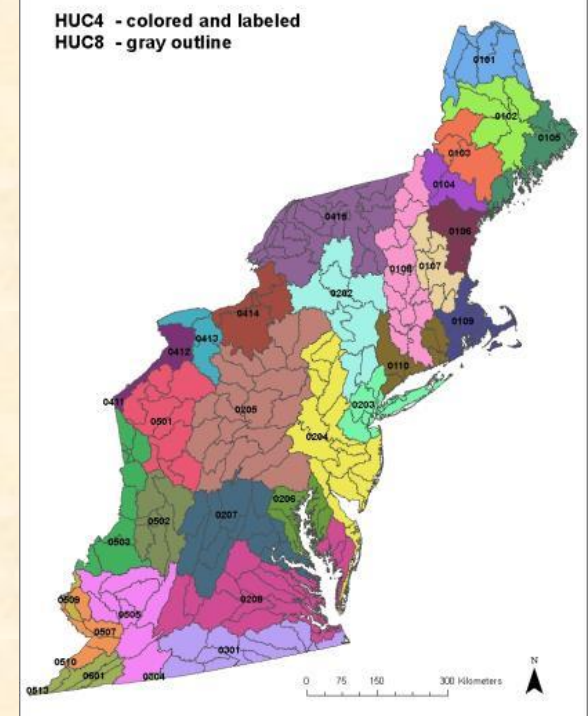


- Finalize design (e.g., integrating ecosystem and species approaches)
- Communicate and distribute results and tools
- Foster implementation
- *For discussion – helping apply approach and tools elsewhere in Northeast*



Multiple Scales of Conservation Plan. & Design

- Spatial scales that match partnerships and decisions being made
- Ability to have scales inform each other
 - Regional context for watershed, state and local actions
- Plan based on both current and projected future conditions
 - Climate change
 - Urban growth
 - Relevant time intervals



Components for Facilitating Conservation Planning & Design at Multiple Scales

- Foundational Data
- Information Management
- Science Delivery
- Conservation Design
 - landscape and regional scales



Type of Unit	Administrative	Watersheds	Terrestrial Ecological Regions	Coastal/Marine Ecoregions
Scale Extent				
Regional	Northeast Region (13 northeast states, could include provinces)	Drainage Area (e.g. Northwest Atlantic)	Bird Conservation Regions, Landscape Conservation Cooperative areas, TNC Ecoregions	Realm: Cold Temperate Northwest Atlantic
Sub-regional	states)	Bay Watershed)	Broadleaf Forest)	provinces, e.g. Canadian, Virginian
Landscape or State	State or Province	Large watersheds (HUC level 4), e.g. Connecticut River watershed)	EPA/Omernik Level IV USFS/Bailey Provinces	Large Estuaries, e.g. Narragansett Bay
Sub-Landscape or State	Country	Tributary sub	Major component of a	Small estuary
Local		12	road-bounded block	and or beach complex
Site	Landholding (e.g. refuge)	Stream reach	Habitat patch or small road-bounded block	Tidal wetland or beach patch

LCC facilitated process to apply science and tools in collaborative conservation design process at these scales and apply learning to future efforts

LCC information management and science delivery support for partner networks to deliver translate and help partners apply science and tools at these scales

Initial LCC Strategy for Cons. Design

- Facilitate collaborative conservation designs at key scales to both support planning at those scales and apply lessons learned to future efforts
 - Initial application at the **regional scale** should be a collaboration with state fish and wildlife agencies to support the development of **regional Conservation Opportunity Areas (COAs)** for State Wildlife Action Plan Updates
 - Initial **landscape scale** conservation designs should be focused on in **large watersheds** or other similar scale ecoregions where there are **active partnerships** working with an initial pilot in the Connecticut River Watershed

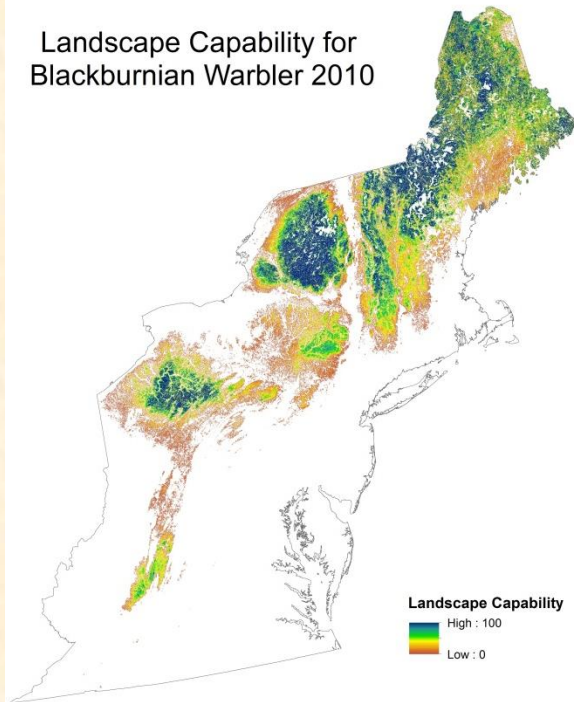
Conservation Design Next Steps: Regional Relative Value Maps of Species and Ecosystems

Develop model outputs and maps of showing relative value of habitats for species and ecosystems at the regional scale under current and projected future conditions and scaled to the region, states and watersheds/ecoregions.

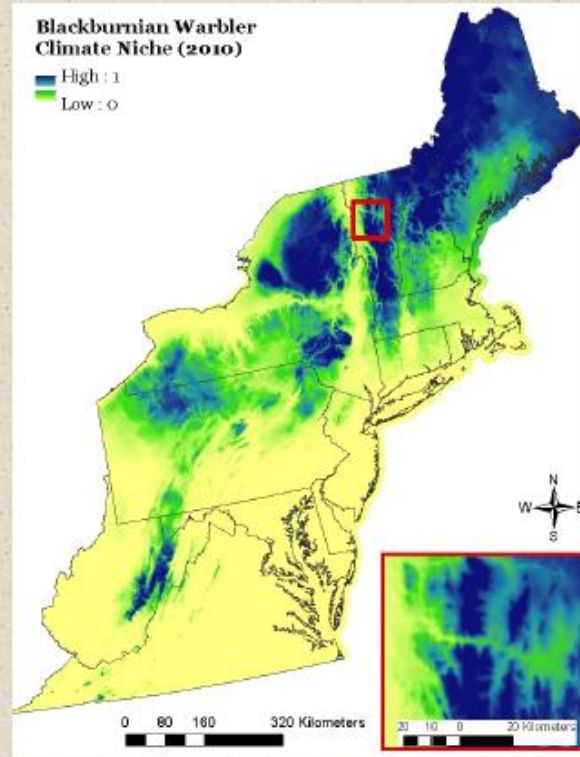


Conservation Design Next Steps: Regional Relative Value Maps of Species and Ecosystems

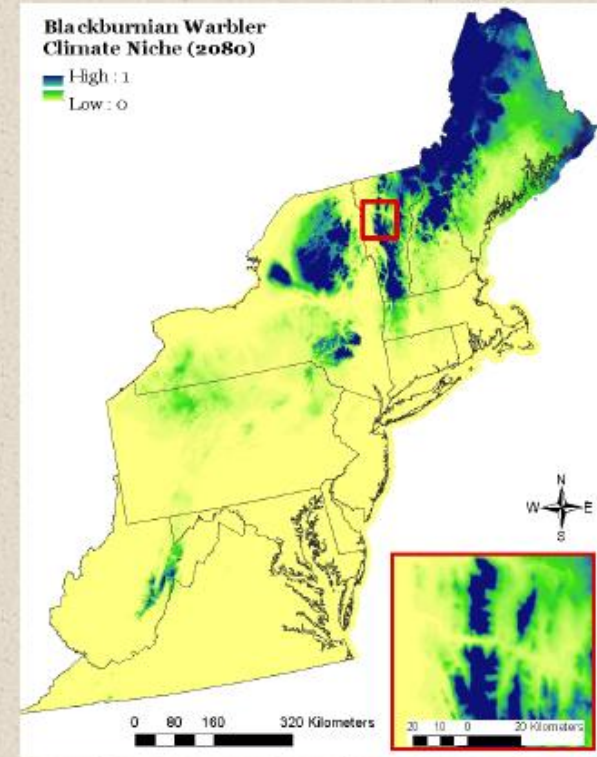
Landscape Capability for
Blackburnian Warbler 2010



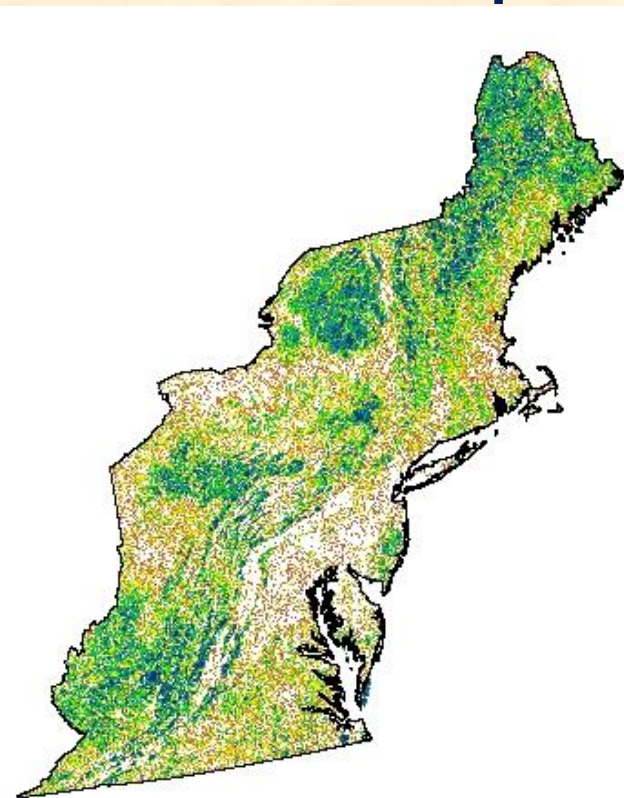
Blackburnian Warbler
Climate Niche (2010)



Blackburnian Warbler
Climate Niche (2080)



Conservation Design Next Steps: Regional Relative Value Maps of Species and Ecosystems



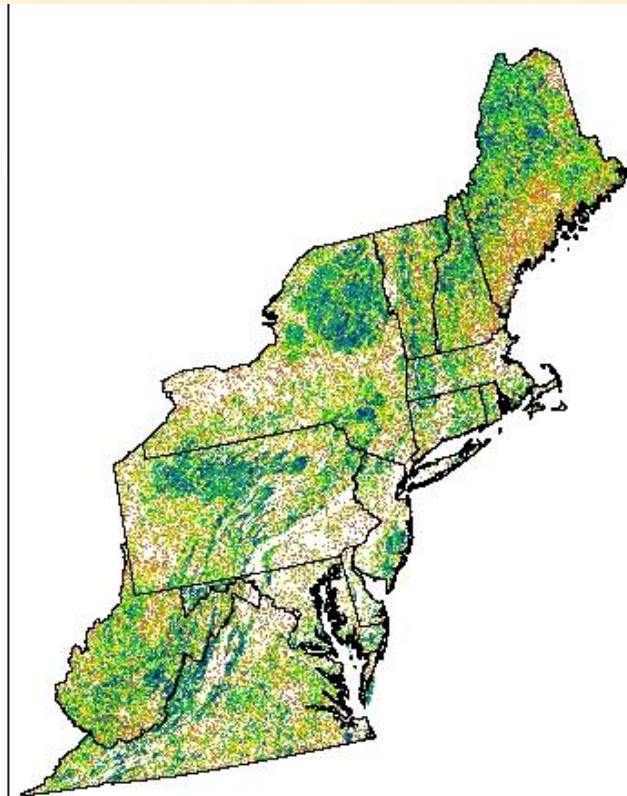
Region Boundary
IEI scaled by region

Value
High : 100
Low : 1



Hydrological Unit Code (HUC) 8
IEI scaled by HUC 8

Value
High : 100
Low : 1

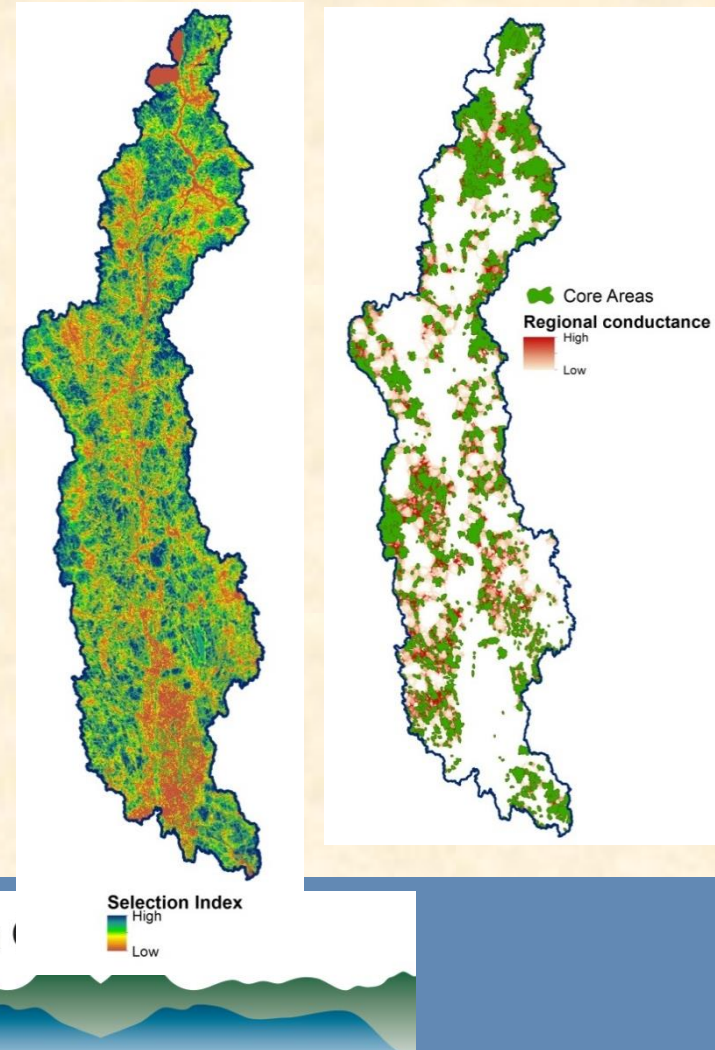


State Boundaries
IEI scaled by state

Value
High : 100
Low : 1

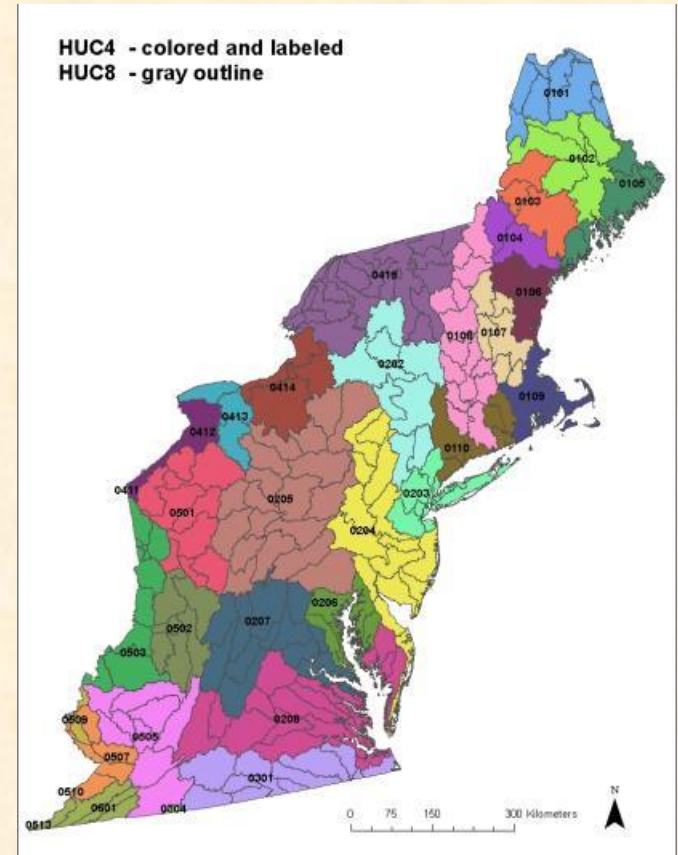
Additional Conservation Design Steps – Demonstrate Regional Conservation Designs

- Using a “standard” set of weightings and decisions (informed by lessons learned in the Connecticut River watershed), demonstrate conservation designs (core areas and connections) for representative species and ecosystems at regional scale



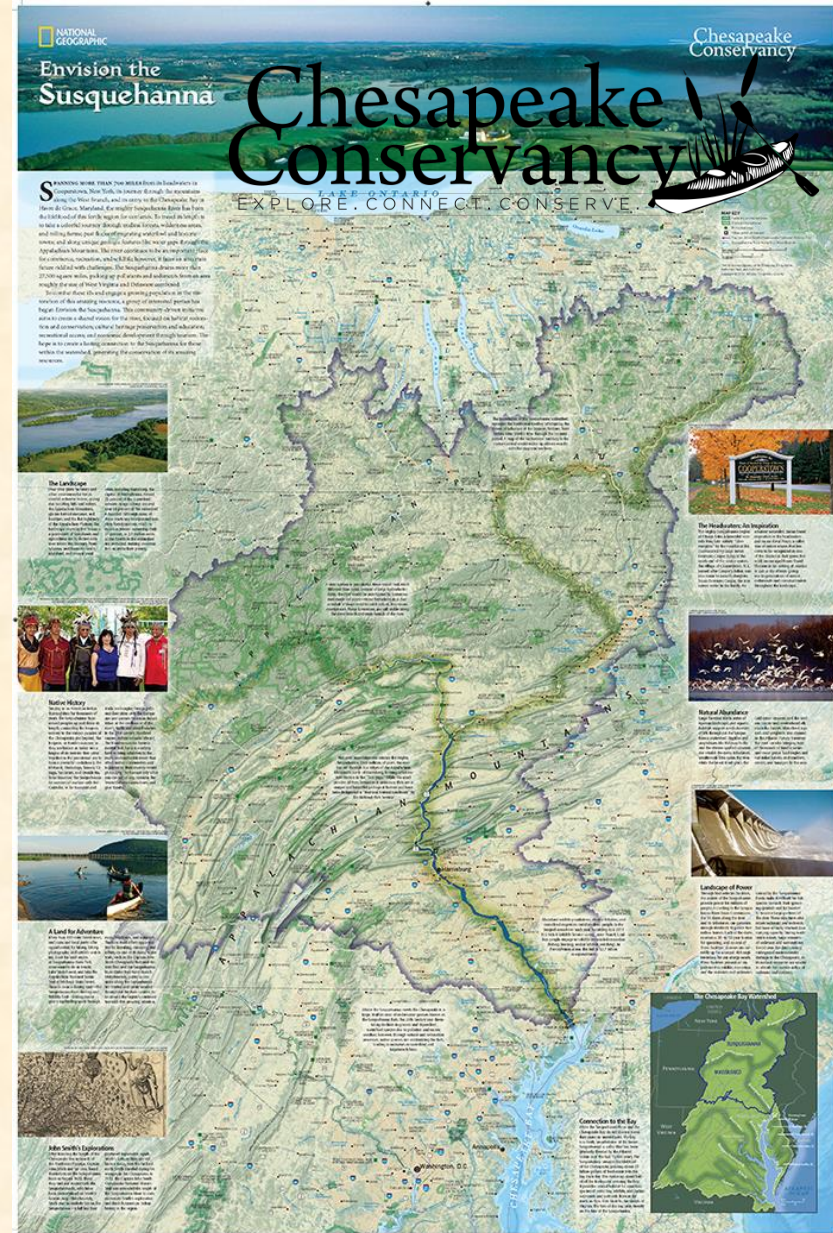
Additional Conservation Design Steps – Support Partner Designs in Other Landscapes

- Support conservation design efforts by partnerships in other watersheds and landscapes across the region using similar tools and approaches



Science Delivery - Demonstration Projects

- Partners promote the use and adoption of landscape science by **demonstrating applications**
- Chesapeake Conservancy
 - using the LCC science products to prioritize locations to best address regional conservation needs along with needs identified by communities as part of their large landscape conservation effort, *Envision the Susquehanna*.



Additional Conservation Design Steps

- Discussion

