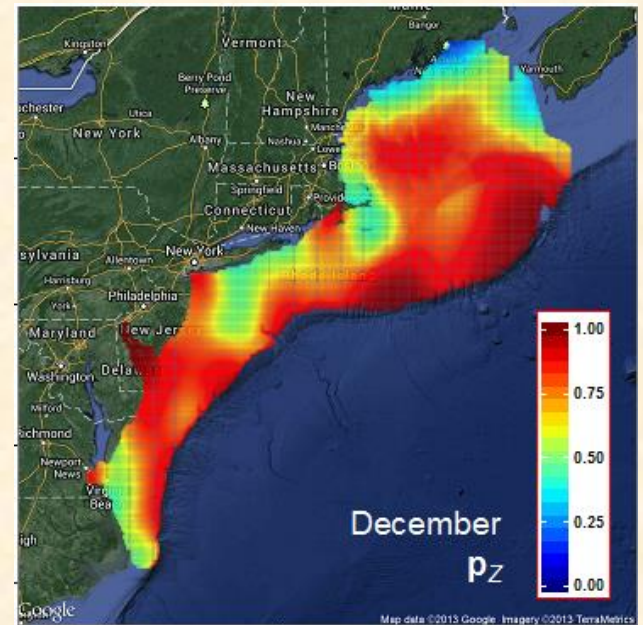
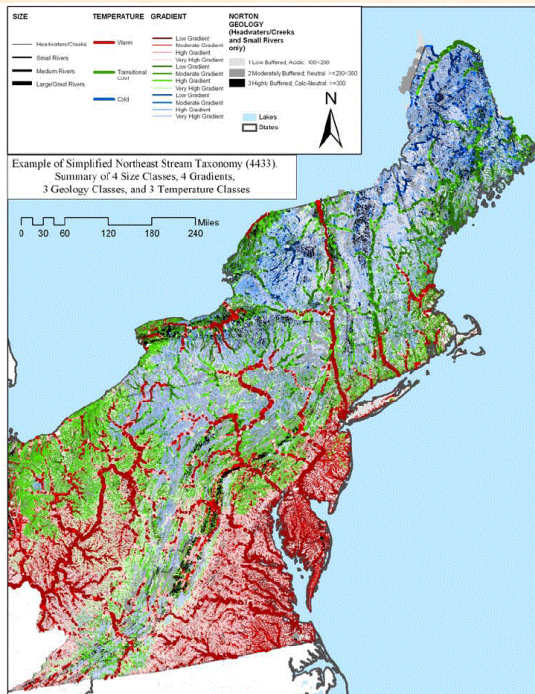


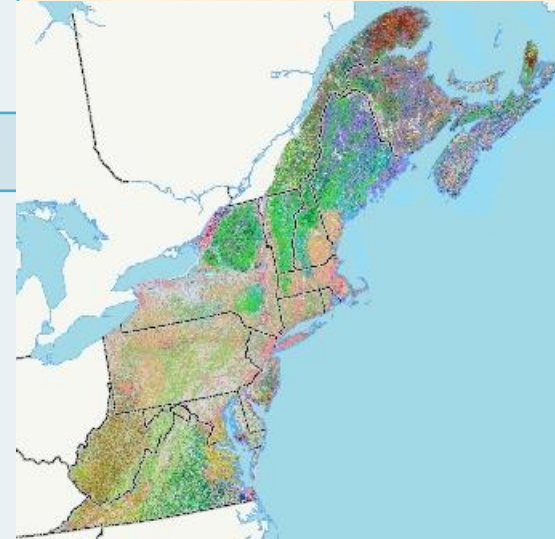
October 2015

# Status of North Atlantic LCC Science Projects and Products



# Foundational Mapping: Northeast Terrestrial Habitat Map

<b>North Atlantic LCC Role</b>	Support revising NEAFWA-sponsored project by TNC and UMass
<b>Products</b>	Classified terrestrial habitat map
<b>Available Now</b>	Expansion to Canadian portion of LCC (August 2015) March 2014: UMass enhancements to reflect roads, streams, development, and revised coastal NWI Virginia revisions (2012)
<b>Intended Users and Uses</b>	Many organizations involved in conservation planning & design and climate adaptation; Canadian and U.S. partners working on trans-boundary conservation
<b>Connections to other projects</b>	Foundational dataset for <i>Designing Sustainable Landscapes</i>

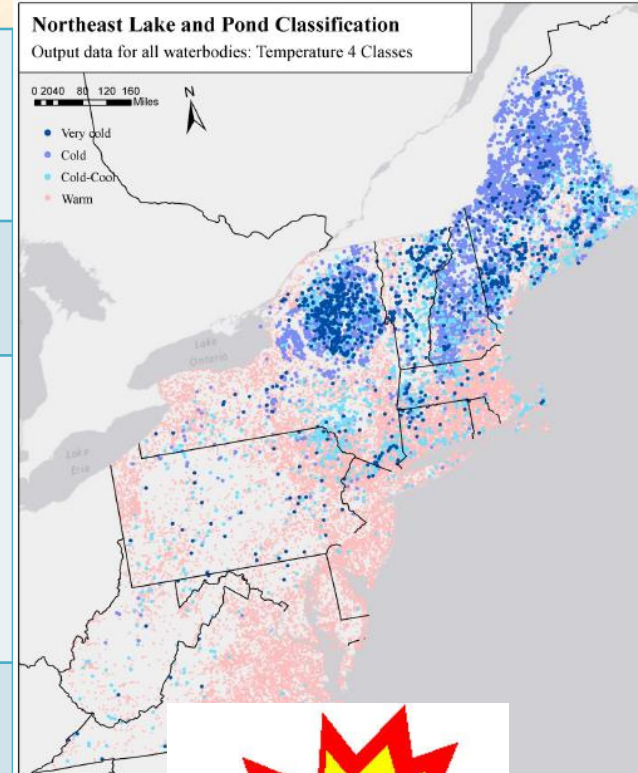


**Canada Expansion  
Completed  
Sept. 2015**



# Foundational Mapping: Northeast Aquatic Classification – U.S.

<b>North Atlantic LCC Role</b>	NEAFWA Project; support TNC revisions to streams (tidal component) and lakes
<b>Products</b>	Classification of Northeast streams and lakes
<b>Available Now</b>	Enhanced lake classification (draft Oct. 2015) Stream classification including new tidal component + guide; initial lake classification
<b>Available 3-6 months</b>	Final enhanced lake classification
<b>Intended Users and Uses</b>	Agencies and NGOs working on state or regional aquatic conservation planning
<b>Connections to other projects</b>	Foundational dataset for <i>Designing Sustainable Landscapes</i>

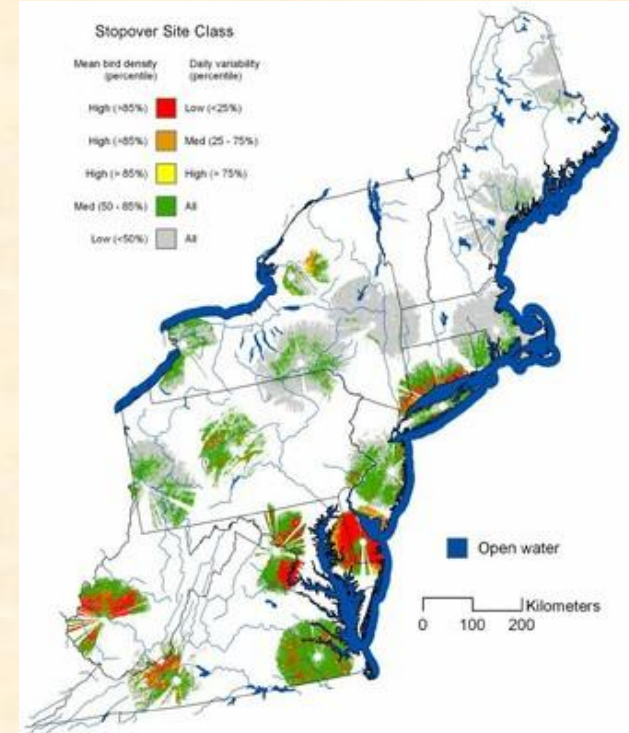


**Revised Lakes & Pond Classification  
Oct. 2015**



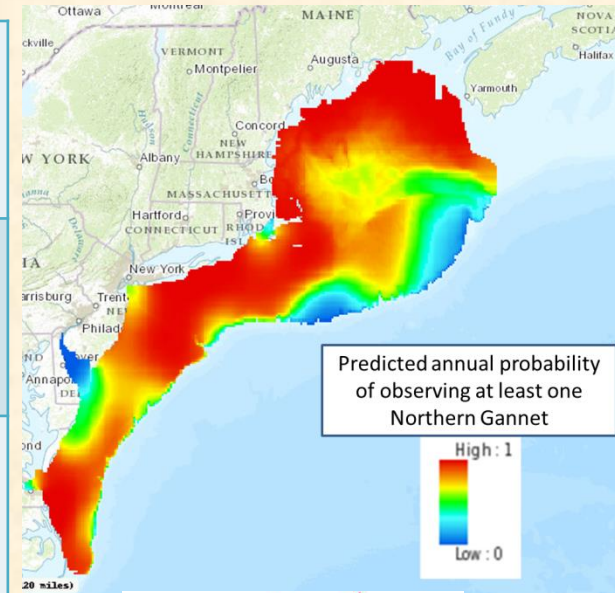
# Foundational Mapping: Important Migratory Landbird Stopover Sites

<b>North Atlantic LCC Role</b>	Co-sponsoring with USFWS, MD, USGS, U. of DE (lead), VA, VCU, TNC, NASA
<b>Products</b>	Improved models of important fall migration stopover sites, based on weather radar and field surveys
<b>Available Now</b>	6 years of analyzed radar data; initial field survey results; preliminary report
<b>Longer Term</b>	Complete report and maps
<b>Intended Users and Uses</b>	Bird habitat conservation managers at regional, state, and local levels to protect and manage key stopover sites



# Foundational Mapping: Marine Birds

<p><b>North Atlantic LCC Role</b></p>	<p>Sponsoring a project by NC State University, NOAA, BRI, CSI/CUNY</p>
<p><b>Products</b></p>	<p>Mapping of seasonal seabird abundance of 24 species to inform marine planning</p>
<p><b>Available Now</b></p>	<p>Final report; marine bird occurrence maps by species and season</p>
<p><b>Intended Users and Uses</b></p>	<p>Regional ocean planning and risk assessment for wind energy, aquaculture, marine infrastructure by state and federal agencies and ocean partnerships</p>



**Final Report &  
Data Released  
Oct. 2015**

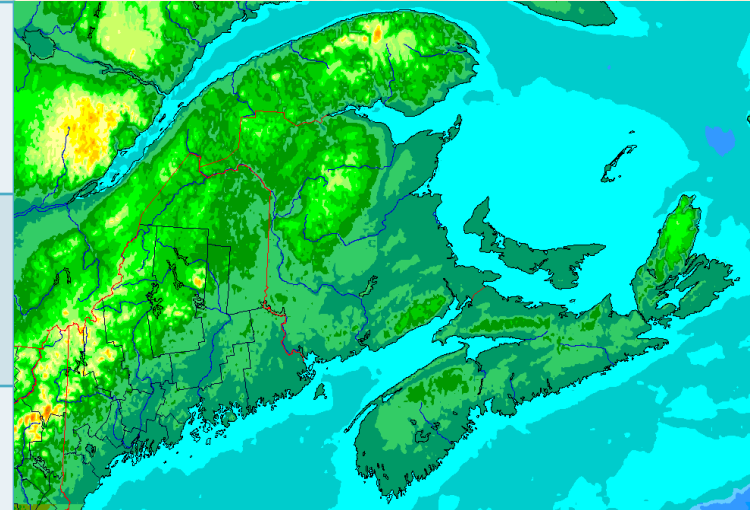
# Foundational Mapping: Compilation of Regional Vernal Pool Data

<b>North Atlantic LCC Role</b>	Sponsoring project by Vermont Center for Ecostudies and UVM (initiated Jan. 2014)
<b>Products</b>	Regional GIS dataset of locations of potential or documented vernal pools; methods for remote sensing location of pools
<b>Available Now</b>	Unified database structure, Remote sensing demonstrations by webinar
<b>Available 3-6 months</b>	Complete report and dataset on NALCC Conservation Planning Atlas (Dec. 2015)
<b>Intended Users and Uses</b>	Organizations for amphibian, reptile, and vernal pool conservation



# Foundational Mapping: Northeast Aquatic Classification - Canada

<b>North Atlantic LCC Role</b>	Sponsoring project led by Nature Conservancy of Canada
<b>Products</b>	Classification of Southern Quebec and Atlantic Canada streams
<b>Available 3-6 months</b>	Compiled spatial datasets
<b>Longer Term</b>	Consistent, classified stream network spanning Atlantic Canada and Northeast U.S.
<b>Intended Users and Uses</b>	Agencies and NGOs working on state or regional conservation planning



**Project Started  
Sept. 2015**



# Conservation Design: *Designing Sustainable Landscapes*

<b>North Atlantic LCC Role</b>	Sponsoring project led by UMass Amherst
<b>Products</b>	Extensive spatial datasets, current and future species capability and ecological integrity, decision support tool for landscape design
<b>Available Now</b>	Many spatial datasets for entire Northeast, regional models for 21 species, design in CT River watershed
<b>Available 3-6 months</b>	<ul style="list-style-type: none"> <li>• Additional regional spatial data</li> <li>• Regional models for additional species (total of 30)</li> </ul>
<b>Longer Term</b>	Supporting <i>Regional Conservation Opportunity Areas</i> ; enhancing coastal components and use of tools by partners
<b>Intended Users and Uses</b>	Agencies and NGOs working on state or regional conservation planning



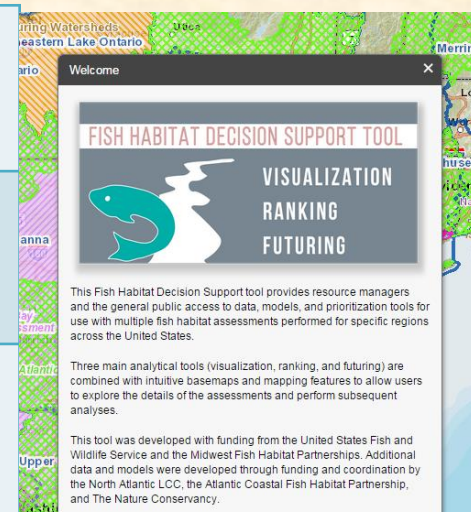
**Connect the  
Connecticut  
Design Completed  
Oct. 2015**





# Conservation Design: Aquatic and Coastal Decision Support Tool

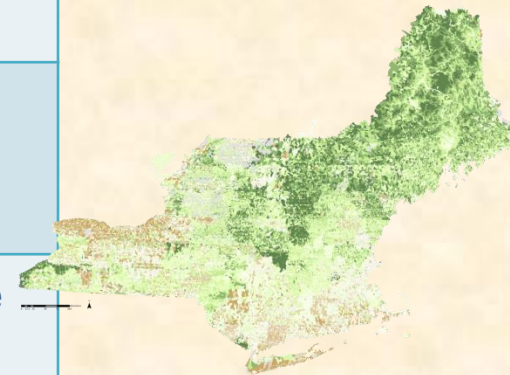
<b>North Atlantic LCC Role</b>	Sponsoring project with Atlantic Coastal Fish Habitat Partnership, led by Downstream Strategies
<b>Products</b>	Aquatic and coastal species models and decision support tools to prioritize restoration and protection of fish habitat
<b>Available Now</b>	Decision support tools for restoration and conservation available on-line for brook trout (Chesapeake Bay), winter flounder (Long Island Sound, Narragansett Bay) and river herring (coastal rivers)
<b>Available 3-6 months</b>	Additional training materials; training as requested
<b>Intended Users and Uses</b>	Watershed and coastal restoration planning by natural resource management agencies, fisheries managers



**Fish Habitat Tool  
Launched  
Sept. 2015**

# Conservation Design: Forecasting Streams and Brook Trout

<b>North Atlantic LCC Role</b>	Sponsoring project led by USGS
<b>Products</b>	Forecasts and decision support tools for stream temperature and brook trout
<b>Available Now</b>	<ul style="list-style-type: none"> <li>• <i>Integrated Catchment Explorer</i> that maps results</li> <li>• Stream temperature and occupancy model for New York to Maine</li> <li>• Incorporated into <i>Connect the Connecticut</i></li> </ul>
<b>Available 3-6 months</b>	<ul style="list-style-type: none"> <li>• Projections of future stream flow and temperature in southern portion of LCC</li> <li>• Regional brook trout forecasts</li> </ul>
<b>Longer Term</b>	Incorporate into conservation design; integrate with other brook trout tools
<b>Intended Users and Uses</b>	Eastern Brook Trout JV partners and other aquatic managers; states to prioritize watershed conservation and restoration actions

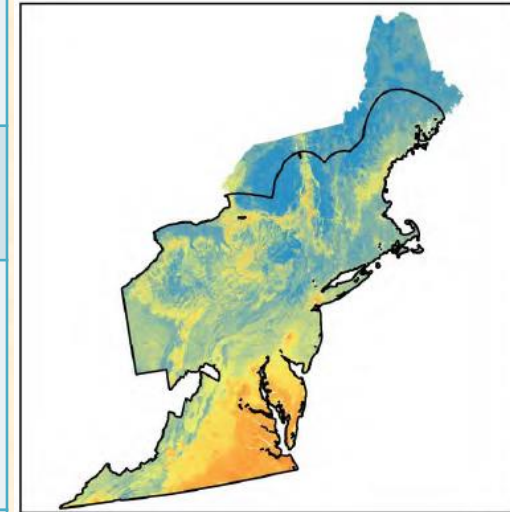


Brook trout probability of occupancy



# Conservation Design: Priority Amphibian and Reptile Conservation Areas (PARCAs)

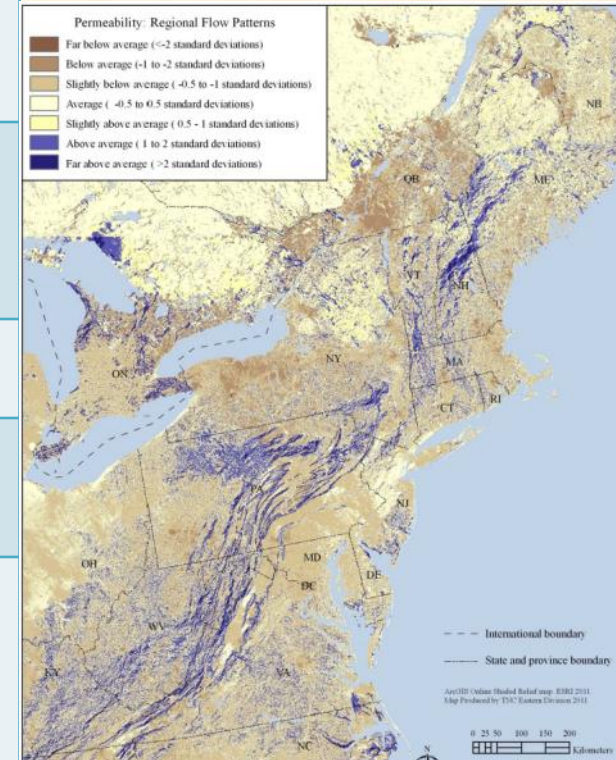
<b>North Atlantic LCC Role</b>	Sponsoring project led by U. of Maine and others
<b>Products</b>	Species models for 60+ priority herps; report with priority areas identified
<b>Available Now</b>	<ul style="list-style-type: none"> <li>• 64 species distribution models &amp; 61 climate niche models</li> <li>• Draft PARCAs provided to states for review in Sept. 2015</li> </ul>
<b>Available 3-6 months</b>	Revised PARCAs
<b>Longer Term</b>	Full PARCA report and recommendations (2016)
<b>Intended Users and Uses</b>	Northeast PARC, natural resource agencies and organizations to manage and protect important areas for herptiles





# Conservation Design: Permeable Landscapes for Wildlife

<b>North Atlantic LCC Role</b>	Sponsoring project by TNC
<b>Products</b>	Report and dataset on relative permeability (connectivity) of landscape for wildlife, accounting for climate change
<b>Available now</b>	Draft final report and data
<b>Available 3-6 months</b>	Final report and data
<b>Intended Users and Uses</b>	Incorporate into regional, state, and LCC planning efforts for large-scale wildlife connectivity and climate change adaptation
<b>Connections to other projects/products</b>	<i>Designing Sustainable Landscapes</i> , species climate change vulnerability assessments



**North Atlantic Landscape Conservation Cooperative**



# Conservation Design: Increasing Aquatic Connectivity and Flood Resiliency (LCC + Hurricane Sandy + National LCC)

<b>North Atlantic LCC Role</b>	Sponsoring/coordinating 4 related projects led by UMass Amherst, USFWS, State F&W agencies, TNC, USGS, USFS, TU
<b>Products</b>	Comprehensive, road-stream crossings dbf; survey protocols and standards; prioritized survey scheme; flood resilience models; prioritization to improve fish passage and reduce flood risks, trainings for towns
<b>Available Now</b>	Survey prioritization scheme, survey protocols for first field season (not tidal); survey results
<b>Longer Term</b>	Complete datasets and reports (2016); coordination with Great Lakes, incorporation into prioritization tools
<b>Intended Users and Uses</b>	Natural resource management agencies, transportation and emergency communities to assess and prioritize road stream crossing upgrades for connectivity and resilience



# Conservation Design: Tidally Influenced Road Stream Crossing Assessment and Prioritization

<b>North Atlantic LCC Role</b>	Sponsoring project led by UMass Amherst
<b>Products</b>	Synthesis of organism passage considerations at tidally influenced crossings (swimming capabilities, velocities and other physical constraints; summary of existing protocols), technical committee created, draft protocol, scoring system for passability
<b>Available Now</b>	Recommendations from tidally influenced crossings workshop in Portsmouth NH
<b>Longer Term</b>	Incorporation into NAACC protocol, database, prioritization tools
<b>Intended Users and Uses</b>	Natural resource management agencies, transportation and emergency communities to assess and prioritize road stream crossing upgrades for connectivity and resilience

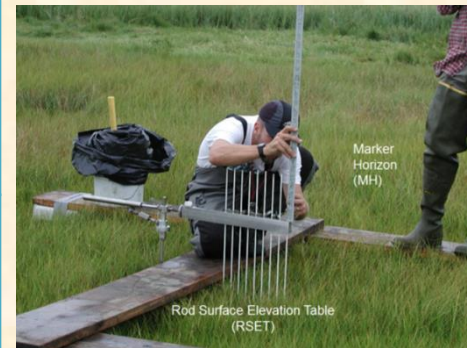




# Conservation Design:

## Increasing Resiliency of Tidal Marsh Habitats and Species in the Face of Storms & Sea Level Rise

<b>North Atlantic LCC Role</b>	Coordinating overall project among P.I.s and partners: FWS, USGS, SHARP (UDel, UConn, UMaine, ME DIFW, SUNY), USC, LSU, UMass, TNC, NROC, and MARCO
<b>Products</b>	Regional maps and decision support models for tidal marsh restoration and management for habitats and species; evaluation of different marsh restoration approaches for increasing resiliency under different conditions
<b>Available now</b>	Consistent monitoring metrics; initial assessments of tidal marsh integrity
<b>Longer Term</b>	Complete models and results delivered to partners (2016); initial post-restoration results
<b>Intended Users and Uses</b>	Natural resource management and planning agencies, species managers, NGO's, land managers to plan and take action to address short and long term sea level rise and storm impacts



# Conservation Design:

## Increasing Resiliency of Beach Habitats and Species in the Face of Storms & Sea Level Rise

### **North Atlantic LCC Role**

Coordinating overall project among P.I.s and partners, CSC, USGS, FWS, Virginia Tech, Rutgers, TCI, Cons. Wild. NJ, NROC & MARCO

### **Products**

Regional decision support models for coastal beach management and restoration for beach habitats and species (e.g., Piping Plover) in the face of storms and SLR; evaluation of the effectiveness of beach restoration & management

### **Available Now**

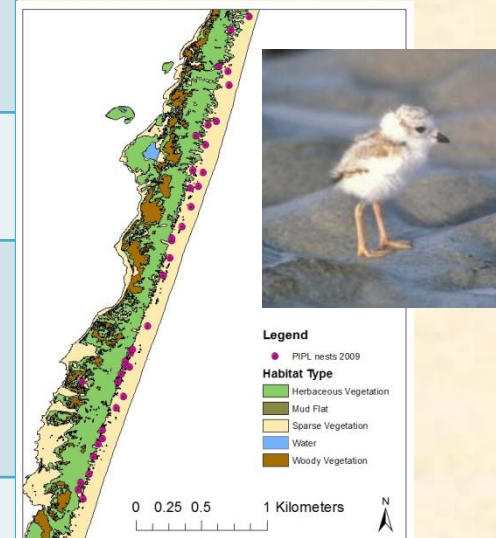
iPlover survey results; Pre-hurricane survey results of inlets and beaches

### **Longer term**

Links between various SLR scenarios, coastal geomorphology changes, beach nesting bird locations in local areas and overall impacts on populations

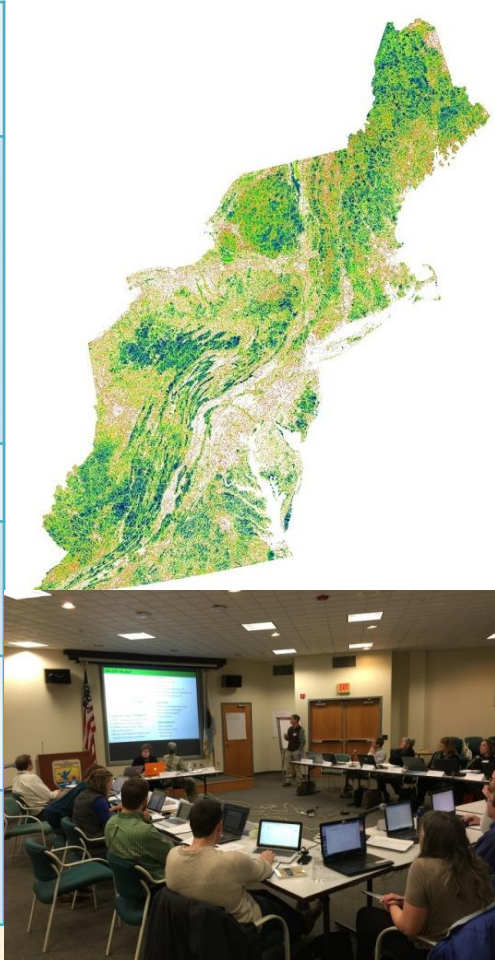
### **Intended Users and Uses**

Beach managers, coastal management and shorebird community, species recovery teams to plan and take action to address short and long term sea level rise and storm impacts



# Regional Conservation Opportunity Areas (RCOAs)

<b>North Atlantic LCC Role</b>	Coordination and support for Northeast conservation design
<b>Products</b>	Northeast conservation design, including opportunity areas for Regional Species of Greatest Conservation Need (RSGCN), habitat restoration and management, and connectivity
<b>Available Now</b>	Draft methodology document
<b>Available 3-6 months</b>	Draft maps of core areas for RSGCN, to be reviewed by NALCC partners and others
<b>Longer Term</b>	Full set of opportunity areas maps accessible via Conservation Atlas
<b>Intended Users and Uses</b>	All partners engaged in SWAP implementation, land management, land protection





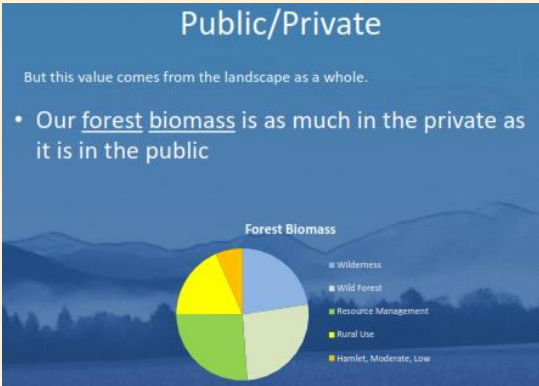
# Science to Practice

<b>North Atlantic LCC Role</b>	Sponsor to Highstead Foundation, project leader
<b>Products</b>	Presentations, training workshops, structured input on NALCC science
<b>Available Now</b>	Documented results, presentations
<b>Available 3-6 months</b>	<ul style="list-style-type: none"><li>• Project complete</li></ul>
<b>Longer Term</b>	Complete
<b>Intended Users and Uses</b>	Multiple land trust, state, and NGO users received training at 4 workshops



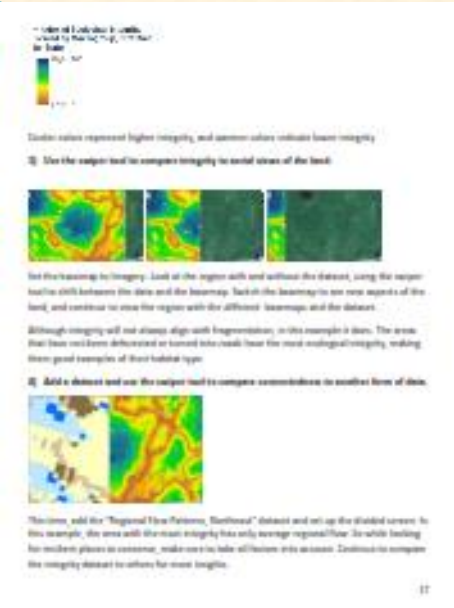
# Enhanced Stewardship of Priority Species and Habitats

<b>North Atlantic LCC Role</b>	Sponsor to Wildlife Conservation Society (project lead)
<b>Products</b>	Prioritized municipalities for land use technical assistance; land use planning tools; land use technical assistance; land use planning network
<b>Available Now</b>	N/A
<b>Available 3-6 months</b>	<ul style="list-style-type: none"> <li>• Prioritized municipalities for land use technical assistance</li> <li>• land use planning tools</li> </ul>
<b>Longer Term</b>	Informed municipalities, Network of land use technical assistance providers
<b>Intended Users and Uses</b>	Land use technical assistance providers, states, municipalities



# Catalyzing Land Trust Capacity for Data and Science Integration

<b>North Atlantic LCC Role</b>	Sponsor to Open Space Institute (project lead)
<b>Products</b>	Series of 4 guidance documents for land trusts to implement climate science in planning
<b>Available Now</b>	N/A
<b>Available 3-6 months</b>	<ul style="list-style-type: none"> <li>Four climate planning guidance documents describing applications of NALCC partner science for climate adaptation</li> </ul>
<b>Longer Term</b>	Goal to catalyze greater science capacity in land trusts
<b>Intended Users and Uses</b>	Land trusts for open space and conservation planning





# Envision the Susquehanna



<b>North Atlantic LCC Role</b>	Sponsor to Chesapeake Conservancy (project lead)
<b>Products</b>	Community engagement throughout Susquehanna watershed leading to Conservation Design and 2 on-the-ground conservation projects
<b>Available Now</b>	N/A
<b>Available 3-6 months</b>	<ul style="list-style-type: none"> <li>Community surveys and engagement results, priorities for landscape design</li> </ul>
<b>Longer Term</b>	On the ground conservation in prioritized locations
<b>Intended Users and Uses</b>	States, land trusts, and other land protection partners



# Multi-LCC projects - Upper Midwest Great Lakes and North Atlantic LCC's Aquatic Habitat Connectivity Collaboration



<b>North Atlantic LCC Role</b>	Co-leading multi-LCC effort
<b>Products</b>	<ul style="list-style-type: none"> <li>• Workshop to compare various approaches to aquatic barrier prioritization and optimization</li> <li>• Focus on Ecological and Infrastructure Resilience</li> <li>• Identify mutually beneficial activities to improve both aquatic habitat and infrastructure resilience</li> </ul>
<b>Available Now</b>	N/A
<b>Available 3-6 months</b>	Draft products above
<b>Longer Term</b>	Final products above
<b>Intended Users and Uses</b>	Aquatic conservation partners, transportation and emergency management partners, communities

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# Multi-LCC projects - Atlantic and Gulf Coast Resiliency Project



Emily Powell,  
Coastal Resilience  
Research Associate

<b>North Atlantic LCC Role</b>	Leading multi-LCC effort
<b>Products</b>	<ul style="list-style-type: none"><li>• Synthesize and deliver tools and information to coastal decision makers</li><li>• Prioritize conservation actions to increase resilience of coastal communities and natural resources</li></ul>
<b>Available Now</b>	Organized coastal resilience team, hired post-doc
<b>Available 3-6 months</b>	Species of concern and thresholds
<b>Longer Term</b>	Final products above
<b>Intended Users and Uses</b>	Coastal conservation partners and communities

