The North Atlantic LCC in the Chesapeake Bay Watershed

The North Atlantic Landscape Conservation Cooperative (LCC) is an applied science and management partnership that builds upon a long history of collaborative conservation in the North Atlantic region. It is a forum to unite agencies and stakeholders around common goals for sustaining natural and cultural resources, and to develop tools and strategies to achieve those goals in the face of threats and uncertainty.

Foundational information, assessments, and tools supported by the North Atlantic LCC offer resources for partners in the Chesapeake Bay Watershed to protect important species, habitats, and landscapes now and in the future. These products were designed to address specific needs expressed by partners and partnerships, including:

- Regionally consistent habitat maps
- Prioritization tools for conservation of brook trout, American black duck, and other key species
- Conservation strategies to address sea level rise and other climate change impacts
- Consistent approaches for assessing and prioritizing aquatic connectivity

Examples of North Atlantic LCC Science Products

AQUATIC CONSERVATION RESOURCES

Chesapeake Bay Brook Trout Assessment and Decision Support Tool
A model and accompanying assessment for the Chesapeake Bay watershed that predicts brook trout occupancy, evaluates habitat quality, quantifies how human use and climate change are likely to impact both, and identifies conservation priorities at multiple scales.

Products (available now)
- Visualization tool to measure natural and human factors that influence brook trout occurrence at multiple scales
- User-defined ranking criteria for identifying priority areas
- Scenario analysis modeling in the context of future climate regimes

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Learn more
- http://204.227.19.109/DS-USFWS-B/Index.html
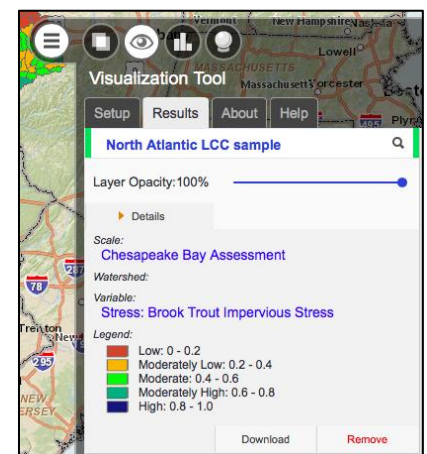
North Atlantic Aquatic Connectivity Collaborative (NAACC)

This collaborative effort unites partners across the region to collectively assess bridges, culverts, and dams with a standard framework and protocols, and to prioritize road-stream crossing upgrades for the benefit of fish and wildlife passage as well as resiliency to future floods.

Products (some available now, others in development)
- Regional network of partners and resources to coordinate assessments and upgrades to road-stream crossings
- Standard protocols and training for conducting road-stream assessments
- Regional database of road-stream crossings
- Web-based tools to prioritize upgrades based on both ecological benefits and infrastructure resiliency

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Learn more
- http://northatlanticlcc.org/projects/aquatic-connectivity/restoring-aquatic-connectivity-and-increasing-flood-resilience
  http://www.streamcontinuity.org

COASTAL & MARINE CONSERVATION RESOURCES

Hurricane Sandy Resilience Projects

This suite of projects integrate monitoring, models, and tools to examine the impact of the hurricane on beaches, tidal marshes, and streams, and guide decisions about how to conduct restoration, conservation, and management in the face of future storms and sea-level rise associated with climate change.

Specific products (partial list)
- Models of the response of salt marshes to sea level rise and storms
- Comprehensive monitoring and assessment of the effectiveness of tidal marsh restoration approaches
- Beach and inlet modification reports before and after the Hurricane
- iPlover smartphone app for shorebird scientists to collect geomorphic data on piping plover nesting sites that will feed into models for improving understanding of habitat use
- Best management practices for managing beaches for beach nesting birds following coastal storms
- Prioritization of road-stream crossings for aquatic connectivity and resiliency

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Learn more
- http://northatlanticlcc.org/groups/coastal-resiliency

How will sea level rise affect piping plover? Among the suite of LCC and Hurricane Sandy funded products is a report by Dr. Sarah Karpanty of the Department of Fish and Wildlife Conservation at Virginia Tech along with U.S. Geological Survey scientists, who modeled the impacts of sea-level rise and management on barrier-island nesting habitat for the federally

The Index of Ecological Integrity (IEI)
This tool identifies areas with the greatest capability to support biodiversity now and into the future by assessing the intactness and resilience to sustain key biological functions over time, relative to other sites within the same ecological system (habitat class).

Specific products (available now)
- Maps of the relative integrity of ecological systems at regional, state, and watershed scales

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Learn more
- http://northatlanticlcc.org/projects/designing-sustainable-landscapes
- http://jamba.provost.ads.umass.edu/web/lcc/DSL_documentation_integrity.pdf
- http://nalcc.databasin.org/datasets/fb419c64f9a24beb9d4f1c1b4f46f356

Picturing integrity: The dark blue shading indicates areas that are most likely to sustain ecological functions over time according to a suite of key metrics that measure "resilience" and "intactness".

Index of Ecological Integrity
High : 100
Low : 1

N

0 25 50   100 Miles
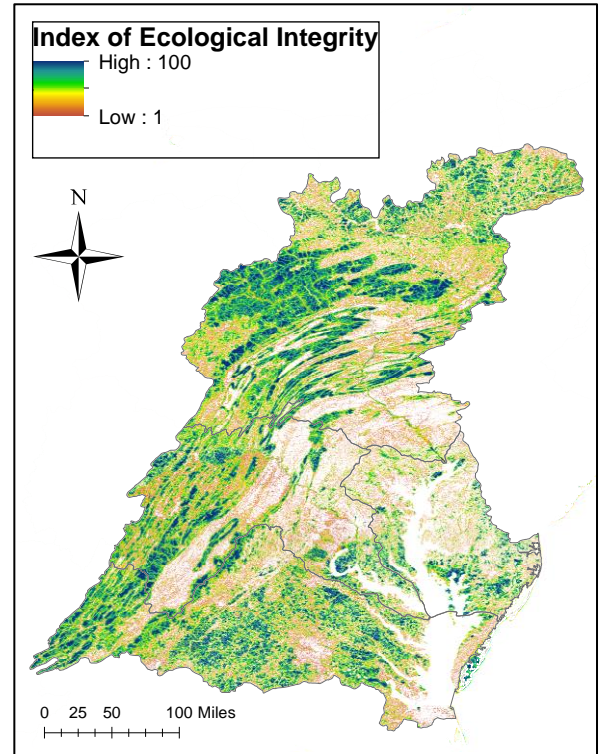
Envision the Susquehanna
This landscape conservation effort unites partners to identify priorities and strategies for protecting the natural and cultural heritage of the Susquehanna River watershed based on LCC and other regional science, and community values.

Products (available now)
- Engagement campaign to identify community conservation needs
- Framework for delivering regional datasets and tools to conservation partners through presentations and workshops
- National Geographic Susquehanna Watershed map
- Community supported conservation science demonstration projects

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Learn more
- http://envisionthesusquehanna.org
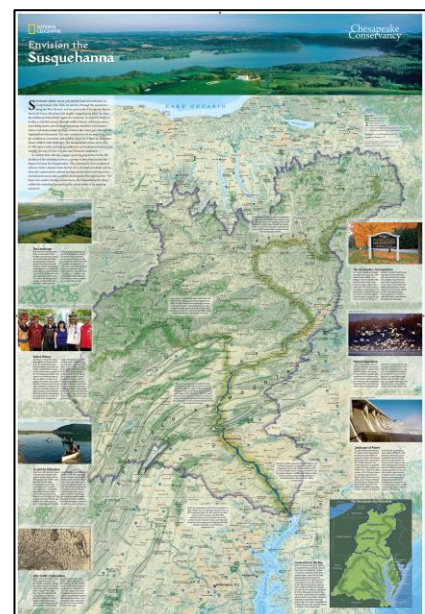
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