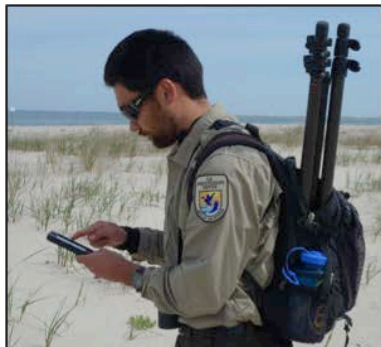# Science Products from the North Atlantic LCC

The North Atlantic Landscape Conservation Cooperative (LCC) works with partners in the Northeast region to develop information, tools, and resources to complement existing information, and support local and regional conservation decisions in the face of major threats, land-use changes, and climate uncertainty.

Putting North Atlantic LCC science to work: Shorebird technician Rob Finer collects data with the iPlover smartphone app at Monomoy National Fish and Wildlife Refuge; Participants explore climate data in a workshop on the North Atlantic LCC Conservation Planning Atlas hosted by Highstead Foundation; Scott Jackson of the North Atlantic Aquatic Connectivity Collaborative leads training on assessing road-stream crossings.

North Atlantic LCC Science Products

The following table provides an overview and examples of the *Foundational Information, Assessment, and Decision-Support Tool* science products supported by the North Atlantic LCC. Additional products are available on the North Atlantic LCC **Conservation Planning Atlas** and **Products page** (please see page four).

Foundational Information - Provide a basis for assessing condition and threats to priority resources		
PRODUCT TYPE	EXAMPLES (with links)	DESCRIPTION
Maps/Spatial datasets (More than 230 regional spatial datasets now available)	Climate: Mean Maximum Summer Temperature 2010 - 2080 (RCP Scenario 4.5)	A collection of datasets that represent the average of the maximum air temperature for June, July, and August for the years 2010 through 2080.
	Northeast Terrestrial Habitat Classification Maps	Data based on NatureServe's Ecological Systems Classification with additional information from state wildlife classifications, and three hierarchal classes: ecological systems, macrogroups, and formation.
	Northeast Aquatic Habitat Classification Map	USGS National Hydrography Dataset Plus centerlines were classified to represent their biophysical setting in terms of size, temperature, gradient, and geology.

	Northwest Atlantic Marine Ecoregional Assessment: Ecological Marine Units	Units represent all three-way combinations of seabed forms, sediment grain size, and depth based on ecological thresholds shown by organism relationships.
Databases	North Atlantic Aquatic Connectivity Collaborative (NAACC)	An online clearinghouse for road-stream crossing assessment resources and data in the Northeast developed to support a network of partners collaborating to evaluate and upgrade crossing infrastructure across the region.
	Vernal Pool Mapping and Conservation	A secure database of vernal pool locations across the Northeast to inform conservation measures and future surveying efforts.

Assessments - Condition, vulnerability, and major threats to priority resources		
PRODUCT TYPE	EXAMPLES	DESCRIPTION
Reports	Vulnerabilities of Northeastern Fish and Wildlife Habitat to Climate Change	A combination of three assessments of the vulnerability of terrestrial, aquatic, and coastal habitats to climate change impacts, including sea-level rise.
	Climate Change Vulnerability Index for Northeast species	A regional synthesis of information on species-specific sensitivity factors associated with climate and projected exposure to future changes for 64 species.
Model-based Assessments	Index of Ecological Integrity	A regional assessment of the relative integrity (including intactness and short-term resiliency) of ecological systems (habitat classes).
	Landscape Capability Models of Representative Species (See "Wildlife Species Models" folder)	A set of habitat and climate suitability models for 30 representative species across the region representing the needs of a larger set of priority species using similar habitats.
	Marine Bird Mapping and Risk Assessment	An analysis of historic and current survey data to identify important marine bird habitat and inform marine spatial planning, including siting offshore energy development.

Publications	["Interactive effects of climate change with nutrients, mercury, and freshwater acidification on key taxa in the North Atlantic LCC region." Pinkney et al 2015](#)	A study examining how climate change could affect the release, dispersal, and impacts of toxic chemicals and excess nutrients in the environment, with case studies focusing on mercury, freshwater acidification, eutrophication, freshwater mussels, and amphibians.

Decision-Support Tools - Including conservation designs that use foundation information and assessments to help partners prioritize and decide how much of what conservation actions are needed where to sustain specific resources.

PRODUCT TYPE	EXAMPLES	DESCRIPTION
Conservation designs, blueprints, and plans	[Connect the Connecticut](#)	A collaborative effort using input from diverse partners to develop models and maps that identify key areas in the watershed that can support resilient ecosystems and species as part of an interconnected network of core areas.
	[Regional Conservation Opportunity Areas](#)	A collaborative effort with State Fish and Wildlife Agencies and other partners to identify Northeast Regional Conservation Opportunity Areas for the conservation of Regional Species of Greatest Conservation Need and their habitats.
Decision-support tools and models	[Interactive Catchment Explorer](#)	An interactive map interface for exploring datasets related to species, habitats and environmental variable habitat at watershed and catchment multiple scales.
	[Prioritized HUC 12 Watersheds for Road-Stream Crossing Surveys](#)	An interactive map and Arc GIS query tool that helps prioritizes where to focus survey and restoration efforts for upgrading road-stream crossings (culverts and bridges).
Publications	["A Bayesian network approach to predicting nest presence of the federally threatened piping plover (Charadrius melodus) using barrier island features." Gieder et al 2014](#)	A modeling framework that addresses the challenge of predicting ecological impacts of sea-level rise by linking species to physical habitat features that will be impacted and helps guide beach management decisions.

**Where to find North Atlantic LCC Science Products**

The North Atlantic LCC Conservation Planning Atlas

This online portal provides a clearinghouse for regionally consistent conservation tools and datasets supported by the North Atlantic LCC and partners. The CPA allows users to explore and visually compare datasets, view metadata, create and share maps, and download data from the North Atlantic LCC region, as well as other relevant efforts and geographies. At least 14 other LCCs in the LCC Network are also using this platform to share and aggregate resources for regional conservation.

You just need an email address to create a free account, letting you download and import data, and save maps.

Conservation Planning Atlas: http://nalcc.databasin.org/

Technical support: NALCC GIS Analyst Renee Farnsworth, renee_vieira@fws.gov
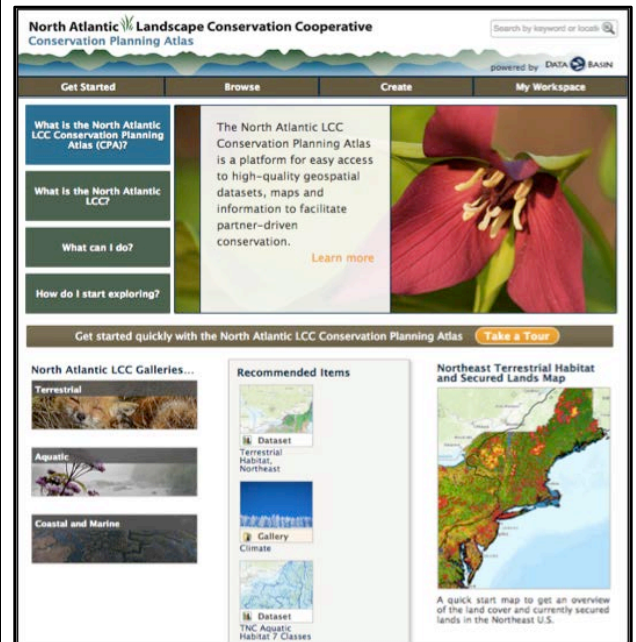
North Atlantic LCC Products page

This searchable database allows users to browse all North Atlantic LCC products by category, keyword, search filters, or a combination of all three.

By selecting a product from the search results, users will be able to view a brief overview of how the product can be applied, a technical description, contact information for the project's principal investigators and North Atlantic LCC staff, and links to both the product and to related resources.

The search results can also be exported into a spreadsheet.

Products page: http://northatlanticlcc.org/products
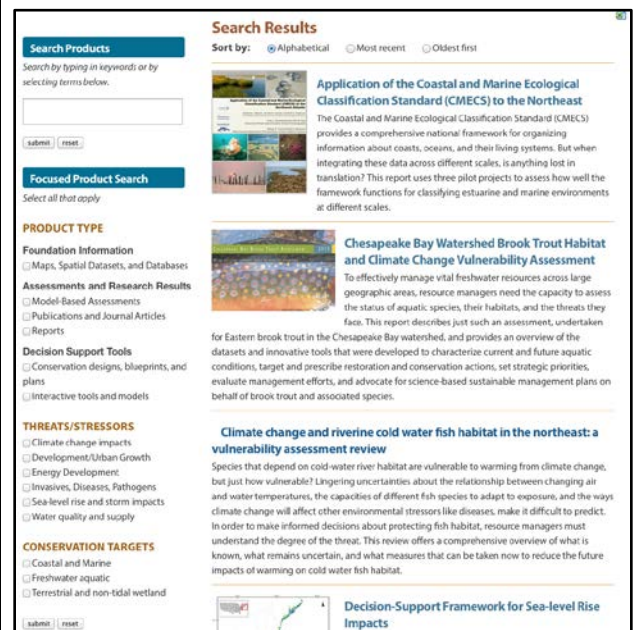
To learn more about North Atlantic LCC Science

Contact North Atlantic LCC Coordinator Andrew Milliken: Andrew_Milliken@fws.gov
Explore the North Atlantic LCC Products database: http://northatlanticlcc.org/products