North Atlantic Landscape Conservation Cooperatives

Regional overview

The north Atlantic coast is one of the most populous and industrialized coastal areas in the world. Home to 17 percent of the nation's population, its natural habitats have long been subject to extreme social and economic use pressures. The Northeast's history of agriculture, forestry, industrialization, resource extraction and urbanization has placed severe demands on the environment. The region is still rich in living resources, although many are considerably lessened from their former levels of abundance and their habitats reduced in extent, making the protection of remaining habitats and populations critical to maintaining the region's biodiversity. Now climate change adds a new threat to already imperiled habitats and species, with potentially vast ecological and economic consequences. The U.S. Fish and Wildlife Service (Service) and partners are being called upon to address these conflicts, and the Service is formalizing the North Atlantic Landscape Conservation Cooperative (LCC) as a response to this challenge. The North Atlantic LCC covers land in 12 of the 13 Northeast states and the District of Columbia.

Bill Buchanan/USFWS

Sanderlings

Purpose and partners

The North Atlantic LCC is a conservation science-management partnership, consisting of federal agencies, states, tribes, universities and private organizations, focused on collaboratively developing science-based recommendations and decision-support tools to implement on-the-ground conservation. The goal is having all partners working together to sustain landscapes capable of maintaining abundant, diverse and healthy populations of fish, wildlife and plants. The work of the North Atlantic LCC will be integrated with a U.S. Geological Survey (USGS) regional climate impact response center to conduct studies and develop landscape-scale conservation plans. The North Atlantic LCC will also address impacts to ecosystems beyond those of climate change, such as potential extirpation of wildlife populations from disease or habitat loss.

Active conservation partnerships already exist around major watersheds, such as Chesapeake Bay, Delaware Bay, Connecticut River/Long Island Sound, New York Bight, and Gulf of Maine. The bird conservation regions of New England/Mid-Atlantic Coast and Atlantic Northern Forest occur within this LCC area, as do multiple fish habitat partnerships. These existing efforts provide strong building blocks on which to establish a fully functioning and highly effective LCC. Links with Canadian partners in the LCC have also been established, which is crucial, given the recognized importance of securing avenues for northward migration of habitats and wildlife distributions under climate change scenarios.

Key among the critical existing partnerships already functioning within the landscape of the North Atlantic LCC is the Atlantic Coast Joint Venture, a partnership of federal, regional and state agencies and organizations focused on the conservation of habitat for native bird species in the Atlantic Flyway region of the United States from Maine south to Puerto Rico, which includes all of the states in the North Atlantic, South Atlantic and South Florida LCCs. The joint venture has agreed to collaborate in broader strategic habitat conservation approaches for all wildlife and fish species consistent with its vision and mission and will likely play a role in tying together conservation science and delivery in all three Atlantic Coast LCCs.

Habitats and species

The North Atlantic LCC encompasses diverse coastal and inland ecosystems and habitat types, including large bays and estuary systems, beaches, coastal islands, salt marshes, major river systems (such as the Connecticut, Hudson, and Delaware rivers), pine barrens, forested wetlands, extensive northern hardwood and conifer forests, and high elevation spruce-fir forests. These diverse ecosystems and habitat types support an equally diverse

set of fish and wildlife resources, including federally listed and candidate species such as Atlantic salmon, piping plover, red knot, Canada lynx, New England cottontail, dwarf wedgemussel and Karner blue butterfly, as well as many other priority species of migratory birds, anadromous fish and species of greatest conservation need as identified in state wildlife action plans.

Impacts

Climate change is already having or is predicted to have major impacts on coastal habitats through sea level rise, increased vulnerability to storm surges and increased intensity and frequency of coastal storms. Areas considered at very high or high risk in the North Atlantic LCC, according to a National Assessment of Coastal Vulnerability to Sea-Level Rise, include the shorelines of Chesapeake Bay and the Delmarva Peninsula, the Atlantic and Delaware Bay coastlines of New Jersey and parts of the south shore of Long Island and Cape Cod. One important question is how beaches, marshes and other coastal habitats will respond and adapt to sea-level rise and how the fish, wildlife and plants using these habitats will be affected.

Another concern is conifer forests and high-elevation areas. High-elevation areas are among the habitats most likely to be affected by climate change. Warmer temperatures during the growing season could gradually allow mountain ecotones to shift upward, shrinking the isolated high-elevation woodlands into progressively higher, smaller and more isolated patches or even eliminating patches completely. Under most climate change predictions, the proportion of conifer forest land cover is likely to decrease. The corresponding decrease in habitats could be very significant, as upland forests support more wildlife species than any other terrestrial habitat. For example, the diversity of breeding birds is higher in North Atlantic forests than in any other part of the United States.

Capacity

The North Atlantic LCC will have a coordinator to focus on developing and facilitating partnerships and strategies for conservation across organizational boundaries, with an emphasis on generating science-based tools to guide management decisions. Another integral position is a science technology coordinator to identify science needs and develop science capabilities in GIS and spatial analysis, population modeling, decision analysis, and monitoring and evaluation while addressing other science needs through partnerships with other agencies, organizations and universities. Communications capacity will be another essential component of the North Atlantic LCC.

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