

Conservation Status of Natural Habitats in the Northeast

Executive Summary



Northeast Association of
Fish & Wildlife Agencies



The Northeast states share a long history of conservation and collaboration. The region's extensive forests, wetlands, rivers, and coastline cross state boundaries, and a tradition of working together to understand and conserve them has evolved. In 2008, the Northeast Association of Fish and Wildlife Agencies (NEAFWA) and its partners developed a multi-state monitoring framework to take stock of the condition and conservation of the species and habitats that characterize the region. In 2011, The Nature Conservancy (TNC), working with NEAFWA, produced the first regional application of the framework in the report: *"Conservation Status of Fish, Wildlife, and Natural Habitats in the Northeast"*.

Synthesizing over 50 region-wide datasets, analyzing the underlying patterns, and assessing the indicators suggested by the monitoring framework, the 2011 status report presented a comprehensive and multidimensional picture of the state of the natural world across the 14-state NEAFWA Region: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Washington D.C.

[This document](#) is an update to the 2011 report. In it we focus on conservation progress and trends in the last decade (2012-2022). Original indicators were revisited where the source data had the resolution and detail to allow us to detect change. Additionally, we added new metrics or revised old ones, where improved data allowed us to backcast one or two decades to detect trends.

DATA HIGHLIGHTS

- ▶ A completely revised **conservation land dataset**, developed collaboratively with state offices, and with "date conserved" added for most records since 2011
- ▶ Remotely sensed **time-sequence data** on land cover change, forest turnover, and anthropogenic fragmentation
- ▶ New and computationally intensive **tools** for measuring local connectedness, regional connectivity, and stream integrated protection
- ▶ A revised **dam dataset** and detailed information on stream nutrient enrichment
- ▶ A **template** for exploring marsh migration and the conservation of migration space
- ▶ **Models** of climate resilience, connectivity, recognized biodiversity areas, and carbon stocks

This work was guided by a steering committee led by Jon Kart of Vermont Fish and Wildlife Department and representing eight states and the regional office. We gratefully acknowledge their help, guidance, and suggestions.

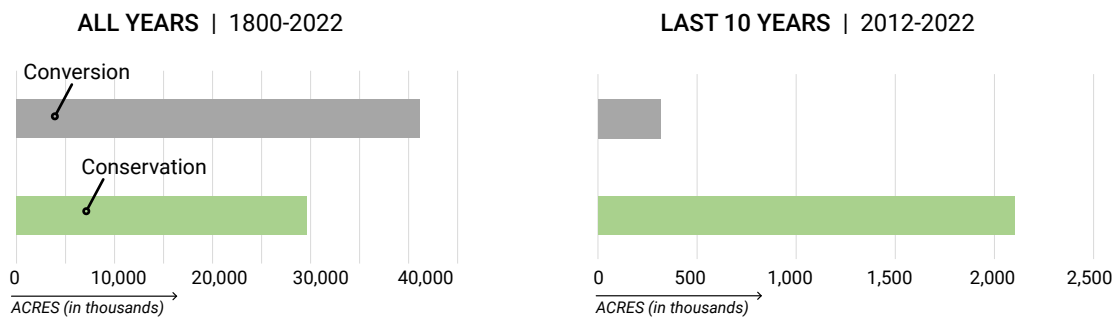
KEY FINDINGS

The following key findings are organized by the thematic chapters of the report. See the full chapter for detail on the methods and results.

CONSERVATION LANDS

Historically, 26% of the region's natural land has been converted to development or agriculture, while 19% has been conserved for nature or multiple uses. This equals 1.4 acres converted for every acre conserved. **Over the last decade, this trend has reversed** with 6.7 acres conserved for every one acre converted since 2012.

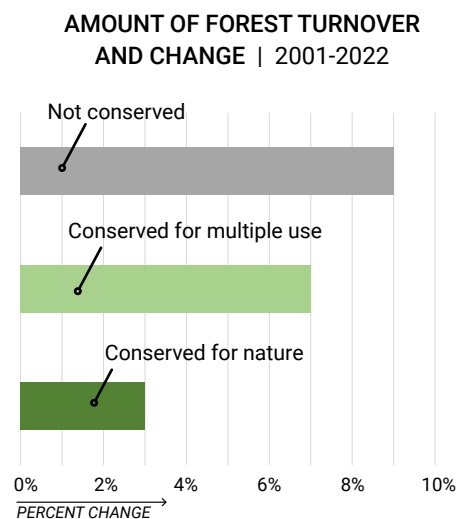
The region now boasts 29 million acres of conservation land, with 2.1 million acres conserved in the last decade. Private conservation organizations accounted for half of the new conservation land, with 62% being easements and 38% fee acquisitions. Most of the new conservation lands (76%) were secured for multiple uses like recreation and forest management, while 24% were conserved primarily for nature.



FORESTS

The region was once 91% forested but is now 61% forested with most of that permanently converted. Of the remaining forest, 24% is secured against further conversion, a ratio of 1.6 acres converted for every acre conserved.

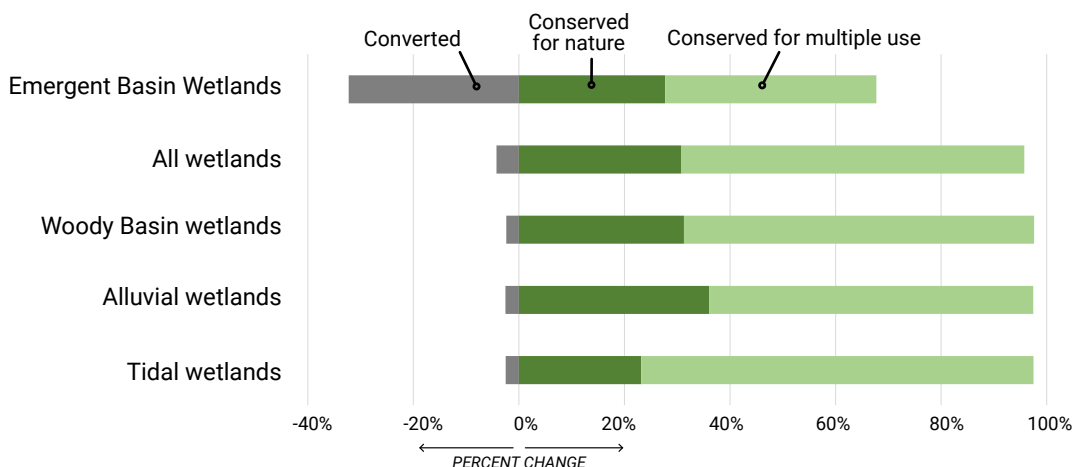
Over the last 20 years, 8 million acres of forest have changed markedly: 57% have returned to forest after active turnover from logging or natural disturbances, 28% remains in other natural land cover, and 1% was converted to development or agriculture, a conversion rate of 35,000 acres per year. **Land conserved primarily for nature has seen much less forest change (3%)** than land conserved for multiple uses (7%) or unconserved land (9%).



WETLANDS

Twenty-one million acres of the region were once covered by swamp, peatlands, floodplain, and marsh supporting over 1,000 types of wetland dependent species. Now, 27% of that has been converted or drained, but 20% of the remaining wetlands are under conservation. In the last two decades regulations have further prevented wetland conversion. As a result, **wetland conservation in the last two decades surpassed conversion almost 25 to 1, reversing the historic trend.** Emergent marshes remain the wetland type most at risk.

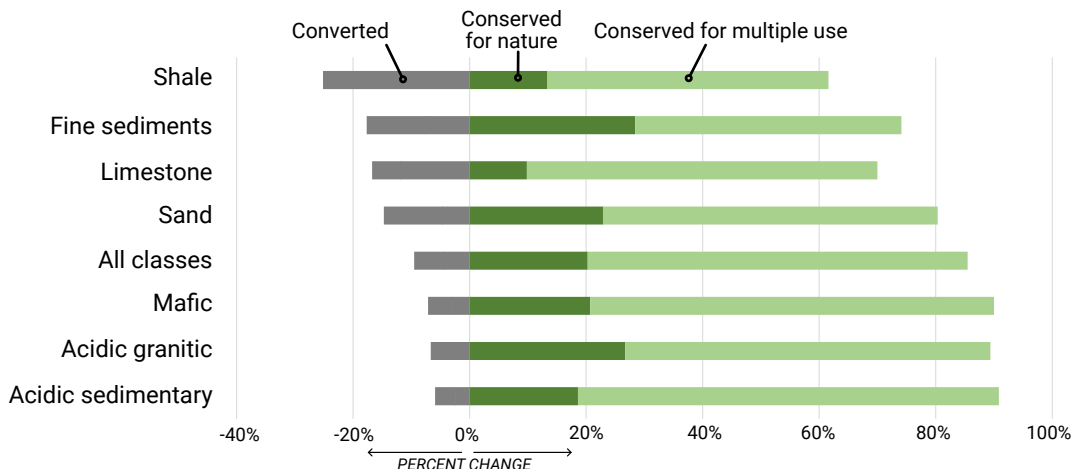
WETLAND CONSERVATION AND CONVERSION | 2001-2022



UNIQUE HABITATS

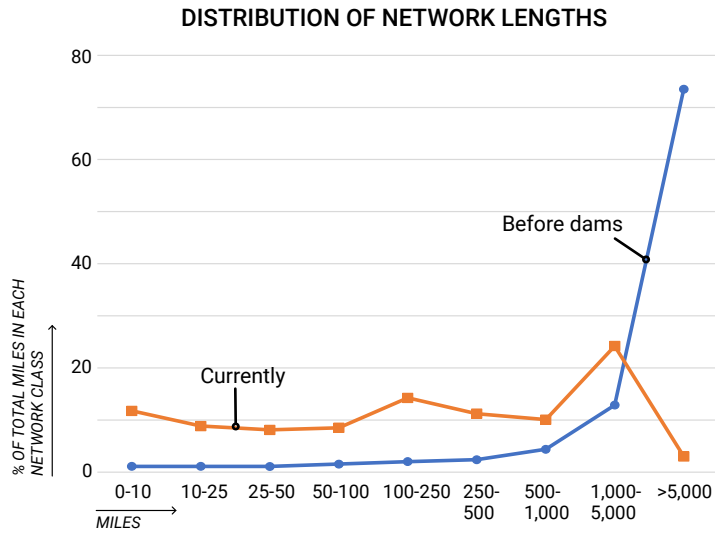
Conservation and conversion have not been distributed equally. In high elevation and granite bedrock areas conservation has exceeded conversion, but in low elevation regions with fertile soils derived from limestone or sand, conversion exceeds conservation eight to one. In the last decade this pattern has reversed with **conservation surpassing conversion across every soil type and elevation zone.** New conservation lands are a mix of multiple-use and nature focused reserves. Shale environments have had the most conversion.

CONSERVATION AND CONVERSION BY GEOLOGY CLASS | 2012-2022



STREAMS AND RIVERS

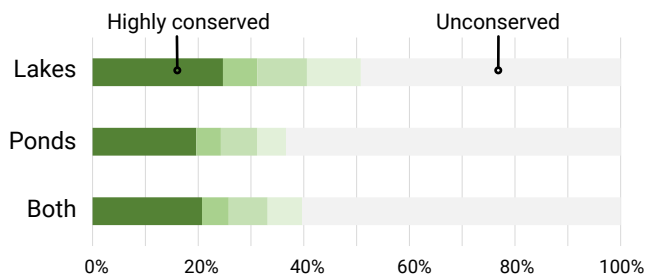
The region's 200,000 miles of streams and rivers support thousands of species. In total, 23% of all stream miles are locally conserved, however, **only 6% have the upstream watershed conservation needed to achieve integrated protection.** Further, 14,000 dam's fragment the stream networks into segments averaging 7 dams per 100 miles. As a result, 86% of river miles are in networks less than a quarter of their pre-dam size, 21% are less than 25 miles long, and 48% are significantly altered in their hydrology. In the last decade, 346 dams were removed, opening at least 3,500 miles. This increases to over 5,000 miles of reconnected river and stream networks if we account for retrofitted or partially passable dams.



LAKES AND PONDS

Of the regions 35,000 lakes and ponds, **21% have most of their shoreline conserved.** Over the last decade, another 446 waterbodies have joined this group and another 800 have shown increased conservation of their shorelines.

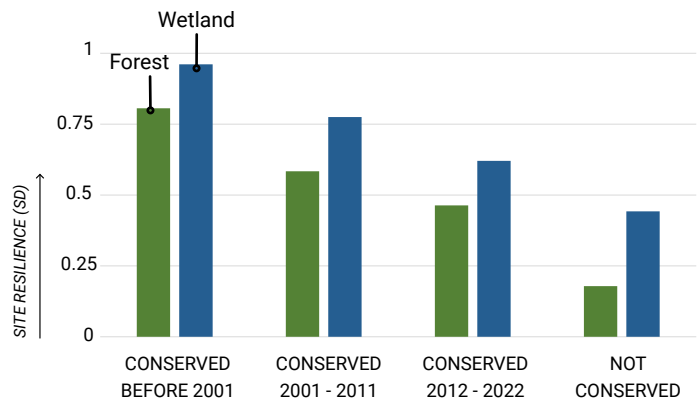
CONSERVATION STATUS OF INDIVIDUAL WATER BODIES



CLIMATE RESILIENCE

Site resilience is a measure of a site's microclimatic buffering which help plants and wildlife persist under a changing climate. Quantitative scores for forest and wetlands on **conservation lands** suggest that they **are more resilient than their unconserved counterparts**, and that the resilience of older conservation lands is higher than the new conservation land. This likely reflects increasing levels of fragmentation across the whole region.

SITE RESILIENCE BY CONSERVATION YEAR



AMERICA THE BEAUTIFUL AND 30 BY 30

The global Convention on Biodiversity have targeted 30% of Earth to be formally protected by 2030. In the U.S., the Biden Administration’s America the Beautiful initiative calls for us to work collaboratively to conserve and restore the lands, waters, and wildlife that support and sustain the nation, and to conserve 30 percent of US lands and waters by 2030.

The Nature Conservancy (TNC) has mapped a spatial blueprint for conservation that covers 34% and integrates the key principles of representation, resilience, connectivity, biodiversity, and carbon. TNC’s Resilient and Connected Network (RCN) **provides an ecologically meaningful blueprint for how to distribute the conservation lands**. Collectively the **region is 19% conserved by area** if multi-use (GAP 3) conservation lands are included. The **RCN is 38% conserved, and averages 42% conserved by state**. Current conservation lands contain 25% of the region’s forest carbon securing the stock from conversion and allowing further sequestration.

State	% Area GAP 1	% Area GAP 2	% Area GAP 3	% Area Conserved	% RCN Conserved	% Forest Carbon Conserved	Total Acres
CT	1%	4%	12%	17%	39%	20%	3,183,447
DC	0%	0%	20%	20%	100%	42%	39,988
DE	1%	4%	13%	18%	49%	30%	1,266,542
MA	3%	5%	16%	24%	46%	32%	5,200,573
MD	0%	2%	16%	18%	41%	30%	6,351,377
ME	2%	3%	16%	21%	28%	22%	20,824,982
NH	5%	8%	20%	33%	49%	36%	5,931,243
NJ	0%	13%	11%	24%	59%	37%	4,843,101
NY	9%	1%	9%	20%	46%	27%	31,055,902
PA	1%	1%	16%	18%	49%	26%	28,986,981
RI	1%	14%	5%	20%	38%	26%	697,220
VA	2%	3%	12%	17%	43%	26%	25,616,295
VT	3%	2%	16%	22%	36%	26%	6,153,095
WV	1%	2%	9%	11%	21%	13%	15,506,478
Region	3%	3%	13%	19%	38%	25%	155,657,223

To read and download the report, click [HERE](#).

Please cite as: Anderson, M.G., Clark, M. and A. Olivero. 2023. Conservation Status of Natural Habitats in the Northeast. The Nature Conservancy, Center for Resilient Conservation Science. Newburyport, MA.

For more information on CRCS and to access the report and data, visit: <http://crs.tnc.org>