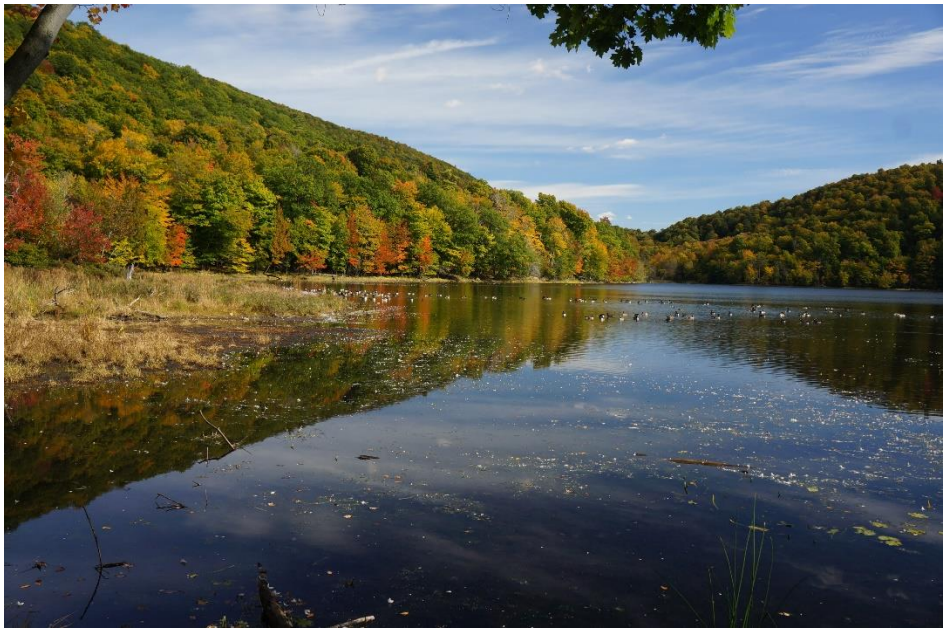
Executive Summary

Rapid Assessment of New Conservation Science in the Northern Appalachian-Acadian Ecoregion



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The Northern Appalachian-Acadian (NAPA) Ecoregion of Canada and the United States encompasses the largest intact broad-leaved temperate forest in the world. It is also home to millions of people who love, live in, and make a living from this rich complex of woodlands, farms, lakes, rivers, and shoreline.

Two Countries, One Forest (2C1Forest) is a cross-border conservation collaborative of Canadian and American members who share a stretch of land, a sense of responsibility, and a powerfully effective tool: science-based landscape conservation. The 2C1Forest strategy works from the landscape to the local level, to protect the extraordinary natural heritage of the Northern Appalachian-Acadian ecoregion. We strive to provide science that informs the activities of a host of groups, including state and federal agencies, policy makers, conservation organizations, communities, and landowners.

At 2C1Forest we strive to bring knowledge that will assist in a greater rate of protection and conservation of high priority habitat. Past work collated and presented by 2C1Forest has laid the foundation for identifying those places at great risk of loss to development and conversion. A key document, issued in 2008, was *Priority Locations for Conservation Action,* which identified key areas warranting protection based on their ecological importance and vulnerability to development. The information developed in 2008 has been used in the last 10 years by non-profit organizations, government agencies, and others to make the case for conservation and protection both locally and regionally. It has also served as a springboard for the implementation of much new conservation work on the ground, including in areas necessary to maintain connectivity among large blocks of intact habitat.

The Rapid Assessment undertaken here has three objectives: 1) synthesize key conservation challenges and opportunities that have emerged in the last decade in the Northern Appalachian-Acadian Ecoregion (NAPA), 2) provide an overview of what new conservation science tells us about the ecoregion, and 3) make recommendations about conservation priorities and next steps that 2C1Forest and its partners can undertake.

The first sections of the report provide an overview of the region, followed by an extensive review of science and conservation work since 2008. Significant advances in science, technology, and collaboration have been made since this time. These include expanded geospatial analyses, a substantial increase in the understanding of freshwater and riparian systems, consideration of climate change and habitat connectivity, and the emergence of widespread collaborative networks of organization working for similar goals. The latter, exemplified by entities like the Staying Connected Initiative, may be the most significant and perhaps least expected of the outcomes from the initial work. The nexus between the biological sciences and social science is both a success and a challenge.

Indeed, a key conclusion of this report is that there has been a shift in priorities over the past decade in the NAPA from a focus on the conservation of irreplaceable and vulnerable areas to

the identification of priority terrestrial and aquatic networks for protection that are better connected, more climate-resilient, and include considerations such as economic valuation and other environmental benefits and ecosystem services like water security. Moreover, the past decade has also seen a new emphasis on ensuring broad participation of stakeholders who have a vested interest in applying the best science to prioritize land protection and who are invested in communicating results and information including making geospatial data and other datasets freely and widely available.

The assessment then summarizes conservation challenges and opportunities that have emerged in the last decade, ranging from continued habitat loss and conversion to climate change and declines in public funding for conservation. With a detailed background established, the report considers how recent developments in science can inform future work, including setting targets and goals, identifying biodiversity surrogates, accounting for climate change, and integrating aquatic and riparian conservation into future work.

Conclusions and recommendations are woven throughout the document, and key ones are consolidated into the final two sections of the assessment. Notable recommendations include the following:

1. Establish a set of shared conservation targets, goals, and definitions across the region. These should at a minimum adhere to international standards and conventions (e.g., Aichi Targets), but could be much more aspirational.
2. Agree on a set of metrics to measure the impacts of conservation and development. These metrics should include the positive effects of protected areas, such as avoided biodiversity loss and maintenance of ecological integrity. Ensure that measurement data are incorporated in policy, planning, and management decisions, and that they are regularly updated.
3. Move from prioritization exercises to action on the ground. There are already many prioritization analyses in the NAPA and some have only had limited distribution and uptake in the region. Options are diminishing to acquire land in priority areas and thus action must be accelerated.
4. Maximize limited resources, both human and financial, by increasing collaboration among government agencies, conservation organizations, community groups, municipalities, private landowners.
5. Expand the parameters and data for science-based work to include more socio-economic variables, including valuation of ecosystem services and environmental benefits and factors transforming the land (e.g., development, water issues, in-migration and rural de-population, and transportation infrastructure).
6. Continuously evaluate the scale of analyses and interventions to ensure local priorities are being met, and that they fit into the larger regional perspective of a well-connected and resilient ecoregion.

7. Ensure all ecoregion data and analyses are shared in one platform—or at least linked to one platform—to make all products more accessible and useful. Some products are already on 2C1Forest's space on the Data Basin platform, which could be the ideal location to share all data, in addition to organization specific websites.
8. Re-assess or cross-walk various analyses and determine where these correlate, or not. Doing a GIS analysis of various priorities and results of analyses would help clarify if various analyses are identifying the same priorities.

The results of the 2008 *Priority Locations* study were also compared with those identified by The Nature Conservancy in its 2016 report entitled *Resilient and Connected Landscapes for Terrestrial Conservation.* Although these planning efforts use different methods (see Annex 1 for descriptions of the two analyses), they both identify spatially explicit conservation priorities at the scale of the NAPA region. Moreover, because they were conducted nearly ten years apart, they may offer insights into whether priorities have changed over the last decade.

Annex 3 summarizes the results of the comparison, and several important areas of overlap emerge. Key places include the Adirondacks, mountainous regions of Vermont and New Hampshire, northern and "downeast" Maine, northern and coastal New Brunswick, the Gaspé Peninsula, and large portions of Nova Scotia.

The overlapping areas represent about 30% of the ecoregion, or more than 26 million acres (nearly 11 million hectares). An additional 17 million acres (7 million hectares) were identified as high priority by the TNC study, and a further 16 million acres (6.7 million hectares) emerged as important in the 2C1Forest analysis. Overall, nearly 68 percent of the ecoregion can be classified as biologically important in some way.

These results are in stark contrast to the current state of conservation in the ecoregion. Today, less than 10% of the region is strictly protected. Another 25% has some degree of protection, but many areas are subject to intensive management practices that erode biodiversity values.

The threat data developed as part of the 2008 *Priority Locations* study provide further insights into potential conservation priorities within the overlapping areas (the threat data should be viewed with caution because of their relative age).

Over the coming years, the pressures to the NAPA region will only increase. The goal for 2c1Forest and its partners is to accelerate the pace of conservation while the opportunity exists. Climate change, population growth, exploitive harvesting, and poor land use decisions are just some examples of the challenges we face. A clear message of the study is the need to incorporate the objectives of everyone in the region, including tribes/First Nation, small woodlot owners, industry, the recreation community, land use planners, and others in conservation planning and action.

Climate change and its effects are increasingly recognized as perhaps the most important stressor in the ecosystem. The threats, however, are more locally defined, whether the area is an intact forest block pressured by exploitive harvesting or a coastal region facing a rising

ocean. The common theme of climate change could nevertheless be the appropriate lens in which to build broad collaborations among stakeholders. Exemplary forest management strategies, restoration of degraded lands, and thoughtful land use planning are actions that empower by showing success.

Going forward, 2C1Forest will seek to provide the best scientific data available to its partners and to collaborate with them to further conservation efforts and enhance on-the-ground management practices. Per this assessment, there is a vital role to play in helping establish a shared set of conservation goals at the local and regional levels. In addition, it is important to develop robust conservation evaluation metrics to track progress towards goals, monitor threats, and diversify the evaluation parameters available to stakeholders.