

What is a Climate Resilient Forest?



Background

A climate resilient forest is comprised of species that are able to absorb and adapt to climate change as well as potential disturbances by pests or disease. Tree species can be separated into four classes: trees that will proliferate, prosper, persevere or decline.



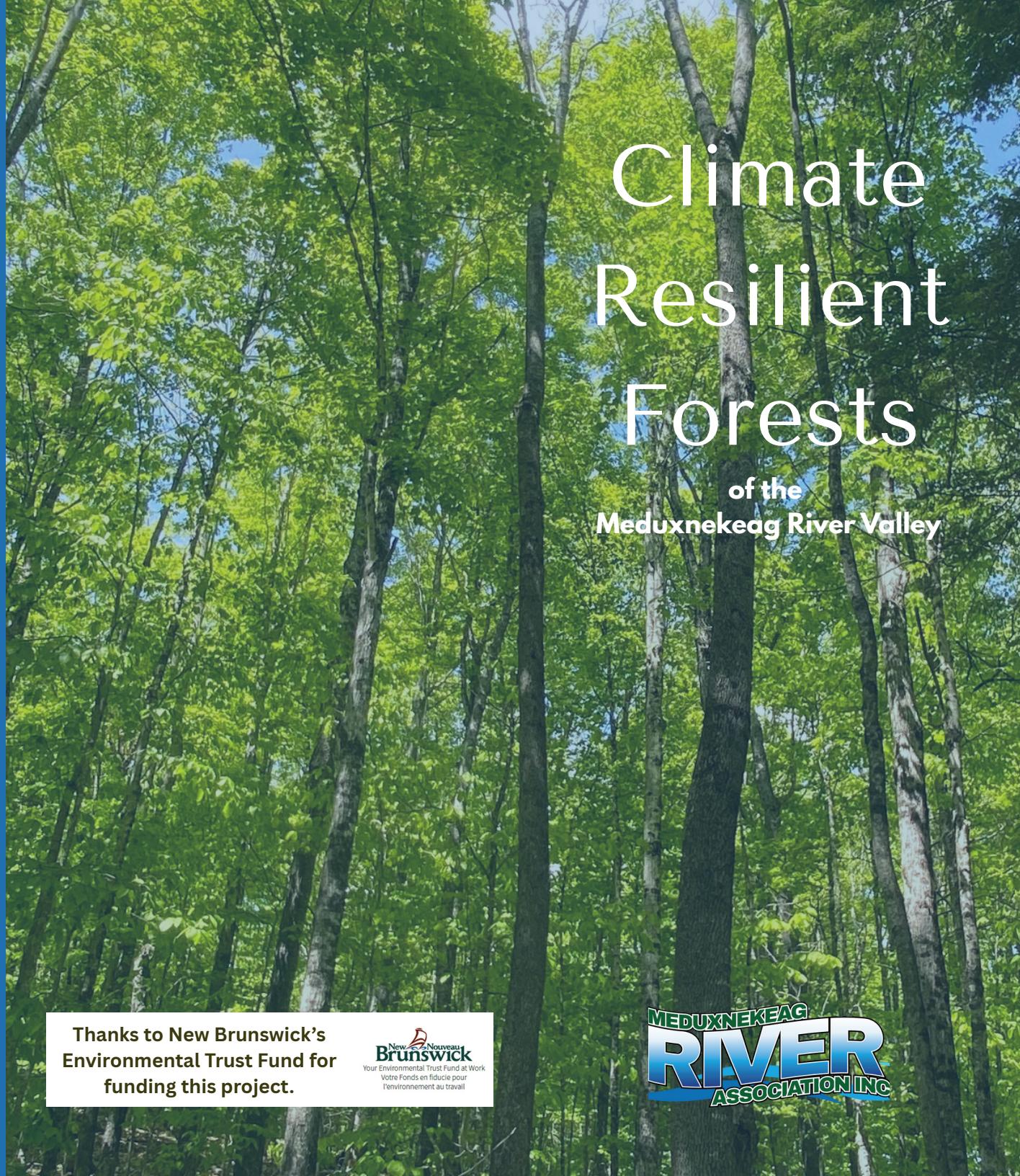
Appalachian Hardwood Forest

The Meduxnekeag River is home to a unique forest type known as the Appalachian Hardwood Forest (AHF), and contains nearly 40% of all AHF forest found in New Brunswick. At the MRA, we are balancing maintaining our unique forest type while also planning for trees that will withstand climate change for the future.



Goals

In the face of climate change, the MRA is creating initiatives to preserve forested cover as well as mitigate future deforestation by managing for climate resilient tree species that will continue to provide ecosystem services to both wildlife as well as the surrounding town of Woodstock.



Thanks to New Brunswick's Environmental Trust Fund for funding this project.



Current Projects

Forest Inventory Assessments

MRA staff is currently completing forest inventory assessments to locate and quantify climate resilient trees in our properties and identify areas for management.



The Next Step

Once areas are identified, MRA staff will be using site data collected such as slope, aspect, soil type, drainage and stem density to appropriately match trees to sites for planting operations. Planting will be completed using both nursery raised saplings and seedstock from our own properties.



Climate Projections on a Species Level

Common Name	Scientific Name	Climate Prediction
Northern Red Oak	<i>Quercus rubra</i>	Prosper
Balsam Fir	<i>Abies balsamea</i>	Decline
Red Maple	<i>Acer rubrum</i>	Proliferate
Eastern Hemlock	<i>Tsuga canadensis</i>	Persevere
Trembling Aspen	<i>Populus tremuloides</i>	Decline
White Pine	<i>Pinus strobus</i>	Prosper

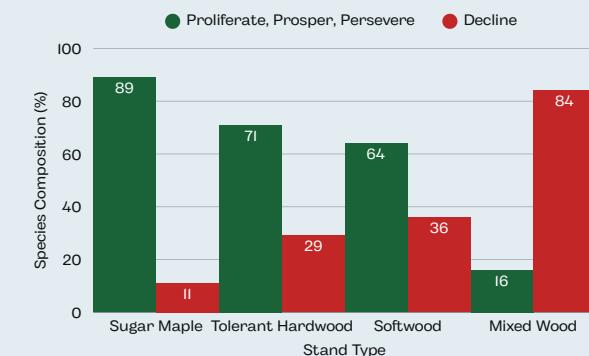
Data obtained from CFI

RPC 4.5 Climate Scenario

Bell Forest Property

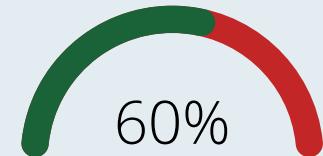
Data obtained from University of New Brunswick Appalachian Forest Management Plan

What Does the Forest Look Like?



Climate Resiliency Rating

(Persevere, Prosper and Proliferate vs. Decline)



The Bell Forest was the first property to be assessed, thanks to the Faculty of Forestry and Environmental Management at UNB. The forest is characterized by lowland black ash wetlands, with ridges of sugar maple and a softwood belt alongside the river. This property alone stored approximately 8054.16 tons of elemental carbon in 2024. As seen in the graphs above, some areas, such as the mixed wood and softwood stands, are in danger of decline by negative effects from climate change. Common species in these stands include balsam fir and spruce species, which are more representative of further north boreal forests.