



KINGSCLEAR Tree Nursery

GROWING HARDWOODS FOR NEW BRUNSWICK

During the age of digitalization, much of the focus shifts to high tech projects and mechanization. But NHRI and our partners will never forget the importance of the beginning of the value chain, which starts with growing trees. This includes promoting silvicultural methods that increase sustainable yield of desired species and improve the volume and value for our hardwoods and mixedwood resources. Growing hardwood trees to an operational scale takes much collaboration and effort, and so we are thankful for our partnership with Kingsclear Tree Nursery.

The Department of Natural Resources and Energy Development (DNRED) Kingsclear Tree Nursery, located in Island View NB, currently grows and ships approximately 20 million tree seedlings annually, for reforestation planting programs on both Crown land and private woodlots in New Brunswick. The nursery, which has operated for over 40 years, includes 7 growing complexes with a total of 74 greenhouses, along with 19 outdoor crop holding areas. The operational area covers approximately 90 hectares.

Image above: Sugar maple seedlings growing in multipot 45 containers in the tree improvement greenhouse at Kingsclear, showing their first true leaves (Robinson, April 2023).

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Current annual tree species production includes white spruce (>50%), black spruce (35%), red spruce (10%) and pine species (<5%). The nursery is managed by professional and technical forestry staff and supported by additional nursery support staff during the operating season. There are approximately fifty workers during peak operations between May and August of each year (Figure 2).



Figure 2 - Kingsclear nursery technicians filling multipot 45 containers with soil medium to prepare to sow thousands of silver maple samaras (Robinson, June 2022).



Figure 3 - Mark Mazerolle, tree improvement technician, transplanting red maple germinates into multipot-45 containers in the tree improvement greenhouse.

As part of a much larger partnership with DNRED to adapt New Brunswick's current silviculture practices to save our sugar maple, our partnership with Kingsclear Tree Nursery aims to:

- Determine best management practices to artificially regenerate sugar maple where simple changes in harvest-based silviculture are not sufficient
- Determine if maples can be produced in the province at an operational scale without massive overhauls to the current nursery system
- Provide enough seedlings to allow us to test different site preparation and tending treatments on the ground
- Find more ways to grow more and faster hardwood pulp

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In 2021 - 2022, the tree improvement department at Kingsclear began a container trial of hardwoods as their first venture into growing hardwoods at the provincial nursery. The first maples were a 2021 red and sugar maple stock, and they were produced from 300 seeds.

Since that time, we have collected and processed 145 litres of silver maple seeds which turned into 3000 silver maple seedlings. We have also successfully stratified and germinated 2500 red maple and 3500 sugar maple seeds. Many of these have already been planted in a demonstration site with AV group, and the rest are doing well in the greenhouse using the container size and the fertilization and light schedules usually used for growing softwoods. The only difference being that hardwoods are being watered by hand to ensure the broad leaves don't intercept the water. The real test will be how they grow and survive in the field compared to direct or broad seeding. We hope to continue the production at least until a full experimental site can be established, and then into the future.



Figure 4 - An area in the tree improvement greenhouse at Kingsclear dedicated to the growth of hardwoods, featuring sugar maple on the left, some black ash on the immediate left closer to the middle, and red maple on the right (Robinson, April 2023).

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TEAM MEMBERS INVOLVED IN THE PARTNERSHIP

Mark Currie	Kingsclear	Tree Improvement Technician
Mark Mazerolle	Kingsclear	Tree Improvement Technician
Shona Millican	Kingsclear	Tree Improvement Coordinator
Martin Noel	Kingsclear	Manager
Gaetan Pelletier	NHRI	Executive Director
Pamela Poitras	NHRI	Silviculture consultant
Storm Robinson	NHRI	Project lead, R&D Forester
Matthew Blaney	N/A	Past project lead

 Article by Storm Robinson, Research Forester, NHRI.



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