We Feel the Need… the Need for Seed

Canada must grow its tree seed supply chain, especially for broadleaf species

BY NAIRN HAY

In Canada, the demand for native trees continues to increase for reclamation and restoration projects. With growing demand for seedlings, there is a parallel increase in demand for larger volumes and numbers of species of tree seed. Climate change is driving the need for more seed, from more species, and from more places.

The largest demand for tree seed, by far, is for reforestation by the forest industry (over 500 million seedlings per year). By and large, the forest industry cuts evergreen trees. To replenish these forests, there is a long history of investments by industry and government that has led to substantial facilities for the production, processing and storage of large volumes of conifer seed. Thanks to these investments, the forest sector has, for the most part, a sustainable supply of conifer tree seed.

However, organizations who seek hardwood trees and shrubs for their projects often have difficulty sourcing tree seeds to grow into seedlings. Non-profits, restoration and reclamation companies, and importantly, Indigenous organizations, often struggle to secure tree seed. This makes it hard for them to plant the right tree in the right place.

Communities and organizations plant trees mainly to restore landscapes altered by human activities. Over the past decade, restoration and reclamation projects are increasingly focused on mitigating the impacts of climate change and industrial development.

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Climate change has altered the scale and vectors of disturbances in our forests: disturbances from fire and disease have become more frequent and are larger. Just think of the 18 million hectares of forest burned by wildfire in Canada in 2023. The 10-year average of area burned by wildfire per year in Canada is nearly 25 times the area harvested for timber each year. The dynamics of where we plant trees and why will alter the species we choose to plant. For example, increased planting of hardwoods as fire breaks to slow fire spread is becoming more common. To meet the challenge of mitigating climate change, we must begin to proactively collect significant amounts of tree seed.

Douglas Maple tree seeds in Lumby, BC, September 2022. Photos by Nairn Hay.

In Indigenous communities, members place high value on restoring plants that have food, medicinal, and cultural value. Saskatoon Berry (used for food) and Black Ash (the bark is used to make baskets) have significant importance to the maintenance of culture: the loss of native plants can be linked to the loss of language and tradition. The National Tree Seed Centre, located in Fredericton, New Brunswick, hosts a national conservation collection of tree seed from species across Canada. In 2022, the centre began the Indigenous Seed Collection Program, to help Indigenous communities build capacity to collect, process, and store tree seed for restoration and reclamation projects. Restoration of landscapes in and adjacent to Indigenous communities is an important step towards reconciliation.

The capacity of the tree seed collection supply chain must be increased significantly for users outside the forest industry. The demand for tree seed used to grow seedlings on behalf of environmental organizations, Indigenous communities, and restoration/reclamation companies are increasing in volume and complexity.

To build capacity in the tree seed collection supply chain will require a sustained financial investment, as provincial governments have done in British Columbia, Alberta, Quebec and the Martimes. In other jurisdictions, there have been pulses of short-term, targeted funding. The financial support helped build capacity for short periods of time but as funding dwindled, much of the built capacity was lost. Investment must be made in training

Above: Green Bur Oak Acorns in Fredericton, NB, September 2021.

Left: Mountain Ash Berries in Lumby, BC, September 2022. Once the berries are picked, seeds are removed from the flesh using either a blender or a Dybvig Seed Cleaner (a machine used to extract seeds from berries) and the seeds are then dried and placed in cold storage.

and education, facilities, and in the seed collections themselves: seed collections are undervalued. Where there is investment, there are sustainable supplies of tree seed.

Forest Recovery Canada conducted surveys with experts and users of seed from across Canada. The surveys revealed the following gaps in the tree seed supply chain: a lack of human resources (labour force), limited access to training and education, less frequent opportunities to collect seed (climate change has made collection cycles less certain), and a need for facilities to process and store high-quality tree seed collections. Building capacity could potentially happen through the funding of four primary functions: partnership and networks, training, education and research, and infrastructure – all while increasing the value of tree seed collections themselves. If tree seed value is increased, it will support a sustainable supply chain now and into the future.

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