CANOPEUM

CONNECTING PEOPLE TO PLANET

Table of Contents

Overview

Canopeum grows trees from seed to forest. Individuals and businesses can sequester their carbon by sponsoring our trees.

Our indigenous trees and shrubs are grown in our innovative micro tree nurseries. Each nursery [a canopeum] can provide tens of thousands of local trees annually. It also supports a place to educate and unite the community it serves by becoming a central hub for positive environmental action and climate optimism.

Our Forest Stewards are trained to pick, propagate, and plant indigenous trees and shrubs into poly-culture forests. Through our research partnerships, we make sure our forests are planted to maximize both biodiversity and carbon sequestration.

Trends and Policy

Canada has committed to reducing its greenhouse gas emissions by 40-45% below 2005 levels by 2030 and to achieving net-zero GHG emissions by 2050[1].

While some forwards thinking companies are beginning to voluntarily offset their GHG emissions, policy will eventually begin to require carbon compensation. The restoration economy is an emerging multi-trillion-dollar economic sector that has the potential to revitalizing our communities and our environment. Climate policy often centers reclamation and restoration efforts on fiscal incentives. As a result, the climate emergency is creating a rush for financial rewards that could have devastating effects that could compromise the long-term results. We need a holistic and responsible approach to scale the supply of indigenous trees and seeds. It is vital that our approach incorporates both ecological responsibility and community engagement to ensure the longevity of regenerative reconciliation.

Since 2000, regional surveys document a chronic lack of appropriate seed and nursery stock. There is no clear system to scale seed collectors, seed processing stations and skilled growers. Lack of inventory for seed and sapling stock will create a bottleneck over the next 5-10 years. This lack of stock threatens to derail the restoration efforts necessary for our rapidly warming planet. We need a clear, efficient, and a unified approach to our climate and public health emergency[2].

Trees and shrubs are a proven low-tech way to effectively reduce greenhouse gas. One tree alone can store 48 pounds of carbon dioxide per year and store 100 pounds in its lifetime *if* it reaches maturity. In the face of the climate emergency, we need a model for maximum sustainable carbon sequestration and all tiers of society need to contribute to the collective effort.

[1] https://www.wri.org/insights/restoration-one-most-overlooked-opportunities-economic-growth
[2] https://natural-resources.canada.ca/science-and-data/research-centres-and-labs/forestry-research-centres/atlantic-forestry-centre/national-tree-seed-centre/national-tree-and-shrub-seed-supply-assessment/23980

Trees planted into forests provide four concrete benefits to the regions they serve. This Ecological Services include[3]:

- stabilizing the conditions of our living environment
- producing useful materials that we can harvest
- promoting optimal psychosocial development and
- Enriching our material, intellectual and spiritual life

Municipalities have influence over roughly 50% of GHG emissions nationally. If municipalities & regional players focus on reducing emissions by the same 40-45% margin as the federal government, we will be more than halfway to our national target.

There needs to be a push in every region toward empowering municipalities to adopt a national strategy to increase indigenous seed and sapling stock. It is time to listen to biology and develop a business growth model that is rooted in nature and powered by people who want environmental action now.

A canopeum

The term "Canopeum" denotes a micro tree nursery with a holistic approach to regenerative change. As well as growing indigenous trees and shrubs, every canopeum becomes a local place to educate citizens about the forest and its specific eco-region. It is a hub for environmental action and a place of optimism aligning communities around one environmental movement. We offer a tangible way sequester carbon on a local level.

A canopeum is a low-tech solution with a high ecological services return. By installing a canopeum on an unproductive outdoor space, businesses and municipalities can adopt a net positive green initiative.
Our pilot model is an annual amount of 20,000 (20T) indigenous trees and shrubs. It requires a currently unused outdoor space of 20m x 20m. Depending on available space, we offer both 10T and 5T urban models.

Every canopeum must be installed neighboring a building. This is intended to recycle rainwater for sapling irrigation while alleviating rainwater pressure on storm drain systems during large rain events. Water storage tanks are used to collect a one-month supply of rainwater. Each canopeum requires access to an alternative source of water to ensure constant coverage during long-term drought.

We grow our saplings outdoors. Each Canopeum is fenced off to human interference and animal foraging. There is a 2' insulated knee-wall to provide protection from winter winds. Depending on seed periodicity each canopeum will have a different combination of sapling stock with an annually supply of at least four-six species.

[3] https://www.erudit.org/fr/revues/natcan/2018-v142-n1-natcan03265/1042012ar/

Every Canopeum includes:

- Perimeter fence and access point
- Water tank (capacity varies depending on model size)
- Rain harvesting system
- Small storage shed
- RootSmart propagation trays (an innovative open-walled trays designed to minimizes root defects)
- Hand tools
- Basic seed cleaning equipment
- Solar power system
- Small seating area
- Central multimedia screen
- Signs

Our seating area invites the wider community to spend time learning from our informational material and staff. Our trained Forest Stewards tend to the canopeum and welcome visitors.

Forest Stewards

Through our Forest Stewardship Training Program, we train our staff to pick and propagate indigenous trees and shrubs from seed. Using a 2-eyed seeing approach, this training program covers topic including but not limited to:

- seed collection and cleaning techniques
- plant propagation and maintenance
- data collecting methods
- environmental education and outreach

A canopeum becomes an asset to the community it serves by offering a space to connect people to planet. Inside every canopeum there is a seating area where citizens can engage with our Forest Stewards and learn about the journey of a tree, from seed to forest.

Each Canopeum is designed to include a multimedia screen. This acts as a portal to our online platform, which is a place dedicated to gathering information, sharing experiences, and supporting environmental optimism. Our platform showcases the efforts of organizations who are taking immediate, specific, and net-positive environmental action.

Once the saplings are ready to leave the nursery, they are given to planting organizations to be planted into the field. Our Forest Stewards accompany the trees through this process to ensure continuity of care and collect data. This builds a relationship with the planting organizations and maintains a connection with our trees, from seed to forest.

Our Forest Stewards are trained to collect data on soil composition, sapling growth, and ecosystem interactions. This data is used to refine our ability to grow successful polyculture forests in terms of biodiversity and maximum carbon sequestration. By following up in the field we ensure that the saplings are planted, survive, and thrive. This is to ensure each planting project succeeds in its intended mission to increase canopy cover. Planting organizations can work with our Forest Stewards to ensure best practices are maintained for tree survival and forest growth.

Tree Sponsorships

Canopeum provides a tangible way for individuals, businesses, and municipalities to contribute directly and locally to carbon sequestration by sponsoring trees through a subscription model. In return for their sponsorship purchases, sponsors have access to educational content and outreach activities led by our Forest Stewards, including forest walks, guest speakers and planting parties. Through the follow-up studies conducted by the Forest Stewards, sponsors also receive updates on the planting projects they have contributed to.

Intentions

Our aim is to enable climate action by connecting people to planet. Through our online platform we intend to build an environmental coalition that:

- connects planting organizations to indigenous trees and shrubs
- connects individual, companies, and municipalities to a net-positive environmental initiative
- connects research institutions to planting organizations

Through our research, we will develop a national standard for the regeneration of polyculture forests using indigenous trees and shrubs.

Both online and through our physical presence in the community, we become a hub for environmental action and climate optimism.

Conclusion

It is important we harness the emerging restoration economy to ensure that time and resources used maximize impact and long-term gain. The Canopeum model is a complete strategy that can scale quickly yet follow the cadence of our ecosystems. By respecting the native eco-regions of all our seed and sapling stock, we can expand globally yet remain local to the seeds, trees, and people helping to build new networks for the ‘re-evolution’.

Canopeum is rooted in nature and powered by people who want environmental action now.