



Impact Story n° 1

## Commercial thinning for forest health

In 2020, Dr. Jean-Martin Lussier and other researchers from the Canadian Forest Service's Canadian Wood Fibre Centre (CWFC) ventured out to Dunière forest on the Gaspé Peninsula in Québec. In this 60,000-hectare forest, you can find spruce, pine, fir and larch trees.

This forest, like others in the Gaspé region, is affected by the eastern spruce budworm, a destructive caterpillar that feasts on trees such as balsam fir and white spruce. Outbreaks of this forest pest weaken mature trees and usually end with mass tree loss. Outbreaks can result in significant timber shortages.

Only a small portion of Canada's forest – just 0.5% – is harvested every year. However, climate change will worsen pest infestations, destroying valuable mature trees. As we learn more about the effects of a changing climate, the CWFC and its partners are developing new forest management practices, such as partial harvesting and commercial thinning, to help adapt to climate change and maintain the important flow of timber resources.



The eastern spruce budworm in larval and adult stage

The eastern spruce budworm defoliates trees, causing mass tree loss.

## Thinning forests for forest health

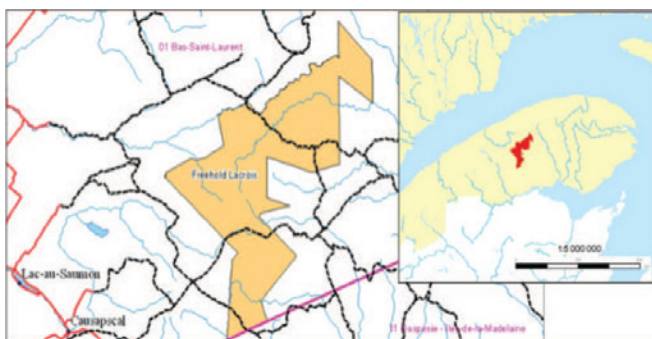
Commercial thinning is a harvesting method that selectively cuts trees for timber, rather than clearcutting entire areas. It requires more groundwork, as foresters have to examine and select specific trees to harvest, but it can sustain forest industries during difficult and destructive pest outbreaks.

The researchers suggest partial harvesting - in this case, thinning forests in 20-year increments during natural pest disturbance periods. The result is a cost-effective and sustainable way to harvest trees and maintain resilient forests.

An economic assessment of commercial thinning found that while clearcutting is immediately more profitable, firms that implement thinning will see a higher return in the long-term - up to \$740 per hectare of forest per year.

If enhanced forest inventory tools such as LiDAR, (a remote sensing method that uses light in the form of a pulsed laser to measure distances), is combined with commercial thinning, time and money are saved - an estimated \$32,000 a year in the Dunière forest.

Forests also benefit from thinning. As remaining trees have more room to grow, thinning encourages stronger trees and healthier forests. Additionally, gradual forest thinning leaves species diversity unharmed. For example, the white-tailed deer will occupy and feed in newly thinned forests.



The Dunière forest is located on the Gaspé Peninsula in eastern Québec.

## Centuries of sustainable management to come

Even though Canada is home to 9% of the world's forests, Canadian forests make up 36% of the world's certified sustainably managed forests. Commercial thinning can even out fibre supply so that a forest's valuable wood can be harvested at a sustainable rate, despite forest pests and a changing climate.

The Canadian Wood Fibre Centre's research provides the evidence to support the continued and expanded use of this additional tool in the sustainable forest management toolbox.

## Learn more

- [State of Canada's Forests report](#)
- [Commercial thinning improves growth of jack pine](#)
- [Pre-commercial thinning in Québec](#)
- [Eastern spruce budworm](#)

For more information, please contact: [nrcan.cwfc-ccfb](http://nrcan.cwfc-ccfb), [nrcan@nrcan-rncan.gc.ca](mailto:nrcan@nrcan-rncan.gc.ca).