

Climate change could reduce number of valuable Maritime trees, ecologist says

Number of fir and spruce trees could be reduced 10 to 20% unless climate change addressed

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Anthony Taylor researched two models — a worst-case scenario, where no effort is made to reduce greenhouse gas emissions, as well as a more optimistic model that considers Paris commitments being met. (Submitted by Anthony Taylor)

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Some of the most lucrative trees in the Acadian forest will start to disappear if nothing is done to halt climate change, according to a new federal study.

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Anthony Taylor, a forest ecologist with Natural Resources Canada in Fredericton, N.B., researched two models — a worst-case scenario, where no effort is made to reduce greenhouse gas emissions, as well as a more optimistic model that considers Paris commitments being met.

Taylor said under climate change scenarios, "Towards the middle to the end of the century, we're going to see significant changes in forest composition, what tree species are here, and how those species are growing."

"We have time to change our behaviour and potentially change the trajectory of how the climate changes."

- Anthony Taylor

The Maritimes' Acadian forest is one of eight forest types in Canada. The current climate enables a mix of northern hardwood and boreal forest, resulting in a tree mix of 32 native species of hardwoods and softwoods unique in the world.

Under the worst-case scenario, the number of cold-adapted tree species, like balsam fir and spruce trees that make up about half of Acadian forests, could drop 10 or 20 per cent by the end of this century.

This would have a significant impact on the forest industry in the Maritime provinces, which relies on spruce and fir trees, Taylor said, and could ultimately lead to a decrease in wood supply.

"Under rapid 21st century warming, Canada's Acadian Forest Region will begin to lose its boreal character (i.e., "deborealize") as key tree species fail to regenerate and survive," the report states.

'Having an impact'

"The key message from this current study would be that the climate is changing — we as a species are having an impact on the climate — however we have time to change our behaviour and potentially change the trajectory of how the climate changes," Taylor said.



Mature balsam fir trees like this won't grow as well in a warmer climate, says Taylor. (Submitted by Anthony Taylor)

If the Paris commitment to reduce greenhouse gas emissions by 30 per cent by 2030 was met, Taylor believes there wouldn't be any significant change in the make-up of Acadian forests.

However, recent research has revealed the Paris goal was too optimistic, Taylor said, and it's unlikely Canada will be able to meet that now.

Maintaining diverse species on woodlots will become even more important in the coming years with some global warming expected, he added.

The study, published in the journal Forest Ecology and Management, is entitled **Rapid 21st century climate change projected to shift composition and growth of Canada's Acadian Forest Region.**

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