

Times & Transcript



141 YEARS
MONCTON, N.B.

FRIDAY / 7 A.M.

JUNE 26, 2009

timetranscript.com

Global warming threatens maple trees: study

■ Economy and environment would suffer if forests left unprotected

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New Brunswick is facing an enormous challenge to the survival of its sugar maple trees due to the looming threat of climate change, a researcher at Mount Allison University says.

Ben Phillips, a master's student of environmental science, has found that environmental conditions have a significant impact on the health of the trees — which could become even more severe if global warming trends continue. He says the trees could face widespread stresses, including disease, insect outbreaks and death, as early as 2025.

"If we continue on a path anywhere close to what we're on now, then my conservative forecasts will happen in a fraction of the time, which is pretty disconcerting because the forecasts I've come up with are already pretty bad," says Phillips, who spent two years comparing the health of sugar maple trees to long-term climatic data.

"You want to react before climate change happens. We should have been looking at this for years now, but we still haven't even started. We know we're going to be stuck with a certain amount of climate change. We know there are going to be effects. Less climate change is the best thing we can do."

The sugar maple is the most common type of maple tree in Canada. Phillips says his research only focuses on one type of tree, but hopes that the *maple example gets people thinking about the effects of climate change in their own backyard.*

"It's on our flag, it's on our hockey jerseys, it's on our kitchen tables. The maple leaf is everywhere and maple trees are all over the place. We really depend on those trees culturally," he says, adding that the destruction of maple would have a disastrous domino effect.

"This has a lot of economic implications. It has some nasty implications for the sugar maple producers. The trees won't be as productive, so the volume of sap that can be tapped is going to be much lower."

According to the New Brunswick Maple Syrup Association Inc., the province is the third-largest maple syrup producer in the world. About 300 producers employ 2,000 people to generate \$15 million in annual revenue.

Phillips says a widespread maple loss could also harm tourism, forestry and other related industries, in addition to the ramifications for wildlife and the ecosystem.

The trees studied were all about 200 years old and were located in eight different sites in New Brunswick and two in Nova Scotia. Phillips used a bore to extract a pencil-shaped sample from hundreds of trees, which were then examined to determine annual growth during each tree's lifetime.

"Each year, a tree consumes what's in its environment. If it's a good growing year — if the climate is good, there's no drought, it has lots of light — the tree will grow a fat ring. I'm looking at that pattern in growth over time, from year to year," he says. The tree rings were then compared to local climate records dating back to 1875 to determine any correlation. "The key in this study was to get a really strong relationship between the data and the tree growth. Then what we can do is to project that model over the next 100 years."

Phillips officially completes his sugar maple research in July, but will continue to study the effects of climate change on a variety of New Brunswick species in the future.