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MONDAY, NOVEMBER 17, 2008

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SECTION B / MONDAY, NOVEMBER 17, 2008

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ADAM HURAS/TELEGRAPH-JOURNAL

Mount Allison University student Carrie White uses X-ray technology to examine tree ring density and match it with climate data, which won her a top prize from the Atlantic division of the Canadian Association of Geographers. White's research is part of a body of work out of Mount Allison that aims to predict future tree growth with climate change models.

## Saving trees from climate change

**Research** Mount Allison looking at ways future weather patterns could affect province's forests

REBECCA PENTY  
TELEGRAPH-JOURNAL

Foresters take note – scientists at a Mount Allison University lab are predicting which tree species will be threatened by climate change in the next century.

Undergraduate environmental sciences student Carrie White has been busily taking X-ray photos of softwood species and matching density of tree rings to climate data from the same time period – temperature and precipitation.

She is seeing correlations that can be paired with a climate change model to show trends affecting the trees and predict the future survival or failure of species.

The research, which adds to a body of ongoing work by masters student Ben Phillips, landed White an award with the Atlantic division of the Canadian Association of Geographers this fall.

"No other research has been done in this area on the East Coast," White said.

She worked at the University of Victoria's Tree Ring Lab with the X-ray machine in

Canada devoted to studying trees.

"If we can predict how climate change will affect the growth of trees, the forest industry will be really interested in that," said André Robichaud, an adjudicator for the association and professor at Université de Moncton in Shippigan.

"What if climate change affects tree growth in a positive or negative way?" Robichaud said.

Dendrochronology – the study of tree rings – has long taken information stored in trees to look back in time at the climate.

But looking forward to predict how the predicted climate of the future will impact species is revolutionary work that Mount Allison professor and researcher Colin Laroque calls "cutting edge."

Laroque is supervising White and Phillips' research on eight softwood species from the Sussex area for the Fundy Model Forest to see how climate change will affect the growth of the native coniferous trees.

With a warmer climate predicted for New Brunswick in the next 50 to 100

years, Laroque's team has already found the eastern white cedar trees are projected to suffer.

Warmer temperatures means less precipitation, which will starve the cedars of water, Laroque said.

Acadian Papers' chief forester Kevin Topolniski said the research out of Mount Allison sounds fascinating.

He said his industry has long assumed that future growth of trees would equal past growth in its five-year yield forecasting of permanent sample plots.

Long-term weather is not right now a factor that is taken into consideration in forestry, Topolniski said.

"If you think that climate will change over 10 years and have a trend that's going to be continual in one direction, you might want to start accounting for that," Topolniski said, admitting that he's not yet convinced.

"We have a hard time predicting the weather next week never mind for 10 years or 50 years or 100 years," Topolniski said.

Foresters are taking note of theories

that species from the south might encroach on New Brunswick's forests, he said.

"Probably the bigger change may not be that the individual trees are growing at a different rate, it might be, which other species are going to be more adapted to a change in climate and will they be more invasive," he said.

Laroque said tree varieties from the northern United States are moving north at a faster rate than the 1,000-year time frames of the past.

"The tree species down there are projected to thrive where we are," he said, "Right now they have decades to move."

Pests are another concern to think about as the climate in New Brunswick begins warming, Laroque said.

Because some forestry companies plant single varieties of trees on large swaths of land, areas of the province are more susceptible to attacks by bugs that like those trees.

Laroque cited the spruce budworm as

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### Forestry must prepare: Laroque

CHANGE ← B1

an example.

"If it gets warmer here, the spruce budworm might come in and wipe out every tree in the province."

Laroque said he has had a hard time convincing government and the forestry industry to look at long-term forecasting of climate and its affect on trees.

"We've been trying to get forestry companies from coast to coast to get interested in what we do," he said.

Laroque believes that the industry will suffer financially if it does not get prepared. He has submitted applications for government funding countless times and has only ever received funding from the Fundy Model Forest, a network of private wood lot owners that receives funding from Natural Resources Canada to study sustainable forest management.

"We believe (the research) is an economic driver and we believe it's very important to New Brunswick because we rely so heavily on the forests."