

INFLUENCE OF CLIMATE CHANGE ON BOREAL MIXED-FOREST YIELD



PROJECT START DATE AND LENGTH

January 2008 • 3 years

Information:

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CONTEXT

Expected global warming will have direct effects on tree growth and natural disturbances, and, hence, the productivity of boreal forests and forestry operations in Quebec. The goal of this project is to determine the influence of climate change on the growth of two forest species (black spruce and trembling aspen) and forest fires in the boreal region of western Quebec.

OBJECTIVES

- Quantify and determine the relationships between climate change and species growth, as well as forest-fire frequency.
- Establish climate-sensitive growth equations and yield tables
- Establish projections on future forest yield and forest-fire frequency based on Canadian Regional Climate Model (CRCM) simulations.
- Simulate various development scenarios, taking account of the effect of climate change on growth and forest fires.
- Assist and support our partners in order to maximize the adaptation of their practices to climate change.

PROJECT OVERVIEW

By means of a dendroclimatic analysis of stands running along a latitudinal, topographical gradient, the work performed will identify the major climatic factors that determine black spruce and trembling aspen growth. These data will be used to supply a sequence of models for use in calculating climate-sensitive yield tables and estimating future allowable cuts, based on the climatic simulations of the Canadian Regional Climate Model (CRCM).

EXPECTED RESULTS

The project will help improve knowledge on the role of climate in forest productivity and develop modelling tools sensitive to climate change. Expected results will not only assist government and the forest industry in adjusting existing yield tables and allowable cuts to ensure forest operation sustainability, but also improve the species-planning techniques to be used in mixed forests

PARTNERS

- Bureau du chef forestier
- Ministère des Ressources naturelles et de la Faune (MRNF) du Québec
- Norbord
- Natural Resources Canada
- Tembec

FUNDING

- Natural Sciences and Engineering Research Council of Canada (NSERC), strategic
- Chaire AFD
- Ouranos

TEAM

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