Natural Resources Canada
Ressources naturelles Canada

Summary of Workshop Overview

Forest Management Planning in the Face of Climate Change: Impact and Adaptation in the Acadian Forest

May 15 and 16, 2007

Fredericton, New Brunswick

Canada

Forest Management Planning in the Face of Climate Change:
Impact and Adaptation in the Acadian Forest.

May 15, 16, 2007

OVERVIEW

- A workshop, organized by Natural Resources Canada - Canadian Forest Service, brought together experts from across federal and provincial governments as well as industry and academia to examine the forestry sector's vulnerability to climate change in Atlantic Canada.
- The workshop was held in response to forest industry's request for models and decision support tools that are capable of planning under the impacts of climate change.
- Adaptation will play a key role in helping the forest industry to minimize losses and maximize benefits from climate change.
- Workshop participants identified four key areas where further work is required.
- There exists a unique opportunity for collaboration in the development of forest management planning and decision support tools that take climate change impacts on forest dynamics into consideration.
- These tools would provide support for the development of science-based policies and climate change adaptation strategies in the forest sector of the Atlantic region.

ISSUE

Climate change has the potential to greatly influence our country's forests, since even small changes in temperature and precipitation can affect forest yield and survival. Furthermore, forest management planning based on observations of past forest dynamics could result in failures to meet sustainability objectives and result in future timber supply problems. Understanding the forestry sector's vulnerability to climate change is essential for forest management planning.

BACKGROUND

In December of 2006, industry approached the CFS-AFC to express their concerns regarding the potential impacts of climate change on the forests under their management in the region and the lack of knowledge that is currently available to assist in planning for these changes. The CFS-AFC agreed to organize a workshop to scope out the issue.

On May 15th and 16th, 2007, CFS-AFC, in conjunction with CFS scientists and regional stakeholders, organized a workshop entitled "Forest Management Planning in the Face of Climate Change: Impact and Adaptation in the Acadian Forest". The purpose of this workshop was to:

- summarize the current understanding of the key impacts of climate change on the Acadian Forest; and
- identify strategies and information requirements to support and enhance forest management planning tools and their ability to incorporate climate change impacts in the planning process.

Day 1 of the workshop was opened to the public as a science forum and over 100 individuals representing the scope of the sector attended.

Day 2 of the workshop was a facilitated session for invited participants only. Representatives from the forestry departments of all four provincial governments, forest industry, academia and CFS researchers from across Canada participated.

CONSIDERATIONS

During the workshop, the following knowledge gaps and required actions were identified:

1. Process models to predict future growth of the Acadia Forest in response to climate change are required for use in strategic forest management planning (wood supply analyses).

   Action: Several CFS researchers from three centres will collaborate on the development of data analyses techniques and calibration of process models as resources become available. They will determine the relationship between stand increment and stand mortality and climate indicators. The forestry departments in Nova Scotia, New Brunswick and Newfoundland have agreed to provide permanent sample plot data and collaborate in this initiative. The forestry department in PEI has since expressed interest as well.
2. There is little capacity to predict changes in forest species composition resulting from climate change despite its importance in determining the quantity and quality of future wood supplies that will be available to forest industry.

   Action: The Workshop Steering Committee agreed to organize a follow-up workshop in February of 2008 to further scope out this issue and investigate the development of succession models for the region.
3. Planning silvicultural programs to adapt to climate change is limited by a lack of knowledge of the growth responses of tree species to climate variability and their resulting ability to adapt. With this knowledge, appropriate species and genotypes can be selected for planting as climate change progresses.

   Action: There is up to 50 years of data from CFS and provincial tree improvement provenance trials that could provide valuable information for planning future planting programs to cope with climate change. An opportunity exists to re-measure these abandoned provenance trials and investigate climatic effects on tree growth.
4. Changes in insect disturbance regimes may have profound effects on future wood supplies and the economic and environmental costs of protecting forests in the future.

   Action: Researchers have an opportunity to work with forest management agencies to estimate probabilities of insect disturbances in the future by current pests and insect species that may become pests in the future for use in long-term forest management planning.

CONCLUSION

The workshop and follow-up action items represent opportunities for collaboration between the federal and provincial governments, industry and academia to contribute to the development of forest management planning and decision support tools that take climate change impacts on forest dynamics (growth, mortality, succession and disturbances) into consideration. These tools would provide support for the development of science-based policies and climate change adaptation strategies in the forest sector of the Atlantic region.

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