



CANADIAN FOREST SERVICE

Forest Change



Integrated Assessment Brief

The Forest Change program is a source of climate change adaptation information for Canada's forest sector. It supports sector competitiveness by identifying risks and opportunities as well as presenting climate change adaptation options.

There are three components to the Forest Change program: **indicators** that describe changes in Canada's forests; an **integrated assessment** of the potential effects of climate change; and **tools and resources** for visualizing a range of projected climate change impacts, assessing vulnerabilities, and implementing adaptation options.

The **integrated assessment** assists decision makers by incorporating biophysical and socioeconomic information for planning and management purposes. Canadian Forest Service researchers modeled the projected impacts of a changing climate on Canada's forests and forest sector under different climate scenarios and three time periods (short term 2011–2040, medium term 2041–2070, and long term 2071–2100). Highlights of the integrated assessment follow.

Projected climate change impacts

- In the short term, increased **fire and insect damage** will be of growing concern in certain Canadian forests.
- After 2050, **forest productivity** will be significantly affected. The response will be complex: potentially increased growth rates for some tree species in certain forests and reduced growth rates in others as well as projected changes in species composition and age-class distribution.
- The magnitude of **impacts on timber supply** (increased operating costs and wood supply disruptions) is projected to vary regionally as well as over time.
- Both **fiber quantity and quality** will be affected. The forest product supply chain could see reductions and increased variability of supply in both the medium and long term. The forest industry will need to adapt to maintain competitiveness.
- **Economic opportunities** available to forest-dependent communities are likely to be affected, both positively and negatively.
- **Health and public safety management** will be influenced, notably by increased wildfire frequency.

Potential opportunities

- Increase in **abundance of some tree species**, for example, in some areas of the Atlantic Maritime Ecozone, red maple (*Acer rubrum*) is projected to increase significantly and white pine (*Pinus strobus*) may also become more abundant.

- **Salvage wood availability** from fire and other disturbances will increase, and is projected to peak in the medium term. Salvaged biomass could be used for a variety of products in the bioeconomy.

Integrated resource management implications

- An increased level of some disturbances, such as wildfire, will **impact multiple sectors** of the economy, including resource development, transportation, and infrastructure.
- **Conflicting land-use pressures** are projected to increase, for example, balancing a continuous fiber supply and other land uses may be challenging.
- **Collaboration**, both within the forest sector and more broadly in integrated resource management, will be essential to ensure a cohesive, cost-effective approach to climate change adaptation.

To learn more about Forest Change and climate change adaptation resources, please visit

cfs.nrcan.gc.ca/forestchange.