



STAR-ORION SOUTH DIAMOND PROJECT
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX 6.5-E
Climate Change - Fire

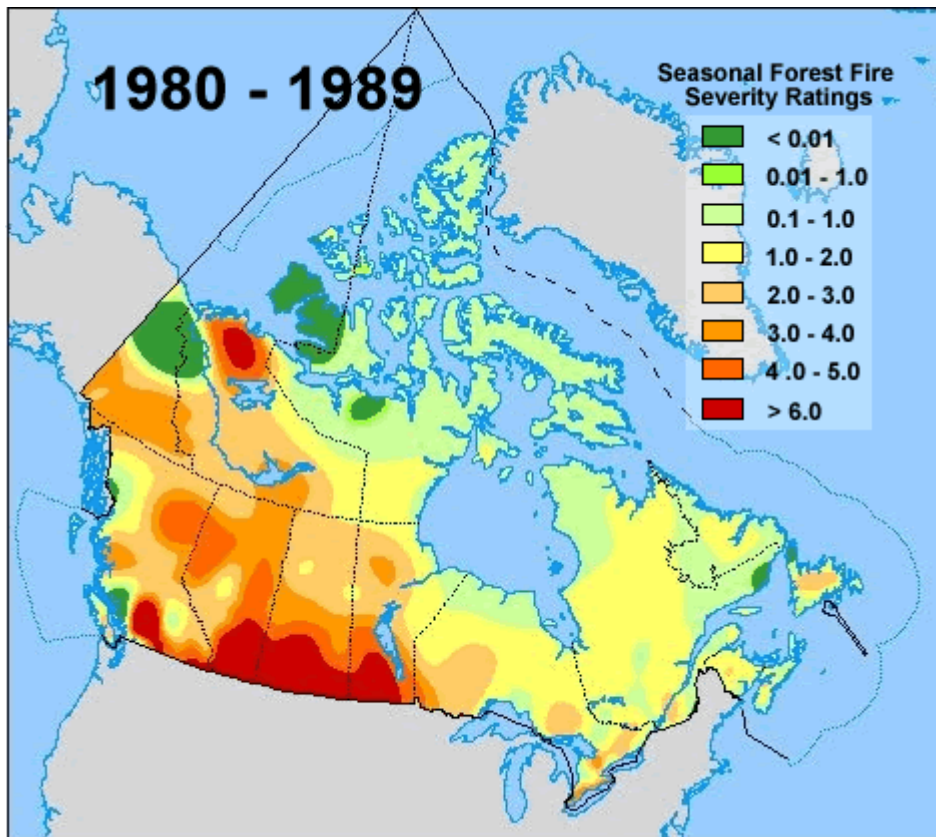
[Natural Resources Canada](#) > [Atlas Home](#) > [Explore Our Maps](#) > [Climate Change](#) > Projected Changes in Forest Fire Severity Ratings: Years 1980 to 1989, 2050 to 2059, 2090 to 2099

Search the Atlas 
[Advanced Search](#)

The Atlas of Canada

[Return to previous page](#) 

Projected Changes in Forest Fire Severity Ratings: Years 1980 to 1989, 2050 to 2059, 2090 to 2099



Select a year to Stop Animation: 1980 to 1989 | [2050 to 2059](#) | [2090 to 2099](#) | [restart animation](#)

The Theme

Forest fires in Canada's boreal forests burn an average of 2.5 million hectares annually. Fire is a natural and necessary force, shaping the landscape and ensuring the healthy growth of new forests. The frequency, extent and impact of boreal fires are primarily controlled by fire management measures, short-term weather conditions, as well as the age structure of the forest. Climate simulations, which were generated from four Global General Circulation Models (GCM), were used to project forest fire danger levels with relation to global warming.

This animation shows the change in forest fire severity levels across Canada from 1980-1989 to 2050 to 2059, and to 2090-2099, based on the most recent Canadian GCM - Coupled Global Circulation Model 2 (CGCM2). The Seasonal Severity Rating (SSR) is a measure of fire danger

conditions over a complete fire season. The SSR is developed by averaging daily values over the season. The scale shown is relative, with values above 6 being extreme. A real value of zero is only possible in remote cold regions where no fire danger exists in the summer months.

Projected Change

The animation shows large increases in the area extent of extreme fire danger and a lengthening of the fire season. Moreover, the warming impacts may include more frequent and severe fires, shorter growth periods between fires, proportionally younger stands, and a decrease in the carbon storage of northern Canadian forests.

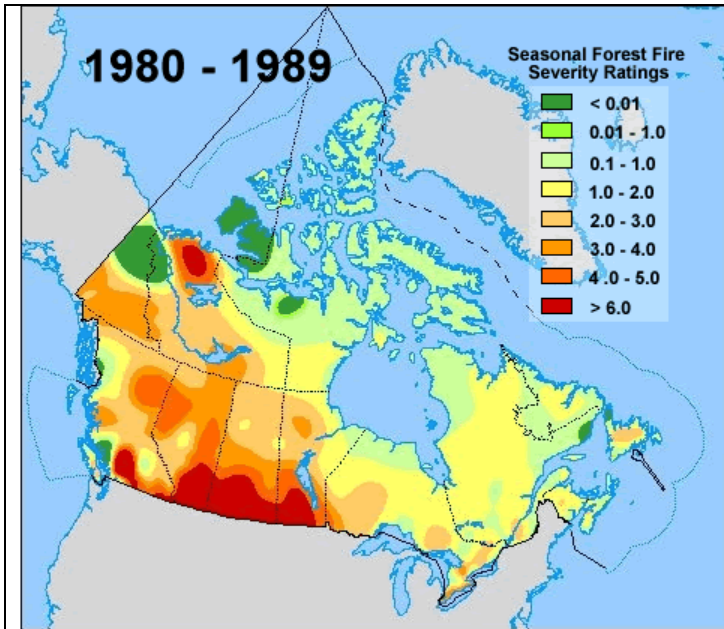
The forest fire maps for the three time periods demonstrate the same general spatial pattern in terms of the fire severity level. Historically, the regions having the most significant forest fire activity in Canada have been in west-central Canada. However, the areas with high sensitivity to forest fire are expected to expand geographically through time.

- ▶ As shown in the map for the period 1980 to 1989, the areas with the highest forest fire danger levels were in the southern Prairies, southern Ontario and the north-western parts of the North West Territories.
- ▶ For the period 2050 to 2059, the map shows that the projected distribution of forest fire severity levels are similar to the 1980 to 1989 map, with a general geographic expansion. The areas with high severity ratings are projected to expand into the central Prairies, southern British Columbia and south-western Yukon.
- ▶ For the period 2090 to 2099, the areas sensitive to forest fire are further expanded in the central and northern parts of the Prairies, southern and eastern British Columbia, southern-central Yukon, and the north-western Ontario.

Data Source

This map was prepared by Brian Stocks and his colleagues at the Canadian Forest Service, Natural Resources Canada.

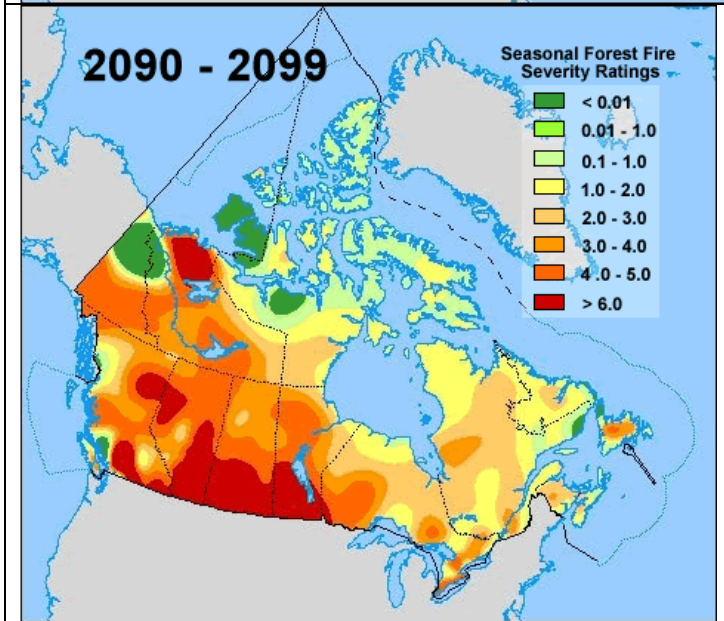
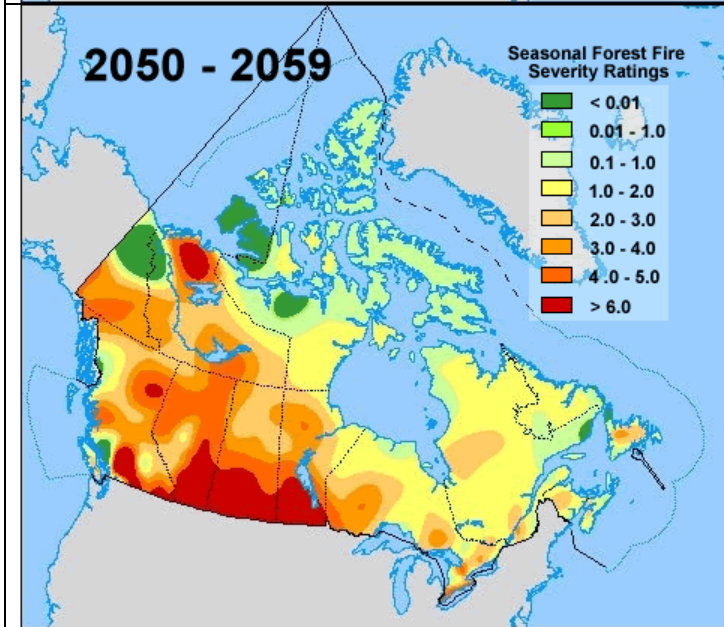
Date Modified: 2004-03-26



Reference:

http://atlas.nrcan.gc.ca/site/english/maps/climate_change/full_forest_fire_animation.gif/image_view

Accessed December 15, 2010





The Atlas of Canada

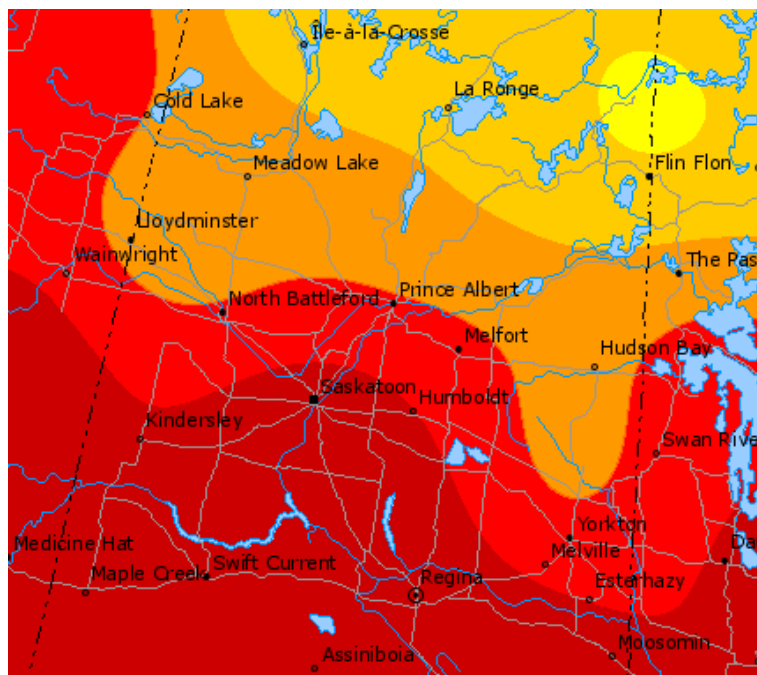


[Print Map](#)

[Return to Map](#)



Forest Fire Severity Level, 1980 to 1989



0 76 152 228 304 km

Seasonal Severity Ratings for Forest Fires, 1980-1989

- < 0.01
- 0.01 - 0.1
- 0.1 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 6.0
- > 6.0

Capitals (Canada)

- ★ National
- ⊙ Provincial and Territorial

Populated Places

- 1 - 4999
- 5 000 - 49 999
- 50 000 - 99 999
- 100 000 and greater

International Boundaries

- EEZ (200 mile)
- Canada / Kalaallit Nunaat dividing line
- International

Provincial and Territorial Boundaries

- Provincial / Territorial

Road network

- Road network
- Ferry route

Drainage

- Coastline / River / Lake shoreline

Water areas

- Water Area

Regions outside Canada

- Land Area

Abstract:

The areas with the highest forest fire danger levels for the period of 1980 to 1989 were in the southern Prairies, southern British Columbia and the north-western parts of the Northwest Territories. The Seasonal Severity Rating, which is a measure of fire danger conditions over a complete fire season, has a relative scale with values above 6 being extreme.



© Her Majesty the Queen in Right of Canada, 2010.



Natural Resources
Canada

Ressources naturelles
Canada

Canada

The Atlas of Canada

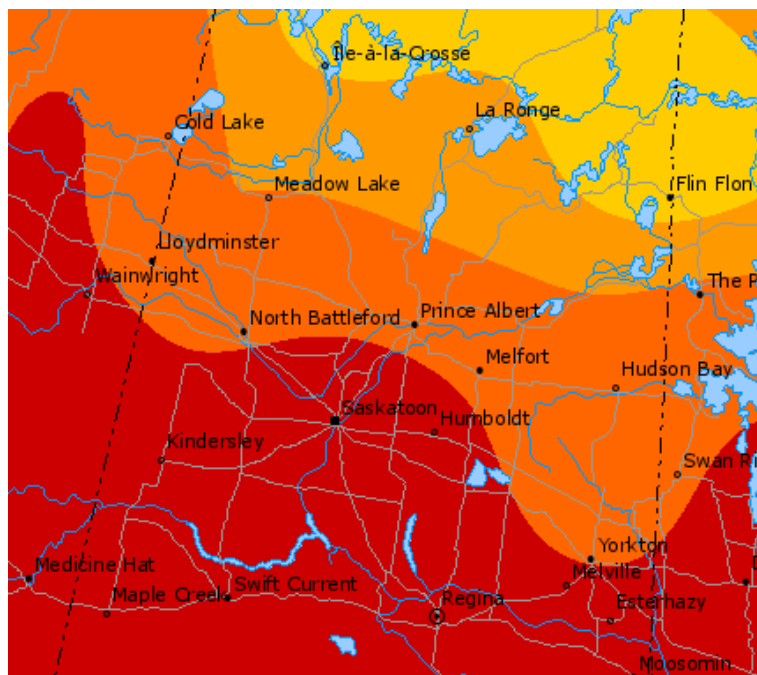


[Print Map](#)

[Return to Map](#)



Projected Forest Fire Severity Level, 2050 to 2059



0 76 152 228 304 km

Seasonal Severity Ratings for Forest Fires, 2050-2059

- < 0.01
- 0.01 - 0.1
- 0.1 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 6.0
- > 6.0

Capitals (Canada)

- ★ National
- ⊙ Provincial and Territorial

Populated Places

- 1 - 4999
- 5 000 - 49 999
- 50 000 - 99 999
- 100 000 and greater

International Boundaries

- ⋯ EEZ (200 mile)
- ⋯ Canada / Kalaallit Nunaat dividing line
- ⋯ International

Provincial and Territorial Boundaries

- ⋯ Provincial / Territorial

Road network

- ⋯ Road network
- ⋯ Ferry route

Drainage

- ⋯ Coastline / River / Lake shoreline

Water areas

- Water Area

Regions outside Canada

- Land Area

Abstract:

Areas with high severity levels are projected to expand into the central and northern parts of the Prairies, north-eastern British Columbia, and south-central Yukon. The projections for the forest fire danger levels were based with relation to global warming for the period of 2050 to 2059. The warming impacts may include more frequent and severe fires, shorter growth periods between fires, proportionally younger stands, and a decrease in the carbon storage of northern Canadian forests. The Seasonal Severity Rating, which is a measure of fire danger conditions over a complete fire season, has a relative scale with values above 6 being extreme.



© Her Majesty the Queen in Right of Canada, 2010.



Natural Resources
Canada

Ressources naturelles
Canada

Canada

The Atlas of Canada

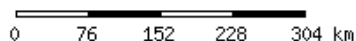
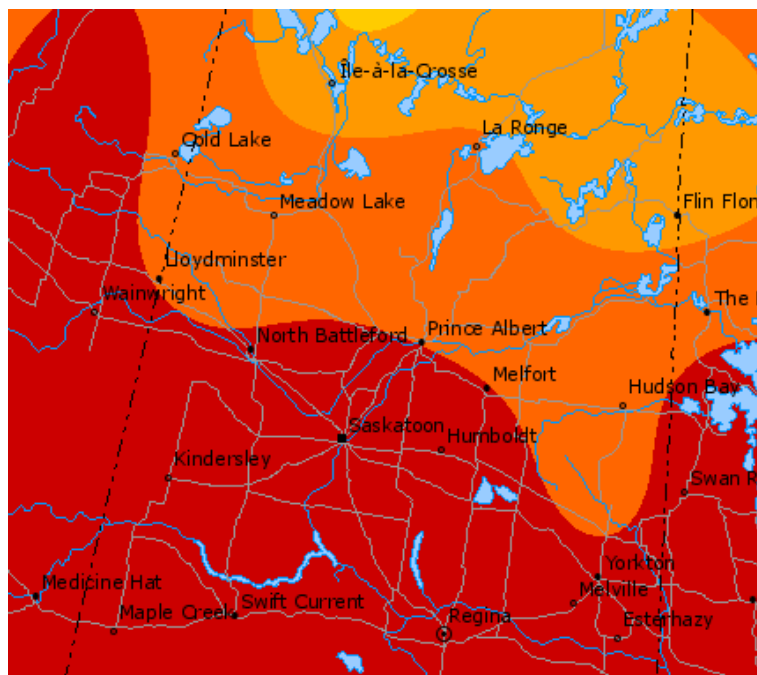


[Print Map](#)

[Return to Map](#)



Projected Forest Fire Severity Level, 2090 to 2099



Abstract:

Areas with high severity levels are projected to expand into the central and northern parts of the Prairies, north-eastern British Columbia, south-central Yukon, and north-western Ontario. The projections for the forest fire danger levels were based with relation to global warming for the period of 2090 to 2099. The warming impacts may include more frequent and severe fires, shorter growth periods between fires, proportionally younger stands, and a decrease in the carbon storage of northern Canadian forests. The Seasonal Severity Rating, which is a measure of fire danger conditions over a complete fire season, has a relative scale with values above 6 being extreme.



© Her Majesty the Queen in Right of Canada, 2010.

Seasonal Severity Ratings for Forest Fires, 2090-2099

- < 0.01
- 0.01 - 0.1
- 0.1 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 6.0
- > 6.0

Capitals (Canada)

- ★ National
- ⊙ Provincial and Territorial

Populated Places

- 1 - 4999
- 5 000 - 49 999
- 50 000 - 99 999
- 100 000 and greater

International Boundaries

- EEZ (200 mile)
- Canada / Kalaallit Nunaat dividing line
- International

Provincial and Territorial Boundaries

- Provincial / Territorial

Road network

- Road network
- Ferry route

Drainage

- Coastline / River / Lake shoreline

Water areas

- Water Area

Regions outside Canada

- Land Area