
# Canadian wildfire smoke forecasting using BlueSky Playground

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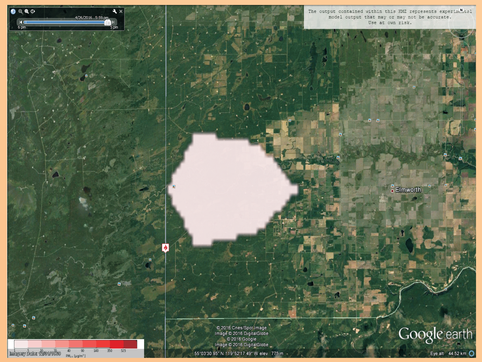
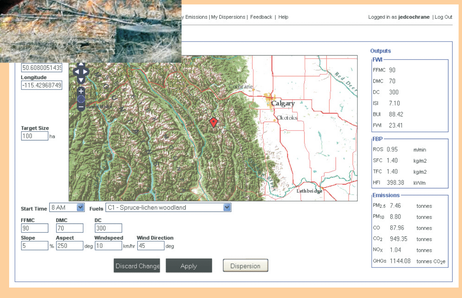



## INTRODUCTION

**BlueSky Canada Playground** is an interactive smoke forecast tool used by fire management agencies to predict possible smoke emissions and dispersion from prescribed fire operations.




Canadian Playground

**BlueSky Canada Playground** is available through
http://firesmoke.ca/
**BlueSky Canada Playground User guide** can be found at:
http://firesmoke.ca/playground/assets/docs/canada/UserGuide.pdf

## METHODOLOGY

**BlueSky Canada Playground** predicts how much smoke is generated and where the plume will spread.




**Fire information**: captures various types of fires including prescribed, piles and wildland fires.

**Fuel loading**: uses the fuel types from the **Canadian Forest Fire Danger Rating System (CFFDRS)** for prescribed fires and wildland fires.

**Consumption**: calculates total fuel consumption based on **Canadian Forest Fire Weather Index (FWI) System** values and **Canadian Forest Fire Behaviour Prediction (FBP) System** fuel types.

**Emission**: uses bulk densities and the fire type (surface, crown, smoldering) based on the **FBP** system; hourly emissions are calculated by chemical species.

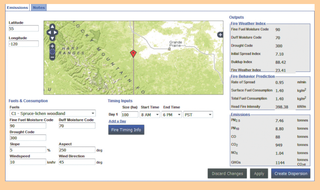
**Meteorology**: based on **BlueSky Canada** forecasts produced at UBC using Weather Research and Forecasting (WRF) for national and regional domains

**Dispersion/trajectory**: uses the **HYSPLIT** model to project the evolution of the smoke plume over the landscape; uses a hybrid approach of Lagrangian and Eulerian techniques for computing pollutant air concentrations.

## INPUTS

**Step 1.**

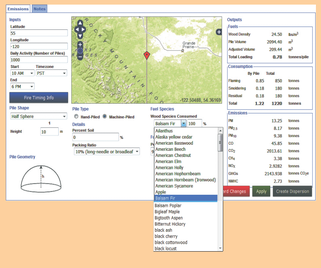
Enter fire type and location

**Step 2.**

**Wildfire/Prescribed Burns**: enter date, fuel type, size and fire weather indices

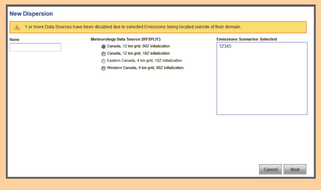
***or***



**Pile Burns**: enter time/date, pile characteristics and wood species

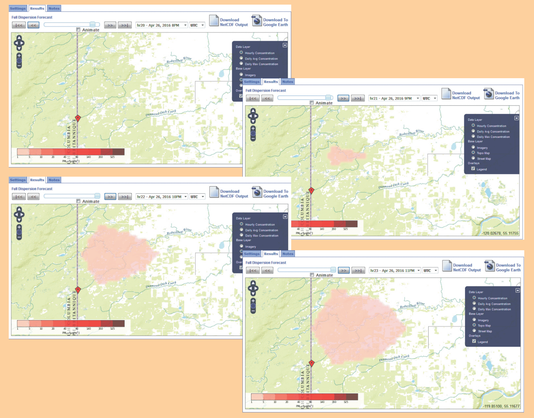
**Step 3.**

Choose the meteorological model domain to use for the dispersion.




## RESULTS

**BlueSky Canada Playground** predicts hourly ground concentrations for the next 48 hours.



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