

Canadian Forest Fire Danger Rating System Indices

The **Fine Fuel Moisture Code (FFMC)** is a numeric rating of the moisture content of litter and other cured fine fuels. This code is an indicator of the relative ease of ignition and the flammability of fine fuel.

The **Duff Moisture Code (DMC)** is a numeric rating of the average moisture content of loosely compacted organic layers of moderate depth. This code gives an indication of fuel consumption in moderate duff layers and medium-size woody material. DMC measures roughly the first 3" of organic material below the fine fuels.

The **Drought Code (DC)** is a numeric rating of the average moisture content of deep, compact organic layers. This code is a useful indicator of seasonal drought effects on forest fuels and the amount of smoldering in deep duff layers and large logs. DC of 300 is the start of serious mop-up. DC measures 3" and lower into the ground. When comparing CFFDRS to NFDRS think of DC as KBDI.

The **Initial Spread Index (ISI)** is a numeric rating of the expected rate of fire spread. It combines the effects of wind and the FFMC on rate of spread without the influence of variable quantities of fuel.

The **Buildup Index (BUI)** is a numeric rating of the total amount of fuel available for combustion. It combines the DMC and the DC.

The **Fire Weather Index (FWI)** is a numeric rating of fire intensity. It combines the Initial Spread Index and the Buildup Index. It is suitable as a general index of fire danger throughout the forested areas of Canada.

The **Daily Severity Rating (DSR)** is a numeric rating of the difficulty of controlling fires. It is based on the Fire Weather Index but more accurately reflects the expected efforts required for fire suppression.

CFFDRS Fire Behavior Prediction Values

Fine Fuel Moisture Code/FFMC

- 75 Surface fire – spreads some
- 80 Surface fire – spreads more continuous
- 90 High probability of spot fires
- 91 Onset of extreme fire behavior

Duff Moisture Code/DMC

- 20 Duff available for ignition
- 30 Fires moderately intense
- 50 Extreme fire behavior
- 150 Loss of available moisture

Drought Code/DC

- 15 Deep organics near saturation
- 300 Onset of smoldering combustion
- 500 Sustained deep smoldering

Initial Spread Index/ISI

- 0 No spread
- 10 Threshold for crowning
- 20 Extreme fire behavior
- 50 Rarely exceeds this value

Build-Up Index/BUI

- 30 Deeper, heavier fuels start to become involved
- 60 Potential for increased mop-up, safety concerns
- 90 Many fires have potential to escape IA

Fire Weather Index/FWI

- 3 Fire spreads
- 25 Onset of potentially extreme fire behavior
- 50+ Disaster fires