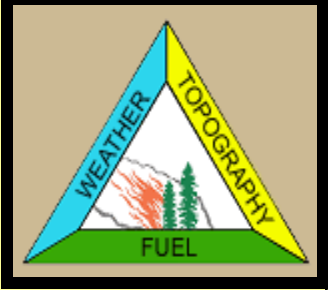




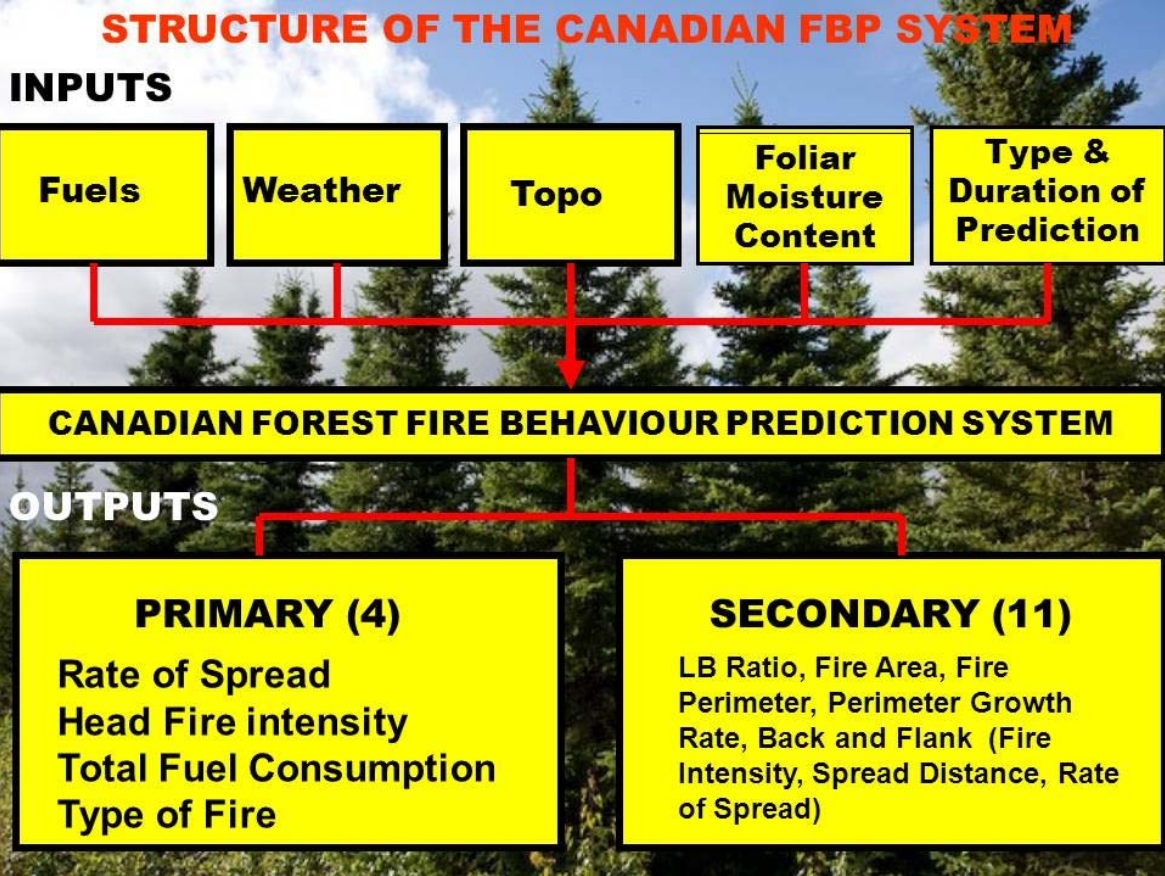
TOPIC 15A

Canadian Forest Fire Behaviour Prediction (FBP) System



The Canadian Forest Fire Behaviour Prediction (FBP) System is a subsystem of the larger Canadian Forest Fire Danger Rating System, which also includes the Canadian Forest Fire Weather Index (FWI) System. The FBP System provides quantitative estimates of head fire spread rate, fuel consumption, fire intensity, and fire description; with the aid of an elliptical fire growth model, it gives estimates of fire area, perimeter, perimeter growth rate, and flank and back fire behaviour.

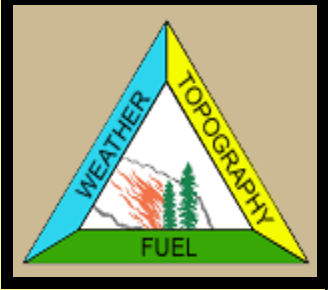
Sixteen discrete fuel types are included, covering most major boreal forest fuel types in Canada. Fire behaviour models for spread rate and fuel consumption were derived from a database of over 400 experimental, wild, and prescribed fire observations. The FBP System is intended to supplement the experiences and judgment of operational fire managers.





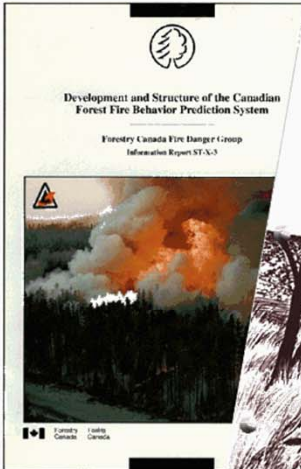
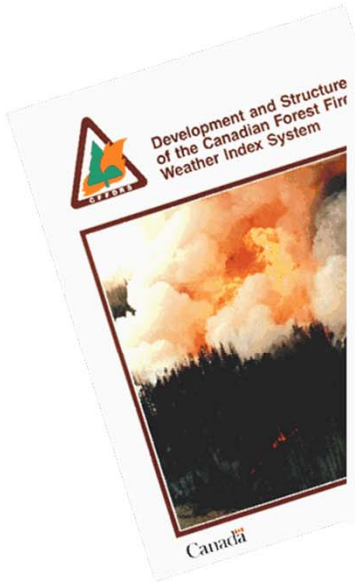
TOPIC 15B

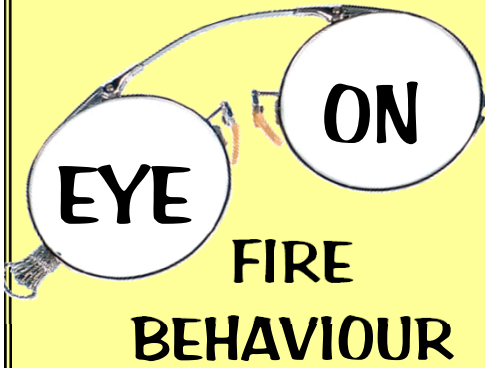
Canadian Forest Fire Behaviour Prediction (FBP) System



FBP System inputs are drawn from the three major group of variables affecting fire behaviour; fuels, weather, and topography. Other inputs, such as latitude/longitude, season (date), and elapsed time (from ignition), are included to estimate fuel condition or spread distance. The FBP System now predicts:

- ✓ The effect of variable fuel consumption on spread rate,
- ✓ Fuel consumption itself, to permit computation of intensity,
- ✓ The onset of crowning
- ✓ The transition from surface fire to crown fire, and
- ✓ The behaviour of the crown fire.





TOPIC 15C

Canadian Forest Fire Behaviour Prediction (FBP) System



FBP System Primary Outputs:

- ✓ Rate of Spread
- ✓ Fuel Consumption
- ✓ Head Fire Intensity
- ✓ Fire Description
 - ✓ Crown Fraction Burned
 - ✓ Fire Type

FBP System Secondary Outputs:

- ✓ Head, Flank and Back Fire Spread Distances
- ✓ Head, Flank and Back Fire Rates of Spread
- ✓ Flank and Back Fire Intensities
- ✓ Elliptical Fire Area and Perimeter
- ✓ Rate of Perimeter Growth
- ✓ Length to Breadth Ratio

