



Examples of  
**FUEL TYPES**  
in the  
**CANADIAN FOREST  
FIRE BEHAVIOR  
PREDICTION (FBP) SYSTEM**



Forestry  
Canada Forêts  
Canada

Canada

The Canadian Forest Fire Behavior Prediction (FBP) System models rate of spread, fuel consumption, fire intensity, and fire growth for 16 national bench mark fuel types. A detailed description of the FBP System fuel types can be found in Forestry Canada Information Report ST-X-3, Development and Structure of the Canadian Forest Fire Behavior Prediction System (Forestry Canada Fire Danger Group 1992), which is available from the Petawawa national Forestry Institute, Chalk River, Ontario.

The top or left photo of each pair is considered the bench mark or most representative example of the stands used to develop the FBP System. The second photo illustrates typical variations in stand structure and composition to indicate the range of conditions to which each fuel type is applicable. The description of fuel type underneath each example follows the standard conditions used in the FBP System (i.e., fuel load, percent composition, and age). Important point on the fuel type's adjustment and applicability are also noted.

The pole-mounted logo of the Canadian Forest Fire Danger Rating System (CFFDRS) found in most of the photos was used for scale. The sign is 30 x 30 cm and the alternate marking on the pole are 30 cm in length. The quadrat used in the Open Fuel Type Group closeup photos is 1 x 1 m with alternate marking 30 cm in length.

Photos were supplied by B.J. Stocks, B.D. Lawson, C.E. Van Wagner, K.G. Hirsch, and W.J. De Groot

*W.J. De Groot*

1993



# M-1

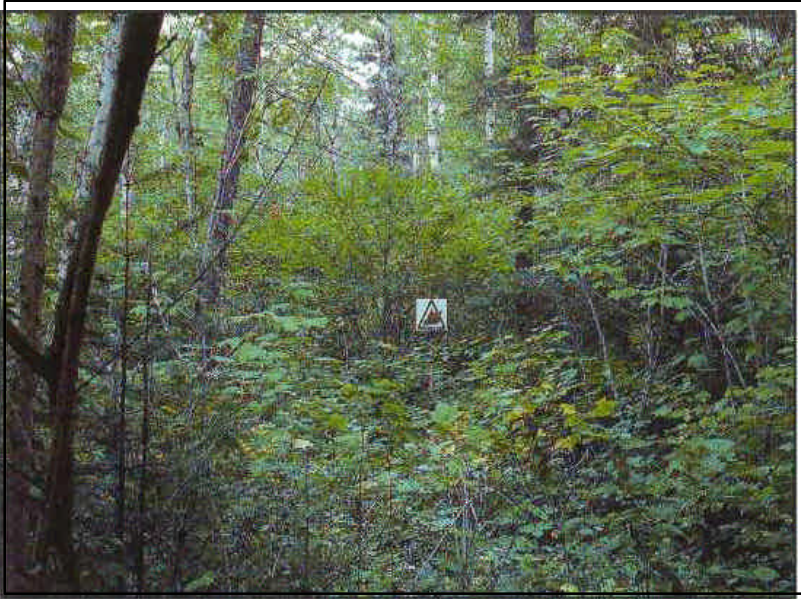
## Boreal Mixedwood -- Leafless



Mixed stands of 25% coniferous and 75% deciduous (left), and 75% coniferous and 25% deciduous (right) boreal species in the leafless stage (same views of M-1 stands). The FBP System accounts for variable softwood/hardwood composition.

## M-2

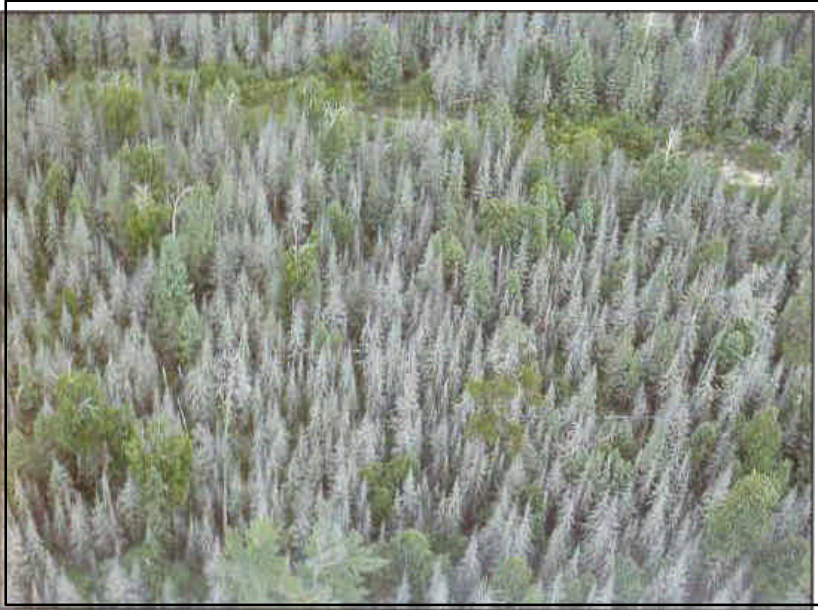
### Boreal Mixedwood -- Green



Mixed stands of 25% coniferous and 75% deciduous (left), and 75% coniferous and 25% deciduous (right) boreal species in the green stage (same views of M-1 stands). The FBP System accounts for variable softwood/hardwood composition.

## M-3

### Dead Balsam Fire/Mixedwood -- Leafless



Aerial (left) and ground (right) views of mixed stands with 60% dead balsam fir and 40% boreal mixedwood species in the leafless stage. The FBP System accounts for balsam fir content, but this fuel type is not applicable to pure balsam fir stands.

## M-4

### Dead Balsam Fir/Mixedwood -- Green



Mixed stands (left and right) with 60% dead balsam fir and 40% boreal mixedwood species in the green stage. The FBP System accounts for balsam fir content, but this fuel type is not applicable to pure balsam fir stands.

## C-1

### Spruce-Lichen Woodland



Open black spruce (top and bottom) stands with lichen understory

## C-2

### Boreal Spruce



Upland black spruce (top) and lowland black spruce (bottom) stands. This fuel type includes white and Engelmann spruce but does not include spruce-sphagnum bog.

## C-3

### Mature Jack or Lodgepole Pine



Fully stocked mature jack pine stands (top and bottom). This fuel type is also applicable to fully stocked lodgepole pine stands.

## C-4

### Immature Jack or Lodgepole Pine



Densely stocked immature jack pine (top) and lodgepole pine (bottom) stands.



## C-5

### Red and White Pine



Mature red and white pine  
(top and bottom) stands.

## C-6

### Conifer Plantation



Red pine plantations (top and bottom). This fuel type is not applicable to all conifer plantations with closed crown canopy and no understory or shrub layer. The FBP System accounts for variations in height to live crown.

## C-7

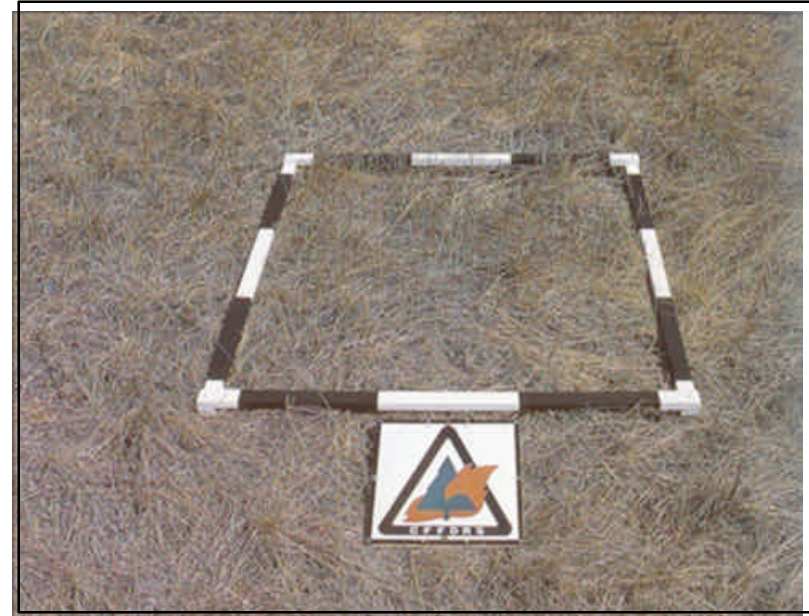
### Ponderosa Pine/Douglas Fir



Mixed stands (left and right) of uneven-aged ponderosa pine and Douglas-fir.

# 0-1a

## Matted Grass



Cured grass (left and right) in matted (early spring) condition with a fuel load of  $0.3 \text{ kg/m}^2$  (closeup view in quadrat photo on right). The FBP System accounts for fraction cured and fuel load.

## 0-1b Standing Grass



Standing cured grass (left and right) with a fuel load of  $0.3 \text{ kg/m}^2$  (closeup view in quadrat photo on right). The FBP System accounts for fraction cured and fuel load.

# D-1

## Leafless Aspen



Pure semimature trembling aspen (left and right) stands in the leafless stage.



**S-1**

**Jack or Lodgepole Pine Slash**

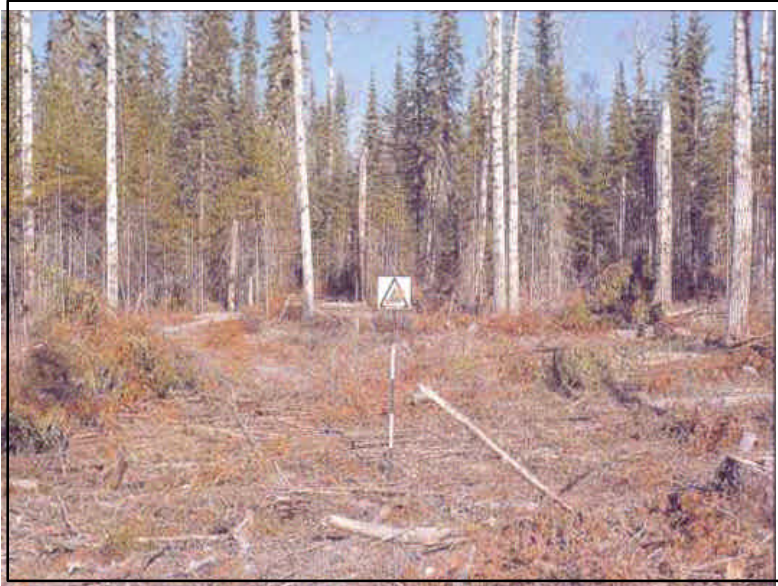


Jack pine (left and right) slash, 1-2 seasons old.



## S-2

### White Spruce/Balsam Slash



White spruce-balsam fir (left) and white spruce-subalpine fir (right) slash, 1-2 seasons old.

## S-3

### Coastal Cedar/Hemlock/Douglas-Fir Slash



Western red cedar, western hemlock, and Douglas-fir (left and right) slash, 1 season old. This fuel type is also applicable to B.C. interior wet belt cedar-hemlock slash.



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