

Anderson 13 Fuel Models

give a table of anderson 13 fuels

The **Anderson 13 fuel models** (also known as the **13 Fire Behavior Fuel Models**) were developed by Hal Anderson in 1982 for use in fire behavior modeling. They classify fuels into **grass, shrub, timber, and slash categories** based on fuel characteristics.

Here’s a table summarizing the **Anderson 13 fuel models**:

Fuel Model	Fuel Type	Description
1	Short Grass	Fine, fast-burning grass (e.g., cured grasslands, open fields)
2	Timber with Grass	Grassy understory beneath a tree canopy (e.g., open pine stands with grass)
3	Tall Grass	Heavy, continuous grass fuels (e.g., tall prairie grasses, marshes)
4	Chaparral	Dense, brush-dominated fuels (e.g., mature chaparral, thick shrubs)
5	Brush	Moderate brush cover with litter (e.g., scrub oak, young chaparral)
6	Dormant Brush	Shrub fuels with low to moderate dead fuel load (e.g., sagebrush, small trees)
7	Southern Rough	Dense palmetto/gallberry shrubs (e.g., Southern U.S. rough fuels)
8	Closed Timber Litter	Compact leaf litter with little understory (e.g., hardwood or conifer forest floor)
9	Hardwood Litter	Light, slightly more active leaf litter (e.g., oak-hickory, aspen)
10	Timber with Heavy Downed Fuel	Heavy deadfall, logs, and deep litter (e.g., old-growth forests, logging slash)
11	Light Slash	Light logging slash (e.g., thinned areas with small branches, residual debris)
12	Medium Slash	Moderate logging slash, larger branches and logs
13	Heavy Slash	Heavy logging debris with deep fuel beds

These models are widely used in **wildfire prediction systems** such as **BEHAVE, FARSITE, and FlamMap** to estimate fire behavior based on fuel characteristics.

Would you like details on a specific fuel model or its application?

now do a table of canadian fules and add a column that is the closest anderson 13

The **Canadian Forest Fire Behavior Prediction (FBP) System** classifies fuels into **16 distinct fuel types**. Below is a table matching them with the **closest Anderson 13 fuel model**:

Fuel Code	Canadian Fuel Type	Description	Closest Anderson 13 Model
C-1	Spruce-Lichen Woodland	Sparse black spruce with lichen ground cover, low intensity	8 (Closed Timber Litter)
C-2	Boreal Spruce	Dense black spruce with moderate to heavy understory, high intensity	10 (Timber with Heavy Downed Fuel)
C-3	Mature Jack or Lodgepole Pine	Conifer stand with moderate understory, crown fire potential	10 (Timber with Heavy Downed Fuel)
C-4	Immature Jack or Lodgepole Pine	Younger pine stands, lower canopy, fast-spreading	2 (Timber with Grass)
C-5	Red and White Pine	More open pine stands, lower fire intensity than C-3	8 (Closed Timber Litter)
C-6	Conifer Plantation	Managed or planted conifer stands, moderate fire behavior	8 (Closed Timber Litter)
C-7	Ponderosa Pine/Douglas-fir	Open stands with needle litter, lower intensity	9 (Hardwood Litter)
D-1	Leafless Aspen	Deciduous stand with low fire risk in leafless condition	9 (Hardwood Litter)
D-2	Green Aspen	Deciduous stand, higher risk when leaves are on	2 (Timber with Grass)
M-1	Boreal Mixedwood (Leafless)	Mixed conifer and deciduous, moderate fuel load	9 (Hardwood Litter)
M-2	Boreal Mixedwood (Green)	Mixed stand, higher spread potential when leaves are present	2 (Timber with Grass)

Fuel Code	Canadian Fuel Type	Description	Closest Anderson 13 Model
M-3	Dead Balsam Fir Mixedwood	Higher conifer content, moderate fuel load	10 (Timber with Heavy Downed Fuel)
M-4	Dead Balsam Fir Mixedwood (Heavy)	High conifer density, increased fire risk	10 (Timber with Heavy Downed Fuel)
S-1	Jack or Lodgepole Pine Slash	Light conifer slash from logging operations	11 (Light Slash)
S-2	White Spruce/Balsam Slash	Moderate conifer slash with larger fuel loads	12 (Medium Slash)
S-3	Coastal Cedar/Hemlock/Douglas-fir Slash	Heavy logging slash in coastal regions	13 (Heavy Slash)
O-1a	Matted Grass	Fine grass fuels, matted, less aerated	1 (Short Grass)
O-1b	Standing Grass	Tall, aerated grass fuels, spreads rapidly	3 (Tall Grass)

This mapping provides an approximation between the **Canadian FBP fuel types** and **Anderson's 13 fuel models**, but real-world conditions may vary.

Would you like more details on any specific fuel type?