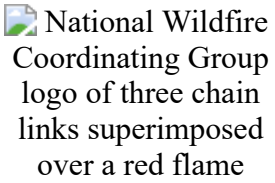
National Wildfire Coordinating Group logo of three chain links superimposed over a red flame

National Wildfire Coordinating Group (NWCG)

Data Element Standard

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National Fire Danger Rating System Fuel Model

Standard Name	National Fire Danger Rating System Fuel Model
Identifier	NFDRS Fuel Model
Version	1.0
Status, Date	Approved, 7/2/2009
Validation	Standard last validated: 7/6/2009, next validation: 12/31/2013
Description	This data standard provides a standard code and definition for identifying the NFDRS Fuel Model representing the predominant fuel bed across a fire area.
Stewardship	Fire Environment Committee; Fire Reporting Subcommittee
System of Record	National Fire Danger Rating System
Custodian	NWCG Fire Environment Committee; Fire Danger Subcommittee

NWCG data standards provide a specification that enables the common usage of data across wildland fire information systems. In addition to the information above, this data standard consists of the following:

- Attribute definitions - the rules needed to ensure the data format and data usage are standardized across automated systems.
- Standard data values - the actual standardized data used by the wildland fire community, often provided as a pick-list or look-up table.
- Change process - the procedures describing how to make changes to the standard or the standard data values.
- Comment process - procedures for submitting comments about this data standard.

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Attribute definitions

A data element standard includes one or more data attribute definitions. This standard defines 1 attribute.

Attribute #1

Attribute Name	National Fire Danger Rating System Fuel Model Code	
Abbreviation	NFDRS Fuel Model Code	
Description	A code that corresponds to one of the National Fire Danger Rating System (NFDRS) fuel models representing the predominant fuel bed properties contributing towards fire spread across the fire area. Fuel Model is defined as: A simulated fuel complex for which all the fuel descriptors required by the mathematical fire spread model have been supplied.	
	Data Exchange Standards	**Data Entry Guidelines**
Maximum Length	1	1
Minimum Length	1	1
Data Type	Character	Alphabetic
Case Sensitivity	Upper	Upper
Format	X	A
Example	B	B
Business Rules	The NFDRS Fuel Model selection is to be based on the NFDRS Fuel Model Key included in Appendix B of INT-39 unless local knowledge indicates another NFDRS Fuel Model should be used to better represent the fuel bed properties contributing towards fire spread across the fire area.	
Source reference	USDA Forest Service General Technical Report INT-39 "The National Fire Danger Rating System - 1978"	

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Standard data values

Standard data values are provided when a data attribute has a pre-determined set of terms, codes, or numbers that must be used in order for the data to be valid. The purpose of standard data values is to ensure consistency and accuracy within a system and across multiple systems.

The following standard data values are also available for download as an MS Excel (.xls) file.

March 17, 2009

The following list provides NWCG's standard data values for this data attribute:

Value	Description
A	Western grasslands vegetated by annual grasses and forbs. Brush or trees may be present but are very sparse, occupying less than one-third of the area.
B	Mature, dense fields of brush six feet or more in height. This model is for California mixed chaparral, generally 30 years or older or for the New Jersey pine barrens. One-fourth or more of the aerial fuel is dead.
C	Open conifer or hardwood trees where perennial grasses and forbs are the primary ground fuel but there is enough needle

	litter and branchwood present to contribute significantly to the fuel loading.
D	Palmetto-gallberry understory-pine association of the southeast coastal plains. Used in the Southeast because of the high moisture of extinction associated with it.
E	Primary fuel is hardwood leaf litter . Fuel Model E best represents the oak- hickory types and is an acceptable choice for northern hardwoods and mixed forests of the Southeast after leaf fall
F	Represents mature closed chamise stands and oak brush fields of Arizona, Utah and Colorado. Applies to young, closed stands and mature, open stands of California mixed chaparral. Also applies to open stands of pinyon-juniper with ground fuels present.
G	Used for dense, sometimes unhealthy, conifer stands where there is a heavy accumulation of litter and downed woody material (much of which is > 3" in diameter) on the forest floor. Duff and litter are deep. Undergrowth is variable.
H	Healthy short needle conifer stands (white pine, spruce, larch and fir) are represented. Sparse undergrowth and thin layer of ground fuels. Fires typically spread slowly except in areas where concentrations of down woody material exist.
I	Clearcut conifer slash where total loading of material less than 6 inches in diameter exceeds 25 tons/acre. After slash settles when needles and twigs fall from branches, Fuel Model I will overrate fire potential.
J	Clearcut conifer slash or heavily thinned conifer stands where total loading of material less than 6 inches in diameter is less than 25 tons/acre.
K	Slash fuels from light thinnings and partial cuts in conifer stands. Typically the slash is scattered about under an overstory. This model also applies to hardwood slash and southern pine clearcuts where all fuels are less than 15 tons/acre.
L	Western perennial grasslands where principal species are courser and the loadings are heavier than in NFDRS Fuel Model A. Shrubs and trees occupy less than one-third of the area. Use NFDRS Fuel Model T for sagebrush, if appropriate.
N	Sawgrass prairies of south Florida. It may be used in other marsh situations where fuels are coarse and reed-like. This model assumes one third of the aerial portion of the plants are dead.
O	Dense, brush like fuels of the Southeast. Fuels are greater than 6 feet tall, almost entirely living (except for litter layer) as opposed to Fuel Model B. Foliage burns readily except during active growing season. Typically pine overstory exists.
P	Closed, thrifty stands of long needled southern pine. A 2 - 4 inch layer of lightly compacted needle litter is the primary fuel. The density of the canopy precludes more than a scattering of shrubs, grass or branchwood.

Q	Dense upland Alaskan black spruce stands with openings. Forest floor is deep layer of moss and lichen with some needle litter. Fire easily climbs into tree crowns. Can also be used for Jack Pine stands in the Lake States.
R	Hardwood areas after canopies leaf out in the spring. This model is provided as an "off fire season" substitute for Fuel Model E. Use in summer in all hardwood and mixed conifer stands where more than half the overstory is deciduous.
S	Alaskan or alpine tundra on relatively well drained sites. Grass and low shrubs are often present, but the principal fuel is a deep layer of lichens or moss. Fires do not spread fast or intensely, but are difficult to extinguish.
T	Sagebrush - grass fuels of the Great Basin and Intermountain West. Shrubs must occupy at least one-third of the site or Fuel Model A or L should be used. Shrubs burn easily and are not dense enough to shade out grass and other herbaceous plants.
U	Closed stands of western long needled pines where ground fuels are primarily litter and small branchwood. Grass and shrubs are absent except in natural openings. Used for ponderosa, Jeffrey, sugar pine, and red pine stands of the Lake States.

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Change process

Requests for the revision of, or changes to this standard may be submitted on the following Request document (fillable/savable PDF). Supplemental information about the standard can be included on a Data Element Standard worksheet (fillable/savable PDF), or a Geospatial Data Layer Standard worksheet (fillable/savable PDF).

Requests should be emailed to the Data Standards and Terminology Subcommittee at BLM_FA_NWCG_Data@blm.gov.

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Comment process

Comments on this NWCG data standard may be submitted on a comment sheet.

Comments should be emailed to the Data Standards and Terminology Subcommittee at BLM_FA_NWCG_Data@blm.gov.

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