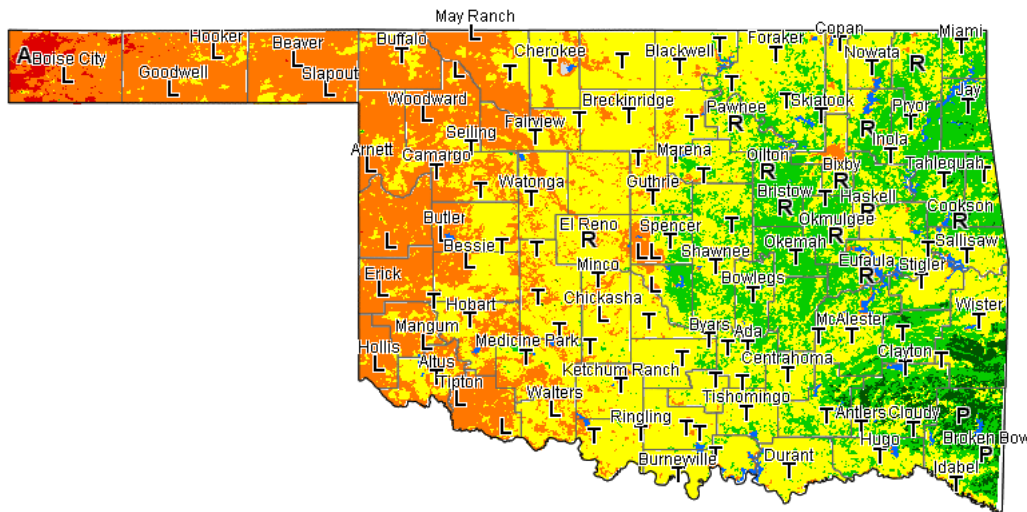


Working with Fuel Models in OK-FIRE

Every 1-km pixel of land in Oklahoma has been assigned one of five NFDRS fuel models. These default models cannot be changed for these pixels and **are the fuel models used in all map products** featuring burning index (BI), spread component (SC), energy release component (ERC), and ignition component (IC).

The default model for any Mesonet site is the fuel model assigned to the 1-km pixel in which the Mesonet tower is located. However, this fuel model may not always be representative of the type of fuel complex you wish to model. A map of these station default fuel models can be found by going to the FIRE section of OK-FIRE and clicking on “Default Fuel Models Map”:



You can also find a table of the default fuel models for every Mesonet site by going to the Product Information section of the web site and selecting “Default Fuel Models for Mesonet Sites”.

The five default fuel models consist of three grassy models and two forest models:

Model A (red) - Western annual grasses

Model L (orange) - Western perennial grasses

Model T (yellow) - Tallgrass with brush

Model R (green) - Hardwood forest

Model P (dark green) - Southern pine forest

These models are dynamic and change the 1-hour dead, live herbaceous, and live deciduous woody fuel loads throughout the year according to the satellite-measured greenness of each 1-km pixel. Again, these “default” models are used for all the fire danger map products and cannot be changed.

For chart, table, or data box products, however, the OK-FIRE user now has the ability to select a different fuel model (10 models are available) for a given Mesonet station if the default model is deemed inappropriate. The fuel model currently being used by the fire danger model for that station is called the “current” fuel model, while the default model is called the “default” fuel model. The “current” fuel model can be changed; the “default” model stays the same.

The suite of 10 fuel models which is available is as follows:

Grassy Models

A - Western annual grasses

L - Western perennial grasses

T - Tallgrass with brush

N - Sawgrass (*use with caution!*)

Brushy Models

D - Southern rough brush (*use with caution!*)

F - Intermediate brush

Forest Models

G - Forest with heavy downed fuels

P - Southern pine forest

R - Hardwood forest

Slash Model

K - Light slash

The default model at a given Mesonet site can certainly be changed if you want to model a different type of fuel complex than is represented by the default fuel model. For example, if the default model is R (hardwood forest) and you want to model a grassy landscape, you can certainly switch to a grassy fuel model. Likewise if the default model is a grassy model, and you want to model a forest fuel complex (understory fuels), you can switch to a forest fuel model. Fuel models D and N should be used with caution, however, as they were developed for fuels not present in Oklahoma and tend to overpredict fire danger.

There is only ONE place (deliberately chosen) in which to change a station's fuel model and that's via the "Station Fuel Model Options" link in the FIRE section. Notice that a map appears and, for any chosen Mesonet site, you can select a different fuel model by highlighting one of the choices in the drop-down menu in the "Change Current Fuel Model to" section. Then click on "Save Fuel Model". You'll notice that the "Current Fuel Model" listed will change to the fuel model you have just selected. The "Default Fuel Model" always stays the same (this is the model used in the map products). The model you have selected will remain the current fuel model (for chart, table, and data box products) until you change it again to some other fuel model.

In the example below, Eufaula has Model R as its default fuel model. We can change it to Model T by highlighting that model in the pull-down menu and clicking on "Save Fuel Model".

OK-FIRE

WEATHER FIRE SMOKE SATELLITE RADAR AIR QUALITY BURN SITE LINKS

Fuel Model Selection

Click on the map to choose a site.

Station:

Default Fuel Model: R - Hardwood forest (leafed-out canopy)

Current Fuel Model: R - Hardwood forest (leafed-out canopy)

Fuel Model Descriptions

Change Current Fuel Model to:

- A - Western annual grasses
- D - Southern rough brush
- E - Hardwood forest (leafless canopy)
- F - Intermediate brush
- G - Forest with heavy downed fuels
- K - Light slash
- L - Western perennial grasses
- N - Sawgrass
- P - Southern pine forest
- R - Hardwood forest (leafed-out canopy)
- T - Tallgrass with brush**

Save

After clicking “Save Fuel Model”, note how the “Current Fuel Model” now shows Model T as the model that will be used in the chart, table, and data box products. The default fuel model, however, remains as Model R, as default fuel models cannot be changed.

OK-FIRE

WEATHER FIRE SMOKE SATELLITE RADAR AIR QUALITY BURN SITE LINKS

Fuel Model Selection

Click on the map to choose a site.

Station:

Default Fuel Model: R - Hardwood forest (leafed-out canopy)

Current Fuel Model: T - Tallgrass with brush

[Fuel Model Descriptions](#)

Change Current Fuel Model to:

Note also that you can click “Fuel Model Descriptions” on this page and get to a window listing the 10 fuel models, along with separate links describing each fuel model as well as pictures representing the type of fuel complex associated with that model.

[close](#)

Optional NFDRS Fuel Models

The OK-FIRE user has the option to select one of 10 NFDRS fuel models (listed below) for use with any Mesonet site location. Most of these 10 models, with the exception of F, G, and K, are modified versions of the 1988 NFDRS original fuel models; models F, G, and K have not been modified. It is important to understand that there is a **default fuel model** associated with every Mesonet location (and every 1-km pixel of land in Oklahoma) for use in the fire danger **map** products (Burning Index, Spread Component, Energy Release Component, and Ignition Component). These default models stay the same throughout the year and cannot be changed in the map products. There are five default fuel models: A (annual grasses), L (perennial grasses), T (tallgrass with brush), R (hardwood forest), and P (pine forest).

For **chart**, **table**, or **data box** fire danger products, however, a different fuel model can be selected for a given Mesonet site location. This is called the **current fuel model** and will remain the same until changed again by the user. Information on the different fuel models available are listed in the links below.

We urge the user to exercise caution before selecting a fuel model different from any of the five default map models (A, L, T, R, and P). Models D and N, for example, were not developed for fuel complexes in Oklahoma and their use here can be problematic. These models were constructed for the palmetto-gallberry and sawgrass fuel complexes, respectively, in the southeastern United States and because of a high moisture of extinction (30%) these models can often produce extreme fire behavior under most Oklahoma weather conditions (i.e. fire danger will be overrated).

Grassy Models

[A](#)
[L](#)
[N](#)
[I](#)

Brushy Models

[D](#)
[E](#)

Forest Models