

Weather File (.WTR)

The Weather (.WTR) File is a ASCII text file required for any *FARSITE* simulation.

A Weather (.WTR) File contains daily observations on temperature and humidity as well as precipitation that depicts a temporal weather stream. The weather stream greatly oversimplifies actual variation in weather. However, this format is an attempt to limit to a practical level, the amount of weather information required for a simulation.

Each weather file must contain data in the space delimited ASCII format specified below. A generic text editing application such as *Notepad* or *WordPad*, a spreadsheet, or the [FARSITE Editor](#) can be used to create or edit ASCII text files. *FARSITE* also has [Custom Editors](#) for each ASCII text file type found in the "FARSITE Project" dialog box. The Weather (.WTR) File can also be automatically generated using the [Input > Generate from Types \(WTR/WND\)](#) command once you've defined weather/[wind types](#).

You can input up to five weather streams; this feature allows you to approximate some spatial variation in weather (see [Simulate > Modify Map > Weather Monitoring & Grid](#)). If you use multiple weather stations, you must make sure that there is at least some overlap of dates in each file, it will be easier if you use the same starting and ending date for each stream.

All inputs must be integers. Each column must be space delimited (leave a space between columns). *FARSITE* allows weather inputs in English or metric units. The units are selected by inserting the word ENGLISH or METRIC as the first line of the Weather (.WTR) File.

Month Day Precip Hour1 Hour2 Temp1 Temp2 Humid1 Humid2 Elevation rt1 rt2

- ***Precipitation*** is the daily rain amount specified in hundredths of an inch or millimeters (integer).
- ***Hour1*** corresponds to the hour at which the **minimum** temperature was recorded (0-2400).
- ***Hour2*** corresponds to the hour at which the **maximum** temperature was recorded (0-2400).
- ***Temperatures*** (Temp1 is **minimum**; Temp2 is **maximum**) are in degrees Fahrenheit or Celsius (integer).
- ***Humidities*** (Humid1 is **maximum**; Humid2 is **minimum**) are in percent, 0 to 99 (integer).
- ***Elevation*** is in feet or meters above sea level. NOTE: these units (feet or meters) do not have to be the same as the landscape elevation theme (integer).
- ***Precipitation Duration*** is optional with the beginning (***rt1***) and ending (***rt2***) times (0-2400) of the daily rain amount. Only one time period per day is allowed. If these fields are left blank the precipitation amount is assumed to be distributed over the entire 24 hour period.

The weather information in each file is used to interpolate temperature and humidity for hours between the maxima and minima of each day. The daily precipitation amount is evenly distributed through the precipitation duration period. These data are then used to model the variation in dead fuel moisture due to topography and shading. Dead fuel

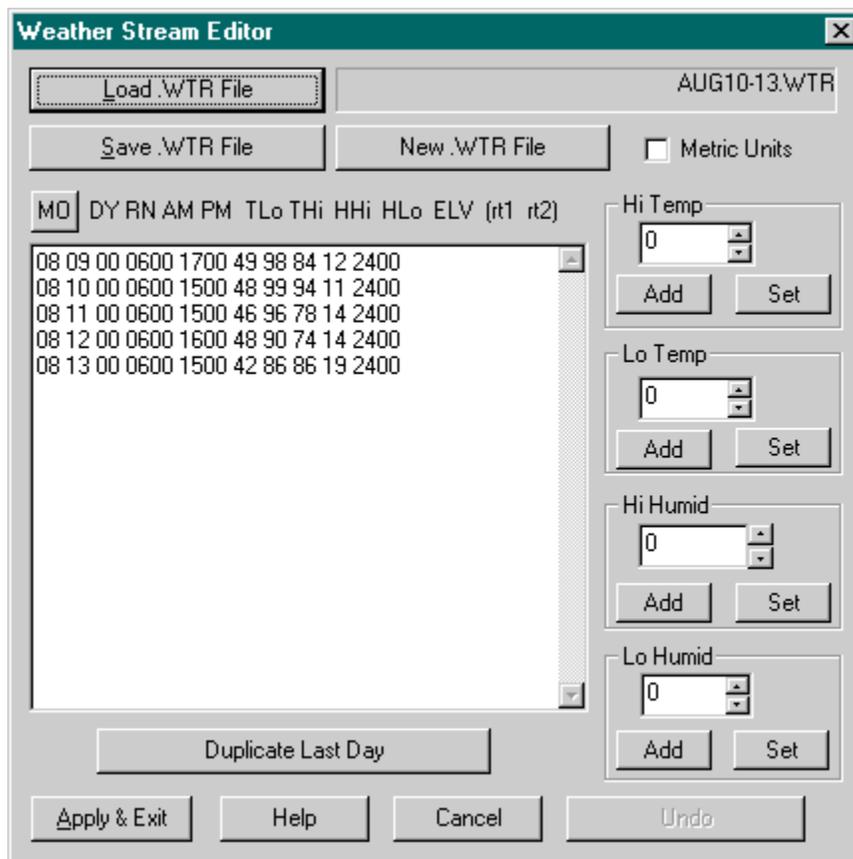
moisture calculations are further described in the [Dead Fuel Moisture Technical Documentation](#) topic.

Example of .WTR File

```
ENGLISH
8 10 00 600 1500 48 99 94 11 2400
8 11 00 600 1500 46 96 78 14 2400
8 12 07 600 1600 48 90 74 14 2400 1830 2000
8 13 00 600 1500 42 86 86 19 2400
```

Using the Weather File Custom Editor

The Weather (.WTR) File Custom Editor is accessed through the ["FARSITE Project" dialog box](#). The  button to the right of the Weather (.WTR) File text box brings up the custom editor for generating or editing a Weather (.WTR) File.



Editing an Existing Weather File

If you currently have a Weather (.WTR) File loaded, this dialog box will allow you to edit the contents of that file.

The Custom Editor allows direct editing in the text box by selecting text with the cursor, using the backspace key, and typing text similar to a text editor.

You can also use a variety of tools in the Custom Editor. First select the range of lines you wish to edit with the cursor. You can use the Add, Mult, and Set buttons to modify the block of lines selected in the text box.

- The Add button adds the value displayed in the spin box to all the values in the currently selected lines.
- The Set button replaces the values in the currently selected lines with the value displayed in the spin box.
- The Mult button multiplies the value displayed in the spin box to all the values in the currently selected lines.

Create a New Weather File

To generate a new Weather (.WTR) File click the New .WTR File button. A single day of weather data is listed in the text box. You can edit this single day's data to make it the first day in your weather stream. Remember the weather and wind streams need to begin one full day before the beginning of your *FARSITE* simulation and take into account any needs for a [conditioning period](#).

Then create additional days with the Duplicate Last Day button which creates a new line with the next day's date. This single new line can be edited or you can create many new lines and edit with the Add, Mult, and Set buttons as shown above.

Finally

Before clicking the Apply & Exit button make sure the modified file has been saved with the Save .WTR File button. If you don't save the changes, they will still be in effect for the current simulation, but they will be lost when the simulation is terminated. However if the Project (.FPJ) File is saved with an unsaved edited Weather (.WTR) File, the Weather (.WTR) File will then be automatically saved also.

Generating Weather Files in Fire Family Plus

Weather (.WTR) Files can be generated from hourly WIMS data using *FireFamily Plus*. From the menu bar in *FireFamily Plus* go to the Weather > Hourly Data Analysis > FarSite Exports command. Make sure you have a *FireFamily Plus* database that contains hourly observations.

Gridded Weather Inputs to *FARSITE*

If you have access to a weather model that produces [gridded](#) weather files of near-surface weather and winds, you can use these in a *FARSITE* simulation. These files will substitute for the above weather files as well as the standard wind file.