

SpatialFOFEM Inputs File

The following switches are used by the SpatialFOFEM class.

Any comment lines in the input file should start with the # character in column 1

Switch: **FCCS_Layer_File**: (Required for Emissions/Consumption)

Purpose: To define the fuel beds and SpatialFOFEM calculation grid

Usage: **FCCS_Layer_File**: X

Where X is a complete path to an GeoTIFF containing the FCCS fuel layer.

Example:

FCCS_Layer_File: C:\Data\FCCS_Fuels.tif

Switch: **FCCS_Layer_Number**: (Optional, default = 1)

Purpose: To indicate which layer of the FCCS_Layer_File is the fuel beds layer

Usage: **FCCS_Layer_Number**: X

Where X is the layer number in the landscape. Layer numbers start at 1. FlamMap landscapes already reserve layers 1 - 8, so this layer must be 9 or greater in a fire behavior landscape GeoTIFF. This switch is optional, the default is

FCCS_Layer_Number: 1

Example:

FCCS_Layer_Number: 9

Indicates layer number 9 in the GeoTIFF landscape is the FCCS fuels layer.

Switch: **FOFEM_Fuelbeds**: (Optional, default uses fof_fccs.csv only)

Purpose: To allow for the use of custom fuel beds

Usage: **FOFEM_Fuelbeds**: X

Where X is an integer representing the number of fuel types listed. Immediately following this line the fuel type definitions occur.

Each FOFEM Fuel must contain the following comma separated values on a single line:
Fuel Number, FOFEM Region1, FOFEM Region2, FOFEM Region3, FOFEM Region4,
Litter Loading, Duff Loading, Duff Depth, Shrub Loading, Herb Loading, 1 Hour Loading,
10 Hour Loading, 100 Hour Loading, 3-6 Sound Loading, 6-9 Sound Loading, 9-20
Sound Loading, 20+ Sound Loading, 3-6 Rotten Loading, 6-9 Rotten Loading, 9-20
Rotten Loading, 20+ Rotten Loading, Crown Foliage Loading, Crown Branches Loading,
FOFEM Cover Group, Flame EF, Duff EF, Smolder 1k EF.

Six additional values are optional. These are alternative consumption equations that can be used for each fuelbed. See FOFEM help for valid equation numbers. The six consumption equation fields are:

Litter equation, Duff load consumption equation, Duff depth reduction equation, MSE equation, Herb equation, Shrub equation.

These consumption equations will only be used if

FOFEM_Use_Consumption_Equations is 1

Fuel Number: Is the code representing the fuel in the landscape layer. Numeric only, > 0

FOFEM Region1: Required, first code for applicable FOFEM region (P, I, N, or S)

FOFEM Region2: May be blank, or one of P, I, N, or S

FOFEM Region3: May be blank, or one of P, I, N, or S

FOFEM Region4: May be blank, or one of P, I, N, or S

Litter Loading: Litter load in tons per acre.

Duff Loading: Duff Loading in tons per acre

Duff Depth: Duff Depth in inches

Shrub Loading: Shrub loading in tons per acre

Herb Loading: Herbaceous fuel loading in tons per acre

1 Hour Loading: 1 Hour fuel loading in tons per acre

10 Hour Loading: 10 Hour fuel loading in tons per acre

100 Hour Loading: 100 Hour Fuel loading in tons per acre

3-6 Sound Loading: 3-6 inch sound fuel loading in tons per acre

6-9 Sound Loading: 6-9 inch sound fuel loading in tons per acre

9-20 Sound Loading: 9-20 inch sound fuel loading in tons per acre

20+ Sound Loading: 20+ inch sound fuel loading in tons per acre

3-6 Rotten Loading: 3-6 inch rotten fuel loading in tons per acre

6-9 Rotten Loading: 6-9 inch rotten fuel loading in tons per acre

9-20 Rotten Loading: 9-20 inch rotten fuel loading in tons per acre

20+ Rotten Loading: 20+ inch rotten fuel loading in tons per acre

Crown Foliage Loading: Crown Foliage loading in tons per acre

Crown Branches Loading: Crown Branch loading in tons per acre

FOFEM Cover Group: Valid cover group recognized by FOFEM, or blank

Flame EF: FOFEM emissions equation number

Duff EF: FOFEM emissions equation number

Smolder 1k EF: FOFEM emissions equation number

Optional fields (all six should be present if any, use -1 for default)

Litter equation: 997, 998, 999, or -1

Duff load consumption equation: 1, 2, 3, 4, 5, 6, 7, 15, 16, 17, 19, 20, or -1

Duff depth reduction equation: 1, 2, 3, 4, 5, 6, 7, 15, 16, 17, 19, 20, or -1

MSE equation: 9, 10, 11, 12, 13, 14, 18, 202, or -1

Herb equation: 22, 221, 222, 223, or -1

Shrub equation: 23, 231, 232, 233, 234, 235, 236, or -1

Example: (These are literal translations from fof_fccs.csv)

FOFEM_Fuelbeds: 2

1, P, I, , , 1.61, 37, 2, 2.7, 0.2, 0.2, 0.8, 3.5, 0.25, 0.25, 0.5, 0, 1.5, 1.5, 4, 5, 22.94, 5.74, , 3, 8, 7

2, P, I, , , 1.57, 45.75, 3, 3.76, 0.16, 1, 2, 4, 1, 1, 3, 6, 0.5, 0.5, 3, 4, 16.83, 4.21, WPH, 3, 8, 7, 997, 1, 1, 9, 22, 23

Switch: **FOFEM_Fuelbeds_File:** (Optional, but can not be used with **FOFEM_Fuelbeds** switch)

Purpose: To allow for the use of custom fuel beds in an external file

Usage: **FOFEM_Fuelbeds_File:** X

Where X is the complete path and name of a csv file in the same format as

FOFEM_Fuelbeds entries. This switch can be used instead of **FOFEM_Fuelbeds**.

Example:

FOFEM_Fuelbeds_File: C:\FOFEM\Data\fuels.csv

Switch: **FOFEM_Region** (Required when **FCCS_Layer_File** specified)

Purpose: To determine Region specific consumption equations used by FOFEM

Usage: **FOFEM_Region**: X

Where X is a valid FOFEM region, one of I, P, N, or S. These translate to InteriorWest, PacificWest, NorthEast, and SouthEast respectively. The following map illustrates FOFEM defined regions:



Example:

FOFEM_Region: I

Switch: **FOFEM_Season** (Required when **FCCS_Layer_File** specified)

Purpose: For setting the season of burn. In some cases season is used to select consumption equations.

Usage: **FOFEM_Season** X

Where X is a recognized FOFEM Season. Valid values are Spring, Summer, Fall, Winter.

Example:

FOFEM_Season: Summer

Switch: **FOFEM_Percent_Foliage_Branch_Consumed** (Required when **FCCS_Layer_File** specified)

Purpose: To set the percent of foliage and branch fuel consumed

Usage: **FOFEM_Percent_Foliage_Branch_Consumed**: X

Where X is the percent of crown foliage and branches consumed entered as an integer (0 - 100)

Example:

FOFEM_Percent_Foliage_Branch_Consumed: 75

Switch: **FOFEM_Use_Expanded_Emissions:** (Optional)

Purpose: Will use the updated emission factors based on Urbanski (2014) The logic to calculate emissions also differs from the the default FOFEM logic

Usage: **FOFEM_Use_Expanded_Emissions:** X

Where X is a boolean value indicating SpatialFOFEM should use the expanded burnup emissions. Use 0 for false (default), or 1 for true

Example: **FOFEM_Use_Expanded_Emissions:** 1

Would cause SpatialFOFEM to use expanded burnup emissions.

Switch: **FOFEM_Use_Consumption_Equations** (Optional)

Purpose: Will cause SpatialFOFEM to use alternative consumption equations for a fuelbed if present in the fuelbed definition.

Usage: **FOFEM_Use_Consumption_Equations:** X

Where X is a boolean value indicating whether SpatialFOFEM should use alternative consumption equations for a fuelbed if present in the fuelbed definition. Presently, these consumption equations can only be loaded using **FOFEM_Fuelbeds** or **FOFEM_Fuelbeds_File** switches.

Example: **FOFEM_Use_Consumption_Equations:** 1

Would cause SpatialFOFEM to use alternative consumption equations if present for all fuelbeds.

Switch: **FOFEM_10_Hour_FM:** (Required when **FCCS_Layer_File** specified)

Purpose: To set the global 10-hour fuel moisture. Entry required even if a geospatial fuel moisture file is supplied. This value will be used when FOFEM_10_Hour_File values are NODATA values. Entered as an integer value.

Usage: **FOFEM_10_Hour_FM:** X

Where X is the global 10-hour fuel moisture, applied globally across the landscape

Example:

FOFEM_10_Hour_FM: 10

Switch: **FOFEM_10_Hour_File** (Optional)

Purpose: To geospatially assign 10-hour fuel moistures. This file must be in the same projection and coordinate system as the **FCCS_Layer_File**, and must completely cover the extents of the **FCCS_Layer_File**. In the case of missing or NODATA values, the **FOFEM_10_Hour_FM** value will be used.

Usage: **FOFEM_10_Hour_File** : X

Where X is the complete path and file name of the GeoTIFF containing cellular 10 hour fuel moistures.

Example:

FOFEM_10_Hour_File : C:\FOFEM\Data\10hourFM.tif

Switch: **FOFEM_10_Hour_Layer_Number**: (Optional, default = 1)

Purpose: To indicate the layer number for 10-hour fuel moistures in the **FOFEM_10_Hour_File**

Usage: **FOFEM_10_Hour_Layer_Number**: X

Where X is the layer number in the **FOFEM_10_Hour_File**. Layer numbers start at 1. This switch is optional, the default is **FOFEM_10_Hour_Layer_Number**: 1

Example:

FOFEM_10_Hour_Layer_Number: 2

Indicates layer number 2 in the **FOFEM_10_Hour_File** is the 10 hour fuel moisture layer.

Switch: **FOFEM_1000_Hour_FM**: (Required when **FCCS_Layer_File** specified)

Purpose: To set the global 1000-hour fuel moisture. Entry required even if a geospatial fuel moisture file is supplied. This value will be used when **FOFEM_1000_Hour_File** values are NODATA values. Entered as an integer value.

Usage: **FOFEM_1000_Hour_FM**: X

Where X is the global 1000 hour fuel moisture, applied globally across the landscape

Example:

FOFEM_1000_Hour_FM: 15

Switch: **FOFEM_1000_Hour_File** (Optional)

Purpose: To geospatially assign 1000-hour fuel moistures. This file must be in the same projection and coordinate system as the **FCCS_Layer_File**, and must completely cover the extents of the **FCCS_Layer_File**. In the case of missing or NODATA values, the **FOFEM_1000_Hour_FM** value will be used.

Usage: **FOFEM_1000_Hour_File** : X

Where X is the complete path and file name of the GeoTIFF containing cellular 1000 hour fuel moistures.

Example:

FOFEM_1000_Hour_File : C:\FOFEM\Data\1000hourFM.tif

Switch: **FOFEM_1000_Hour_Layer_Number**: (Optional, default = 1)

Purpose: To indicate the layer number for 1000-hour fuel moistures in the **FOFEM_1000_Hour_File**

Usage: **FOFEM_1000_Hour_Layer_Number**: X

Where X is the layer number in the **FOFEM_1000_Hour_File**. Layer numbers start at 1. This switch is optional, the default is **FOFEM_1000_Hour_Layer_Number**: 1

Example:

FOFEM_1000_Hour_Layer_Number: 4

Indicates layer number 4 in the **FOFEM_1000_Hour_File** is the 1000 hour fuel moisture layer.

Switch: **FOFEM_Duff_FM**: (Required when **FCCS_Layer_File** specified)

Purpose: To set the global duff moisture. Entry required even if a geospatial fuel moisture file is supplied. This value will be used when **FOFEM_Duff_File** values are NODATA values. Entered as an integer value.

Usage: **FOFEM_Duff_FM**: X

Where X is the global duff fuel moisture, applied globally across the landscape.

Example:

FOFEM_Duff_FM: 40

Switch: **FOFEM_Duff_File** (Optional)

Purpose: To geospatially assign duff moistures. This file must be in the same projection and coordinate system as the **FCCS_Layer_File**, and must completely cover the extents of the **FCCS_Layer_File**. In the case of missing or NODATA values, the **FOFEM_Duff_FM** value will be used.

Usage: **FOFEM_Duff_File** : X

Where X is the complete path and file name of the GeoTIFF containing cellular duff fuel moistures.

Example:

FOFEM_Duff_File : C:\FOFEM\Data\DuffFM.tif

Switch: **FOFEM_Duff_Layer_Number**: (Optional, default = 1)

Purpose: To indicate the layer number for duff moistures in the **FOFEM_Duff_File**

Usage: **FOFEM_Duff_Layer_Number**: X

Where X is the layer number in the **FOFEM_Duff_File**. Layer numbers start at 1. This switch is optional, the default is **FOFEM_Duff_Layer_Number**: 1

Example:

FOFEM_Duff_Layer_Number: 5

Indicates layer number 5 in the **FOFEM_Duff_File** is the Duff fuel moisture layer.

Switch: **FOFEM_DUFF_1000_Hour_x_3**: (Optional)

Purpose: Used to set duff moistures to the **FOFEM_1000_Hour_File** value * 3.0. Only valid when **FOFEM_1000_Hour_File** is used.

Usage: **FOFEM_DUFF_1000_Hour_x_3**: X

Where X is a boolean value (0 is off, 1 is on, default = 1) representing whether SpatialFOFEM should use the 1000 Hour Fuel Moisture times 3 for cells that do not have duff fuel moisture in the **FOFEM_Duff_File** grid. If a 1000 hour fuel moisture is undefined for the cell, SpatialFOFEM will use the **FOFEM_Duff_FM** value.

If this switch is enabled and no **FOFEM_1000_Hour_File** is defined,

FOFEM_1000_Hour_FM times 3 will always be used for duff fuel moisture;

Without this switch enabled SpatialFOFEM will use the **FOFEM_Duff_FM** value when **FOFEM_Duff_File** value is undefined or **FOFEM_Duff_File** is not used.

Example: **FOFEM_DUFF_1000_Hour_x_3**: 1

Switch: **FOFEM_10_Percent_Duff_Moisture**: (Optional)

Purpose: To handle duff consumption when duff moisture is 10% or less.

Usage: **FOFEM_10_Percent_Duff_Moisture**: X

Where X is a boolean integer (0 = false, 1 = true) directing SpatialFOFEM to to set duff consumption to 100% if duff moisture is 10% or less for a cell. If

FOFEM_10_Percent_Duff_Moisture is false, and a cell's duff moisture is 10% or less, SpatialFOFEM will set the duff moisture to 11% for the cell before running FOFEM for the cell to prevent FOFEM from automatically consuming 100% of the duff. The default for **FOFEM_10_Percent_Duff_Moisture** is true, and SpatialFOFEM will consume 100% of the duff for any cell with 10% or less duff moisture. Default value for **FOFEM_10_Percent_Duff_Moisture** is 1 (true).

Switch: **FOFEM_Limiting_Shapefile:** (Optional)

Purpose: To limit SpatialFOFEM to a subset of the **FCCS_Layer_File**. Cells outside the polygon(s) in this layer will return NODATA for all calculations.

Usage: **FOFEM_Limiting_Shapefile:** X

Where X is the complete path and file name for the desired shapefile. This shapefile must be of a polygon or multipolygon type. SpatialFOFEM will run calculations only on cells whose centers are included in the polygon(s) in the shapefile.

Example: **FOFEM_Limiting_Shapefile:** C:\Data\Perimeter.shp

Switch: **FOFEM_Moisture_Precision:** (Optional)

Purpose: To set the decimal precision of duff and fuel moistures when the values are retrieved from a GeoTIFF file. Can greatly increase processing time.

Usage: **FOFEM_Moisture_Precision:** X

Where X is an integer representing the number of decimal places to use for fuel moisture percent. The default is zero, so fuel moistures are always rounded to the nearest integer percent.

Example: **FOFEM_Moisture_Precision:** 2

Would round each cell's 10 hour, 1000 hour, and duff moistures to the nearest hundredth of a percent. E.g. 6.7890% is rounded to 6.79%

SpatialFOFEM Mortality Specific Input Switches

Switch: **FOFEM_TreeListID_File** (Required to enable Mortality calculations)

Purpose: Enables calculation for tree mortality. Expects a GGeoTIFF of Tree List ID's that match the Tree_Table_CONUS.db, which are tree lists from the TreeMap project.

Usage: **FOFEM_TreeListID_File** : X

Where X is the complete path to the input TreeListID GeoTIFF of Tree List ID's and directs SpatialFOFEM to run Mortality and provide mortality outputs.

Example: **FOFEM_TreeListID_File** : C:\data\treelistIDs.tif

Would cause SpatialFOFEM to run Mortality and provide mortality outputs for the area and tree list ID's found in treelistIDs.tif

Switch: **FOFEM_TreeListID_Layer_Number**: (Optional, default = 1)

Purpose: To indicate which layer of the **FOFEM_TreeListID_File** is the tree list ID layer

Usage: **FOFEM_TreeListID_Layer_Number**: X

Where X is the layer number in the GeoTIFF. Layer numbers start at 1. FlamMap landscapes already reserve layers 1 - 8, so this layer must be 9 or greater in a fire behavior landscape GeoTIFF. This switch is optional, the default is

FOFEM_TreeListID_Layer_Number: 1

Example:

FOFEM_TreeListID_Layer_Number: 9

Indicates layer number 9 in the GeoTIFF file is the Tree List ID layer.

Switch: **FOFEM_Flame_Length**: (Required if **FOFEM_TreeListID_File** is used)

Purpose: Sets the default flame length to be used in Mortality calculations.

Usage: **FOFEM_Flame_Length**: X

Where X is is global flame length to be applied in Mortality calculations.

Example: **FOFEM_Flame_Length**: 4.5

Would cause SpatialFOFEM to use 4.5 as default flame length when calculating mortality.

Switch: **FOFEM_Flame_Length_File**: (Optional)

Purpose: To utilize gridded Flame Length values for calculations of tree mortality

Usage: **FOFEM_Flame_Length_File**: X

Where X is the complete path to the GeoTIFF file containing flame length values. The GeoTIFF must completely cover the fuels layer.

Example: **FOFEM_Flame_Length_File**: C:\Data\FlameLengths.tif

Would cause SpatialFOFEM to use the flame lengths in the grid when calculating mortality.

Switch: **FOFEM_Flame_Length_Layer_Number**: (Optional)

Purpose: Indicates the band number in the **FOFEM_Flame_Length_File** that contains flame length data. The default is band 1

Usage: **FOFEM_Flame_Length_Layer_Number**: X

Where X is an integer representing the band number in the GeoTIFF containing the flame length data.

Example: **FOFEM_Flame_Length_Layer_Number: 2**

Would indicate that Band Number 2 in **FOFEM_Flame_Length_File** contains the flame length data.

Switch: **FOFEM_Flame_Length_Precision:** (Optional, default = 1)

Purpose: To set the degree of decimal precision for flame length values

Usage: **FOFEM_Flame_Length_Precision: X**

Where X is an integer (0 - 9) indicating the degree of decimal precision for flame length values used in calculating mortality.

Example: **FOFEM_Flame_Length_Precision: 2**

Would cause SpatialFOFEM to use two decimal places of precision (hundredths of a foot) for mortality calculations.

Switch: **FOFEM_Mortality_Species:** (Optional)

Purpose: To set the tree species for which SpatialFOFEM will calculate tree mortality. By default, SpatialFOFEM will calculate tree mortality for all species encountered.

Usage: **FOFEM_Mortality_Species: X**

Where X is an integer representing the number of subsequent tree species codes to be analyzed

Immediately following this line should be X lines containing NRCS species codes to run tree mortality on.

Example:

FOFEM_Mortality_Species: 3

PICO

PIPO

PSME

Would indicate that three (3) species are to be analyzed for mortality, and those species are PICO (Lodgepole Pine), PIPO (Ponderosa Pine), and PSME (Douglas Fir)

Switch: **FOFEM_Mortality_Size_Classes:**

Purpose: Defines the size classes to be used in Mortality summaries and individual species/size class GeoTIFF output.

Usage: **FOFEM_Mortality_Size_Classes: X**

Where X is the number of size class entries. This line is immediately followed by X lines of the minimum value for each size class in ascending order. The first entry is the smallest size to be considered. The default size classes (inches DBH)

are 0-4, 4-8, 8-12, 12-16, 16-20, 20-24, 24+, and would be represented in the inputs file as:

FOFEM_Mortality_Size_Classes: 7

0
4
8
12
16
20
24

Example:

FOFEM_Mortality_Size_Classes: 2

12
24

Would cause SpatialFOFEM to create 2 size classes; 12 - 23.9", and 24" plus; trees less than 12" diameter would be ignored.

Spatial FOFEM Output Switches:

The following switches cause spatial FOFEM to allocate memory for and make available the corresponding output. One switch per line, no options:

Emissions outputs:

FOFEM_FLAMING_CO2: CO2 in lb/acre produced by flaming

FOFEM_FLAMING_CO: CO in lb/acre produced by flaming

FOFEM_FLAMING_CH4: CH4 in lb/acre produced by flaming

FOFEM_FLAMING_NOX: NOX in lb/acre produced by flaming

FOFEM_FLAMING_SO2: SO2 in lb/acre produced by flaming

FOFEM_FLAMING_PM25: PM 2.5 in lb/acre produced by flaming

FOFEM_FLAMING_PM10: PM 10 in lb/acre produced by flaming

FOFEM_SMOLDERING_CO2: CO2 in lb/acre produced by smoldering

FOFEM_SMOLDERING_CO: CO in lb/acre produced by smoldering

FOFEM_SMOLDERING_CH4: CH4 in lb/acre produced by smoldering

FOFEM_SMOLDERING_NOX: NOX in lb/acre produced by smoldering

FOFEM_SMOLDERING_SO2: SO2 in lb/acre produced by smoldering
FOFEM_SMOLDERING_PM25: PM 2.5 in lb/acre produced by smoldering
FOFEM_SMOLDERING_PM10: PM 10 in lb/acre produced by smoldering
FOFEM_TOTAL_CO2: CO2 in lb/acre produced by flaming and smoldering
FOFEM_TOTAL_CO: CO in lb/acre produced by flaming and smoldering
FOFEM_TOTAL_CH4: CH4 in lb/acre produced by flaming and smoldering
FOFEM_TOTAL_NOX: NOX in lb/acre produced by flaming and smoldering
FOFEM_TOTAL_SO2: SO2 in lb/acre produced by flaming and smoldering
FOFEM_TOTAL_PM25: PM 2.5 in lb/acre produced by flaming and smoldering
FOFEM_TOTAL_PM10: PM 10 in lb/acre produced by flaming and smoldering

Fuel Consumption outputs:

FOFEM_TOTAL_FUEL_PREBURN: Total fuel preburn loading (T/acre)
FOFEM_TOTAL_FUEL_CONSUMED: Total fuel consumed (T/acre)
FOFEM_TOTAL_FUEL_POSTBURN: Total fuel postburn loading (T/acre)
FOFEM_TOTAL_FUEL_PERCENT_REDUCED: Total fuel percent reduction

FOFEM_LITTER_PREBURN: Litter preburn loading (T/acre)
FOFEM_LITTER_CONSUMED: Litter inch fuel consumed (T/acre)
FOFEM_LITTER_POSTBURN: Litter inch postburn loading (T/acre)
FOFEM_LITTER_PERCENT_REDUCED: Litter inch percent reduction

FOFEM_1_HOUR_PREBURN: 0-¼ inch preburn loading (T/acre)
FOFEM_1_HOUR_CONSUMED: 0-¼ inch fuel consumed (T/acre)
FOFEM_1_HOUR_POSTBURN: 0-¼ inch postburn loading (T/acre)
FOFEM_1_HOUR_PERCENT_REDUCED: 0-¼ inch percent reduction

FOFEM_10_HOUR_PREBURN: ¼-1 inch preburn loading (T/acre)
FOFEM_10_HOUR_CONSUMED: ¼-1 inch fuel consumed (T/acre)
FOFEM_10_HOUR_POSTBURN: ¼-1 inch postburn loading (T/acre)
FOFEM_10_HOUR_PERCENT_REDUCED: ¼-1 inch percent reduction

FOFEM_100_HOUR_PREBURN: 1-3 inch preburn loading (T/acre)
FOFEM_100_HOUR_CONSUMED: 1-3 inch fuel consumed (T/acre)
FOFEM_100_HOUR_POSTBURN: 1-3 inch postburn loading (T/acre)
FOFEM_100_HOUR_PERCENT_REDUCED: 1-3 inch percent reduction

FOFEM_SOUND_3_6_PREBURN: 3-6 inch Sound preburn loading (T/acre)
FOFEM_SOUND_3_6_CONSUMED: 3-6 inch Sound fuel consumed (T/acre)
FOFEM_SOUND_3_6_POSTBURN: 3-6 inch Sound postburn loading (T/acre)
FOFEM_SOUND_3_6_PERCENT_REDUCED: 3-6 inch Sound percent reduction

FOFEM_SOUND_6_9_PREBURN: 6-9 inch Sound preburn loading (T/acre)
FOFEM_SOUND_6_9_CONSUMED: 6-9 inch Sound fuel consumed (T/acre)
FOFEM_SOUND_6_9_POSTBURN: 6-9 inch Sound postburn loading (T/acre)
FOFEM_SOUND_6_9_PERCENT_REDUCED: 6-9 inch Sound percent reduction

FOFEM_SOUND_9_20_PREBURN: 9-20 inch Sound preburn loading (T/acre)
FOFEM_SOUND_9_20_CONSUMED: 9-20 inch Sound fuel consumed (T/acre)
FOFEM_SOUND_9_20_POSTBURN: 9-20 inch Sound postburn loading (T/acre)
FOFEM_SOUND_9_20_PERCENT_REDUCED: 9-20 inch Sound percent reduction

FOFEM_SOUND_20_PLUS_PREBURN: 20+ inch Sound preburn loading (T/acre)
FOFEM_SOUND_20_PLUS_CONSUMED: 20+ inch Sound fuel consumed (T/acre)
FOFEM_SOUND_20_PLUS_POSTBURN: 20+ inch Sound postburn loading (T/acre)
FOFEM_SOUND_20_PLUS_PERCENT_REDUCED: 20+ inch Sound percent reduction

FOFEM_ROTEN_3_6_PREBURN: 3-6 inch Rotten preburn loading (T/acre)
FOFEM_ROTEN_3_6_CONSUMED: 3-6 inch Rotten fuel consumed (T/acre)
FOFEM_ROTEN_3_6_POSTBURN: 3-6 inch Rotten postburn loading (T/acre)
FOFEM_ROTEN_3_6_PERCENT_REDUCED: 3-6 inch Rotten percent reduction

FOFEM_ROTEN_6_9_PREBURN: 6-9 inch Rotten preburn loading (T/acre)
FOFEM_ROTEN_6_9_CONSUMED: 6-9 inch Rotten fuel consumed (T/acre)
FOFEM_ROTEN_6_9_POSTBURN: 6-9 inch Rotten postburn loading (T/acre)
FOFEM_ROTEN_6_9_PERCENT_REDUCED: 6-9 inch Rotten percent reduction

FOFEM_ROTEN_9_20_PREBURN: 9-20 inch Rotten preburn loading (T/acre)
FOFEM_ROTEN_9_20_CONSUMED: 9-20 inch Rotten fuel consumed (T/acre)
FOFEM_ROTEN_9_20_POSTBURN: 9-20 inch Rotten postburn loading (T/acre)
FOFEM_ROTEN_9_20_PERCENT_REDUCED: 9-20 inch Rotten percent reduction

FOFEM_ROTEN_20_PLUS_PREBURN: 20+ inch Rotten preburn loading (T/acre)
FOFEM_ROTEN_20_PLUS_CONSUMED: 20+ inch Rotten fuel consumed (T/acre)
FOFEM_ROTEN_20_PLUS_POSTBURN: 20+ inch Rotten postburn loading (T/acre)
FOFEM_ROTEN_20_PLUS_PERCENT_REDUCED: 20+ inch Rotten percent reduction

FOFEM_DUFF_PREBURN: Duff preburn loading (T/acre)
FOFEM_DUFF_CONSUMED: Duff fuel consumed (T/acre)
FOFEM_DUFF_POSTBURN: Duff postburn loading (T/acre)
FOFEM_DUFF_PERCENT_REDUCED: Duff fuel percent reduction

FOFEM_HERB_PREBURN: Herbaceous preburn loading (T/acre)
FOFEM_HERB_CONSUMED: Herbaceous fuel consumed (T/acre)

FOFEM_HERB_POSTBURN: Herbaceous postburn loading (T/acre)
FOFEM_HERB_PERCENT_REDUCED: Herbaceous fuel percent reduction

FOFEM_SHRUB_PREBURN: Shrub preburn loading (T/acre)
FOFEM_SHRUB_CONSUMED: Shrub fuel consumed (T/acre)
FOFEM_SHRUB_POSTBURN: Shrub postburn loading (T/acre)
FOFEM_SHRUB_PERCENT_REDUCED: Shrub fuel percent reduction

FOFEM_FOLIAGE_PREBURN: Crown foliage preburn loading (T/acre)
FOFEM_FOLIAGE_CONSUMED: Crown foliage fuel consumed (T/acre)
FOFEM_FOLIAGE_POSTBURN: Crown foliage postburn loading (T/acre)
FOFEM_FOLIAGE_PERCENT_REDUCED: Crown foliage fuel percent reduction

FOFEM_BRANCH_PREBURN: Crown branchwood preburn loading (T/acre)
FOFEM_BRANCH_CONSUMED: Crown branchwood fuel consumed (T/acre)
FOFEM_BRANCH_POSTBURN: Crown branchwood postburn loading (T/acre)
FOFEM_BRANCH_PERCENT_REDUCED: Crown branchwood fuel percent reduction

FOFEM_LITTER_CARBON_PREBURN: Litter preburn carbon loading (T/acre)
FOFEM_LITTER_CARBON_POSTBURN: Litter postburn carbon loading (T/acre)

FOFEM_WOOD_CARBON_PREBURN: Wood preburn carbon loading (T/acre)
FOFEM_WOOD_CARBON_POSTBURN: Wood postburn carbon loading (T/acre)

FOFEM_DUFF_CARBON_PREBURN: Duff preburn carbon loading (T/acre)
FOFEM_DUFF_CARBON_POSTBURN: Duff postburn carbon loading (T/acre)

FOFEM_HERB_CARBON_PREBURN: Herbaceous preburn carbon loading (T/acre)
FOFEM_HERB_CARBON_POSTBURN: Herbaceous postburn carbon loading (T/acre)

FOFEM_SHRUB_CARBON_PREBURN: Shrub preburn carbon loading (T/acre)
FOFEM_SHRUB_CARBON_POSTBURN: Shrub postburn carbon loading (T/acre)

FOFEM_FOLIAGE_BRANCH_CARBON_PREBURN: Crown preburn carbon loading (T/acre)
FOFEM_FOLIAGE_BRANCH_CARBON_POSTBURN: Crown postburn carbon loading (T/acre)

FOFEM_TOTAL_CARBON_PREBURN: Total preburn carbon loading (T/acre)
FOFEM_TOTAL_CARBON_POSTBURN: Total postburn carbon loading (T/acre)

FOFEM_DUFF_DEPTH_PREBURN: Duff preburn depth (inches)
FOFEM_DUFF_DEPTH_CONSUMED: Duff depth consumed (inches)
FOFEM_DUFF_DEPTH_POSTBURN: Duff postburn depth (inches)

FOFEM_DUFF_DEPTH_PERCENT_REDUCED: Duff depth percent reduction

FOFEM_MINERAL_SOIL_EXPOSED: Percent Mineral Soil Exposed

Sample Inputs file contents:

#Sample SpatialFOFEM inputs file

FCCS_Layer_File: C:\FOFEM\Data\FCCS_Fuels.tif

FCCS_Layer_Number: 1

FOFEM_Fuelbeds: 2

1, P, I, , , 1.61, 37, 2, 2.7, 0.2, 0.2, 0.8, 3.5, 0.25, 0.25, 0.5, 0, 1.5, 1.5, 4, 5, 22.94, 5.74, , 3, 8, 7
2, P, I, , , 1.57, 45.75, 3, 3.76, 0.16, 1, 2, 4, 1, 1, 3, 6, 0.5, 0.5, 3, 4, 16.83, 4.21, WPH, 3, 8, 7

FOFEM_Percent_Foliage_Branch_Consumed: 75.0

FOFEM_Region: I

FOFEM_Season: Summer

FOFEM_10_Hour_File: C:\FOFEM\Data\10HourFM.tif

FOFEM_1000_Hour_File : C:\FOFEM\Data\1000hourFM.tif

FOFEM_10_Hour_FM: 10

FOFEM_1000_Hour_FM: 15

FOFEM_Duff_FM: 40

#Selected SpatialFOFEM outputs, in this case select all emissions

FOFEM_FLAMING_CO2:

FOFEM_FLAMING_CO:

FOFEM_FLAMING_CH4:

FOFEM_FLAMING_NOX:

FOFEM_FLAMING_SO2:

FOFEM_FLAMING_PM25:

FOFEM_FLAMING_PM10:

FOFEM_SMOLDERING_CO2:

FOFEM_SMOLDERING_CO:

FOFEM_SMOLDERING_CH4:

FOFEM_SMOLDERING_NOX:

FOFEM_SMOLDERING_SO2:

FOFEM_SMOLDERING_PM25:

FOFEM_SMOLDERING_PM10:

FOFEM_TOTAL_CO2:
FOFEM_TOTAL_CO:
FOFEM_TOTAL_CH4:
FOFEM_TOTAL_NOX:
FOFEM_TOTAL_SO2:
FOFEM_TOTAL_PM25:
FOFEM_TOTAL_PM10:

#Select 'total' fuel and carbon outputs
FOFEM_TOTAL_FUEL_PREBURN:
FOFEM_TOTAL_FUEL_CONSUMED:
FOFEM_TOTAL_FUEL_POSTBURN:
FOFEM_TOTAL_CARBON_PREBURN:
FOFEM_TOTAL_CARBON_POSTBURN: