

FSPPro Inputs File Documentation

'#' in first column indicates a comment line.

General Format

Switch: Value

Note the : and the minimum of 1 space of whitespace after the :

Whitespace can be blanks and/or tabs.

Switches can occur in any order in the inputs file. A switch must start in the first column, and the switch and corresponding value must appear on the same line.

Switch: **Dimension:**

Usage:

Dimension: 2

Dimension should always be 2 for FSPPro. This switch has been deprecated and will be removed in a future version.

Example:

Dimension: 2

Switch: **Resolution:**

Usage:

Resolution: X

Where X is a floating point value representing the resolution of FSPPro simulation.

Resolution should be a multiple of the source landscape file resolution.

Example: Resolution: 90

Switch: **Duration:**

Usage:

Duration: X

Where is an integer representing the number of days to simulate each fire in the FSPPro run. This includes any forecast days.

Example:

Duration: 10

Switch: **NumFires:**

Usage:

NumFires: X

Where X is an integer representing the number of fires to simulate.

Example:

NumFires: 5000

Switch: **MaxLag:**

Usage:

MaxLag: X

Where X is the number of previous days the ERC time series generator uses for influence on generated ERC

Example:

MaxLag: 30

Switch: **PolyDegree:**

Usage:

PolyDegree: X

Where X is an integer representing the polynomial degree of the equation used in the ERC time series generator. Values should be in the range 4 - 15

Example:

PolyDegree: 9

Switch: **ThreadsPerFire:**

Usage:

ThreadsPerFire: X

Where X is an integer representing the number of threads used for each fire. This switch has been deprecated and will be ignored, ThreadsPerFire is always 1 in FSPro

Example: ThreadsPerFire: 1

Switch: **SPOTTING_SEED:**

Usage:

SPOTTING_SEED: X

Where X is an integer representing the seed used to initialize the random number generator for spotting. This switch is not required but can be used to generate duplicate results.

Example:

SPOTTING_SEED: 200

Switch: **CROWN_FIRE_METHOD:**

Usage:

CROWN_FIRE_METHOD: X

Where X is a string representing the desired method to be used for crown fire calculations. The only acceptable values are "Finney" and "ScottRheinhardt"

Example:

CROWN_FIRE_METHOD: Finney

Switch: **CalmValue:**

Usage:

CalmValue: X

Where X is a floating point number representing the proportion of winds which will be calm (0 MPH)

Example:

CalmValue: 10.26

Switch: **NumWindDirs:**

Usage:

NumWindDirs: X

Where X is an integer representing the number of wind directions (azimuth in degrees from North) in the winds matrix. The next line of the inputs file must contain X space delimited wind directions (0 - 360)

Example:

NumWindDirs: 8

45 90 135 180 225 270 215 360

Switch: **NumWindSpeeds:**

Usage:

NumWindSpeeds: X

Where X is an integer representing the number of wind speeds (in MPH) in the winds matrix. The next line of the inputs file must contain X space delimited integer values for wind speeds in ascending order

Example:

NumWindSpeeds: 6

5 10 15 20 25 30

Switch: **WindCellValues:**

Usage:

WindCellValues

Immediately after this switch must appear **NumWindSpeeds** rows of **NumWindDirs** space delimited floating point values. Each value represents the proportion of the wind speed/direction occurrence to be used in the simulation.

Example:

WindCellValues:

0.74 0.86 1.19 2.16 1.18 1.45 2.01 1.8
1.79 0.91 4.6 7.48 8.17 5.89 3.39 3.4
1.12 0.76 2.48 5.21 7.74 3.27 1.53 1.52
0.59 0.34 1.19 2.45 5.23 2.92 1.56 1.09
0.47 0.12 0.22 1.43 4.1 2.11 0.81 0.68
0.13 0.01 0.05 0.43 1.35 1.05 0.44 0.32

Switch: **NumERCClasses:**

Usage:

NumERCClasses: X

Where X is an integer representing the number of ERC classes used in the simulation. Immediately following this line should be X lines of ERC class definitions, in descending order by ERC value.

Each ERC class definition line must contain the following 10 space delimited values:

MinERC MaxERC FM1 FM10 FM100 FMHerb FMWoody Duration SpotProbability SpotDelay

MinERC - The minimum value for the ERC class

Max ERC - The maximum value for the ERC class

FM1 - The 1 dead hour fuel moisture expressed as percent for the ERC class

FM10 - The 10 dead hour fuel moisture expressed as percent for the ERC class

FM100 - The 10 dead hour fuel moisture expressed as percent for the ERC class

FMHerb - The live herbaceous fuel moisture expressed as percent for the ERC class

FMWoody - The live woody fuel moisture expressed as percent for the ERC class

Example:

NumERCClasses: 5

81 91 2.9 3.2 4.3 36.3 60.0 360 0.15 0

70 80 3.5 3.9 5.4 38.1 62.5 300 0.1 0

66 71 4.1 4.5 6.0 39.6 73.1 240 0.05 0

60 65 5.1 5.6 7.5 40.5 76.0 180 0.01 0

55 59 5.1 5.8 8.6 51.6 83.4 120 0.0 0

Switch: **NumERCYears:**

Usage:

NumERCYears: X

Where X is an integer representing the number of years of historic ERC streams.

Example:

NumERCYears: 10

Switch: **NumWxPerYear:**

Usage:

NumWxPerYear: X

Where X is an integer representing the number of ERC values present in each historic ERC stream

Example:

NumWxPerYear: 214

Switch: **HistoricERCValues:**

Usage:

HistoricERCValues:

This switch should be immediately followed, starting on the next line, by **NumERCYears** lines of **NumWxPerYear** space delimited ERC values

Switch: **AvgERCValues:**

Usage:

AvgERCValues:

This switch should be immediately followed by a line of **NumWxPerYear** space delimited average ERC values

Switch: **StdDevERCValues:**

Usage:

StdDevERCValues:

This switch should be immediately followed by a line of **NumWxPerYear** space delimited standard deviations of the **AvgERCValues** values

Switch: **NumWxCurrYear:**

Usage:

NumWxCurrYear: X

Where X is the number of ERC values for the current year leading up to ignition. X should be greater than or equal to **MaxLag** and less than **NumWxPerYear - Duration**

Example:

NumWxCurrYear: 79

Switch: **CurrentERCValues:**

Usage:

CurrentERCValues:

The next line should contain **NumWxCurrYear** space delimited ERC values

Example:

CurrentERCValues:

43 46 51 75 77

Switch: **NumForecast:**

Usage:

NumForecast: X

Where X is an integer representing the number of forecast days to be used for each fire in the simulation. This value should be in the range from zero through **Duration - 1**.

Immediately following this switch should be X lines of space delimited forecast data.

Each forecast data line should be of the following format (integers only):

ERC WindSpeed WindDirection

Example:

NumForecast: 2

71 10 250

76 14 270

Note: FSPro will use the ERC value to determine the appropriate ERC class for the forecast. FSPro will then use explicit WindSpeed and WindDirection value for the

forecast to calculate FlamMap fire behavior to be used for that day in each fire simulation.

Switch: **SavePerimeters:**

Usage:

SavePerimeters: X

Where X is an integer boolean value (0 or 1) indicating whether perimeters should be saved and output on simulation completion. Perimeters are saved to a shapefile.

Example:

SavePerimeters: 1

Switch: **IgnitionFile:**

Usage:

IgnitionFile: X

Where X is the complete path to the shapefile to be used for FSPro ignition. This file should be in the same projection and coordinate system as the source landscape file.

Example:

IgnitionFile: E:\FB_x64\TestFSPro\SampleData\416ign.shp

Switch: **BarriersFile:**

Usage:

BarriersFile: X

Where X is the complete path to the barriers shapefile. This file should be in the same projection and coordinate system as the source landscape file. This switch is optional and only needs to be present if a barrier is used.

Example:

BarriersFile: E:\FB_x64\TestFSPro\SampleData\416barrier.shp

Switch: **BarrierFill:**

Usage:

BarrierFill: X

Where X is a boolean integer (0 or 1) indicating whether FSPro should fill any polygon barrier as non-burnable.

Example:

BarrierFill: 1