

## PLOT DESCRIPTION (PD) FIELDS

### Required Fields (Database Key)

(Note: the following fields are named as per the relevant subset included in the *PD* table of the FIREMON database v.2.1.1.)

*RegID* – Registration ID is a 4-character code that identifies the entity collecting data (e.g., code for the field team).

*ProjID* – Project ID is an 8-character code used to identify the project for which the data are being collected. You are not required to use all eight characters.

*PlotID* – Plot ID is a long-integer value that uniquely identifies the field plot in which data are being collected.

*Date* – Date of sampling in the MM/DD/YYYY format, where MM is the month's number, DD is the day of the month and YYYY is the current year. For example, April 01, 2006 would be entered 04/01/2006.

### Plot and Sampling Information Fields

*Examiner* - Last name of the person entering data, up to 20 characters.

*Units* – Units of measurements (i.e., English, metric) in which the field data are recorded.

*Radius* – Radius (or length) of the field plot.

*PlotType* – Code for type of plot installed.

*SEvent* – Code for sampling event, which explains why the plot is being measured on this date. FIREMON accepts one of three codes: 1) P is the pre-treatment measurement of the plot, 2) R is the post-treatment re-measurement of the plot, and 3) IV indicates an Inventory plot that is not permanently marked and will not be re-sampled.

*LocType* – Coordinate system used to locate the plot (e.g., UTM, Lat/Long). Please confirm that your GPS device is set accordingly.

*Lat* – Latitude of plot center.

*Long* – Longitude of plot center.

*Northing* – Northing coordinate of plot center.

*Easting* – Easting coordinate of plot center.

*Datum* – Map datum to which the coordinates are referenced. Please confirm that your GPS device is set accordingly.

*UTM\_Zone* – Zone that defines the reference point for the UTM coordinates.

### **Vegetation Fields**

*TreeC* – Percentage of canopy cover of all trees within the plot. This estimate includes cover of ALL tree species from the smallest of seedlings to the tallest of old growth stems. It includes all layers of canopy vertically projected to the ground. Use the canopy cover codes in Table PD-1.

*ShrubC* – Percentage of canopy cover of all shrubs in the plot. This cover estimate includes vertically projected cover of all shrub species of all heights. Use the canopy cover codes in Table 1.

*GramC* – Percentage of canopy cover of all graminoid species in the plot. Graminoids include all grasses, sedges, and rushes. Use the canopy cover codes in Table PD-1.

*ForbC* – Percentage of canopy cover of all forbs (i.e., all non-graminoid herbaceous plants) in the plot. Use the canopy cover codes in Table PD-1.

### **General Fuel Characteristics Fields**

*FModel* – The appropriate fire behavior fuel model for the plot, chosen from Anderson's 1982 publication, *Aids for Determining Fuel Models for Estimating Fire Behavior*.

*SHT* – Stand height, or typical height of the overstory vegetation. Only include vegetation taller than 6 feet in your estimate. This estimate is used as a starting point for embers, calculating wind reductions, and computing volume of crown fuels in the FARSITE fire-behavior prediction system. Estimate the top of the layer to the nearest 3 feet. If there are no plants taller than 6 feet on the plot, enter "999."

*CBH* – The typical lowest point above the ground at which there is a sufficient amount of live and/or dead tree-canopy fuel to spread a fire vertically into the overstory vegetation. Include all vegetation on the plot in your estimate. Canopy fuel base height (CBH) is a stand-level measurement used by FARSITE to initiate crown fire in the model and includes the dense dead vertical fuels (for example, lichens, draped needles, dense dead branches) that could allow a surface fire to morph into a crown fire. Take into account the dead fuels attached to standing trees or shrubs that, when intermingled with branches from other plants, could move flames up into the overstory. Estimate canopy base height to the nearest foot. If there are no trees or shrubs on the plot, enter "999."

*CanopyC* – Percentage of cover of the overstory (from trees, shrubs, or both) above 6.5 feet. This value is used by FARSITE as a starting point for embers, calculating wind reductions, and calculating variation in fuel moisture due to canopy shading. Be sure to estimate vertically projected canopy cover for all species as a whole. Use the canopy cover codes in Table PD-1.

*Local1* – Note natural disturbances and management activities that have affected more than half of the dominant vegetation within the plot sometime in the last 10 years. Enter the single-digit code(s) for up to three types from those listed in Table PD-2. If there is no evidence of a major disturbance, enter only “0.”

**Photo Fields**

*NorthPic* – Code for plot photo taken while facing northward.

*EastPic* – Code for plot photo taken while facing eastward.

**Comments Field**

*Comments* – Enter up to a 256-character comment.

**PLOT DESCRIPTION (PD) REFERENCE TABLES**

Table PD-1. Canopy cover codes.

Code	Percentage of Canopy Cover
0	0
0.5	>0-1
3	>1-5
10	>5-15
20	>15-25
30	>25-35
40	>35-45
50	>45-55
60	>55-65
70	>65-75
80	>75-85
90	>85-95
98	>95

Table PD-2. Codes for natural disturbance agents or management activities that may have influenced the vegetation composition or structure within a field plot sometime in the last 10 years.

Code	Natural Disturbance Agent or Management Activity
0	No evidence of major disturbance or activity.
1	Chaining or other deliberate uprooting of trees or shrubs.
2	Insects or disease.
3	Fire.
4	Harvest (firewood cutting, commercial logging).
5	Grazing.
6	Mining.
7	Weather (blowdown).
8	Other.

## FUEL LOAD (FL) FIELDS

### Fuel Load Macro

(Note: the following fields are named as per the relevant subset included in the *FLMacro* table of the FIREMON database v.2.1.1.)

*1HRTranLen* – Length of the sampling plane for 1-hour fuel (see Figure FL-1 for sampling recommendation and Table FL-2 for hour-class definitions).

*10HRTranLen* – Length of the sampling plane for 10-hour fuel (see Figure FL-1 for sampling recommendation and Table FL-2 for hour-class definitions).

*100HRTranLen* – Length of the sampling plane for 100-hour fuel (see Figure FL-1 for sampling recommendation and Table FL-2 for hour-class definitions).

*1000HRTranLen* – Length of the sampling plane for 1000-hour fuel (see Figure FL-1 for sampling recommendation and Table FL-2 for hour-class definitions).

*NumTran* – Number of transects it takes to count 100 pieces of DWD (1-hour, 10-hour, 100-hour, and 1000-hour fuel, collectively) on the plot.

### Fine Woody Debris Fields

(Note: the following fields are named as per the relevant subset included in the *FLFineDL* table of the FIREMON database v.2.1.1.)

*Transect* – The identifying “number” of the transect (or sampling plane) along which you are currently collecting the following FWD data (see Figure FL-2).

*Slope* – Slope of the transect, recorded to the nearest 5 percent.

*1hr* – Number of FWD pieces in the 1-hour size class (0-0.25 inches) that intersect the current transect along the length that you sample.

*10hr* – Number of FWD pieces in the 10-hour size class (0.25-1.0 inches) that intersect the current transect along the length that you sample.

*100hr* – Number of FWD pieces in the 100-hour size class (1.0-3.0 inches) that intersect the current transect along the length that you sample.

*D/LDep1* – Total depth, recorded to the nearest 0.1 inch, of the duff-and-litter profile at the 45-foot mark on the current transect (see Figure FL-1).

*LitterPct1* – Proportion, recorded to the nearest 10 percent, of the total D/L Depth at the 45-foot mark that consists of litter (see Figure FL-1).

*D/LDep2* – Total depth, recorded to the nearest 0.1 inch, of the duff-and-litter profile at the 75-foot mark on the current transect (see Figure FL-1).

*LitterPct2* – Proportion, recorded to the nearest 10 percent, of the total D/L Depth at the 75-foot mark that consists of litter (see Figure FL-1).

### **Coarse Woody Debris Fields**

(Note: the following fields are named as per the relevant subset included in the *FL1000hr* table of the FIREMON database v.2.1.1.)

*Transect* – The identifying “number” of the transect (or sampling plane) along which you are currently collecting the following CWD data (see Figure FL-2).

*LogNum* – The identifying (and sequential) “number” of the log for which you are currently collecting the following data.

*Dia* – Diameter, recorded to the nearest 0.5 inch, of the log as measured perpendicular to its central (or longitudinal) axis.

*DecayCl* – Decay class of the log. Describe only the area that intersects the sampling plane (or transect). Select from the classes listed in Table FL-3.

### **Vegetation Fields**

(Note: the following fields are named as per the relevant subset included in the *FLVeg* table of the FIREMON database v.2.1.1.)

*Transect* – The identifying “number” of the transect (or sampling plane) along which you are currently collecting the following vegetation data (see Figure FL-2).

*LiShCl* – Cover class of live trees and shrubs at the 45-foot mark on the current transect. Select from the classes listed in Table FL-1.

*DdShCl* – Cover class of dead trees and shrubs at the 45-foot mark on the current transect. Select from the classes listed in Table FL-1.

*ShHt1* – Average height, to the nearest half foot, of live and dead tree/shrub component at the 45-foot mark on the current transect.

*LiHeCl* – Cover class of live herbs at the 45-foot mark on the current transect. Select from the classes listed in Table FL-1.

*DdHeCl* – Cover class of dead herbs at the 45-foot mark on the current transect. Select from the classes listed in Table FL-1.

*HeHt1* – Average height, to the nearest half foot, of live and dead herb component at the 45-foot mark on the current transect.

*LiShC2* – Cover class of live trees and shrubs at the 75-foot mark on the current transect. Select from the classes listed in Table FL-1.

*DdShC2* – Cover class of dead trees and shrubs at the 75-foot mark on the current transect. Select from the classes listed in Table FL-1.

*ShHt2* – Average height, to the nearest half foot, of live and dead tree/shrub component at the 75-foot mark on the current transect.

*LiHeC2* – Cover class of live herbs at the 75-foot mark on the current transect. Select from the classes listed in Table FL-1.

*DdHeC2* – Cover class of dead herbs at the 75-foot mark on the current transect. Select from the classes listed in Table FL-1.

*HeHt 2* – Average height, to the nearest half foot, of live and dead herb component at the 75-foot mark on the current transect.

**FUEL LOAD (FL) FIGURES**

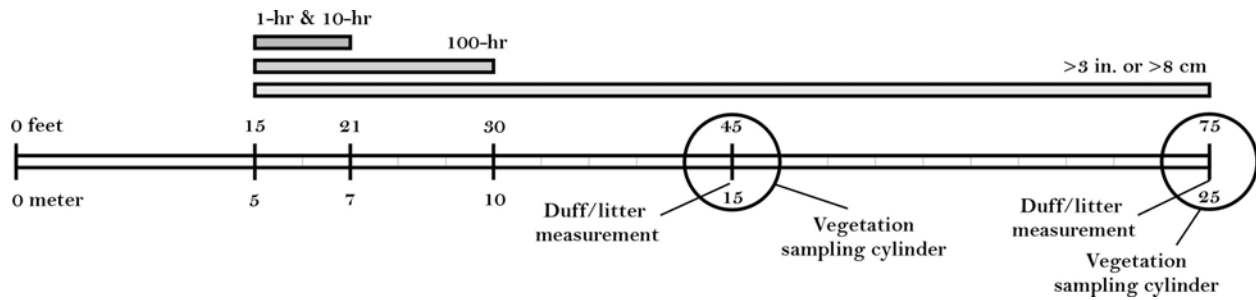


Figure FL-1. Dead fuels, duff/litter, and vegetation data are recorded at specific locations on or along each sampling plane. The 1-hour and 10-hour fuels should be sampled from the 15-foot to the 21-foot marks along the plane, the 100-hr fuels should be sampled from the 15-foot to the 30-foot marks, and pieces 3 inches and larger should be sampled between the 15-foot and 75-foot marks along the plane. Duff/litter measurements should be made in a representative area within a 6-foot diameter circular area at the 45-foot and 75-foot marks. The cover of live and dead vegetation should be estimated within an imaginary 6-foot diameter by 6-foot high sampling cylinder at the 45-foot and 75-foot marks.

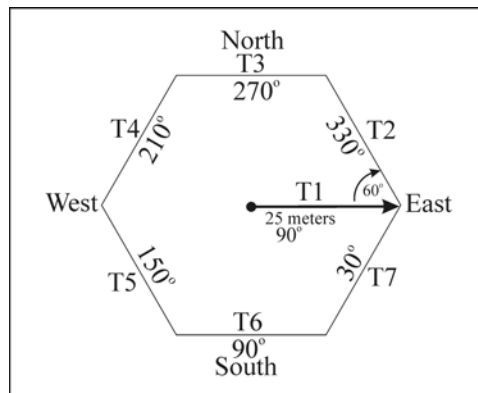


Figure FL-2. The FIREMON FL plot design allows a representative sample of DWD to be obtained while reducing or eliminating the bias introduced by non-randomly oriented pieces. Data should be collected on and along three to seven sampling planes.



**FUEL LOAD (FL) REFERENCE TABLES**

Table FL-1. Canopy cover codes.

Code	Percentage of Canopy Cover
0	0
0.5	>0-1
3	>1-5
10	>5-15
20	>15-25
30	>25-35
40	>35-45
50	>45-55
60	>55-65
70	>65-75
80	>75-85
90	>85-95
98	>95

Table FL-2. Typically 1-, 10- and 100-hour fuels are called “fine woody debris” (FWD) and 1000-hour fuels and larger are called “coarse woody debris” (CWD).

Dead Woody Class			Diameter (in)
DWD	FWD	1-hr	0 to 0.25
		10-hr	0.25 to 1.0
		100-hr	1.0 to 3.0
	CWD	1000-hr and greater	3.0 and greater

Table FL-3. Use these descriptions to determine the decay class at the point at which each piece of coarse woody debris, or “log,” crosses the sampling plane.

Decay Class	Description
1	All bark is intact. All but the smallest twigs are present. Old needles probably still present. Hard when kicked.
2	Some bark is missing, as are many of the smaller branches. No old needles still on branches. Hard when kicked.
3	Most of the bark is missing and most of the branches less than 1 inch in diameter also missing. Still hard when kicked.
4	Looks like a Class 3 log but the sapwood is rotten. Sounds hollow when kicked and you can probably remove wood from the outside with your boot. Pronounced sagging if suspended for even moderate distances.
5	Entire log is in contact with the ground. Easy to kick apart but most of the piece is above the general level of the adjacent ground. If the central axis of the piece lies in or below the duff layer, it should not be included in the CWD sampling as these pieces act more like duff than wood when burned.

### **SPECIES COMPOSITION (SC) FIELDS**

(Note: the following fields are named as per the relevant subset included in the *SCMacro* table of the FIREMON database v.2.1.1.)

*SppIDLevel* – The criterion (e.g., threshold cover level) that is the basis for inclusion of plants in your species list.

(Note: the following fields are named as per the relevant subset included in the *SCCover* table of the FIREMON database v.2.1.1.)

*Item* – The NRCS PLANTS symbol key (i.e., code) for the plant species for which you are currently collecting the following data.

*Status* – Status of the individuals currently being assessed (e.g., live, dead).

*SizeCl* – Size class of the individuals currently being assessed. If all sizes are considered together, enter “TO” to denote “Total.”

*Cover* – Enter the code from Table SC-1 that best indicates the percentage of canopy cover of the individuals currently being assessed.

*Height* – Enter the typical height of individuals currently being assessed.

**SPECIES COMPOSITION (SC) REFERENCE TABLES**

Table SC-1. Canopy cover codes.

Code	Percentage of Canopy Cover
0	0
0.5	>0-1
3	>1-5
10	>5-15
20	>15-25
30	>25-35
40	>35-45
50	>45-55
60	>55-65
70	>65-75
80	>75-85
90	>85-95
98	>95

## TREE DATA (TD) FIELDS

### General Plot Information

(Note: the following fields are named as per the relevant subset included in the *TDMacro* table of the FIREMON database v.2.1.1.)

*MacroPlotSize* – Size of the plot in which trees greater than or equal to 4.5 feet tall are measured.

*MicroPlotSize* – Size of the plot in which trees less than 4.5 feet tall are measured.

*BreakPntDia* – DBH above or equal to which trees are measured individually and below which trees are tallied into diameter-species-status classes.

### Seedlings – Trees less than 4.5 feet tall

(Note: the following fields are named as per the relevant subset included in the *TDSeed* table of the FIREMON database v.2.1.1.)

*SizeCl\_Ht* – Midpoint of the height range of the trees less than 4.5 feet tall being sampled.

*Species* – Code for sampled entity, preferably from the NRCS PLANTS database.

*TreeStat* – Code for general health/condition of sampled class, selected from Table TD-1.

*Count* – Number of trees tallied within the height-species-status class

### Sapling – Trees less than breakpoint diameter but at least 4.5 feet tall

(Note: the following fields are named as per the relevant subset included in the *TDSap* table of the FIREMON database v.2.1.1.)

*SizeCl\_Dia* – Midpoint of the diameter range of the trees being sampled

*Species* – Code for sampled entity, preferably from the NRCS PLANTS database.

*TreeStat* – Code for general health/condition of sampled class, selected from Table TD-1.

*Count* – Number of trees tallied within the height-species-status class.

*AvgHt* – Average height of all trees tallied within the height-species-status class.

*AvgLiCr* – Average live crown percent of all trees tallied within the height-species-status class.

**Tree Table – Mature trees (trees of at least the breakpoint diameter)**

(Note: the following fields are named as per the relevant subset included in the *TDTree* table of the FIREMON database v.2.1.1.)

*TagNo* – Number assigned to sampled tree.

*Species* – Code for sampled tree, preferably from the NRCS PLANTS database.

*TreeStat* – Code for general health/condition of sampled tree, selected from Table TD-1.

*DBH* – Diameter at breast height (4.5 feet) of sampled tree.

*Height* – Actual height of sampled tree.

*LiCrBHt* – Height from the ground to the base of the live crown of the sampled tree.

*CrwnCl* – Code for the position of the tree's crown in the forest canopy, selected from Table TD-2.

**TREE DATA (TD) REFERENCE TABLES**

Table TD-1. Tree condition codes.

Code	Definition
H	Healthy; tree(s) with very little biotic or abiotic damage.
U	Unhealthy; tree(s) with some biotic or abiotic damage that will diminish growth, but not kill the tree(s).
S	Sick; tree(s) with extensive biotic or abiotic damage expected to kill the tree(s) within 5-10 years.
D	Dead; tree(s), or snag(s), with no living tissue visible.

Table TD-2. Crown class codes.

Code	Definition
O	Open grown; the tree is not near any other tree.
E	Emergent; crown extends entirely above the canopy of the stand.
D	Dominant; crown receives light from at least 3-4 directions.
C	Codominant; crown receives light from at least 1-2 directions.
I	Intermediate; crown receives light only from above.
S	Suppressed; crown is entirely beneath the canopy of the stand and shaded from above.