

FIREMON Database

User Manual



EXECUTIVE SUMMARY

The FIREMON database software allows users to enter data, generate summary reports, and perform other data management tasks. The FIREMON database software consists of a Java application and a Microsoft® Access database. The Java application provides the user interface with FIREMON data through data entry forms, data summary reports, and other data management tools. The Microsoft® Access database contains the tables that store the actual FIREMON data and the standard lookup codes used in various FIREMON fields.

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INTRODUCTION

Fire effects monitoring is defined by two tasks: field data collection and evaluation. Field data collection has been discussed in detail in the **Integrated Sampling Strategy** and **Field Assessment** documentation. Discussed here is the FIREMON data entry and data summary software.

The FIREMON database encompasses three major tasks: 1) data entry, 2) data management, and 3) data summary. Data entry is accomplished in FIREMON by physically entering the collected field data into a set of standardized Microsoft® Access database tables. Data management includes populating a plant species list for the database, adding additional codes used in the vegetation sampling methods (e.g. life forms such as forb, grass, or shrub), and adding user specific codes to the FIREMON lookup code tables. Data summary reports are generated by a C program (sum.exe) developed specifically for the FIREMON data summary display reports.

The FIREMON database performs a variety of tasks. Plot data are entered through a data entry form for each FIREMON sampling method. All the FIREMON plot-sampling methods are displayed on the main plot entry form. A separate data entry form is provided for the Metadata and Fire Behavior data since these methods apply to one or more FIREMON plots. Metadata and Fire Behavior data are linked to FIREMON plots through the MDID and FireID fields, respectively, on the Plot Description form.

Plot data summaries are displayed through the data summary reports. These reports display basic summary data for a FIREMON plot. The FIREMON Analysis Tools (FMAT) can be executed from the FIREMON database or as a stand-alone program. The NRCS plants database is provided with the FIREMON database and a data entry form allows users to build a species list for their data. FIREMON also provides a data entry form for adding customized codes and/or ground cover covers used with the vegetation sampling methods. A Simple Query Builder tool allows users to query data from any of the FIREMON tables, however more sophisticated queries must be developed by FIREMON users and stored in the FIREMON *Data* database. The FIREMON database also includes a simple program for generating random transect starting points along a baseline and random quadrat starting points along each transect.

FIREMON DATABASE INSTALLATION AND CONFIGURATION

Installing the FIREMON Software

Log on to the FIREMON website (www.fire.org/firemon), navigate to the FIREMON software link (www.fire.org/firemon/software.htm), and download the FIREMON installation file. Run the installation file which installs the Java application, FIREMON database, and data analysis software. The default installation directory and FIREMON software configuration files are set to c:\firemon, however the FIREMON software may

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be installed in any directory. When the files are successfully installed, the firemon directory should appear similar to the directory in figure 1.

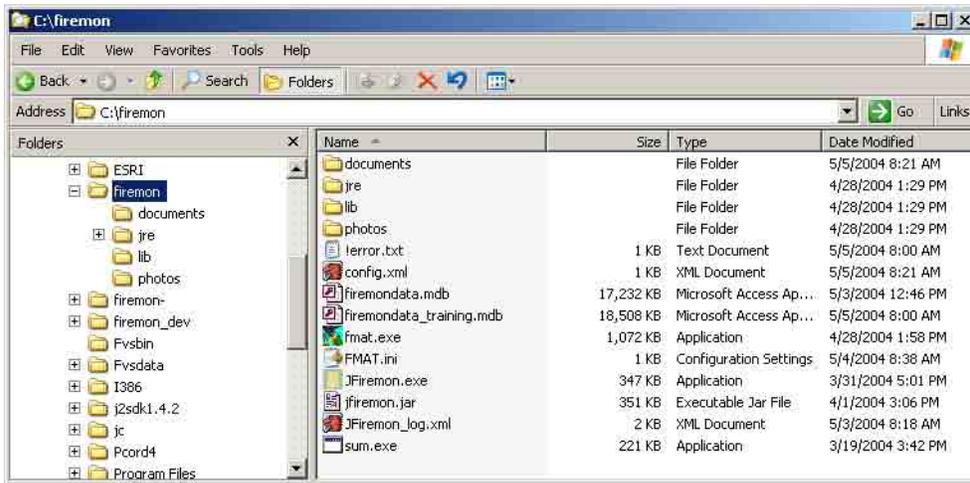


Figure 1. Files contained in FIREMON directory.

The firemon directory consists of the FIREMON Java application, the FIREMON database, the FIREMON data analysis software, and subdirectories for plot photos and metadata documents. The FIREMON Java application (JFiremon.exe) is the Java executable program containing all the FIREMON data entry forms, data summary reports, and data management tools. The C program (sum.exe) is used by the JFiremon.exe program to summarize FIREMON data for the data summary reports. The FIREMON database (firemondata.mdb) is an empty database containing all the FIREMON data tables and lookup code tables (e.g. NRCS species codes, landform codes, etc.) The FIREMON training data database (firemondata_training.mdb) is a database with some training data for testing and training purposes. The FIREMON Analysis Tools include the data analysis program (fmat.exe) and associated help files (firemon.hlp, roboex32.dll). The photo and documents subdirectories are for storing photos and documents and contain a few sample photos and a document used with the training data set.

The JFiremon program is the Java application in which users interact with the FIREMON database. The FIREMON Java application may be linked to any FIREMON database (e.g. firemondata.mdb, firemon_training.mdb). The *File* → *Save As...* option on the main FIREMON toolbar allows users to rename a FIREMON database. The database, firemondata.mdb, is read only and must be renamed after the first installation of FIREMON. This ensures that users always have an empty set of FIREMON tables in order to create a new FIREMON database. Since the JFiremon application is separate from the FIREMON database, users are able to keep their data intact when new versions of JFiremon.exe are released.

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Configuring the FIREMON database application

Open the FIREMON application (JFiremon.exe) using the desktop icon or Start menu. The main FIREMON form appears along with the plot data entry forms on the screen after the FIREMON splash screen disappears (figure 2). The database name is displayed in the upper right corner of the JFiremon application.

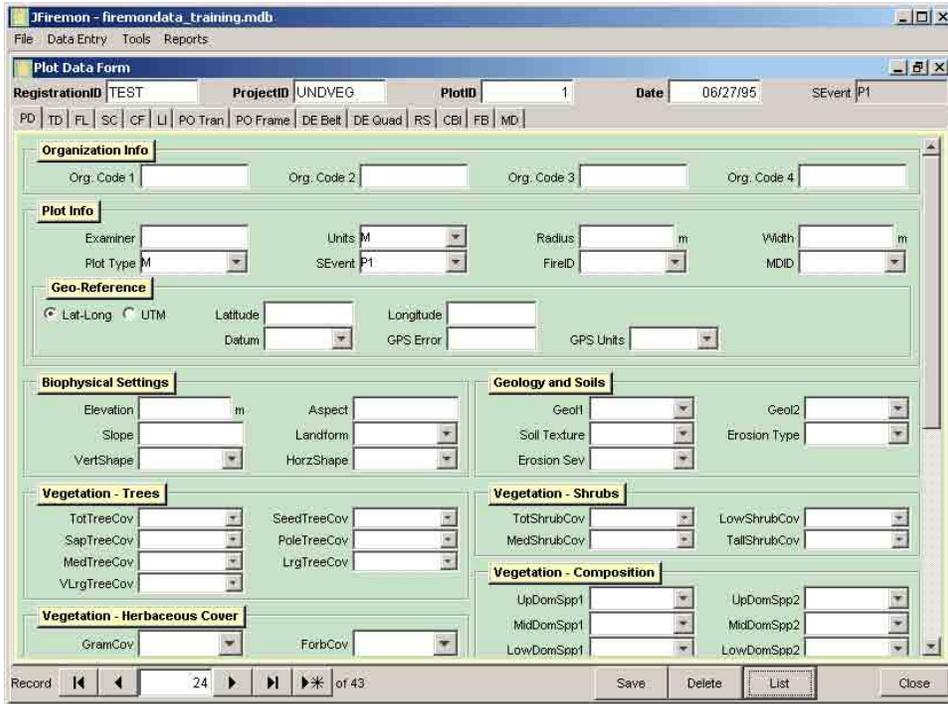


Figure 2. Main form for the FIREMON application database with plot data entry forms window open.

Next, close the plot data entry forms window and select *File* → *Settings...* from the FIREMON toolbar. This will display the FIREMON Configuration and Settings form (figure 3).



Figure 3. FIREMON configuration settings.

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The *Configuration and Settings* form allows users to set the default directories for plot photos and documents, the FIREMON analysis software, and the FIREMON data tables. Once these directories are set, the FIREMON application uses these settings until they are changed again. Click on the *Save Settings* button to save the current settings.

The *Photos Base Directory* and *Documents Base Directory* settings set the hyperlinks for plot photos data metadata documents to the directories storing the photos and documents, respectively.

Populating the Plant Species Codes Lookup Table

FIREMON uses the NRCS Plants database codes as the default plant species codes, however local codes may be used with FIREMON. If any plant species data are collected using the FIREMON sampling methods, then users must populate the plant species code table with a list of plant species for their project area. Although FIREMON provides the entire list of species from the NRCS Plants database, this list is much too large to display effectively in a drop down list for data entry.

Prepare to add species to the lookup table by closing the data entry forms. Otherwise, the data entry forms will need to be closed and reopened before the species you add will show in the species drop-down list. To add species, select *Data Entry* → *Plant Species Codes* from the FIREMON toolbar to display the NRCS Plants database form (figure 4).

Figure 4. NRCS Plants database form.

This form allows users to search for a plant species by the NRCS Plants code, scientific name, or common name. Users must find each plant species for their project area and populate the *Local Code* field on the form. Open the NRCS species list window by clicking the *List* button at the bottom of the NRCS Plant Codes window. Symbol, Symbol Code and Scientific Name are the default search fields. More search fields may be added

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by using the *Add Field* menu and dropdown list found at the bottom of the Record List window. Search fields may be deleted (except the defaults) by right clicking on a column header and clicking *Remove this Column*. Use the *Find* button at the bottom of the Record List window to search through the records in the NRCS Plants database. Search on any field selected in the Record List window. When the desired species is found, click the *Add to Local Code* button on the NRCS Plants Codes window. For example, in figure 5, the Common Name column has been added to the Record List window (shown lower right), the Common Name field has been selected to search for grand fir in the Find window (lower left), and ABGR entered into the lookup table by clicking *Add to Local Code* (top). Users can change the local code from the one provide by NRCS. For example, deleting ABGR and entering GF in the Local Code field on the NRCS Plants Codes window links the NRCS code for grand fir {ABGR} to the local code (GF) and adds GF to the species lookup table. Any open data entry forms must be closed and reopened before any newly added species are displayed in the species drop down list.

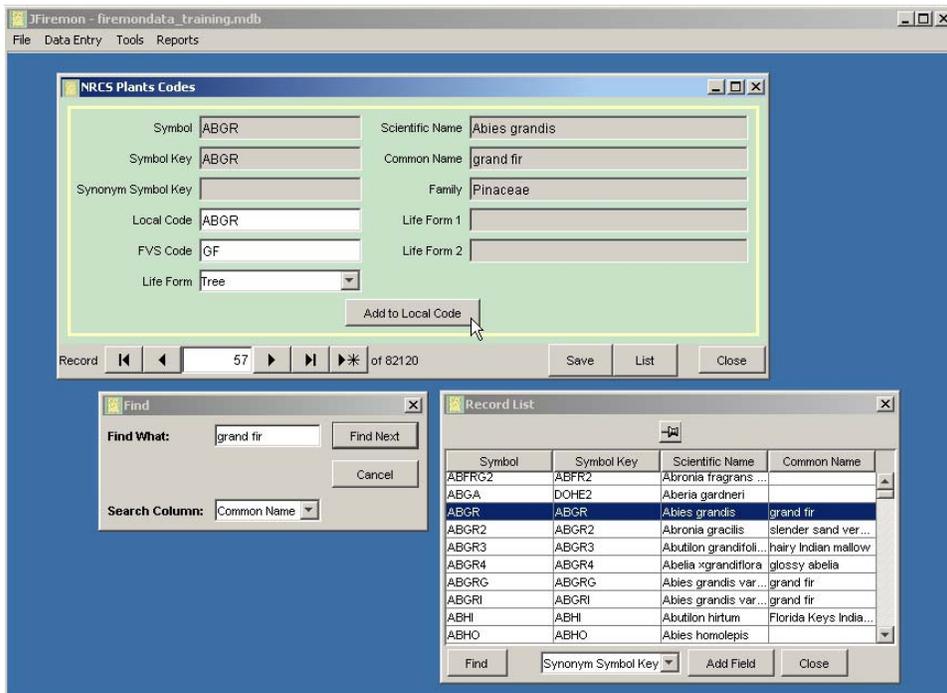


Figure 5. Grand fir has been added to the *NRCS Plants Codes* and lookup table by searching the *Record List* for grand fir a clicking *Add to Local Code*.

The FIREMON data entry forms build a plant species code lookup table based on all species which have the *Local Code* field populated. If a species is not in this list, the data entry forms will not allow that species to be entered in the database.

Adding Other Items to the Plant Species Lookup Table

The FIREMON vegetation sampling methods (SC, CF, LI, PO, and DE) allow other items to be entered in the plant species (*Item*) field. These item codes, however, are not stored in the Plant Species Codes table. FIREMON provides another table, which users may customize, to store these fields. Examples of other items include ground cover codes

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used with the point intercept method, plant life form codes (e.g. shrub, grass, forb), and density counts of items other than plant species (e.g. elk pellets, gopher mounds, etc.). Select *Data Entry* → *Other Item Codes* from the FIREMON toolbar to display the *Other Item Codes* form (figure 6).

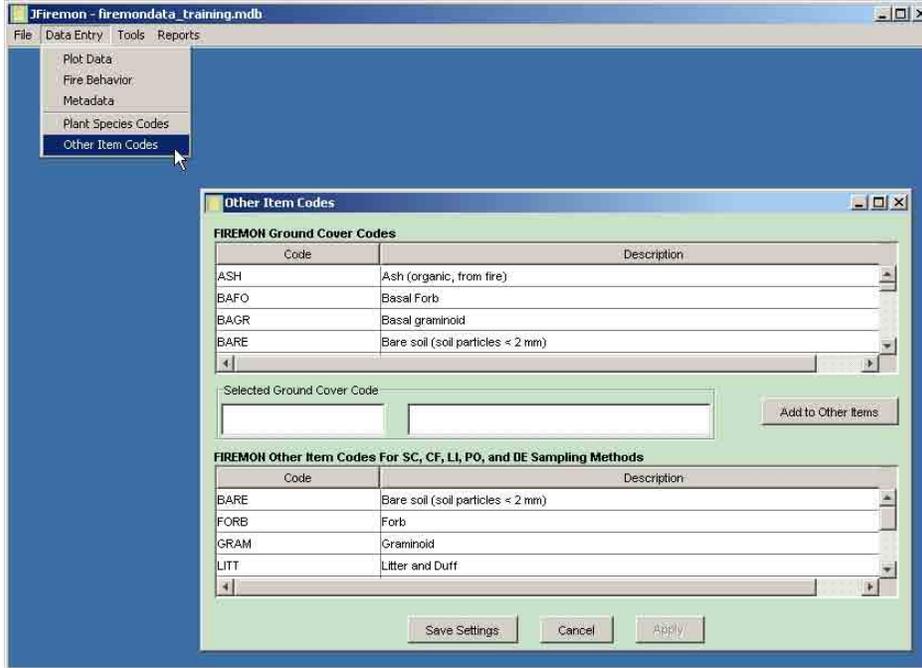


Figure 6. Other Item Codes form.

The FIREMON *Ground Cover Codes* table is displayed in the upper window and the *FIREMON Other Item Codes* table is displayed in the lower window. Ground cover codes are the most common codes to add to the list of other items, and users may select ground cover codes to populate the *Other Item* list. Codes for items other than ground cover may be entered in the lower (*Other Item Codes*) table along with a description for the code. These codes are displayed, along with the plant species codes, when entering data in the *Item* field on the SC, CF, LI, PO, and DE sampling forms. **It is important to enter all codes for items other than plant species in this table since the data entry forms will not allow users to enter codes which are not in the lookup tables for plant species and other items.**

FIREMON DATA ENTRY FORMS

Once the plant species codes and other item codes are populated, users may enter plot data for each of the FIREMON sampling methods. Select *Data Entry* → *Plot Data* on the FIREMON toolbar to display the Plot Data entry forms (figure 7). When the Plot Description data entry form opens, record number one will be selected. If the form is empty (first time use) start entering your data, otherwise click on the *New Record* button, the right most button (right facing black triangle and asterisk), on the Access record navigation bar at the bottom of the form. This advances beyond the last record in the

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database and allows users to enter new records. Similarly, the *New Record* button can be used to enter new data on the other data entry forms. When editing existing records, use the record selectors or the *List* button to find the desired record and begin editing the record (figure 8).

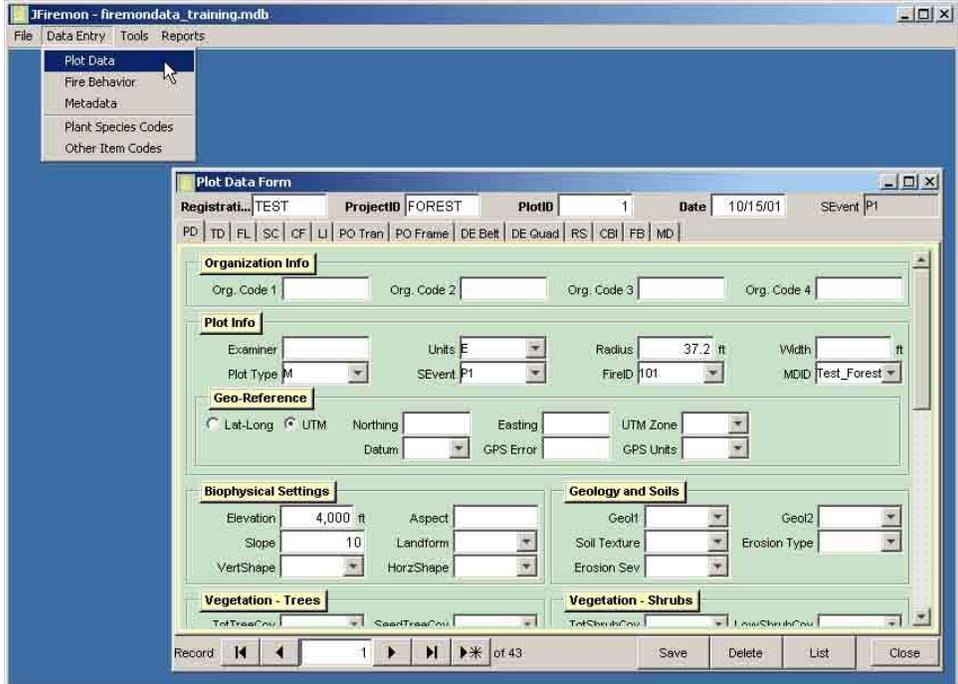


Figure 7. Plot Description data entry form displaying the first database record.

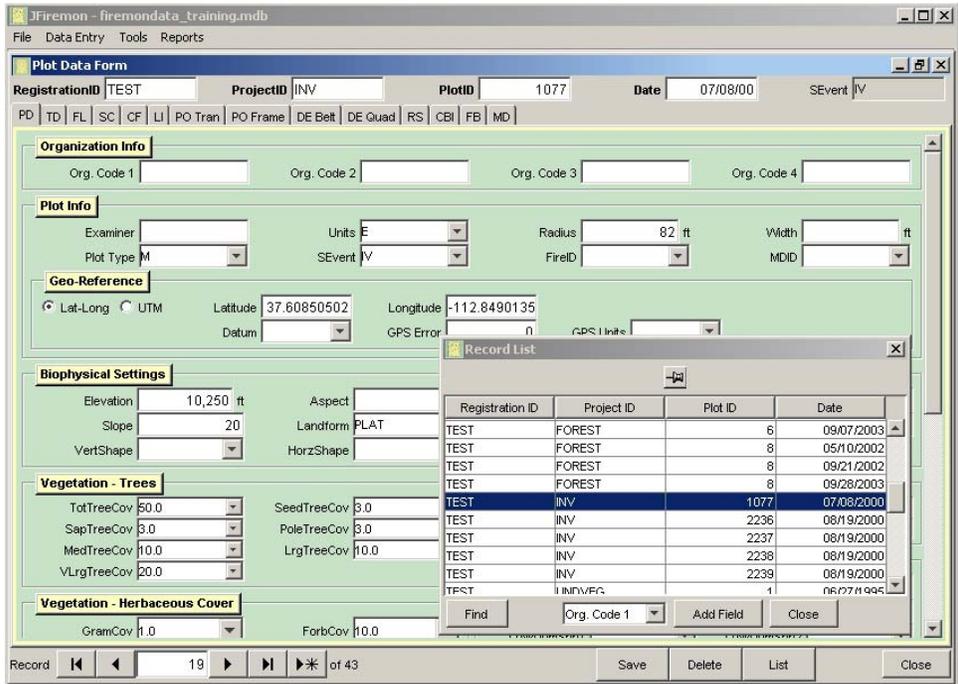


Figure 8. Navigating to an existing record using the *List* button.

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Attempting to enter a new record before valid data is entered in all the plot key fields (RegID, ProjID, PlotID, and Date) returns an error message stating there are missing fields (figure 9). You must either delete the current record or fill in the required key fields. The current record may be deleted by right clicking on the record and pressing the *Delete This Record* button (figure 10).

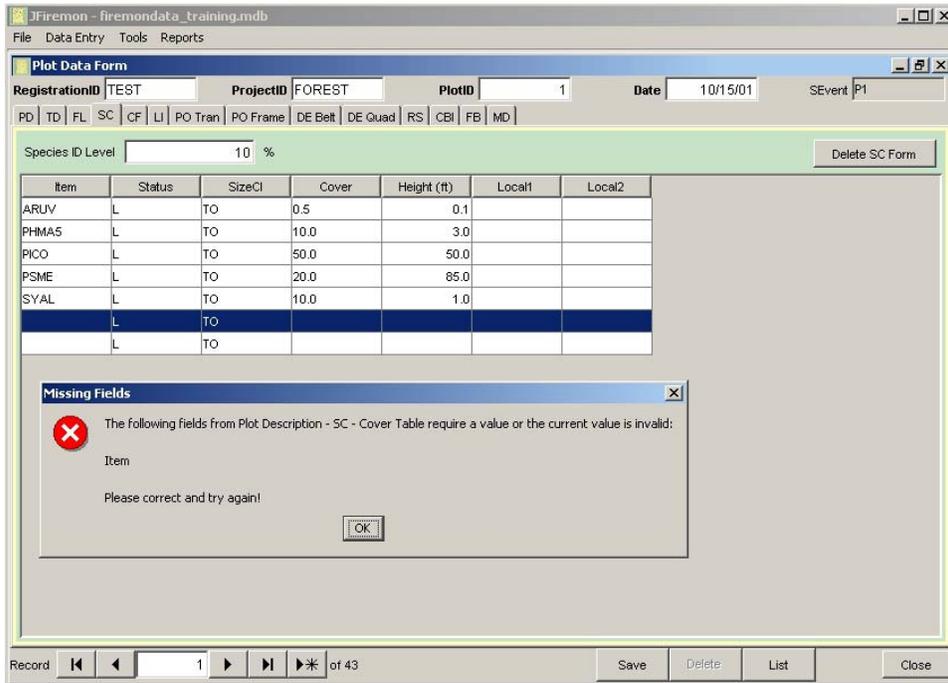


Figure 9. Example error generated when trying to save a record missing one or more key fields.

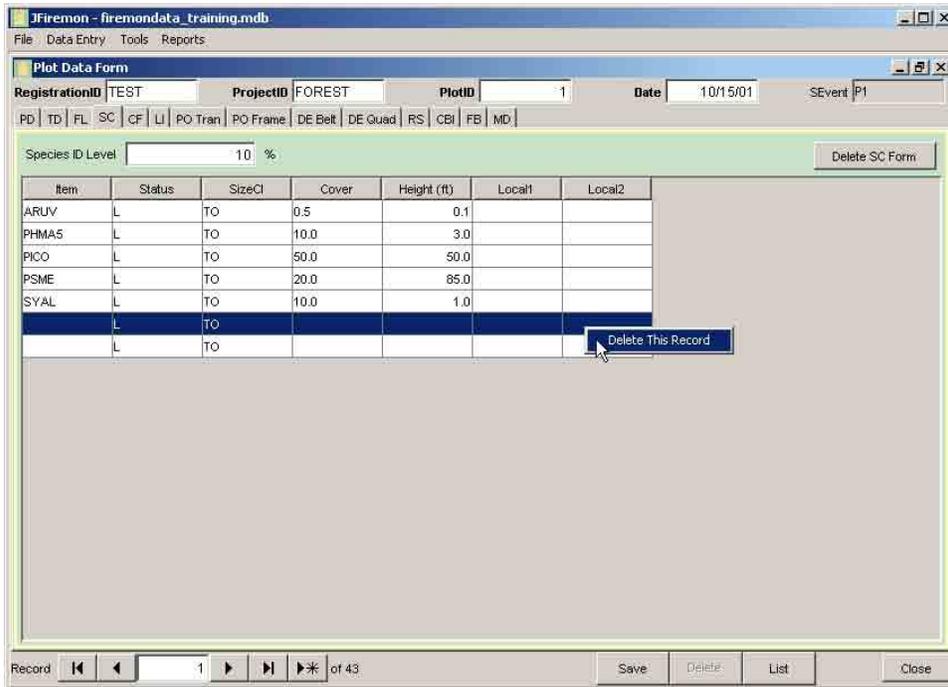


Figure 10. Deleting a record by right clicking on the current record.

Plot Description (PD) Data Entry Form

The first data entry form is for the PD sampling method (figures 7 and 8). Users are required to enter data in this form first for each plot. The FIREMON key fields (*RegID*, *ProjID*, *PlotID*, and *Date*) are required and automatically populate these fields in the other sampling method data entry forms. Users must also enter the units in which the FIREMON data are collected (E = English, M = metric), the plot type (C = control, M = measured), and the sampling event (Pn = pretreatment, Rn = remeasurement, IV = inventory).

All fields on the PD form relate to the general description of the plot. General categories of these fields include location, biophysical setting, geology and soils, vegetation cover, vegetation composition, ground cover, fuels, fire behavior and effects, plot photo ids, and comments.

The *Delete* button deletes the current PD record and any records linked to this record. Since all tables are linked to the PD table, this button deletes any records in the database for the current plot.

Tree Data (TD) Data Entry Form

The TD data entry form (figure 11) is used to enter tree data for mature trees, saplings, and seedlings. Users must enter the correct plot sizes used in the TD sampling method in order for the data summary and analysis programs to calculate the correct tree density values. The snag plot size is assumed to be the same as the macro plot size, unless the user enters a different value in the snag plot size field.

The *TagNo* field in the mature trees table is a key field and is required for each record. Each mature tree recorded on the plot must have a unique tag number entered in the database. Enter a tree species code and one or more fields in the mature tree table. The *SizeCL_Dia*, *Species*, and *TreeStat* fields are key fields in the saplings table and are required for each record. Enter a count and one or more other fields for each species by diameter class in the saplings table. The *SizeCL_Ht*, *Species*, and *TreeStat* fields are key fields in the seedlings table and are required each record. Enter a count and one or more other fields for each species by height class in the seedlings table. It is important that the units of all fields entered be consistent with the units on the data entry form.

The *Delete TD Form* button deletes the current TD record and any records linked to this record. This button deletes any records in the tree data tables for the current plot, including the plot size data, individual tree data, sapling data, and seedling data. Users may delete records specific to the individual tree tables (mature trees, seedlings, and saplings) by right clicking on the record and pressing the *Delete This Record* button.

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Figure 11. Tree data entry form.

Fuel Loading (FL) Data Entry Form

The FL data entry form (figure 12) is used to enter fuel counts for fine and coarse fuels, duff and litter depths, and vegetation cover and height. Users must enter the correct transect lengths, slope values, fuel counts, duff/litter depths, litter percent, log diameters and decay classes in order for the fuel loading calculations to provide the correct values.

The *Transect* field is a key field in the *Fine Woody Debris* table and is required for each record. Number the transects ascending and sequentially starting with transect number one. Enter the slope of the transect, fuel counts, duff/litter depths, and litter percents for each transect. Zero values should be entered when a fuel class is not counted on a transect, although the fuel loading calculations assume a zero value if these fields are left blank. The *Transect* and *LogNum* fields are key fields in the *Coarse Woody Debris* table and are required for data entry. As with fine woody debris, number transects sequentially starting with number one. Number logs sequentially starting with number one. Logs can be numbered by transect or by plot. If no pieces of coarse woody debris are located on a transect we suggest you enter a transect and log number and inter zero for the diameter and decay class fields. This is not required but helps with record keeping. You will receive a warning message about zero diameter and decay class fields from the data summary and analysis programs, but the biomass values will be correct. Enter the diameter and decay class for each log. The *Transect* field is a key field in the *Vegetation* table and is required for each record. Enter shrub and/or herbaceous cover and height for each transect. If vegetation cover and height are collected at only one point along the transect, the data summary calculations only include this one point when averaging these

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values across the transect. If two points were sampled and there is no vegetation cover at one of the points, a zero must be entered in this field. It is important that the units for all fields entered be consistent with the units on the data entry form.

The *Delete FL Form* button deletes the current FL record and any records linked to this record. This button deletes any records in the fuel data tables for the current plot including the transect length data, fine fuels data, coarse fuels data, and vegetation cover data. Users may delete records specific to the individual fuel tables (fine woody debris, coarse woody debris, vegetation) by right clicking on the record and pressing the *Delete This Record* button.

Plot Data Form

RegistrationID: TEST ProjectID: FOREST PlotID: 1 Date: 10/15/01 SEvent: P1

PD | TD | FL | SC | CF | LI | PO Tran | PO Frame | DE Belt | DE Quad | RS | CBI | FB | MD

Length and Number of Transects

1-hr: 6 ft 10-hr: 6 ft 100-hr: 15 ft 1000-hr: 50 ft

Num. Transects: 2

Fine Woody Debris

Transect	Slope	1hr	10hr	100hr	D/LDep1 (in)	LitterPct1	D/LDep2 (in)	LitterPct2	Local1
1	26.0	38	20	3	2.5	30	2.0	20	300
2	6.0	51	27	4	2.0	25	3.0	50	28

Coarse Woody Debris

Transect	LogNum	Dia (in)	DecayCl	Local1
1	1	7.1	2	
1	2	5.5	3	
2	3	4.5	3	
2	4	6.1	4	

Vegetation All heights are in feet.

Transect	L/ShC1	DdShC1	SHt1	LIHeC1	DdHeC1	HeHt1	L/ShC2	DdShC2	SHt2	LIHeC2	DdHeC2	HeHt
1	30.0	10.0	3.0	50.0	20.0	0.5						
2	20.0	30.0	2.0	40.0	20.0	1.0						

Record: 1 of 43

Figure 12. Fuel loading data entry form.

Species Composition (SC) Data Entry Form

The SC data entry form (figure 13) is used to enter ocular estimates of plant species cover and height for a plot. The *Species ID Level* field is required for data entry. It is important to enter the correct species identification level on this form so users know whether a full or reduced plant species list was collected. The *Item*, *Status*, and *Size Class* are key fields and are required for each record. Enter a cover and/or height value for each item by status and size class. It is important that the units for all fields entered be consistent with the units on the data entry form.

The *Delete SC Form* button deletes the current SC record and any records linked to this record. This button deletes any records in the species composition tables for the current

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plot including the species id level and all species on the plot. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

Item	Status	SizeCl	Cover	Height (ft)	Local1	Local2
ARUV	L	TO	0.5	0.1		
PHMAS	L	TO	10.0	3.0		
PICO	L	TO	50.0	50.0		
PSME	L	TO	20.0	85.0		
SYAL	L	TO	10.0	1.0		
	L	TO				

Figure 13. Plant species composition data entry form.

Cover / Frequency (CF) Data Entry Form

The CF data entry form (figure 14) is used to enter plant species cover and/or frequency data. Users must enter the correct number of transects and quadrats per transect in order for the data summary and analysis programs to calculate the correct average cover and frequency.

The *Transect*, *Item*, and *Status* fields are key fields and are required for each record. Enter one or more of the following fields: canopy cover, frequency, and height for each item by status on each quadrat. The data entry form allows a maximum of 20 quadrats per transect. The fields for each quadrat are numbered sequentially (e.g. CC1, NRF1, Ht1 for the first quadrat). It is important that the units for all fields be consistent with the units on the data entry form.

The *Delete CF Form* button deletes the current CF record and any records linked to this record. This button deletes any records in the cover/frequency tables for the current plot, including the transect/quadrat size data and all the species data for the plot. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

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The screenshot shows the 'Plot Data Form' window in the Firemon database application. The window title is 'Jfiremon - firemondata_training.mdb'. The menu bar includes 'File', 'Data Entry', 'Tools', and 'Reports'. The form contains several input fields for project information: RegistrationID (TEST), ProjectID (FOREST), PlotID (1), and Date (10/15/01). Below these are navigation buttons (PD, TD, FL, SC, CF, LI, PO Tran, PO Frame, DE Belt, DE Quad, RS, CBI, FB, MD) and a 'Delete CF Form' button. The main data entry area includes fields for: Num. Transects (5), Transect Length (20 ft), Num. Quadrats/Transect (5), Quadrat Length (20 in), Quadrat Width (20 in), NRF Ratio (1:25:50:100), and NRF Numbers (1:2:3:4). A note states 'All heights are in feet.' Below this is a table with 15 columns: Transect, Item, Status, CC1, NRF1, Ht1, CC2, NRF2, Ht2, CC3, NRF3, Ht3, CC4, NRF4, Ht4. The table contains 15 rows of data for various species and transects. At the bottom, there are record navigation controls (Record, arrows, 1 of 43) and buttons for Save, Delete, List, and Close.

Transect	Item	Status	CC1	NRF1	Ht1	CC2	NRF2	Ht2	CC3	NRF3	Ht3	CC4	NRF4	Ht4
1	ARUV	L	20.0	4	0.1	20.0	3	0.2	10.0	4	0.1	20.0	3	
1	SYAL	L	30.0	2	1.0	20.0	3	1.0	20.0	3	2.0	20.0	3	
2	ARUV	L	20.0	3	0.1	30.0	2	0.1	40.0	1	0.2	30.0	2	
2	PHMA5	L	20.0	3	3.0	10.0	4	4.0	20.0	3	3.0	10.0	4	
3	ARUV	L	10.0	4	0.2	20.0	3	0.1	20.0	3	0.1	20.0	3	
4	ARUV	L	20.0	3	0.1	30.0	2	0.1	40.0	1	0.2	30.0	2	
4	PHMA5	L	20.0	3	3.0	10.0	4	4.0	20.0	3	3.0	10.0	4	
5	ARUV	L	10.0	4	0.1	20.0	3	0.2	10.0	4	0.1	20.0	3	
5	SYAL	L	30.0	2	1.0	20.0	3	1.0	20.0	3	2.0	20.0	3	
5		L												

Figure 14. Cover / frequency data entry form.

Line Intercept (LI) Data Entry Form

The LI data entry form (figure 15) is used for entering line intercept data for plant species. Users must enter the correct number of transects, transect length, and start/stop points for each intercept in order for the data summary and analysis programs to calculate the correct cover values.

The *Transect*, *Item*, *Status*, *SizeCl*, and *TranLen* fields are required for each record. Enter the start and stop points along the transect for each species by status and size class. Transect length may vary by species sampled. For example, sagebrush species could be sampled in the middle 30 meters of a 60-meter transect, while juniper could be sampled along the entire transect. Height values may be entered at one or more intercepts. The average height calculations for the line intercept data only include intercepts where heights are entered. Click the *New Record* button on the *Species* navigation bar at the top of the LI data entry form to enter data for a new species.

The *Delete LI Form* button deletes the current LI record and any records linked to this record. This button deletes any records in the line intercept tables for the current plot, including the number of transects, all the species, and all the intercept measurements for the plot. Users may delete a single species from the plot using the *Delete Species* button. A list of all species entered is displayed with the *List Species* button. This list may be used to navigate to a particular species on a transect for editing purposes. Individual

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intercept measurements may be deleted by right clicking on the record and pressing the *Delete This Record* button

Start (m)	Stop (m)	Intercept (m)	Height (m)
83.89	84.01	0.12	
84.13	84.21	0.08	

Figure 15. Line intercept data entry form.

Point Intercept (PO) Data Entry Forms

The PO data entry forms are used for entering plant species and/or ground cover point data. The *POTran* data entry form (figure 16) is used to enter point cover data collected along individual transects. The *POFrame* data entry form (figure 17) is used to enter point cover data collected within frames (groups of points) along individual transects.

When entering point intercept data collected along transects, users must enter the correct number of transects and points per transect in order for the data summary and analysis programs to calculate the correct cover values. The *Item* and *Status* fields are key fields and are required for each record. Enter the number of hits for each item by status on each transect. An average height value for each species on the transect may also be entered. The data entry form allows a maximum of 20 transects per plot. The fields for each transect are numbered sequentially (e.g. Hits1, Ht1 for the transect 1). It is important that the units for all fields be consistent with the units on the data entry form.

The *Delete POTran Form* button deletes the current PO transect record and any records linked to this record. This button deletes any records in the point intercept transect tables for the current plot, including the transect data and all the species data for the plot. Users

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may delete individual species by right clicking on the record and pressing the *Delete This Record* button.

Plot Data Form

RegistrationID: TEST ProjectID: FOREST PlotID: 1 Date: 10/15/01 SEvent: P1

Num. Transects: 5 Num. Points/Transect: 66

Transect Length: 66 ft

All heights are in feet.

Item	Status	Hits1	Ht1	Hits2	Ht2	Hits3	Ht3	Hits4	Ht4	Hits5	Ht5	Hits6	Ht6	Hits7	Ht7
AGSP	L	13		20		7		20		13					
ARUV	L	10		3		17		3		10					
MOSS	L	0		3		7		3		0					
ROCK	D	3		7		0		7		3					
SYAL	L	7		3		3		3		7					
	L														

Record 1 of 43

Figure 16. Point intercept transect data entry form.

When entering point intercept data collected within frames placed along transects, users must enter the correct number of transects, frames per transect, and number of points per frame in order for the data summary and analysis programs to calculate the correct cover values.

The *Transect*, *Item*, and *Status* fields are key fields and required for each record. Enter the number of hits for each item by status in each frame. An average height value for each species in the frame may also be entered. The data entry form allows a maximum of 20 frames per transect. The fields for each frame are numbered sequentially (e.g. Hits1, Ht1 for frame 1). It is important that the units for all fields be consistent with the units on the data entry form.

The *Delete POFrame Form* button deletes the current PO frame record and any records linked to this record. This button deletes any records in the point intercept frame tables for the current plot, including the transect/frame data and all the species data for the plot. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

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Transect	Item	Status	Hits1	Ht1	Hits2	Ht2	Hits3	Ht3	Hits4	Ht4	Hits5	Ht5	Hits6	Ht6

Figure 17. Point intercept frame data entry form.

Density (DE) Data Entry Forms

The DE data entry forms are used for entering counts of individual plants or other items. The *DEBelt* data entry form (figure 18) is used to enter density data collected along individual belt transects. The *DEQuad* data entry form (figure 19) is used to enter density data collected within quadrats placed along individual transects.

When entering density data collected within belt transects, users must enter the correct number of transects, transect length, and transect width in order for the data summary and analysis programs to calculate the correct density values. The *Item*, *Status*, and *SizeCl* fields are key fields and are required for each record. Enter the transect length, transect width, and count for each item by status and size class in each belt transect. Belt transect length and width may vary by item. For example, Juniper trees may be counted in a 6 x 60 meter belt transect while sagebrush plants may be counted in a 2 x 60 meter belt transect. An average height value for each species in the belt transect may also be entered. The data entry form allows a maximum of 20 transects per plot. The fields for each transect are numbered sequentially (e.g. *Cnt1*, *Ht1* for transect 1). It is important that the units for all fields be consistent with the units on the data entry form.

The *Delete DEBelt Form* button deletes the current DE Belt record and any records linked to this record. This button deletes any records in the density belt transect tables for the current plot, including the transect data and all the species data for the plot. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

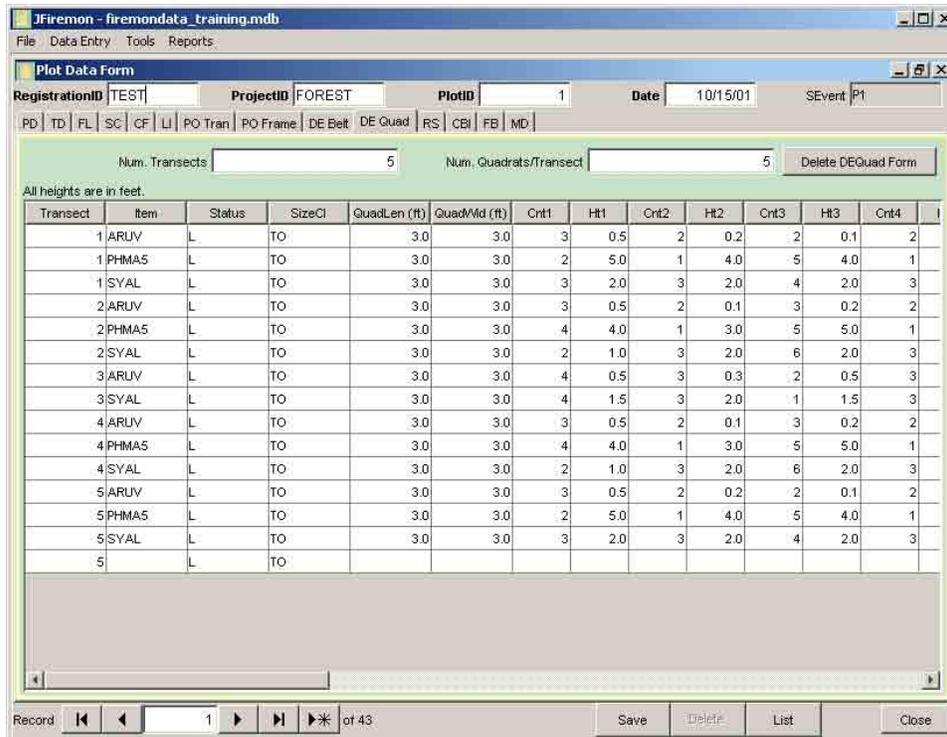
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Figure 18. Density belt transect data entry form.

When entering density data collected within quadrats placed along transects, users must enter the correct number of transects and quadrats per transect in order for the data summary and analysis programs to calculate the correct density values. The *Transect*, *Item*, *Status*, and *SizeCl* fields are key fields and are required for each record. Enter the quadrat length, quadrat width, and count for each item by status and size class in a quadrat. Quadrat size may vary by species. For example, smaller herbaceous plants may be counted in smaller quadrats and larger shrubs counted in larger quadrats. An average height value for each species in the quadrat may also be entered. The data entry form allows a maximum of 20 frames per transect. The fields for each quadrat are numbered sequentially (e.g. Cnt1, Ht1 for quadrat 1). It is important that the units for all fields be consistent with the units on the data entry form.

The *Delete DEQuad Form* button deletes the current DE quadrat record and any records linked to this record. This button deletes any records in the density quadrat tables for the current plot, including the transect/frame data and all the species data for the plot. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

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Transect	Item	Status	SizeCl	QuadLen (ft)	QuadWld (ft)	Cnt1	Ht1	Cnt2	Ht2	Cnt3	Ht3	Cnt4
1	ARUV	L	TO	3.0	3.0	3	0.5	2	0.2	2	0.1	2
1	PHMA5	L	TO	3.0	3.0	2	5.0	1	4.0	5	4.0	1
1	SYAL	L	TO	3.0	3.0	3	2.0	3	2.0	4	2.0	3
2	ARUV	L	TO	3.0	3.0	3	0.5	2	0.1	3	0.2	2
2	PHMA5	L	TO	3.0	3.0	4	4.0	1	3.0	5	5.0	1
2	SYAL	L	TO	3.0	3.0	2	1.0	3	2.0	6	2.0	3
3	ARUV	L	TO	3.0	3.0	4	0.5	3	0.3	2	0.5	3
3	SYAL	L	TO	3.0	3.0	4	1.5	3	2.0	1	1.5	3
4	ARUV	L	TO	3.0	3.0	3	0.5	2	0.1	3	0.2	2
4	PHMA5	L	TO	3.0	3.0	4	4.0	1	3.0	5	5.0	1
4	SYAL	L	TO	3.0	3.0	2	1.0	3	2.0	6	2.0	3
5	ARUV	L	TO	3.0	3.0	3	0.5	2	0.2	2	0.1	2
5	PHMA5	L	TO	3.0	3.0	2	5.0	1	4.0	5	4.0	1
5	SYAL	L	TO	3.0	3.0	3	2.0	3	2.0	4	2.0	3
5		L	TO									

Figure 19. Density quadrat data entry form.

Rare Species (RS) Data Entry Form

The RS form (figure 20) is used to enter data collected for rare perennial plants. Users must enter the baseline length for each plot. The *Species* and *PlantNo* fields are required for each record. The *PlantNo* field is a unique, sequential number assigned to each individual plant by species.

Enter the distance along the baseline and distance from the baseline for each individual plant. Enter one or more of the following fields: status, stage, maximum canopy diameter, second canopy diameter, height, number of stems, number of flowers, number of fruits, and local fields 1, 2, and 3.

The *Delete RS Form* button deletes the current RS record and any records linked to this record. This button deletes any records in the RS tables for the current plot, including all individual plant records for the plot. Users may delete one or more individual plant records by right clicking on the record and pressing the *Delete This Record* button.

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The screenshot shows a software window titled "Jfiremon - firemondata_training.mdb". The menu bar includes "File", "Data Entry", "Tools", and "Reports". The main window is titled "Plot Data Form" and contains the following fields and controls:

- RegistrationID: TEST
- ProjectID: FOREST
- PlotID: 1
- Date: 10/15/01
- SEvent: P1

Below these fields is a row of buttons: PD, TD, FL, SC, CF, LI, PO Tran, PO Frame, DE Belt, DE Quad, RS, CBI, FB, MD. A "Baseline Length" input field is followed by "ft." and a "Delete RS Form" button. Below this is a text area with instructions: "All distances are in feet.", "All diameters are in inches.", and "Height is in feet." A table with the following columns is visible:

Species	PlantNo	DistAlongBL	DistFromBL	Status	Stage	MaxDia	Dia2	Height	Stems	Flowers

At the bottom, there is a "Record" field showing "1" of 43, and buttons for "Save", "Delete", "List", and "Close".

Figure 20. Rare species data entry form.

Composite Burn Index (CBI) Data Entry Form

The CBI form (figure 21) is used to enter data for the calculation of Composite Burn Index value for a plot. Enter the effects of fire, ranked from 1 – 3, for each of the vegetation strata on the form. The CBI values for each stratum and for the total plot are updated as the data are entered or edited. The *Delete CBI Form* button deletes the current CBI record.

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The screenshot shows the 'Plot Data Form' interface. At the top, there are input fields for 'RegistrationID' (TEST), 'ProjectID' (FOREST), 'PlotID' (1), and 'Date' (10/15/01). Below these are several tabs: PD, TD, FL, SC, CF, LI, PO Tran, PO Frame, DE Belt, DE Quad, RS, CBI, FB, MD. The main area is divided into sections: 'Burn Severity Scale' with a scale from 0.0 (No Effect) to 3.0 (High); 'Substrates' with 'Pre-Fire Cover' and 'Pre-Fire Depth' fields; and 'Herbs, Low Shrubs, Tree Seedlings' with 'Pre-Fire' and 'Cover' fields. A table below the substrates section shows the expected changes for different fuel types (Litter, Duff, Soil/Rock, Fuel Bed) across the burn severity scale. The bottom of the form has a 'Record' field showing '1 of 43' and buttons for 'Save', 'Delete', 'List', and 'Close'.

Figure 21. Composite Burn Index data entry form.

Fire Behavior (FB) Data Entry Form

The FB data entry form (figure 22) is used for entering data on fire behavior. The *Fire Behavior* form is separate from other data entry forms since it is not entered for every plot. The records in the *Fire Behavior* table are linked to the plot data through the *FireID* field on the PD form. One Fire Behavior record may be linked to many plots; any plots sampled in within the same fire. Fire Behavior data may be entered for different times during the fire. To add a new fire behavior record using the current *FireID*, click the *New Record* button on the *FBDData* record navigator bar in the upper part of the *Fire Behavior Entry* form. The *Delete* button deletes the current FB record and all data recorded for the fire. The *Delete FBDData* button deletes observations recorded at one time period for the fire. The *List FBDData* displays a list of all observations recorded for the current *FireID* and may be used to navigate to a specific observation for editing purposes.

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Figure 22. Fire Behavior data entry form.

Metadata (MD) Data Entry Form

The MD data entry form (figure 23) is used for entering any metadata and/or general comments about the FIREMON sampling methods. The MD form is separate from other data entry forms since it is not entered for every plot. The records in the MD table are linked to the plot data through the *MDID* field on the PD form. One MDID record may be linked to many plots. Enter metadata and/or comments by subject in the comments field. [Click the *New Record* button on the *MDData* navigation bar in the upper part of the *Metadata Entry Form* to start recording comments for a new subject related to the current *Metadata ID*.](#) The *Comment* field can store up to 65,536 characters. If more text is needed, split up the metadata and comments into different subjects. Text from word processor documents (e.g. Microsoft Word) may be copied from the Windows clipboard into the *Comments* field.

The file name for Word processing documents (e.g. Microsoft Word) may be entered in the *Documents Link* field and opened via hyperlink from the MD form. These documents provide additional metadata which is linked to FIREMON plots and also display tables and figures which can not be stored in the comments field. These documents should be stored in the documents subdirectory or the user selected directory listed in the *Document Base Directory* field in the FIREMON Configuration and Settings form (figure 3).

The *Delete* button deletes the current MD record and all associated records. The *Delete MDData* button deletes metadata or comments for one subject only. The *List MDData*

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displays a list of all subject records for an MDID record and may be used to navigate to a specific subject for editing purposes.

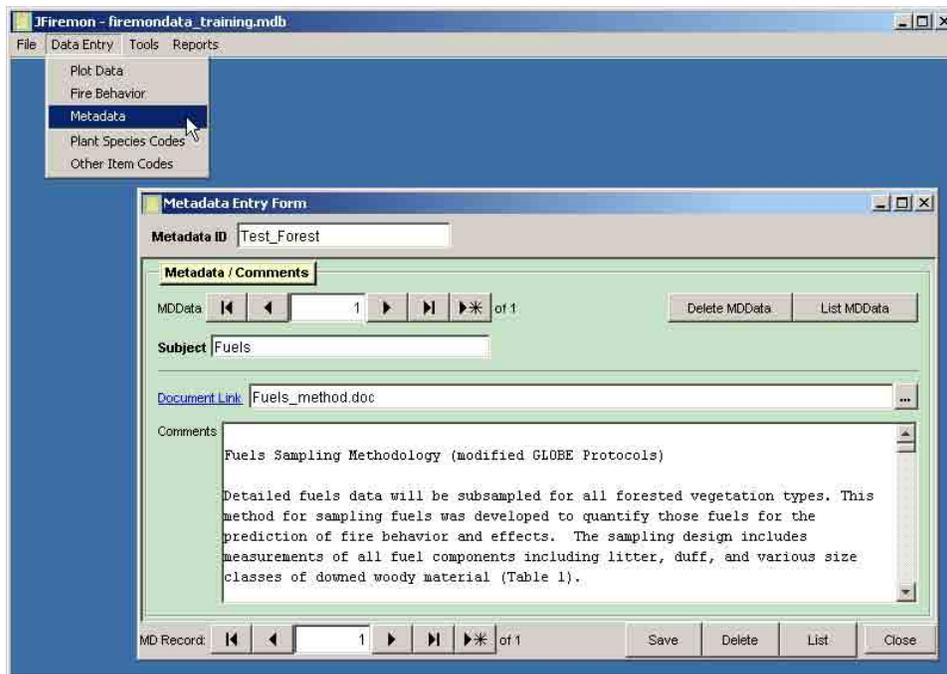


Figure 23. Metadata data entry form.

FIREMON DATA SUMMARY REPORTS

FIREMON provides reports to display summary data for each plot in the FIREMON database. Reports may be printed or exported as .pdf, .csv, or .html files. Select *Reports* → *Data Summary Reports* from the FIREMON toolbar to display the *Data Summary Reports* form (figure 24). Users may select the output units for the reports (English or Metric). The data summary report is selected using the radio buttons. The plots displayed on the report may be filtered by any of the FIREMON plot key fields and the sample event. For example, users may report only plots for a specific project or only select pre treatment plots. Click on the *Generate Report* button to display the report. Use the *Print* button to print the report or the *Export* button to save the report in the desired file format.

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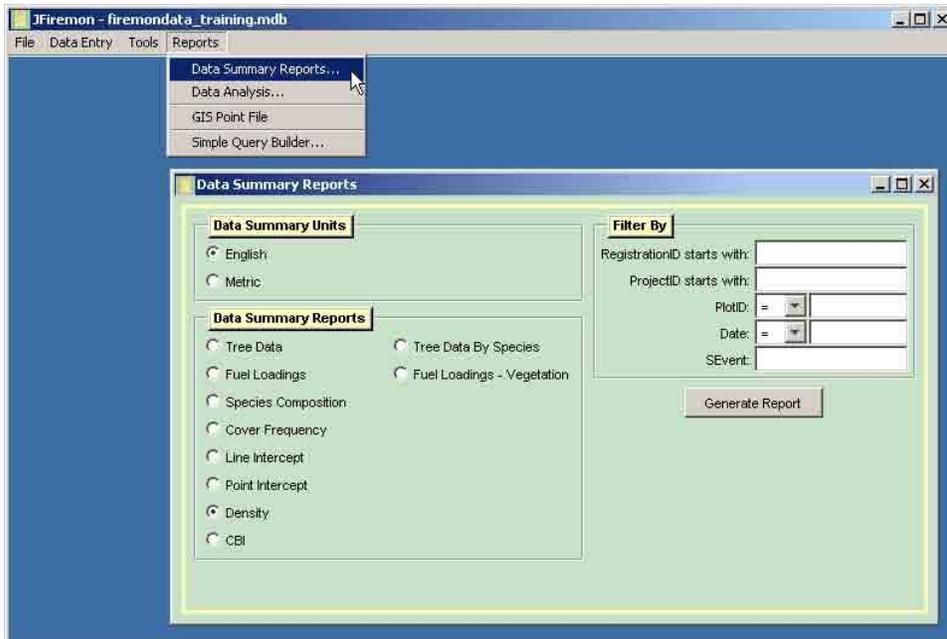


Figure 24. Data summary reports form.

Tree Data (TD) Summary Reports

The TD data summary reports (figures 25 and 26) display summary data for all trees on a plot and by tree species on a plot. Tree density, basal area, average live crown base height, average height, and quadratic mean diameter (QMD) are calculated for mature trees. Seedling density, sapling density, and snag density are also calculated. Density is calculated per acre (ha), average heights are displayed in feet (m), and QMD is displayed in inches (cm).

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Tree Summary

RegID	ProjID	PlotID	Date	Sample Event	Trees (per acre)	Basal Area (sq ft/acre)	Avg Live Crown Base Height (ft)	Avg Height (ft)	QMD (in)	Saplings (per acre)	Seedlings (per acre)	Total Trees (per acre)	Snags (per acre)
TEST	FOREST	1	101501	P1	50.0	22.4	27.2	63.0	50.0	50.0	500.0	600.0	.0
TEST	FOREST	1	100702	R1	30.0	22.4	51.7	72.7	11.7	50.0	500.0	580.0	2.0
TEST	FOREST	1	80203	R2	30.0	22.4	51.7	72.7	11.7	50.0	500.0	580.0	2.0
TEST	FOREST	1	10402	P1	50.0	99.2	26.4	66.6	15.9	50.0	500.0	600.0	.0
TEST	FOREST	1	100802	R1	40.0	67.4	34.8	78.0	17.6	50.0	500.0	590.0	1.0
TEST	FOREST	1	80503	R2	30.0	63.9	38.0	89.0	19.8	50.0	500.0	580.0	2.0
TEST	FOREST	4	50502	P1	50.0	44.6	24.8	63.2	12.8	50.0	500.0	600.0	.0
TEST	FOREST	4	100502	R1	40.0	40.1	31.0	70.8	13.6	50.0	500.0	590.0	1.0
TEST	FOREST	4	90503	R2	30.0	30.2	31.0	75.7	13.6	50.0	500.0	580.0	2.0
TEST	FOREST	5	50602	P1	50.0	26.6	27.6	88.0	9.9	50.0	600.0	700.0	.0
TEST	FOREST	5	100502	R1	40.0	23.1	35.0	64.0	10.7	50.0	600.0	680.0	1.0
TEST	FOREST	5	90503	R2	30.0	21.2	36.7	72.0	11.9	50.0	600.0	680.0	2.0
TEST	FOREST	6	50502	P1	50.6	50.0	27.6	76.1	13.5	50.6	505.9	607.0	.0
TEST	FOREST	6	100702	R1	50.6	67.9	37.4	77.8	15.7	50.6	505.9	607.0	.0
TEST	FOREST	6	90703	R2	50.6	70.0	35.6	68.2	15.9	50.6	505.9	607.0	.0
TEST	FOREST	8	53002	P1	40.5	37.1	29.4	62.1	8.8	50.6	404.7	495.8	1.0
TEST	FOREST	8	92102	R1	20.2	30.9	34.8	68.9	9.9	50.6	505.9	576.7	1.0
TEST	FOREST	8	92803	R2	20.2	30.9	34.8	68.9	9.9	50.6	505.9	576.7	1.0

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Figure 25. Tree data summary report.

Tree Summary by Species

RegID	ProjID	PlotID	Date	Sample Event	Species	Trees (per acre)	Basal Area (sq ft/acre)	Avg Live Crown Base Height (ft)	Avg Height (ft)	QMD (in)	Saplings (per acre)	Seedlings (per acre)	Total Trees (per acre)	Snags (per acre)
TEST	FOREST	1	101501	P1	PICO	10.0	7.1	23.3	48.3	6.7	.0	.0	10.0	.0
TEST	FOREST	1	101501	P1	PSME	20.0	20.1	33.0	85.0	13.6	50.0	500.0	570.0	.0
TEST	FOREST	1	100702	R1	PICO	10.0	2.1	35.0	48.0	6.5	.0	200.0	210.0	2.0
TEST	FOREST	1	100702	R1	PSME	20.0	20.1	60.0	85.0	13.6	50.0	100.0	370.0	.0
TEST	FOREST	1	80203	R2	PICO	10.0	2.1	35.0	48.0	6.5	.0	200.0	210.0	2.0
TEST	FOREST	1	80203	R2	PSME	20.0	20.1	60.0	85.0	13.6	50.0	100.0	370.0	.0
TEST	FOREST	1	10402	P1	PIPO	10.0	61.1	27.3	75.0	19.1	30.0	100.0	360.0	.0
TEST	FOREST	1	10402	P1	PSME	20.0	7.9	25.0	54.0	8.5	20.0	200.0	240.0	.0
TEST	FOREST	3	100802	R1	PIPO	20.0	39.5	34.5	102.0	23.4	30.0	100.0	350.0	1.0
TEST	FOREST	3	100802	R1	PSME	20.0	7.9	35.0	54.0	8.5	20.0	200.0	240.0	.0
TEST	FOREST	3	80503	R2	PIPO	20.0	39.5	34.5	102.0	23.4	30.0	100.0	350.0	1.0
TEST	FOREST	3	80503	R2	PSME	10.0	4.4	45.0	63.0	9.0	20.0	200.0	250.0	1.0
TEST	FOREST	4	50502	P1	LAOC	20.0	9.9	27.0	65.5	9.5	20.0	100.0	140.0	.0
TEST	FOREST	4	50502	P1	PIPO	10.0	20.1	27.0	95.0	19.1	10.0	200.0	250.0	.0
TEST	FOREST	4	50502	P1	PSME	20.0	14.4	21.5	45.0	11.4	20.0	200.0	240.0	.0
TEST	FOREST	4	100502	R1	LAOC	20.0	9.9	31.0	65.5	9.5	20.0	100.0	140.0	.0
TEST	FOREST	4	100502	R1	PIPO	10.0	20.1	27.0	95.0	19.1	10.0	200.0	250.0	.0
TEST	FOREST	4	100502	R1	PSME	10.0	10.1	39.0	57.0	13.6	20.0	200.0	250.0	1.0
TEST	FOREST	4	80503	R2	LAOC	20.0	9.9	31.0	66.0	9.5	20.0	100.0	140.0	.0
TEST	FOREST	4	80503	R2	PIPO	10.0	20.1	27.0	95.0	19.1	10.0	200.0	250.0	.0

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Figure 26. Tree data summary report by species.

Fuel Loading (FL) Summary Reports

The FL summary reports (figures 27 and 28) display fuel loadings in tons per acre (kg per m²) calculated from fuel counts and duff / litter measurements on the fuels transects along with average vegetation cover and heights. Down woody loadings are calculated for 1-hr, 10-hr, 100-hr, 1-100-hr, 1000-hr sound, 1000-hr rotten, and 1-1000hr fuels. Biomass is calculated based on the equations presented in Handbook for Inventorying Downed Woody Material (Brown 1974). Non-slash, composite values are used for quadratic mean diameter, non-horizontal correction and specific gravity of fine woody debris. Decay class 1, 2 and 3 pieces of coarse woody debris are considered sound and assigned a specific gravity of 0.40. Decay class 4 and 5 pieces are considered rotten and assigned a specific gravity of 0.30. Loading of litter and duff is calculated using bulk densities of 2.75 lbs/ft³ and 5.5 lbs/ft³, respectively. Duff and litter depth summaries are provided. Averages for live shrub cover, dead shrub cover, live herbaceous cover, and dead herbaceous cover are also calculated. Average shrub height and herbaceous height are calculated in feet (m). Biomass of live and dead shrubs and biomass of live and dead herbaceous plants are calculated using the equation,

$$B=H*C*BD$$

Where, B is biomass (kg/sq. m)
 H is height (m)
 C is percent cover/100
and BD is bulk density (kg/cu. m)

Bulk density used for the herbaceous and shrub components are 0.8 kg/m³ and 1.8 kg/m³, respectively.

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Fuel Loading Summary

RegID	ProjID	PlotID	Date	Sample Event	Tons per Acre										Depth (m)		
					1-Jr	10-Jr	100-Jr	1-100-Jr	1000-Jr Semi-R	1000-Jr Rotten	1-1000-Jr	Duff	Litter	Total	Duff	Litter	Total
TEST	FOREST	1	10/15/01	P1	0.72	7.27	3.45	11.41	4.82	1.1	17.6	15.9	1.9	37.4	1.6	.8	2.4
TEST	FOREST	1	10/07/02	R1	0.36	3.71	1.97	6.05	2.91	.3	9.3	10.8	.9	30.9	1.1	.2	1.2
TEST	FOREST	1	6/02/03	R2	0.4	4.31	3.45	8.38	2.91	.1	11.2	13.0	1.0	25.2	1.3	.2	1.5
TEST	FOREST	3	1/04/02	P1	0.08	0.79	1.51	2.39	11.08	.0	13.5	8.5	.8	22.7	.8	.2	1.0
TEST	FOREST	3	10/08/02	R1	0.03	0.32	1.02	1.37	10.56	.0	11.9	6.9	.3	19.1	.7	.1	.8
TEST	FOREST	3	6/03/03	R2	0.07	0.48	1.02	1.57	10.56	.0	12.1	7.9	.4	20.4	.8	.1	.9
TEST	FOREST	4	5/05/02	P1	0.42	2.94	3.5	5.97	8.0	9.1	23.0	16.9	4.1	44.0	1.7	.8	2.5
TEST	FOREST	4	10/03/02	R1	0.07	0.32	1.01	1.4	7.06	8.6	17.1	12.5	.0	29.6	1.2	.0	1.2
TEST	FOREST	4	9/05/03	R2	0.12	0.63	1.49	2.25	4.77	10.4	17.4	11.6	.3	29.4	1.2	.1	1.2
TEST	FOREST	5	5/06/02	P1	0.75	1.71	1.49	3.95	12.47	3.0	19.4	11.5	3.0	33.9	1.2	.6	1.8
TEST	FOREST	5	10/05/02	R1	0.22	0.78	1.01	2.01	11.59	2.5	16.1	10.9	.3	27.1	1.1	.0	1.1
TEST	FOREST	5	9/05/03	R2	0.29	1.1	1.49	2.88	11.59	2.5	16.9	10.8	.3	27.9	1.1	.0	1.1
TEST	FOREST	6	5/05/02	P1	0.24	1.44	1.41	3.06	17.76	.0	20.8	9.4	.9	31.0	2.4	.4	2.8
TEST	FOREST	6	10/07/02	R1	0.06	0.43	0.93	1.42	15.55	.0	17.0	6.2	.0	22.1	1.6	.0	1.6
TEST	FOREST	6	9/07/03	R2	0.1	0.58	0.93	1.61	15.55	.0	17.2	8.1	.3	25.5	2.0	.1	2.2
TEST	FOREST	8	5/10/02	P1	0.27	1.89	3.31	5.47	9.31	5.2	19.8	18.4	3.1	41.3	4.7	1.6	6.2
TEST	FOREST	8	9/21/02	R1	0.04	0.28	1.93	2.23	8.61	4.4	15.3	30.0	.0	23.9	2.2	.0	2.2
TEST	FOREST	8	9/28/03	R2	0.1	1.02	2.37	1.5	8.61	4.4	16.6	11.7	.7	29.0	3.0	.3	3.3
TEST	INV	1077	7/06/00	IV	0.42	0.83	0.7	1.95	9.71	39.8	51.5			51.5		1.6	
TEST	INV	2236	8/19/00	IV	0.4	1.12	4.12	5.64	0.83	7.8	14.3			14.3		3.0	
TEST	INV	2237	8/19/00	IV	0.43	0.66	1.68	2.78	3.78	11.8	18.4			18.4		1.3	

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Figure 27. Fuel loading summary report.

Fuel Loading Vegetation Summary

RegID	ProjID	PlotID	Date	Sample Event	Shrub Cover %		Shrub Height (ft)	Herbaceous Cover %		Herbaceous Height (ft)	Biomass (tons per acre)			
					Live	Dead		Live	Dead		Shrub Live	Shrub Dead	Herbaceous Live	Herbaceous Dead
TEST	FOREST	1	10/15/01	P1	25.0	20.0	2.5	45.0	30.0	0.75	4.36	3.92	0.34	0.51
TEST	FOREST	1	10/07/02	R1	5.0	37.5	2.0	2.5	60.0	0.1	2.74	5.34	0.06	0.82
TEST	FOREST	1	6/02/03	R2	60.0	15.0	4.0	55.0	25.0	0.4	20.57	5.63	0.85	0.48
TEST	FOREST	3	1/04/02	P1	25.0	7.5	1.73	30.0	30.0	0.45	2.92	2.37	0.25	0.55
TEST	FOREST	3	10/08/02	R1	7.5	45.0	1.0	7.5	55.0	0.25	1.35	3.46	.02	0.8
TEST	FOREST	3	6/03/03	R2	45.0	20.0	3.3	55.0	25.0	1.25	11.31	5.18	1.11	0.76
TEST	FOREST	4	5/05/02	P1	55.0	15.0	2.72	30.0	15.0	0.5	11.76	3.85	0.57	0.38
TEST	FOREST	4	10/03/02	R1	7.5	75.0	1.73	0.5	40.0	0.15	2.36	12.99	0.03	0.58
TEST	FOREST	4	9/05/03	R2	65.0	35.0	4.0	55.0	25.0	1.0	21.2	9.54	1.05	0.67
TEST	FOREST	5	5/06/02	P1	35.0	7.5	2.5	35.0	30.0	0.4	5.9	3.39	0.6	0.41
TEST	FOREST	5	10/05/02	R1	15.0	35.0	2.0	2.5	10.0	0.25	2.81	4.57	0.09	0.24
TEST	FOREST	5	9/05/03	R2	55.0	15.0	4.0	65.0	25.0	1.0	17.34	5.63	1.18	0.67
TEST	FOREST	6	5/05/02	P1	25.0	5.0	1.73	25.0	7.5	0.49	2.98	2.36	0.31	0.28
TEST	FOREST	6	10/07/02	R1	5.0	25.0	0.98	0.0	12.5	0.35	0.99	1.78	0.0	0.23
TEST	FOREST	6	9/07/03	R2	55.0	15.0	3.44	55.0	7.5	0.74	15.26	4.88	0.97	0.37
TEST	FOREST	8	5/10/02	P1	45.0	10.0	2.95	17.5	4.0	0.39	9.34	4.05	0.38	0.21
TEST	FOREST	8	9/21/02	R1	7.5	7.5	0.71	0.0	0.0	0.0	0.99	1.0	0.0	0.0
TEST	FOREST	8	9/28/03	R2	55.0	20.0	2.95	40.0	15.0	0.74	12.8	4.37	0.78	0.46

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Figure 28. Fuel loading vegetation summary report.

Species Composition (SC) Summary Report

The SC summary report (figure 29) displays the same species cover data as the data entry form since no calculations are required to calculate average cover or height for a plot. Average height is displayed in feet or meters depending on the output units selected.

The screenshot shows a software window titled "Viewer" with a menu bar containing "Print", "Reload", and "Export". The main content area displays a table titled "Species Composition Summary". The table has the following columns: RegID, ProjID, PlotID, Date, Sample Event, Freq, Status, Size Class, Cover (%), and Height (ft). The data rows show various species (ARUV, PHMAA, PICO, PSME, SYAL) across different plots and dates, with their respective cover percentages and heights.

RegID	ProjID	PlotID	Date	Sample Event	Freq	Status	Size Class	Cover (%)	Height (ft)
TEST	FOREST	1	1013.01	P1	ARUV	L	TO	0	0.1
TEST	FOREST	1	1013.01	P1	PHMAA	L	TO	10	3.0
TEST	FOREST	1	1013.01	P1	PICO	L	TO	30	30.0
TEST	FOREST	1	1013.01	P1	PSME	L	TO	20	35.0
TEST	FOREST	1	1013.01	P1	SYAL	L	TO	10	1.0
TEST	FOREST	1	1007.02	R1	ARUV	L	TO	10	0.1
TEST	FOREST	1	1007.02	R1	PHMAA	L	TO	10	3.0
TEST	FOREST	1	1007.02	R1	PICO	L	TO	10	38.0
TEST	FOREST	1	1007.02	R1	PSME	L	TO	20	35.0
TEST	FOREST	1	802.03	R2	ARUV	L	TO	30	0.2
TEST	FOREST	1	802.03	R2	PHMAA	L	TO	10	3.0
TEST	FOREST	1	802.03	R2	PICO	L	TO	10	38.0
TEST	FOREST	1	802.03	R2	PSME	L	TO	20	35.0
TEST	FOREST	1	802.03	R2	SYAL	L	TO	10	2.0
TEST	FOREST	3	1040.02	P1	AGRP	L	TO	20	1.0
TEST	FOREST	3	1040.02	P1	FHD	L	TO	10	0.4
TEST	FOREST	3	1040.02	P1	PHMAA	L	TO	80	3.0
TEST	FOREST	3	1040.02	P1	PICO	L	TO	30	75.0
TEST	FOREST	3	1040.02	P1	PSME	L	TO	20	34.0
TEST	FOREST	3	1040.02	P1	XETE	L	TO	20	2.0
TEST	FOREST	3	1008.02	R1	AGRP	D	TO	10	0.4
TEST	FOREST	3	1008.02	R1	AGRP	L	TO	10	0.2
TEST	FOREST	3	1008.02	R1	FHD	L	TO	10	0.1
TEST	FOREST	3	1008.02	R1	PHMAA	L	TO	10	1.2
TEST	FOREST	3	1008.02	R1	PICO	L	TO	20	100.0
TEST	FOREST	3	1008.02	R1	PSME	L	TO	20	34.0

Figure 29. Species composition summary report.

Cover / Frequency (CF) Summary Report

The CF summary report (figure 30) displays average plant species cover and frequencies for the different frame sizes used in the CF method. Average cover is calculated for each plant species by status. The frequency of occurrence is calculated for the different frame sizes used to collect the frequency data. The summary Report allows up to four different frame sizes. Frequency is calculated by dividing the number of quadrats in which a species is present by the total number of quadrats.

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RegID	ProjID	PlotID	Date	Sample Event	Dean	Status	Avg Cover (%)	Subplot 1 Frequency	Subplot 2 Frequency	Subplot 3 Frequency	Subplot 4 Frequency	Avg. Height(ft)
TEST	FOREST	1	10/15/01	P1	ARUV	L	29.4	32.0	56.0	92.0	100.0	3
TEST	FOREST	1	10/15/01	P1	PIMAS	L	6.4	16.0	40.0	40.0	40.0	3.4
TEST	FOREST	1	10/15/01	P1	SYAL	L	9.6		24.0	40.0	40.0	1.2
TEST	FOREST	1	10/07/02	R1	ARUV	L	14.4			16.0	40.0	3
TEST	FOREST	1	10/07/02	R1	PIMAS	L	14.4			16.0	40.0	2.6
TEST	FOREST	1	8/02/00	R2	ARUV	L	24.2	16.0	40.0	92.0	100.0	2
TEST	FOREST	1	8/02/00	R2	PIMAS	L	6.4	16.0	40.0	40.0	40.0	3.4
TEST	FOREST	1	8/02/00	R2	SYAL	L	10.4		16.0	40.0	40.0	1.8
TEST	FOREST	3	1/04/02	P1	AGSP	L	17.2	8.0	24.0	36.0	60.0	1.0
TEST	FOREST	3	1/04/02	P1	64E	L	13.6			24.0	40.0	4
TEST	FOREST	3	1/04/02	P1	PIMAS	L	4.8		12.0	20.0	20.0	3.0
TEST	FOREST	3	1/04/02	P1	XETE	L	24.8		16.0	56.0	80.0	2.1
TEST	FOREST	3	10/08/02	R1	AGSP	D	12.8		8.0	24.0	40.0	4
TEST	FOREST	3	10/08/02	R1	AGSP	L	8.0				20.0	2
TEST	FOREST	3	10/08/02	R1	64E	L	15.2			8.0	40.0	3
TEST	FOREST	3	10/08/02	R1	PIMAS	L	4.4	4.0	12.0	20.0	20.0	1.1
TEST	FOREST	3	10/08/02	R1	XETE	D	11.2		16.0	32.0	40.0	1.8
TEST	FOREST	3	10/08/02	R1	XETE	L	15.2			8.0	40.0	1.1
TEST	FOREST	3	8/05/00	R2	AGSP	L	15.2		28.0	60.0	60.0	1.1
TEST	FOREST	3	8/05/00	R2	64E	L	13.6			24.0	40.0	6
TEST	FOREST	3	8/05/00	R2	PIMAS	L	3.2	8.0	20.0	20.0	20.0	4.0

Figure 30. Cover / Frequency summary report.

Line Intercept (LI) Summary Report

The LI summary report (figure 31) displays average cover and height values for plant species sampled using the line intercept method. Plant species cover on a transect is calculated by dividing the total intercept for each species on a transect by the total length of the transect. Average cover is then calculated for the plot by averaging the transect cover values. Average height is calculated by averaging all the height measurements for a species by status and size class. Average height is displayed in feet or meters depending on the output units selected.

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Line Intercept Summary

RegID	ProjID	PlotID	Date	Sample Event	Freq	Status	Size Class	Average Cover (%)	Average Height (ft)
TEST	FOREST	1.0	1015.01	P1	PIMAS	L	TO	35.3	3.9
TEST	FOREST	1.0	1015.01	P1	PRVI	L	TO	23.5	7.8
TEST	FOREST	1.0	1007.02	R1	PIMAS	D	TO	4.0	1.8
TEST	FOREST	1.0	1007.02	R1	PRVI	D	TO	2.0	7.0
TEST	FOREST	1.0	1007.02	R1	PRVI	L	TO	2.5	2.0
TEST	FOREST	1.0	802.03	R2	PIMAS	L	TO	11.3	3.5
TEST	FOREST	1.0	802.03	R2	PRVI	L	TO	10.0	4.3
TEST	FOREST	1.0	104.02	P1	PIMAS	L	TO	18.8	4.2
TEST	FOREST	1.0	104.02	P1	SVAL	L	TO	18.1	3.0
TEST	FOREST	1.0	1008.02	R1	PIMAS	L	TO	9.9	3.2
TEST	FOREST	1.0	1008.02	R1	SVAL	D	TO	3.8	1.5
TEST	FOREST	1.0	805.03	R2	PIMAS	L	TO	18.8	3.7
TEST	FOREST	1.0	805.03	R2	SVAL	L	TO	11.0	3.2
TEST	FOREST	4.0	505.02	P1	PRVI	L	TO	14.7	9.5
TEST	FOREST	4.0	505.02	P1	SVAL	L	TO	4.0	3.8
TEST	FOREST	4.0	1005.02	R1	PRVI	D	TO	3.0	10.0
TEST	FOREST	4.0	1005.02	R1	SVAL	D	TO	2.0	0.5
TEST	FOREST	4.0	905.03	R2	PRVI	L	TO	7.5	11.0
TEST	FOREST	4.0	905.03	R2	SVAL	L	TO	10.4	2.0
TEST	FOREST	4.0	905.03	R2	VAGL	L	TO	3.2	2.0
TEST	FOREST	5.0	506.02	P1	PIMAS	L	TO	15.2	3.0
TEST	FOREST	5.0	506.02	P1	PRVI	L	TO	12.0	7.5
TEST	FOREST	5.0	506.02	P1	SVAL	L	TO	13.4	2.1
TEST	FOREST	5.0	1005.02	R1	PIMAS	L	TO	3.6	3.0
TEST	FOREST	5.0	1005.02	R1	PRVI	L	TO	3.0	7.0
TEST	FOREST	5.0	1005.02	R1	SVAL	D	TO	0.7	1.0

Figure 31. Line intercept summary report.

Point Cover (PO) Summary Report

The PO summary report (figure 32) displays average cover and height values for plant species sampled using the point cover method. Plant species and ground cover values on a transect are calculated by dividing the number of hits for an item divided by the total number of points sampled on the transect. The transect cover values are then averaged to provide an average cover value for the plot. Average height values in feet (m) are also calculated. Plant species and ground cover values for point frames are calculated by dividing the number of hits for an item divided by the total number of points per frame. The frame cover values are used to calculate an average cover value for the plot.

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RegID	ProjID	PlotID	Date	Sample Event	Item	Status	Average Cover (%)	Average Height (ft)
TEST	FOREST	1.0	10/15/01	PI	AGSP	L	22.1	
TEST	FOREST	1.0	10/15/01	PI	ARUV	L	13.0	
TEST	FOREST	1.0	10/15/01	PI	MOSS	L	3.9	
TEST	FOREST	1.0	10/15/01	PI	ROCK	D	6.1	
TEST	FOREST	1.0	10/15/01	PI	SYAL	L	7.0	
TEST	FOREST	1.0	10/07/02	R1	AGSP	D	0.0	
TEST	FOREST	1.0	10/07/02	R1	ARUV	D	13.0	
TEST	FOREST	1.0	10/07/02	R1	ARUV	L	9.4	
TEST	FOREST	1.0	10/07/02	R1	MOSS	D	2.7	
TEST	FOREST	1.0	10/07/02	R1	ROCK	D	6.1	
TEST	FOREST	1.0	10/07/02	R1	SYAL	D	7.0	
TEST	FOREST	1.0	8/02/03	R2	AGSP	L	24.2	
TEST	FOREST	1.0	8/02/03	R2	ARUV	L	25.3	
TEST	FOREST	1.0	8/02/03	R2	MOSS	L	3.2	
TEST	FOREST	1.0	8/02/03	R2	ROCK	L	6.1	
TEST	FOREST	1.0	8/02/03	R2	SYAL	L	17.0	
TEST	FOREST	1.0	1/04/02	PI	AGSP	L	19.1	
TEST	FOREST	1.0	1/04/02	PI	FEID	L	18.5	
TEST	FOREST	1.0	1/04/02	PI	PIMAS	L	9.1	
TEST	FOREST	1.0	1/04/02	PI	SYAL	L	11.2	
TEST	FOREST	1.0	1/04/02	PI	XETE	L	7.0	
TEST	FOREST	1.0	10/08/02	R1	AGSP	D	9.1	
TEST	FOREST	1.0	10/08/02	R1	FEID	D	3.8	
TEST	FOREST	1.0	10/08/02	R1	PIMAS	L	3.2	
TEST	FOREST	1.0	10/08/02	R1	SYAL	D	7.0	
TEST	FOREST	1.0	10/08/02	R1	XETE	D	4.6	

Figure 32. Point intercept summary report.

Density (DE) Summary Report

The DE summary report (figure 33) displays density summaries for plant species and other items sampled using the density method. The average number of items per quadrat or belt transect is calculated. The average number of items per sq. foot (sq. m) and per acre (hectare) are also calculated. The average height in feet (m) is calculated for each item.

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Density Summary

RegID	ProjID	PlotID	Date	Sample Event	Burn	Status	Size Class	Avg. Biom (per quadrat or belt tran.) (per sq ft)	Avg. Biom (per sq ft)	Avg. Biom (per acre)	Avg. Height(m)
TES1	FOREST	1.0	10/15/01	PI	ARUV	L	TO	2.6	3	12777.6	3
TES1	FOREST	1.0	10/15/01	PI	PIMAS	L	TO	2.1	2	10063.2	4.1
TES1	FOREST	1.0	10/15/01	PI	SYAL	L	TO	3.2	3	13294.4	1.8
TES1	FOREST	1.0	10/07/02	R1	ARUV	D	TO	1.4	2	6582.4	1
TES1	FOREST	1.0	10/07/02	R1	ARUV	L	TO	.8	3	3872.0	2
TES1	FOREST	1.0	10/07/02	R1	PIMAS	D	TO	.8	3	3872.0	3.0
TES1	FOREST	1.0	10/07/02	R1	PIMAS	L	TO	.9	3	4239.2	3.6
TES1	FOREST	1.0	10/07/02	R1	SYAL	D	TO	1.4	2	6736.0	1.5
TES1	FOREST	1.0	10/07/02	R1	SYAL	L	TO	1.1	3	5420.8	1.6
TES1	FOREST	1.0	8/23/00	R2	ARUV	L	TO	3.5	4	16843.2	4
TES1	FOREST	1.0	8/23/00	R2	PIMAS	L	TO	2.9	3	13039.2	4.4
TES1	FOREST	1.0	8/23/00	R2	SYAL	L	TO	3.7	4	17811.2	2.0
TES1	FOREST	3.0	1/4/02	PI	AGSP	L	TO	1.0	3	4646.4	3
TES1	FOREST	3.0	1/4/02	PI	FERO	L	TO	.7	3	3484.8	4
TES1	FOREST	3.0	1/4/02	PI	PIMAS	L	TO	.6	3	3097.6	4.2
TES1	FOREST	3.0	1/4/02	PI	SYAL	L	TO	.9	3	4239.2	3.0
TES1	FOREST	3.0	1/4/02	PI	SETE	L	TO	1.6	2	7033.6	2.7
TES1	FOREST	3.0	10/08/02	R1	AGSP	D	TO	.6	3	2710.4	2
TES1	FOREST	3.0	10/08/02	R1	FERO	D	TO	.4	6	1742.4	1
TES1	FOREST	3.0	10/08/02	R1	PIMAS	L	TO	.6	3	3097.6	2.9
TES1	FOREST	3.0	10/08/02	R1	SYAL	D	TO	.7	3	3484.8	5

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Figure 33. Density summary report.

Composite Burn Index (CBI) Summary Report

The CBI summary report (figure 34) displays the Composite Burn Index for each stratum and the summarized CBI values for understory, overstory, and the total plot.

Composite Burn Index

RegID	ProjID	PlotID	Date	Substrate	Herb / Low Shrubs	Tall Shrubs / Saplings	Intermediate Trees	Big Trees	Understory	Overstory	Total Plot
TES T	FOREST	1.0	10/07/02	.52	.25	2.00	2.10	.00	1.16	2.10	1.39
TES T	FOREST	3.0	10/08/02	.00	.00	.00	.00	.00	.00	.00	.00
TES T	FOREST	4.0	10/08/02	1.62	.60	2.87	2.63	.00	1.69	2.63	1.91
TES T	FOREST	5.0	10/08/02	.00	.00	.00	.00	.00	.00	.00	.00
TES T	FOREST	6.0	10/08/02	.57	.50	1.97	1.57	.97	.97	1.57	1.11
TES T	FOREST	8.0	10/08/02	1.26	.65	2.73	2.17	1.49	1.49	2.17	1.64

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Figure 34. Composite Burn Index summary report.

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FIREMON DATA ANALYSIS PROGRAM

The FIREMON Analysis Tools (FMAT) program is opened by selecting *Reports* → *Data Analysis* from the FIREMON toolbar. When FMAT opens, it may not be connected to a database or may not be connected to the same database you are using in FIREMON. Open a database by selecting *Options* → *Settings* from the main toolbar (figure 35), click *Open* and double click on the database you want to use. Databases have an .mdb extension and are found in the c:\firemon folder. Select the *RegID* and *ProjectID* for the plots you want to examine (figure 36).

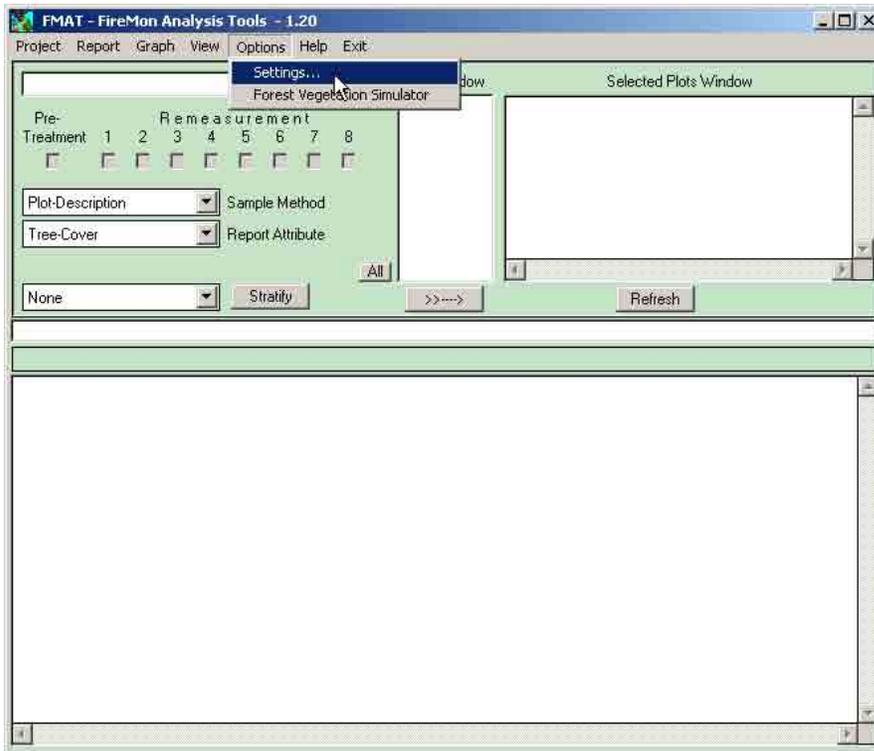


Figure 35. FIREMON Analysis Tools (FMAT) program.

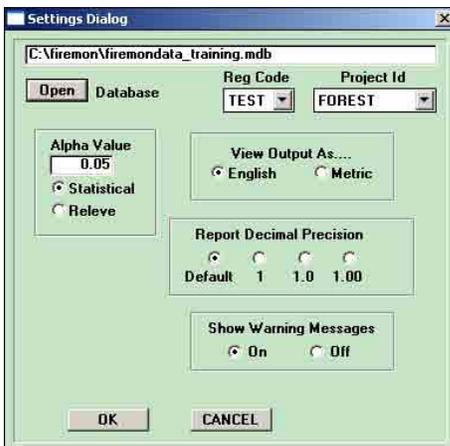


Figure 36. Settings dialog box.

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Four additional settings are found in the *Settings Dialog* box. The *Alpha Value* field lets users select the significance level of the F-test that is applied during analysis. When the p-value of the F-test is below the selected *Alpha Value* a Dunnett's t-test is performed to identify attribute(s) that are significantly different than the pre-treatment data. If the p-value of the F-test is greater than the *Alpha Value* no significant differences between attribute means were found and the Dunnett's t-test is not applied. The statistical analysis process is described in more detail below. Selecting the *Releve* radio button eliminates all statistical tests. Users can select the decimal precision and choose to see output in metric or English units. FMAT warns users of possible problems during the analysis process (e.g. if the diameter of a piece of coarse woody debris is zero or blank). If warning messages are selected (*On*), each message is printed to the screen and users must click *OK* to continue processing. If warning messages are not selected (*Off*), they are printed to a file (error.txt) that can be viewed when the analysis is finished. After selecting all options, click *OK* to close the *Settings Dialog* box. Plots with the *RegID* and *ProjectID* you selected in the *Settings Dialog* are displayed in the *Plot Window*.

Select plots for analysis by clicking the plot number(s) and clicking the arrow button below the *Plot Window*. The selected plots will move to the *Selected Plots Window* (figure 37). You can move all the plots by clicking the *All* button then clicking the arrow. Select the *Sampling Events* you want analyze (e.g. pre-treatment, first remeasurement, second remeasurement, etc.) by marking the appropriate check boxes. Select the method and attribute for analysis using the *Sample Method* and *Report Attribute* combo boxes. Generate a report by selecting *Report* → *Create Report* from the main toolbar (figure 38). Reports can be printed directly from the window, saved to a file or moved to a word processor file using the Windows *Copy* and *Paste* command.

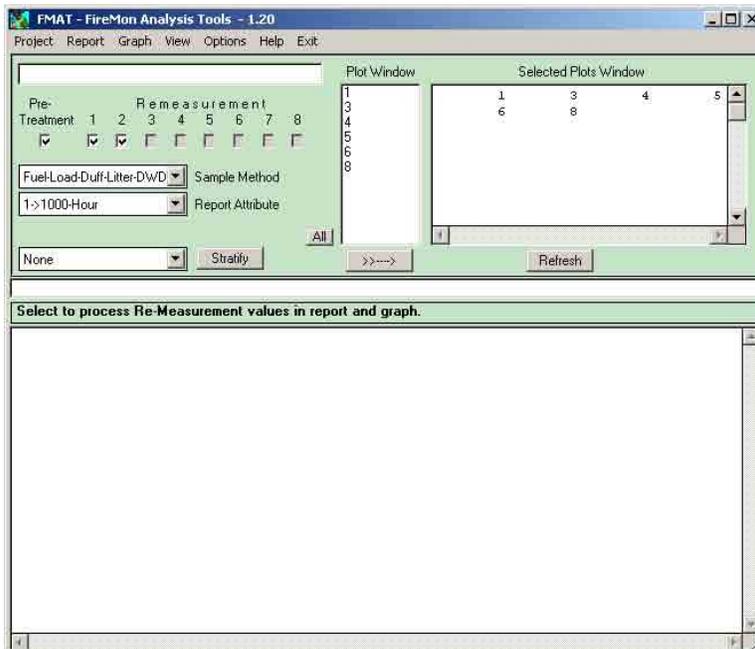


Figure 37. FIREMON Analysis Tools displayed with plots selected and moved into the *Selected Plots Window*.

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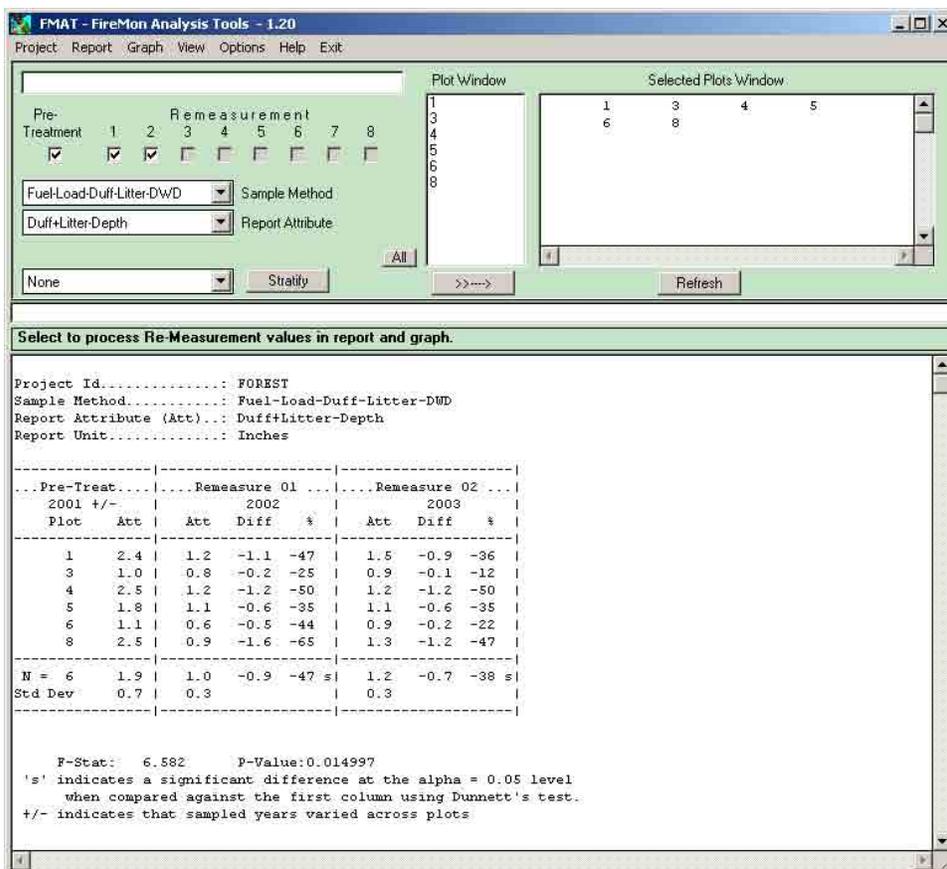


Figure 38. FIREMON Analysis Tools report display.

The FMAT program uses a one-way analysis of variance procedure for a single attribute by two or more sampling events. Analysis of variance is used to test the hypothesis that several means are equal. As described above, in addition to determining that differences exist among the means, FMAT determines which means differ when the ANOVA F-test indicates a significant difference. A Dunnett's pairwise multiple comparison t-test is used to compare a set of treatments against a single control mean. FMAT uses the first sampling event (most recent pre-treatment or first remeasurement) as the control and the subsequent sampling events as the set of treatments. The FIREMON analysis report displays the attribute value for each plot and the absolute and percent difference for each value' relative to the first sampling event. The mean values, standard deviation, and differences in mean values are displayed at the bottom of the plot attribute value table. The F-statistic and associated P-value for the ANOVA table are displayed below the plot attribute table (figure 38). An "S" next to an attribute mean indicates a significant difference when compared to the first sampling event using Dunnett's t-test at the 0.01 significance level. An "s" denotes significance at the 0.05 level.

Generate a graph by selecting *Graph* → *Create Graph* from the main toolbar (figure 39). The FIREMON analysis graph displays the mean values for the attribute by sampling event. Graphs may be printed directly from the window, saved to a file, or copied to the clipboard and pasted into word processing documents. Reports may be copied from the

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report display text box and then pasted into documents. **For additional details on the FIREMON Analysis tools, see the Analysis Tools Guide.**

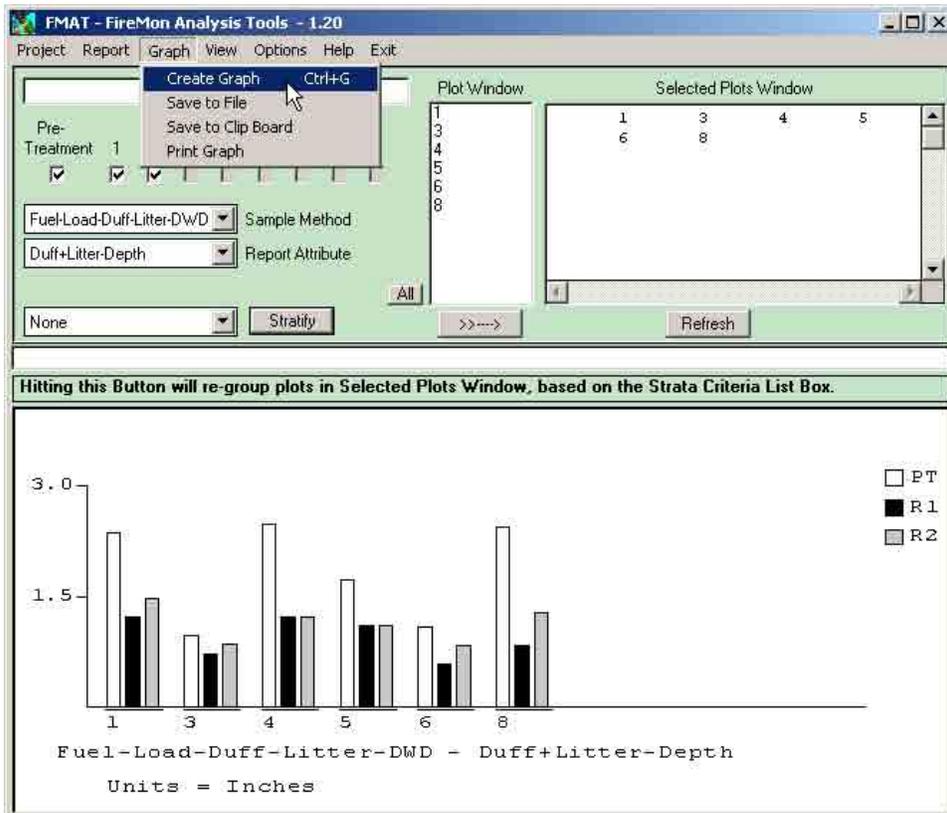


Figure 39. FIREMON Analysis Tools graph display.

SIMPLE QUERY BUILDER

Select *Reports* → *Simple Query Builder* from the FIREMON toolbar to display the *Simple Query Builder* Form (figure 40). The FIREMON Simple Query Builder is a form that allows users to query the FIREMON tables. This tool provides a quick way to view data in the FIREMON data tables and has only a few query options. Users may select any fields from one or more FIREMON tables. For example, users may select the transect length fields from the FLMacro table and the fine fuel counts plus duff/litter depths from the FLFineDL table (figure 40). The query results may be filtered by Registration ID, Project ID, Plot ID, and Date. The query results are displayed in form view for easier viewing on the screen and can be exported in .csv file format to import into spreadsheets or statistical analysis software (figure 41). All FIREMON plot data tables, fields, and field descriptions are listed below (Appendix A) as a reference for building these simple queries. See Customizing the FIREMON Database (Section 12) for a brief tutorial on designing more complex queries in Access.

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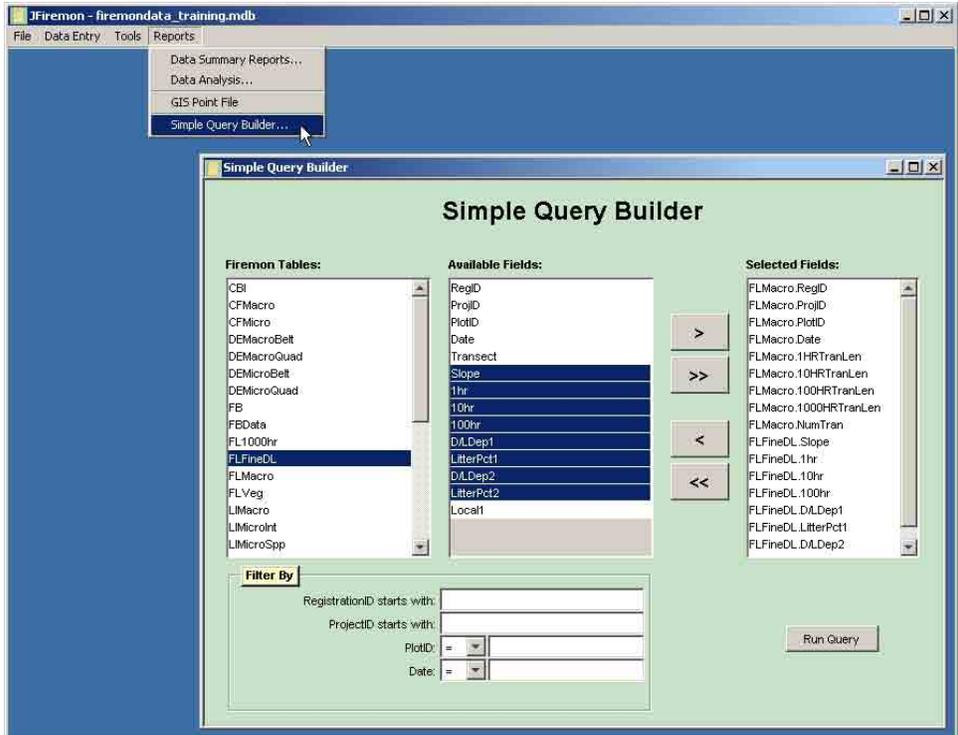


Figure 40. Simple query builder form used to link fields from the FLMacro and FLFineDL tables.

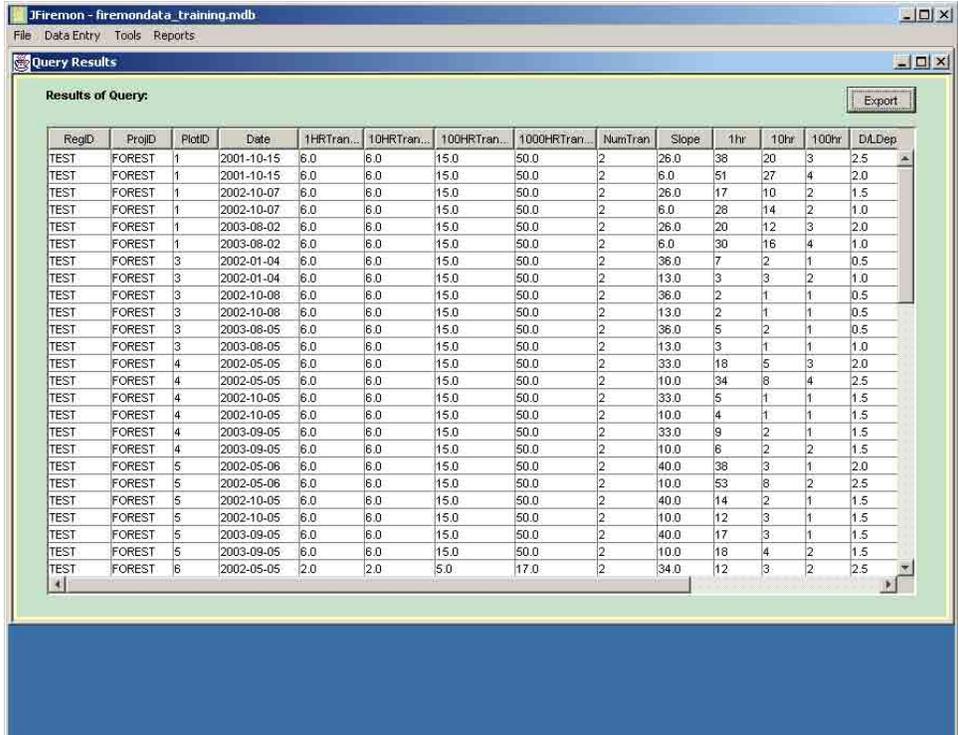
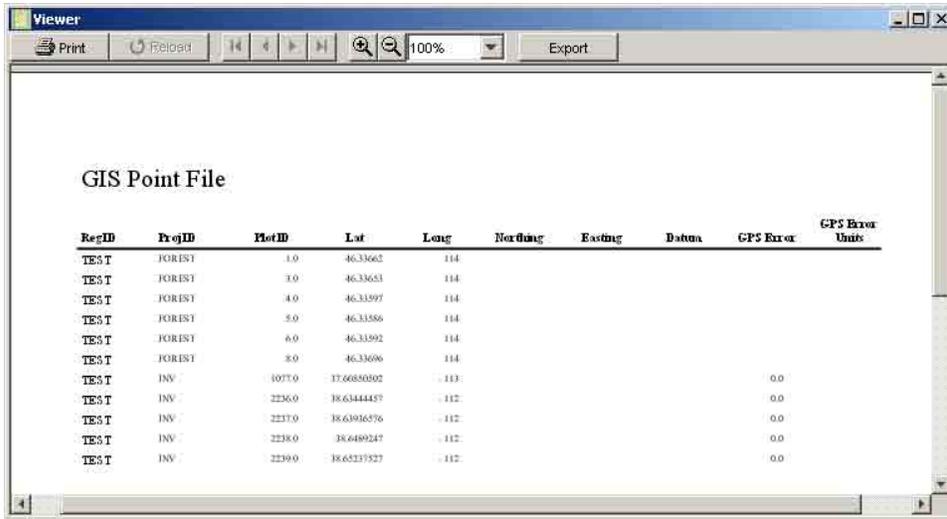


Figure 41. Query results using the Simple Query Builder to display fuel transect lengths, fine fuel counts, and duff/litter depths.

GIS POINT FILE

Select *Reports* → *GIS Point File* to display all the plot locations in the database (figure 42). This tool provides a quick way to export all the plot locations to create a point coverage in a GIS. All location fields in the PD table are displayed for all plots in the database. Location fields include latitude, longitude, UTM zone, northing, easting, datum, GPS error, and GPS error units. This file may be printed or exported in .csv, .pdf, or .html file formats.



RegID	ProjID	PlotID	Lat	Long	Northing	Easting	Datum	GPS Error	GPS Error Units
TEST	FOREST	1.0	46.33662	114					
TEST	FOREST	3.0	46.33653	114					
TEST	FOREST	4.0	46.33597	114					
TEST	FOREST	5.0	46.33586	114					
TEST	FOREST	6.0	46.33592	114					
TEST	FOREST	8.0	46.33696	114					
TEST	INV	10770	37.66850502	-113				0.0	
TEST	INV	2236.0	38.63444437	-112				0.0	
TEST	INV	2237.0	38.63936576	-112				0.0	
TEST	INV	2238.0	38.6489247	-112				0.0	
TEST	INV	2239.0	38.65237527	-112				0.0	

Figure 42. GIS point file.

RANDOM TRANSECT LOCATOR PROGRAM

Select *Tools* → *Transect Layout* from the FIREMON toolbar to display the *Random Transect Locator* form (figure 43). This tool generates random starting points for transects placed along a baseline. It also generates random starting points for placing quadrats along a transect. Enter the number of transects, transect length, and the maximum distance from the baseline to place the first quadrat. The maximum distance from the baseline for placement of the first quadrat depends on transect length, number of quadrats, spacing of quadrats, and quadrat size. Click on the *Transect Locations* button to generate the transect locations and click on the *Quadrat Locations* button to generate the starting points for the first quadrat.

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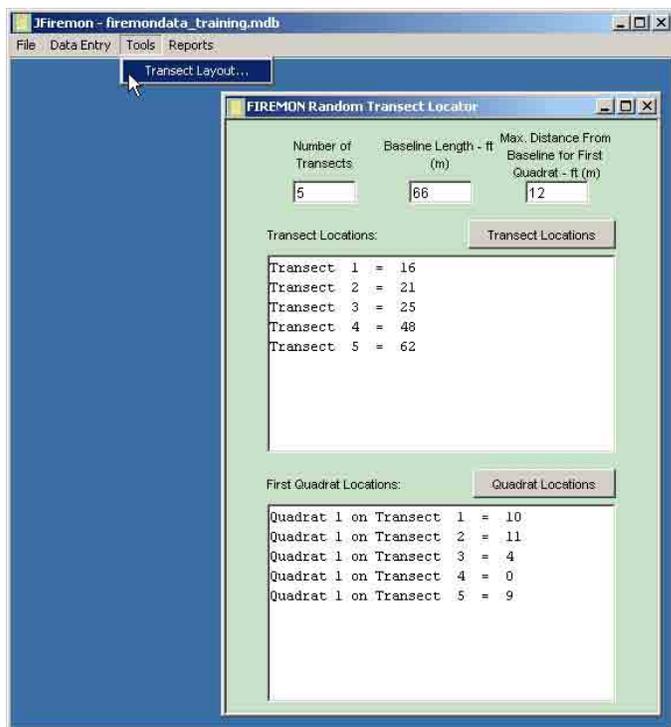


Figure 43. Random transect locator program.

CUSTOMIZING THE FIREMON DATABASE

The FIREMON database may be tailored to local users by editing the lookup code tables to provide user specific codes for various FIREMON fields. User specific queries may also be developed for customized reports or for exporting data to spreadsheets and statistical software packages. **Customizing the FIREMON code tables is generally not recommended for users who will share data with other FIREMON users. The more FIREMON is customized, the more difficult it is to share data with other FIREMON users. FIREMON user groups should coordinate their use of custom codes.**

All customized code tables and user-designed queries should reside in the FIREMON database in which users are storing their FIREMON plot data. Users with customized FIREMON databases will not lose their customized version of FIREMON code tables and queries when they install updated versions of the *JFiremon Application*.

Customizing FIREMON Codes

The FIREMON code tables may be modified to include locally specific codes. Users may edit these tables in the FIREMON *Data* database (firemondata.mdb). The FIREMON code tables are named `_codes*.*` (figure 44). The code tables are systematically named by the table name and field name for which they store codes. For example,

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_codesTD_CrwnClass is the table with the crown class codes (figure 45) used in the TD sampling method and data entry form.

The code tables generally have three fields. The first field is the code, the second field is the description of the code, and the third field is a number that sorts the order of the codes. The sorting number is used to display fields in the drop down list in an order other than alphabetic. Codes may be added, modified, or deleted. However, if longer codes are added, the field size must be lengthened in the FIREMON table. Table 1 lists all the code tables in FIREMON, the FIREMON tables and forms that use the codes, and a brief description of the type of codes stored in each table.

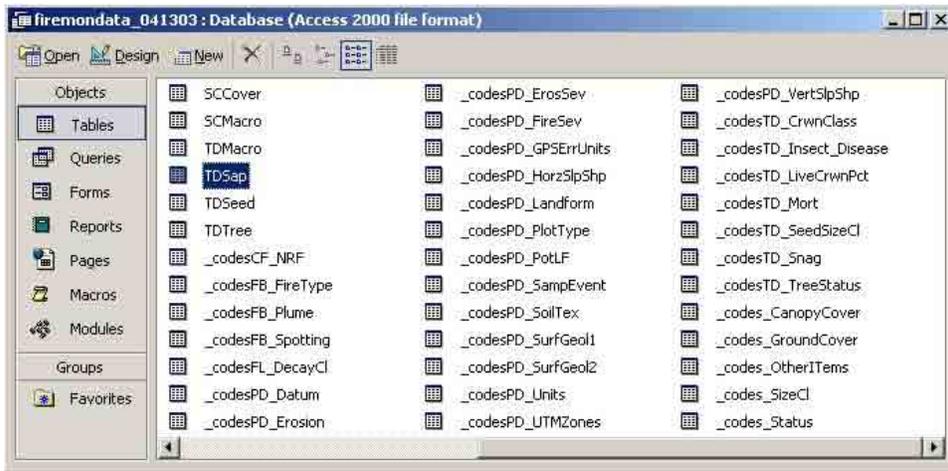


Figure 44. Code tables in the FIREMON data database.

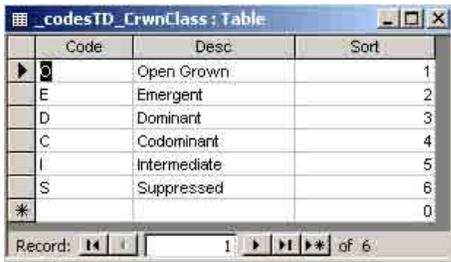


Figure 45. Crown Class codes.

Table 1. FIREMON code tables.

Table Name	FIREMON Tables/Forms	FIREMON Code Description
<u>_codes_CanopyCover</u>	PD, FL, SC, CF	Canopy Cover Classes
<u>_codes_GroundCover</u>	SC, CF, PO	Ground Cover
<u>_codes_OtherITems</u>	SC, CF, LI, PO, DE	Other Items
<u>_codes_SizeCl</u>	SC, LI, DE	Tree / Shrub Size Classes
<u>_codes_Status</u>	SC, CF, PO, LI, DE, RS	Plant Species Status
<u>_codesCF_NRF</u>	CF	Nested Rooted Frequency
<u>_codesFB_FireType</u>	FB	Fire Type

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_codesFB_Plume	FB	Plume
_codesFB_Spotting	FB	Spotting
_codesFL_DecayCl	FL	Log Decay Class
_codesPD_Datum	PD	Datum
_codesPD_Erosion	PD	Erosion Type
_codesPD_ErosSev	PD	Erosion Severity
_codesPD_FireSev	PD	Fire Severity
_codesPD_GPSErrUnits	PD	GPS Error Units
_codesPD_HorzSlpShp	PD	Horizontal Slope Shape
_codesPD_Landform	PD	Landform
_codesPD_PlotType	PD	Plot Type
_codesPD_PotLF	PD	Potential Life Form
_codesPD_SampEvent	PD	Sampling Event
_codesPD_SoilTex	PD	Soil Texture
_codesPD_SurfGeol1	PD	Primary Surficial Geology
_codesPD_SurfGeol2	PD	Secondary Surficial Geology
_codesPD_Units	PD	Measuring Units
_codesPD_UTMZones	PD	UTM Zone
_codesPD_VegComp	PD	Non-species Vegetation Composition Codes
_codesPD_VertSlpShp	PD	Vertical Slope Shape
_codesRS_Stage	RS	Plant Species Stage
_codesTD_CrwnClass	TD	Crown Class
_codesTD_Damage	TD	Damage
_codesTD_DamSev	TD	Damage Severity
_codesTD_LiveCrwnPct	TD	Live Crown Percent
_codesTD_Mort	TD	Mortality
_codesTD_SapSizeCl	TD	Sapling Size Class
_codesTD_SeedSizeCl	TD	Seedling Size Class
_codesTD_Snag	TD	Snag Decay Class
_codesTD_TreeStatus	TD	Tree Status

Developing Custom Queries in FIREMON

The JFiremon application has a *Simple Query Builder* tool that allows users to display and export data from FIREMON tables. However, this form only builds relatively simple queries and can only filter records based on the four primary key fields in FIREMON (RegID, ProjID, PlotID, and Date). More complex queries require the use of the *Access Query Design* window described below. Users may design their own queries and store them in the FIREMON database. Click on *Queries* → *New* → *Design* view to display the *Access Query Design* window (figure 45). Customized queries are useful for exporting data into statistical software packages or for generating custom reports. All FIREMON tables, fields, and field descriptions are listed below (Appendix A) as a reference for building customized queries.

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Access prompts users to click on tables to add to the *Access Query Design* window. Selected tables and their relationships are added to the design window. Users may select the desired fields along with any criteria for specific fields. For example, the query in figure 46 joins the PD table with the FLMacro and FLFineDL tables. This query selects the FireID, PlotID, transect number, slope, and fine fuel counts for all plots in the FIREMON database which were located inside the fire assigned to FireID=101. The resulting query is displayed in figure 46.

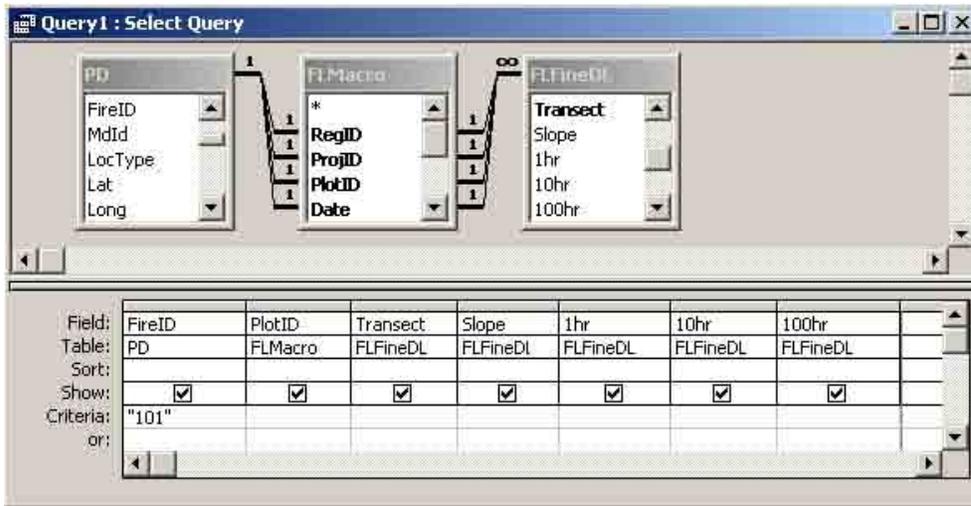


Figure 46. Access Query Design window.

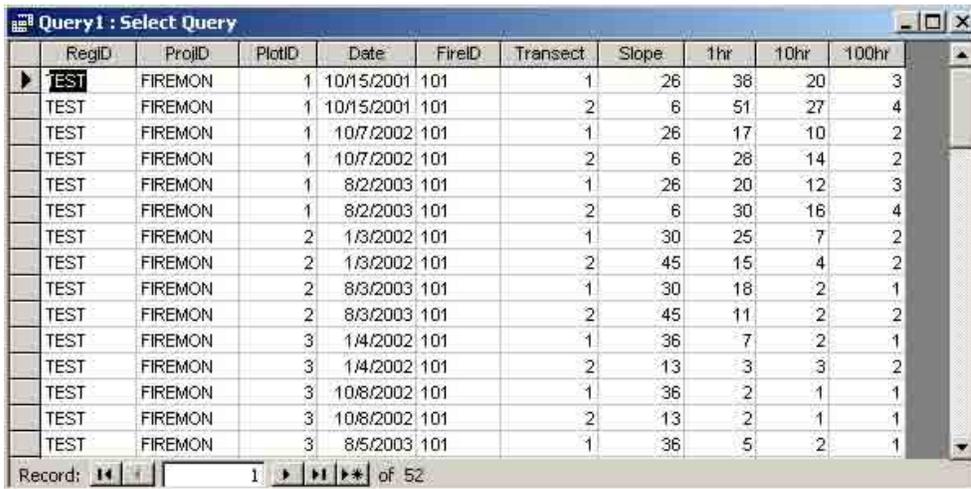


Figure 46. Query results for displaying fine fuel counts on transects for FireID = 101.

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Appendix A: FIREMON Table Names, Field Names, and Field Descriptions

Table Name	Field Name	Field Description
CBI	RegID	Registration ID
CBI	ProjID	Project ID
CBI	PlotID	Plot ID
CBI	Date	Date
CBI	Percent_20m_Plot_Burned	Percent of 20m plot burned
CBI	Percent_30m_Plot_Burned	Percent of 30m plot burned
CBI	FuelPhoto	Fuel photo
CBI	PreFire_Cov_Litter	Litter cover before the fire
CBI	PreFire_Cov_Duff	Duff cover before the fire
CBI	PreFire_Cov_Soil	Soil cover before the fire
CBI	PreFire_Depth_Litter	Litter depth before the fire
CBI	PreFire_Depth_Duff	Duff depth before the fire
CBI	PreFire_Depth_FuelBed	Fuelbed depth before the fire
CBI	Litter	Litter score
CBI	Duff	Duff score
CBI	Med_Fuels	Medium fuels score
CBI	Heavy_Fuels	Heavy fuels score
CBI	Soil_Cover	Soil cover score
CBI	Add_Factor_Substrates	Additional substrate factor score
CBI	PreFire_Cov_Herbs	Herbaceous cover before the fire
CBI	Percent_Foliage_Alt_Herbs	Percent altered herbaceous foliage score
CBI	Percent_Living_Herbs	Percent live herbaceous score
CBI	Colonizers_Herbs	Herbaceous colonizers score
CBI	Species_Diversity_Herbs	Herbaceous species diversity score
CBI	Add_Factor_Herbs	Additional herbaceous factor score
CBI	Enhanced_Growth_Fact_Herbs	Enhanced growth factor for herbaceous plants
CBI	PreFire_Cov_Tall_Shrubs	Tall shrub cover before the fire
CBI	Percent_Foliage_Alt_Tall_Shrubs	Percent altered shrub foliage score
CBI	Percent_Green_Tall_Shrubs	Percent green shrub score
CBI	Percent_Living_Tall_Shrubs	Percent live shrub score
CBI	Species_Diversity_Tall_Shrubs	Shrub species diversity score
CBI	Add_Factor_Tall_Shrubs	Additional shrub factor score
CBI	Enhanced_Growth_Fact_Tall_Shrubs	Enhanced growth factor for shrubs
CBI	PreFire_Cov_Int_Trees	Intermediate tree cover before the fire
CBI	PreFire_Den_Int_Trees	Intermediate tree density before the fire
CBI	Percent_Green_Int_Trees	Percent green intermediate tree score
CBI	Percent_Black_Int_Trees	Percent black intermediate tree score
CBI	Percent_Brown_Int_Trees	Percent brown intermediate tree score
CBI	Percent_Canopy_Mort_Int_Trees	Percent intermediate tree canopy mortality score
CBI	Char_Height_Int_Trees	Intermediate tree char height score
CBI	Add_Factor_Int_Trees	Additional intermediate tree factor score
CBI	Percent_Girdled_Int_Trees	Percent intermediate trees girdled
CBI	Percent_Felled_Int_Trees	Percent intermediate trees felled
CBI	Percent_Tree_Mort_Int_Trees	Percent intermediate tree mortality
CBI	PreFire_Cov_Big_Trees	Big tree cover before the fire
CBI	PreFire_Den_Big_Trees	Big tree density before the fire

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CBI	Percent_Green_Big_Trees	Percent green big tree score
CBI	Percent_Black_Big_Trees	Percent black big tree score
CBI	Percent_Brown_Big_Trees	Percent brown big tree score
CBI	Percent_Canopy_Mort_Big_Trees	Percent big tree canopy mortality score
CBI	Char_Height_Big_Trees	Big tree char height score
CBI	Add_Factor_Big_Trees	Additional big tree factor score
CBI	Percent_Girdled_Big_Trees	Percent big trees girdled
CBI	Percent_Felled_Big_Trees	Percent big trees felled
CBI	Percent_Tree_Mort_Big_Trees	Percent big tree mortality
CBI	Plant_Community_Notes	Notes on plant species community
CBI	Substrate_CBI	Substrate composite burn index
CBI	Low_Shrub_CBI	Low shrub composite burn index
CBI	Tall_Shrub_Sapling_CBI	Tall shrub composite burn index
CBI	Intermediate_Trees_CBI	Intermediate tree composite burn index
CBI	Big_Trees_CBI	Big tree composite burn index
CBI	Understory_CBI	Understory composite burn index
CBI	Overstory_CBI	Overstory composite burn index
CBI	Total_Plot_CBI	Total plot composite burn index
CFMacro	RegID	Registration ID
CFMacro	ProjID	Project ID
CFMacro	PlotID	Plot ID
CFMacro	Date	Date
CFMacro	NumTran	Number of transects
CFMacro	TranLen	Transect length - feet (m)
CFMacro	NumQuadTran	Number of quadrats/transect
CFMacro	QuadLen	Quadrat length - inches (cm)
CFMacro	QuadWid	Quadrat width - inches (cm)
CFMacro	NFRatio	Nested frequency subplot size ratio - percent
CFMacro	NFNum	Nested frequency subplot numbers
CFMicro	RegID	Registration ID
CFMicro	ProjID	Project ID
CFMicro	PlotID	Plot ID
CFMicro	Date	Date
CFMicro	Transect	Transect number
CFMicro	Item	Item code - plant species or other item
CFMicro	Status	Health of species (live or dead)
CFMicro	CC1	Canopy cover of item by quadrat - percent
CFMicro	NRF1	Nested rooted frequency of item by quadrat
CFMicro	Ht1	Height of item by quadrat
CFMicro	CC2	
CFMicro	NRF2	
CFMicro	Ht2	
CFMicro	CC3	
CFMicro	NRF3	
CFMicro	Ht3	
CFMicro	CC4	
CFMicro	NRF4	
CFMicro	Ht4	
CFMicro	CC5	
CFMicro	NRF5	
CFMicro	Ht5	

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CFMicro	CC6	
CFMicro	NRF6	Nested rooted frequency of item by quadrat
CFMicro	Ht6	Height of item by quadrat
CFMicro	CC7	
CFMicro	NRF7	
CFMicro	Ht7	
CFMicro	CC8	
CFMicro	NRF8	
CFMicro	Ht8	
CFMicro	CC9	
CFMicro	NRF9	
CFMicro	Ht9	
CFMicro	CC10	
CFMicro	NRF10	
CFMicro	Ht10	
CFMicro	CC11	
CFMicro	NRF11	
CFMicro	Ht11	
CFMicro	CC12	
CFMicro	NRF12	
CFMicro	Ht12	
CFMicro	CC13	
CFMicro	NRF13	
CFMicro	Ht13	
CFMicro	CC14	
CFMicro	NRF14	
CFMicro	Ht14	
CFMicro	CC15	
CFMicro	NRF15	
CFMicro	Ht15	
CFMicro	CC16	
CFMicro	NRF16	
CFMicro	Ht16	
CFMicro	CC17	
CFMicro	NRF17	
CFMicro	Ht17	
CFMicro	CC18	
CFMicro	NRF18	
CFMicro	Ht18	
CFMicro	CC19	
CFMicro	NRF19	
CFMicro	Ht19	
CFMicro	CC20	
CFMicro	NRF20	
CFMicro	Ht20	
DEMacroBelt	RegID	Registration ID
DEMacroBelt	ProjID	Project ID
DEMacroBelt	PlotID	Plot ID
DEMacroBelt	Date	Date
DEMacroBelt	NumTran	Number of transects
DEMacroQuad	RegID	Registration ID

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DEMacroQuad	ProjID	Project ID
DEMacroQuad	PlotID	Plot ID
DEMacroQuad	Date	Date
DEMacroQuad	NumTran	Number of transects
DEMacroQuad	NumQuadTran	Number of quadrats / transect
DEMicroBelt	RegID	Registration ID
DEMicroBelt	ProjID	Project ID
DEMicroBelt	PlotID	Plot ID
DEMicroBelt	Date	Date
DEMicroBelt	Item	Item code; plant species or other item
DEMicroBelt	Status	Health of species (live or dead)
DEMicroBelt	SizeCl	Size class
DEMicroBelt	TranLen	Transect length - feet (m)
DEMicroBelt	TranWid	Transect width - feet (m)
DEMicroBelt	Cnt1	Count (number of items) by transect
DEMicroBelt	Ht1	Average height of item by transect - feet (m)
DEMicroBelt	Cnt2	
DEMicroBelt	Ht2	
DEMicroBelt	Cnt3	
DEMicroBelt	Ht3	
DEMicroBelt	Cnt4	
DEMicroBelt	Ht4	
DEMicroBelt	Cnt5	
DEMicroBelt	Ht5	
DEMicroBelt	Cnt6	
DEMicroBelt	Ht6	
DEMicroBelt	Cnt7	
DEMicroBelt	Ht7	
DEMicroBelt	Cnt8	
DEMicroBelt	Ht8	
DEMicroBelt	Cnt9	
DEMicroBelt	Ht9	
DEMicroBelt	Cnt10	
DEMicroBelt	Ht10	
DEMicroBelt	Cnt11	
DEMicroBelt	Ht11	
DEMicroBelt	Cnt12	
DEMicroBelt	Ht12	
DEMicroBelt	Cnt13	
DEMicroBelt	Ht13	
DEMicroBelt	Cnt14	
DEMicroBelt	Ht14	
DEMicroBelt	Cnt15	
DEMicroBelt	Ht15	
DEMicroBelt	Cnt16	
DEMicroBelt	Ht16	
DEMicroBelt	Cnt17	
DEMicroBelt	Ht17	
DEMicroBelt	Cnt18	
DEMicroBelt	Ht18	
DEMicroBelt	Cnt19	
DEMicroBelt	Ht19	

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DEMicroBelt	Cnt20	
DEMicroBelt	Ht20	
DEMicroQuad	RegID	Registration ID
DEMicroQuad	ProjID	Project ID
DEMicroQuad	PlotID	Plot ID
DEMicroQuad	Date	Date
DEMicroQuad	Transect	Transect number
DEMicroQuad	Item	Item code; plant species or other item
DEMicroQuad	Status	Health of species (live or dead)
DEMicroQuad	SizeCl	Size Class
DEMicroQuad	QuadLen	Quadrat length - feet (m)
DEMicroQuad	QuadWid	Quadrat width - feet (m)
DEMicroQuad	Cnt1	Count (number of items) by quadrat
DEMicroQuad	Ht1	Average height of item by quadrat - feet (m)
DEMicroQuad	Cnt2	
DEMicroQuad	Ht2	
DEMicroQuad	Cnt3	
DEMicroQuad	Ht3	
DEMicroQuad	Cnt4	
DEMicroQuad	Ht4	
DEMicroQuad	Cnt5	
DEMicroQuad	Ht5	
DEMicroQuad	Cnt6	
DEMicroQuad	Ht6	
DEMicroQuad	Cnt7	
DEMicroQuad	Ht7	
DEMicroQuad	Cnt8	
DEMicroQuad	Ht8	
DEMicroQuad	Cnt9	
DEMicroQuad	Ht9	
DEMicroQuad	Cnt10	
DEMicroQuad	Ht10	
DEMicroQuad	Cnt11	
DEMicroQuad	Ht11	
DEMicroQuad	Cnt12	
DEMicroQuad	Ht12	
DEMicroQuad	Cnt13	
DEMicroQuad	Ht13	
DEMicroQuad	Cnt14	
DEMicroQuad	Ht14	
DEMicroQuad	Cnt15	
DEMicroQuad	Ht15	
DEMicroQuad	Cnt16	
DEMicroQuad	Ht16	
DEMicroQuad	Cnt17	
DEMicroQuad	Ht17	
DEMicroQuad	Cnt18	
DEMicroQuad	Ht18	
DEMicroQuad	Cnt19	
DEMicroQuad	Ht19	
DEMicroQuad	Cnt20	
DEMicroQuad	Ht20	

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FB	FireID	12 digit unique fire identifier
FBData	FireID	12 digit unique fire identifier
FBData	FDate	Date of the fire; format = DD/MM/YYYY
FBData	FTime	Time of day observations recorded; format = 24hr time
FBData	FName	Name of the fire
FBData	RefId	Unique fire code
FBData	Units	Units of measure; E=English and M=Metric
FBData	TObs	Temperature - degrees Fahrenheit (Celsius)
FBData	RH	Relative humidity - percent
FBData	Wind	Wind speed - miles/hr (meters/sec)
FBData	Cloud	Cloudiness - percent
FBData	W1Hr	Moisture of 1 hr fuels - percent
FBData	W10Hr	Moisture of 10 hr fuels - percent
FBData	W100Hr	Moisture of 100 hr fuels - percent
FBData	W1000HrSnd	Moisture of 1000 hr sound fuels - percent
FBData	W1000HrRott	Moisture of 1000 hr rotten fuels - percent
FBData	Litter	Moisture of litter layer - percent
FBData	Duff	Moisture of duff layer - percent
FBData	Soil	Moisture of uppermost soil layer - percent
FBData	Shrub	Moisture of live shrubs - percent
FBData	Herb	Moisture of live herbaceous plants - percent
FBData	Crown	Moisture of tree crown foliage - percent
FBData	FireType	Code for type of fire
FBData	FLength	Flame length - feet (meters)
FBData	FDepth	Flame depth - feet (meters)
FBData	Srate	Average speed of fire - feet/minute (meters/second)
FBData	Plume	Dynamic behavior of plume
FBData	Spot	Spotting behavior of fire
FBData	Local1	Local field 1
FBData	Local2	Local field 2
FBData	Comments	Comments
FL1000hr	RegID	Registration ID
FL1000hr	ProjID	Project ID
FL1000hr	PlotID	Plot ID
FL1000hr	Date	Date
FL1000hr	Transect	Line Transect Number
FL1000hr	LogNum	Log Number
FL1000hr	Dia	Diameter of log at line intersection - inches (cm)
FL1000hr	DecayCl	Log Decay Class
FL1000hr	Local1	Local field 1
FLFineDL	RegID	Registration ID
FLFineDL	ProjID	Project ID
FLFineDL	PlotID	Plot ID
FLFineDL	Date	Date
FLFineDL	Transect	Line Transect Number
FLFineDL	Slope	Slope of transect (rise/run)*100 - percent

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FLFineDL	1hr	Number of pieces 0 - 0.25 in. (0 - 0.635 cm) in diameter
FLFineDL	10hr	Number of pieces 0.25 - 1.0 in. (0.635 - 2.54 cm) in diameter
FLFineDL	100hr	Number of pieces 1- 3 in. (2.54 and 7.62 cm) in diameter
FLFineDL	D/LDep1	Depth of Duff/Litter Profile - inches (cm)
FLFineDL	LitterPct1	Proportion of total profile depth that is litter-percent
FLFineDL	D/LDep2	Depth of Duff/Litter Profile - inches (cm)
FLFineDL	LitterPct2	Proportion of total profile depth that is litter-percent
FLFineDL	Local1	Local field 2
FLMacro	RegID	Registration ID
FLMacro	ProjID	Project ID
FLMacro	PlotID	Plot ID
FLMacro	Date	Date
FLMacro	1HRTranLen	1 HR Transect Length - feet (m)
FLMacro	10HRTranLen	10 HR Transect Length - feet (m)
FLMacro	100HRTranLen	100 HR Transect Length - feet (m)
FLMacro	1000HRTranLen	1000 HR Transect Length - feet (m)
FLMacro	NumTran	Number of transects
FLVeg	RegID	Registration ID
FLVeg	ProjID	Project ID
FLVeg	PlotID	Plot ID
FLVeg	Date	Date
FLVeg	Transect	Line Transect Number
FLVeg	LiShC1	Live woody cover at point 1
FLVeg	DdShC1	Dead woody cover at point 1
FLVeg	ShHt1	Woody height at point 1
FLVeg	LiHeC1	Live non-woody cover at point 1
FLVeg	DdHeC1	Dead non-woody cover at point 1
FLVeg	HeHt1	Non-woody height at point 1
FLVeg	LiShC2	Live woody cover at point 2
FLVeg	DdShC2	Dead woody cover at point 2
FLVeg	ShHt2	Woody height at point 2
FLVeg	LiHeC2	Live non-woody cover at point 2
FLVeg	DdHeC2	Dead non-woody cover at point 2
FLVeg	HeHt2	Non-woody height at point 2
LIMacro	RegID	Registration ID
LIMacro	ProjID	Project ID
LIMacro	PlotID	Plot ID
LIMacro	Date	Date
LIMacro	NumTran	Number of transects
LIMicroInt	RegID	Registration ID
LIMicroInt	ProjID	Project ID
LIMicroInt	PlotID	Plot ID
LIMicroInt	Date	Date
LIMicroInt	Transect	Transect number

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LIMicroInt	Item	Item code; plant species or other item
LIMicroInt	Status	Health of species (live or dead)
LIMicroInt	SizeCl	Size class
LIMicroInt	Start	Starting point for intercept on measuring tape - inches (cm)
LIMicroInt	Stop	Stopping point for intercept on measuring tape - inches (cm)
LIMicroInt	Intercept	Intercept length (Stop - Start) - inches (cm)
LIMicroInt	Height	Average height for item on transect - feet (m)
LIMicroSpp	RegID	Registration ID
LIMicroSpp	ProjID	Project ID
LIMicroSpp	PlotID	Plot ID
LIMicroSpp	Date	Date
LIMicroSpp	Transect	Transect number
LIMicroSpp	Item	Item code; plant species or other item
LIMicroSpp	Status	Health of species (live or dead)
LIMicroSpp	SizeCl	Size class
LIMicroSpp	TranLen	Transect Length - feet (m)
MD	MdId	Meta data Key-ID
MDComm	MDID	Metadata ID
MDComm	Subject	Subject description
MDComm	DocLink	Hyperlink to document
MDComm	Comments	Metadata or comment text
NRCSPPlantsDB	Symbol	Plant species symbol
NRCSPPlantsDB	Symbol_Key	Plant species symbol key
NRCSPPlantsDB	Synonym_Symbol_Key	Plant species preferred synonym
NRCSPPlantsDB	Local_Code	Local plant species code
NRCSPPlantsDB	FVS_Code	FVS plant species code
NRCSPPlantsDB	Life_Form	Plant species life form
NRCSPPlantsDB	Scientific_Name	Scientific name
NRCSPPlantsDB	Common_Name	Common name
NRCSPPlantsDB	Family	Plant family
NRCSPPlantsDB	Life_Form_1	Alternate life form
NRCSPPlantsDB	Life_Form_2	Second alternate life form
PD	RegID	Registration ID
PD	ProjID	Project ID
PD	PlotID	Plot ID
PD	Date	Date
PD	OrgCode1	Organization code 1
PD	OrgCode2	Organization code 2
PD	OrgCode3	Organization code 3
PD	OrgCode4	Organization code 4
PD	Examiner	Name of FireMon crew boss or lead examiner
PD	Units	Units of measurement (English or metric)
PD	Radius	Radius/length of the macroplot in feet (meters)

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PD	Width	Width of macroplot in feet (meters)
PD	PlotType	Type of plot: C=Control, M=Measured
PD	SEvent	Sampling event - reason why plot is being measured at this time
PD	FireID	Fire behavior database key-id
PD	MdId	Metadata Key-Id
PD	LocType	Type of Location L=Lat/Long, U=UTM
PD	Lat	Latitude of plot center
PD	Long	Longitude of plot center
PD	Northing	UTM Northing of plot center
PD	Easting	UTM Easting of plot center
PD	Datum	GPS datum
PD	GPS_Error	GPS error (meters or feet)
PD	GPS_Err_Units	Units for GPS Error: ft = feet, m=meters
PD	UTM_Zone	UTM zone
PD	Elev	Elevation above mean sea level - feet (meters)
PD	Aspect	Aspect of plot in azimuth - degrees
PD	Slope	Average slope (rise/run)*100 - percent
PD	Landform	Landform code
PD	VShape	Shape of plot perpendicular to contour
PD	HShape	Shape of plot parallel to contour
PD	Geol1	Primary surficial geology code
PD	Geol2	Secondary surficial geology code
PD	SoilTex	Soil texture
PD	EType	Erosion type
PD	ESev	Erosion severity
PD	TreeC	Total tree cover - percent
PD	SeedC	Seedling cover - percent
PD	SapC	Sapling cover - percent
PD	PoleC	Pole cover - percent
PD	MedC	Medium tree cover - percent
PD	LTreeC	Tree cover - percent
PD	VLTreeC	Very large tree cover - percent
PD	ShrubC	Total shrub cover - percent
PD	LShrubC	Low shrub cover - percent
PD	MShrubC	Medium shrub cover - percent
PD	TShrubC	Tall shrub cover - percent
PD	GramC	Graminoid cover - percent
PD	ForbC	Forb cover - percent
PD	FernC	Fern cover - percent
PD	MossC	Moss and lichen cover - percent
PD	USpp1	Most dominant species in upper layer
PD	USpp2	Second most dominant species in upper layer
PD	MSpp1	Most dominant species in middle layer
PD	MSpp2	Second most dominant species in middle layer
PD	LSpp1	Most dominant species in lower layer
PD	LSpp2	Second most dominant species in lower layer
PD	PVTId	Potential vegetation type code
PD	PotForm	Potential lifeform code
PD	BSoilGC	Bare soil ground cover - percent
PD	GravelGC	Gravel ground cover - percent

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PD	RockGC	Rock ground cover - percent
PD	DuffGC	Duff and litter ground cover - percent
PD	WoodGC	Wood ground cover - percent
PD	MossGC	Moss and lichen ground cover - percent
PD	CharGC	Charred ground cover - percent
PD	AshGC	Ash ground cover - percent
PD	BVegGC	Basal vegetation ground cover - percent
PD	WaterGC	Water ground cover - percent
PD	FModel	Fire behavior model (Anderson 1983)
PD	PhotoID	Fuel photo series
PD	SHT	Stand height; height of highest stratum which contains at least 10% of canopy cover - feet (meters)
PD	CBH	Canopy fuel base height - feet (meters)
PD	CanopyC	Percent canopy cover of forest canopy > 6.5 feet - feet (meters)
PD	FLength	Average flame length - feet (meters)
PD	SRate	Spread rate; average speed of fire - feet/min (meters/min)
PD	FBevPic	Picture code for fire behavior picture
PD	FSC	Fire severity code
PD	NorthPic	Code for plot photo taken in direction of due north
PD	EastPic	Code for plot photo taken in direction of due east
PD	Photo1	Code for plot photo 1
PD	Photo2	Code for plot photo 2
PD	Local1	Local code 1
PD	Local2	Local code 2
PD	Comments	Comments about plot
POMacroFrame	RegID	Registration ID
POMacroFrame	ProjID	Project ID
POMacroFrame	PlotID	Plot ID
POMacroFrame	Date	Date
POMacroFrame	NumTran	Number of transects
POMacroFrame	TranLen	Transect length
POMacroFrame	NumFrmTran	Number of frames / transect
POMacroFrame	NumPtsFrm	Number of points / frame
POMacroTran	RegID	Registration ID
POMacroTran	ProjID	Project ID
POMacroTran	PlotID	Plot ID
POMacroTran	Date	Date
POMacroTran	NumTran	Number of transects
POMacroTran	TranLen	Transect length
POMacroTran	NumPtsTran	Number of points / transect
POMicroFrame	RegID	Registration ID
POMicroFrame	ProjID	Project ID
POMicroFrame	PlotID	Plot ID
POMicroFrame	Date	Date
POMicroFrame	Transect	Transect number

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POMicroFrame	Item	Item code - plant species or other item
POMicroFrame	Status	Health of species
POMicroFrame	Hits1	Number of hits for item by frame
POMicroFrame	Ht1	Average height of item by frame - feet (m)
POMicroFrame	Hits2	
POMicroFrame	Ht2	
POMicroFrame	Hits3	
POMicroFrame	Ht3	
POMicroFrame	Hits4	
POMicroFrame	Ht4	
POMicroFrame	Hits5	
POMicroFrame	Ht5	
POMicroFrame	Hits6	
POMicroFrame	Ht6	
POMicroFrame	Hits7	
POMicroFrame	Ht7	
POMicroFrame	Hits8	
POMicroFrame	Ht8	
POMicroFrame	Hits9	
POMicroFrame	Ht9	
POMicroFrame	Hits10	
POMicroFrame	Ht10	
POMicroFrame	Hits11	
POMicroFrame	Ht11	
POMicroFrame	Hits12	
POMicroFrame	Ht12	
POMicroFrame	Hits13	
POMicroFrame	Ht13	
POMicroFrame	Hits14	
POMicroFrame	Ht14	
POMicroFrame	Hits15	
POMicroFrame	Ht15	
POMicroFrame	Hits16	
POMicroFrame	Ht16	
POMicroFrame	Hits17	
POMicroFrame	Ht17	
POMicroFrame	Hits18	
POMicroFrame	Ht18	
POMicroFrame	Hits19	
POMicroFrame	Ht19	
POMicroFrame	Hits20	
POMicroFrame	Ht20	
POMicroTran	RegID	Registration ID
POMicroTran	ProjID	Project ID
POMicroTran	PlotID	Plot ID
POMicroTran	Date	Date
POMicroTran	Item	Item code; plant species or other item
POMicroTran	Status	Health of species (live or dead)
POMicroTran	Hits1	Number of hits for item by transect
POMicroTran	Ht1	Average height of item by transect - feet (m)
POMicroTran	Hits2	
POMicroTran	Ht2	

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POMicroTran	Hits3	
POMicroTran	Ht3	
POMicroTran	Hits4	
POMicroTran	Ht4	
POMicroTran	Hits5	
POMicroTran	Ht5	
POMicroTran	Hits6	
POMicroTran	Ht6	
POMicroTran	Hits7	
POMicroTran	Ht7	
POMicroTran	Hits8	
POMicroTran	Ht8	
POMicroTran	Hits9	
POMicroTran	Ht9	
POMicroTran	Hits10	
POMicroTran	Ht10	
POMicroTran	Hits11	
POMicroTran	Ht11	
POMicroTran	Hits12	
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POMicroTran	Hits17	
POMicroTran	Ht17	
POMicroTran	Hits18	
POMicroTran	Ht18	
POMicroTran	Hits19	
POMicroTran	Ht19	
POMicroTran	Hits20	
POMicroTran	Ht20	
RSMacro	RegID	Registration ID
RSMacro	ProjID	Project ID
RSMacro	PlotID	Plot ID
RSMacro	Date	Date
RSMacro	BLineLen	Length of Baseline - feet or meters
RSSpp	RegID	Registration ID
RSSpp	ProjID	Project ID
RSSpp	PlotID	Plot ID
RSSpp	Date	Date
RSSpp	Species	Plant species code
RSSpp	PlantNo	Unique number for each individual plant
RSSpp	DistAlongBL	Distance along baseline
RSSpp	DistFromBL	Distance from baseline
RSSpp	Status	Plant status
RSSpp	Stage	Plant stage

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RSSpp	MaxDia	Canopy diameter measured at maximum diameter
RSSpp	Dia2	Canopy diameter measured at right angles to maximum diameter measurement
RSSpp	Height	Plant Height
RSSpp	Stems	Number of stems
RSSpp	Flowers	Number of flowers
RSSpp	Fruits	Number of fruits
RSSpp	Local1	Local field 1
RSSpp	Local2	Local field 2
RSSpp	Local3	Local field 3
SCCover	RegID	Registration ID
SCCover	ProjID	Project ID
SCCover	PlotID	Plot ID
SCCover	Date	Date
SCCover	Item	Item code
SCCover	Status	Health of species - (live or dead)
SCCover	SizeCl	Size class
SCCover	Cover	Canopy cover - percent
SCCover	Height	Average height - feet (m)
SCCover	Local1	Optional field 1
SCCover	Local2	Optional field 2
SCMacro	RegID	Registration ID
SCMacro	ProjID	Project ID
SCMacro	PlotID	Plot ID
SCMacro	Date	Date
SCMacro	SppIDLevel	Plant species id level; minimum cover recorded - percent
TDMacro	RegID	Registration ID
TDMacro	ProjID	Project ID
TDMacro	PlotID	Plot ID
TDMacro	Date	Date
TDMacro	MacroPlotSize	Macroplot size - acres (square meters)
TDMacro	MicroPlotSize	Microplot size - acres (square meters)
TDMacro	SnagPlotSize	Snagplot size - acres (square meters)
TDMacro	BreakPntDia	Break point diameter - inches (cm)
TDSap	RegID	Registration ID
TDSap	ProjID	Project ID
TDSap	PlotID	Plot ID
TDSap	Date	Date
TDSap	SizeCl_Dia	Size class
TDSap	Species	Species code
TDSap	TreeStat	Tree status
TDSap	Count	Number of trees by species, size class, and status
TDSap	AvgHt	Average height - feet (m)
TDSap	AvgLiCr	Average live crown percent
TDSap	Local1	Local field 1

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TDSeed	RegID	Registration ID
TDSeed	ProjID	Project ID
TDSeed	PlotID	Plot ID
TDSeed	Date	Date
TDSeed	SizeCl_Ht	Size class
TDSeed	Species	Species code
TDSeed	TreeStat	General health condition of sample tree
TDSeed	Count	Number of trees by species, size class, and status
TDSeed	Local1	Local field 1
TDTree	RegID	Registration ID
TDTree	ProjID	Project ID
TDTree	PlotID	Plot ID
TDTree	Date	Date
TDTree	TagNo	Tree tag number
TDTree	Species	Species code
TDTree	TreeStat	Health of tree (live or dead)
TDTree	DBH	Diameter breast height - inches (cm)
TDTree	Height	Tree Height - feet (m)
TDTree	LiCrPct	Live crown percent
TDTree	LiCrBHt	Live crown base height feet (m)
TDTree	CrwnCl	Crown position class
TDTree	Age	Tree age - years
TDTree	GrwthRt	Tree growth rate (last 10 yrs radial growth) - inches (mm)
TDTree	DecayCl	Decay Class
TDTree	Mort	Cause of Mortality
TDTree	DamCd1	Damage code 1
TDTree	DamSev1	Severity code 1
TDTree	DamCd2	Damage code 2
TDTree	DamSev2	Severity code 2
TDTree	CharHt	Bole char height - feet (m)
TDTree	CrScPct	Crown scorch percent
TDTree	Local1	Optional code 1