

FIREMON Database

User Manual



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SUMMARY

The FIREMON database software allows users to enter data, store, analyze, and summarize plot data, photos, and related documents. 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.

INTRODUCTION

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

Managing and maintaining the FIREMON database encompasses three major tasks: 1) data entry, 2) data management, and 3) data summary. Data entry is accomplished by physically entering the collected field data into 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 (for example, 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.

Data stewards can perform a variety of tasks using the FIREMON database. Plot data are entered through data entry forms for each FIREMON sampling method. All the FIREMON plot-sampling methods are accessible by clicking the tabs above entry forms. A separate data entry form is provided for the **Metadata** and **Fire Behavior** data because 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.

Basic plot data summaries are displayed through data summary reports. These reports display basic summary data for a FIREMON plot. The FIREMON Analysis Tools (FMAT), which calculate plot statistics, 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 sampling codes. 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 program to generate random transect starting points along a baseline and random quadrat starting points along transects.

FIREMON DATABASE INSTALLATION AND CONFIGURATION

Installing the FIREMON Software

Log on to the FIREMON Web site (www.fire.org/firemon), navigate to the FIREMON software link 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 be installed in any directory. When the files are successfully installed, the FIREMON directory should appear similar to the directory in figure DB-1.

The c:\firemon directory includes the FIREMON Java application, database, analysis software, and subdirectories for plot photos and metadata documents. The Java application (JFiremon.exe) contains data entry forms, data summary reports, and data management tools. The C program (sum.exe) is used by the JFiremon.exe program to summarize data for the data summary reports. The database (firemondata.mdb) is an empty database containing all the FIREMON data tables and lookup code tables (such as the NRCS species codes and landform codes). The FIREMON training database (firemondata_training.mdb) contains fictional 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; they contain 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 (for example, firemondata.mdb or firemon_training.mdb). The *File* → *Save As...* option on the main FIREMON toolbar allows users to rename a FIREMON database. The firemondata.mdb database is read only and must be renamed after the first installation of FIREMON to preserve an empty set of FIREMON tables for creating new

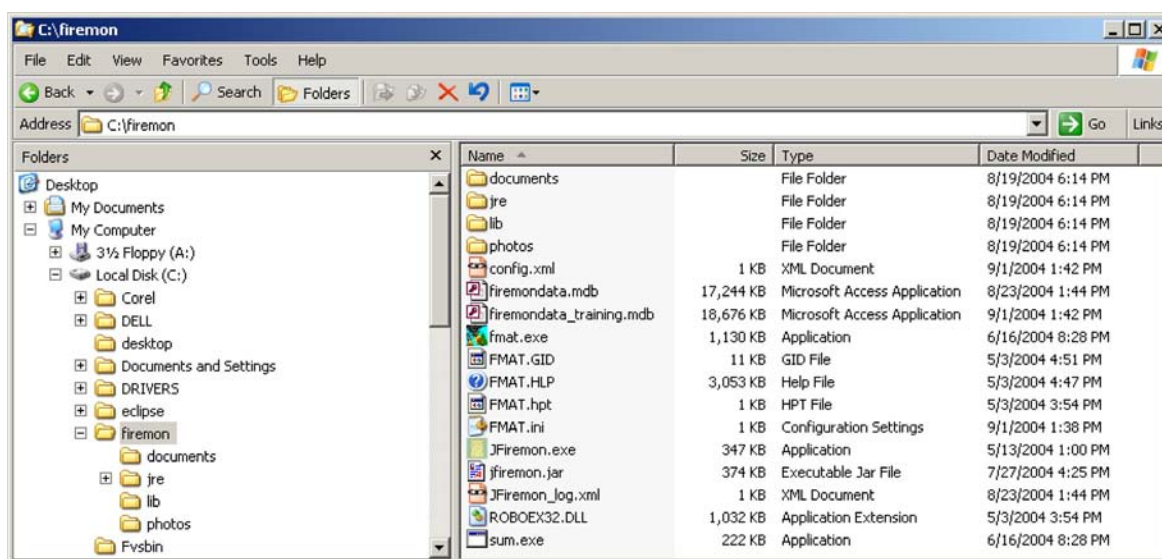


Figure DB-1 — Files contained in the FIREMON directory.

FIREMON databases. Because 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.

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 (fig. DB-2) after the FIREMON splash screen closes. The database name is displayed in the upper left corner of the JFiremon application.

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 (fig. DB-3).

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 and metadata documents to the directories storing those items.

Populating the Plant Species Codes Lookup Table

FIREMON uses the NRCS Plants database codes as defaults, although local codes may be used. If plant species data are collected using the FIREMON sampling methods, then users must populate the plant

The screenshot displays the JFiremon application window titled "JFiremon - firemondata_training.mdb". The menu bar includes "File", "Data Entry", "Tools", and "Reports". The main form is titled "Plot Data Form" and contains several sections for data entry:

- Registration Info:** Fields for RegistrationID (TEST), ProjectID (FOREST), PlotID (1), Date (10/15/01), and SEvent (P1).
- Organization Info:** Four fields for Org. Code 1, 2, 3, and 4.
- Plot Info:** Fields for Examiner, Units (E), Radius (37.2 ft), Width (ft), Plot Type (M), SEvent (P1), FireID (101), and MIDID (Test_Forest).
- Geo-Reference:** Radio buttons for Lat-Long and UTM, with fields for Northing, Easting, UTM Zone, Datum, GPS Error, and GPS Units.
- Biophysical Settings:** Fields for Elevation (4,000 ft), Aspect, Slope (10), Landform, VertShape, and HorzShape.
- Geology and Soils:** Fields for Geol1, Geol2, Soil Texture, Erosion Type, and Erosion Sev.
- Vegetation - Trees:** Fields for TotTreeCov, SapTreeCov, MedTreeCov, VLrgTreeCov, SeedTreeCov, PoleTreeCov, and LrgTreeCov.
- Vegetation - Shrubs:** Fields for TotShrubCov, MedShrubCov, LowShrubCov, and TallShrubCov.
- Vegetation - Herbaceous Cover:** Fields for GramCov, FernCov, ForbCov, and MossLichCov.
- Vegetation - Composition:** Fields for UpDomSpp1, MidDomSpp1, LowDomSpp1, PVT ID, UpDomSpp2, MidDomSpp2, LowDomSpp2, and Pot Form.

The bottom of the window features a record navigation bar showing "Record 1 of 43" and buttons for "Save", "Delete", "List", and "Close".

Figure DB-2—Main form for the FIREMON application database.

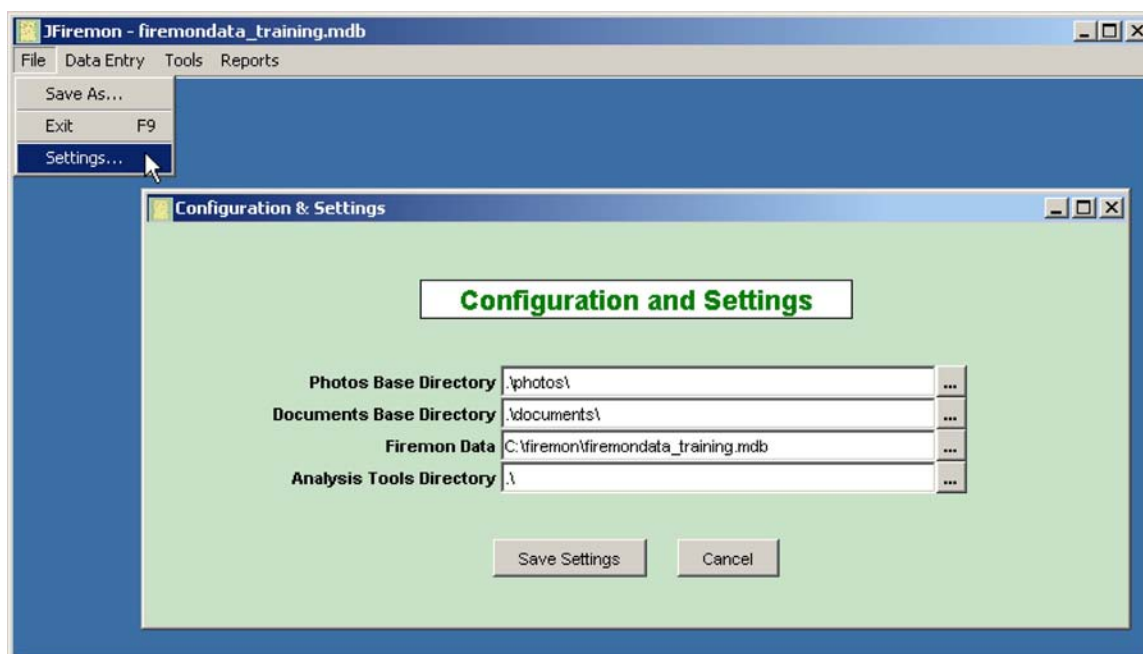


Figure DB-3—FIREMON configuration settings

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 dropdown 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 (fig. DB-4). 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. To do this, open the NRCS species list window by clicking the *List* button at the bottom of the NRCS Plant Codes window. A table will appear showing the default search fields: Symbol, Symbol Code, and Scientific Name. More search fields may be added 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 by selecting the appropriate Search Column, typing your search in the Find What box, and clicking the *Find Next* button. When the desired species is found and highlighted in the Record List window, click the *Add to Local Code* button on the NRCS Plants Codes window. For example, in figure DB-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 has been 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 newly added species are displayed in the species dropdown list.

The FIREMON data entry forms build a plant species code lookup table based on all species that 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.

JFiremon - firemondata_training.mdb

File Data Entry Tools Reports

Plot Data
Fire Behavior
Metadata
Plant Species Codes
Other Item Codes

NRCS Plants Codes

Symbol Scientific Name
 Symbol Key Common Name
 Synonym Symbol Key Family
 Local Code Life Form 1
 FVS Code Life Form 2
 Life Form

Add to Local Code

Record of 82120

Figure DB-4—NRCS Plants database form.

JFiremon - firemondata_training.mdb

File Data Entry Tools Reports

NRCS Plants Codes

Symbol Scientific Name
 Symbol Key Common Name
 Synonym Symbol Key Family
 Local Code Life Form 1
 FVS Code Life Form 2
 Life Form

Add to Local Code

Record of 82120

Find

Find What:
 Search Column:

Record List

Symbol	Symbol Key	Scientific Name	Common Name
ABFRG2	ABFR2	Abies fragrans v...	
ABGA	DOHE2	Aberia gardneri	
ABGR	ABGR	Abies grandis	grand fir
ABGR2	ABGR2	Abies gracilis	slender sand verben
ABGR3	ABGR3	Abutilon grandifolium	hairy Indian mallow
ABGR4	ABGR4	Abelia xgrandiflora	glossy abelia
ABGRG	ABGRG	Abies grandis var. ...	grand fir
ABGRI	ABGRI	Abies grandis var. i...	grand fir

Figure DB-5—Refreshing the records for the data entry forms.

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 used with the point intercept method, plant life form codes (shrub, grass, forb, and so forth), and density counts of items other than plant species (such as elk pellets, gopher mounds). Select *Data Entry* → *Other Item Codes* from the FIREMON toolbar to display the *Other Item Codes* form (fig. DB-6).

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. Codes displayed in the *FIREMON Other Item Codes* table will be displayed on *Item* dropdown lists. Ground cover codes are the most common codes to add to the list of other items, and users may use these codes to easily populate the *Other Item* list by selecting the desired row in the upper window and clicking the *Add to Other Codes* button. Other codes may be manually entered into the lower table (*Other Item Codes*) by typing a code and description in the Selected Ground Cover Code boxes, and clicking the *Add to Other Codes* button. These codes will be displayed, along with the plant species codes, when entering data in the *Item* field on the SC, CF, LI, PO, and DE sampling forms. Click the *Save Settings* button before closing the *Other Item Codes* form. It is important to enter all codes for items other than plant species in this table because the data entry forms will not allow users to enter codes that are not in the lookup tables for plant species and other items.

The screenshot shows the FIREMON software interface with the 'Other Item Codes' form open. The form has a menu bar with 'File', 'Data Entry', 'Tools', and 'Reports'. The 'Data Entry' menu is open, showing options like 'Plot Data', 'Fire Behavior', 'Metadata', 'Plant Species Codes', and 'Other Item Codes'. The 'Other Item Codes' form is titled 'Other Item Codes' and contains two tables. The first table, 'FIREMON Ground Cover Codes', lists codes like ASH, BAFO, BAGR, and BARE with their descriptions. The second table, 'FIREMON Other Item Codes For SC, CF, LI, PO, and DE Sampling Methods', lists codes like BARE, FORB, GRAM, and LITT with their descriptions. There are buttons for 'Add to Other Items', 'Save Settings', 'Cancel', and 'Apply'.

Code	Description
ASH	Ash (organic, from fire)
BAFO	Basal Forb
BAGR	Basal graminoid
BARE	Bare soil (soil particles < 2 mm)

Selected Ground Cover Code

Add to Other Items

Code	Description
BARE	Bare soil (soil particles < 2 mm)
FORB	Forb
GRAM	Graminoid
LITT	Litter and Duff

Save Settings Cancel Apply

Figure DB-6—Other Item Codes form.

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 (fig. DB-7). When the Plot Description data entry form opens, Record 1 will be selected. If the form is empty (first time use) start entering your data, otherwise click on the *New Record* 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 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 (fig. DB-8).

Attempting to enter a new record before valid data are entered in all the plot key fields (RegID, ProjID, PlotID, and Date) returns an error message stating there are missing fields (fig. DB-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 (fig. DB-10).

Important Instructions Common to all Data Entry Forms

Each data entry form has required “key” fields necessary to link and organize database entries. These fields are identified in the paragraphs that follow. Understanding these requirements before collecting data may be useful in speeding up the data entry process.

Figure DB-7—Adding a new record to the FIREMON database.

JFiremon - firemondata_training.mdb

File Data Entry Tools Reports

Plot Data Form

RegistrationID TEST ProjectID INV PlotID 1077 Date 07/08/00 SEvent IV

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

Organization Info

Org. Code 1 Org. Code 2 Org. Code 3 Org. Code 4

Plot Info

Examiner Units E Radius 82 ft Width ft

Plot Type M SEvent IV FireID MDID

Geo-Reference

☒ Lat-Long ☐ UTM Latitude 37.60850502 Longitude -112.849013

Datum GPS Error 0 GPS Units

Biophysical Settings

Elevation 10,250 ft Aspect

Slope 20 Landform PLAT

VertShape HorzShape

Vegetation - Trees

TotTreeCov 50.0 SeedTreeCov 3.0

SapTreeCov 3.0 PoleTreeCov 3.0

MedTreeCov 10.0 LrgTreeCov 10.0

VlrgTreeCov 20.0

Vegetation - Herbaceous Cover

GramCov 1.0 ForbCov 10.0

FernCov MossLichCov

Record List

Registration ID	Project ID	Plot ID	Date
TEST	FOREST	8	05/10/2002
TEST	FOREST	8	05/10/2002
TEST	FOREST	8	09/21/2002
TEST	FOREST	8	09/28/2003
TEST	INV	1077	07/08/2000
TEST	INV	2236	08/19/2000
TEST	INV	2237	08/19/2000
TEST	INV	2238	08/19/2000
TEST	INV	2239	08/19/2000
TEST	UNDEVEG	1	06/27/1995
TEST	UNDEVEG	1	06/23/1997
TEST	UNDEVEG	4	07/20/2000

Find Org. Code 1 Add Field Close

Record 19 of 43 Save Delete List Close

Figure DB-8—Editing an existing record in the FIREMON database.

JFiremon - firemondata_training.mdb

File Data Entry Tools Reports

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

Species ID Level 10 % Delete SC Form

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				
	L	TO				

Missing Fields

The following fields from Plot Description - SC - Cover Table require a value or the current value is invalid:

Item

Please correct and try again!

OK

Record 1 of 43 Save Delete List Close

Figure DB-9—Example of adding a null record.

The screenshot shows the 'Plot Data Form' window for 'JFiremon - firemondata_training.mdb'. The form includes fields for RegistrationID (TEST), ProjectID (FOREST), PlotID (1), and Date (10/15/01). Below these are tabs for various data entry sections: PD, TD, FL, SC, CF, LI, PO Tran, PO Frame, DE Belt, DE Quad, RS, CBI, FB, and MD. The 'PD' tab is active, showing a table with columns: Item, Status, SizeCl, Cover, Height (ft), Local1, and Local2. The table contains five rows of data, with the last row highlighted in blue. A 'Delete This Record' button is visible next to the last row. At the bottom, there are navigation buttons (Record, back, forward, etc.) and a status bar indicating '1 of 43' records. A 'Save' button is also present.

Item	Status	SizeCl	Cover	Height (ft)	Local1	Local2
ARUV	L	TO	0.5	0.1		
PHMA5	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		

Figure DB-10—Null record error message.

Many data entry forms will require transect numbers, lengths, points, plot size, or other overall sample design data. It is important to provide accurate information as these entries are used to calculate plot summaries including items such as cover, density, frequency, and tons per acre.

The Plot Data (PD) form asks users to specify the units of the entered data as English or metric and, once entered, is used to specify units on all forms linked to that PD. The chosen units dictate how density, cover, and frequency values are calculated when summary reports are requested. Therefore, it is important to enter all data in the units that were specified on the PD. The units are described in the description of each sampling method. When summary reports are generated, users may view them in English or metric units.

Plot Description (PD) Data Entry Form

The first data entry form is for the PD sampling method (fig. DB-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 on the PD form deletes the current PD record and any records linked to this record. Because all tables are linked to the PD table, this button deletes all records in the database for the current plot.

Tree Data (TD) Data Entry Form

The TD data entry form (fig. DB-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 snag plot size field cannot be left blank. Click on the TD tab to open the Tree Data form.

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. If you did not use tags to mark your trees, *TagNo* can be numbered sequentially (1, 2, 3, 4...). 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 for 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 the 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. It does not delete data on the PD or other data forms. 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.

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

Plot Size

Macro Plot: 0.1 acre Micro Plot: 0.01 acre Snag Plot: 1 acre

Break Point Dia.: 5 in

All heights are in feet.
All diameters are in inches.
Growth rate is in inches.

Mature Trees

TagNo	Species	TreeStat	DBH	Height	LiCrPct	LiCrBht	CrwnCl	Age	GrwthRt	DecayCl
1	PSME	H	14.9	88.0	60.0	35.0	C			
2	PICO	H	6.5	48.0	54.0	22.0	I			
3	PICO	U	5.9	41.0	31.0	28.0	S			
4	PSME	H	12.1	82.0	62.0	31.0	C			
5	PICO	H	7.5	56.0	64.0	20.0	C			

Saplings (sapling size class = midpoint dia. in inches)

SizeCl Dia	Species	TreeStat	Count	AvgHt	A
0.5	PSME	H	3	16.0	40.0
1.5	PSME	H	2	23.0	50.0

Seedlings (seedling size class = midpoint ht. in feet)

SizeCl Ht	Species	TreeStat	Count	LocalH
0.2	PSME	U	1	20
1.0	PSME	U	2	30
2.0	PSME	H	2	60

Record: 1 of 43 Save Delete List Close

Figure DB-11—Tree data entry form.

Fuel Loading (FL) Data Entry Form

The FL data entry form (fig. DB-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 sampling planes (transects) ascending and sequentially starting with transect number 1. Enter the slope of the transect, fuel counts, duff/litter depths, and litter percentages for each transect. Zero should be entered when a fine woody 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 1. Number logs sequentially for each transect or for the entire plot starting with number “1.” Enter the diameter and decay class for each piece of coarse woody debris. If no pieces of coarse woody debris are located on a transect, we suggest you enter a transect and log number and enter “0” for the diameter field and “X” in the decay class field. This is not required but helps with recordkeeping. You will receive a warning message about zero diameter and invalid decay class fields from the data summary and analysis programs, but the biomass values will be correct. 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 include only this one point when

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	LiShC1	DdShC1	ShHt1	LiHeC1	DdHeC1	HeHt1	LiShC2	DdShC2	ShHt2	LiHeC2	DdHeC2
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 Save Delete List Close

Figure DB-12—Fuel loading data entry form.

averaging these values across the transect. If no cover is noted for one of the cover components, enter “0” for that component. 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. It does not delete data on the PD or other data forms. 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.

Species Composition (SC) Data Entry Form

The SC data entry form (fig. DB-13) is used for 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 future 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 plot including the *Species ID Level* and all species on the plot. It does not delete data on the PD or other data forms. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

JFiremon - firemondata_training.mdb

File Data Entry Tools Reports

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

Species ID Level: 10 % Delete SC Form

Item	Status	SizeCl	Cover	Height (ft)	Local1	Local2
ARUV	L	TO	0.5	0.1		
PHMA5	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				

Record 1 of 43 Save Delete List Close

Figure DB-13—Plant species composition data entry form.

Cover/Frequency (CF) Data Entry Form

The CF data entry form (fig. DB-14) is for 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 (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. It does not delete data on the PD or other data forms. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

Line Intercept (LI) Data Entry Form

The LI data entry form (fig. DB-15) is for 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.

Figure DB-14 is a screenshot of the Firemon - firemondata_training.mdb Plot Data Form. The form is titled "Plot Data Form" and displays fields for RegistrationID (TEST), ProjectID (FOREST), PlotID (1), Date (10/15/01), and SEvent (P1). Below these fields are tabs for different data entry forms: PD, TD, FL, SC, CF, LI, PO Tran, PO Frame, DE Belt, DE Quad, RS, CBI, FB, and MD. The CF (Cover/Frequency) tab is selected. The CF form contains input 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 "Delete CF Form" button is located to the right of these fields. Below the input fields is a table with 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 plant species (ARUV, SYAL, PHMA5) across different transects and quadrats. At the bottom of the form, there are navigation buttons (Record, back, forward, first, last) and a status bar showing "1 of 43" records. Action buttons (Save, Delete, List, Close) are also present.

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 DB-14—Cover/frequency data entry form.

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

Num. Transects: 3 Delete LI Form

Species Number: 1 of 5 Delete Species List Species

Transect: 1 Item: PHMAS Status: SizeCl: TO TranLen: 66 ft

Start (ft)	Stop (ft)	Intercept (ft)	Height (ft)
1.0	2.0	1.0	4.0
6.67	8.33	1.66	
10.83	16.67	5.84	
20.83	26.67	5.84	6.0
35.25	42.67	7.41	
53.33	59.67	6.33	3.0
59.16	59.33	0.17	

Record: 1 of 43 Save Delete List Close

Figure DB-15—Line intercept data entry form.

The *Transect*, *Item*, *Status*, *SizeCl*, and *TranLen* fields are required for each record. Enter the transect start and stop points 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 include only intercepts where heights are entered. Click the (right facing black triangle and asterisk) 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. It does not delete data on the PD or other data forms. 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 intercept measurements may be deleted by right clicking on the record and pressing the *Delete This Record* button

Point Intercept (PO) Data Entry Forms

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

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File Data Entry Tools Reports

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

Num. Transects: 5 Num. Points/Transect: 66 Delete POTran Form

Transect Length: 66 ft

All heights are in feet.

Item	Status	Hits1	Ht1	Hits2	Ht2	Hits3	Ht3	Hits4	Ht4	Hits5	Ht5	Hits6	Ht6	Hits7
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 Save Delete List Close

Figure DB-16—Point intercept transect data entry form.

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File Data Entry Tools Reports

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

Num. Transects: Num. Frames/Transect: Delete POFrame Form

Transect Length: ft Num. Points/Frame:

All heights are in feet.

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

Record: 1 of 43 Save Delete List Close

Figure DB-17—Point intercept frame data entry form.

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 (for example, Hits1, 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 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. It does not delete data on the PD or other data forms. Users may delete individual species by right clicking on the record and pressing the *Delete This Record* button.

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 are 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 (for example, 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. It does not delete data on the PD or other data forms. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

Density (DE) Data Entry Forms

The DE forms are for counts of individual plants or other items. The *DEBelt* data entry form (fig. DB-18) is for density data collected along individual belt transects. The *DEQuad* data entry form (fig. DB-19) is used for 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, according to the sample design. 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 (for example, 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. It does not delete data on the PD or other data forms. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

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

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File Data Entry Tools Reports

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

Num. Transects Delete DEBelt Form

All heights are in feet.

Item	Status	SizeCl	TranLen (ft)	TranVld (ft)	Cnt1	Ht1	Cnt2	Ht2	Cnt3	Ht3	Cnt4	Ht4	Cnt
------	--------	--------	--------------	--------------	------	-----	------	-----	------	-----	------	-----	-----

Record 1 of 43 Save Delete List Close

Figure DB-18—Density belt transect data entry form.

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File Data Entry Tools Reports

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

Num. Transects 5 Num. Quadrats/Transect 5 Delete DEQuad Form

All heights are in feet.

Transect	Item	Status	SizeCl	QuadLen (ft)	QuadVld (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									

Record 1 of 43 Save Delete List Close

Figure DB-19—Density quadrat data entry form.

by status and size class in a quadrat. Quadrat size may vary by species according to the sample design. 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 (for example, 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. It does not delete data on the PD or other data forms. Users may delete individual species records by right clicking on the record and pressing the *Delete This Record* button.

Rare Species (RS) Data Entry Form

The RS form (fig. DB-20) is for rare perennial plant data. 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 screenshot shows the 'Plot Data Form' window for 'JFiremon - firemondata_training.mdb'. The 'RegistrationID' is 'TEST', 'ProjectID' is 'FOREST', 'PlotID' is '1', 'Date' is '10/15/01', and 'SEvent' is 'P1'. The 'RS' tab is active. The 'Baseline Length' field is empty, followed by 'ft'. Below this, instructions state: 'All distances are in feet.', 'All diameters are in inches.', and 'Height is in feet.' A table with 11 columns (Species, PlantNo, DistAlongBL, DistFromBL, Status, Stage, MaxDia, Dia2, Height, Stems, Flowers) is present. At the bottom, a status bar shows 'Record 1 of 43' and buttons for Save, Delete, List, and Close.

Figure DB-20—Rare species data entry form.

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. It does not delete data on the PD or other data forms. Users may delete one or more individual plant records by right clicking on the record and pressing the *Delete This Record* button.

Composite Burn Index (CBI) Data Entry Form

The CBI form (fig. DB-21) is used for the calculation of Composite Burn Index value by plot. Enter the effects of fire, ranked from 1 to 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. It does not delete data on the PD or other data forms.

Fire Behavior (FB) Data Entry Form

The FB data entry form (fig. DB-22) is for fire behavior data. The *Fire Behavior* form is separate from other data entry forms because 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. Fire Behavior data may be entered for different times during the same fire. To add a new fire behavior record using the current *FireID*, click the *New Record* button (right facing black triangle and asterisk) on the *FBData* 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. It does not delete data on the PD or other data forms. The *Delete FBData* button deletes observations recorded at one time

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

% Burned 20m Plot: % Burned 30m Plot: Fuel Photo Series:

Burn Severity Scale

	No Effect 0.0	Low 0.5	Moderate 1.0	Moderate 1.5	Moderate 2.0	High 2.5	High 3.0
Substrates							
Pre-Fire Cover:	Litter		Duff		Soil/Rock		
Pre-Fire Depth:	Litter		Duff		Fuel Bed		
Litter/Light Fuels	Unchanged	50% litter	100% litter		98% light fuels		
Duff/Moss	Unchanged	Light char	50% loss, deep char		Consumed		
Med. Fuel, 3-8 in	Unchanged	20% consumed	40% consumed		>60% loss, deep char		
Heavy Fuel, >8 in	Unchanged	10% loss	25% loss, deep char		>40% loss, deep char		
Soil Cover/Color	Unchanged	10% change	40% change		>80% change		
Additional Factor							
Herbs, Low Shrubs, Tree Seedlings							
Pre-Fire:					Cover		
% Foliage Altered	Unchanged	30%	80%	95%	100%, branch loss		
% Living/Resprout	>=100%	90%	50%	<20%	None		
Colonizers	Unchanged	Low	Moderate	High-Low	Low to none		
Spp. Comp./Abund.	Unchanged	Little Change	Moderate change		High change		

Record 1 of 43 Save Delete List Close

Figure DB-21 — Composite Burn Index data entry form.

Figure DB-22—Fire Behavior data entry form.

period for the fire. The *List FBData* displays a list of all observations recorded for the current *FireID* and may be used to navigate to a specific observation for editing purposes.

Metadata (MD) Data Entry Form

The MD data entry form (fig. DB-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 because 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*. Click the *New Record* button (right facing black triangle and asterisk) 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 (such as Microsoft Word) may be copied from the Windows clipboard into the *Comments* field.

The file name for Word processing documents may be entered in the *Documents Link* field and opened via hyperlink from the MD form. These documents provide additional metadata that are 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 (fig. DB-3).

Figure DB-23—Metadata data entry form.

The *Delete* button deletes the current MD record and associated MD records. It does not delete data on the PD or other data forms. The *Delete MDData* button deletes metadata or comments for one subject only. The *List MDData* displays a list of all subject records for an MDID record and may be used to navigate to a specific subject for editing purposes.

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 (fig. DB-24). Users may select the output units for the reports (English or metric) independent of input units. The data summary report is selected using radio buttons. The plots displayed on the report may be filtered by any of the FIREMON plot key fields and the sample event (*SEvent*). For example, users may report plots for only a specific project or select only pretreatment 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.

Tree Data (TD) Summary Reports

The TD data summary reports (fig. DB-25 and DB-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 (crown fuel base height), average height, and quadratic mean diameter (QMD) are calculated for mature trees. Seedling, sapling, 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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File Data Entry Tools Reports

Data Summary Reports...
Data Analysis...
GIS Point File
Simple Query Builder...

Data Summary Reports

Data Summary Units

☒ English
☐ Metric

Data Summary Reports

☒ Tree Data
☐ Tree Data By Species
☐ Fuel Loadings
☐ Fuel Loadings - Vegetation
☐ Species Composition
☐ Cover Frequency
☐ Line Intercept
☐ Point Intercept
☐ Density
☐ CBI

Filter By

RegistrationID starts with:
ProjectID starts with:
PlotID: =
Date: =
SEvent:

Generate Report

Figure DB-24—Data summary units form.

Viewer

Print Reload 100% Export

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	10/15/01	P1	50.0	27.4	27.2	63.0	10.0	50.0	500.0	600.0	.0
TEST	FOREST	1	10/07/02	R1	30.0	22.4	51.7	72.7	11.7	50.0	500.0	580.0	2.0
TEST	FOREST	1	8/02/03	R2	30.0	22.4	51.7	72.7	11.7	50.0	500.0	580.0	2.0
TEST	FOREST	3	1/04/02	P1	50.0	69.2	26.4	66.6	15.9	50.0	500.0	600.0	.0
TEST	FOREST	3	10/08/02	R1	40.0	67.4	34.8	78.0	17.6	50.0	500.0	590.0	1.0
TEST	FOREST	3	8/05/03	R2	30.0	63.9	38.0	89.0	19.8	50.0	500.0	580.0	2.0
TEST	FOREST	4	5/05/02	P1	50.0	44.6	24.8	63.2	12.8	50.0	500.0	600.0	.0
TEST	FOREST	4	10/05/02	R1	40.0	40.3	33.0	70.8	13.6	50.0	500.0	590.0	1.0
TEST	FOREST	4	9/05/03	R2	30.0	30.2	31.0	75.7	13.6	50.0	500.0	580.0	2.0
TEST	FOREST	5	5/06/02	P1	50.0	26.6	27.6	58.0	9.9	50.0	600.0	700.0	.0
TEST	FOREST	5	10/05/02	R1	40.0	25.1	35.0	64.0	10.7	50.0	600.0	690.0	1.0
TEST	FOREST	5	9/05/03	R2	30.0	23.2	36.7	72.0	11.9	50.0	600.0	680.0	2.0
TEST	FOREST	6	5/05/02	P1	50.6	50.0	27.6	76.1	13.5	50.6	505.9	607.0	.0
TEST	FOREST	6	10/07/02	R1	50.6	67.9	37.4	77.8	15.7	50.6	505.9	607.0	.0
TEST	FOREST	6	9/07/03	R2	50.6	70.0	35.6	68.2	15.9	50.6	505.9	607.0	.0
TEST	FOREST	8	5/10/02	P1	40.5	17.1	29.4	62.1	8.8	50.6	404.7	495.8	1.0
TEST	FOREST	8	9/21/02	R1	20.2	10.9	34.8	68.9	9.9	50.6	505.9	576.7	3.0
TEST	FOREST	8	9/28/03	R2	20.2	10.9	34.8	68.9	9.9	50.6	505.9	576.7	3.0

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Figure DB-25—Tree data summary form.

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	10/15/01	P1	PICO	30.0	7.3	23.3	48.3	6.7	.0	.0	30.0	.0
TEST	FOREST	1	10/15/01	P1	PSME	20.0	20.1	33.0	85.0	13.6	50.0	500.0	570.0	.0
TEST	FOREST	1	10/07/02	R1	PICO	10.0	2.3	35.0	48.0	6.5	.0	200.0	210.0	2.0
TEST	FOREST	1	10/07/02	R1	PSME	20.0	20.1	60.0	85.0	13.6	50.0	300.0	370.0	.0
TEST	FOREST	1	8/02/03	R2	PICO	10.0	2.3	35.0	48.0	6.5	.0	200.0	210.0	2.0
TEST	FOREST	1	8/02/03	R2	PSME	20.0	20.1	60.0	85.0	13.6	50.0	300.0	370.0	.0
TEST	FOREST	3	1/04/02	P1	PIPO	30.0	61.3	27.3	75.0	19.3	30.0	300.0	360.0	.0
TEST	FOREST	3	1/04/02	P1	PSME	20.0	7.9	25.0	54.0	8.5	20.0	200.0	240.0	.0
TEST	FOREST	3	10/08/02	R1	PIPO	20.0	59.5	34.5	102.0	23.4	30.0	300.0	350.0	1.0
TEST	FOREST	3	10/08/02	R1	PSME	20.0	7.9	35.0	54.0	8.5	20.0	200.0	240.0	.0
TEST	FOREST	3	8/05/03	R2	PIPO	20.0	59.5	34.5	102.0	23.4	30.0	300.0	350.0	1.0
TEST	FOREST	3	8/05/03	R2	PSME	10.0	4.4	45.0	63.0	9.0	20.0	200.0	230.0	1.0
TEST	FOREST	4	5/05/02	P1	LAOC	20.0	9.9	27.0	65.5	9.5	20.0	100.0	140.0	.0
TEST	FOREST	4	5/05/02	P1	PIPO	10.0	20.3	27.0	95.0	19.3	10.0	200.0	220.0	.0
TEST	FOREST	4	5/05/02	P1	PSME	20.0	14.4	21.5	45.0	11.5	20.0	200.0	240.0	.0
TEST	FOREST	4	10/05/02	R1	LAOC	20.0	9.9	33.0	65.5	9.5	20.0	100.0	140.0	.0
TEST	FOREST	4	10/05/02	R1	PIPO	10.0	20.3	27.0	95.0	19.3	10.0	200.0	220.0	.0
TEST	FOREST	4	10/05/02	R1	PSME	10.0	10.1	39.0	57.0	13.6	20.0	200.0	230.0	1.0
TEST	FOREST	4	9/05/03	R2	LAOC	20.0	9.9	33.0	66.0	9.5	20.0	100.0	140.0	.0
TEST	FOREST	4	9/05/03	R2	PIPO	10.0	20.3	27.0	95.0	19.3	10.0	200.0	220.0	.0

Figure DB-26—Tree species data summary form.

Fuel Loading (FL) Summary Reports

The FL summary reports (figs. DB-27 and DB-28) display fuel loadings in tons per acre (kg per m^2) 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-hour, 10-hour, 100-hour, 1 to 100-hour, 1,000-hour sound, 1,000-hour rotten, and 1 to 1,000 hour fuels. Biomass is calculated based on the equations presented in the *Handbook for Inventorying Downed Woody Material* (Brown 1974). Nonslash, composite values are used for quadratic mean diameter, nonhorizontal 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 lb per ft^3 and 5.5 lb per ft^3 , 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,

Equation DB-1

$$B = H * C * BD$$

where, B is biomass (kg per m^2), H is height (m), C is percent cover/100, and BD is bulk density (kg per m^3). Bulk density used for the herbaceous and shrub components are 0.8 kg per m^3 and 1.8 kg per m^3 , respectively. Vegetation heights entered in English units on the FL form are automatically converted to metric units for the biomass calculations.

Viewer

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Fuel Loading Summary

RegID	ProjID	PlotID	Date	Sample Event	1-Jr	10-Jr	100-Jr	1-100-Jr	1000-Jr Sound	1000-Jr Rotten	1-1000-Jr	Buff	Litter	Total	Buff	Litter	Total
Tons per Acre															Depth (in)		
TEST	FOREST	1	10/15/01	P1	0.72	7.27	3.45	11.43	4.82	1.3	17.6	15.9	3.9	37.4	1.6	.8	2.4
TEST	FOREST	1	10/07/02	R1	0.36	3.71	1.97	6.05	2.93	.3	9.3	10.8	.9	20.9	1.1	.2	1.2
TEST	FOREST	1	8/02/03	R2	0.4	4.33	3.45	8.18	2.93	.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	8/05/03	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	2.04	3.5	5.97	8.0	9.1	23.0	16.9	4.1	44.0	1.7	.8	2.5
TEST	FOREST	4	10/05/02	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	.5	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	.2	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	.2	27.9	1.1	.0	1.1
TEST	FOREST	6	5/05/02	P1	0.21	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	23.1	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	9.11	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	2.25	8.63	4.4	15.3	8.6	.0	23.9	2.2	.0	2.2
TEST	FOREST	8	9/28/03	R2	0.1	1.02	2.37	3.5	8.63	4.4	16.6	11.7	.7	29.0	3.0	.3	3.3
TEST	INV	1077	7/08/00	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 DB-27—Fuel loading data summary report.

Viewer

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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	Herbaceous	Live	Dead
TEST	FOREST	1	10/15/01	P1	25.0	20.0	2.5	45.0	20.0	0.75	1.59	0.92	0.35	0.14
TEST	FOREST	1	10/07/02	R1	5.0	37.5	2.0	2.5	60.0	0.1	0.24	1.53	0.0	0.06
TEST	FOREST	1	8/02/03	R2	60.0	15.0	4.0	55.0	25.0	0.4	5.87	1.22	0.24	0.1
TEST	FOREST	3	1/04/02	P1	25.0	7.5	1.75	30.0	30.0	0.45	1.04	0.25	0.15	0.12
TEST	FOREST	3	10/08/02	R1	7.5	45.0	1.0	7.5	55.0	0.25	0.18	0.92	0.02	0.13
TEST	FOREST	3	8/05/03	R2	45.0	20.0	3.5	55.0	25.0	1.25	3.92	1.43	0.76	0.29
TEST	FOREST	4	5/05/02	P1	55.0	15.0	2.75	30.0	15.0	0.5	3.67	0.82	0.16	0.07
TEST	FOREST	4	10/05/02	R1	7.5	75.0	1.75	0.5	40.0	0.15	0.34	2.65	0.0	0.07
TEST	FOREST	4	9/05/03	R2	65.0	35.0	4.0	55.0	25.0	1.0	6.36	2.85	0.6	0.24
TEST	FOREST	5	5/06/02	P1	35.0	7.5	2.5	35.0	20.0	0.4	2.2	0.36	0.17	0.09
TEST	FOREST	5	10/05/02	R1	15.0	35.0	2.0	2.5	10.0	0.25	0.73	1.43	0.01	0.02
TEST	FOREST	5	9/05/03	R2	55.0	15.0	4.0	65.0	25.0	1.0	5.38	1.22	0.71	0.24
TEST	FOREST	6	5/05/02	P1	25.0	5.0	1.72	25.0	7.5	0.49	1.08	0.18	0.13	0.04
TEST	FOREST	6	10/07/02	R1	5.0	25.0	0.98	0.0	12.5	0.15	0.18	0.55	0.0	0.02
TEST	FOREST	6	9/07/03	R2	55.0	15.0	3.44	55.0	7.5	0.74	4.7	1.1	0.43	0.06
TEST	FOREST	8	5/10/02	P1	45.0	10.0	2.95	17.5	4.0	0.39	3.25	0.6	0.09	0.02
TEST	FOREST	8	9/21/02	R1	7.5	7.5	0.74	0.0	0.0	0.0	0.15	0.1	0.0	0.0
TEST	FOREST	8	9/28/03	R2	55.0	20.0	2.95	40.0	15.0	0.74	3.97	1.2	0.29	0.09

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Figure DB-28—Fuel loading vegetation summary report.

Species Composition (SC) Summary Report

The SC summary report (fig. DB-29) displays the same information as the data entry form because 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.

Cover/Frequency (CF) Summary Report

The CF summary report (fig. DB-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 frame sizes. Frequency is calculated by dividing the number of quadrats in which a species is present by the total number of sampled quadrats.

Line Intercept (LI) Summary Report

The LI summary report (fig. DB-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.

Point Cover (PO) Summary Report

The PO summary report (fig. DB-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

RegID	ProjID	PlotID	Date	Sample Event	Name	Status	Size Class	Cover (%)	Height (ft)
TEST	FOREST	1	10/15/01	P1	ARUV	L	TO	0	0.1
TEST	FOREST	1	10/15/01	P1	PHMA5	L	TO	10	3.0
TEST	FOREST	1	10/15/01	P1	PICO	L	TO	50	50.0
TEST	FOREST	1	10/15/01	P1	PSME	L	TO	20	85.0
TEST	FOREST	1	10/15/01	P1	SYAL	L	TO	10	1.0
TEST	FOREST	1	10/07/02	R1	ARUV	L	TO	10	0.1
TEST	FOREST	1	10/07/02	R1	PHMA5	L	TO	10	3.0
TEST	FOREST	1	10/07/02	R1	PICO	L	TO	10	48.0
TEST	FOREST	1	10/07/02	R1	PSME	L	TO	20	85.0
TEST	FOREST	1	8/02/03	R2	ARUV	L	TO	30	0.2
TEST	FOREST	1	8/02/03	R2	PHMA5	L	TO	10	3.0
TEST	FOREST	1	8/02/03	R2	PICO	L	TO	10	48.0
TEST	FOREST	1	8/02/03	R2	PSME	L	TO	20	85.0
TEST	FOREST	1	8/02/03	R2	SYAL	L	TO	10	2.0
TEST	FOREST	3	1/04/02	P1	AGSP	L	TO	20	1.0
TEST	FOREST	3	1/04/02	P1	FEID	L	TO	10	0.4
TEST	FOREST	3	1/04/02	P1	PHMA5	L	TO	80	3.0
TEST	FOREST	3	1/04/02	P1	PIPO	L	TO	30	75.0
TEST	FOREST	3	1/04/02	P1	PSME	L	TO	20	54.0
TEST	FOREST	3	1/04/02	P1	XETE	L	TO	20	2.0
TEST	FOREST	3	10/08/02	R1	AGSP	D	TO	10	0.4
TEST	FOREST	3	10/08/02	R1	AGSP	L	TO	10	0.2
TEST	FOREST	3	10/08/02	R1	FEID	L	TO	10	0.1
TEST	FOREST	3	10/08/02	R1	PHMA5	L	TO	10	1.2
TEST	FOREST	3	10/08/02	R1	PIPO	L	TO	20	100.0
TEST	FOREST	3	10/08/02	R1	PSME	L	TO	20	54.0

Figure DB-29—Species composition summary report.

Viewer

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Cover / Frequency Summary

RegID	ProjID	PlotID	Date	Sample Event	Item	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	20.4	8.0	24.0	68.0	100.0	.1
TEST	FOREST	1	10/15/01	P1	PHMA5	L	6.4			24.0	40.0	3.4
TEST	FOREST	1	10/15/01	P1	SYAL	L	9.6		16.0	40.0	40.0	1.2
TEST	FOREST	1	10/07/02	R1	ARUV	L	14.4	24.0	40.0	40.0	40.0	.1
TEST	FOREST	1	10/07/02	R1	PHMA5	L	14.4	24.0	40.0	40.0	40.0	2.6
TEST	FOREST	1	8/02/03	R2	ARUV	L	25.2	8.0	60.0	84.0	100.0	.2
TEST	FOREST	1	8/02/03	R2	PHMA5	L	6.4			24.0	40.0	3.4
TEST	FOREST	1	8/02/03	R2	SYAL	L	10.4		24.0	40.0	40.0	1.8
TEST	FOREST	3	1/04/02	P1	AGSP	L	17.2	24.0	36.0	52.0	60.0	1.0
TEST	FOREST	3	1/04/02	P1	ksd	L	13.6	16.0	40.0	40.0	40.0	.4
TEST	FOREST	3	1/04/02	P1	PHMA5	L	4.8		8.0	20.0	20.0	3.0
TEST	FOREST	3	1/04/02	P1	XETE	L	24.8	24.0	64.0	80.0	80.0	2.3
TEST	FOREST	3	10/08/02	R1	AGSP	D	12.8	16.0	32.0	40.0	40.0	.4
TEST	FOREST	3	10/08/02	R1	AGSP	L	8.0	20.0	20.0	20.0	20.0	.2
TEST	FOREST	3	10/08/02	R1	ksd	L	15.2	32.0	40.0	40.0	40.0	.1
TEST	FOREST	3	10/08/02	R1	PHMA5	L	4.4		8.0	16.0	20.0	1.1
TEST	FOREST	3	10/08/02	R1	XETE	D	11.2	8.0	24.0	40.0	40.0	1.8
TEST	FOREST	3	10/08/02	R1	XETE	L	15.2	32.0	40.0	40.0	40.0	1.1
TEST	FOREST	3	8/05/03	R2	AGSP	L	15.2		32.0	60.0	60.0	1.3
TEST	FOREST	3	8/05/03	R2	ksd	L	13.6	16.0	40.0	40.0	40.0	.6
TEST	FOREST	3	8/05/03	R2	PHMA5	L	3.2			12.0	20.0	4.0

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Figure DB-30—Cover/frequency summary report.

Viewer

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Line Intercept Summary

RegID	ProjID	PlotID	Date	Sample Event	Item	Status	Size Class	Average Cover (%)	Average Height (ft)
TEST	FOREST	1	10/15/01	P1	PHMA5	L	TO	35.5	3.9
TEST	FOREST	1	10/15/01	P1	PRVI	L	TO	23.5	7.5
TEST	FOREST	1	10/07/02	R1	PHMA5	D	TO	4.0	1.8
TEST	FOREST	1	10/07/02	R1	PRVI	D	TO	2.0	7.0
TEST	FOREST	1	10/07/02	R1	PRVI	L	TO	2.5	2.0
TEST	FOREST	1	8/02/03	R2	PHMA5	L	TO	13.3	3.5
TEST	FOREST	1	8/02/03	R2	PRVI	L	TO	10.0	4.3
TEST	FOREST	3	1/04/02	P1	PHMA5	L	TO	18.8	4.2
TEST	FOREST	3	1/04/02	P1	SYAL	L	TO	18.1	3.0
TEST	FOREST	3	10/08/02	R1	PHMA5	L	TO	9.9	3.2
TEST	FOREST	3	10/08/02	R1	SYAL	D	TO	3.8	1.5
TEST	FOREST	3	8/05/03	R2	PHMA5	L	TO	18.8	3.7
TEST	FOREST	3	8/05/03	R2	SYAL	L	TO	13.0	3.2
TEST	FOREST	4	5/05/02	P1	PRVI	L	TO	14.7	9.5
TEST	FOREST	4	5/05/02	P1	SYAL	L	TO	4.0	1.8
TEST	FOREST	4	10/05/02	R1	PRVI	D	TO	3.0	10.0
TEST	FOREST	4	10/05/02	R1	SYAL	D	TO	2.0	0.5
TEST	FOREST	4	9/05/03	R2	PRVI	L	TO	7.5	11.0
TEST	FOREST	4	9/05/03	R2	SYAL	L	TO	10.4	2.0
TEST	FOREST	4	9/05/03	R2	VAGL	L	TO	1.2	2.0
TEST	FOREST	5	5/06/02	P1	PHMA5	L	TO	15.2	3.0
TEST	FOREST	5	5/06/02	P1	PRVI	L	TO	12.0	7.5
TEST	FOREST	5	5/06/02	P1	SYAL	L	TO	13.4	2.1
TEST	FOREST	5	10/05/02	R1	PHMA5	L	TO	3.6	3.0
TEST	FOREST	5	10/05/02	R1	PRVI	L	TO	1.0	7.0
TEST	FOREST	5	10/05/02	R1	SYAL	D	TO	0.7	1.0
TEST	FOREST	5	10/05/02	R1	SYAL	L	TO	1.0	2.0

Figure DB-31—Line intercept summary report.

RegID	ProjID	PlotID	Date	Sample Event	Item	Status	Average Cover (%)	Average Height (ft)
TEST	FOREST	1	10/15/01	P1	AGSP	L	22.1	
TEST	FOREST	1	10/15/01	P1	ARUV	L	13.0	
TEST	FOREST	1	10/15/01	P1	MOSS	L	3.9	
TEST	FOREST	1	10/15/01	P1	ROCK	D	6.1	
TEST	FOREST	1	10/15/01	P1	SYAL	L	7.0	
TEST	FOREST	1	10/07/02	R1	AGSP	D	0.0	
TEST	FOREST	1	10/07/02	R1	ARUV	D	13.0	
TEST	FOREST	1	10/07/02	R1	ARUV	L	9.4	
TEST	FOREST	1	10/07/02	R1	MOSS	D	2.7	
TEST	FOREST	1	10/07/02	R1	ROCK	D	6.1	
TEST	FOREST	1	10/07/02	R1	SYAL	D	7.0	
TEST	FOREST	1	8/02/03	R2	AGSP	L	24.2	
TEST	FOREST	1	8/02/03	R2	ARUV	L	27.3	
TEST	FOREST	1	8/02/03	R2	MOSS	L	8.2	
TEST	FOREST	1	8/02/03	R2	ROCK	L	6.1	
TEST	FOREST	1	8/02/03	R2	SYAL	L	17.0	
TEST	FOREST	3	1/04/02	P1	AGSP	L	19.1	
TEST	FOREST	3	1/04/02	P1	FEED	L	18.5	
TEST	FOREST	3	1/04/02	P1	PHMA5	L	9.1	
TEST	FOREST	3	1/04/02	P1	SYAL	L	11.2	
TEST	FOREST	3	1/04/02	P1	XETE	L	7.0	
TEST	FOREST	3	10/08/02	R1	AGSP	D	9.1	
TEST	FOREST	3	10/08/02	R1	FEED	D	8.8	
TEST	FOREST	3	10/08/02	R1	PHMA5	L	8.2	
TEST	FOREST	3	10/08/02	R1	SYAL	D	7.0	
TEST	FOREST	3	10/08/02	R1	XETE	D	4.6	

Figure DB-32—Point intercept summary report.

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.

Density (DE) Summary Report

The DE summary report (fig. DB-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 ft² (m²) and per acre (hectare) are also calculated. The average height in feet (m) is calculated for each item.

Composite Burn Index (CBI) Summary Report

For each plot the CBI summary report (fig. DB-34) displays the Composite Burn Index for each stratum and the summarized CBI values for understory, overstory, and the total plot.

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 (fig. DB-35), click *Open* and double click on the database you want to use. Databases have an .mdb extension and are found in the installation folder (default: c:\firemon). Select the *RegID* and *ProjectID* for the plots you want to examine (fig. DB-36).

Viewer

Print Reload 100% Export

Density Summary

RegID	ProjID	PlotID	Date	Sample Event	Item	Status	Size Class	Avg. Items (per quadrat or belt tran.)	Avg. Items (per sq. ft)	Avg. Items (per acre)	Avg. Height(ft)
TEST	FOREST	1	10/15/01	P1	ARUV	L	TO	2.6	.3	12777.6	.3
TEST	FOREST	1	10/15/01	P1	PHMA5	L	TO	2.1	.2	10067.2	4.1
TEST	FOREST	1	10/15/01	P1	SYAL	L	TO	3.2	.3	15294.4	1.8
TEST	FOREST	1	10/07/02	R1	ARUV	D	TO	1.4	.2	6582.4	.1
TEST	FOREST	1	10/07/02	R1	ARUV	L	TO	.8	.1	3872.0	.2
TEST	FOREST	1	10/07/02	R1	PHMA5	D	TO	.8	.1	3872.0	3.0
TEST	FOREST	1	10/07/02	R1	PHMA5	L	TO	.9	.1	4259.2	3.6
TEST	FOREST	1	10/07/02	R1	SYAL	D	TO	1.4	.2	6776.0	1.5
TEST	FOREST	1	10/07/02	R1	SYAL	L	TO	1.1	.1	5420.8	1.6
TEST	FOREST	1	8/02/03	R2	ARUV	L	TO	3.5	.4	16843.2	.4
TEST	FOREST	1	8/02/03	R2	PHMA5	L	TO	2.9	.3	13939.2	4.4
TEST	FOREST	1	8/02/03	R2	SYAL	L	TO	3.7	.4	17811.2	2.0
TEST	FOREST	3	1/04/02	P1	AGSP	L	TO	1.0	.1	4646.4	.7
TEST	FOREST	3	1/04/02	P1	FEID	L	TO	.7	.1	3484.8	.4
TEST	FOREST	3	1/04/02	P1	PHMA5	L	TO	.6	.1	3097.6	4.2
TEST	FOREST	3	1/04/02	P1	SYAL	L	TO	.9	.1	4259.2	1.0
TEST	FOREST	3	1/04/02	P1	XETE	L	TO	1.6	.2	7937.6	2.7
TEST	FOREST	3	10/08/02	R1	AGSP	D	TO	.6	.1	2710.4	.2
TEST	FOREST	3	10/08/02	R1	FEID	D	TO	.4	.0	1742.4	.1
TEST	FOREST	3	10/08/02	R1	PHMA5	L	TO	.6	.1	3097.6	2.9
TEST	FOREST	3	10/08/02	R1	SYAL	D	TO	.7	.1	3484.8	.5

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Figure DB-33—Density summary report.

Viewer

Print Reload 100% Export

Composite Burn Index

RegID	ProjID	PlotID	Date	Substrate	Herbs / Low Shrubs	Tall Shrubs / Saplings	Intermediate Trees	Big Trees	Understory	Overstory	Total Plot
TEST	FOREST	1	10/07/02	.52	.25	2.60	2.10	.00	1.16	2.10	1.39
TEST	FOREST	3	10/08/02	.00	.00	.00	.00	.00	.00	.00	.00
TEST	FOREST	4	10/05/02	1.62	.60	2.87	2.63	.00	1.69	2.63	1.91
TEST	FOREST	5	10/05/02	.00	.00	.00	.00	.00	.00	.00	.00
TEST	FOREST	6	10/07/02	.57	.50	1.97	1.57	.00	.97	1.57	1.11
TEST	FOREST	8	9/21/02	1.26	.63	2.73	2.17	.00	1.49	2.17	1.64

Figure DB-34—Composite burn index summary report.

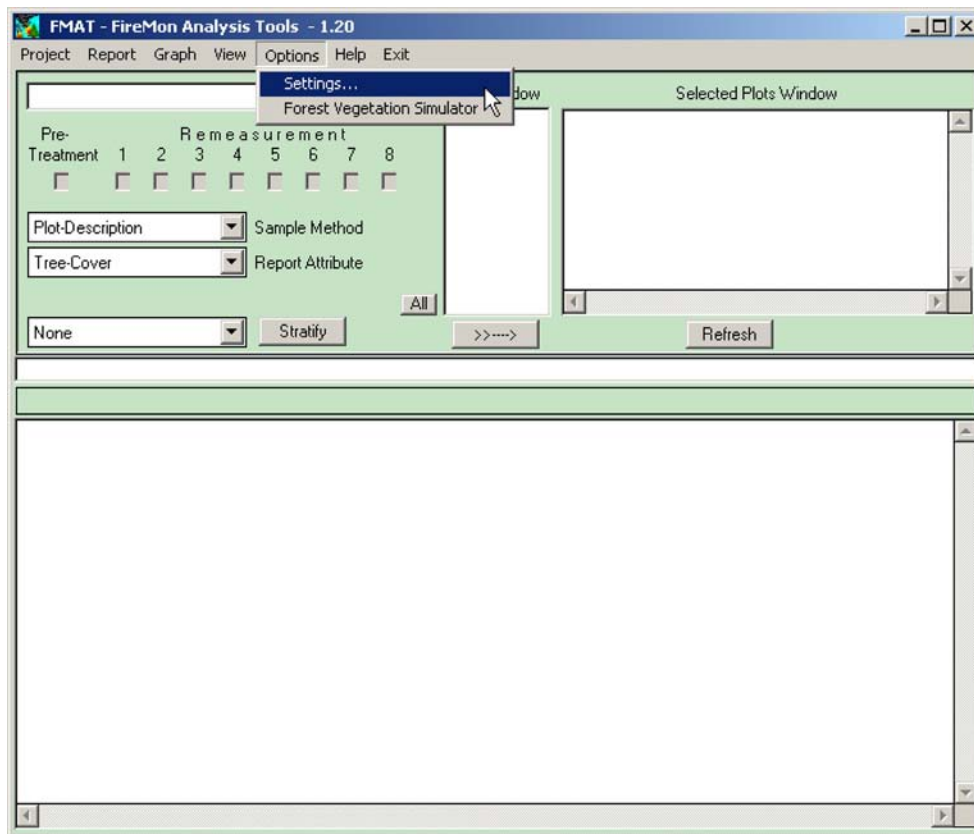


Figure DB-35—FIREMON data analysis program screen.

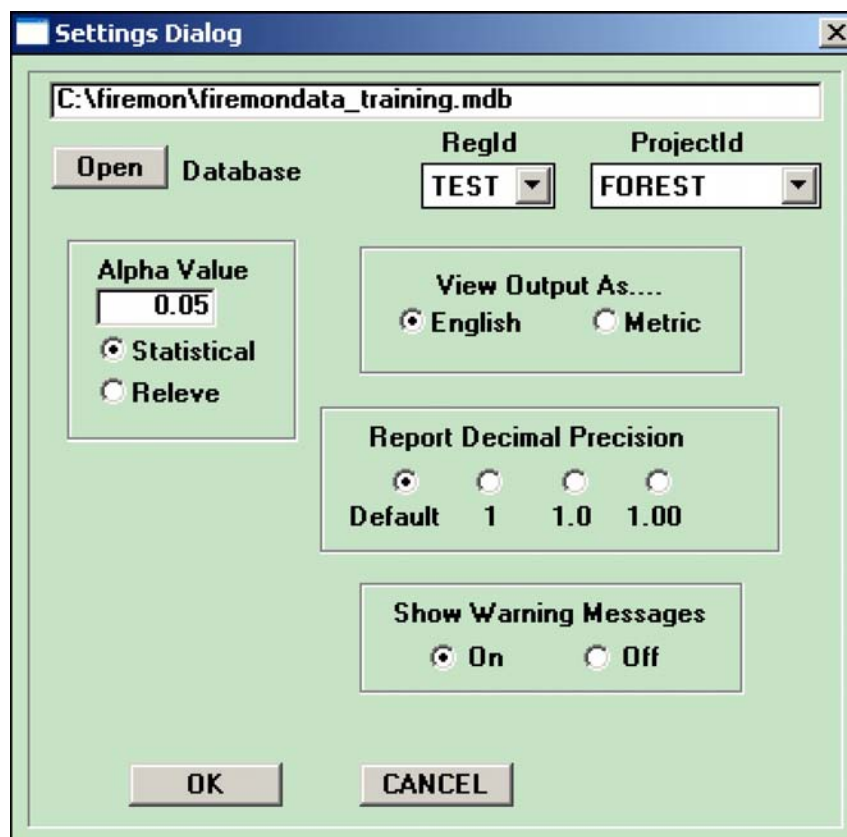


Figure DB-36—Settings dialog box.

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 procedure for multiple comparisons with a control is performed to identify attribute(s) that are significantly different from the pretreatment data. If the p-value of the F-test is greater than the *Alpha Value*, no significant differences between attribute means are noted and the Dunnett's procedure 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 (such as 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* (fig. DB-37). You can move all the plots by clicking the *All* button then clicking the arrow button. Select the *Sampling Events* you want to analyze (for example, pretreatment, first remeasurement, second remeasurement, and so forth) by marking the appropriate check boxes. Select the method and attribute for analysis using the *Sample*

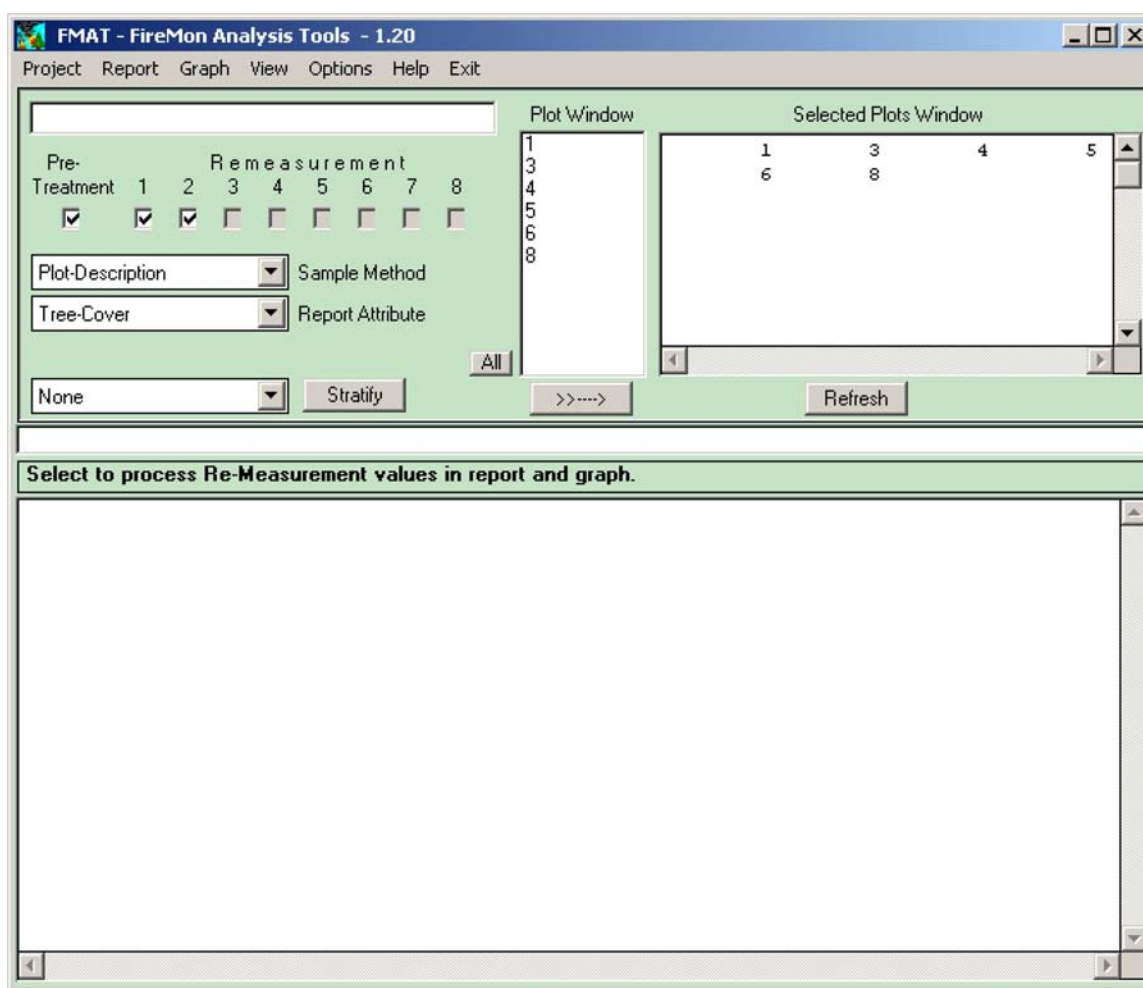


Figure DB-37—FIREMON analysis plot screen showing plots that have been selected for analysis (Selected Plots Window).

Method and *Report Attribute* combo boxes. Generate a report by selecting *Report* → *Create Report* from the main toolbar (fig. DB-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* commands.

The FMAT program uses a randomized block analysis of variance (ANOVA) procedure for a single attribute by two or more sampling events. ANOVA 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 using a Dunnett's procedure for multiple comparisons to compare a set of treatments against a single control mean. FMAT uses the first sampling event (most recent pretreatment or first remeasurement) as the control and the subsequent sampling events as the set of

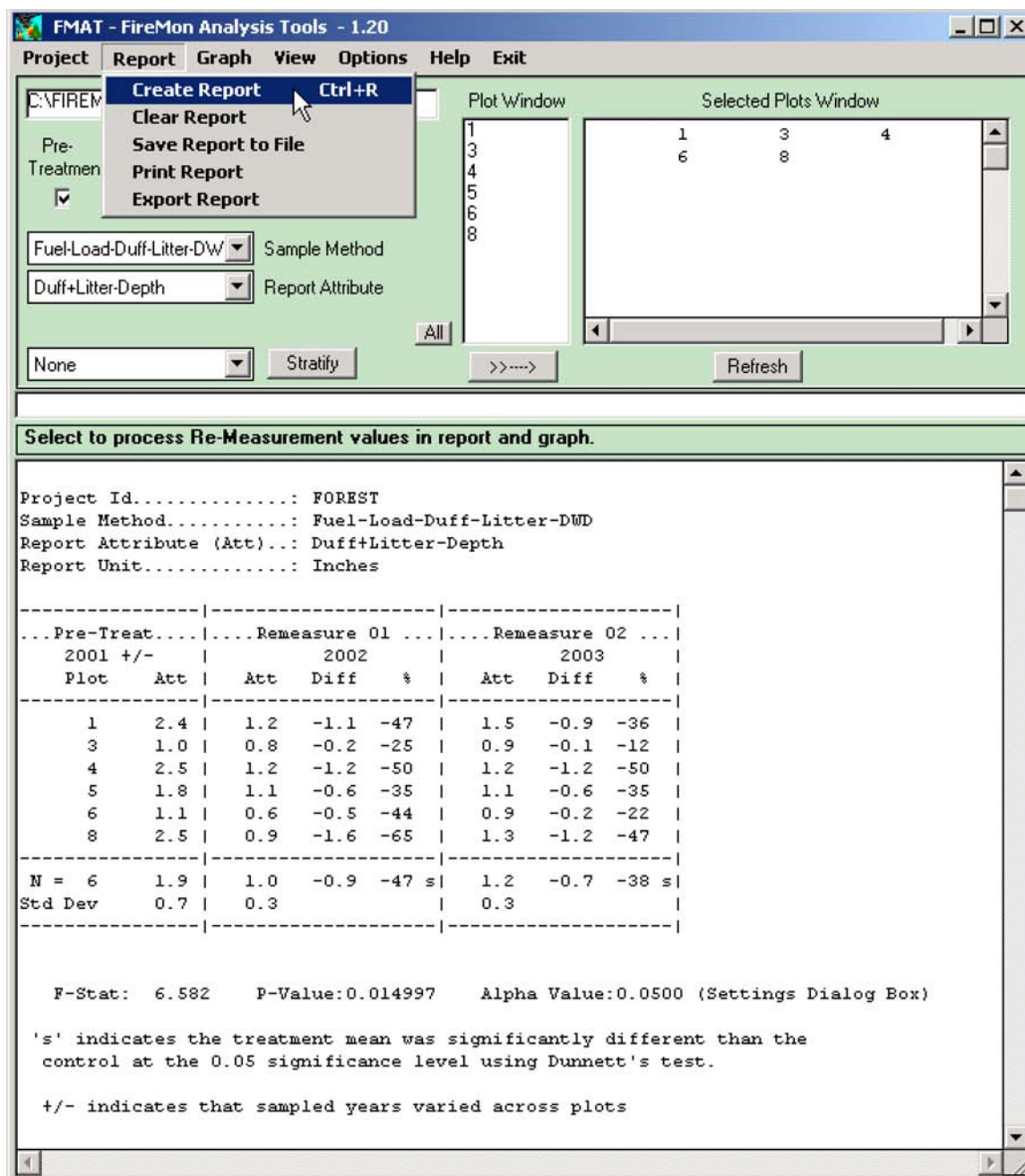
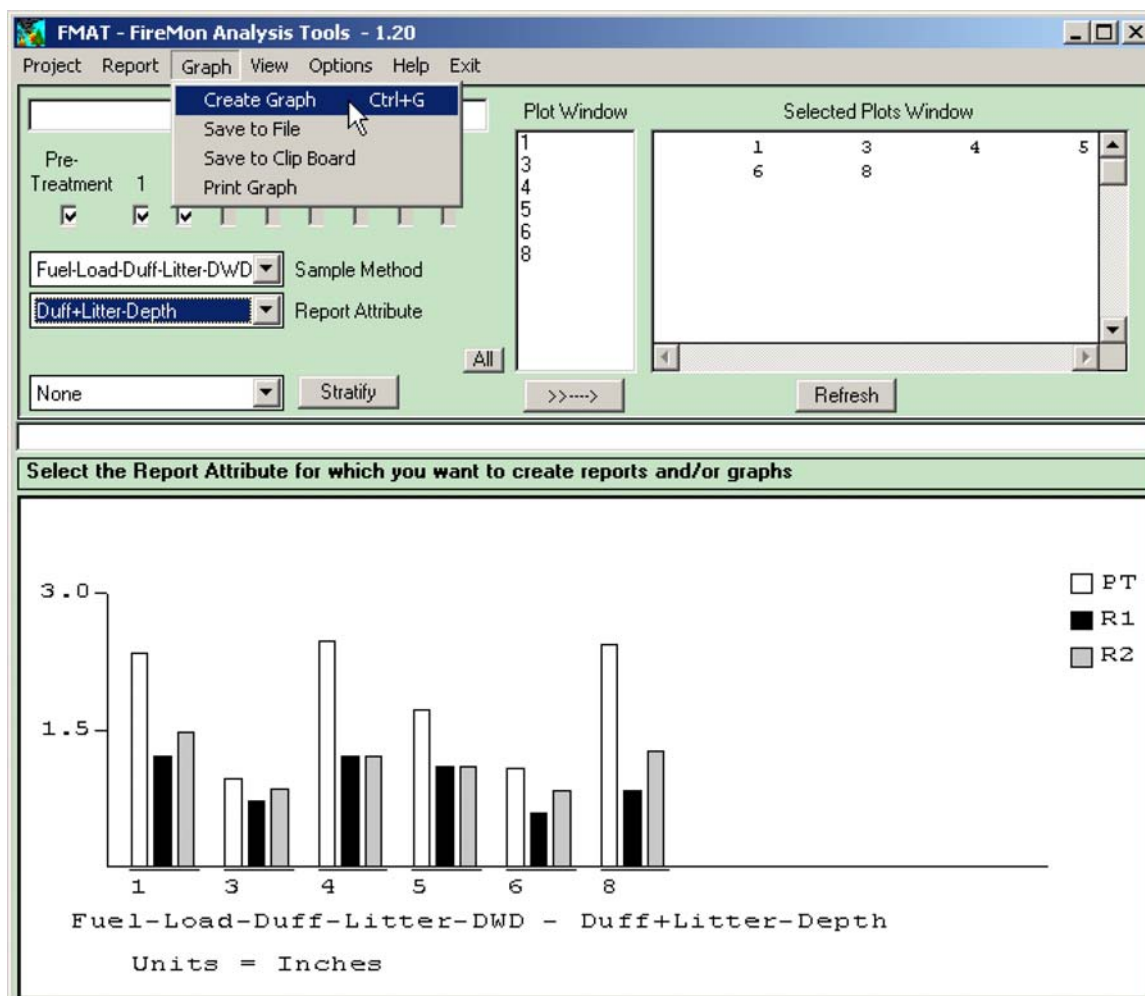


Figure DB-38—FIREMON analysis program report display.

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 (fig. DB-38). An “S” next to an attribute mean indicates a significant difference when compared to the first sampling event using Dunnett’s procedure at the 0.01 significance level. An “s” denotes significance at the 0.05 level.

FMAT assumes the data meets the assumptions of parametric tests (for example, normally distributed observations, homogenous variance, independent observations, and so on). While the tests used in FMAT are robust to these assumptions, validity of results may be adversely affected if data do not meet the assumptions of the tests used. If needed, data should be analyzed in more a comprehensive program such as SAS.

Generate a graph by selecting *Graph* → *Create Graph* from the main toolbar (fig. DB-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. Graphs may be copied from the report display text box and then pasted into documents. For additional details, see the **Analysis Tools Guide**.



SIMPLE QUERY BUILDER

Select *Reports* → *Simple Query Builder* from the FIREMON toolbar to display the *Simple Query Builder* Form. 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 (fig. DB-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 (fig. DB-41). All FIREMON plot data tables, fields, and field descriptions are listed in appendix E as a reference for building these simple queries. See **Customizing the FIREMON Database** in this chapter for a brief tutorial on designing more complex queries in Access.

GIS POINT FILE

Select *Reports* → *GIS Point File* to display all the plot locations in the database (fig. DB-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.

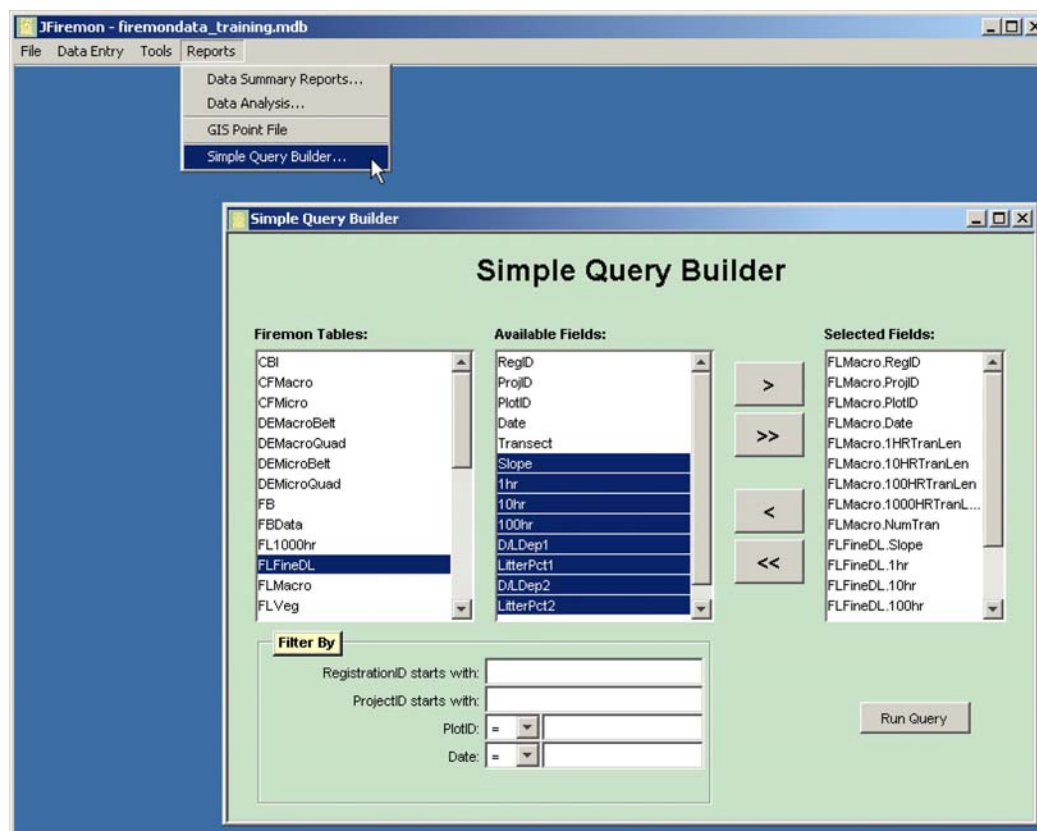


Figure DB-40—Simple query builder screen.

Results of Query:

RegID	ProjID	PlotID	Date	1HR...	10HR...	100HR...	1000HR...	NumTran	Transect	Slope	1hr	10hr	100hr
TEST	FOREST	1	2001-10-15	6.0	6.0	15.0	50.0	2	1	26.0	38	20	3
TEST	FOREST	1	2001-10-15	6.0	6.0	15.0	50.0	2	2	6.0	51	27	4
TEST	FOREST	1	2002-10-07	6.0	6.0	15.0	50.0	2	1	26.0	17	10	2
TEST	FOREST	1	2002-10-07	6.0	6.0	15.0	50.0	2	2	6.0	28	14	2
TEST	FOREST	1	2003-08-02	6.0	6.0	15.0	50.0	2	1	26.0	20	12	3
TEST	FOREST	1	2003-08-02	6.0	6.0	15.0	50.0	2	2	6.0	30	16	4
TEST	FOREST	3	2002-01-04	6.0	6.0	15.0	50.0	2	1	36.0	7	2	1
TEST	FOREST	3	2002-01-04	6.0	6.0	15.0	50.0	2	2	13.0	3	3	2
TEST	FOREST	3	2002-10-08	6.0	6.0	15.0	50.0	2	1	36.0	2	1	1
TEST	FOREST	3	2002-10-08	6.0	6.0	15.0	50.0	2	2	13.0	2	1	1
TEST	FOREST	3	2003-08-05	6.0	6.0	15.0	50.0	2	1	36.0	5	2	1
TEST	FOREST	3	2003-08-05	6.0	6.0	15.0	50.0	2	2	13.0	3	1	1
TEST	FOREST	4	2002-05-05	6.0	6.0	15.0	50.0	2	1	33.0	18	5	3
TEST	FOREST	4	2002-05-05	6.0	6.0	15.0	50.0	2	2	10.0	34	8	4
TEST	FOREST	4	2002-10-05	6.0	6.0	15.0	50.0	2	1	33.0	5	1	1
TEST	FOREST	4	2002-10-05	6.0	6.0	15.0	50.0	2	2	10.0	4	1	1
TEST	FOREST	4	2003-09-05	6.0	6.0	15.0	50.0	2	1	33.0	9	2	1
TEST	FOREST	4	2003-09-05	6.0	6.0	15.0	50.0	2	2	10.0	6	2	2
TEST	FOREST	5	2002-05-06	6.0	6.0	15.0	50.0	2	1	40.0	38	3	1
TEST	FOREST	5	2002-05-06	6.0	6.0	15.0	50.0	2	2	10.0	53	8	2
TEST	FOREST	5	2002-10-05	6.0	6.0	15.0	50.0	2	1	40.0	14	2	1
TEST	FOREST	5	2002-10-05	6.0	6.0	15.0	50.0	2	2	10.0	12	3	1
TEST	FOREST	5	2003-09-05	6.0	6.0	15.0	50.0	2	1	40.0	17	3	1
TEST	FOREST	5	2003-09-05	6.0	6.0	15.0	50.0	2	2	10.0	18	4	2
TEST	FOREST	6	2002-05-05	2.0	2.0	5.0	17.0	2	1	34.0	12	3	2
TEST	FOREST	6	2002-05-05	2.0	2.0	5.0	17.0	2	2	16.0	15	7	1
TEST	FOREST	6	2002-10-07	2.0	2.0	5.0	17.0	2	1	34.0	3	1	1
TEST	FOREST	6	2002-10-07	2.0	2.0	5.0	17.0	2	2	16.0	5	2	1
TEST	FOREST	6	2003-09-07	2.0	2.0	5.0	17.0	2	1	34.0	5	2	1

Figure DB-41 — Query results display form view.

GIS Point File

RegID	ProjID	PlotID	Lat	Long	Northing	Easting	Datum	GPS Error	GPS Error Units
TEST	FOREST	1	46.33662	114.24593					
TEST	FOREST	3	46.33653	114.24666					
TEST	FOREST	4	46.33597	114.24426					
TEST	FOREST	5	46.33586	114.24387					
TEST	FOREST	6	46.33592	114.24619					
TEST	FOREST	8	46.33696	114.24688					
TEST	INV	1077	37.60850502	-112.84901355				0.0	
TEST	INV	2236	38.63444457	-111.64676222				0.0	
TEST	INV	2237	38.63996576	-111.6515173				0.0	
TEST	INV	2238	38.6489247	-111.65684394				0.0	
TEST	INV	2239	38.65237527	-111.65380709				0.0	

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Figure DB-42 — GIS point file screen.

RANDOM TRANSECT LOCATOR PROGRAM

Select *Tools* → *Transect Layout* from the FIREMON toolbar to display the *Random Transect Locator* form (fig. DB-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.

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. 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. Unique queries may also be developed for customized reports or for exporting data to spreadsheets and statistical software packages.

All customized code tables and user-designed queries should reside in the FIREMON database where 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.

FIREMON Random Transect Locator

Number of Transects: Baseline Length - ft (m): Max. Distance From Baseline for First Quadrat - ft (m):

Transect Locations:

Transect 1 = 5
 Transect 2 = 17
 Transect 3 = 29
 Transect 4 = 49
 Transect 5 = 65

First Quadrat Locations:

Quadrat 1 on Transect 1 = 9
 Quadrat 1 on Transect 2 = 8
 Quadrat 1 on Transect 3 = 12
 Quadrat 1 on Transect 4 = 10
 Quadrat 1 on Transect 5 = 7

Figure DB-43—Random transect locator program.

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 (.mdb). The FIREMON code tables are named `_codes*.*` (fig. DB-44). The code tables are systematically named by the table name and field name for which they store codes. For example, `_codesTD_CrwnClass` is the table with the crown class codes (fig. DB-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 dropdown 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 DB-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.

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 filter only

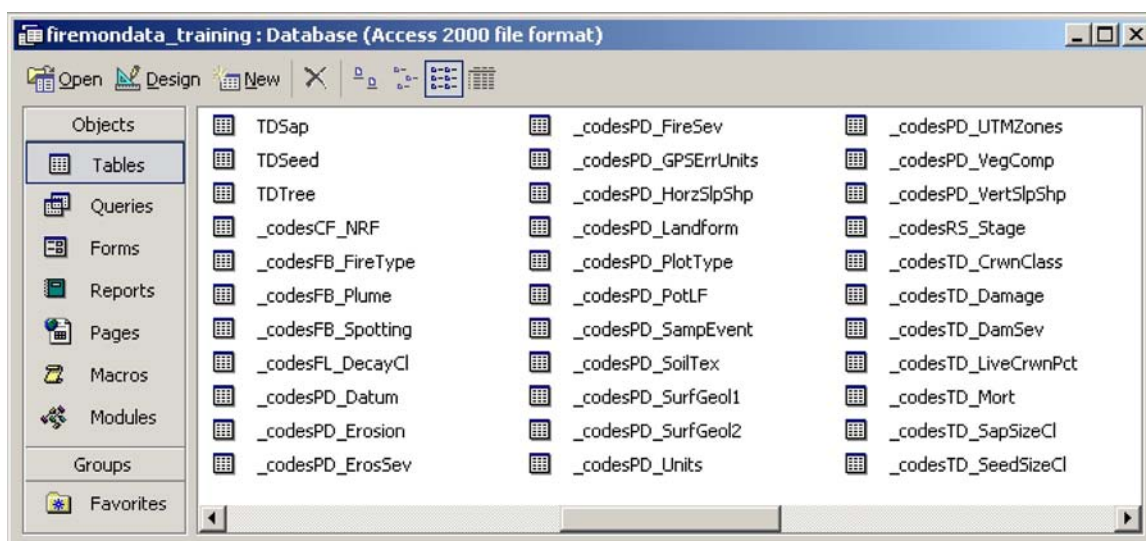


Figure DB-44—FIREMON database code tables.

	Code	Desc	Sort
▶		Open Grown	1
	E	Emergent	2
	D	Dominant	3
	C	Codominant	4
	I	Intermediate	5
	S	Suppressed	6
	X	Not Assessed	7
*			0

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Figure DB-45—Crown class codes.

Table DB-1 — FIREMON code tables.

Table name	FIREMON tables/forms	FIREMON code description
_codes_CanopyCover	PD, FL, SC, CF	Canopy cover classes
_codes_GroundCover	SC, CF, PO	Ground cover
_codes_OtherItems	SC, CF, LI, PO, DE	Other items
_codes_SizeCl	SC, LI, DE	Tree/shrub size classes
_codes_Status	SC, CF, PO, LI, DE, RS	Plant species status
_codesCF_NRF	CF	Nested rooted frequency
_codesFB_FireType	FB	Fire type
_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

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 (fig. DB-46). 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 in appendix E as a reference for building customized queries.

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 DB-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 that were located inside the fire assigned to FireID = 101. The resulting query is displayed in figure DB-47.

The FIREMON database relationships are presented in appendix F.

Query1 : Select Query

PD	FLMacro	FLFineDL
FireID	*	Transect
MdId	RegID	Slope
LocType	ProjID	1hr
Lat	PlotID	10hr
Long	Date	100hr

Field:	FireID	PlotID	Transect	Slope	1hr	10hr	100hr
Table:	PD	FLMacro	FLFineDL	FLFineDL	FLFineDL	FLFineDL	FLFineDL
Sort:							
Show:	☒	☒	☒	☒	☒	☒	☒
Criteria:	"101"						
or:							

Figure DB-46—Access query design window.

Query1 : Select Query

	FireID	PlotID	Transect	Slope	1hr	10hr	100hr
▶ 101		1	1	26	38	20	3
101		1	2	6	51	27	4
101		1	1	26	17	10	2
101		1	2	6	28	14	2
101		1	1	26	20	12	3
101		1	2	6	30	16	4
101		3	1	36	7	2	1
101		3	2	13	3	3	2
101		3	1	36	2	1	1
101		3	2	13	2	1	1
101		3	1	36	5	2	1
101		3	2	13	3	1	1
101		4	1	33	18	5	3
101		4	2	10	34	8	4
101		4	1	33	5	1	1

Record: 1 of 71

Figure DB-47—Query results displaying fine fuel counts on transects by FireID.