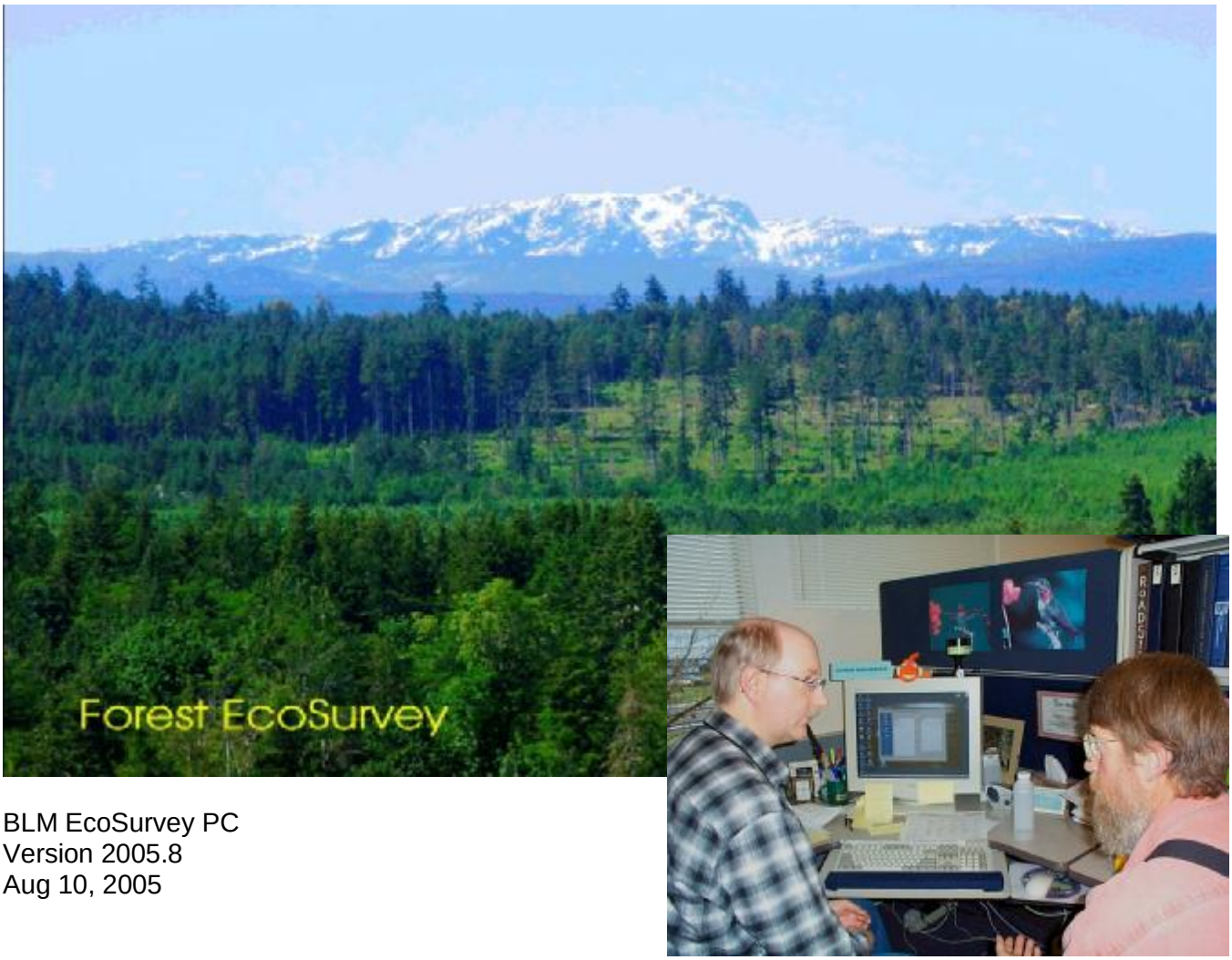
User Guide

BLM EcoSurvey - Forest Survey for the PC



BLM EcoSurvey PC
Version 2005.8
Aug 10, 2005

D.R. systems inc.

EcoSoft

I. Introduction

BLM EcoSurvey is a PC and handheld data collection and reporting system. The handheld collects field data and performs statistical calculations. The PC program does data merging from several sources, data manipulation, exporting to growth models and other databases, and statistical reporting.

Development
Development of the handheld data collection and PC software took three years and included the involvement of a development team consisting of Dan Schlottmann, Steve Brownfield, and Alan Rhodes of the BLM, Salem, Oregon office. The design and programming was done by Attila Dobozi, Aaron Hudon, and Richard Holmboe of D.R. systems inc., with Dr. Kim Iles providing guidance and expertise in forest sampling methodologies and the formulae and insight behind the statistics used in the system. Additionally, beta testing was done on the handheld and PC Programs by representatives from each BLM District: Wes Wong, Dugan Bonney, Vince Cargile, Walt Smith, Walt Kastner – Salem; Joe Graham, Trixy Moser & Al James – Roseburg; Scott Haupt, Cliff Powers – Medford; Mike Oxford, Jim Kowalick, Paul Fontaine – Coos Bay; Greg Reddell – Klamath Falls; Chris Haubrich, Jack Zwiesler – Eugene; Jim Alegria - Oregon State Office.

BLM EcoSurvey System
The system consists of:

- Handheld data collection software
- PC Lite "Contractors" software – for transferring data, field report printing, and emailing data to districts.
- PC BLM EcoSurvey Software – for data manipulation, editing, reporting, translate creation. Set-up configurations and Units with sampling methods can be set up in the PC and transferred to contractors and the handheld.
- PC BLM EcoSurvey Administrator Software – control of standards for table codes, volume equations, and edit check rules.

Documentation

- BLM EcoSurvey PC User Guide
- BLM EcoSurvey Technical Support Document – contains calculations, statistics, report (printout) definitions, and references.
- BLM EcoSurvey CE User Guide
- BLM EcoSurvey Administration PC Software Manual

Handheld Development Approach
The handheld data collection design is based on over 15 man-years of forest data collection software development covering over a dozen forestry applications. Several tools and techniques for fast data entry have been employed in the software. And, the software is very intuitive and easy to use. Several BLM office and field staff were consulted in the creation of this system.

Latest Proven Sampling Methods
The software accommodates traditional fixed radius and variable plot (VP) sampling methods. In addition, the latest sampling procedures and methodologies are incorporated as taught and promoted through such experts as Dr. John Bell and Dr. Kim Iles. These newer methods – the "BIG BAF (2 prism)" as taught in the OSU Bell short course and "Prism +Ratio" methods will not only save time, but efficiencies will be gained through their use. In other words you will get a better answer with less work. The Ratio Sampling method requires the use of the handheld software. The other sampling methods allow the use of field cards and can be keypunched into the PC program.

PC Validation
The Validation in the keypunch - data entry module of the PC program is not as fully featured as the handheld. This is partly due to the fact that only the handheld can actually collect data using the Ratio Sampling Method – it really cannot be done on field cards easily. It is also partly due to the emphasis that the handheld be the prime entry point for data entry into the system with the PC being used primarily for editing.

Innovative Features

- Combining plots with different sampling methods and sampling frequencies.
  The PC program incorporates one feature that is groundbreaking – that being the ability to provide statistically valid results for combining plots, stratum, and units that are sampled using different sampling methods, and frequencies. In other words, stratum can be combined that have been sampled having different Prism sizes, and strata sampled by different fixed plot sizes. Due to a weighting process, developed by Dr. Iles, the summary results are statistically valid. To the best of DR System's knowledge this process has not been done before.
- Graphical Interface – the interface for viewing and manipulating data is very intuitive and easy to use.
- Intelligent Data Merging. A major problem of data collection systems used in operations is finding a way to protect data from accidental deletion. The deletion of a day or weeks fieldwork due to inexperience or to an awkward, clumsy system design is expensive in many ways. The "Merge" feature provides users with a no fuss and easy way to assure users of what happens during a data transfer, giving them full control in situations where multiple handhelds are used on the same project and unit.
- Intelligent program and data transfer. The system requires minimum knowledge of the directory and file structure within the handheld and PC programs. Program updates, Data and Table transfer sessions are icon or menu driven and do not require a user knowing paths or directory structures.

Your input
Your input on errors and program improvements are appreciated.

Acknowledgements
I wish to thank to the valuable contributions by Dan Schlottmann, Steve Brownfield, Alan Rhodes, and the numerous BLM field and management staff that assisted us in this development project. Additionally, I thank Dr. John Bell and Dr. Kim Iles.

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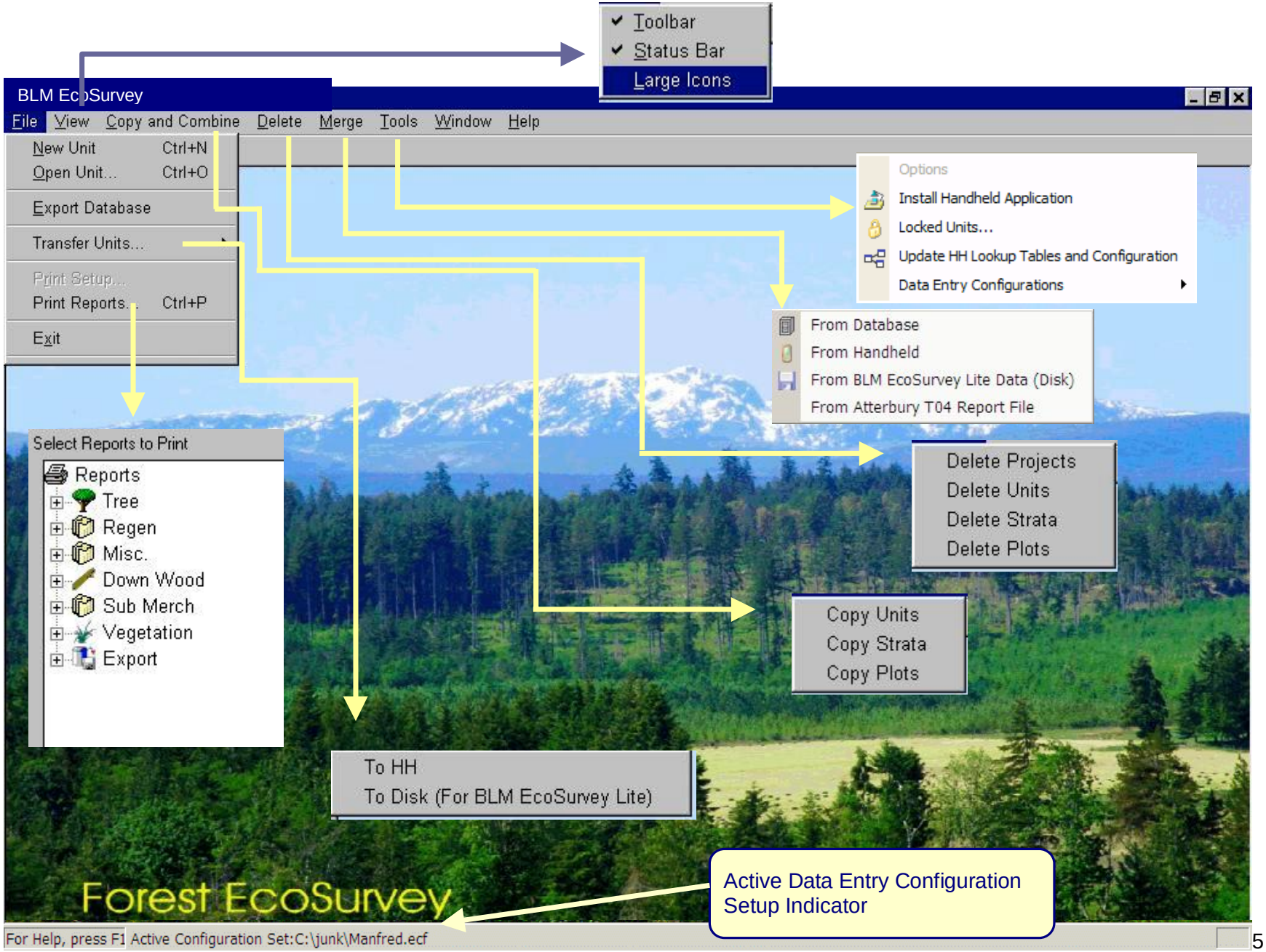
III. Menu Map


Toolbar
Status Bar
Large Icons
BLM EcoSurvey
File View Copy and Combine Delete Merge Tools Window Help
New Unit Ctrl+N
Open Unit... Ctrl+O
Export Database
Transfer Units...
Print Setup...
Print Reports... Ctrl+P
Exit
Options
Install Handheld Application
Locked Units...
Update HH Lookup Tables and Configuration
Data Entry Configurations
From Database
From Handheld
From BLM EcoSurvey Lite Data (Disk)
From Atterbury T04 Report File
Select Reports to Print
Reports
Tree
Regen
Misc.
Down Wood
Sub Merch
Vegetation
Export
Delete Projects
Delete Units
Delete Strata
Delete Plots
Copy Units
Copy Strata
Copy Plots
To HH
To Disk (For BLM EcoSurvey Lite)
Forest EcoSurvey
For Help, press F1
Active Configuration Set:C:\junk\Manfred.ecf
Active Data Entry Configuration Setup Indicator

IV. Merge

A. Merge Overview

Merge means "merge data from another source". The source file may be a file on your PC or it may involve a direct data transfer from a handheld.

Merge data from:

- Handheld (handheld applies time/date stamp) *for procedure go to page 12 .*
- Files produced by PC Lite (contractor) program (email or disk) *for procedure go to page 13.*
- Other Forest EcoSurvey databases *for procedure go to page 11.*
- Atterbury Report File (T04) *for explanation of Merging an Atterbury Report file go to page 96.*

The Merge function provides a safe, easy way to bring data into the database. It detects *"duplicate data" and* allows the user to verify and decide what "duplicate" data is to be protected and which is to be rejected. An example of a duplicate would be if a handheld is accidentally downloaded twice (or a contractor's data that has multiple downloads). What if you have already edited the Report Unit Headers in the PC program? Should the resident data be protected or overwritten by the incoming duplicate data? Wouldn't it be nice to have control over this?

A better example - a handheld is downloaded daily (a good practice). On day two the cruiser goes back to the same unit and adds two new plots and makes changes to a stratum pages and adds more lines of notes in the notepads. At the end of the day it would be nice to be able to have some control over what is protected and saved. The merge system allows control over these issues.

An even better example – multiple handhelds are used on the same survey. Each handheld, by definition, has the same project, unit, and maybe even stratum names. The Merge process will append the new data, detect duplicate data, verify what it is, and allow you to decide what to do with the duplicate data.

The merge function only exists in the Main Forest EcoSurvey PC program. The PC Lite program allows one to download everything and stores the file. If more plots are added the next day, the resulting transferred file is stored and saved in its entirety (as a separate file).

The merge rules:

Detection of duplicates –As the data is brought into the PC database a duplicate warning will appear if an incoming duplicate record is detected.

Record ID's

A duplicate record is a resident record having a matching ID with an incoming one. The ID's are inherent to a Project Name, a Unit within the same project, a Stratum within the same Unit, a Plot within a Unit.

Date and Time

A date and time stamp is applied to each plot (and all data levels) as they are created. This stamp is placed in both the handheld and PC program. So, it can be important to maintain proper date and time on your office and handheld hardware. The date and time stamps are used along with the record ID in the merge/ verification process.

- If the incoming duplicate is older (date/time stamp) the resident data is protected (the incoming duplicates ignored).

- If the incoming data is new (newly added plots or stratum) it is automatically appended to the database.
- If the incoming data contains new “pieces” (trees, regen, etc) of an existing plot resident on the PC, then you will be prompted for an action. The new pieces are not appended automatically, this situation requires user action.
- If the incoming duplicate is newer (date/time stamp) then a duplicate warning appears along with a special verification window allowing a choice between rejecting or saving each duplicate record. For example, suppose you download your handheld, then the next day you enter the plot header page in the handheld and change just one item of information. This change is detected by the merge program and you will be asked if you want this plot header to overwrite the resident plot header.
- All notes are appended automatically *(provided you select overwrite in the duplicate message pane)*

If no duplicate records are detected then no “duplicate messages” will appear and the merging will finish with a Merge Report, see page 10 .

If duplicates are found then Duplicate Message Windows appear - see next pages.

I. Merge Duplicate Messages and Verification

Duplicate Message Panes

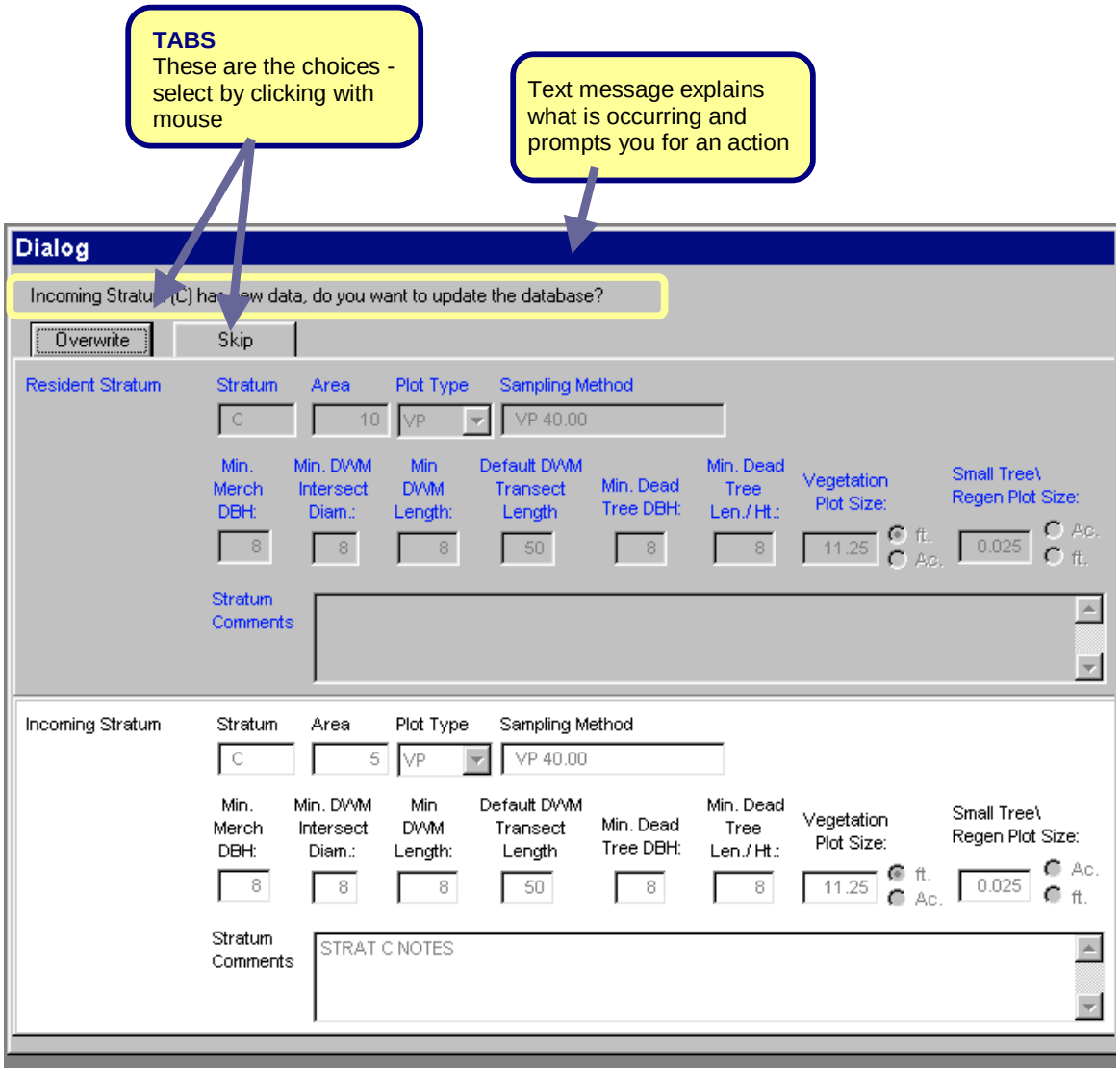
If there are no duplicates as would be the case with a new unit survey a merge report appears. If this is the case no duplicate messages will appear. You can skip this section on “duplicates” and continue at the “Merge Report “ section on page 10 . After the merge selection is made, duplicates may be detected. When this occurs, message panes appear. Duplicate message panes exist for:

- Project - Unit Pages
- Stratum Pages
- Plot Header Pages (along with tree messages).

The message panes are fairly descriptive.

Message pane Areas

Upper Half (gray color)	Resident data (current data in PC database) View resident “page” of info and all values to compare to the incoming “page”
Lower Half (white)	Incoming data (data coming from other source – handheld, database, or PC Lite)



TABS for Unit and Stratum offer two choices:

- Overwrite resident data.
- Skip bringing in duplicate record and preserve resident data.

TABS for PLOT may offer 1 extra choice:

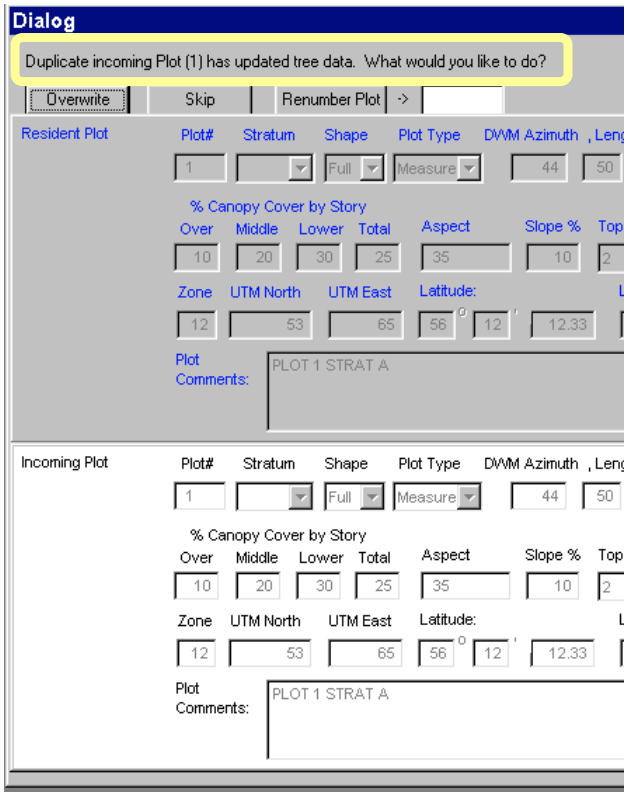
- Renumber Plot.

Notepads

In the case of notes in unit, strata, and plots, they will only be appended if the "Overwrite" action tab is selected. What this means is that a new line of notes will be added to the current resident notepad. You can view the notes in both the resident and incoming record in the same message pane. This feature is more likely to become an issue when multiple handhelds are used on the same unit, since notes are likely to be valid in all handhelds used on that unit.

Plots and Piece Duplicates (tree, regen, DWM, and Veg)

In the case of Plots it is important to read the text message at the top of the dialogue window. The message might contain instructions for either or both the plot header pages and pieces associated with the plot.



Duplicate Examples:

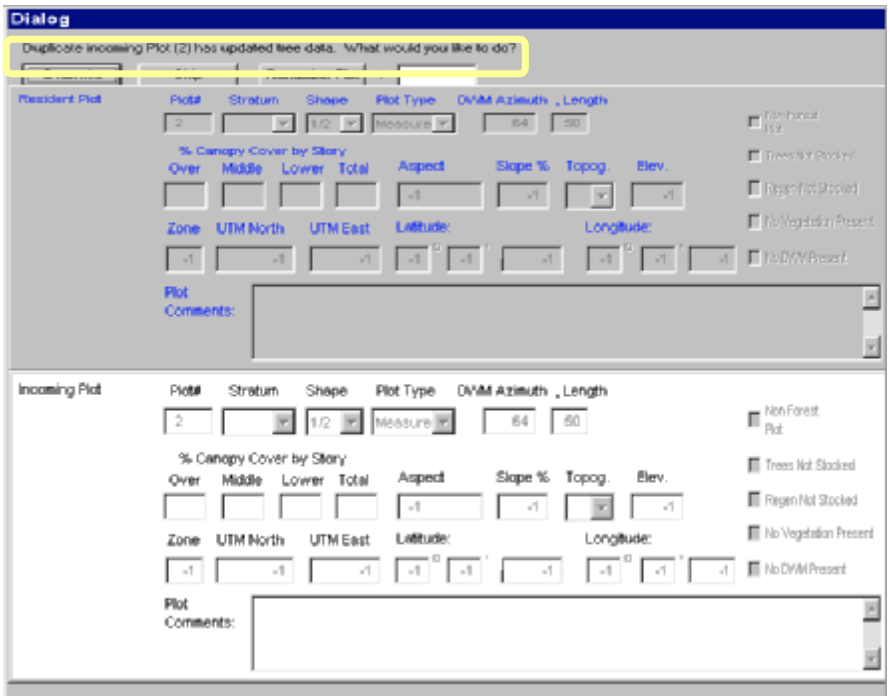
A: *Duplicate incoming plot page is newer or changed than what is in the database, but only the plot header is new* - no new trees or pieces exist.

In this situation the message will ask if you want to update "overwrite" the plot header data and that the existing pieces (trees) in the PC database will not be effected.

B: *Duplicate incoming plot contains updated or new tree data* - a piece (tree) was changed or added: the plot header is the same. In this situation the message explains there exists "updated" tree data. The possible actions are:

- Overwrite – Incoming plot header and all associated pieces will replace the existing resident plot.
- Skip – Incoming plot header and associated pieces are ignored – resident plot header and trees (pieces) remains the same.
- Renumber Plot – If you think the plot is a new plot or it is in the wrong stratum, you can type a new plot number, then click the "Renumber Plot" tab. This "new" plot will be added to the Unit. The plot can be dealt with later in the data entry module where the plot can be edited re-stratified or deleted. In this situation, the other option is to select "Skip", then if the handheld is available, re-stratify the plot and then re-transfer it. If the handheld is not available then, renumbering is the safe method.

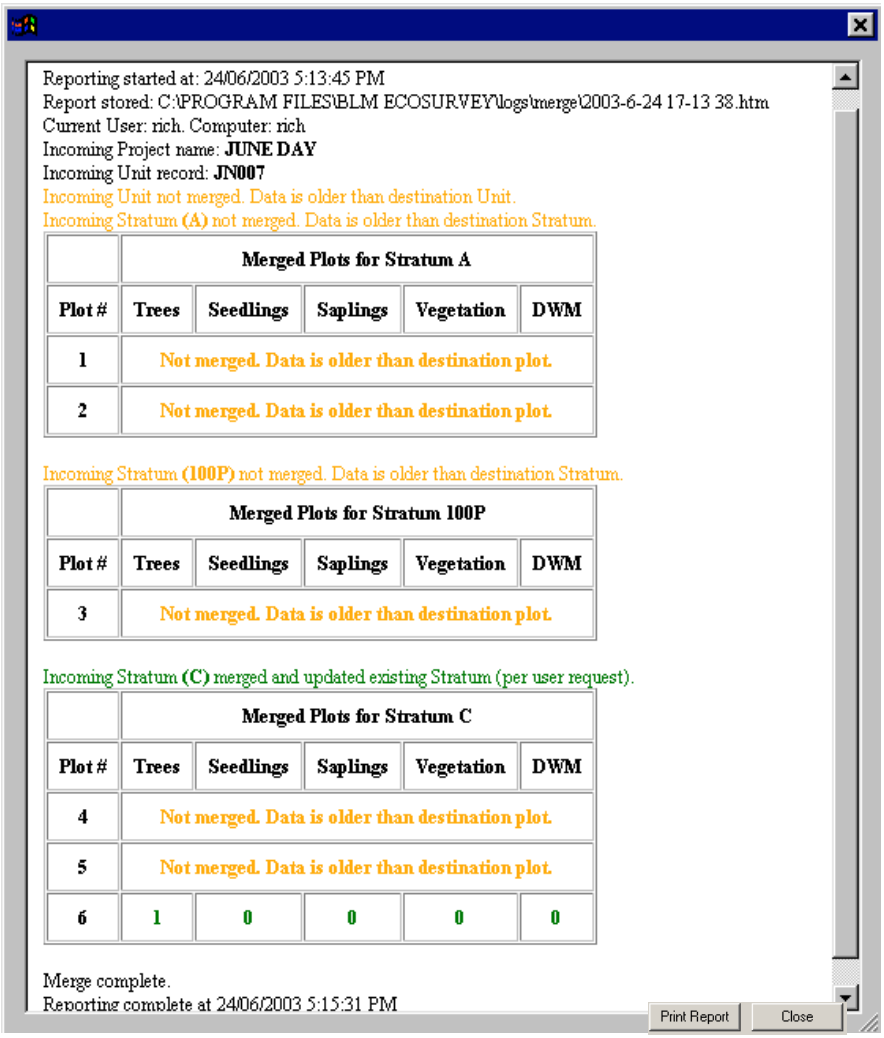
When duplicates are done, the merging process finishes - a Merge Report is displayed.



II. Merge Report

The appearance of the Merge Report signals the end of the merge process. This report verifies what happened during the merge process. The window can be expanded by click and drag on any of the borders or the lower right wrinkle.

The report is an html file that can be viewed with MS Word and is saved to a subfolder under the Forest EcoSurvey program called: \logs\merge. The filenames are based on date and time of the merge (note the filename at the top of the page). MS Windows Explorer can be used to open and view the file. The html reports files accumulate and should be managed by a supervisor periodically.



Reporting started at: 24/06/2003 5:13:45 PM
Report stored: C:\PROGRAM FILES\BLM ECOSURVEY\logs\merge\2003-6-24 17-13 38.htm
Current User: rich. Computer: rich
Incoming Project name: **JUNE DAY**
Incoming Unit record: **JN007**
Incoming Unit not merged. Data is older than destination Unit.
Incoming Stratum **(A)** not merged. Data is older than destination Stratum.

	Merged Plots for Stratum A				
Plot #	**Trees**	**Seedlings**	**Saplings**	**Vegetation**	**DWM**
1	**Not merged. Data is older than destination plot.**				
2	**Not merged. Data is older than destination plot.**				

Incoming Stratum **(100P)** not merged. Data is older than destination Stratum.

	Merged Plots for Stratum 100P				
Plot #	**Trees**	**Seedlings**	**Saplings**	**Vegetation**	**DWM**
3	**Not merged. Data is older than destination plot.**				

Incoming Stratum **(C)** merged and updated existing Stratum (per user request).

	Merged Plots for Stratum C				
Plot #	**Trees**	**Seedlings**	**Saplings**	**Vegetation**	**DWM**
4	**Not merged. Data is older than destination plot.**				
5	**Not merged. Data is older than destination plot.**				
6	**1**	**0**	**0**	**0**	**0**

Merge complete.
Reporting complete at 24/06/2003 5:15:31 PM

Print Report Close

- A green font denotes newly added or replaced items.
- A yellow/orange font denotes duplicates in the resident database that were protected (incoming not merged).

· Print the Report print by 1) Clicking on

Print button at the bottom of the report or; 2) use a right mouse click on the report, then click Print.

- Close the report by clicking on the X, or the close button.
- To finish merge process close the Data Manager by clicking on the "X".

B. Merge a Database

"Merge from database" is used to transfer survey data from one EcoSurvey database to another EcoSurvey database. This is a copy function in that the original database remains intact. Note: BLM Ecosurvey databases and parts of EcoSurvey databases can be exported**,** *see page52.*

Steps:

1) On the top horizontal menu bar select Merge – "Merge From Database"
2) Using the Explorer interface find the Access ".mdb" file to bring into the database.
3) Highlight file, then click OPEN. – the Data Manager Box appears
4) Click the Expandable Project Names (small [+] boxes) to view the Unit Names.
5) Place a "checkmark" in each desired Unit to bring into the database.
6) Click the "Merge Checked Units Button" at the bottom of the Data Manager window.

<u>The next steps:</u>

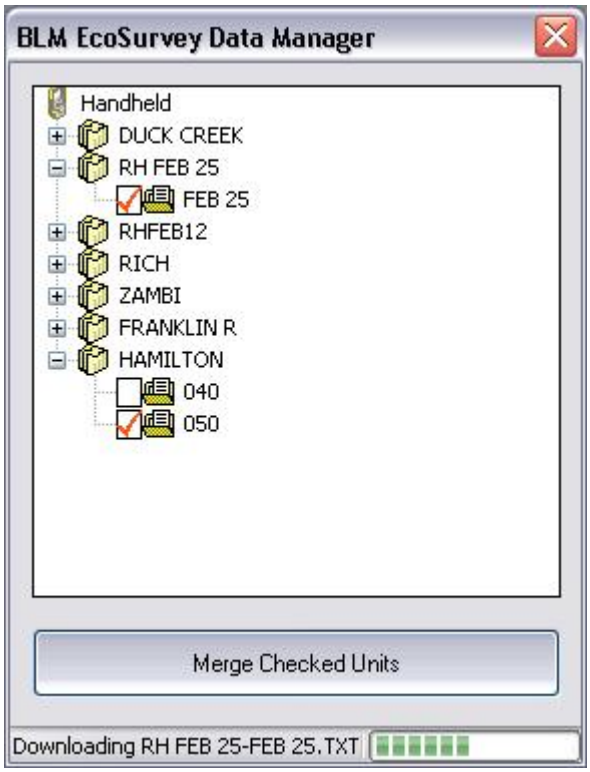
1) Merging of data – see Merge Overview on page 6.
2) Merge Duplicate Message Panes – see page 8 .
3) Merge Report – see page 10 .

C. Merge from Handheld

"Merge from Handheld" will transfer survey data from the handheld, then merge the survey data into the BLM EcoSurvey database.

Steps

1) Start MS ActiveSync to start the handheld to PC communication process.
2) On the BLM EcoSurvey top horizontal menu bar select Merge – Merge From Handheld.
3) The Data Manager Box appears. Click the Expandable Project Names (small [+] boxes) to view the Unit Names.
4) Place a "checkmark" in each desired Unit to bring into the PC database.
5) Click the "Merge Checked Units Button" at the bottom of the Data Manager window.



<u>The next steps:</u>

6) Merging of data – see Merge Overview, page 6.
7) Merge Duplicate Message Panes, see page 8.
8) Merge Report, see page 10.

D. Merge from EcoSurvey PC Lite

"Merge from EcoSurvey PC Lite" is used to transfer survey data that is exported from the EcoSurvey Lite program then merge the survey data into the BLM EcoSurvey database. The Lite program creates handheld files that can be emailed or copied to disk. The files have an extension of *.hdcp. The .hdcp files can be merged from the floppy disk or they could be copied to a folder you find convenient on your PC or server. *Note – even if you have multiple units in a project in the handheld, a separate file is created for each unit*. During the "Merge from EcoSurvey PC Lite " process, the projects that each unit is assigned to will appear in the BLM EcoSurvey PC program in the appropriate hierarchy.

When you select the folder as the location to find the file(s), all you will see is a list of files (one for each unit). The filename convention is [project name + Unit name].

Steps

1) On the BLM EcoSurvey top horizontal menu bar select Merge – Merge From EcoSurvey Lite Data.
2) An explorer type browse screen appears. Find the subfolder where the data files from EcoSurvey Lite are stored. Click OK. If valid data exists, then the Data Manager Box appears. (if data is not valid, you get a "no data available" message") All projects- units will be displayed automatically, even if multiple data files exist.
3) Click the Expandable Project Names (small [+] boxes) to view the Unit Names.
4) Place a "checkmark" in each desired Unit to bring into the PC database.
5) Click the "Merge Checked Units Button" at the bottom of the Data Manager window.

<u>The next steps:</u>
1) Merging of data *– see Merge Overview, page 6.*
2) Merge Duplicate Message Panes - *see page 8.*
3) Merge Report *– see page 10.*

E. Merge from Atterbury T04 Report File

for explanation of Merging an Atterbury Report file go to page 96.

V. New Projects - Units

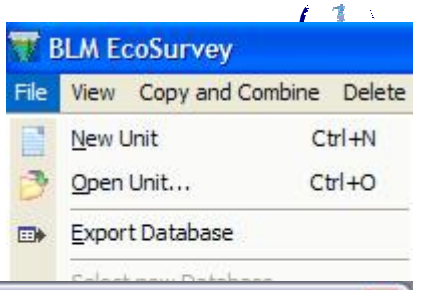
A. Overview

The following data structure hierarchy is used in the Forest EcoSurvey PC program:

1. Project
2. Unit
3. Stratum
4. Plot

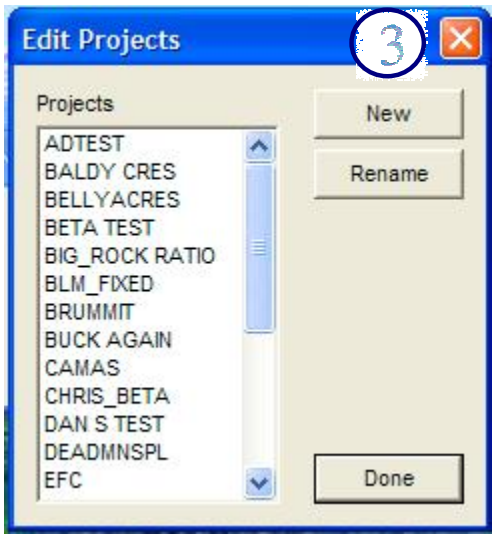
For example, there might be multiple units in a project, multiple stratum in a unit, and multiple plots in a stratum. The basic physical block most foresters are familiar with is the "Unit" - often the unit references a polygon in a GIS system. The project is only a descriptive name and might normally be used to make finding units easier in a list. It is only out of convenience that the Forest EcoSurvey PC-handheld program offers the flexibility of allowing more than one unit in a project. One rule that does exist in the system is that one cannot create only a unit name – a unit must be attached or be associated with an existing project. So, if one wants to create a unit, a project name must first be created, or an existing project name can be used.

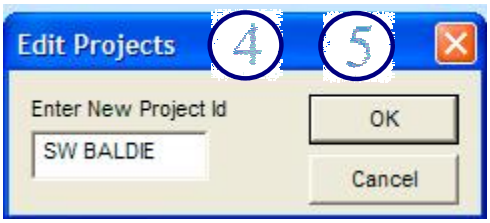
B. Create New Project



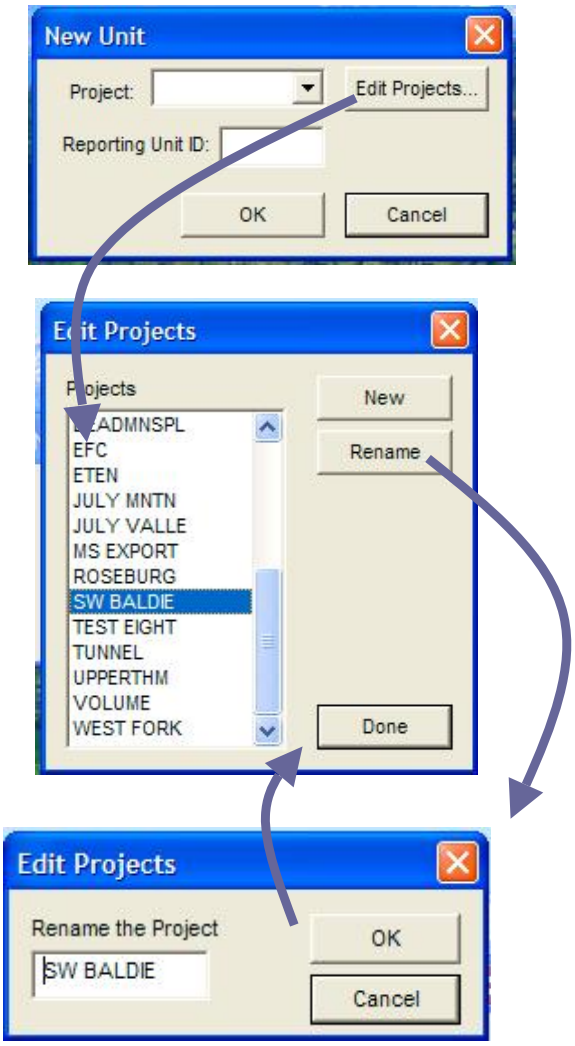
Steps

1) On the top horizontal menu bar select File – New (or press [CTRL] + [N]). A New Unit window appears.
2) Click on Edit Projects button – *ignore the projects list box.*
3) Click New button
4) Type new project ID
5) Click OK
6) The Project List box appears. If the project list is long you may have to scroll for filter (refer to page 73)to find the project name just created.
7) To Create a New Unit for this project *go to "Create a New Unit" , section D on page16 .*





C. Rename a Project



Steps

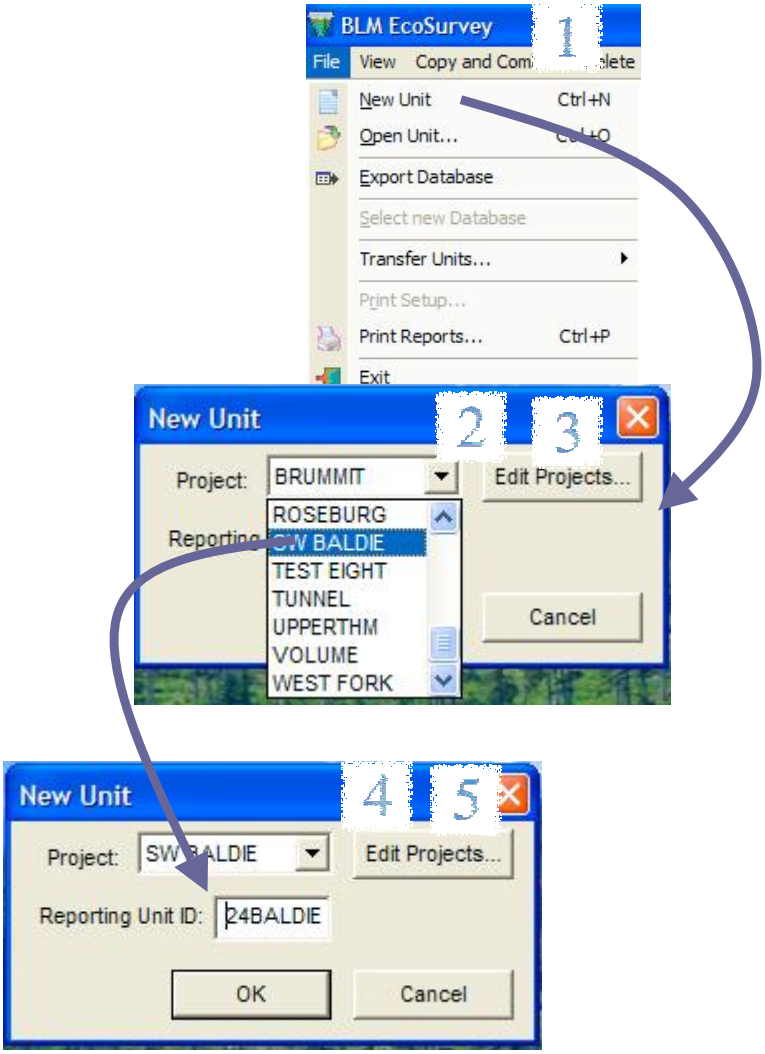
1) Select File – New Unit" from the top bar menu
2) Click the "Edit Projects" button.
3) Select Project name to edit.
4) Click Rename button
5) Type new name
6) Select OK
7) Press "Done" button

D. Create a New Unit

Creating a new unit first involves the creation of a project name. Or, an existing project name can be used. To create a new project name review steps *on page 14.*

Steps

1) On the top horizontal menu bar select File – New (or press [CTRL] + [N]). A New Unit window appears.
2) Click on the down arrow box to pop up project list.
3) Select project
4) Type Unit ID
5) Click OK.



E. Rename a Unit

Edit a Unit Name by:

1) Open a unit - *see "Open Unit" section on next page (Item F.)*
2) After opening the unit, the unit name can be changed.

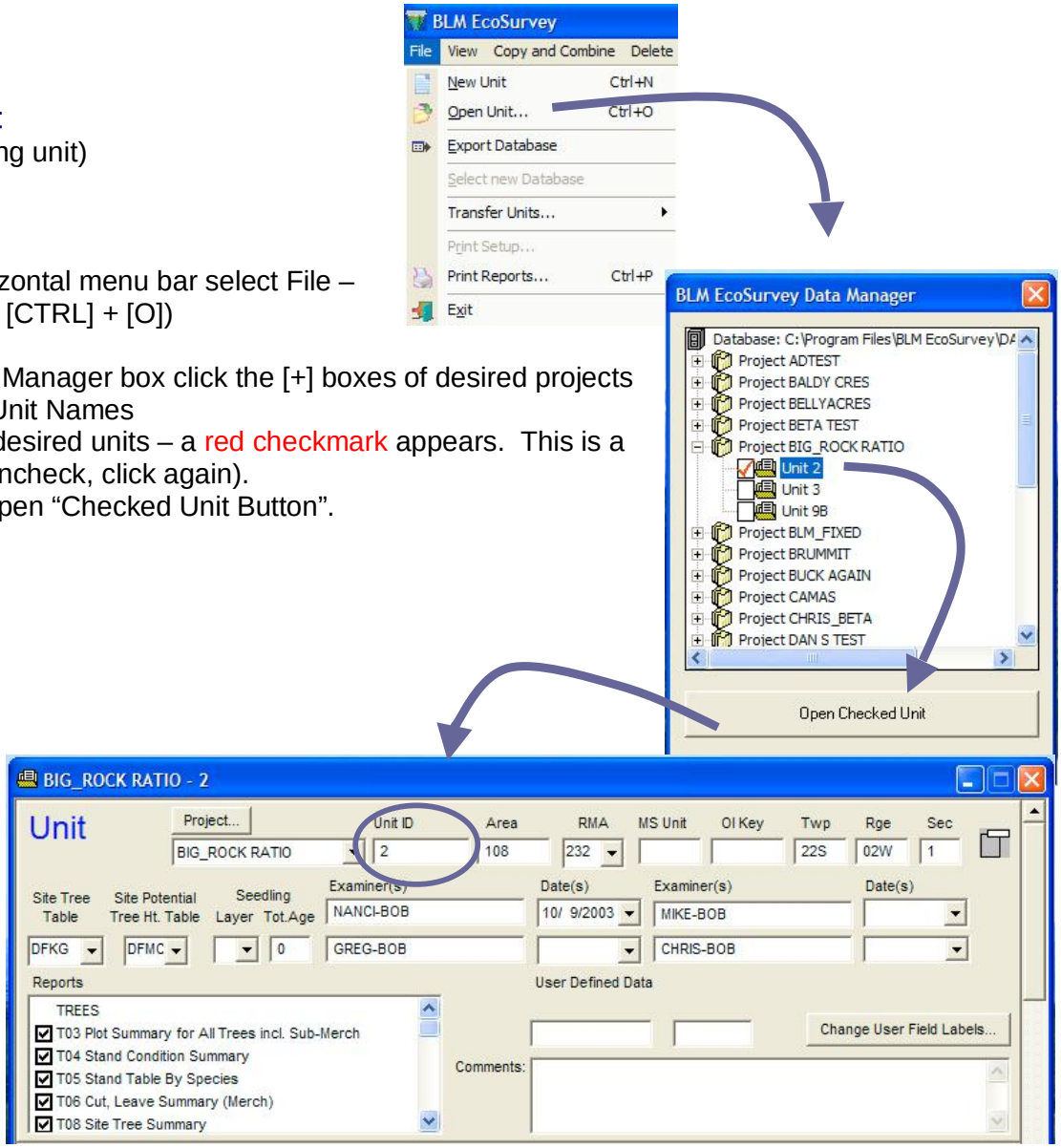
F. Open Unit

(open an existing unit)

Steps

On the top horizontal menu bar select File – Open (or press [CTRL] + [O])

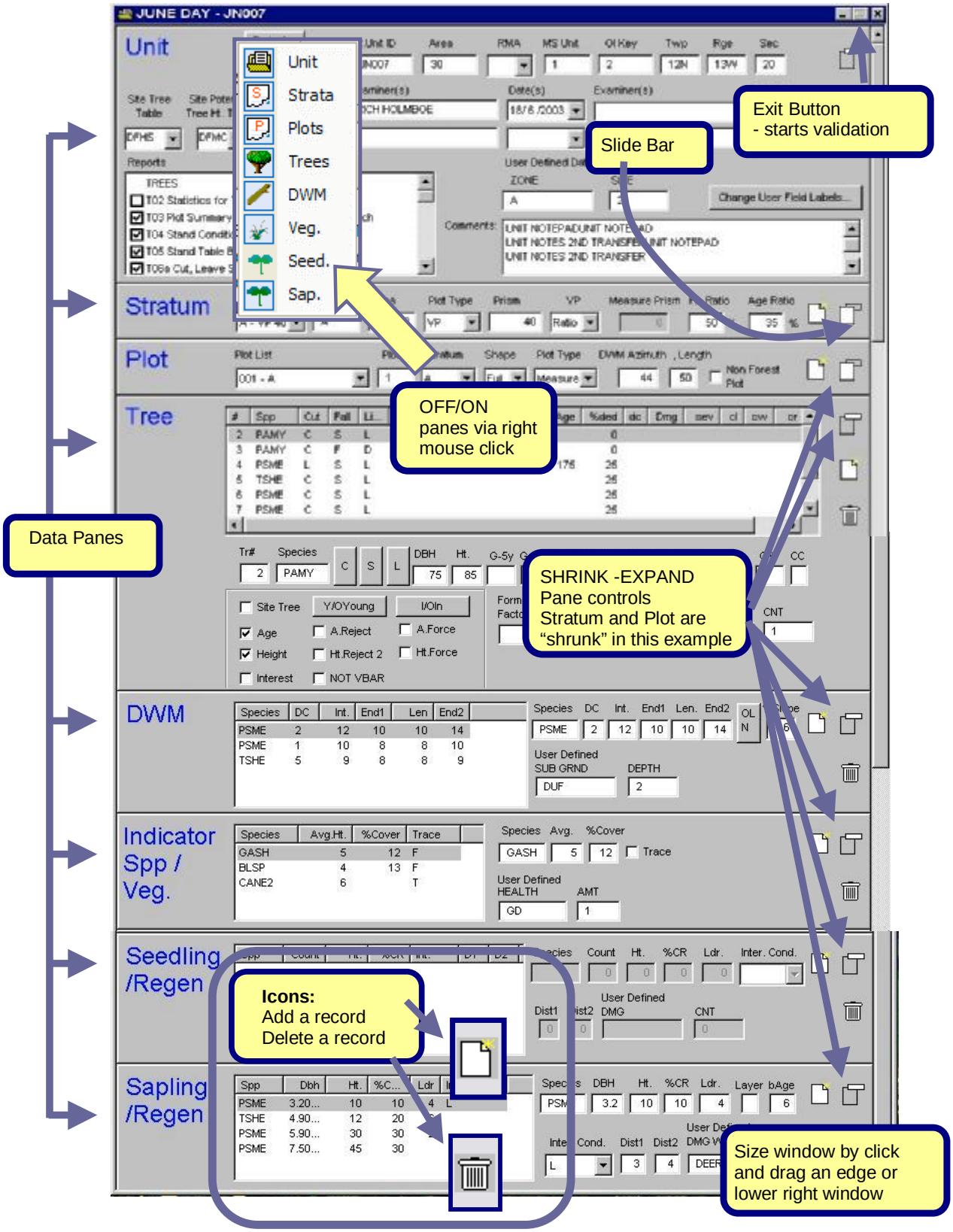
1) In the Data Manager box click the [+] boxes of desired projects to see the Unit Names
2) Check the desired units – a red checkmark appears. This is a toggle (to uncheck, click again).
3) Click the "open "Checked Unit Button".



VI. Data Entry and Editing

A. Overview

After creating a new Project or selecting an ‘Old Project” the data entry window appears.



I. Shortcut Keys for Data Entry

Key functions when entering or editing data in the Data Entry Area

[CTRL] + [S] Expands or Contracts the active Data Area (Pane) that the cursor is in. For Example, when the cursor is in the Plot Pane, [CTRL]+[S] toggles between the full pane and a shortened pane (containing only critical summary fields).

[.] (Period or Decimal) When cursor is in field with table lookups, pressing the keyboard period key will pop up a pick list of valid codes. Examples of fields with pick lists are: Tree Species, Vegetation Species and Damage Code. Some fields do not have pick lists, but instead have valid codes denoted by a long prompt. When a value is entered into these fields, the long prompt displays the code name (you may have to move the cursor back into the field to see).

[CTRL] + [A] When the cursor is placed in an active field in a pane (Unit, Stratum, Plot, Etc) this key combination creates a new record.
[CTRL] + [D] Highlight or click record then use this key combination to delete.

Toggle Pane Off or On

Right Mouse Click on any Pane for a pane menu allowing you to toggle visibility of each pane. Each icon/title is toggle OFF/ON. You can only toggle one pane at a time. So, in order to turn off or on several panes the menu must be called up several times.

II. Add a Record - Stratum, Plot, Tree, DWM, Indicator Species, Seedling, Sapling

Note: A Unit – Project can only be added using the File – New menu selection

Method 1:

- click the "Add" icon

Note: you may want to expand the pane - click the Expand Toggle Icon.

Method 2:

- Place cursor in an open field in the pane to make the pane active.
- Press [CTRL] + [A].

In some situations an open field may not exist, so you will need to click the ADD icon.

Method 3

- applies only to Panes having "pieces": Trees, DWM, Vegetation, Seedling, Sapling
- After the first record is created place cursor in any field. Press down arrow to create new record.

III. Validation – Edit Checking

The PC data entry module does some validation, but does not do as much validation as the handheld program.

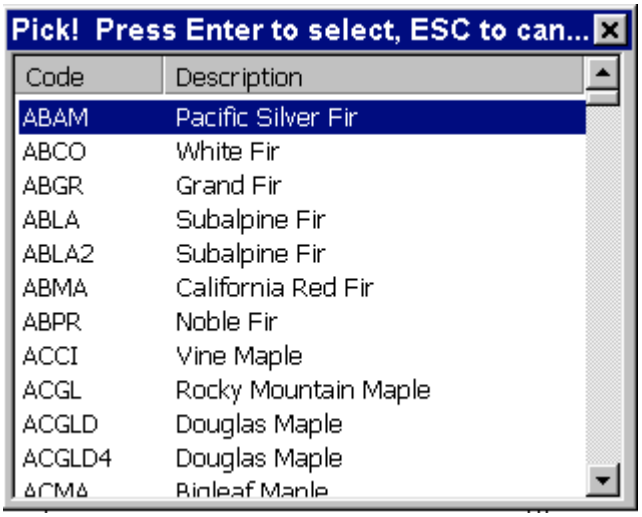
Validation Features

Validation – Edit Checking

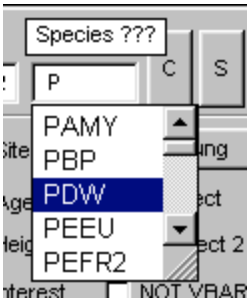
The PC data entry module does some validation, but does not do as much validation as the handheld program.

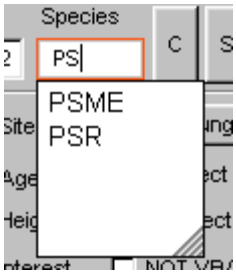
Fields with lookup tables

These edits are done immediately and will be run upon Exiting the Unit. Some fields such as species code and damage code have a lookup table that can be called up for viewing and selection:



1. When cursor is in the field press the [.] key (just like the handheld). When the list appears a code and description can be found by scrolling or by typing letter. As each letter is typed the list advances. When the correct code is highlighted – [Enter] inserts code.





2. Typing – as a code is manually typed into the field suggested codes will appear in a list. If one letter is typed a list appears for all codes beginning with that letter. The list can be expanded by grab and drag. Each letter typed reduces list size

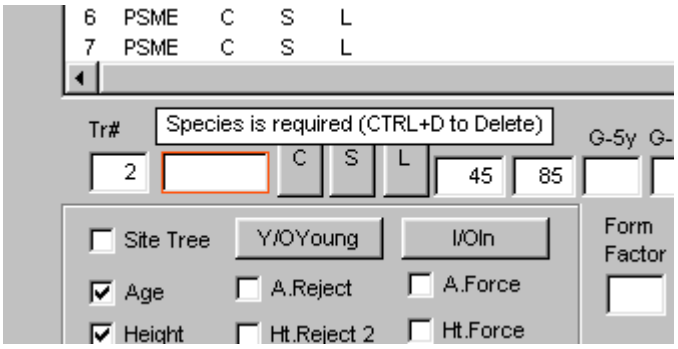
3. If a code is not valid, a ???? prompt appears above the field during typing. Select the correct highlighted code by clicking or use [ENTER]

Once a valid code is entered a common or long name appear in the long prompt bar provided the cursor is still in the field.

Required field.

When a record is created fields that are absolutely required will appear with a *red border* (for example species code in trees or regeneration panes). If no entry is made you will not be able to [ESC]ape the record unless:

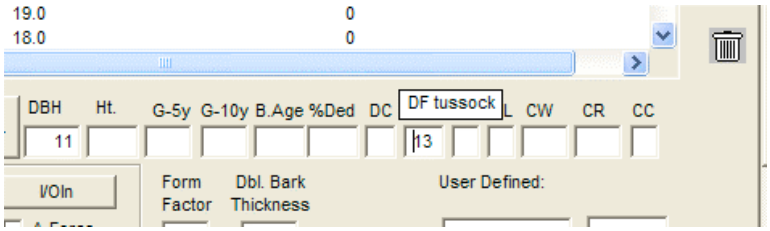
- A code is entered (it does not have to be correct).
- The record is deleted with [CTRL]+[D] keys.



It is possible to enter an invalid or wrong code. However, upon exiting the data entry module a batch validation routine is done and an on-screen error list appears before final exiting.

Fields with valid codes (that are embedded)

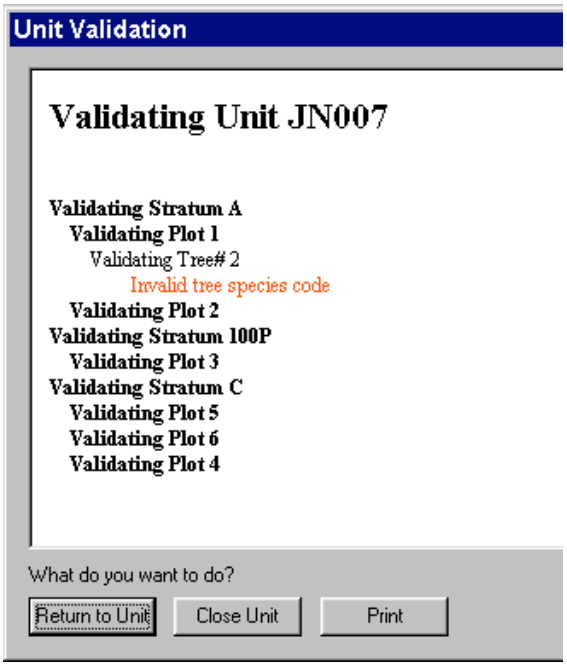
Edits on these fields are done immediately and will not allow entry of any non-valid data. Examples of this field type are canopy layer and decay class. The long prompt may show valid codes or range of codes. After a correct code is entered the long prompt displays the code description when the cursor is in the field.



Cross checking between fields

Crosschecking between fields is done with a batch validation routine that runs upon exiting the Data Entry module. For example, the routine will detect invalid stratum setup configurations – like a Ratio Sample (in the stratum pane) not having a BAF and a value for Height Ratio. Another example is where a tree dbh (in tree pane) is less than the min. merch dbh (in stratum pane).

Upon exiting the data entry module an on-screen report displays a list of errors. Before final exiting you have the option to return to the unit for fixing the listed errors.



IV. Delete a Stratum, Plot, Tree, DWM, Indicator Species, Seedling, Sapling

Two methods:

First method

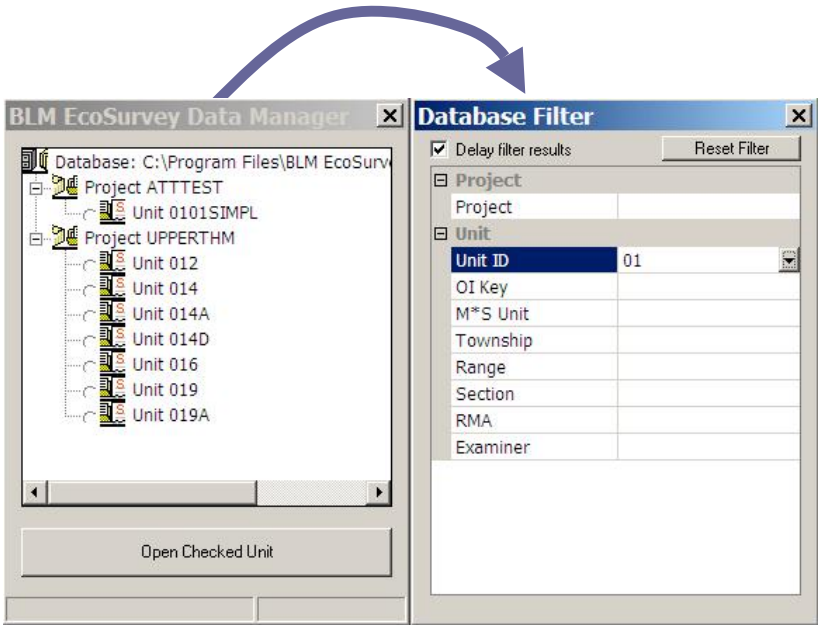
1) Ensure the object in the pane you want to delete is in view. Highlight if it is a piece like tree, sapling, or vegetation.
2) Click the Trashcan button

Second Method

1) Press [CTRL]+[D]

V. Finding your Unit using the Filter Tool

Over time, as you and others merge projects, the project/unit list will expand to the point where finding a unit becomes cumbersome. At any time a “Find Filter” tool can be used. For directions on how to use the filter tool turn to Filtering on page 73.



VI. Quick Keys and Repeats for Species Codes

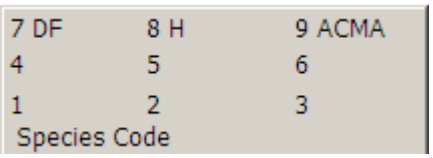
(On the Piece Level Panes)

Quick Keys and Repeats are data entry tools that can speed up data entry and are available for use on the piece level data entry panes (Trees, Saplings, Regen, DWM, and Vegetation).

Both of these features are set up in the TOOLS area of the Main Menu:
TOOLS – Data Entry Configurations – refer to page 65.

Quick Keys

Species Codes can be assigned to the numbers on the number pad. When the cursor resides in the Species code field and the quick species code toggle is set to "on" (see page 65), a graphical image of the number pad with the Species Codes appears. Pressing the code associated number inserts the code into the field automatically, eliminating the need to switch to the alpha portion of the keyboard. Codes can be entered manually even when the Quick Key tool is on.



Repeats

Repeats can be set for selected fields for each data type. When the Repeat is toggle on, and a code is entered , the code is duplicated for each new record whether using the down arrow or New Piece button. The item repeats until it is changed or the field is turned into a blank.

B. Unit Pane

Keys

When pane is open:

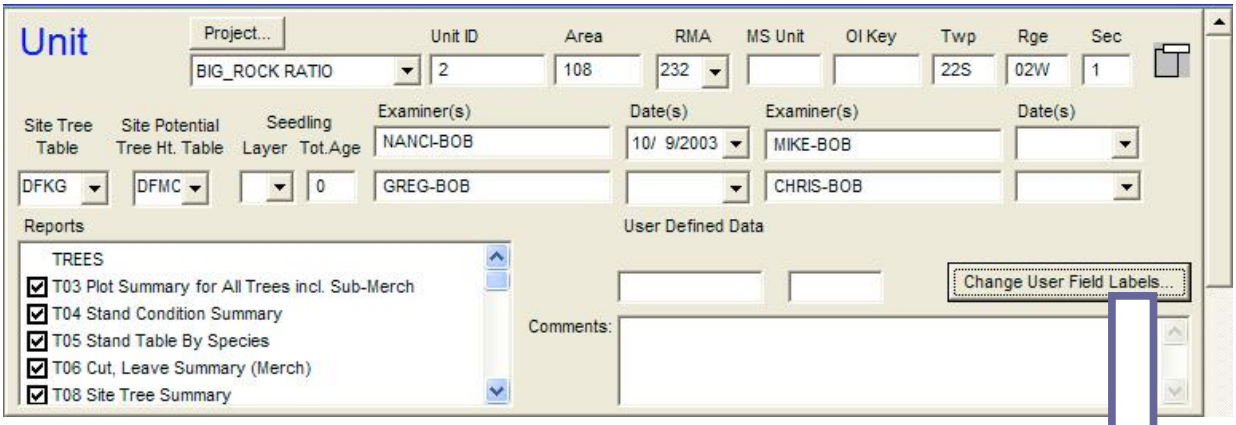
- [TAB] circles focus through each field and button around pane.
- [ENTER] moves cursor through, most but not all fields. In the comments field it creates a new line.
  - [CTRL] +[S] toggles pane size

Add a Unit

The only way to add a new Unit is by using the Main Menu File – New

Delete a Unit and Projects via the Main Forest Ecosurvey Screen – Delete Menu

Pane Fields and Areas



Dates

Enter Date using number keys and right and left arrow keys to move between day, month, and year. Or, use the pop up calendar.

Project and Units

A Unit can be assigned to any Project by using the Project down arrow pick list.

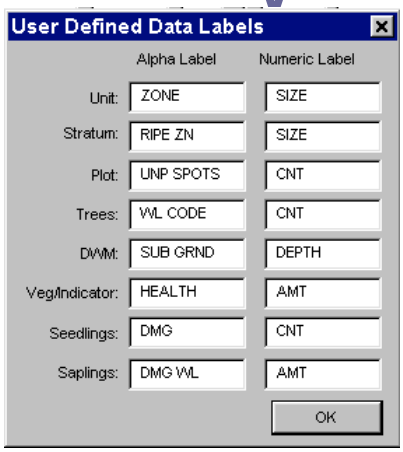
Reports/Export Box

The Report Box is not used in the PC program. If a handheld is used or is going to be used the checked boxes denote reports/exports used that drive validation and cursor movement.
If you plan to set up a unit file to transfer to the handheld you might want to check the appropriate Reports or Exports.

User Defined Fields

"Change User Field Labels" Button

- Use to create labels for user defined data for all panes. The labels will appear above the fields where values can be entered. Data entered in these fields are stored and appear on a special report containing User Defined Data, (TO1a) – "Complete Tree List with User-Defined Fields". Once these labels are created they appear when a new Unit, Strata, Plot, or Piece Level page appears.



Site Tree Table

- Site Tree Table and Site Potential Tree Ht. Table.
- Assign table using the down arrow picklist.

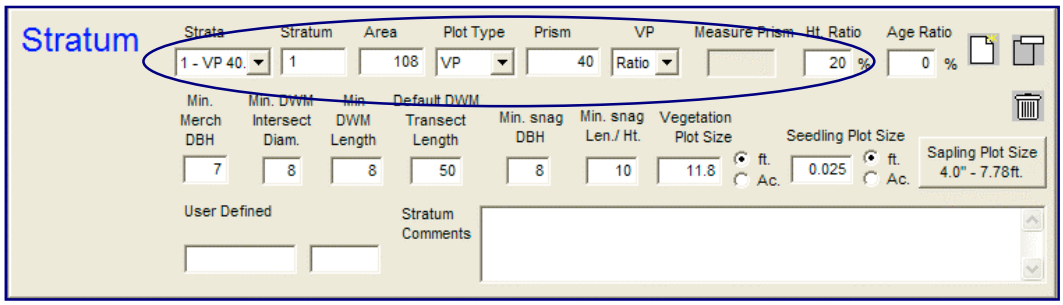
Micro*Storms Seedling Layer & Age

Select Layer or type value

C. Strata Pane

Sampling Methods and setting up the stratum - Discussion

The lowest level for producing statistically based reports is the stratum. A Unit can have several strata. When entering information about Sampling in the Strata Pane on the next page it is important to understand the relationship between sampling methods and Plot type – essentially the fields in the top row of the Stratum Pane.



The PC program is similar to the handheld in that some fields are related to others, preventing incorrect or illogical entries. These relationships are discussed in detail in the BLM EcoSurvey handheld manual. These are relationships to be aware of:

Sampling Method	Plot Type toggle	VP Field	Rules - comments
VP Methods	VP		If Plot Type VP is selected, then three VP Method selections are available: - VP1 (1 prism) - VP2 (2 prism or BIG BAF method) Ratio (1 prism for count, Ratios for subsample trees
VP - 1 Prism	VP	VP1	Enter a prism size to the left. The measure prism, Ht. Ratio, and Age Ratio are not available (grayed out)
Big BAF	VP	VP2	Enter values for Prism, Measure Prism
Ratio	VP	Ratio	Enter values for Prism, Ht. Ratio and Age Ratio. This only applies to a setup for handheld since ratio method requires random number generator in handheld.
Fixed Radius	Radius or Area	not available	Prism Field turns into Feet or Acres depending on selection, other fields not available (grayed out)
100%	Area	not available	Prism Field turns into Acres. Rules: - Stratum Area field must match Acres (plot size) field. - Only one plot can be used. Note the system won't keep you from adding other plots, but the results will be suspect.

Keys

When pane is open:

- [TAB] circles focus through each field and button around pane.
- [ENTER] moves cursor through, most but not all fields. In the Comments Field it creates a new line.
- [CTRL] +[S] toggles pane size
- [CTRL] +[A] adds new stratum record (if cursor is in a field in the pane)

Delete

- Delete the Strata by clicking on Trashcan, then confirm with Yes

Note delete erases the Strata and all the plot data below or attached to it.

OR

- Press [CTRL]+[D]

Add a Stratum

- Use [CTRL]+[A] - when pane is open and cursor is in a field

OR

- Click on the New icon

When more than one stratum is present, toggle between strata codes using the Strata pick list button.

Pane Fields and Areas

Plot Type

Several fields are related to Plot Type: VP, Measure Prism, Ht. Ratio, Age Ratio
The Plot Type selection triggers what can be entered into these related fields.
Plot types are:

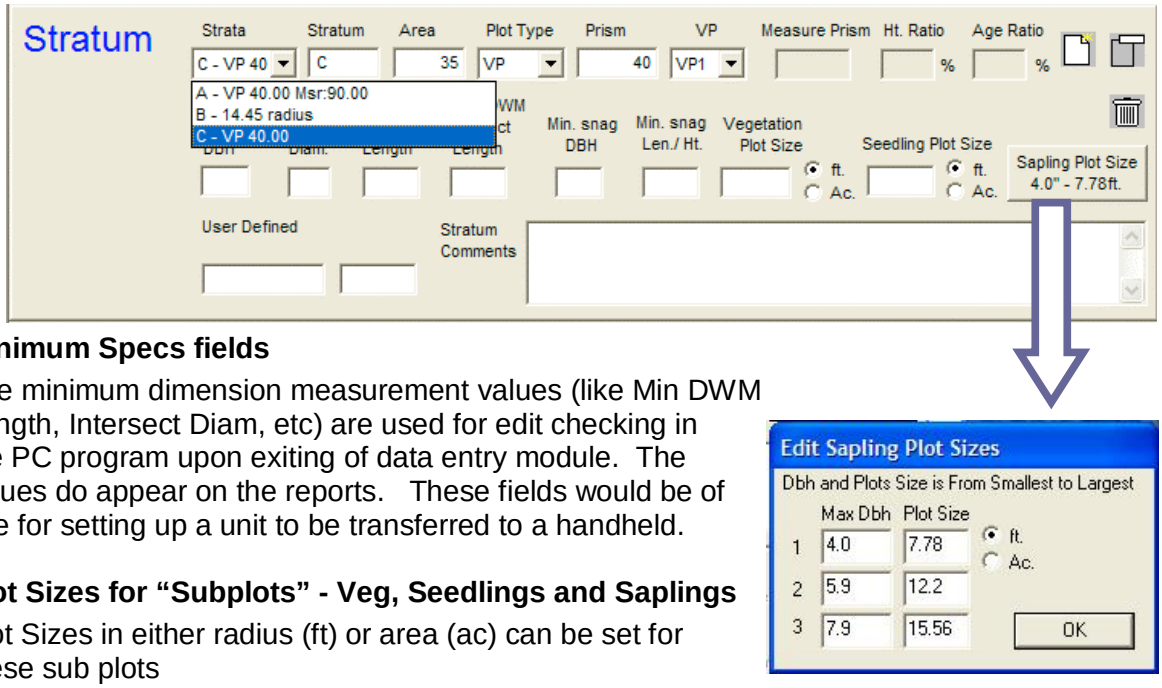
- VP
- Radius
- Area

Plot type - VP allows the following selections in the VP fields (Ratio, VP1 or VP2)

- VP1 is a prism cruise having a BAF prism size entry
- VP2 is a “BIG BAF” sample having two BAF size entries (Count Prism Size & Measure Prism Size)
- Ratio requires entry into Ht. Ratio and/or Age Ratio. A Ratio value is a percent of trees given an “A” or “H” flag that are selected by a handheld on a random basis. You wouldn’t use the Ratio option for manual data entry since the system relies on the use of the handheld to make selections. The exception to this is if you are setting up a cruise to be downloaded to the handheld for field use.

Area Plot Type allows a fixed plot area or a 100% unit sample to be done. If a 100% unit survey were required the Acres value would equal the size of the Unit Acres and there will have to be only one plot in the stratum.

Radius Plot Type a value (in feet) can be entered for a fixed plot radius.



Minimum Specs fields

The minimum dimension measurement values (like Min DWM Length, Intersect Diam, etc) are used for edit checking in the PC program upon exiting of data entry module. The values do appear on the reports. These fields would be of use for setting up a unit to be transferred to a handheld.

Plot Sizes for “Subplots” - Veg, Seedlings and Saplings

Plot Sizes in either radius (ft) or area (ac) can be set for these sub plots

Clicking the Sapling Plot Size Button sets three Sapling Subplot Plot Sizes. Note the order of plot size must be from smallest to largest (top to bottom)

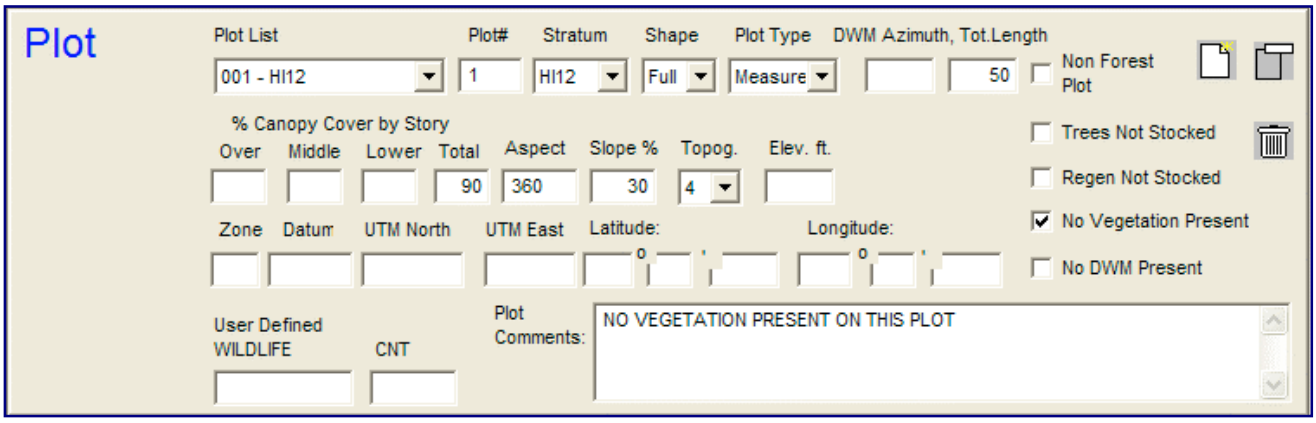
The sapling subplots can be used to accommodate the ORGANON model or any other model that needs up to 3 subplot sizes. Be sure to toggle the correct radial button (area (Ac) or radius (ft.) you do not have to enter all three plot sizes for all max dbh’s. If you want to omit a max dbh - plot size pair from the window you should make that pair the bottom-most in the list. And you will need to blank out the default 0’s that appear in these fields.

In the handheld, all saplings are entered in one “Sapling” data entry screen: the different sizes are sorted later in the reporting phase. The same is true in the Sapling data entry pane in the PC program.

User Defined

The labels for these two fields can be set up in the handheld or in the Unit Page of the PC program. Once the labels are set they appear on every new stratum created.
The left-most field is defined as Alphanumeric; the right-most field is numeric (with decimal) only.

D. Plots Pane



Keys

When pane is open:

- [TAB] circles focus through each field and button around pane.
- [ENTER] moves cursor through, most but not all fields. In the Comments Field it creates a new line.
- [CTRL] + [S] toggles pane size.
- [CTRL] + [D] deletes plot (and associated lower levels) present in the pane.

Delete

Delete the Plot by clicking on Trashcan, then confirm with Yes
Note delete erases the Plot and all data below it.

Or

- Press [CTRL]+[D]

Add a Plot

- Use [CTRL]+[A] - when pane is open and cursor is in a field

OR

- Click on the New icon

Pane Fields and Areas

Plot List

The Plot list is a pick list showing both plot number and stratum that plot is assigned to.

Plot# and Stratum

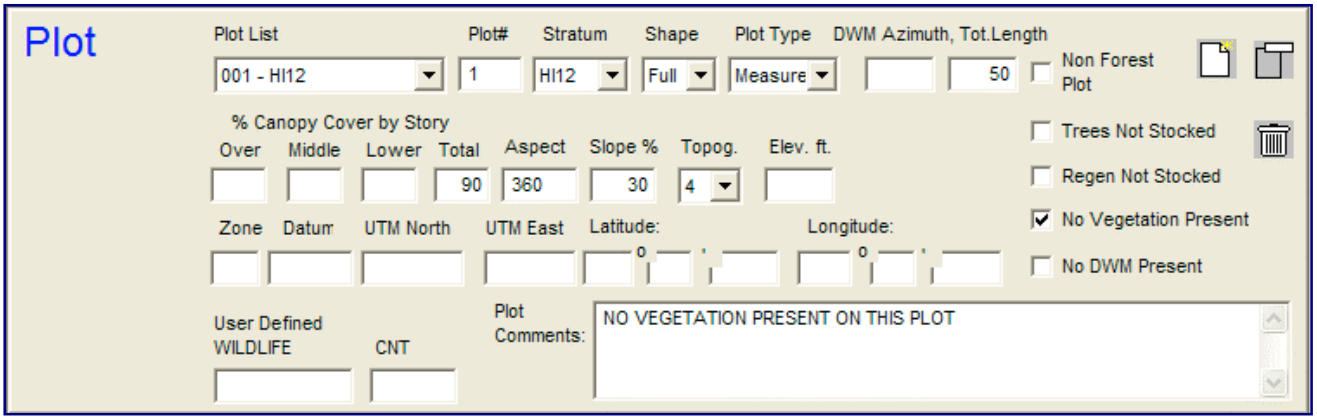
Enter or edit plot number and toggle or assign plot to stratum

Shape

Split plots into 1/2 or 1/4 using the pick list. The compiler will use this number to multiply the tree count by the denominator during the report generation function.

Plot Type

Measure versus Count
Note: a Ratio plot is always a “Measure” plot



Non Forest Plot and Not Stocked check boxes

The Non Forest Plot check box is used only for Regeneration Surveys. These (checked) Non Forest plots are excluded from the stocking percent calculations. *See Regeneration report in “BLM Forest Ecosurvey” Technical Document for details.*

The Not Stocked check boxes are used to denote that there was no data present when a Tree, Regen, Vegetation or DWM plot or transect was installed. When the Not Stocked box is checked, this means the plot was installed but there was no Tree, Sub Merch: Sapling - Regen, Vegetation or DWM present. It is important to use these Not Stocked boxes as the calculation engine that performs the per acre calculations for volume, TPA etc. must know whether or not a plot was installed. Click on the word or box to toggle a checkmark.

User-Defined Fields

The labels for these two fields can be set up in the handheld or in the Unit Page of the PC program. Once the labels are set they appear on every new stratum created.

The left-most field is defined as Alphanumeric; the right-most field is numeric (with decimal) only.

E. Trees Pane

Note: The Tree Pane differs from others in that it displays two different data sets:
A scrolling Tree list – with critical summary tree info per line
Complete data set for a tree – where data entry is done

When pane is open:

- [TAB] circles focus through each field and button around pane.
- [ENTER] moves cursor through, most but not all fields.
- [CTRL] +[S] toggles pane size
- [CTRL] +[A] adds new plot record (if cursor is in a field in the pane)
- [CTRL]+[D] deletes highlighted tree
- Period or decimal [.] – when cursor is in some fields pressing the period key will pop up a code pick list.
- The two active fields are: Tree Species and Damage Codes.
- [Spacebar] – when focus is in button field spacebar toggles between two values (like Cut versus Leave).

A more detailed description of pop up lists, and data entry help can be found in the section on validation, see page 20 .

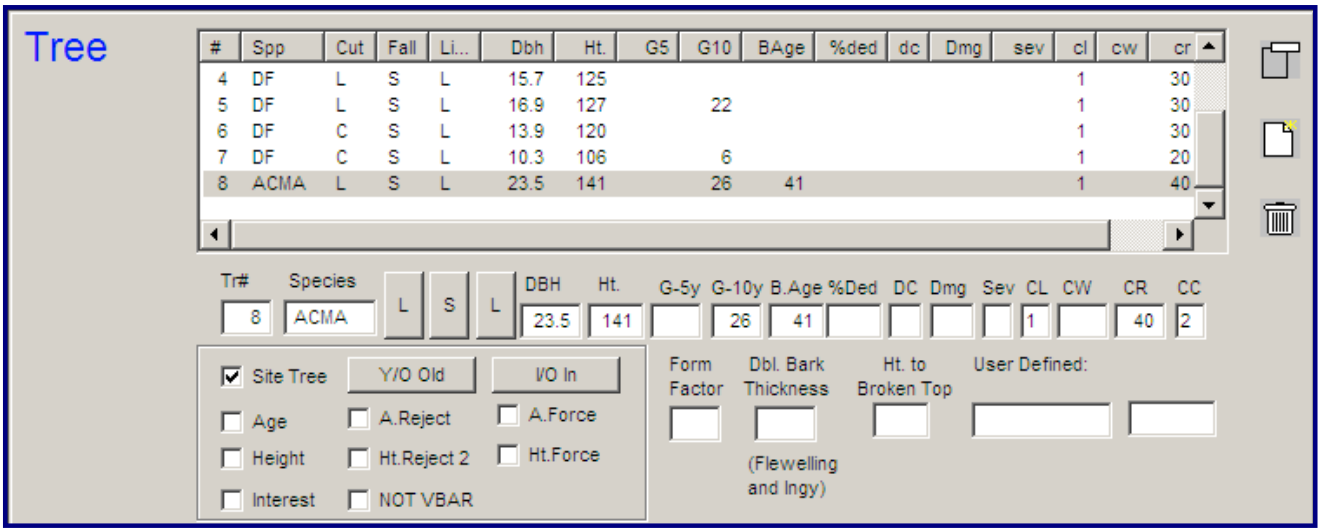
Delete

Delete a tree - highlight tree in scroll list, then click Trashcan, and confirm with Yes
OR
Press [CTRL]+[D]

Add a Tree

- Use [CTRL]+[A] - when pane is open and cursor is in a field, OR
- Click on the New icon

When a tree is added a new tree line is made in the bottom of the scrolling tree list window – a tree number is incremented from the last number automatically and the cursor starts in the species code field.



Pane Fields and Areas

Scrolling Tree List Window – upper half of pane.

Up and Down Arrow – scrolls tree highlight between tree records. Highlighted record shows all tree information in lower half of pane.

Tree data Pane Area – lower half of pane.

All editing and data entry is done in this pane area.
[TAB] moves cursor through every field and button, except the “Tree Flag” Pane area

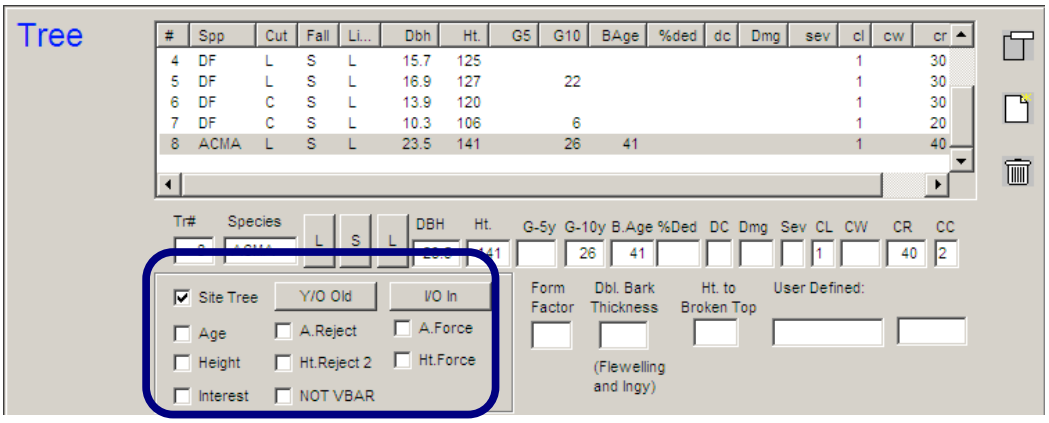
Tree Flag Pane Area - (lower left) Cursor does not move here. Use Checkbox or click on Young/Old or In/Out buttons.

Buttons: Young/Old In/Out

Trees marked as Out are not compiled for volume or reports, with the exception of Site Flagged Trees. The Outside Site Trees are used for Site Tree Reports and Site Index calculations, but not included in plot volumes. Trees flagged as Old normally use the same volume table as young age (if defined by administrator) but may use different volume tables if desired. See Administrators manual for details.

Check Boxes: Site Tree, Age, Height, Interest,

Reject Check Boxes: Age and Ht and NOT VBAR
checking “Not VBAR” - tree will not be included in VBAR calculations.



Tree Flags:
Cursor does not move through Tree Flag Area . Click checkboxes or buttons to select options.

Tree Number

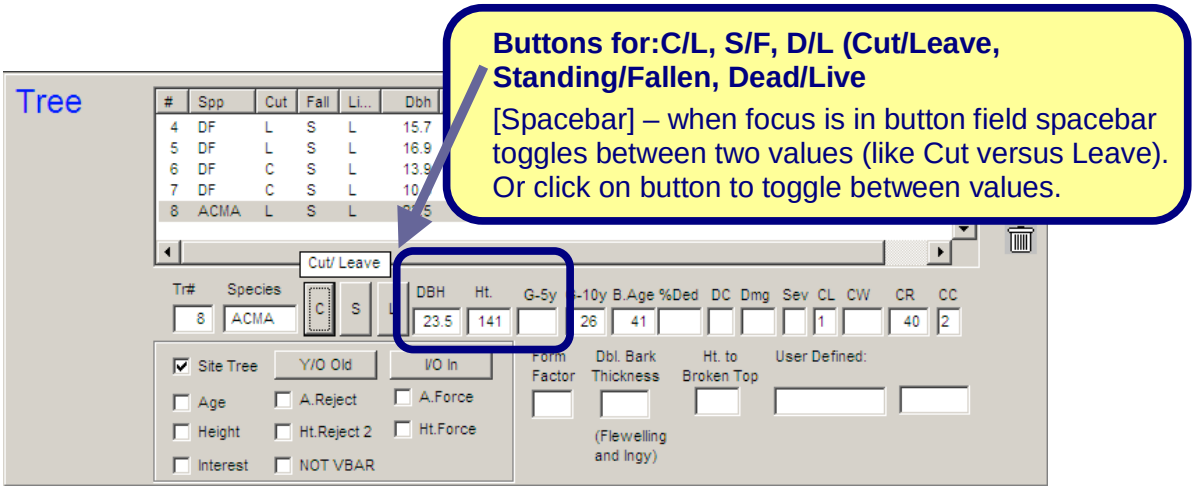
Tree numbers are automatically incremented from the last number. Tree number can be edited.

Species Codes

- Species codes field requires a valid code.
- Code description list can be accessed by pressing [.] (Period, or decimal).
- When cursor is in field an invalid code is denoted by ???? long prompt. The long prompt displays the long name for a valid code.
- Quick Key Tool - The species code can be typed manually or inserted using the quick key tool, refer to pages 23, and 65.
- Repeats Tool – Species and other fields can be repeated when the repeat toggle is turned on – refer to pages 23, and 65.

Cut/Leave Standing/Fallen Dead/Live

These button toggles can be set via mouse click or [SPACEBAR]. [ENTER] moves cursor over the buttons



DC – Decay Class

- Code description list can be accessed by pressing [.] (period, or decimal).
- Values are shown with long prompt – when cursor is in field

Dmg – Sev Damage & Severity

- The Damage & Severity fields are related. The allowable and valid Severity code is dependent on the Damage field.
- When cursor is in field – long prompt displays definition
- When cursor is in Damage field the [.] button displays lookup list.

CL – Canopy Layer	When cursor is in field – long prompt displays definition
CW – Crown Width	When cursor is in field – long prompt displays definition
CR – Crown Ratio	When cursor is in field – long prompt displays definition

CC – Crown Class When cursor is in field – long prompt displays definition

Bark Thickness Bark Thickness is used for Bark Thickness if you use Behrs volume formula (along with default or custom form factor. If you use Flewelling volume formula then this is converted in the PC program into 2X bark thickness automatically.

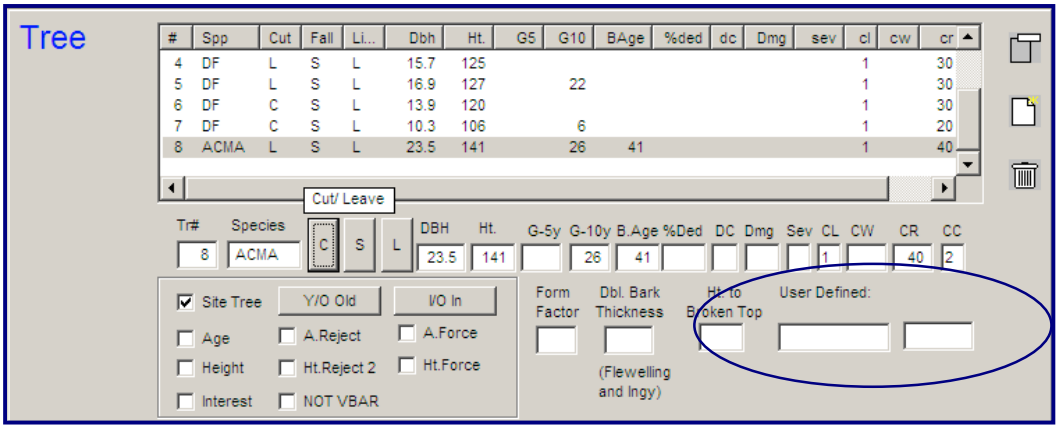
Ht to Broken Top

If present, Height to Broken Top will be used in the T09 Snag Summary report to describe broken top dead tree height.

User Defined

The labels for these two fields can be set up in the handheld or in the Unit Page of the PC program. Once the labels are set they appear on every new tree created.

The left-most field is defined as Alphanumeric; the right-most field is numeric (with decimal) only.



F. DWM Pane

Two screen areas:
A scrolling piece list – with summary piece (log) info per line
Complete data set for a log – where data entry is done

When pane is open:

- [TAB] circles focus through each field and button around pane.
- [ENTER] moves cursor through all fields.
- [CTRL] +[S] toggles pane size.
- [CTRL] +[A] adds new plot record (if cursor is in a field in the pane)
- [CTRL] +[D] – deletes highlighted log.
- Period or decimal [.] – when cursor is in some fields pressing the period key will pop up a code pick list. The active field is: Tree Species.
- [Spacebar] – when focus is in button field spacebar toggles between two values (Overlap Y/N). Or, click on Overlap button to toggle Y/N

Delete

Delete log - highlight log in scroll list, then click Trashcan, and confirm with Yes

OR

Highlight and press [CTRL]+[D]

Add a Log

- Use [CTRL]+[A] - when pane is open and cursor is in a field

OR

- Click on the New icon

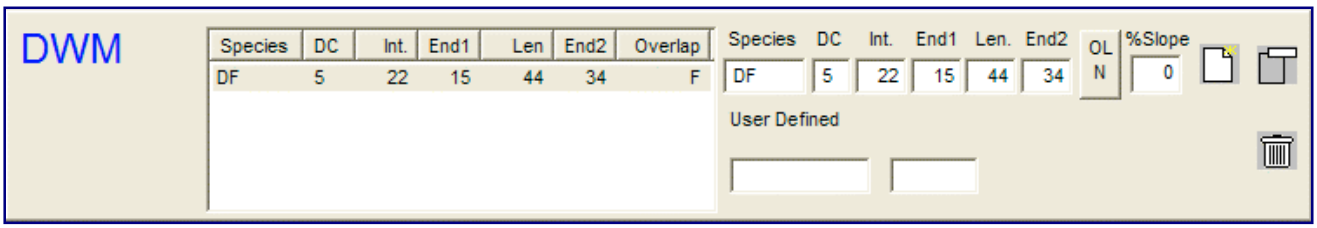
When a log is added a log line is made in the bottom of the scrolling tree list window - cursor starts in the species code field

Pane Fields and Areas

Scrolling Log List Window – left half of pane.

Up and Down Arrow – scrolls tree highlight between records. Highlighted record shows all log information in right half of pane.

Log data Pane Area – right half of pane.
All editing and data entry is done in this pane area.
[TAB] and [ENTER] moves cursor through every



field and button.

Species Code

- Species code field requires a valid code.
- Code description list can be accessed by pressing [.] (period, or decimal).
- When cursor is in field an invalid code is denoted by ???? long prompt.
- The long prompt displays the long name when cursor is in field with correct code.
- Quick Key Tool - The species code can be typed manually or inserted using the quick key tool, refer to pages 23, and 65.
- Repeats Tool – Species and other fields can be repeated when the repeat toggle is turned on – refer to pages 23, and 65.

Button for Overlap

- [Spacebar] – when focus is in button field spacebar toggles between Yes No values. Button toggles between values with click

User Defined

The labels for these two fields can be set up in the handheld or in the Unit Page of the PC program. Once the labels are set they appear on every new tree created.

The left-most field is defined as Alphanumeric; the right-most field is numeric (with decimal) only.

G. Indicator/Vegetation Pane

Two screen areas:
A scrolling veg list – with summary veg info per line
Complete data set for vegetation – where data entry is done

When pane is open:

- [TAB] circles focus through each field and button around pane.
- [ENTER] moves cursor through all fields.
- [CTRL] +[S] toggles pane size.
- [CTRL] +[A] adds new plot record (if cursor is in a field in the pane).
- [CTRL] +[D] – deletes highlighted veg record.
- Period or decimal [.] – when cursor is in some fields pressing the period key will pop up a code pick list. The two active fields are: Tree Species

Delete

- Delete record - highlight log in scroll list, then click Trashcan, confirm with Yes

OR

- Highlight and press [CTRL]+[D]

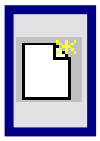
Add a record

- Use [CTRL]+[A] - when pane is open and cursor is in a field

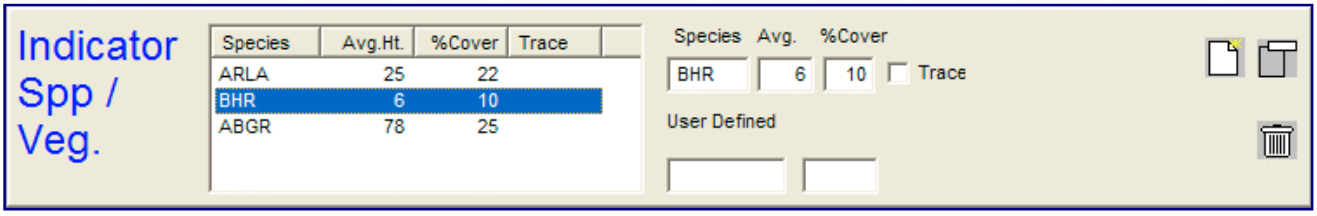
OR

- Click on the New icon

When a record is added a veg line is made in the bottom of the scrolling tree list window Cursor starts in the species code field.



Pane Fields and Areas



Scrolling record List Window – left half of pane.

Up and Down Arrow – scrolls tree highlight between records. Highlighted record shows all log information in right half of pane.

Vegetation data Pane Area – right half of pane.
All editing and data entry is done in this pane area.
[TAB] and [ENTER] moves cursor through every field and button.

Species Code

- Species code field requires a valid code.
- Code description list can be accessed by pressing [.] (period, or decimal).
- When cursor is in field an invalid code is denoted by ???? long prompt. The long prompt displays the long name for a valid code.
- Quick Key Tool - The species code can be typed manually or inserted using the quick key tool, refer to pages 23, and 65.
- Repeats Tool – Species and other fields can be repeated when the repeat toggle is turned on – refer to pages 23, and 65.

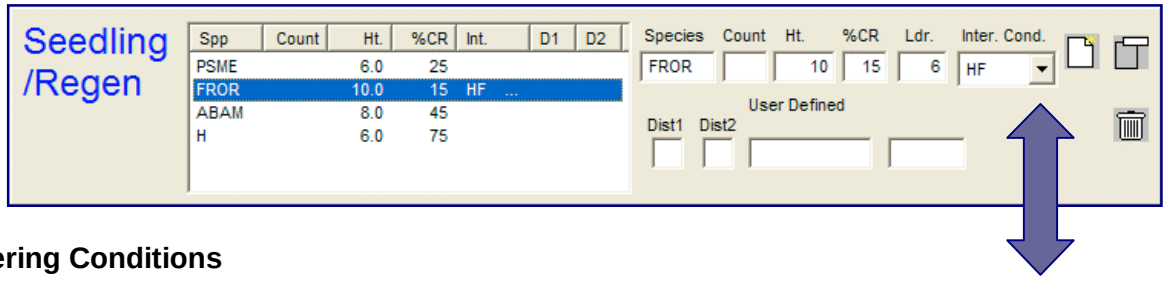
User Defined

The labels for these two fields can be set up in the handheld or in the Unit Page of the PC program. Once the labels are set they appear on every new tree created.

The left-most field is defined as Alpha-numeric; the right-most field is numeric (with decimal) only.

H. Seedling/Regen Pane

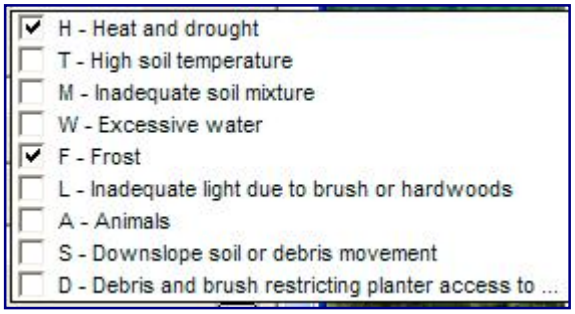
Seedling pane is identical in functions and features as the Vegetation Pane.



Interfering Conditions

Enter Codes two ways:

1. Typing Letters via keyboard, or
2. Click on down arrow, then check desired boxes in checkbox window. The codes are inserted automatically.

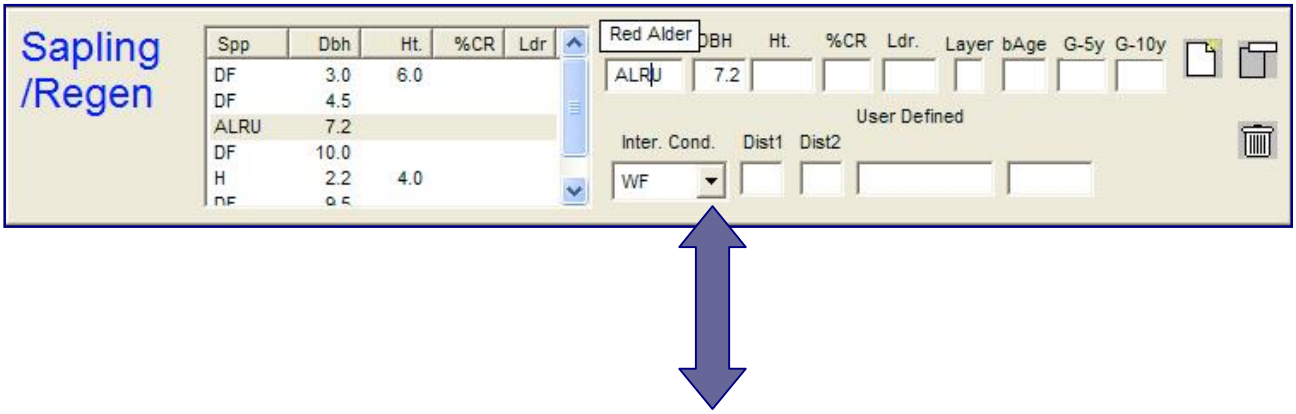


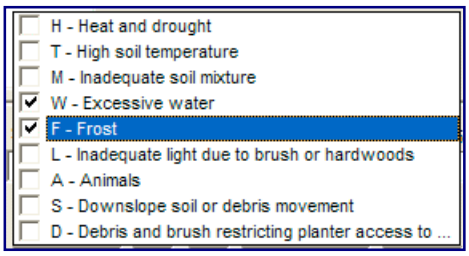
- Quick Key Tool - The species code can be typed manually or inserted using the quick key tool, refer to pages 23, and 65.
- Repeats Tool – Species can be repeated when the repeat toggle is turned on – refer to pages 23, and 65.

I. Sapling/Regen Pane

The Sapling pane is identical in functions and features as Seedling and Indicator/Vegetation Pane

All Saplings (below merch dbh) are entered in this pane, including saplings taken on different subplots. The trees in each subplot are separated by dbh classes automatically in the reporting phase. The subplot size and dbh ranges are set in the Strata Pane.





Interfering Conditions

Enter Codes two ways:

- Typing Letters via keyboard, or
- Click on down arrow, then check desired boxes in checkbox window.

The codes are inserted automatically.

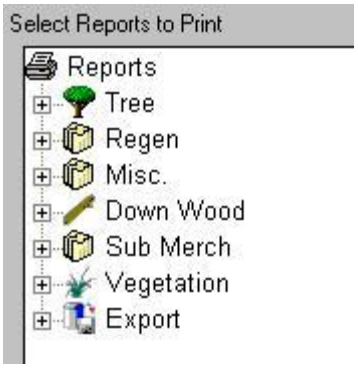
Layer & Breast Height Age

Micro*storms Layer and Breast Ht. Age

%Crown
Leader Length (in inches)
Growth- 5yrs (Radial Growth in 1/20")
Growth – 10 yrs (Radial Growth in 1/20")
Distance 1, Distance 2

- Quick Key Tool - The species code can be typed manually or inserted using the quick key tool, refer to pages 23, and 65.
- Repeats Tool – Species can be repeated when the repeat toggle is turned on – refer to pages 23, and 65.

VII. Reports & Export Translate files



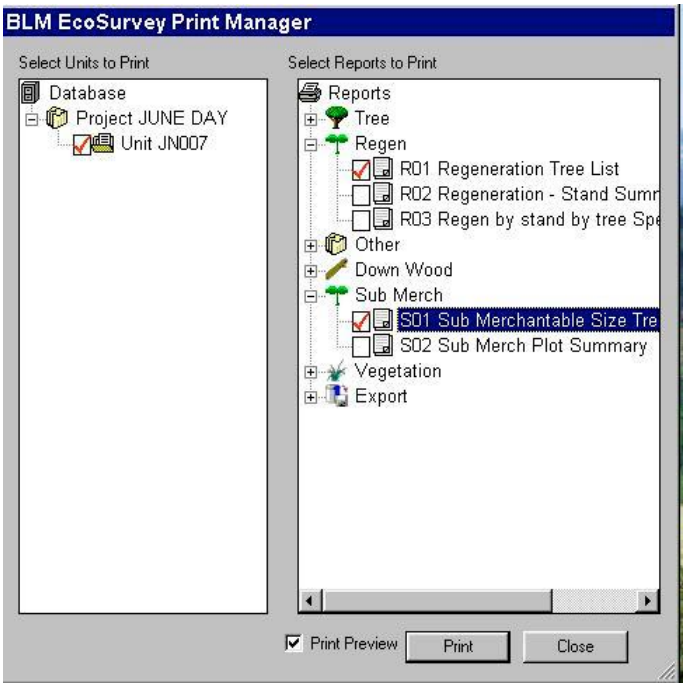
- Print Reports
- Export Report into other file formats
- Export - translate files for growth models
- Export – translate file for Micro*storms database

Note: *An explanation of reports – the report groupings, statistics and the calculations used is contained in a separate document - "BLM EcoSurvey Technical Document – Equations, calculations, field and table definitions."*

A. Reports - Steps

I. Print Manager

1) Select File – Print
2) In the Print Manager click the [+]s for the desired: (Projects in the Left Pane and Reports in the Right Pane).
3) Place a checkmark in the desired Units and Reports
4) Check the Preview checkbox if you want to preview before printing.
5) Click the "Print" button



the print list manager window can be expanded by click and drag or by dragging the wrinkle on the bottom right corner.

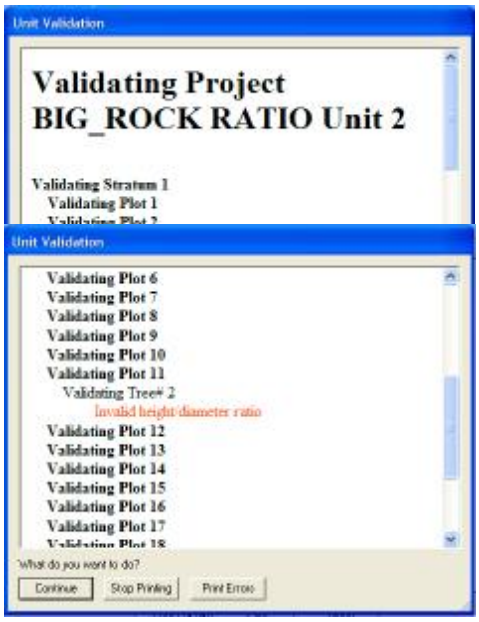
Finding your Unit using the Filter Tool

Over time, as you and others merge projects, the project/unit list will expand to the point where finding a unit becomes cumbersome. At any time a "Find Filter" tool can be used. For directions on how to use the filter tool turn to Filtering on page 73.

II. Final Validation Check

Before the selected report(s) are displayed a final validation for “bad data” is done on the selected unit. This validation should catch bad data that would cause a report to “crash”. An example of how this could occur might be an excessive tree height compared to a diameter. It is possible that this combination might have been entered in the handheld and since any edit is passable the excessive height tree would have been transferred into the PC program. The unit that contains this “bad tree” could cause either a “crash” or produce “bad” results during the running of a report that requires a tree volume calculation.

- If the unit is clean the reporting process continues.
- If the unit has some “bad” data an on screen report appears with a description of what the bad data is and where it can be found.
    - An error report can be scrolled and printed.
    - The printing function can be stopped if desired by clicking on the “Stop Printing” button
    - Editing the data can be done in the Data Entry portion of the PC program.



III. Volume Equation Defaults Window

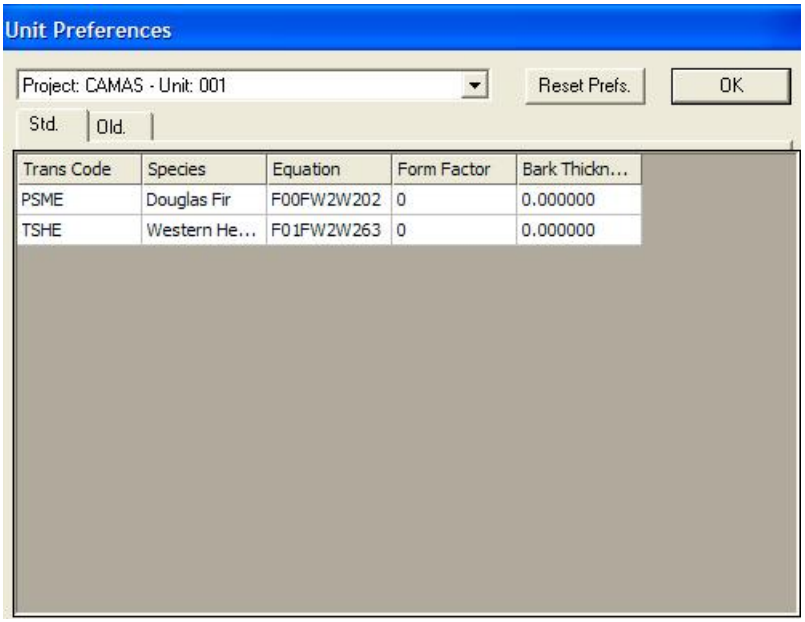
When a report is selected that involves volume calculations a volume equation window appears showing the default variable values used for the species equations used in the report being generated. If these default variables are satisfactory, then click [OK] to continue to report view window.

If required you can change the following coefficients by clicking within the appropriate cell:

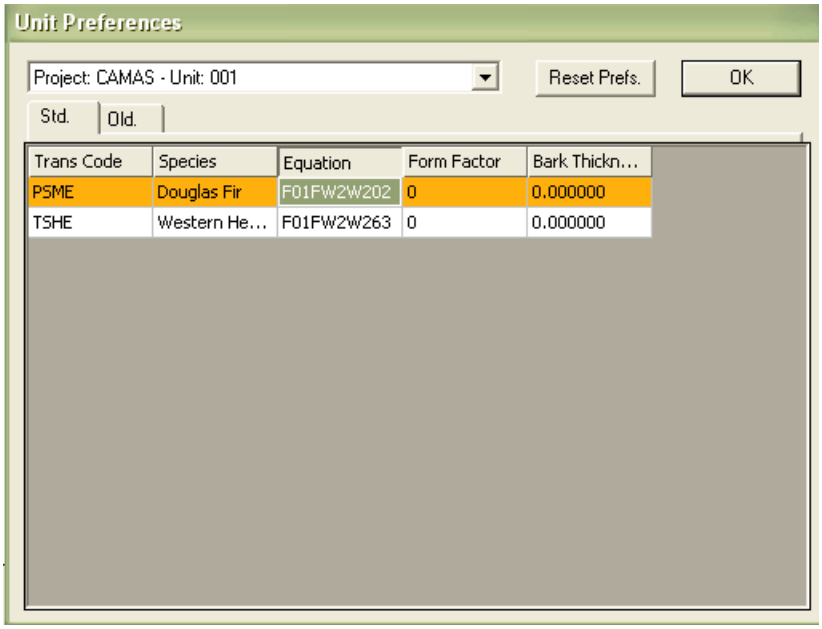
- Equation (eq_name) – a different equation can be substituted from a pick list
- Form Factor (eq_ff) - used in Behrs Equations
- Bark Thickness (eq_bt) – used in Flewelling Equations

You can also assign a different equation to any of the species by double clicking on the desired “eq_name” cell. If this is done a list of all equations appears.

- All columns can be viewed via the horizontal scroll bar at the bottom of the window.
- Reset Preferences Button – reset values to default values
- Equation changes are used for the current reports being generated. *Once the equation is changed for a unit the change is "remembered" forever for that unit until the "reset prefs" button is pressed*.
- You can have different equations for Old Growth and Standard (2nd growth) by using the labeled tabs.

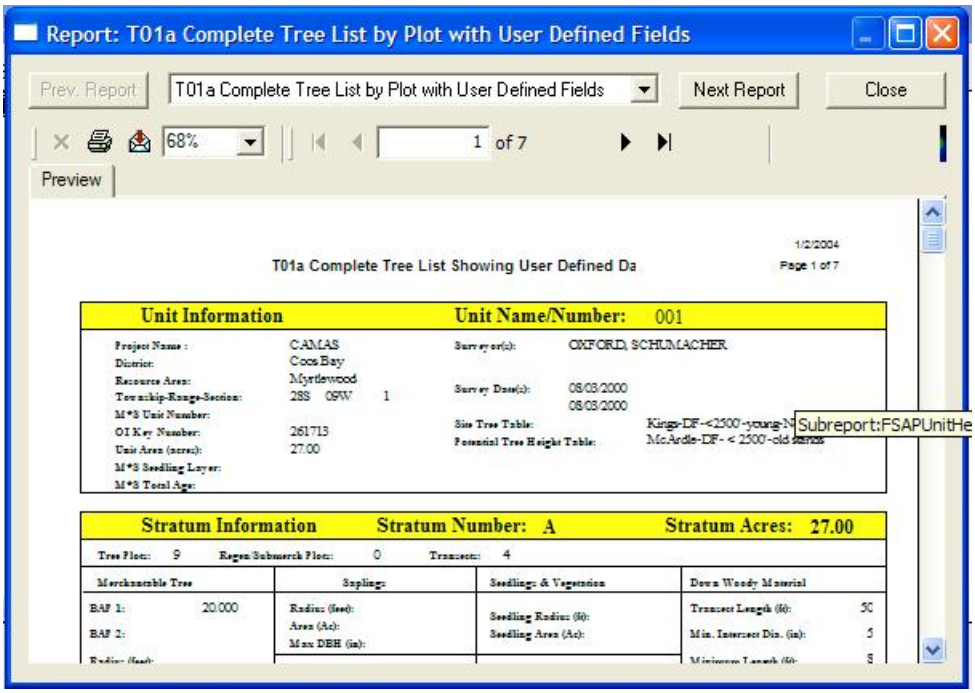


If an equation is changed from the default the entire line appears in an orange or yellow color.



IV. Print Preview Window

If Preview is selected a preview window appears.



The Print Preview window can be expanded by either:

- click and dragging a window edge
- clicking on the "maximize" window button in the upper right-hand corner.

The following controls are available in print preview:

- Toggle between Picked Reports – use down arrow pick box at top center.
- Move to next Report – use [Next Report] button.
- Move to previous Report – Use [Prev Report] button.
- Go to next page in report – click on the >> symbol
- Go to First, Last page in report – click on |<< and >>| respectively.
- Find a word or phrase in report – Click on binocular icon.
- Export Report in HTML file format (various selections appear in list but only HTML works) – click on envelope icon.
- Zoom – Click on down arrow pick box next to the 66% figure.
- Escape - click "Close" button.
- Print – click Printer icon.

The Printer icon commands

The Print Window allows you to print all or separate pages (but this only applies to the Report that is being accessed). It you have multiple reports you will be returned to the Print Preview Window where the next report has to be selected. and the Printer icon selected again for printing.

V. Report Versions

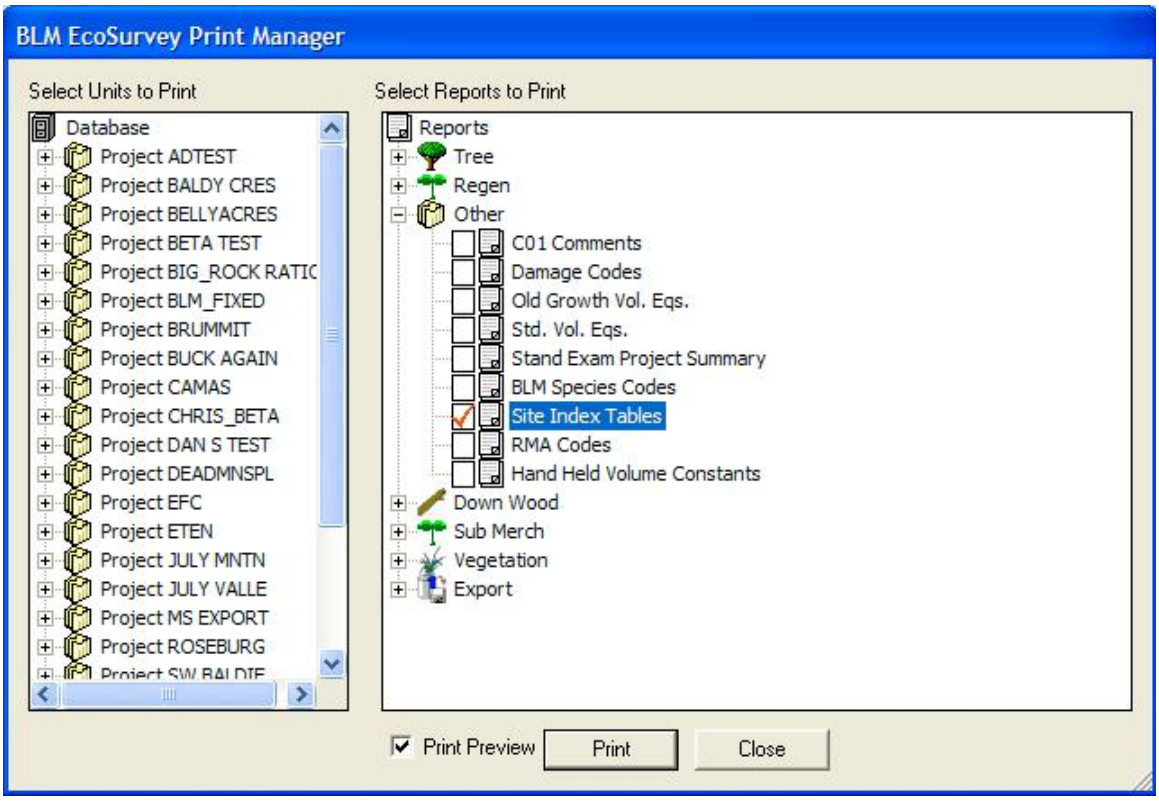
All reports with the exception of "Other Reports" have a version number located on the bottom right – hand corner of the printed page.

Export Files to Growth Models and Micro*Storms have their version numbers displayed on the top line of the Export Window that generates the file.

B. "Other Reports"

Other reports consist of system and informational reports, such Survey Comments, handheld volume constants, PV volume equations, and lookup tables (mdb table files used in the PC and handheld program.

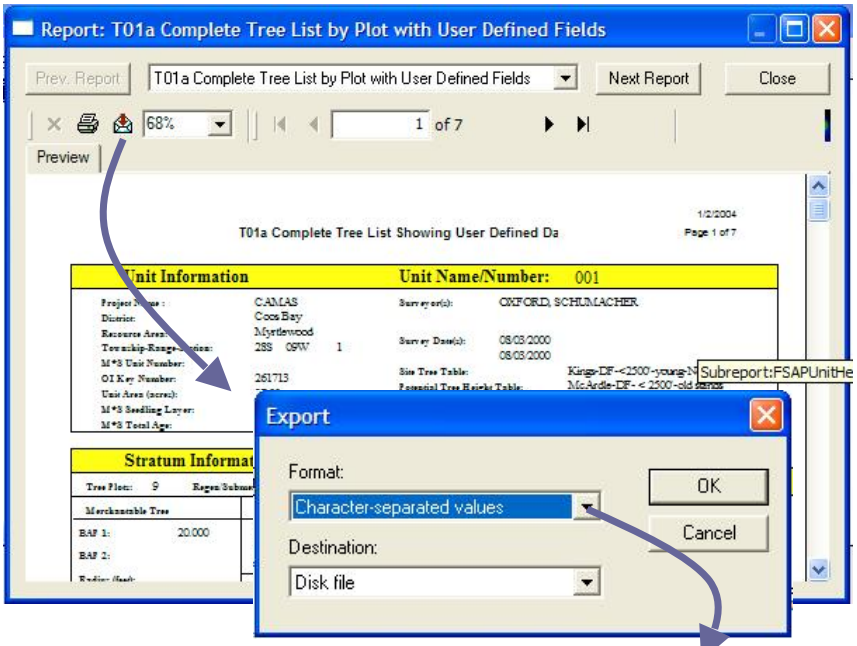
See diagram below for selection list.



No unit needs to be selected to generate these informational reports with the exception for the C01 - Comments report.

C. Exporting Report into HTML file format.

The Report window allows the report to be converted into HTML 4.0 that can be imported or read by HTML editing software programs, read by HTML viewers like MS Explorer or Navigator, and MS Word. One clever use is in knowing that an html "image" being viewed can be saved as a graphic image using the PC [Print Screen] button, and then pasted into a document.



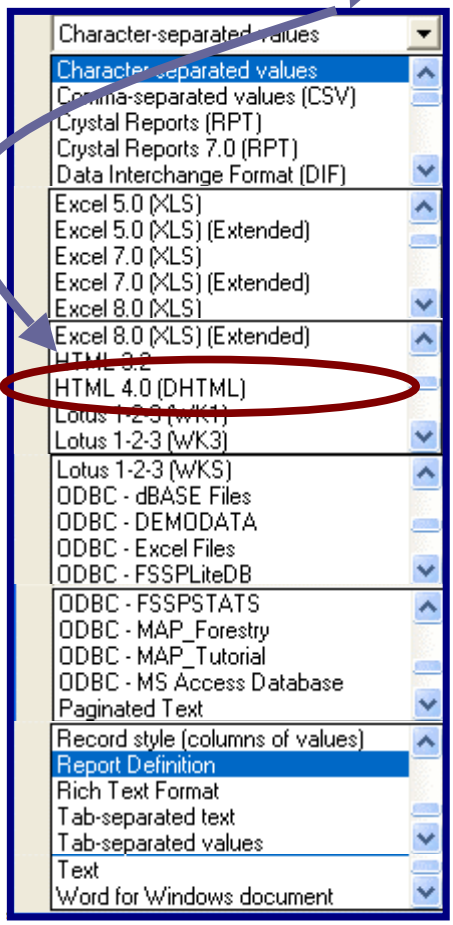
I. Steps - export a report into HTML format

Even though different file formats, such as Lotus, MS Access, or MS Excel appear only the HTML selection works.

1) Generate a report via the File Menu – Print Reports.
2) In the Print Preview Screen click the envelope (export report) icon.

3) Select the destination and HTLML 4.0 format by clicking on the selection list down arrows. Normally, the destination will be "disk".

The graphic on the right shows the possible file format choices. Note - only the HTML selections work.



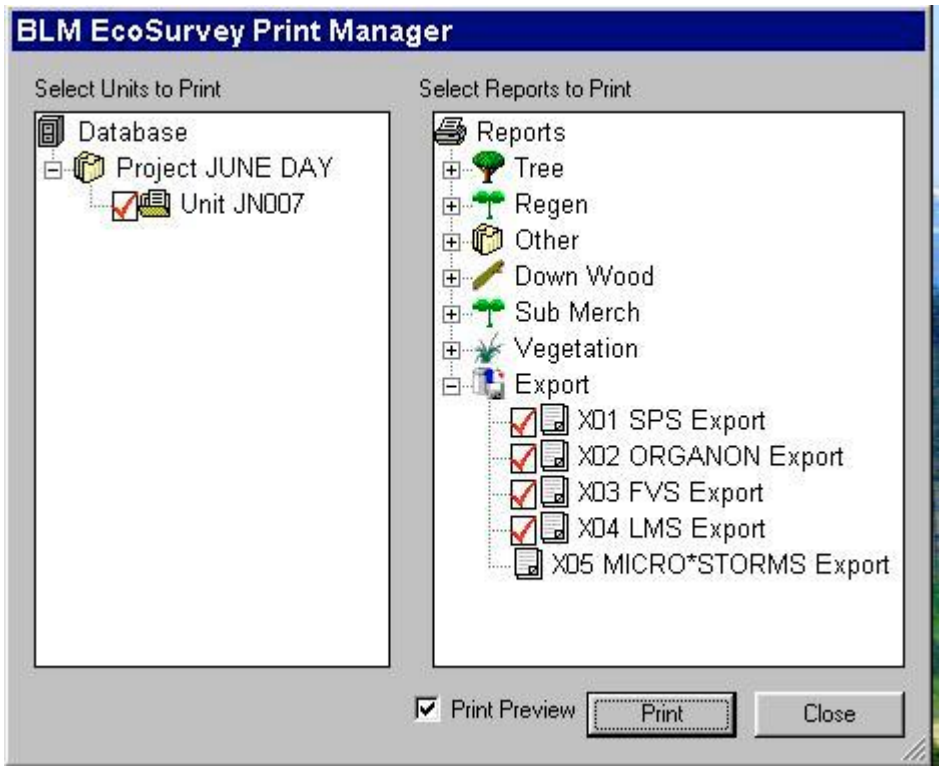
4) You will be asked to select a folder for the created html files to be placed.

In the case of HTML files you further select whether to create one report file with all pages or to create a file for each page. The HTML files are placed in a subfolder named "html" from the folder you select (read the HTML information screen for more detail on this function).

D. Exporting to Growth and Visualization Models

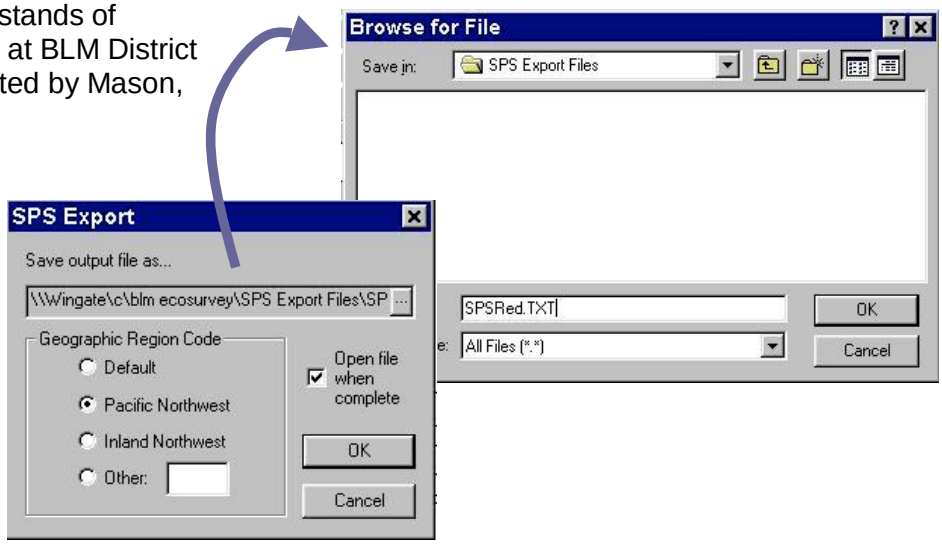
The procedure for creating a translate file that can be imported by Growth Models, Visualization Models, such as LMS, and the Micro*Storms database are similar. The procedure starts the same as print reports, but with the selection of the Export model instead of a report.

Each export file created follows the design requirements for each growth or visualization model. Refer to the data input specifications in the model documentation for valid species codes and other data. Exports that use volumes created by Forest Ecosurvey are using the default or user-selected volumes that appear in the Report Generation sequence.



II. SPS Export

The Stand Projection System (SPS), built in 1991 by James D. Arney, is the standard growth model used in Salem, Eugene and Coos Bay Districts of the BLM. It was used to project yields for the allowable cut calculations used in the 1990's RMP's. Current use is primarily for predicting response to various thinning treatments on even-aged stands of Douglas-fir. It is available at BLM District offices and is also distributed by Mason, Bruce and Girard.



Steps

1) Select X01 SPS Export in Print Window.
2) Click on the **[...]** button and using the file/directory browse window select the folder and type the SPS filename. *If the filename ends in .TXT it can be automatically opened by MS Notepad for previewing later.*
3) Click [OK] when finished entering the filename.
4) In the SPS Export window check the Region Code and the file open (if desired).
5) Click OK to create file.

III. ORGANON Export

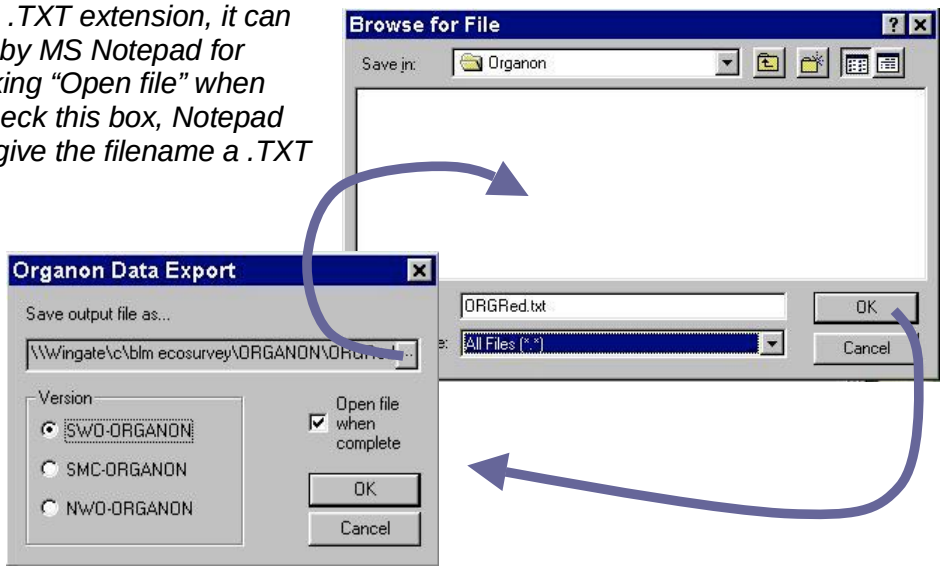
ORGANON is an individual tree growth model developed for Southwest Oregon, Northwest Oregon and the lands of the Stand Management Cooperative. It will project stand development for several species mixes, stand structures and management activities. It was built and distributed by the College of Forestry at Oregon State University and is available at their web site: http://www.cof.orst.edu/cof/fr/research/organon/

Steps

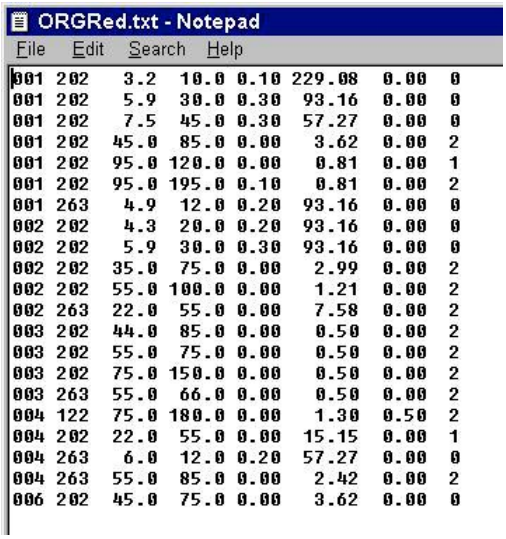
1) Select X02 ORGANON Export in Print Window.

2) Click on the **[…]** button and using the file/directory browse window, select the folder, and type the filename.

If you give the filename a .TXT extension, it can be automatically opened by MS Notepad for previewing later by checking "Open file" when complete. Even if you check this box, Notepad will not open unless you give the filename a .TXT extension.]

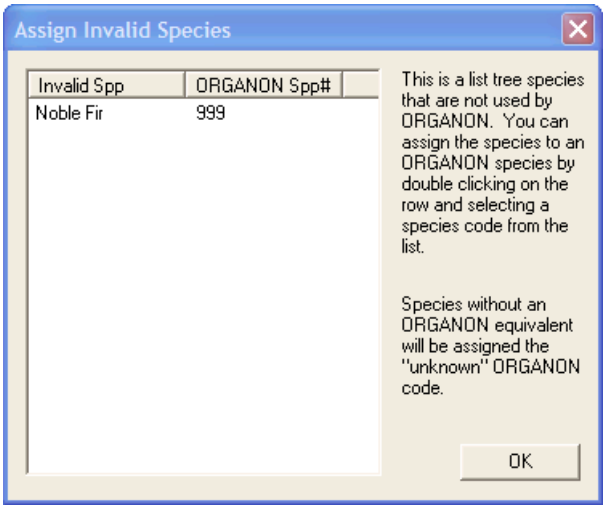


3) Click [OK] when finished entering the filename.
4) In the ORGANON Export window check the Region Code and the "file open" (if desired).
5) Click OK to create file.

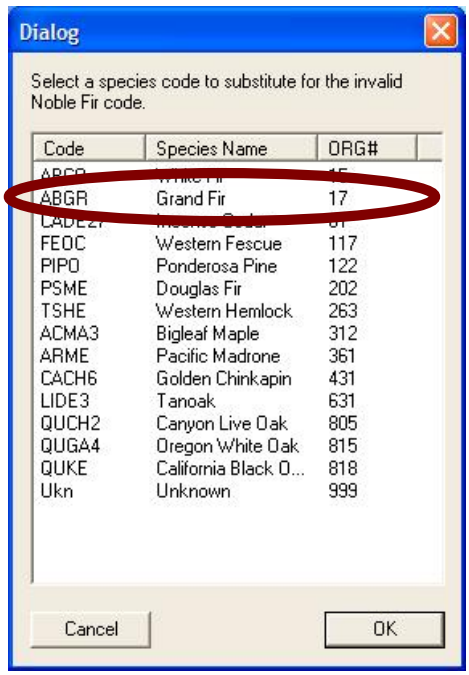



```
001 202   3.2  10.0 0.10 229.08  0.00  0
001 202   5.9  30.0 0.30  93.16  0.00  0
001 202   7.5  45.0 0.30  57.27  0.00  0
001 202  45.0  85.0 0.00   3.62  0.00  2
001 202  95.0 120.0 0.00   0.81  0.00  1
001 202  95.0 195.0 0.10   0.81  0.00  2
001 263   4.9  12.0 0.20  93.16  0.00  0
002 202   4.3  20.0 0.20  93.16  0.00  0
002 202   5.9  30.0 0.30  93.16  0.00  0
002 202  35.0  75.0 0.00   2.99  0.00  2
002 202  55.0 100.0 0.00   1.21  0.00  2
002 263  22.0  55.0 0.00   7.58  0.00  2
003 202  44.0  85.0 0.00   0.50  0.00  2
003 202  55.0  75.0 0.00   0.50  0.00  2
003 202  75.0 150.0 0.00   0.50  0.00  2
003 263  55.0  66.0 0.00   0.50  0.00  2
004 122  75.0 180.0 0.00   1.30  0.50  2
004 202  22.0  55.0 0.00  15.15  0.00  1
004 263   6.0  12.0 0.20  57.27  0.00  0
004 263  55.0  85.0 0.00   2.42  0.00  2
006 202  45.0  75.0 0.00   3.62  0.00  0
```

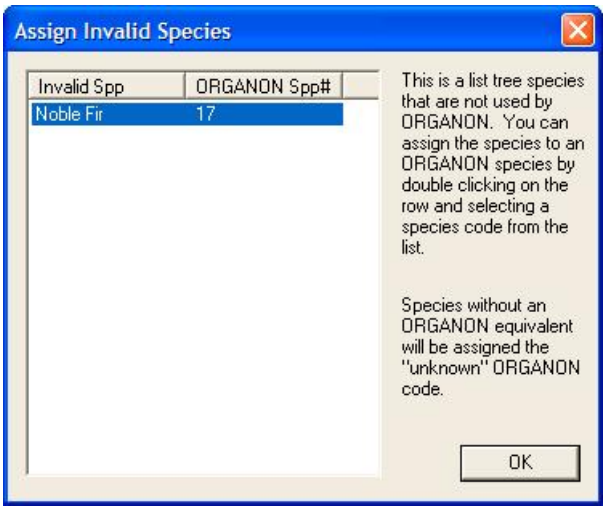
If an species code unknown to ORGANON is encountered an “Assign Invalid Specie ” interface window appears.



- An unknown species can be assigned an ORGANON species code by double clicking on the species line



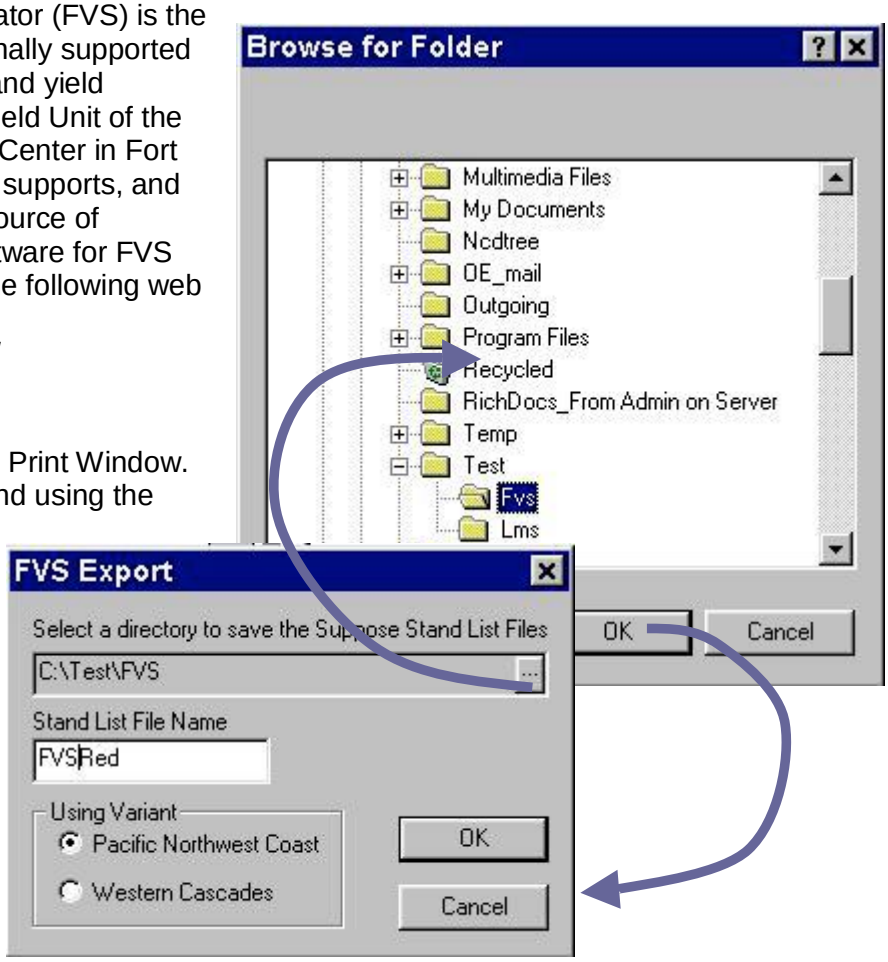
- Then select the desired ORGANON species code by clicking the species line and the OK button.



- Click OK to verify the new ORGANON assigned Species code.

E. Forest Vegetation Simulator Export

The Forest Vegetation Simulator (FVS) is the USDA Forest Service's nationally supported framework for forest growth and yield modeling. The Growth and Yield Unit of the Forest Management Service Center in Fort Collins, Colorado, maintains, supports, and develops FVS. This is your source of information, support, and software for FVS and related programs. See the following web site for additional details: http://www.fs.fed.us/fmsc/fvs/



Steps

1) Select X03 FVS Export in Print Window.
2) Click on the **[…]** button and using the file/directory browse window select the folder where the files are to be created.
3) Click [OK] – close the Browse Folder window.
4) In the FVS Export window check the Variant you wish to use.
5) Type the Stand List Filename
6) Click OK to create file.

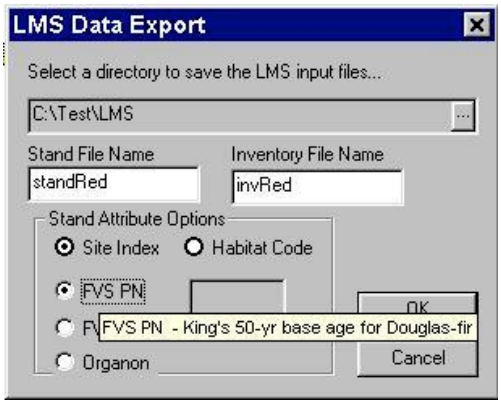
Note: two files are created:

1. Suppose file *.SLF
2. Tree File *.FVS

Filename nomenclature
The Suppose, SLF, filename created uses the filename you typed
The Tree File, FVS, filename differs and consists of “t_ “ plus a “random number”. This filename is automatically referenced by the suppose file.

F. Landscape Management System Export

The Landscape Management System (LMS) is an evolving application designed to assist in landscape level analysis and planning of forest ecosystems by automating the tasks of stand projection, graphical and tabular summarization, stand visualization, and landscape visualization. LMS is implemented as a Microsoft Windows (TM) application that coordinates the activities of other programs (projection models, visualization tools, etc.) that makeup the overall system. LMS is comprised of many separate programs that make projections, produce graphical or tabular displays, store inventory information, and connect these diverse programs into a cohesive system. The University of Washington, College of Forest Resources maintains, supports, and develops LMS. See the following web site for additional details: http://lms.cfr.washington.edu/lms.php



Steps

1) Select X04 LMS Export in Print Window.
2) Click on the **[…]** button and using the file/directory browse window select the folder where the files are to be created.
3) Click [OK] – close the Browse Folder window.
4) You have two options in the FVS Export window:
   - Select Habitat Code. In this case you provide the habitat code in the space below this option button.
   - Check the Site Index option button then select a Region Code (regional growth model).
5) Type the Stand List and Inventory Filename.
6) Click OK to create file.

Note the long prompt when the cursor passes over the region code selections. LMS does not calculate Site Index.

Note: two files are created:

- Stand file*.CSV
- Tree File *.CSV

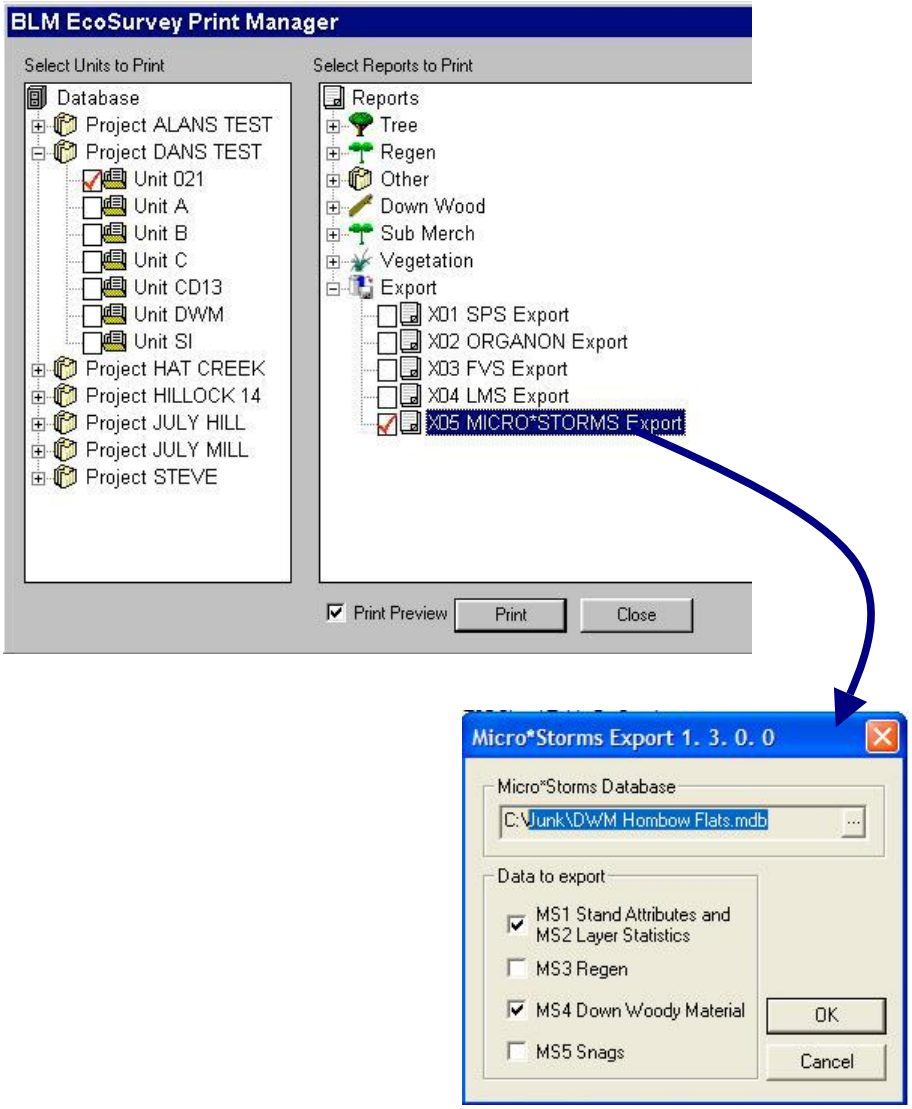
G. Micro*Storms Export

Micro*Storms is the BLM's Forest Operations Inventory database for Western Oregon and Klamath Falls Resource Area. This database is where silviculture treatment and vegetation description information is stored. The routine that follows will export stand exam information into an Access database, that in turn, can be imported electronically into the Micro*Storms database. Export data includes stand attributes, vegetation layer description, regeneration, down woody material and snag information. See "BLM EcoSurvey Technical Support Document" for export file details

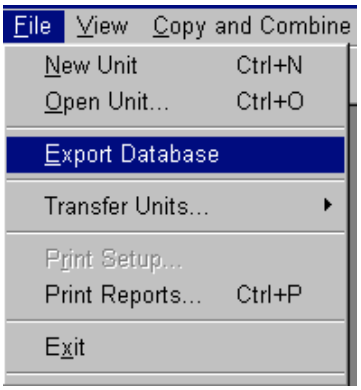
Additionally, the Micro*Storm export routine contains rules and validations. Refer to the BLM EcoSurvey Technical Support Document, Micro*Storms section, for a detailed listing/description.

Steps

1) Check the X05 series Micro*Storms Export.
2) Click Print.
3) In the Data to Export Box Click on the **[…]** button and using the file/directory browse window select the folder where the Micro*Storms data file template is found. Highlight the file and Click OK. You are returned to the "Data to Export" Box
4) Place checks on the M*Storms data groups desired.
5) Click [OK] to finish.
6) Turning gears signify the creation of the translate file



VIII. Export Database

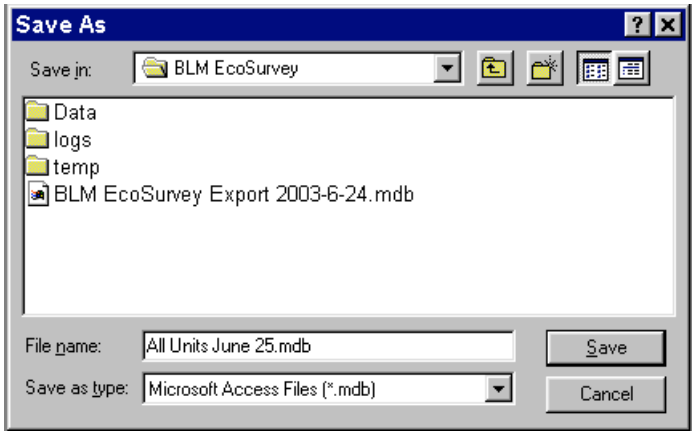


A. Export Units to a Separate Access Database

Export data to a MS Access 2000 .mdb database.

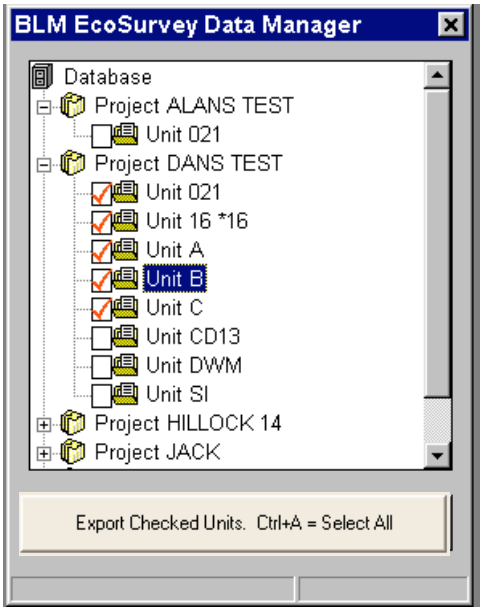
Exporting may be done to:

- back up a database as a safety procedure before doing a copy and combine operation.
- send the database or a segment of the database to other Forest Ecosurvey Users. The database can be imported and merged by other Forest EcoSurvey users.
- Analyze data in Excel – See following section "Export database in Microsoft Excel Format", page 52.
- Any other analysis outside of the EcoSurvey Program.



I. Steps

1) Select File – Export Database – a "Save As" dialog box appears. A filename using the current date and BLM EcoSurvey Export title is created for you.
2) Edit the filename if desired.
3) Using the Explorer interface find the folder to place the export file. (The Explorer interface defaults file placement to the BLM EcoSurvey program directory.) Click Save to save, or cancel the operation.
4) The Forest EcoSurvey Data Manager appears allowing you to select the desired projects, units, or stratum to export. A filter tool is available, refer to page 73 . Or, [CTRL+A] to select all.
5) When done checking desired units click the [Export checked units] button to create the mdb file. A "Export Finished" message appears and closes the data manager.



Note any database can be imported (and merged) via the Merge – Merge from Database menu selection

B. Export Database in MicroSoft Excel format

The database can be portioned and exported into an MS Excel format for further statistical analyses.
Examples of Excel's built-in statistical functions that you may use include standard deviations and regressions. The exporting is done via the MS Access database functionality. MS Access is used.
Note: Export Data only exports raw data; the function does not export calculated fields, such as tree volumes, TPA, etc.

A case example of exporting data into Excel format and using an Excel statistical tool for an analysis can be found in section “Appendix B - Case Example: Export Database in MicroSoft Excel format to do Analysis in Excel” on page 82.

A discussion about strategies you can use to extract data for analysis is found in “Appendix A Extracting data for analysis – comments” on page 81 .

Finding your Unit using the Filter Tool

Over time, as you and others merge projects, the project/unit list will expand to the point where finding a unit becomes cumbersome. At any time a “Find Filter” tool can be used. For directions on how to use the filter tool turn to Filtering on page 73.

IX. Copy and Combine

The importance of protecting original data

A word of warning - the system does not prevent you from copying data from a unit into another valid unit, which might produce an unintended result. It is a good idea to back up data if possible before attempting a copy and combine operation, especially if the process is new to you. This is easy to do via the Export Database Menu Selection

It is also safer to combine data from different units and stratum in a new "experimental unit", thus protecting the original data sets.

A. Overview

Copy and Combine allows the copying of plots, stratum, and or units into other projects, Stratum and units. This process involves copying plot and other data into another area. The original data is left untouched. The approved method for doing this is to create a project/unit called "Experiment", then copy all data into this area. A word of warning, however, the system does not prevent you from copying data from a unit into another valid unit, which might produce an unintended result. It is a good idea to back up data if possible before attempting a copy and combine operation, especially if the process is new to you. This is easy to do via the Export Database Menu Selection, see page 52. It is also safer to combine data from different units and stratum in a new "experimental unit", thus protecting the original data sets.

Copy and Combine is used in four different situations:

I. When data needs to be *moved* into its correct location - Moving a plot or plots that were mistakenly placed in the wrong stratum.

For example plots were sampled in a 40 BAF strata and when a stratum boundary was crossed in the field. Some plots were mistakenly given a stratum code having a different BAF (or sampling type). These plots need to be placed into the 40 BAF strata in order to maintain report integrity when the data is compiled. In this situation you would:

1) Copy the plots into the correct strata
2) Delete the plots in the strata they were in.
3) Create reports

Important note: if plots are copied between stratum having different sampling methods and frequencies the plots copied from the source stratum into the target stratum will assume the sampling method and frequency of the target (receiving) stratum.

***Note** - other ways of moving plots between stratum in the same Unit*:

- Handheld - Re-assign the stratum code in the plot listing in the handheld.
- PC program – File – Open: Re-assign the stratum code in the plot header in the PC program.

The steps involved in copy and combining are found on page 57.

II. When a "combined result" is desired for plots in strata that were sampled with the same system and frequency.

The process involves:
1. Copy plots, stratum, units, into other (similar) stratum, units, and/or projects.
2. Run Reports

When the plots are copied from a "source" stratum and placed in the target stratum they will assume the sampling method and frequency of the target (receiving) stratum. If the target and source strata do not have the same sampling characteristics, then the final combined result may not be what was intended. So care needs to be taken to ensure that the sampling method and frequency are identical between source and target strata for this situation. For ultimate safety of your original data you may want to attempt copying the similar sampled plots into a matching stratum in an "experimental unit", see below.

Copy and Combine "how to - steps" is found on page 57.
Steps in Creating an Experimental Unit is found on page 59.

III. When a "combined result" is desired for plots that were sampled with different sampling methods and frequency.

Example
In order to protect the original stratum and plot data being copied into (the target), it is safest to create and experimental or a new unit (see below) and copy and combine into the experimental unit.

An example of this might entail copying one unit to another with each unit having plots with different stratum BAF's. Another example might involve combining plots having different sampling methods, like fixed plots and VP plots (or even Ratio plots).

This particular process involves getting combined results that use a "weighting" system to produce statistically valid results. The reports generated treat all plots as if they were in one single stratum.

Copy and Combine "how to – steps" is found on page 57.
"Creating and Experimental unit for combining" is found on page 59.

IV. When you desire to create reports on a subset of data in one or more units.

Another very powerful use of Copy and Combine is to do custom analysis. Besides doing an analysis on any combination of plots, you can do an analysis on just a portion of data within any combination of plots. This process will meet many custom reporting needs without the cumbersome process of exporting to Excel as outlined earlier. You can also use this to do specialized volume calculations volume tables which are not available in Excel.

For example, let's assume you want unit statistics on trees 12-20 inches in diameter. You would copy the data from a unit into an "experimental unit." You would then delete all trees in this "experimental unit" less then 12 inches and greater then 20 inches and run reports on the remaining trees. In this case you would not be combining units.

You can also run an analysis like this across data from one or more plots from more then one unit. In this case you would do a copy and combine.

The one critical thing to remember is that whatever criteria you use to delete data in one plot must be applied to all remaining plots. Failure to do so will give erroneous reports.

The importance of protecting original data

Again the importance of protecting original data must be stressed. Always create an experimental unit before deleting trees.

The steps in creating an experimental unit are covered on page 59. The difference between the experimental units in cases II and III and this methodology is that in cases II and III you always do a copy and combine. In this case, while you will always do a copy, you will not always do a combine. The steps involved in doing a copy and combine are found on page 57.

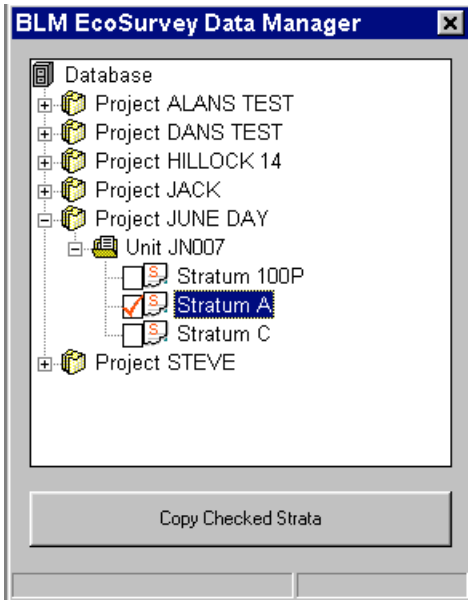
Finding your Unit using the Filter Tool

Over time, as you and others merge projects, the project/unit list will expand to the point where finding a unit becomes cumbersome. At any time a “Find Filter” tool can be used. For directions on how to use the filter tool turn to Filtering on page 73.

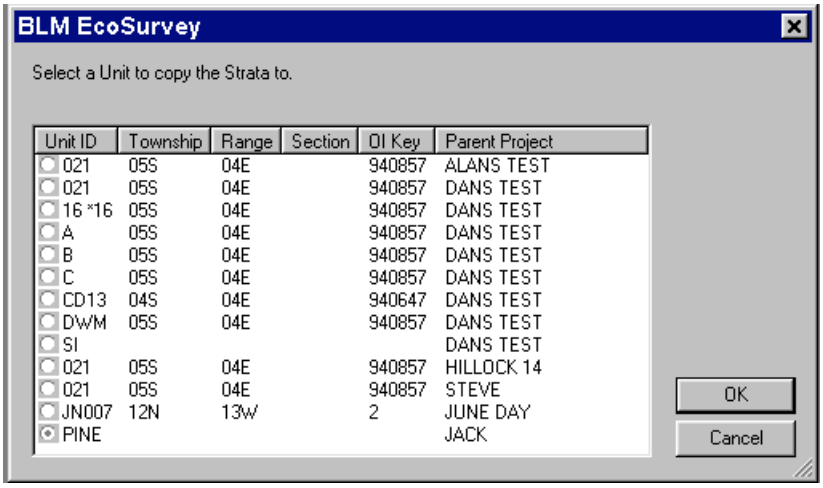
B. Copy and Combine Steps – how to

1) On the horizontal Menu bar select “Copy and Combine”
2) Choose what to copy: Units, Stratum, Plots

3) Click on the [+]s to open the Projects and expose the Units, or , Stratum, or plots
4) Place a checkmark for each desired box to copy



5) Click the “Copy Checked” Button at the bottom of the Data Manager Window
6) Select the Units, Stratum, or Projects *to copy to* by placing checkmarks in the radial button.

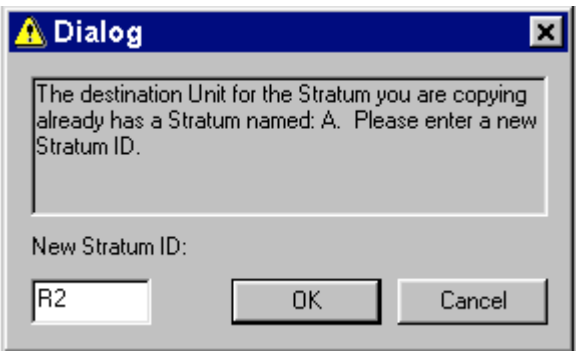


Window expansion

The box can be expanded by click and drag on the window edges or wrinkle at the bottom right of the window. If you want to see more of the title - the labels on the title bar can be individually expanded by click and sliding the title.

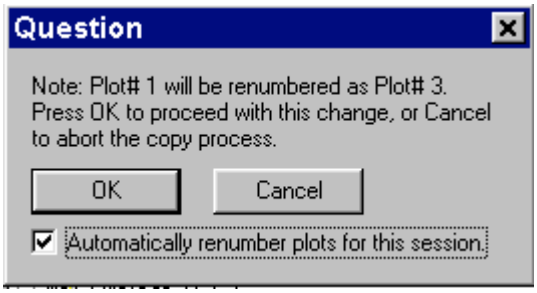
7) Click OK button to copy, or Click Cancel button.

Note: *Duplicate stratum and plot ID's.*
Duplicate stratum IDs.
If a stratum you selected to copy has the same name as another stratum (either in the destination unit or another stratum being copied) a dialogue box appears asking you to rename the "stratum" ID (name). Type a new stratum ID and click OK.



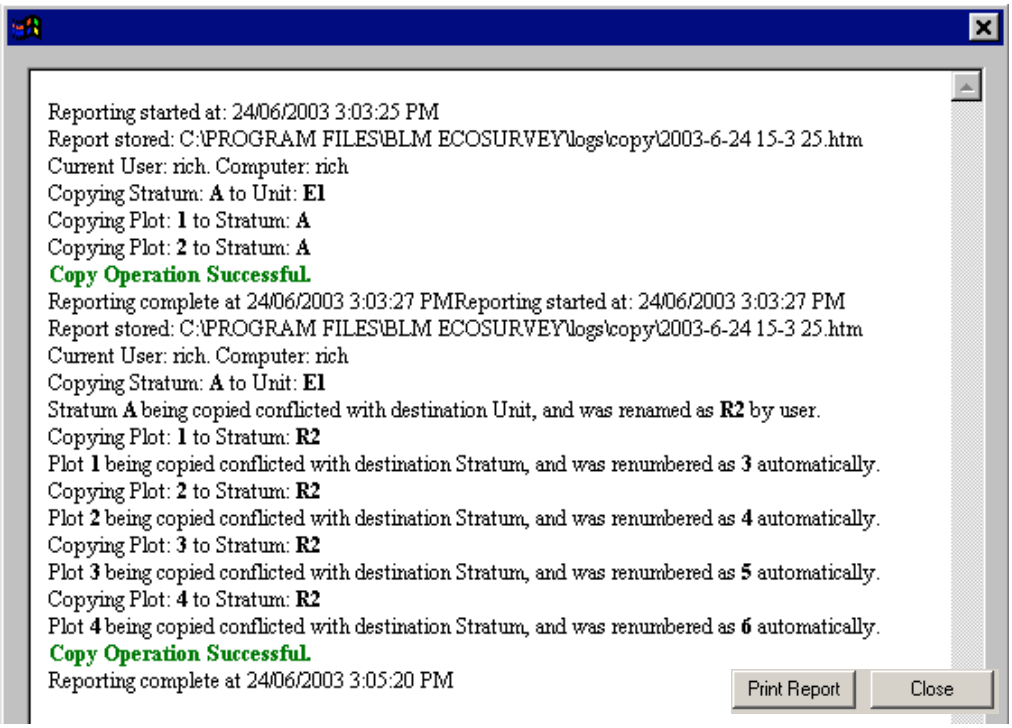
Duplicate plot numbers. If the plot ID's or numbers you selected to copy are the same as the target plot numbers a dialogue box appears asking to renumber the duplicate incoming plot numbers to another series of numbers. The computer attempts to determine a safe plot number to begin with.

- Clicking [OK] begins the renumbering, one plot at a time.
- Checking the "Automatically renumber plots for session" checkbox, then clicking [OK] will automatically renumber all incoming plots.



If your intention is to "move" plots you will want to delete the original plots to ensure you get correct summary reports.

When the units, stratum, and plots are copied and combined a report box appears. This is an html report that is stored for your reference in a subfolder labeled "COPY".
The filename along with date and time appears at the top of the report. You can note this information down and read and print the report using Windows Explorer.



Print this report by clicking the Print button at the bottom of the form.

C. Creating an Experimental combined Unit – Overview

In order to protect the original units, strata, or plots that are going to be combined an "Experimental Unit" should be created. Then the original or source data can be moved (copied) into this "experimental unit or work area.

Combine data into an "experimental unit".

1) Create Experimental Project and Unit.
2) Copy plots, stratum, or units into the "Experimental Project".
3) Run Reports.

Experimental Combining – "how to - steps", see below.

D. Steps in combining data into an "experimental unit".

The importance of protecting original data

A word of warning - the system does not prevent you from copying data from a unit into another valid unit, which might produce an unintended result. It is a good idea to back up data if possible before attempting a copy and combine operation, especially if the process is new to you. This is easy to do via the Export Database Menu Selection

It is also safer to combine data from different units and stratum in a new "experimental unit", thus protecting the original data sets.

Create Experimental Project and Unit - combine units plots and stratum with different sampling methods to get new results.

1) Select File – New Unit.
2) Create new Project called Experimental by clicking on [edit Projects] button, then [NEW].
3) Type "Experiment" (or some other appropriate name).
4) Click [Done] button.
5) Select Experiment project name by clicking the down arrow.
6) Type a unit name (for example "E1").
7) Click OK. – the Experimental Unit has been created.
8) Close the new Experiment Unit closed by closing the window. A validation list will appear. Since you will be copying other units into this unit, just click [Close Unit].

To copy units, stratum, and plots into experimental unit proceed with copy and combine instructions given in the previous section "Copy and Combine Steps" on page 57. In order to ensure correct combined results continue reading the next paragraphs.

Note: Getting correctly weighted combined results –
In order to generate correct results for plots having been sampled at different rates, frequencies and methods the stratum information must accompany the plot. For that reason you must copy plots

with a stratum, - *the easiest way is by copying an entire stratum with its associated plots into the experimental project.* Plots can be deleted afterwards from within the data entry function in the Experimental Unit. Each stratum copied is stored along with its sampling information, along with the associated plots. In the case of duplicate stratum names you will be asked to rename the incoming duplicate stratum ID, in order to keep the stratum info separate. The final combined results consist of multiple stratum and associated plots with proper weighting applied to each plot.

You can copy individual plots into a stratum in the experimental project but if the stratum ID does not exist you will have to create it from scratch in the experimental project. Then you should take care to apply the same sampling method and frequency to match the stratum you are copying from. If they don't match your results will not be valid.

E. Plot Number Sequencing after Merging

When plots are merged from two different stratum into one, plots may be renumbered. This is done to avoid duplicate plot numbers.

the renumbering logic is: - as plots are combined, the numbering may jump in groups of 10. This allows an easier tracking of where to plots came from.

An example: if Strata B with plots 1-12 are combined with Strata A plots 1-6, Strata B plot 1 becomes plot 21, plot 2 becomes 22, plot 3 becomes 23 so all Strata B plots are renumbered in sequence.

X. Transfer Projects/Units

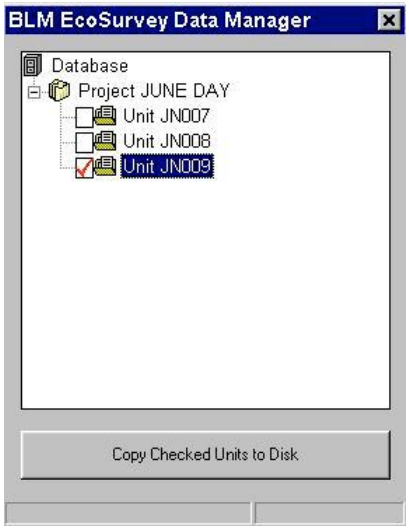
Finding your Unit using the Filter Tool

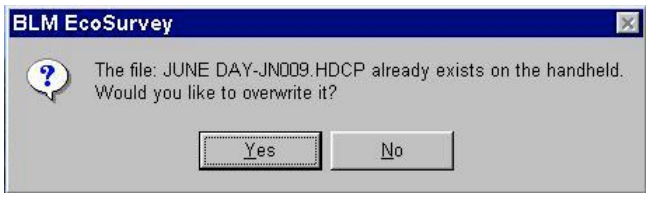
Over time, as you and others merge projects, the project/unit list will expand to the point where finding a unit becomes cumbersome. At any time a "Find Filter" tool can be used. This is done by using [CTRL]+[F] (for Find) when the File Data Manager box is on screen. For directions on how to use the filter tool refer to page 73.

- To Handheld
- To Disk or Hard Drive

A. Export to Handheld - Steps

1) Connect the handheld to PC
2) Start communications between handheld and PC. PC ActiveSync must be toggled to "Allow serial cable or infrared connection to this COM port (under Connection Settings). If USB is used this step is not required. When connection is made proceed.
3) Select File – Transfer Units to Handheld
4) Click the [+] Project boxes in the Data Manager Window
5) Click and place a checkmark in the desired Units to send.
6) Click the "Send Checked Units to Handheld" Button.





Note: if there is a duplicate Project – Unit on the handheld a message box appears and you can choose to overwrite the handheld project if desired.

7) A message box displays the number of units successfully transferred.

Note: if you need to use the serial port for DOS handheld transfers you may need to change the ActiveSync so that ActiveSync doesn't try to exclude COM port use by DOS communication programs.

B. Exporting to Disk – Steps

Exporting to Disk allows units to be sent to BLM EcoSurvey Lite where the units can be transferred to the handheld. The created file can be sent by floppy disk or as an email attachment. The PC Ecosurvey Lite program has the ability to download this data file to handhelds.

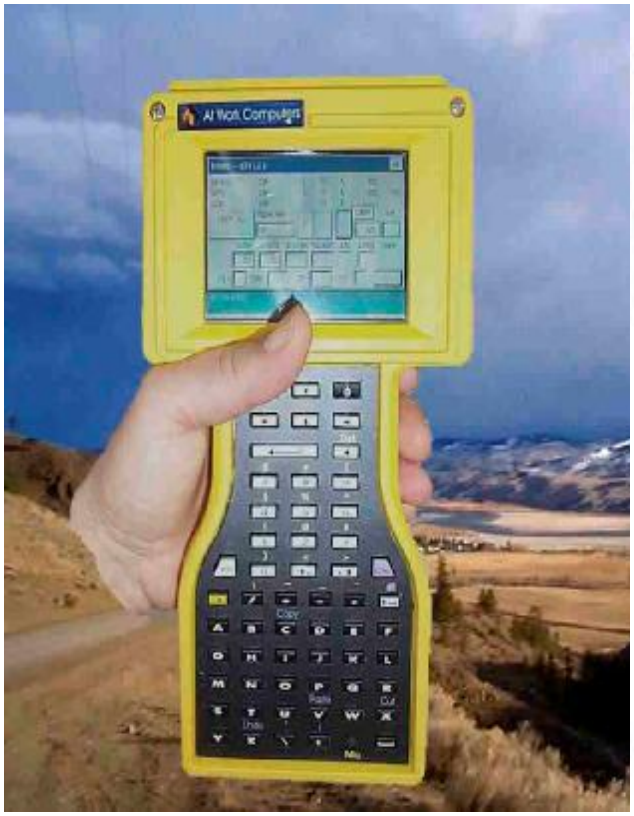
1) Select File – Transfer Units - to Disk (for BLM EcoSurvey Lite)
2) Use the Browser Explorer interface window to find the drive and folder to place the file.
3) Click the [+] Project boxes in the Data Manager Window
4) Click and place a checkmark in the desired Units to send.
5) Click the Copy button.

Filename
The file created will have the Project and Unit Name with an .HDCP file extension.

XI. Tools

A. Install EcoSurvey Handheld Data Collection Program (HDCP)

This is used to install a new handheld program directly into a handheld from the PC.
The install process will ask for the location of the handheld file install script (Install.hdcp). So you will need to know the file location (a CD or on the hard drive).



The install process automatically detects which model of the following handhelds needs to be installed:

- Juniper Systems Allegro – FPC (486 chip), WinCE 3.X
- Juniper Systems Allegro – WinCE 3.X, StrongArm chip
- TDS At WorkRanger – StrongArm chip, WinCE 3.X

Steps

1) Before installation it is a good idea to delete your current handheld program.
2) Connect the handheld to the PC
3) Start MS ActiveSync Communications
4) On the Upper Menu Bar select TOOLS – Install Handheld Application.
5) In the Step 1 Box (if the handheld connection has been made) click “Locate Install Script” button.
6) Find the “install.hdcp” file
7) Click “Next” button.

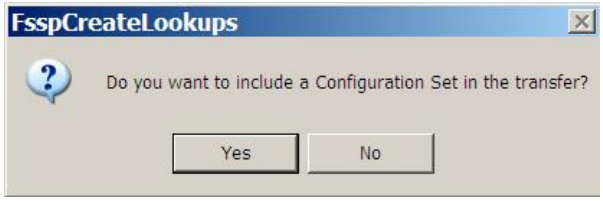
The handheld program will be installed in its correct location automatically.

B. Update handheld lookup & configuration tables

This function installs two major handheld functions:

1. the lookup tables used in the PC program into the handheld. These tables include: Damage, Damage Severity, Indicator Species, RMA-District codes, Site Tree Tables, Tree Species, and Tree Rules (edit checking Rules). All these files are denoted by *.txt file extensions.
2. the handheld configuration tables that control repeats, custom & required cursor jump order and are denoted by *.ecf filename extensions.

- The Handheld lookup tables are generated from the lookup tables used in the PC program - Data Entry module.
- The Handheld lookup tables can also be generated from the BLM EcoSurvey Administrators program.
- The Handheld Configuration configuration is generated from the PC program – Tools – Data Entry Configurations.



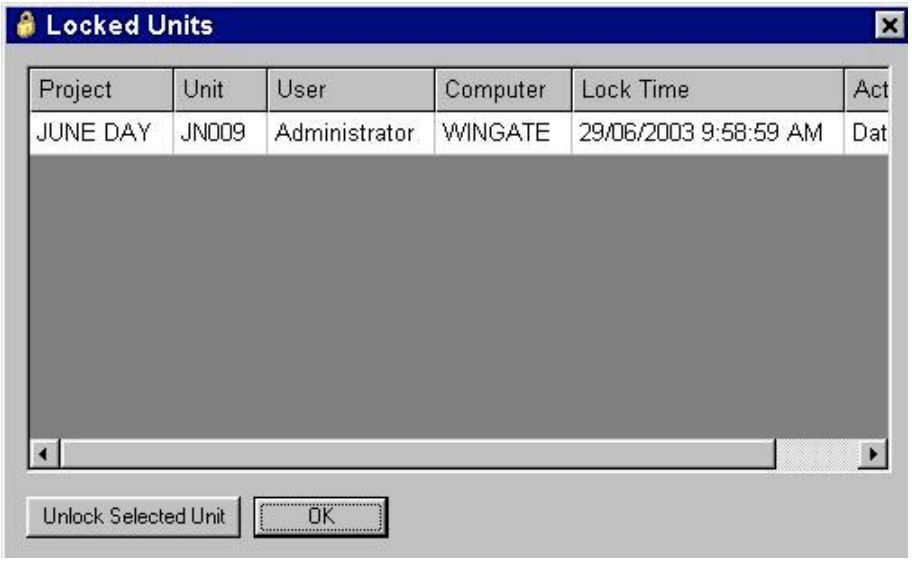
Steps

1) Connect the handheld to the PC
2) Start MS ActiveSync Communications
3) On the Upper Menu Bar select TOOLS – Update HH lookup tables.
4) If you want to send a handheld configuration set click Yes.
5) The message box "Creating Meta Files" appear. Then the files will be transferred automatically into the correct location in the handheld.

***Note**:* if you want to send the lookup tables and configuration tables to a contractor to be used with EcoSurvey Lite, you need to use the Administrator's program to create the file.

C. Locked Units

This selection lists the units that are open by other users. Units that are locked may not be available for editing while in use. This is to avoid data corruption and entry of illogical data. This includes transferring the same unit from a handheld while the unit is open.



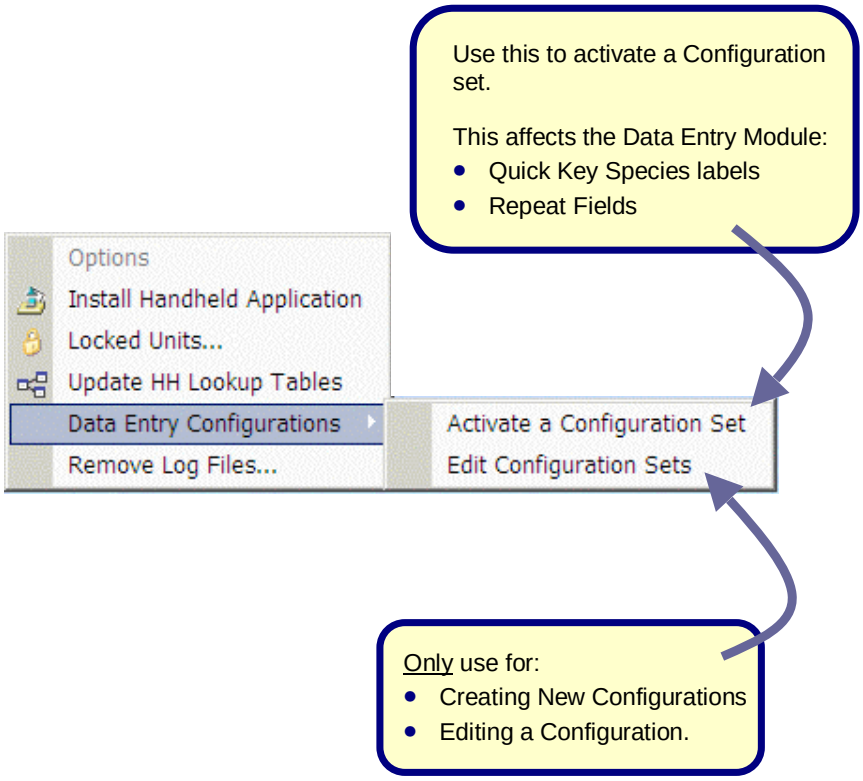
If you absolutely need to unlock a unit the Unlock button provides this emergency function.

D. Data Entry Configurations

I. Overview

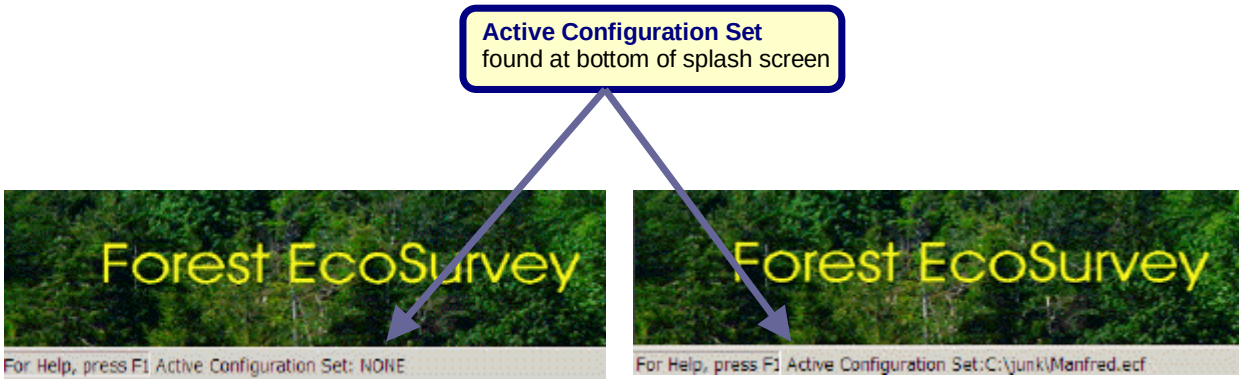
The data entry configuration area contains tools that affect the data entry behavior for both the handheld and the PC data entry area.

Features that affect handheld: In the handheld (see handheld user guide) the user can set up such features as Quick Keys for species codes, global, field validation and cursor jumping controls (above and beyond what is dictated by the Administration software). These handheld configuration toggles can be set up in the handheld directly or in the PC program, then transferred to the handheld, to a disk, or sent by email to be used by the EcoSurvey Lite program to update the handheld. To transfer the configuration setup refer to page 64.



Visual Confirmation of the Activate Configuration Set
In order to activate a setup for the PC data entry module, go to "Activate a Configuration Set" under tools and find a setup that you have pre-defined. You do not activate a configuration from within "Edit Configuration Sets" – this is used only to create and edit configurations.

A visual aid prompt at the bottom of the BLM EcoSurvey splash screen lets you know that a configuration set is active by name. The active name remains at the bottom of the splash screen throughout the program until a new selection is made via the TOOLS menu. It is possible to not have a configuration via TOOLS – Activate a Configuration Set and then not selecting or canceling the selection.



Features that affect PC: The following PC program Data Entry tools are configured in this area:
- Quick Key keymaps for each data type (pane)
- Repeats for each data type (pane)

Functions	PC data entry Feature	Handheld Feature
Quick Keymaps for each data level/type	X	X
[1]Repeat fields for each data level/type	X	X
Required Field Jump Order		X
Maximum Range Checks		X
Custom Jump Order		X

Multiple configurations
Multiple set-ups can be maintained and stored for future modification and use for both or either the PC and handheld.

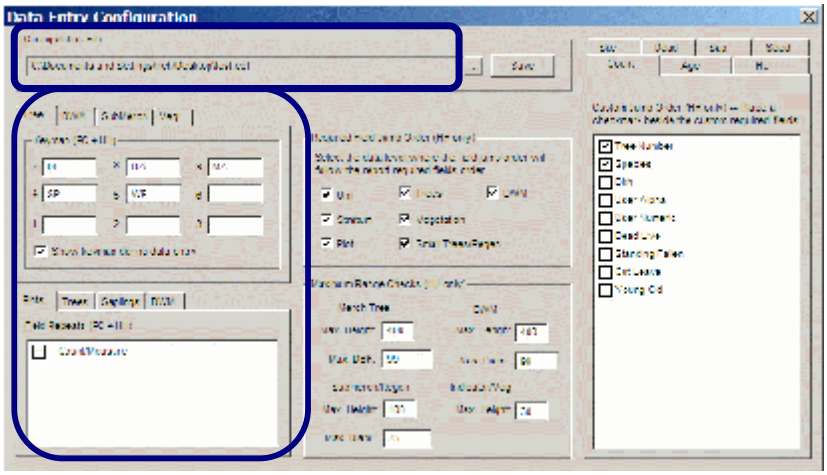
[1] Two repeat species data types cannot be set: vegetation and seedlings.

II. Setting up a Configuration

Steps

1) From Main Menu - Select TOOLS – Data Entry Configurations – Edit Configuration Sets.

Note the areas of the data entry configuration window that apply to both the PC and the handheld (The left 1/3 of the window). The Entire Windows applies to both the PC and the handheld.



Note, there is no SP code validation in this window. If you want to find the valid short species codes, exit TOOLS, go to the Data Entry area and by pressing the [.] key in the Species Field, review all valid codes.

PC and Handheld area (the entire window affects HH)

Configuration being modified (filename)

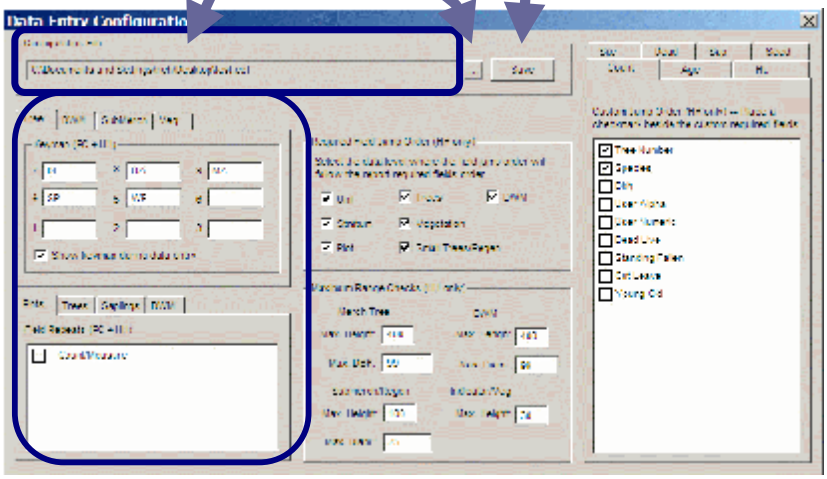
Create a new configuration –button

Save current configuration

The current setup name is displayed in the filename area in the upper left part of window. To save any changes made click the [save] button.

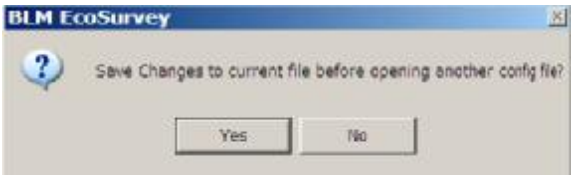
<u>Make and Save Configurations</u>

2) Make changes by clicking on Tabs, Edit and check boxes. When the first click is made the [SAVE button] turns black (becomes active). At any time clicking save button saves the current configuration.



<u>Create a new Setup</u>
(this procedure will save the current active setup configuration window to a new filename)

3) Click the […] button. If any editing has been done on the Config window a Save Confirmation Box Appears.



The Open Filename/Location box appears

4) Navigate to the folder and/or create a folder name to store configuration setups (.ecf files) using the explorer interface.
5) Type a descriptive filename
6) Click OPEN.

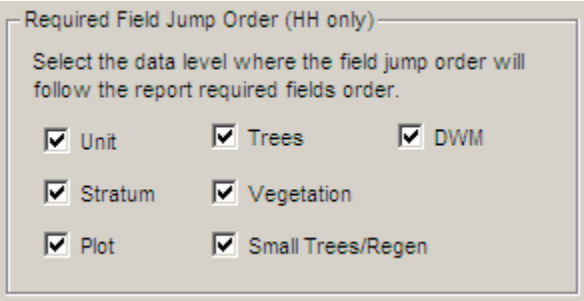
A New filename confirmation box appears.

7) Click Yes to correct.

The filename and configuration is stored and becomes the active configuration. You can verify the active configuration by using the Menu Selection: TOOLS – Data Entry Configurations – Activate a Configuration Set.

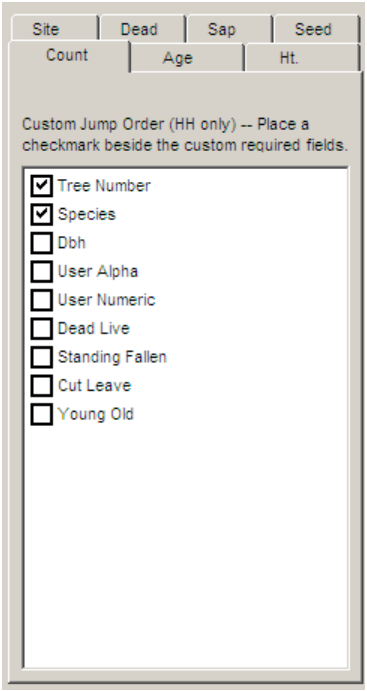
III. Required Field Jump Order and Custom Jump Order Functionality

Required Field Jump Order (Handheld Only)
This allows you to turn off or on the validation and cursor jumping for each level and data type. When unchecked the cursor jumps into every field. This might be useful, for instance in the Unit pages where it allows the cursor to enter every field – helpful, since when starting a New Unit, reports have not been selected and the cursor enters very few fields.



Custom Jump Order (Handheld Only)
The custom jump order allows a way to override the reports driven validation and can be used to include additional fields for each data type and tree flag.

When installed the system defaults to Tree Number and Species as being required fields for every data type and Tree Flag. Since, Tree number and Species are required in all instances they are really permanent.



A) Adding custom required jump order fields in addition to the Report Required fields.

These custom jump order fields are additive/accumulative to the Reports - validation set in the handheld. In summary, the cursor jumping – required fields are determined by the Reports selected *plus* the custom Jump Order fields.

Note: the required reports can be set in the PC program by creating the unit, then transferring the unit to the handheld. The required reports determine the first set of required fields (and cursor entry)

B) Defining only custom required jump order Fields and Ignoring Report Driven fields

This is accomplished by:

1) selecting the jump order fields using the Custom Jump Order, and,
2) turning off all reports, except the "Custom Required Fields" Report in the handheld.

Field exclusions by tree flag and data type can be set in the Tree Rules form in the Administrator's program.

IV. Change and verify the active configuration setup for the PC

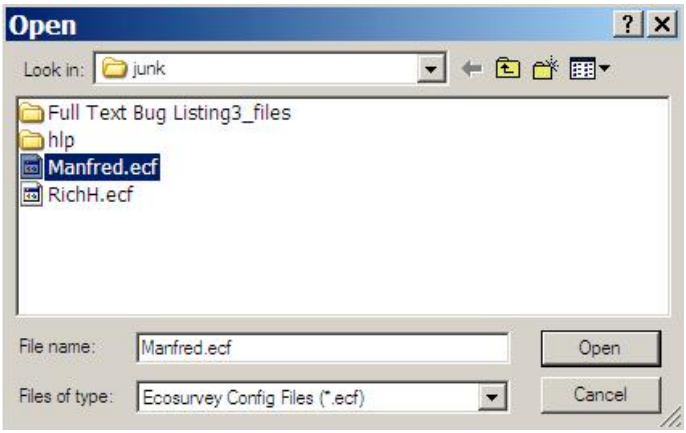
Please note that any configuration you want to use for quick keys and repeats is not active until it is activated via the Activate a Configuration Set menu selection.

Steps

From the Main Menu select
1) TOOLS – Data Entry Configurations – Activate a Configuration Set.

A File explorer interface appears.

2) Navigate to the folder where the configuration setups are located (.ecf files).
3) Highlight the file, then Click Open button.



Note the active configuration filename appears on the title bar on the lower left of Ecosurvey splash screen and remains there until another active configuration set is selected

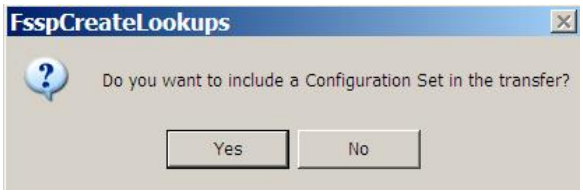
V. Transferring Configuration Files to a handheld

Steps

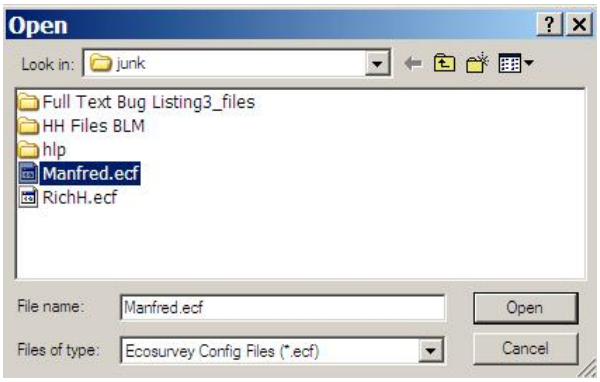
<u>Preparation:</u>
1) Be sure to exit the Forest Ecosurvey Handheld program to the desktop screen
2) Start ActiveSync.
3) From the Main PC Menu select TOOLS – Update HH Lookup Tables

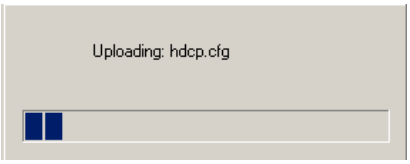
A Creating Meta Files gear symbol appears

4) Click Yes button to include configuration setup with lookup tables.
5) Find the configuration (ecf) file to send using the Explorer interface.
6) Then Click Open



Transfer progress of Tables and Config files will be shown on the PC screen.





VI. Transferring Configuration Files to a contractor for use with EcoSurvey Lite

Configuration Files can be transferred to a contractor for installation to the handheld through the use of EcoSurvey Lite.

The steps involved are:

Preparation:

1) Create and save a data entry configuration setup file in the main PC program via TOOLS – Edit Configuration Sets – Create a Configuration File.
2) Note the location of the created *.ECF file.

Administrator's program:

3) Start the Forest EcoSurvey Administrator's program
4) On the general tab, in the Handheld Lookup Tables area, select either the "send to disk" or "send via email" radial button. (note, if your client email has not been set up to work with Forest EcoSurvey which might occur due to firewall restrictions then use "send to disk" option).
5) Click Create lookups and configurations button.
6) Select the folder to send/store to lookups to using the explorer interface.
7) Click OK button.

   The moving cogs "creating metafiles" image appears briefly

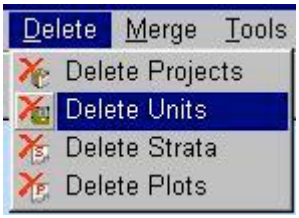
8) Click Yes, to the "Do you want to include a configuration set in the transfer?"
9) Find the *.ECF file you created in the Forest Ecosurvey PC program using the file explorer interface.
10) Click the file, then the OK button.

The file will be created in the target location. The file created is named HDCPlookups.zip.

Note: This file will contain not only the handheld set up configuration for the handheld, but also the other tables stored in the Administration Program, such as, Tree Data Entry Rules and species codes.

The zip file can be sent as an attachment or on other storage media to be used with Ecosurvey Lite.

XII. Delete

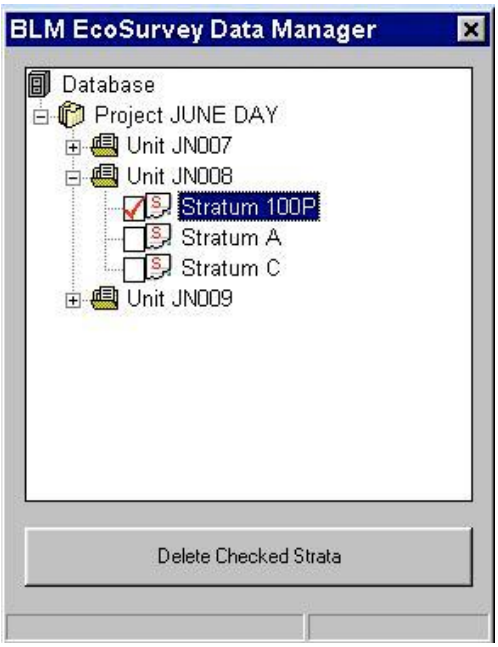


Items that can be deleted:

- Projects
- Units
- Stratum
- Plots

Steps

1) On top horizontal menu bar select Delete
2) Select level to delete
3) Click on the [X] Projects to delete or view sublevels
4) Check the boxes to delete by clicking in box (uncheck to cancel).
5) Click the "Delete Checked (Projects, Units, Stratum, or Plots) button.



Note: The following levels can also be deleted from within the Edit Data Entry Function of the program by clicking the trashcan icon on the data panes:

- Stratum
- Plots
- Trees, DWM, Vegetation, Regeneration and Saplings

The Project/Unit can only be deleted from the Delete Menu Selection.

Finding your Unit using the Filter Tool

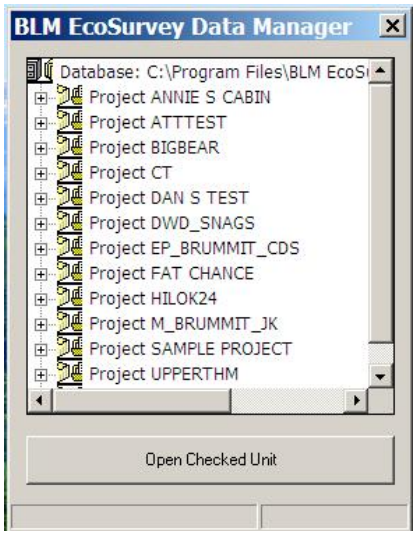
Over time, as you and others merge projects, the project/unit list will expand to the point where finding a unit becomes cumbersome. At any time a "Find Filter" tool can be used. For directions on how to use the filter tool turn to Filtering on page 73.

XIII. Additional Notations & Comments

A. Filtering – finding units by narrowing your search.

The Filter Tool is available wherever the Project/Unit Data Manager box appears:

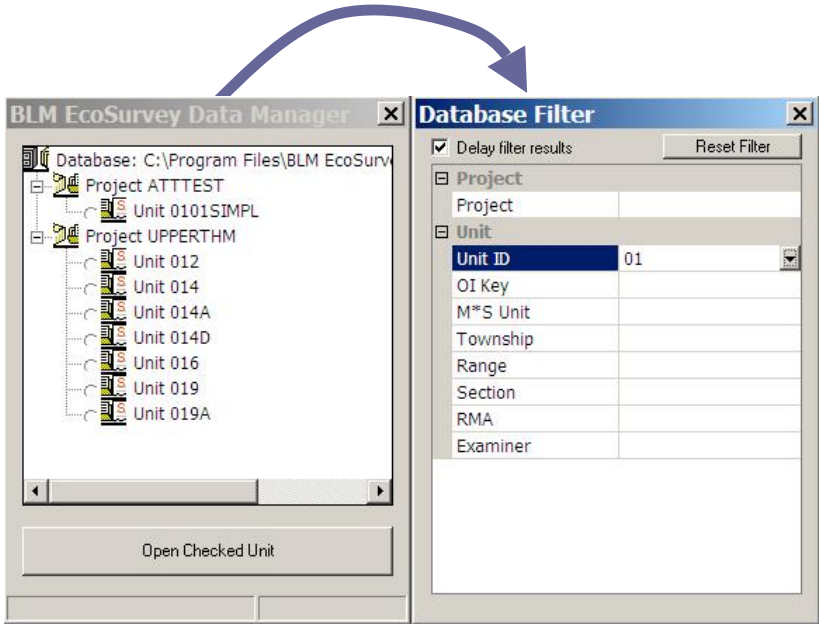
- Data Entry - Edit Module (File-Open)
- Print Reports (and Export)
- Copy and Combine
- Export Database
- Delete
- Transfer Units to disk
- Transfer Units to handheld



I. Using the Filter Tool

When the Data Manager Window is present:

1) Press [Ctrl] + [F] = (Find)
2) The Database Filter box appears.



Filtering Methods

There are 3 filtering methods:

1. Enter filter values – string search.
2. Use dropdown lists (pop lists)
3. Use a combination of string search and dropdown lists.

II. Filtering Strategy

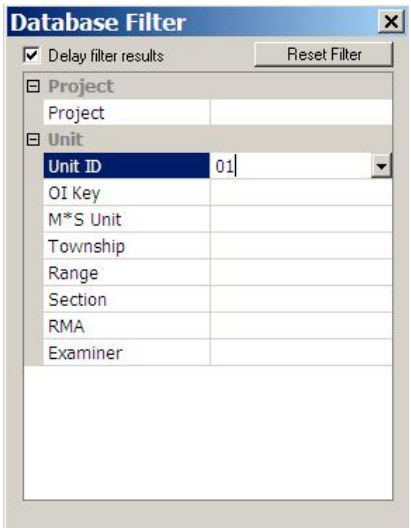
The normal strategy is to filter by one category to create a list, then sub-filter by another category. This list can also be sub-filtered. (note: all categories are available to be used). Each sub-filtering reduces the list size, unless your filter value doesn't exist in the database. If this should occur you will get a "no data available" message in the Left window.

You can filter by starting with any category (Township, Range, RMA, etc), even at the bottom of the list. For example you can select a particular Examiner, which pares the list to only those units, OI

Key, M*S Unit, Township, Range, Sections, RMAs, done by that examiner. Clicking on any of these sub categories presents a list of those items available containing that particular examiner's name.

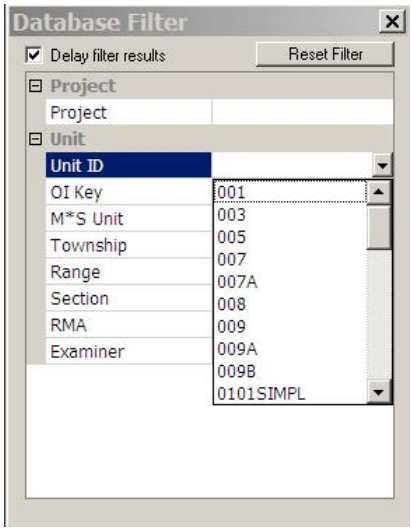
1) Start by making sure the delay checkbox is checked in the filter box.
2) Select a category (left column) by clicking on that line (left column) to highlight it.

Filtering is interactive. The list in the left data manager pane reflects the filtered results from the right pane.



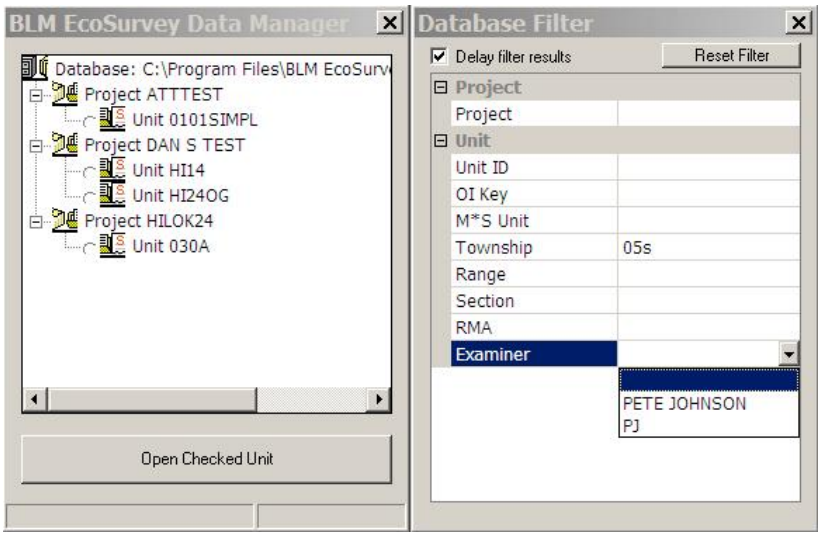
example of value entry filtering

Note: you can reset your search at anytime by clicking the "Reset Filter Button"



example of pop-list filter tool

example - combination filter method



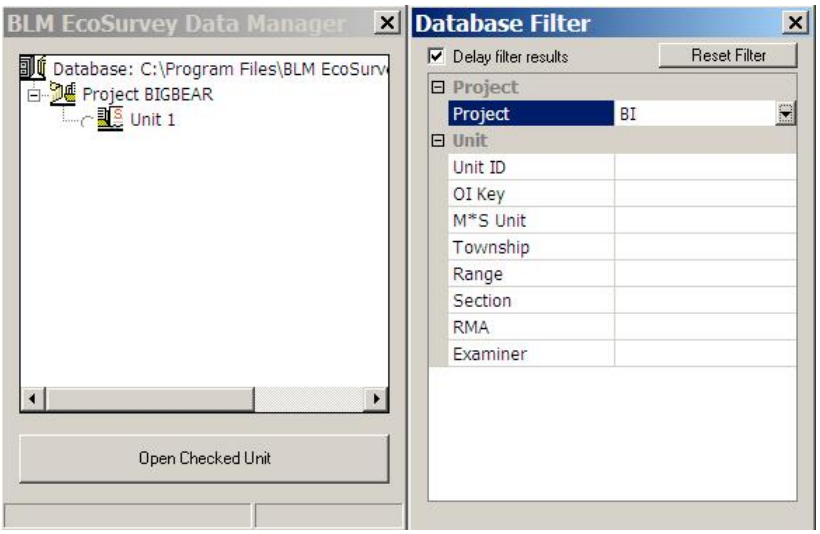
1st Filter - All units in left pane are in 25S Township.
2nd Filter – The poplist shows remaining Examiners to select from.

You would click on the desired examiner to pare the list to those unit–strata meeting the above two filter requirements.

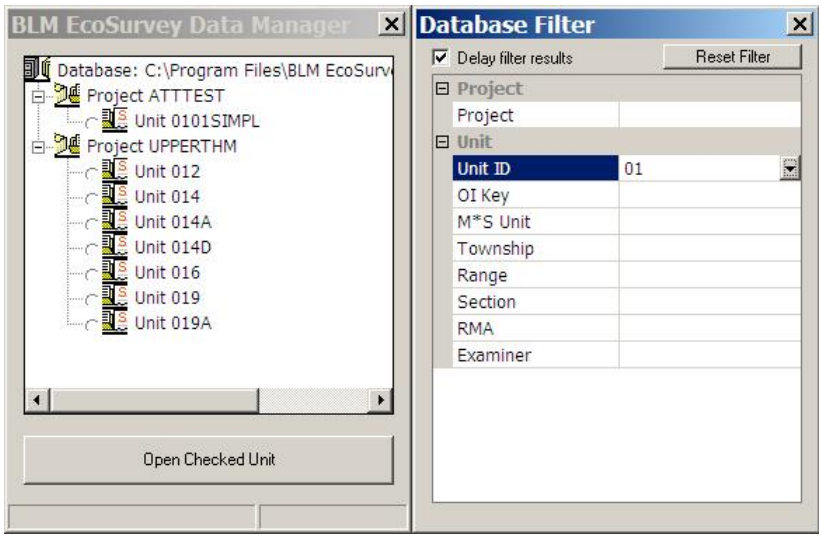
III. String Search (value) Filter procedure

The filtering is done via a string search where values are typed into a cell.

For example if you type the letters **BI** in the Project cell,
then [ENTER] or [TAB]
only those projects starting with the letters **BI** will remain (in the left pane). *(see example to right)*
- Be sure to press [ENTER] after typing the BI to activate filter.



Another example - Type 01 into the Unit ID cell,
then [ENTER] or [TAB]
the remaining items in the list will contain 01 as the first part of the name, such as 0101, 01AB02, and 01100.



3) Click inside the cell of the right column of desired category line (right column of Database Filter window),
4) Type a value (s) to filter for. In some instances the filter may not initiate until the cursor leaves the cell. If this should occur just press the [TAB] key or click somewhere else to initiate filtering. The filtered list appears in the left pane.

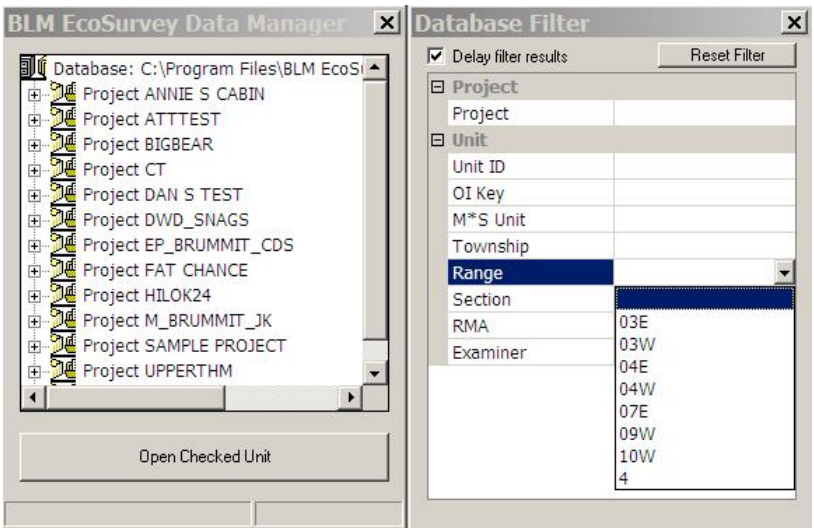
Editing the cell
You can edit the cell if you make a mistake. Place the cursor in the cell, then use backspace, delete, or overtype the values. If all else should fail you can click [Reset] in the upper right of the filter pane. Reset clears your entries in the database filter pane and refreshes the project list in the left pane. And, you can always click both panes closed and restart your filter search.

IV. Pop (drop-down) List Filter procedure

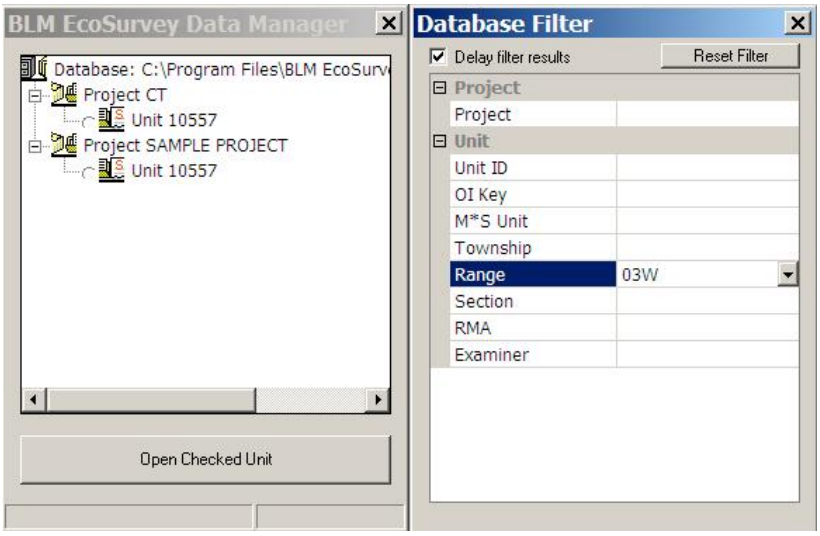
Filtering can be done by using pop (drop-down) lists

In the example on the right, the Range drop down list was made to appear by clicking on the Range line (left column. The down arrow icon appears in the right column. Clicking the down arrow icon presents a list of those range values present in the database.

Scroll to find and then click the Range value desired.



The Range value appears in the right pane with the left panel refreshing showing all units with the 03W Range value.

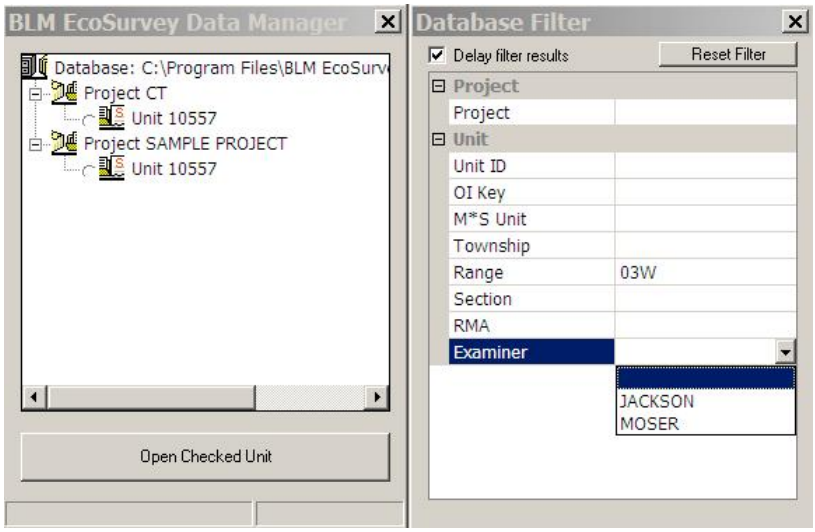


Further filtering can be done on the refreshed list of 03W Range Units.

In the example on the right, The examiner drop down was activated by clicking on the Examiner line (either cell).

Then the down arrow icon was clicked to reveal those examiners whose names are attached to units in the 03W Range.

An examiner can be selected by clicking on the name.

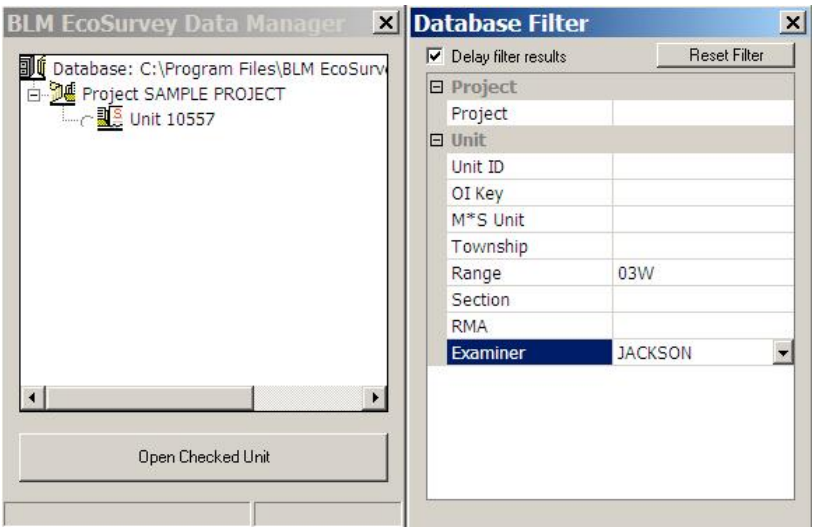


Clicking on the name finishes this example filter by showing the one unit having:

- Range - 03W
- Examiner – Jackson

To open, delete, print (etc) the unit.

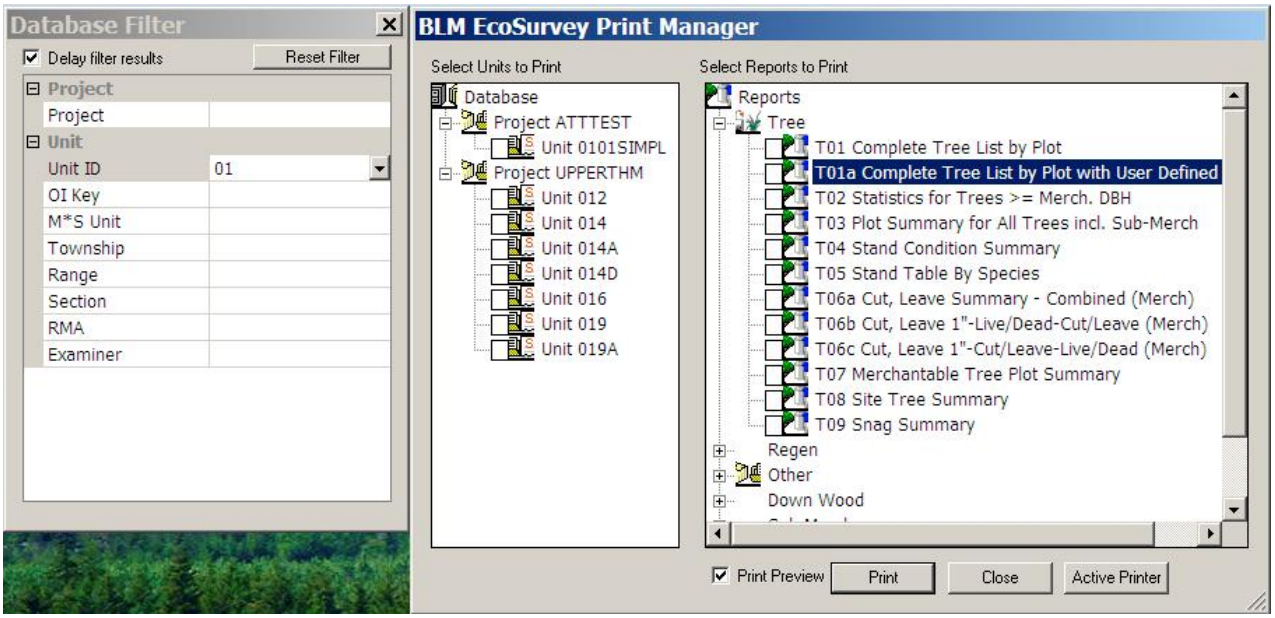
1) Click the radial button to mark the unit.
2) Click the “Open checked unit” button.



Filter Result - display differences.

Filter results in the left pane might show strata and even plot (checkboxes) in addition to units, depending on where the filter is activated. Such would be the case with Delete and Copy and Combine.

Below, example of filter user interface in Print



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XV. Support

D. R. systems inc. **EcoSoft**

Consulting in:

- Strategic planning in resource management
- Development of Ecologically-based forest management plans
- Development of Habitat Conservation Plans
- Timber Supply Analysis
- OPTIONS forest estate model
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Appendix A Extracting data for analysis – comments

There are three methods that can be used to manipulate or extract data for further analysis. These are:

1. Use MS Access 2000 to segregate data, then use MS Access for analysis.
This method requires knowledge of MS Access. The advantage of this is if you know how to use a database "trimming" data to get what you want is very fast. For example, in only a minute of work you can get all trees with the following characteristics - only live trees, select species, dbh between 10" and 20". The disadvantage is if you need to use calculated fields, like TPA, Volumes, and BA you will have to create your own formulas using MS Access.

2. Use MS Access 2000 to segregate data, then use MS Excel for analysis.
This method requires knowledge of MS Access and MS Excel. The advantage of this is if you know how to use a database "trimming" data to get what you want is very fast. For example, in only a minute of work you can get all trees with the following characteristics - only live trees, select species, dbh between 10" and 20". The disadvantage is if you need to use calculated fields, like TPA, Volumes, and BA you will have to create your own formulas using MS Excel.

3. Create an Experimental Unit, then slice and dice.
Create an Experimental Unit within the Forest Ecosurvey PC database, then edit the data so that it contains only those records of interest. This method has been called "slicing and dicing". The advantage of the method is it only involves the skills required for adding, editing, and deleting records using the normal Data Entry function. A second advantage of this method is that if different sampling methods and frequencies are used between the units, statistical results are correctly weighted in summary reports. The third advantage is that the reports generated utilize the calculations built into the Forest EcoSurvey software, such as tree volumes, TPA, BA and statistics. These calculated fields are not available since only raw data resides in the Forest EcoSurvey Access database. The disadvantage is the process can be tedious since deleting an individual record requires confirmation (for each record).

The Experimental "slice and dice" method involves:

1) Creating an Experimental Unit
2) Copy the Unit(s) and strata of interest into the Experimental Unit
3) Delete the records that are not of interest, leaving only the records of interest within the unit.
4) Print the desired reports – the reports will only contain the data and fields of interest.

You can also slice and dice to obtain the records desired, then export the desired data to either MS Access or Excel.

Appendix B - Case Example: Export Database in MicroSoft Excel format to do Analysis in Excel

The database can be portioned and exported into an MS Excel format for further statistical analyses. Examples of Excel's built-in statistical functions that you may use include standard deviations and regressions. The exporting is done via the MS Access database functionality. MS Access is used. *Note: Export Data only exports raw data; the function does not export calculated fields, such as tree volumes, TPA, etc..*

Procedures for exporting BLM EcoSurvey database data to an Excel spreadsheet (using MS Access 2000).

- This document assumes that you are familiar with the relational structure of the database, and are confident in using MS Excel and the MS Access query builder. The relationships viewer can be accessed in MS Access from Tools->Relationships.
- Directions for exporting data into a MS Access data is found in the previous section, "Export Units to a Separate Access Database", page 52.

Example
The example we will use is - export the diameters and heights of trees in a unit to MS Excel to perform a dbh – height regression analysis. This entails not only exporting the trees associated with a unit, but also exporting only those trees that are live and are not site trees.

Preparation

1) If your Forest Ecosurvey database is located on a network server make a copy of the database to your local PC hard drive by either:
   - copy it to a folder of your choice using MS File Explorer, or
   - export the database to the folder of your choice using the File – Export Database function within the Forest Ecosurvey PC program

   Note: If your installation was a "stand-alone", the fsspmain.mdb file is normally found at: C:\program files\ BLM Ecosurvey\ Data.

2) Understanding table relationships.

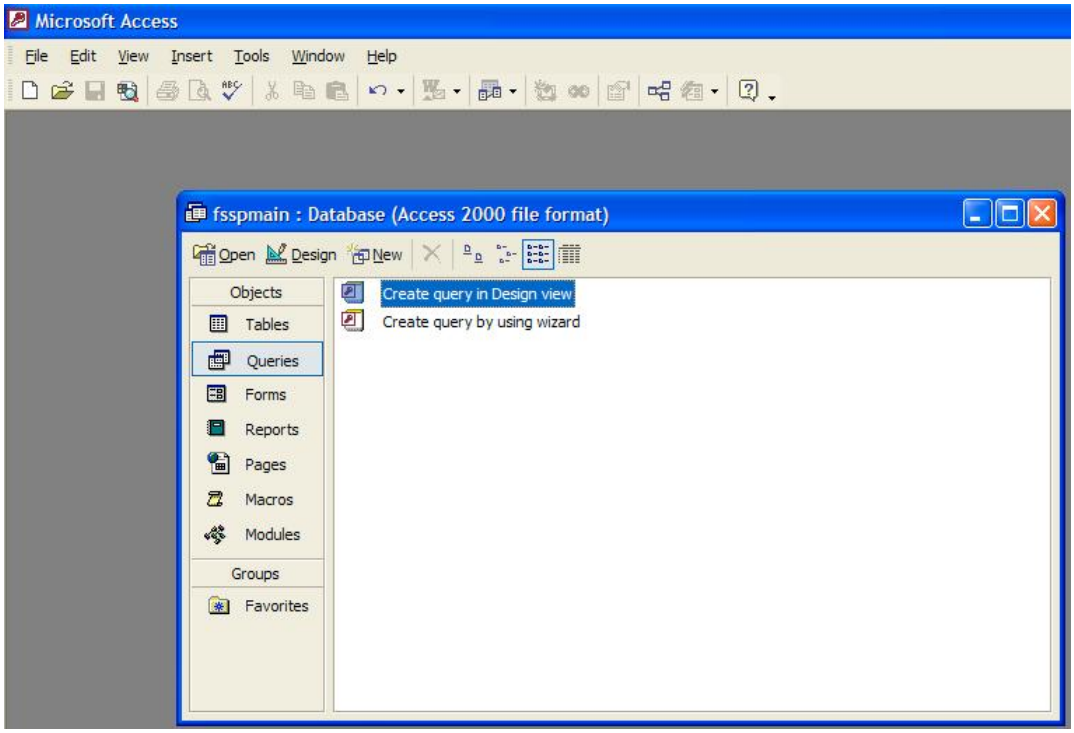
The Forest EcoSurvey Program is comprised of the following hierarchal levels:

- Project
- Unit
- Stratum
- Plot
- Trees – DWM – Sapling – Seedling - Vegetation

3) Open the Forest EcoSurvey database either by:

- starting MS Access and selecting File-New – new from existing file.
- or, an easier way is to locate the Main Forest Ecosurvey database (*fsspmain.mdb*) using MS File Explorer, then double clicking the file.

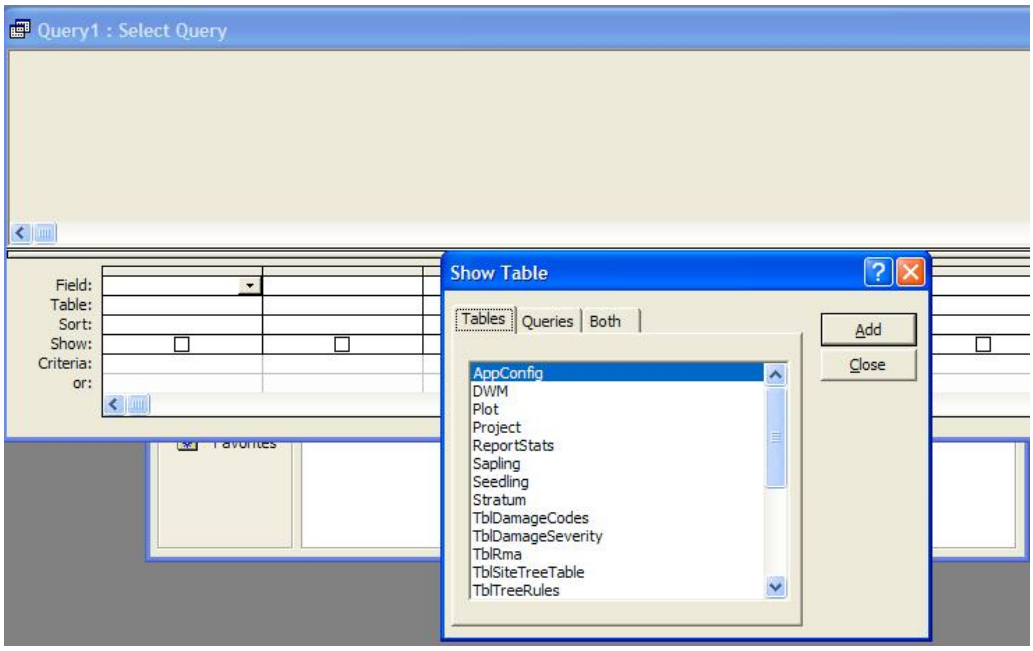
The Access Database Menu Window should appear as shown to the right.



We will create a new query for the analysis. You can create as many queries as you want and save them with identifying names for later use. The main advantage of this ability is if you have a particular query that is useful, it can be saved and used again; even for other units. We will not be showing how a "generic" query like this is done in this example – this feature is mentioned so that you know it can be done.

4) Select "Create Query from Design View", by double clicking on it.

A "Show Table" window appears containing a list of tables available for the query.



You will now have to select the relevant tables containing the data wanted for analysis.

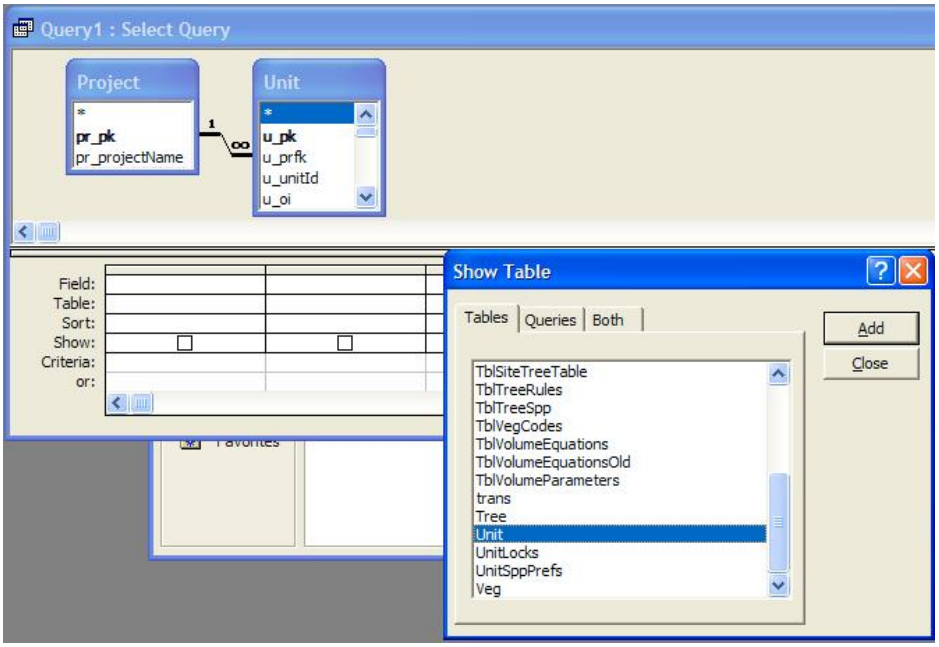
The tables of interest for this query are:

- Project
- Unit
- Stratum

- Plot
- Trees

Each table contains all the associated fields that you see in the handheld and and PC data entry program.

5) Double click the “Project” table - the table appears above in a “table relationship” diagram area.

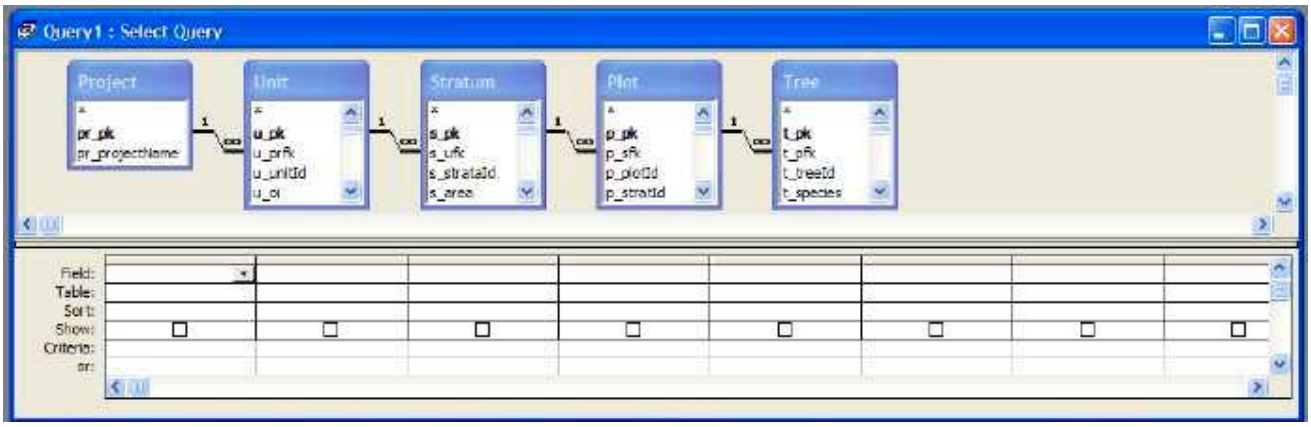


6) scroll down and double click “Unit” – the table appears above with a link to the project table.

7) continue the same procedure to select “stratum”, “plot”, and “trees”.

A relationship diagram appears above the table listing

8) click the “close” button on the Show Table window.



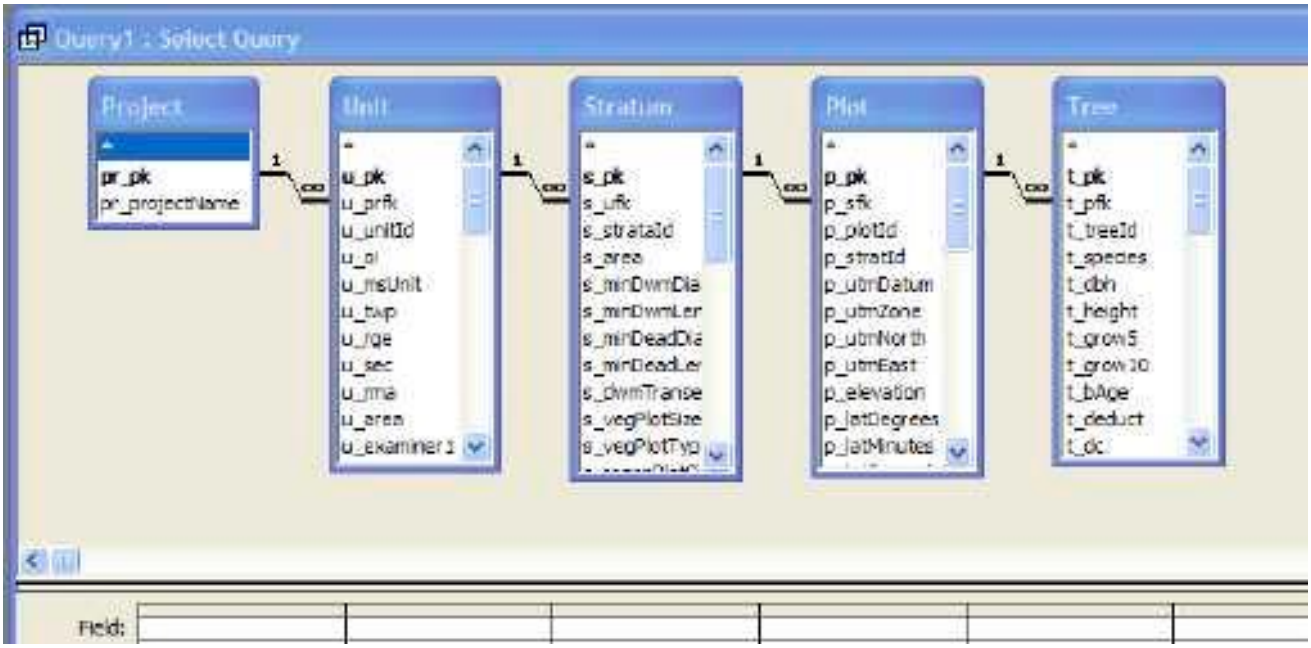
Note there are two parts of this window –

1. *a relationship pane (above), showing tables and fields within each table and the key linkages between these tables.*
2. *a field listing pane (below), identifying individual fields in a spreadsheet style layout.*

In order to see what is being done you may have to click and drag the panes and table windows.

9) Click and drag the bottommost window to show more table rows.
10) Click and drag the bottom of the upper pane so that there is more room to expand the individual table windows.

11) Drag the bottom of each table window in the upper pane so that the lists are easier to read.



The next series of steps involve selecting only those fields of interest in each table to our query. As each field is selected from the upper pane, the entry will appear in a table column in the lower pane.

Terminology - the bolded and topmost fields that appear in each upper pane table window are called the "key" fields - those fields that are the unique identifier for each record in that table. They are often the basis for tying tables together).

12) In the project window double click the "pr_projectName" field – it appears in the table below.

13) Now, scroll down the Unit Window and double click the "u_unitId" field – it also appears in the table below.

14) Continue this procedure for the stratum and plot table windows (do not do anything with the tree table window just yet. In the stratum table select strataId. In the Plot table select Plot Id:
    - Stratum – "s_strataId"
    - Plot – "p_plotId"

15) Select Datasheet View

A special view of the data selected at this point can be generated by right clicking on the Header of the “Select Query” window and selecting “Datasheet view” from the pop up menu.

Note, the Query table is replaced by a datasheet spreadsheet view showing all the data we have selected at this point in time. However, instead of just one project appearing, all projects appear in a long list (use scroll bar on right to view). We need to trim this data set down so that we are working only in the project and unit of interest. Go back to the Query Design by right clicking on the header of the window and clicking on “Query Design”.

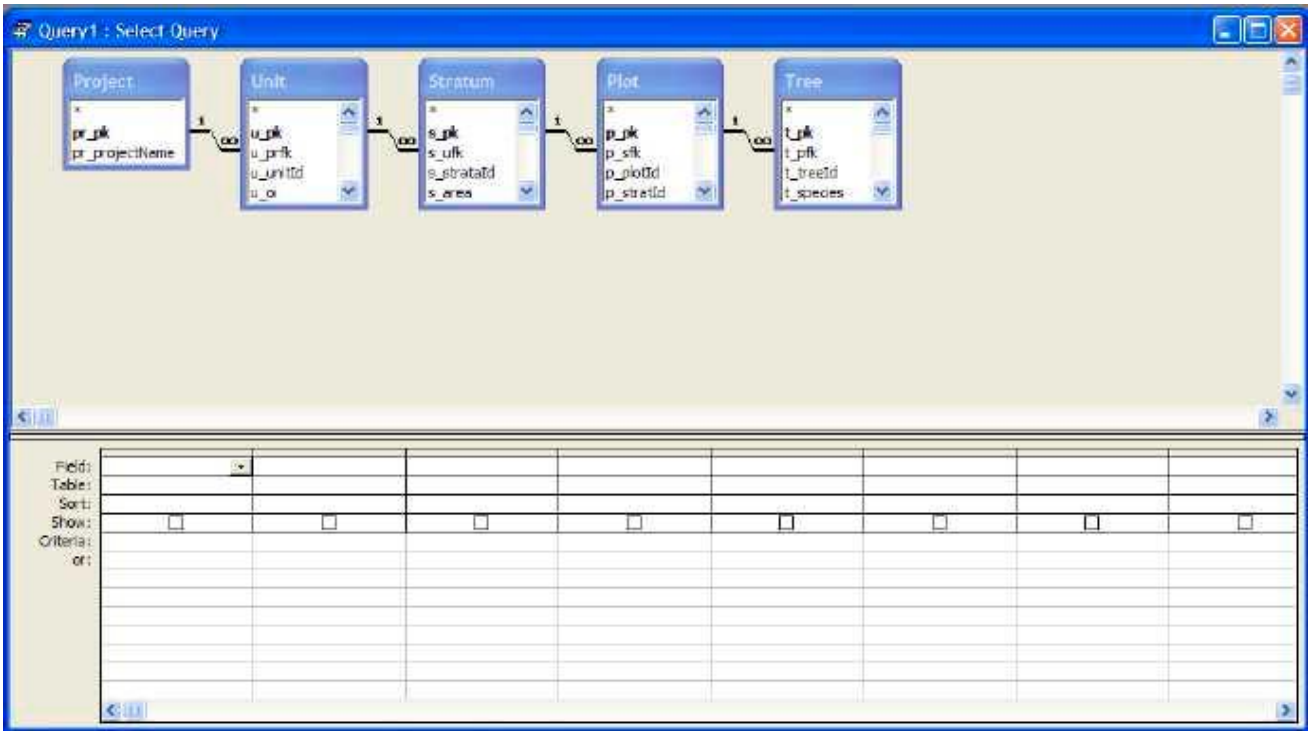
Note: be sure not to click the X in the upper right-hand corner of the window – this closes the query.

Datasheet View

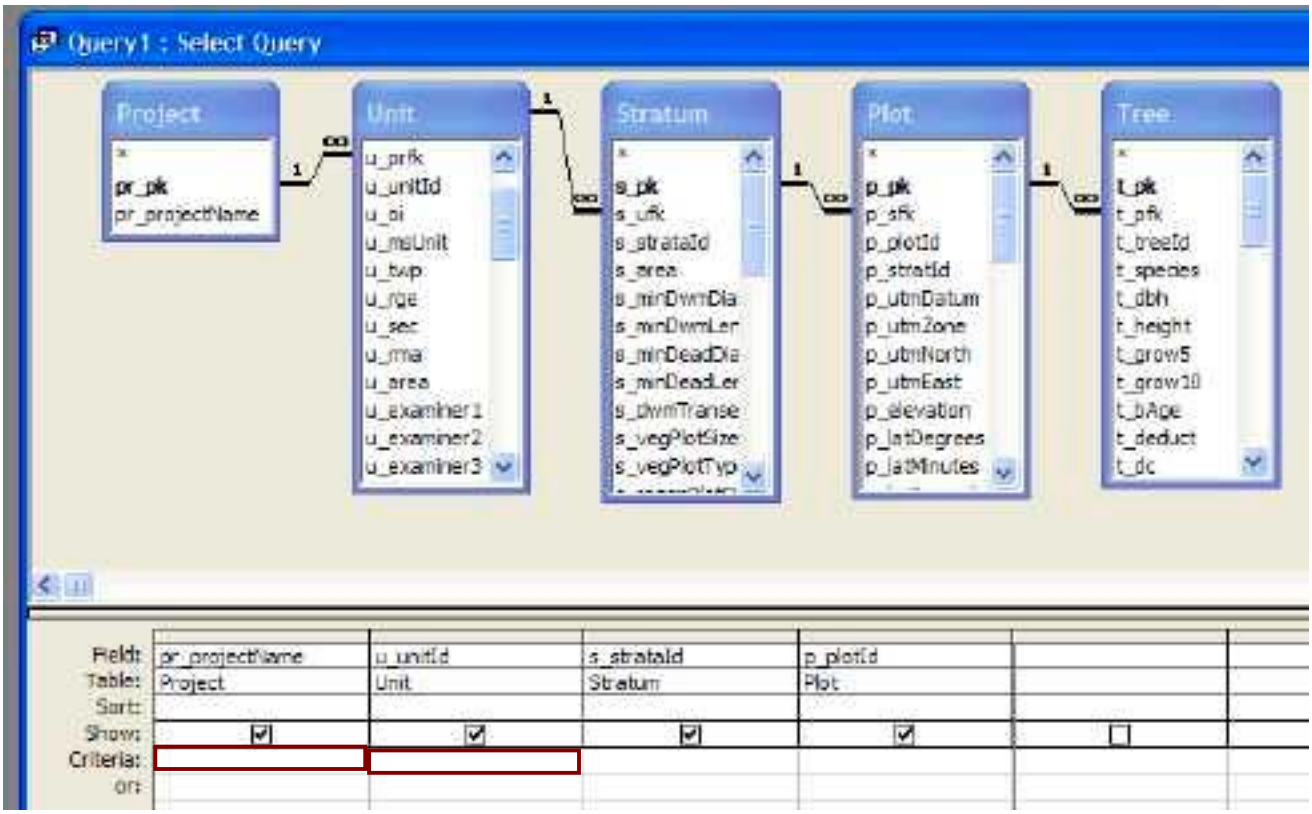
dbhhtregression : Select Query

pr_projectName	u_unitId	s_strataId
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
EXAMPLE	953456	1
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	A
HOMEBOW FL	007	B
HOMEBOW FL	007	B
HOMEBOW FL	007	B
HOMEBOW FL	007	B
HOMEBOW FL	007	B
HOMEBOW FL	007	B

Query View



Now, we can start refining our query so that we end up with the data items of interest for exporting to Excel. The criteria row in the lower pane will be used to achieve this end.
In this example we are interested in the project called “Dan s Test” and the unit named “HI12”.
We will be working in the lower pane.



In the Project Name column we can achieve getting only data on “Dan s Test” project by typing the Project name -

16) Type “dan s test” in the Criteria row in the project column (*note there is a space between dan and s).* You do not type the quotation marks as they will be inserted automatically when the cursor leaves the cell.

To further trim the data to include only the unit of interest move the cursor into the criteria cell for the Unit table (just to the right of Project). When the cursor moves quotation marks automatically appear around “dan s test”. To get only data relating to our desired unit:

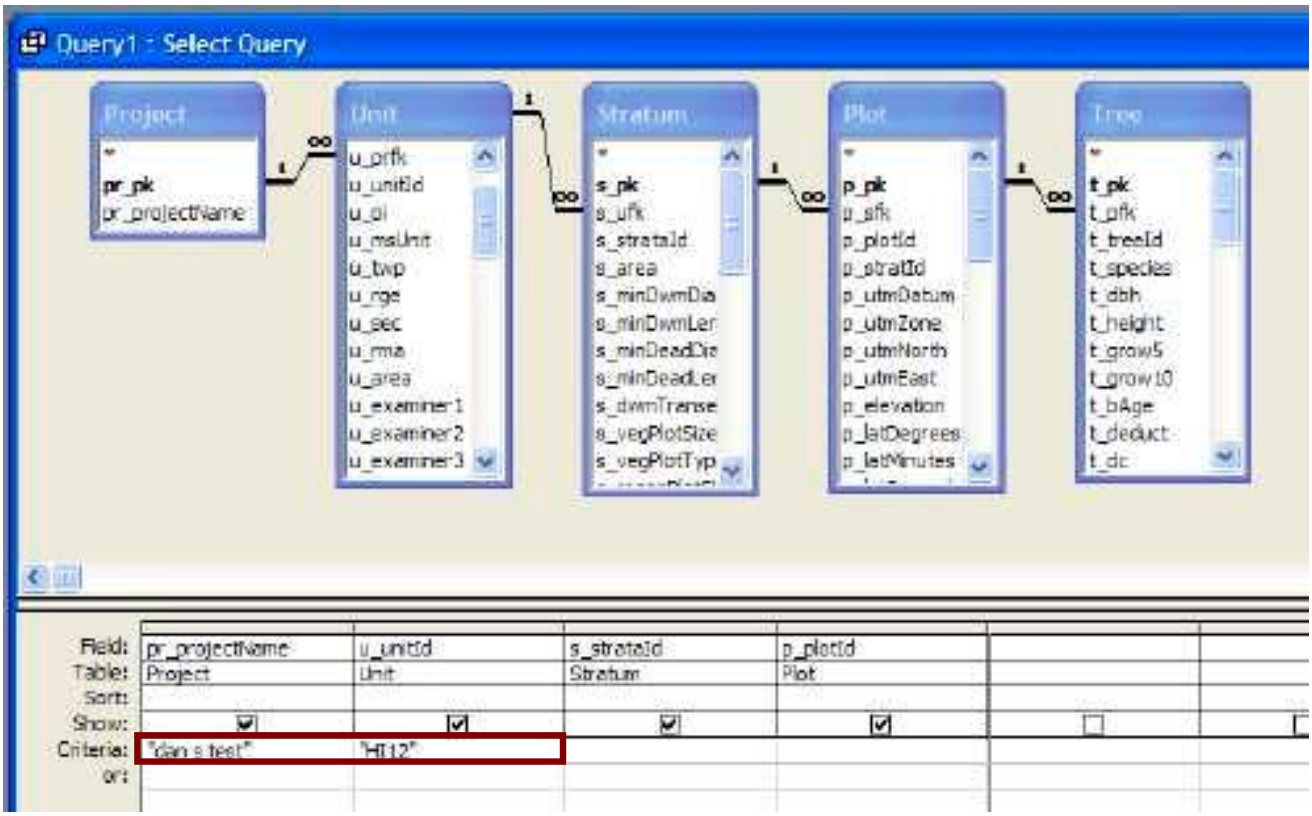
17) Move cursor to the cell referenced by criteria (row) and Unit ID (column).
18) Type “HI12” in the cell.

At any point in time you can go to the datasheet spreadsheet view in order to verify the data being selected by right-clicking on the window header and selecting “datasheet view”. Be sure to return to the design view by right clicking on the datasheet view header and selecting query design.

19) We are interested in all stratum in this query so leave the stratum criteria cell blank. This means that all stratum will be included.

20) The same applies to plots – no entry in the criteria cell is done.

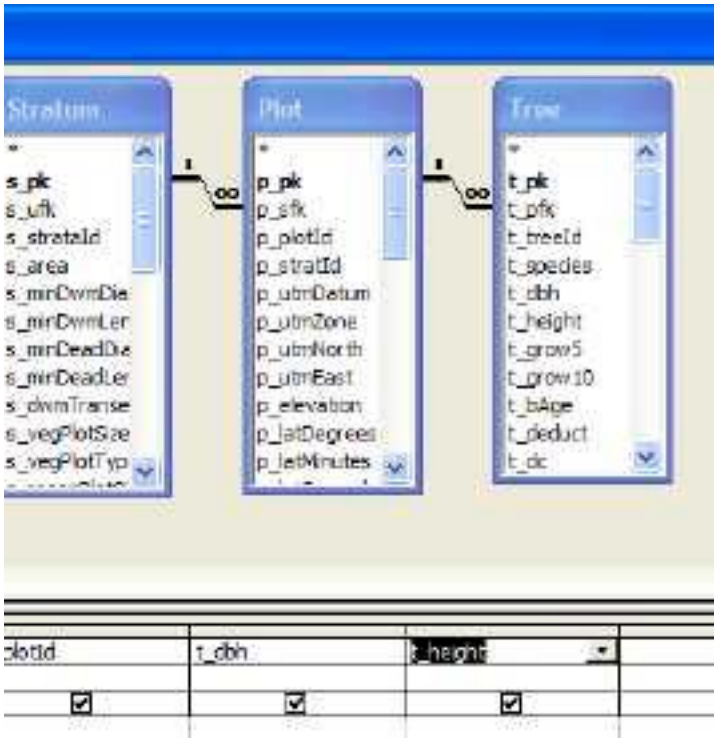
The table and relationship panes will look like the image shown below.



Since we are interested in generating a data file for doing a diameter - height regression analysis we want to include only those trees in the plots with characteristics relevant to such an analysis. In this example we will include only height and diameter fields, but it would be relevant to eliminate the following trees, which we will accomplish in this example:

- site trees
- dead trees

21) In the Tree Table Window in the upper pane, double click "t_dbh" – it appears in a column below
22) In the Tree Table Window, double click "t_height" – it appears in the lower pane in the next column.



We now have all the dbh and ht values for all the trees in the unit.

Note that as table fields are added you may have to use the horizontal scroll bar to view hidden columns.

Now eliminate the site and dead trees by:

23) In the Tree Table Window, scroll down and double click the “t_isSite” field (meaning “is a Site Tree”) – it appears in the lower pane.

24) View the datasheet view to see how the site trees are denoted. *Go to step 15 to review how to access the datasheet view and return to the query design view.* Site trees are denoted with a checkmark in a box. Also note the number of records in the lower left hand corner of the window. This denotes the number trees contained in the query so far.

We now want to use the criteria field to only generate those trees that are not tagged as “Site Trees” in the database. In order to eliminate Site trees you would have to know that the term False = no and True = yes. So,

25) Type the word “false” in the criteria cell in the t-isSite column.

The datasheet view will reveal the checked t-isSiteboxes are now removed.

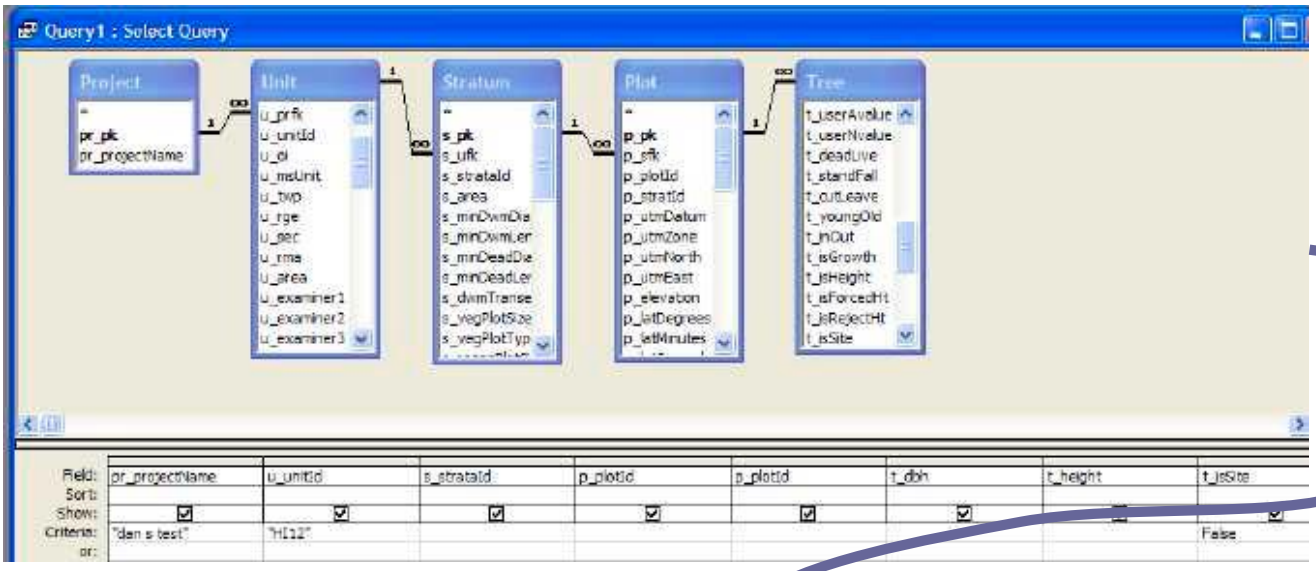
26) In the Tree Table Window, scroll down and double click “t_deadLive” – it appears in the lower pane.

To see how dead and live trees are denoted in the database you can go to database view and see trees are denoted with D or L (for Dead and Live).

27) In Query Design, in the criteria row (in the t_deadLive cell) type L (for live).

We have now finished our query. You can verify the data via the Datasheet view. At the bottom of the datasheet view note the number of records the dataset has been reduced to by using the criteria.

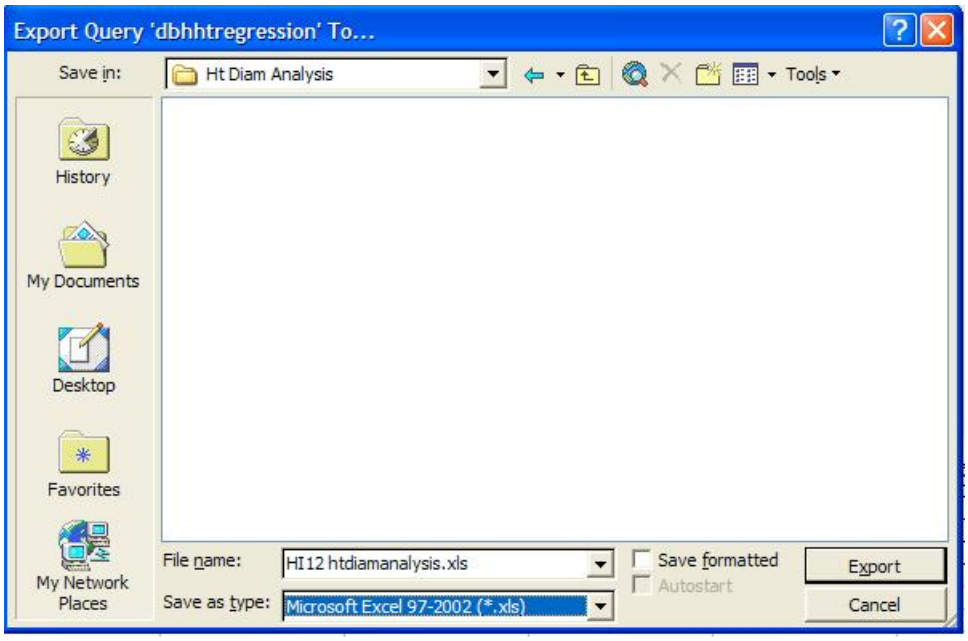
The query design view looks like the graphic on the next page.



If you want to save your query “for this unit” you can do a File – Save As.

Export file in MS Excel format

28) To export the data into an Excel format, select File – Export

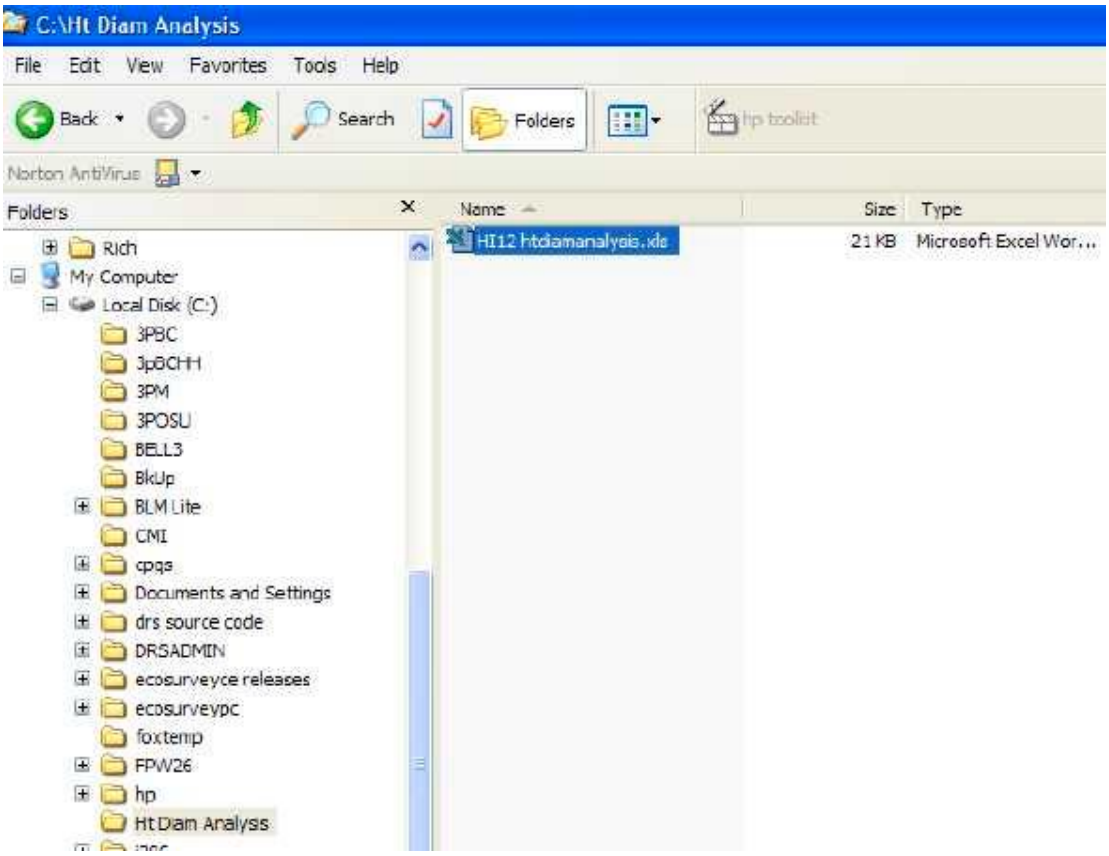


Select the folder to store the file, type a filename, and select via the toggle at the bottom of the file manager window the spreadsheet format extension desired.

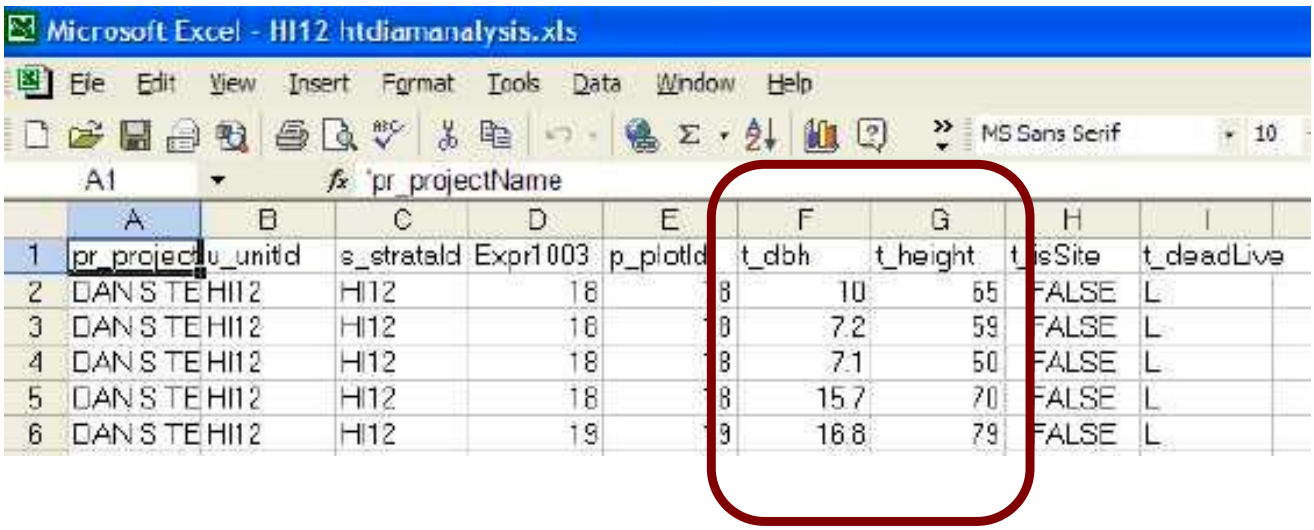
You can now close MS Access

Import File in MS Excel

29) Find the file exported Excel data file in MS Windows Explorer and double click to open.



Note the column labels when the spreadsheet opens. Only two columns are required for a diam – ht regression analysis. The other columns can be ignored or used as a reference.



30) First, select the regression analysis tool via TOOLS – DATA ANALYSIS. Then, scroll down and double click REGRESSION. – a Regression info box appears.

We will make the X axis show dbh and the Y axis represent ht.

31) Click the cursor in the “Input Y Range” field.

Select the ht column values by:

32) Click the “t_height column header label cell – a blinking dotted line appears.

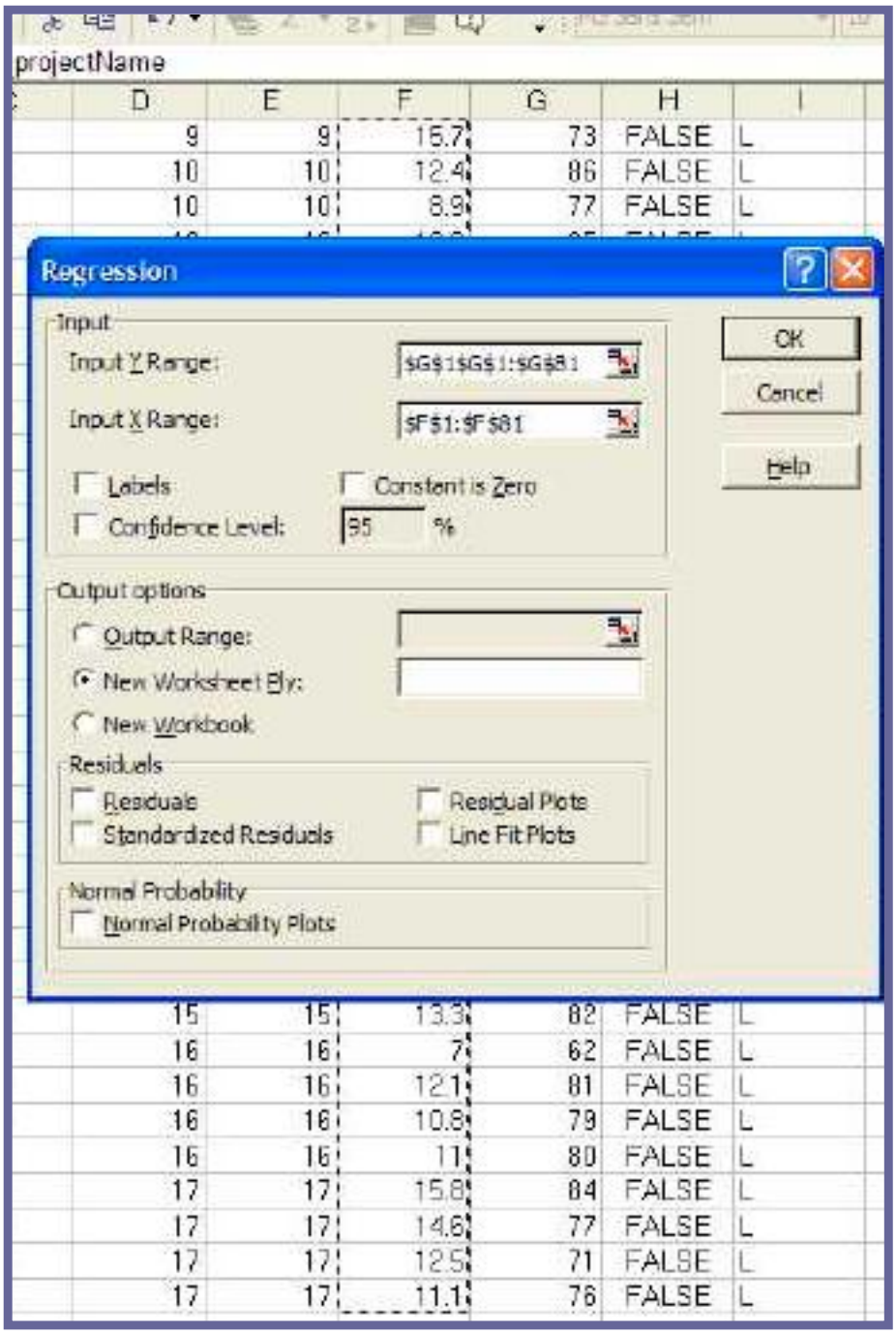
33) Press the following keys [Shift] + [CTRL] + [DN] – the entire column appears in a flashing box, with an entry for these values in the “Input Y Range” field.

34) Click the cursor in the “Input X Range” field.

35) Move the slide bar on the right side to the top so that the header labels show.

36) Click the “t_dbh” header line cell – a blinking dotted line appears around the cell.

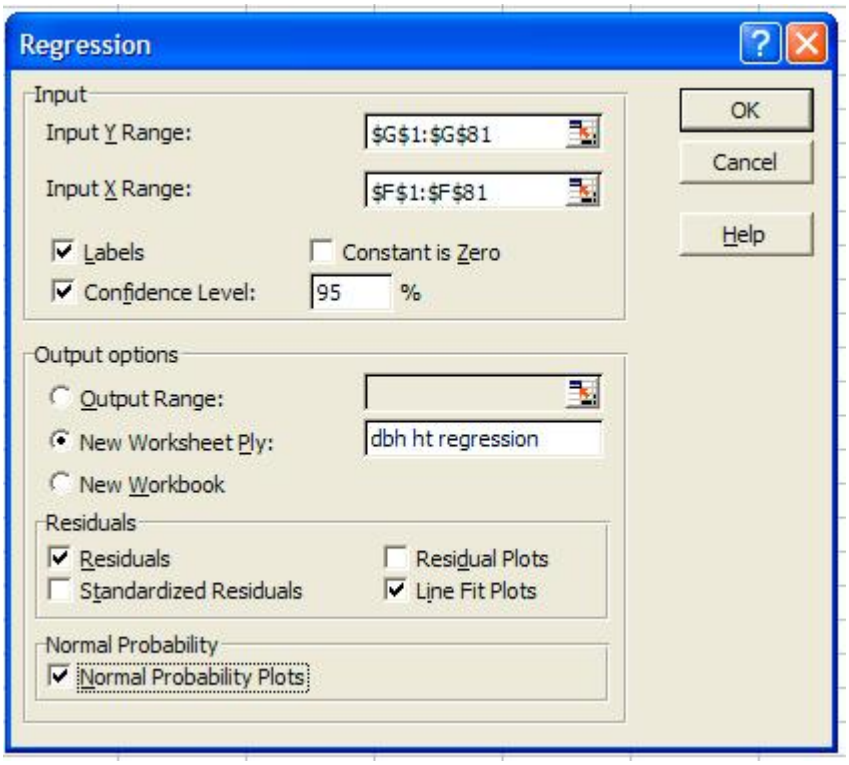
37) Press the following keys [Shift] + [CTRL] + [DN] – the entire column appears in a flashing box, with an entry for these values in the “Input X Range” field.



38) Check the checkboxes shown in the example to the right.

39) Also, you can type a worksheet name after checking “New Worksheet Ply”.

40) Click OK button to generate results.



The raw data and results are displayed on two sheets that are toggled by clicking on the TABS at the bottom of the window (see examples on next pages). Clicking the left tab displays results and graphs. The graphs can be moved and modified for easier viewing.

Tools Data Window Help

MS Sans Serif 10

	A	B	C	D	E	F	G	H	I
1	pr_project	u_unitId	s_strataId	Expr1003	p_plotId	t_dbh	t_height	t_isSite	t_deac
2	DAN S TE	HI12	HI12	18	18	10	65	FALSE	L
3	DAN S TE	HI12	HI12	18	18	7.2	59	FALSE	L
4	DAN S TE	HI12	HI12	18	18	7.1	50	FALSE	L
5	DAN S TE	HI12	HI12	18	18	15.7	70	FALSE	L
6	DAN S TE	HI12	HI12	19	19	16.8	79	FALSE	L
7	DAN S TE	HI12	HI12	19	19	13.8	71	FALSE	L
8	DAN S TE	HI12	HI12	19	19	15.1	82	FALSE	L
9	DAN S TE	HI12	HI12	1	1	11.5	97	FALSE	L
10	DAN S TE	HI12	HI12	1	1	9.3	83	FALSE	L
11	DAN S TE	HI12	HI12	1	1	16.9	90	FALSE	L
12	DAN S TE	HI12	HI12	1	1	12.5	84	FALSE	L
13	DAN S TE	HI12	HI12	1	1	12.8	97	FALSE	L
14	DAN S TE	HI12	HI12	2	2	12.1	90	FALSE	L
15	DAN S TE	HI12	HI12	2	2	13.3	95	FALSE	L
16	DAN S TE	HI12	HI12	2	2	13.3	95	FALSE	L
17	DAN S TE	HI12	HI12	2	2	13.6	96	FALSE	L
18	DAN S TE	HI12	HI12	2	2	13.6	97	FALSE	L
19	DAN S TE	HI12	HI12	3	3	8.8	62	FALSE	L
20	DAN S TE	HI12	HI12	3	3	15.1	82	FALSE	L
21	DAN S TE	HI12	HI12	3	3	8.2	62	FALSE	L
22	DAN S TE	HI12	HI12	3	3	10.1	63	FALSE	L
23	DAN S TE	HI12	HI12	3	3	10.3	65	FALSE	L
24	DAN S TE	HI12	HI12	4	4	9	61	FALSE	L
25	DAN S TE	HI12	HI12	4	4	12.2	66	FALSE	L
26	DAN S TE	HI12	HI12	4	4	9.2	57	FALSE	L
27	DAN S TE	HI12	HI12	4	4	12.8	77	FALSE	L
28	DAN S TE	HI12	HI12	5	5	21.6	119	FALSE	L
29	DAN S TE	HI12	HI12	5	5	17.7	95	FALSE	L
30	DAN S TE	HI12	HI12	5	5	18.6	107	FALSE	L
31	DAN S TE	HI12	HI12	5	5	11.2	93	FALSE	L
32	DAN S TE	HI12	HI12	6	6	18.8	93	FALSE	L
33	DAN S TE	HI12	HI12	6	6	7.4	66	FALSE	L
34	DAN S TE	HI12	HI12	6	[illegible]	20.5	108	FALSE	L

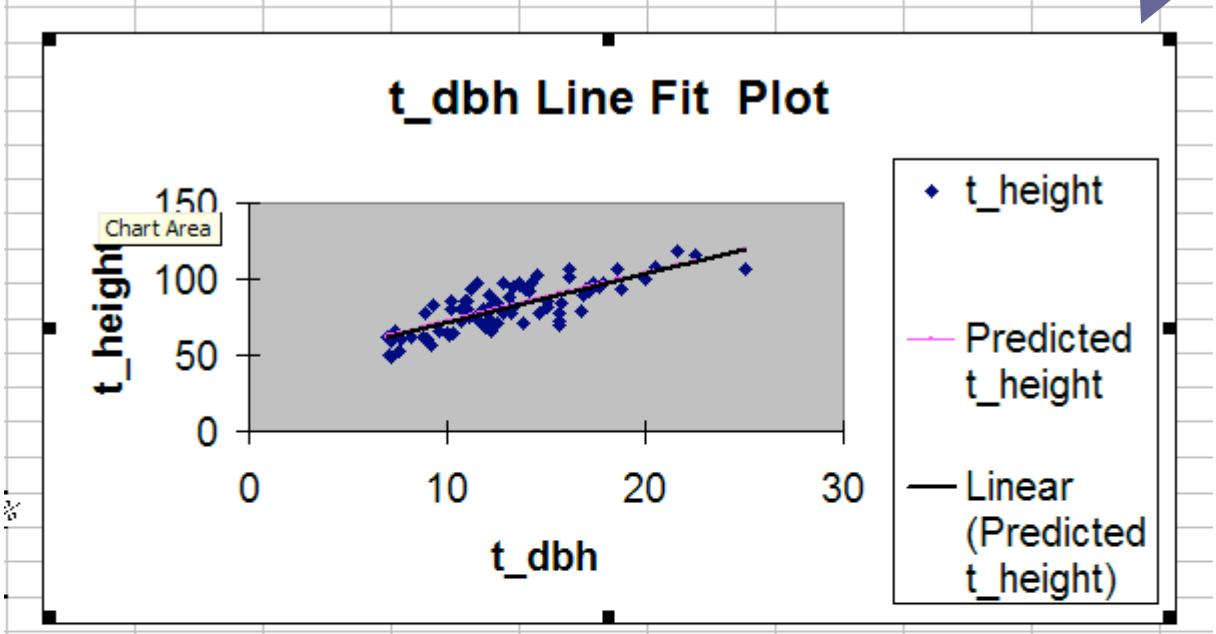
dbh ht regression | dbhhtregression

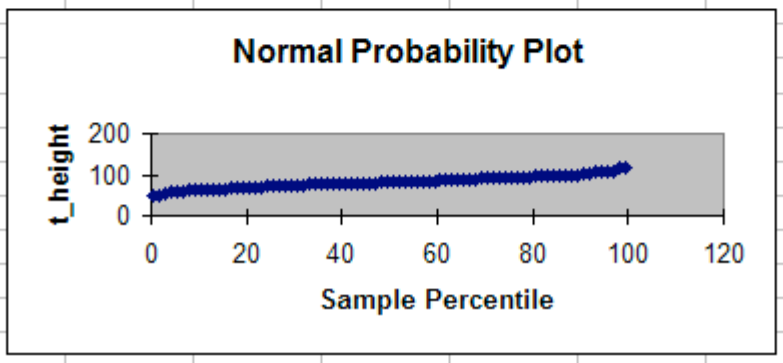
Sum=1049.3

Raw data sheet

Results and Graphs sheet

	A	B	C	D	E	F	G	H	I
1	SUMMARY OUTPUT								
2									
3	*Regression Statistics*								
4	Multiple R	0.792861							
5	R Square	0.628629							
6	Adjusted F	0.623868							
7	Standard E	9.367077							
8	Observatio	80							
9									
10	ANOVA								
11		*df*	*SS*	*MS*	*F*	*ignificance F*			
12	Regressic	1	11584.8	11584.8	132.0324	1.88E-18			
13	Residual	78	6843.886	87.74213					
14	Total	79	18428.69						
15									
16		*Coefficient*	*tandard Er*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
17	Intercept	39.91943	3.803766	10.49471	1.43E-16	32.34671	47.49215	32.34671	47.49215
18	t_dbh	3.203512	0.278796	11.49053	1.88E-18	2.648472	3.758552	2.648472	3.758552
19									
20									
21									
22	RESIDUAL OUTPUT				PROBABILITY OUTPUT				
23									
24	*Observatio*	*dicted t_he*	*Residuals*		*Percentile*	*t_height*			
25	1	71.95455	-6.95455		0.625	49			
26	2	62.98472	-3.98472		1.875	50			





XVI. Appendix C - Merging Data from an Atterbury Report File (T04)

A. Overview

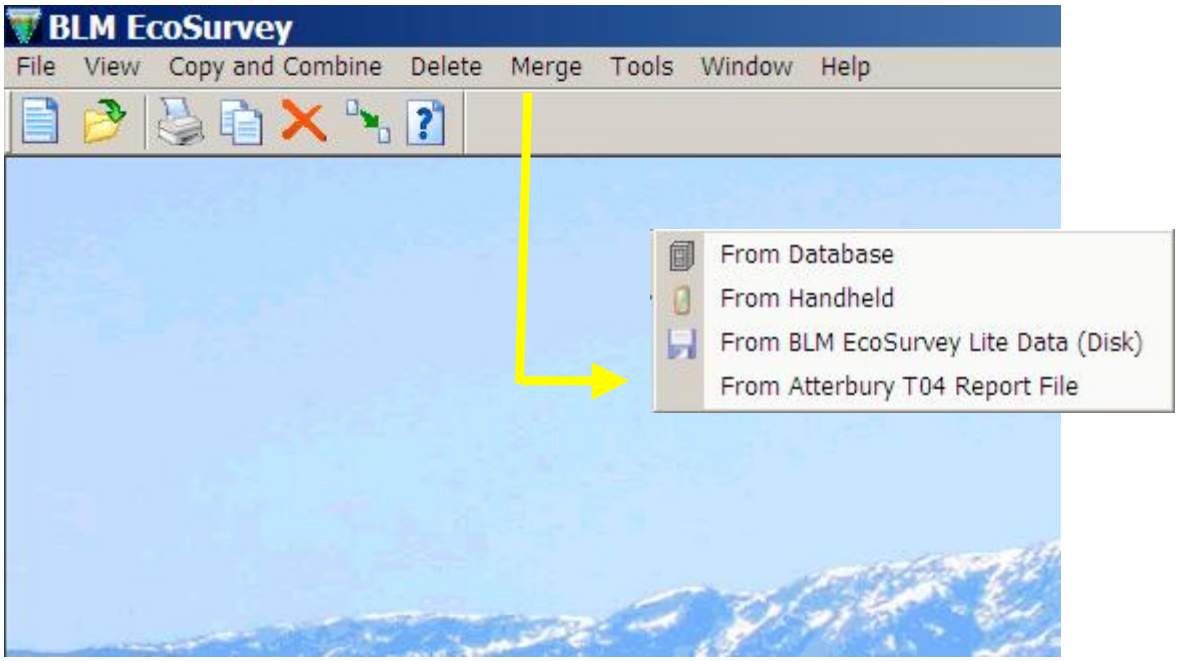
The BLM EcoSurvey Atterbury T04 Merge Wizard imports data from the Atterbury program's T04 tree report text file.

The merge process can handle any number of Atterbury projects and units with identical configuration in one text file. The merge process assumes that all units within the Atterbury file have identical setup for the following items:

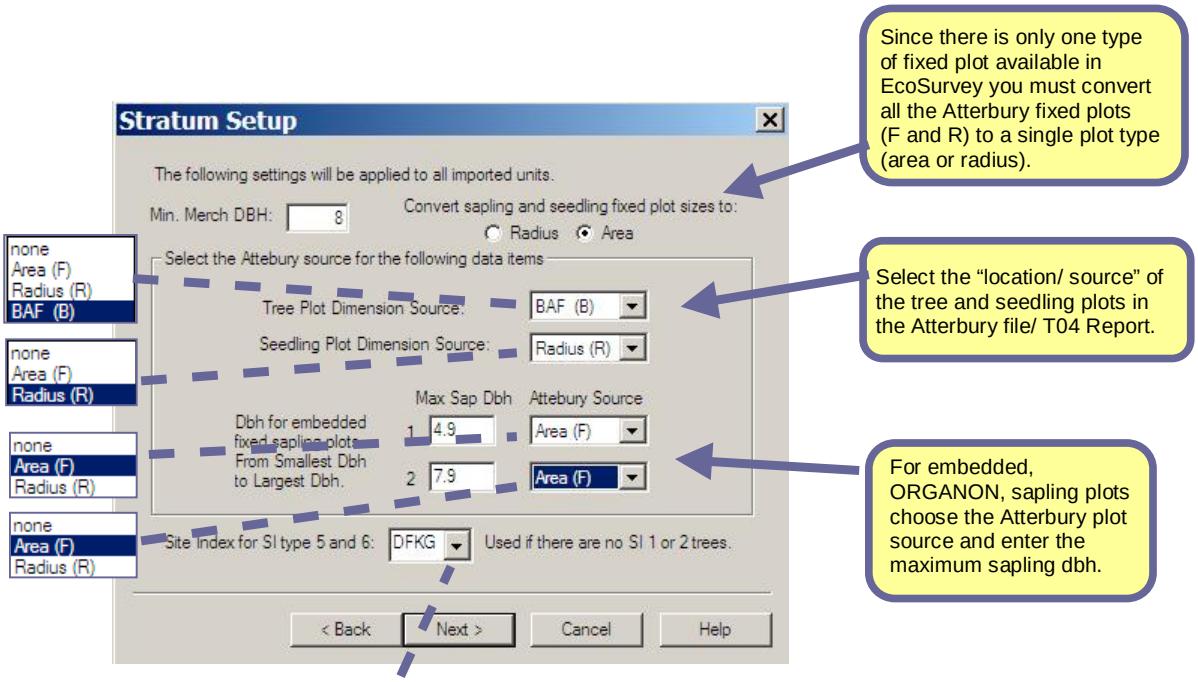
- Minimum Merch. DBH
- Merch tree plot type (BAF, Area or, Fixed)
- Seedling plot type (Area or Fixed)
- Sapling plot type (Area or Fixed) or embedded plot maximum dbh
- Site Index table for site tree type 5 and 6

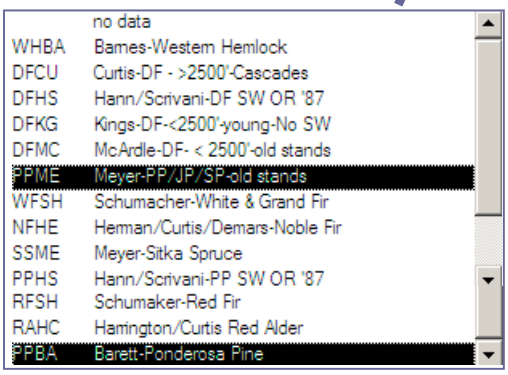
B. Procedure

1) Create a text file for report T04 in the Atterbury program. Note the placement or location of the file.
2) Start BLM Forest Ecosurvey program.
3) To start merging select the "From Atterbury T04 Report File" menu item from the Merge menu.



The first merge wizard page prompts for the common setup, as listed above.

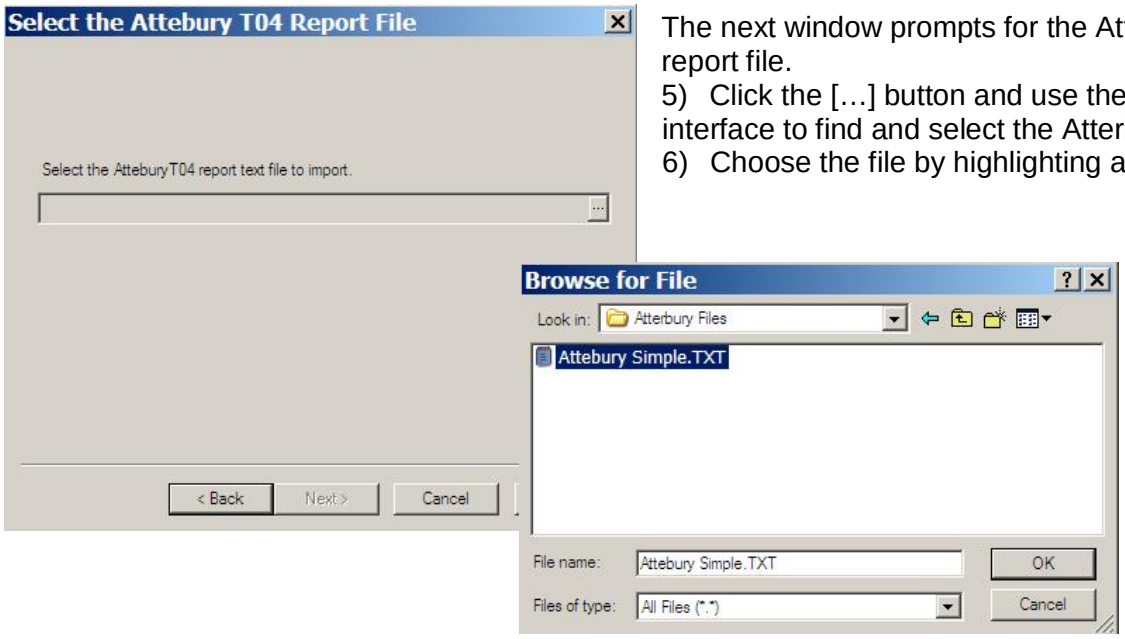




The above settings are:

* applied to all the projects and units within the Atterbury T04 file.
* saved and become the default for future Atterbury merges.

4) After making your settings, click Next button.

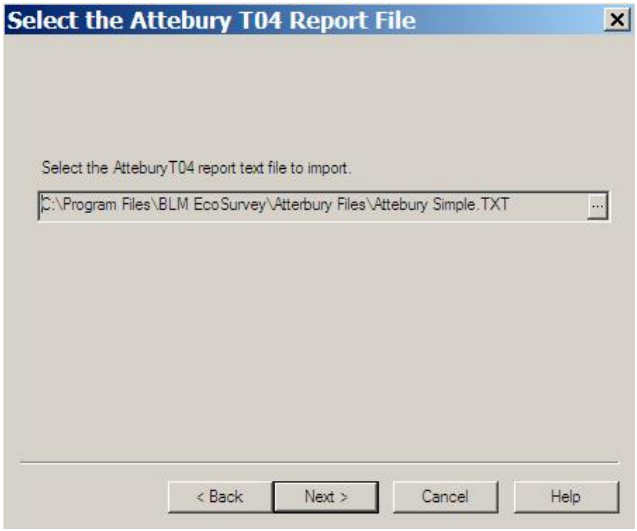


The next window prompts for the Atterbury T04 report file.

5) Click the […] button and use the file explorer interface to find and select the Atterbury file.

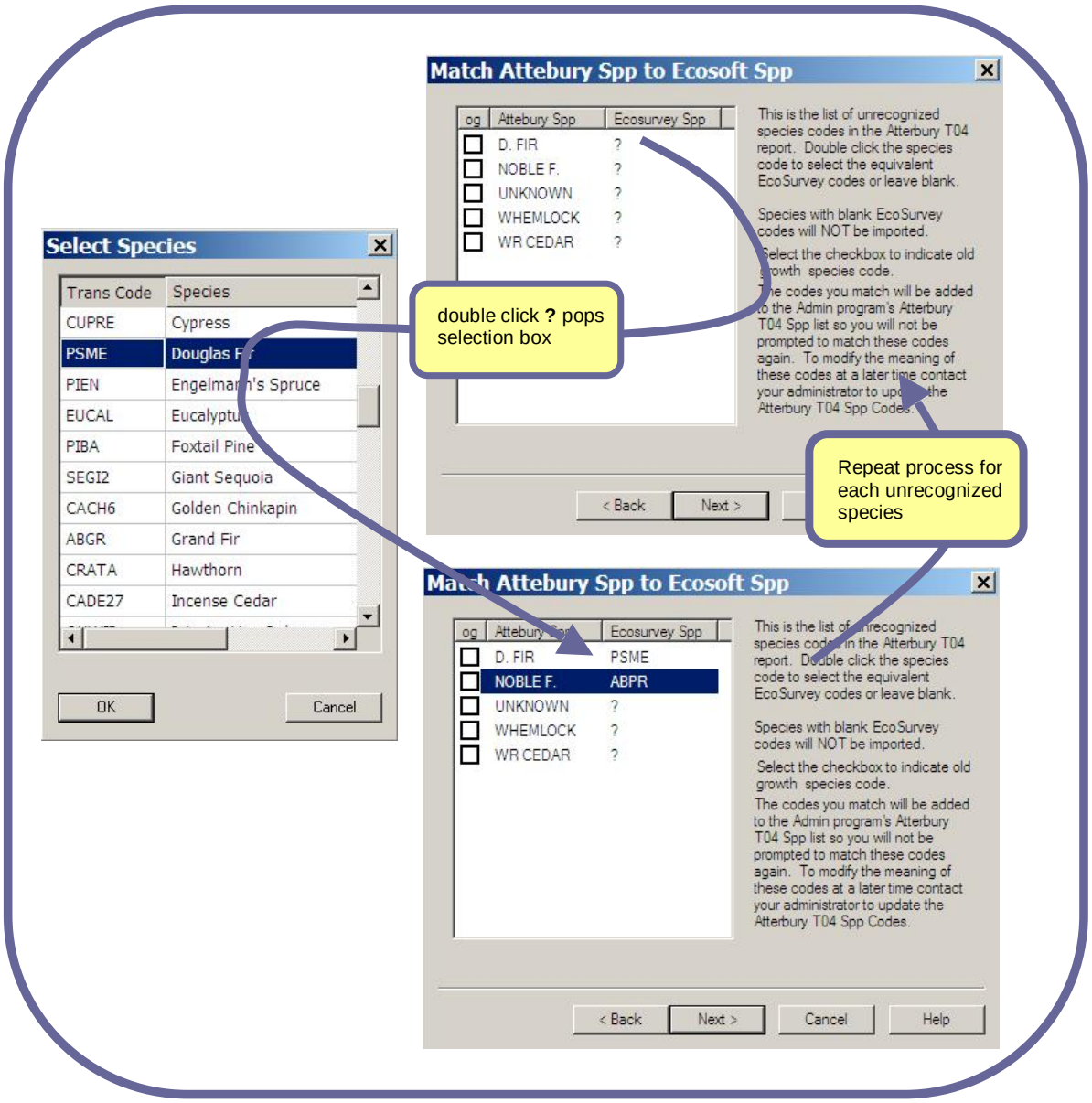
6) Choose the file by highlighting and clicking OK.

7) Click [NEXT] button

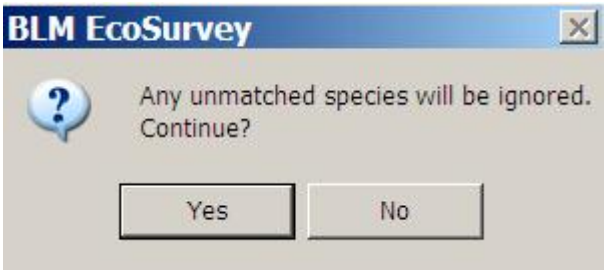


The next step analyzes the Atterbury file and presents a list of all unrecognized tree species codes.

8) Double click on the Atterbury Species to assign it an EcoSurvey tree species code.
9) If the code represents an old growth tree then check the og column. Do this procedure for each unknown species.



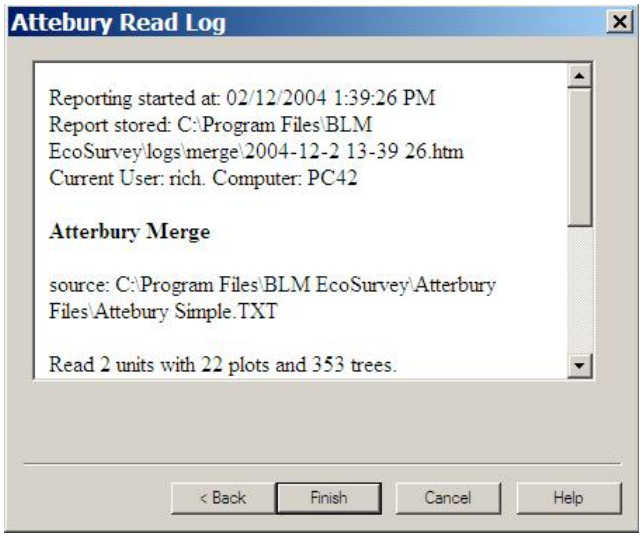
If you don't select an EcoSurvey species code then that species will not be merged.



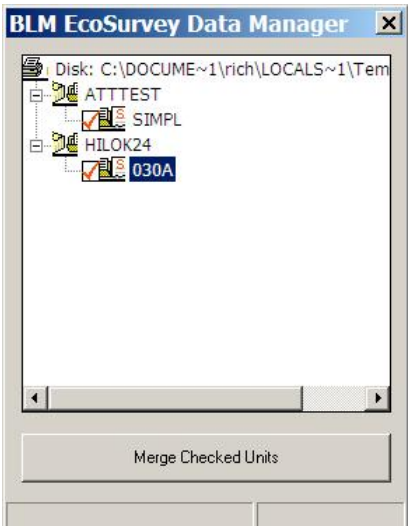
Note:
The codes you match will be added to the Administration program's Atterbury T04 Species list so you will not be prompted to match these codes again. If you need to change the meaning of these codes at a later time contact your BLM Forest Ecosurvey administrator to update or modify the Atterbury T04 Species Codes.

10) Click [NEXT] when finished matching species codes.

The next step analyzes the Atterbury file to make sure all the units conform to the Stratum Setup as defined in the first wizard page. If there are errors they are listed in this window. To fix the errors return to the first page, correct the settings or, re-create the Atterbury file without the unit with the error(s).



11) Pressing the Finish button calls the standard merge window.

12) Select units to be merged.

From this point onward the normal BLM Forest EcoSurvey Merge rules are applied to the Atterbury data. (see Merging, page 6).