United States Department of Agriculture
US Forest Service
Natural Resource Manager (NRM)

FSVeg Common Stand Exam
User Guide
Chapter 7: Reports

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REPORTS MAIN SCREEN

The Reports menu contains reports developed by the FS Veg staff.

Figure 1: Reports main screen

Set the filter options for the Search button

Table 1: File menu bar functionality

Option	Description
Close	Close the form and return to the previous form
Save	Save all changes made to the current form
Print	Print a copy of the current form
Preferences	Access the user preferences form (see below)
Exit	Exit the current form and return to the previous form

Table 2: Edit menu bar functionality

Option	Description
Copy	Copy the highlighted values and place them on the clipboard
Clear All	Clear all entries in the current form
Edit	Access a pop-up screen; editing can be done in the pop-up screen or directly in the form field
Insert	Insert the current record into the database
Delete	Delete the current record from the database, including all data associated with record and all child records related to this record; FSVeg_Wizard role is required to delete setting or plot records
Clear Record	Clear all entries in the current form; data is saved but not displayed
Duplicate Record	Duplicate the current record to the next record; this option only works on a blank record—it duplicates the previous record, but will create a new CN number if needed

Table 3: Query menu bar functionality

Option	Description
Cancel Query	Cancel the current query

Table 4: Record menu bar functionality

Option	Description
First Record	Move to the first record
Previous	Move to the previous record
Next	Move to the next record
Last Record	Move to the last record

The tool bar at the top of the screen has the functionality outlined in the following Figures.

Figure 2: Icon: Exit the current form and return to previous form

Figure 3: Icon: Save all changes made to current form

Figure 4: Icon: Print a copy of current form

The Access icon allows you to access a pop-up screen. Editing can be done in the pop-up screen or directly in the form field.

Figure 5: Icon: Access a pop-up screen

Figure 6: Icon: Insert the current record into database

The delete icon deletes the current record from the database, including all data associated with the record and all child records related to this record; the FSVeg_Wizard role is required to delete setting or plot records.

Figure 7: Icon: Delete the current record from database

Figure 8: Icon: Clear all entries in current form, data is saved but not displayed

Figure 9: Icon: Enter a query to search for a specific code

Figure 10: Icon: Execute query

Figure 11: Icon: Cancel query

Figure 12: Icon: Move to first record

Figure 13: Icon: Move to previous record

Figure 14: Icon: Move to next record

Figure 15: Icon: Move to last record

Figure 16: Icon: Access NRIS FSVeg web page

The list of reports contains four fields, as shown in Table 5.

Table 5: Reports fields

Field	Description
ID	A short report name or identifier; used to sort the report list
Name	Report name
Type	Type of report; valid types are: Oracle Report, Oracle Form, SQL Script, Program Utility, Arc/Info AML, and Other
Description	Detailed description of the report

The buttons at the bottom of the screen are described in Table 6.

Table 6: Bottom buttons

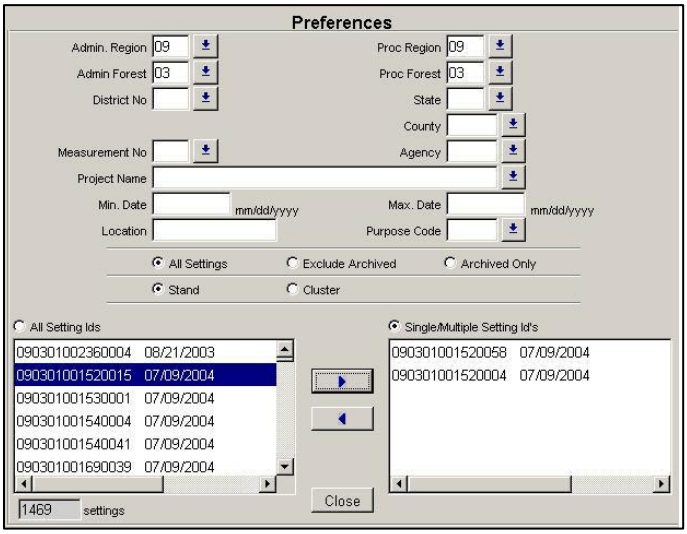
Button	Description
Run Oracle Report	Launch the Oracle report
Output to Excel	Place the report result into an MS Excel spreadsheet
Information	Access detailed information about the report
Report Filter	Set the preferences to use to select which stand(s) will be used in the report
Use Preferences	Use the Report Filter preferences to select the stand(s) to use in the report
Use List	Use a List of Stands to select the stand(s) to use in the report

REPORT FILTER

The report filter button, on the main Report screen, provides the ability to create reports for all settings that match the designated criteria. Once data has been entered in the upper portion of the screen, select either the "all setting IDs" or the "single/multiple setting IDs" button. The "all setting IDs" button will include all settings matching the preference criteria in the reports. The "single/multiple setting IDs" button will produce a list of all setting IDs matching the preference criteria. Individual setting IDs can then be moved from the complete list on the left hand side to the list on the right hand side by using the arrow buttons. All setting IDs on the right hand list will be included in the reports. Preferences remain in effect until you exit the report section. The preference items such as region, forest, district, and location are always saved; however, the list of selected settings is not saved.

Some reports, especially the stand table and volume reports require several seconds to process each setting. Use the Preferences button to limit the number of settings to 20 or less. If more than 20 settings are selected, a warning message will be displayed.

Figure 17: Report preferences



To obtain the best performance when using the preference function, the preference information should be entered in order. For example, specifying a Forest number without a Region number will result in slower response time, even if only one Region's data is stored in the local database. Specifying a District number, without the Region and Forest numbers, results in slower response times. The hierarchy to obtain the best response time is as follows:

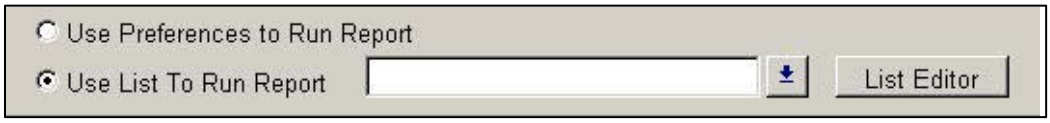
- Region
- Forest
- District
- Project Name
- Measurement Date

REPORT LIST

The report list provides the ability to create reports for all settings specified in a list.

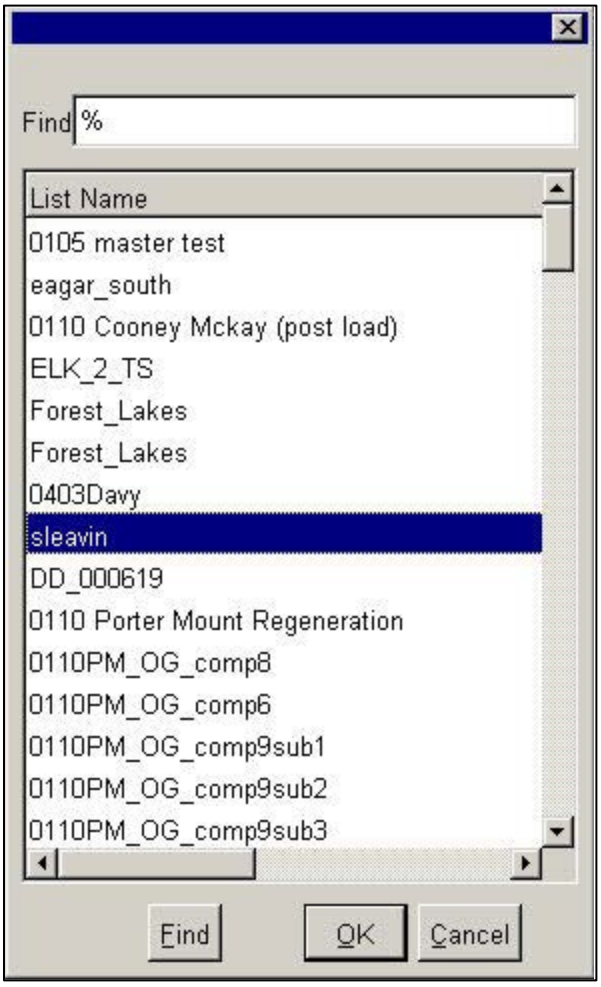
Step 1. Select the Use List to Run Report at the bottom of the Report screen, as shown in Figure 18.

Figure 18: Measurement Standards form



Step 2. If you have already created a list, use the down arrow to highlight the existing list; then hit the OK button. The list name will appear in the list box on the main report screen and the stands in the list will be used in the report.

Figure 19: Highlight the desired existing list



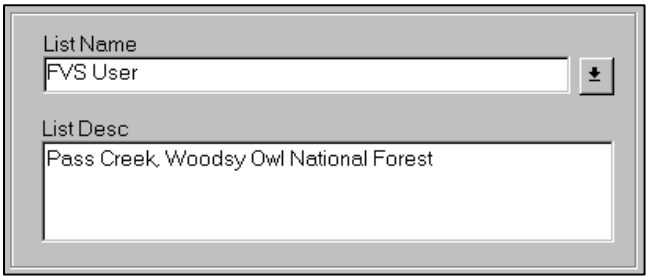
Step 3. If you want to create a new list, select the List Editor button. This will take you to the FSVeg List editor screen. Follow the directions on the form. They are replicated below for your convenience.

a. Clear the form (if a list has already been entered) by selecting the clear record icon, as shown in Figure 20.

Figure 20: Setting identifiers form

b. Enter a list name and list description

Figure 21: Fields for List Name and List Description

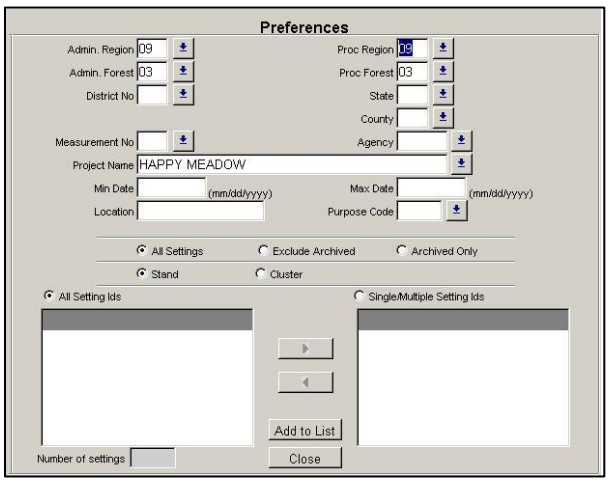


c. Click the yellow disk icon to save the list name

Figure 22: Save list name

d. Click on File/Preferences to open the window shown in Figure 23

Figure 23: Preferences window



e. Adjust the preferences to select the desired settings from FSVeg.

   i. To include all settings, select the All Setting IDs button

   ii. To include only some settings:

      1. Select Single/Multiple Setting IDs

      2. Select a setting ID in the left list box

      3. Click on the right-arrow (->) button to move the setting ID to the right list box

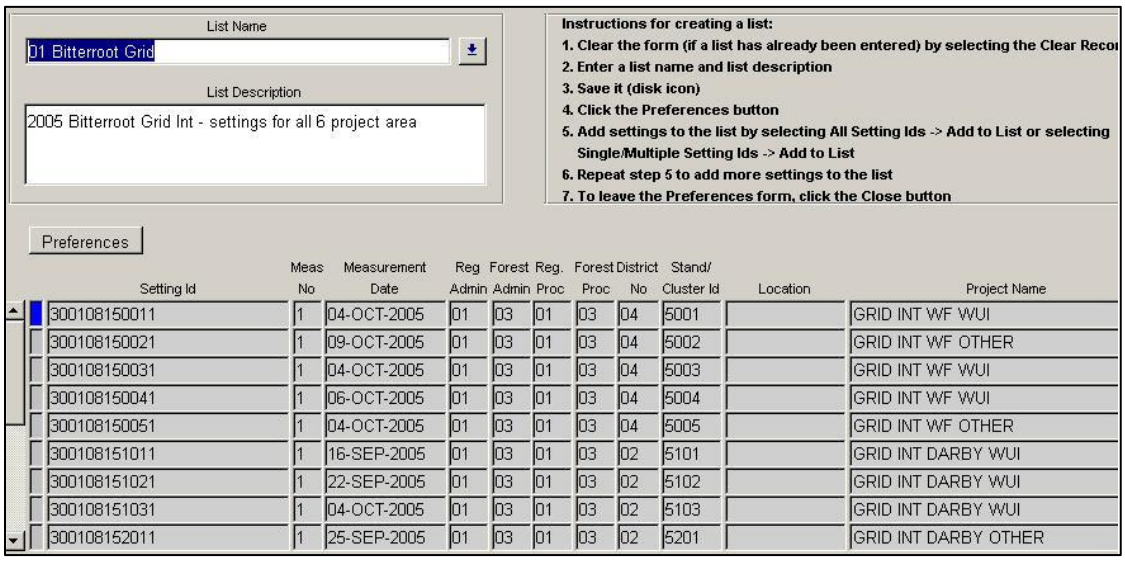
      4. Add any additional desired settings by selecting them and using the right-arrow button

f. When finished selecting setting IDs, you may change the preferences and select other settings, or click the yellow disk icon to save the selection.

g. Click the Close button.

The list name and associated setting IDs are now displayed in the List Editor, as shown in Figure 24.

Figure 24: List Editor



Setting Id	Meas No	Measurement Date	Reg Admin	Forest Admin	Reg. Proc	Forest Proc	District No	Stand/ Cluster Id	Location	Project Name
300108150011	1	04-OCT-2005	01	03	01	03	04	5001		GRID INT WF WUI
300108150021	1	09-OCT-2005	01	03	01	03	04	5002		GRID INT WF OTHER
300108150031	1	04-OCT-2005	01	03	01	03	04	5003		GRID INT WF WUI
300108150041	1	06-OCT-2005	01	03	01	03	04	5004		GRID INT WF WUI
300108150051	1	04-OCT-2005	01	03	01	03	04	5005		GRID INT WF OTHER
300108151011	1	16-SEP-2005	01	03	01	03	02	5101		GRID INT DARBY WUI
300108151021	1	22-SEP-2005	01	03	01	03	02	5102		GRID INT DARBY WUI
300108151031	1	04-OCT-2005	01	03	01	03	02	5103		GRID INT DARBY WUI
300108152011	1	25-SEP-2005	01	03	01	03	02	5201		GRID INT DARBY OTHER

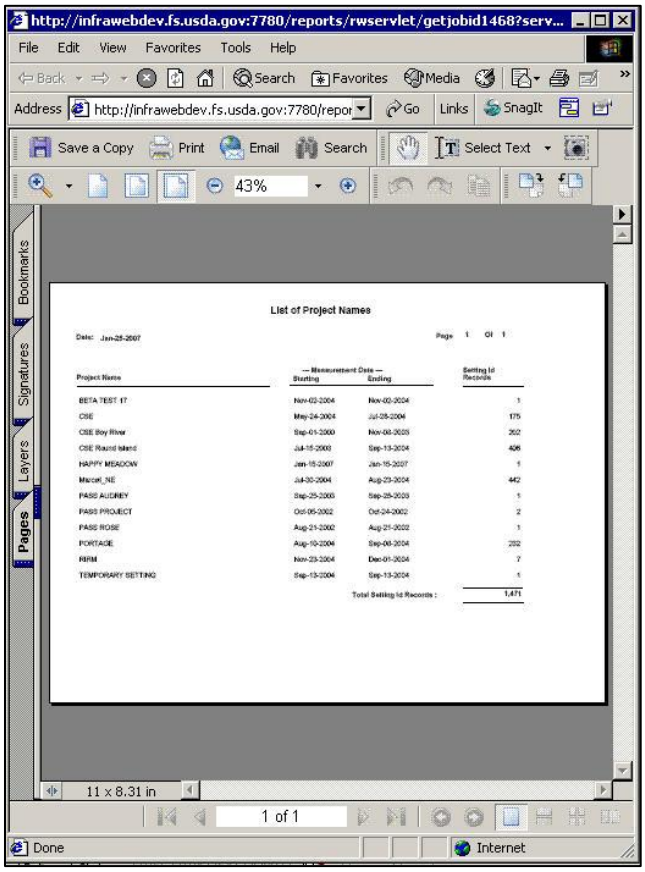
To close the FSVeg List Editor, select the red folder icon located on the upper left-hand corner of the form, as shown in Figure 25.

Figure 25: Red folder icon

RUN ORACLE REPORT

This option executes the selected report and displays the results, as shown in Figure 26.

Figure 26: Report results



The icons at the top of the form are shown in Figure 27 and Figure 28.

Figure 27: Save a copy of report to a file icon

Figure 28: Print a copy of report icon

REPORT DESCRIPTIONS

Table 7 provides a listing of all available reports. Samples of each report follow.

Table 7: Descriptions of available reports

Report #	Report Name	Report Description
1	List of Project Names	Provides a list of all project names stored in FSVeg, the first and last date project data was collected, and the number of setting ID records associated with each project name. This Report does NOT use the preference function.
2	List of Setting IDs	Provides a list of setting IDs stored in FSVeg, grouped by project name. The Report includes basic information about each setting, including measurement date, ownership, and size. This Report uses the preference function.
3	Setting Administrative Data	Provides a list of setting IDs stored in FSVeg, grouped by project name. The Report includes administrative data such as Region, Forest, District, location, stand number, and Agency. This Report uses the preference function.
4	Setting Physical Data	Provides a list of setting IDs stored in FSVeg, grouped by project name. The Report includes physical data such as slope, elevation, aspect, and stratum. This Report uses the preference function.
5	Setting Reference Data	Provides a list of setting IDs stored in FSVeg, grouped by project name. The Report includes reference data such as examiner, radial and height growth intervals, and remarks. This Report uses the preference function.
6	Setting Damage Data	Provides setting insect, disease, and damage data stored in FSVeg, grouped by project name and setting ID. This Report uses the preference function.
7	Sample Design	Provides the sample design data for each setting record in FSVeg, grouped by project name. This Report uses the preference function.
8	Plot Data	Provides plot data for each plot associated with each setting stored in FSVeg, grouped by project name and setting ID. The Report includes information about slope, aspect, elevation, history, and fuel models. This Report uses the preference function.

Report #	Report Name	Report Description
9	Tree Data	Provides individual tree data stored in FSVeg, grouped by project name, setting ID, and plot. This Report uses the preference function.
10	Tree Damage Data	Provides individual tree insect, disease, and damage data stored in FSVeg, grouped by project name, setting ID, and plot. This Report uses the preference function.
11	Tree Remeasurement Data	Provides individual remeasured tree data stored in FSVeg, grouped by project name, setting ID, and plot. This Report uses the preference function.
12	Tree Remeasurement Damage Data	Provide individual, remeasured t4ree insect, disease, and damage data stored in FSVeg, grouped by project name, setting ID, and plot. This Report uses the preference function.
13	Vegetation Cover Data	Provides vegetation data for each plot associated with each setting stored in FSVeg, grouped by project name, setting ID, and plot. This Report uses the preference function.
14	Surface Cover Data	Provides surface cover data for each plot associated with each setting stored in FS Veg, grouped by project name setting ID, and plot. This report uses the preference function.
15	Down Woody Data	Provides down woody material data and fuel data for each plot associated with each setting stored in FSVeg, grouped by project name, setting ID, and plot. This Report uses the preference function.
16	Stand Table	Provides stand information by user supplied diameter groupings. This information includes trees-per-acre, and basal-area-per-acre, by live trees, dead trees, and all trees. This Report uses the preference function.
17	Volume Report	Calculates tree volume information for selected settings, and uses appropriate volume equations for the location. This Report uses the preference function.
18	Species Configuration	Provides the volume equation, height equation, and site index equations (and their parameters) for selected species, by configuration identifier.

Report #	Report Name	Report Description
19	CSE Comprehensive Stand Report	Compiles setting, sample design, plot, tree, vegetation, and down woody data into one report. For use with CSE data only. This report uses the preference function.
20	CSE Brown's Protocol Report	Compiles and summarizes downed woody data collected with Brown's protocol. Not for use with other types of down woody data. For use with CSE data only. This report uses the preference function.
21	Multi-stand Report	Provides multi-stand summary information by user supplied diameter groupings. This information includes tree-per-acre and basal area-per-acre by live, dead, and all trees.
22	Multi-stand Volume Report	Summarizes tree volume information for selected settings using appropriate volume equations for the location.
23	Acres by Age Class Report	Provides the acres in each age class for a group of stands. The "Year of Origin" value must be populated. This value is not populated via CSE; it may be populated using an SQL script or via the Data Table forms.
24	Vegetation Structural Stage	Calculates vegetation structural state (VSS) for selected settings in Regions 2, 3, and 4.
25	Cover Summary Report	Calculates setting level vegetation and surface cover characteristics for selected settings.
26	Live Tree Stocking Report	Calculates setting level vegetation and surface cover characteristics for selected settings.
27	NEAT-R TPA Report	Setting compilation of TPA by diameter and species classes, formatted for use in NEAT-R analyses. This Report only works for Region 10 tree species and can produce Excel output in the "A" format.
28	NEAT-R Volume Report	Setting compilation of volume per acre by diameter and species classes, formatted for use in NEAT-R analyses. This report only works for Region 10 tree species and can produce Excel output in either the "A" or "B" formats.
30	User Code Report	Displays user defined codes and values associated with the parent setting, child setting, tree, and/or cover tables. Specifically, this is the data that is stored in the nrv_data_code_setmeas, nrv_data_code_treemeas, and nrv_data_covmeas tables.

Report #	Report Name	Report Description
31	Stand Exam Data Source	Identifies the most recent data source for a given set of stand exams. Possible sources include an original exam or data created through an FSVeg Spatial operation such as a polygon split, merge, or reshape.
32	Stand Exam Data Source Detail	Identifies the data sources for a given set of stand exams. Possible sources include an original exam or data created through an FSVeg Spatial operation such as a polygon split, merge, or reshape. Also provides a detailed history of FSVeg Spatial operations for each setting.

Figure 29: Report #1 – List of Project Names

Report 1: List of Project Names

Date: **Nov-16-2007**

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Project Name	--- Measurement Date --- Starting	Ending	Setting Id Records
CONT DIV	Apr-09-2004	Oct-18-2007	583
CSE Round Island	Jul-21-2003	Sep-13-2004	315
E WINNIE	Aug-14-2005	Sep-15-2005	4
E WINNIE DUP	Oct-16-2005	Oct-16-2005	1
KITCHI	Jul-01-2005	Oct-30-2007	184
LOWLAND	Oct-27-2005	Dec-07-2006	43
REGEN06	Aug-30-2006	Aug-31-2006	18
REGEN07 NO OVER	May-07-2007	Jun-28-2007	26
REGEN07 WITH OVER	Apr-20-2007	Jul-26-2007	16
RIRM	Dec-01-2004	Dec-01-2004	4
		Total Setting Id Records :	**1,194**

Report #2 provides a list of all "Project Names," the first and last date the project data was collected, and the number of Setting IDs associated with each project.

Figure 30: Report #2 – List of Setting IDs

Report 2: List of Setting IDs

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Project Name: BIGFORK

Setting Id	Meas. No	Measurement Date	Proc. Region	Proc. Forest	Admin. Forest	District	Location	Stand Number	Agency	State	County	Stratum	Structure	Grow Area %	Acres
090304000220023	1	OCT-28-2005	09	03	03	04	00022	0023	USFS	MN					17.98
090304000220027	1	OCT-28-2005	09	03	03	04	00022	0027	USFS	MN					18.85
090304000230004	1	FEB-22-2005	09	03	03	04	00023	0004	USFS	MN					25.76
090304000230020	1	FEB-22-2005	09	03	03	04	00023	0020	USFS	MN					34.82
090304000230041	1	FEB-22-2005	09	03	03	04	00023	0041	USFS	MN					15.64
090304000230046	1	FEB-22-2005	09	03	03	04	00023	0046	USFS	MN					19.48
090304000230065	1	FEB-22-2005	09	03	03	04	00023	0065	USFS	MN					32.99
090304000230066	1	FEB-22-2005	09	03	03	04	00023	0066	USFS	MN					11.76
090304000230083	1	JAN-06-2006	09	03	03	04	00023	0083	USFS	MN					12.73
090304000230089	1	FEB-22-2005	09	03	03	04	00023	0089	USFS	MN					18.83
090304000240035	1	FEB-22-2005	09	03	03	04	00024	0035	USFS	MN					12.75
090304000240050	1	FEB-22-2005	09	03	03	04	00024	0050	USFS	MN					38.47
090304000340009	1	FEB-22-2005	09	03	03	04	00034	0009	USFS	MN					18.52

This report provides a list of all Setting IDs grouped by project Name. The Setting ID is 16 digits composed of:

- RR = 2-digit Region number
- FF = 2-digit Forest number
- DD = 2-digit District number
- LL = up to a 16-digit location number (the actual number is left-justified, without trailing zeros)
- SS = 4-digit stand number

The measurement number is valid only for re-measured data.

Report #3 contains administrative data associated with each setting ID, grouped by project name.

Figure 31: Report #3 – Setting Administrative Data

Date: Nov-16-2007 **Report 3: Setting Administrative Data** **Page: 1 Of 124**

Project Name: HPW

Setting Id	Meas. No	Measurement Date	Proc. Region	Proc. Forest	Admin. Forest	District	Location	Stand Number	Agency	State	County
090205000580004	1	Jul-29-2004	09	02	13	05	00058	0004	USFS	WI	007
	1	Jul-29-2004	09	02	13	05	00058	0004	USFS	WI	007

Project Name: 181 UPDATE

Setting Id	Meas. No	Measurement Date	Proc. Region	Proc. Forest	Admin. Forest	District	Location	Stand Number	Agency	State	County
090205001810021	1	Feb-01-2005	09	02	13	05	00181	0021	USFS	WI	007

Project Name: 187UPDATE

Setting Id	Meas. No	Measurement Date	Proc. Region	Proc. Forest	Admin. Forest	District	Location	Stand Number	Agency	State	County
090205001870021	1	Feb-01-2005	09	02	13	05	00187	0021	USFS	WI	007
090205001870023	1	Feb-01-2005	09	02	13	05	00187	0023	USFS	WI	007
090205001870024	1	Feb-01-2005	09	02	13	05	00187	0024	USFS	WI	007

Report #4 contains physical data associated with each setting ID, grouped by project name.

Figure 32: Report #4 – Setting Physical Data

Report 4: Setting Physical Data

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Project Name: HPW

Setting Id	Measurement Date	Stratum	EV Code	PV Code	Grow Area %	Fuel Model	Structure	Elev.	Slope Position	Slope	ASP	Acres	Species Mgt Interest
090205000580004	JUL-29-2004					11			VB	0	270	42	
090205000580004	JUL-29-2004					11			VB	0	270	42	

Project Name: 181 UPDATE

Setting Id	Measurement Date	Stratum	EV Code	PV Code	Grow Area %	Fuel Model	Structure	Elev.	Slope Position	Slope	ASP	Acres	Species Mgt Interest
090205001810021	FEB-01-2005		93				SS					10	

Project Name: 187UPDATE

Setting Id	Measurement Date	Stratum	EV Code	PV Code	Grow Area %	Fuel Model	Structure	Elev.	Slope Position	Slope	ASP	Acres	Species Mgt Interest
090205001870021	FEB-01-2005		93				SS					7	
090205001870023	FEB-01-2005		93				SS					7	
090205001870024	FEB-01-2005		93				SS					3	

Report #5 contains the reference data associated with each setting ID, grouped by project name.

Figure 33: Report #5 – Setting Reference Data

Report 5: Setting Reference Data

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Project Name: HPW

Setting Id		Measurement Date	Examiner	Photo Id	Fuel Photo Reference	PV Reference Code	EV Reference Code	Radial Growth Interval	Radial Growth Interval 2	Height Growth Interval	Exam Level	Exam Purpose
090205000580004		Jul-29-2004	EM					10		5	0021	FL
	Remarks :-	TRANS. 335										
090205000580004		Jul-29-2004	EM					10		5	0021	FL
	Remarks :-	TRANS. 335										

Project Name: 181 UPDATE

Setting Id		Measurement Date	Examiner	Photo Id	Fuel Photo Reference	PV Reference Code	EV Reference Code	Radial Growth Interval	Radial Growth Interval 2	Height Growth Interval	Exam Level	Exam Purpose
090205001810021		Feb-01-2005	RWR				FSHR9	10		5	1000	SE
	Remarks :-											

Report #6 contains the Insect and Disease data for each setting ID, grouped by project name.

Figure 34: Report #6 – Setting Insect, Disease and Damage Data

Report 6: Setting Insect, Disease and Damage Data

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Project Name: BORDEAUX_burned

Setting ID: 0207020160010076 **Measurement date:** Apr-16-2003

Proc. Region: 02 Proc. Forest: 07 Admin. Forest: 07 District: 02 Location: 016001 Stand: 0076

Category Name	Category Code	Agent Name	Agent Code	Severity Code	Effect Code	Effect Severity
Fire	30	Wildfire	031	2		

Setting ID: 0207020160010082 **Measurement date:** Apr-16-2003

Proc. Region: 02 Proc. Forest: 07 Admin. Forest: 07 District: 02 Location: 016001 Stand: 0082

Category Name	Category Code	Agent Name	Agent Code	Severity Code	Effect Code	Effect Severity
Fire	30	Wildfire	031	2		

Setting ID: 0207020160010313 **Measurement date:** Apr-16-2003

Proc. Region: 02 Proc. Forest: 07 Admin. Forest: 07 District: 02 Location: 016001 Stand: 0313

Category Name	Category Code	Agent Name	Agent Code	Severity Code	Effect Code	Effect Severity

Report #7 contains the Sample Design data for each setting ID, grouped by project name.

Figure 35: Report #7 – Sample Design

Report 7: Sample Design

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Project Name: LOWLAND

Setting ID: 090301000130019 **Measurement Number:** 1 **Measurement Date:** FEB-13-2006

Proc. Region: 09 **Proc. Forest:** 03 **Admin. Forest:** 03 **District:** 01 **Location:** 00013 **Stand:** 0019

Sel. Method Type	Sample Expansion Factor	Points Installed	Starting Azimuth	Remarks	Sel. Criteria No	Subpop Filter	Subpop Variable	Subpop Min Value	Subpop Max Value
BAF	10	4	360	large live trees	1	ALL	DBH	5.0000	999.9900
FRQ	100	4	0	small trees	2	ALL	DBH	.0100	4.9900
					3	LIVE	HGT	.5000	4.4900
TRN	7	4	360	1 hour fuels	6	DOWN	DIA	.0100	.2400
TRN	7	4	360	10 hour fuels	7	DOWN	DIA	.2500	.9900
TRN	7	4	360	100 hour fuels	8	DOWN	DIA	1.0000	2.9900
TRN	27	4	360	1000 hour fuels	9	DOWN	DIA	3.0000	9999.9000

Report #8 contains the plot data for each setting ID, grouped by project name.

Figure 36: Report #8 – Plot Data

Report 8: Plot Data

Date: Jun-30-2008

Page: 1 Of 1

Project Name: KITCHI

Setting ID: 090302000110007 Measurement Number: 1 Measurement Date: JUL-09-2007

Proc.Region: 09 Proc. Forest: 03 Admin. Forest: 03 District: 02 Location: 00011 Stand: 0007

Plot Numbe	Latitude Deg	Min	Sec	Longitude Deg	Min	Sec	Cap Grow	Aspect	Slope %	Slope Pos	Slope Horz	Slope Vert	Elev. in Feet	Exist Veg	Potent Veg	Fuel Model	Dist Seed Wall	Hist Code	Hist Date
1	47	27	36.20	94	24	15.70													
	Remarks: 145557																		
2	47	27	36.20	94	24	21.50													
	Remarks: 1455553																		
3	47	27	35.10	94	24	27.20													
	Remarks: 1456531																		
4	47	27	38.00	94	24	27.30													
	Remarks: 1453588																		
5	47	27	38.00	94	24	33.00													
	Remarks: 1453584																		

Report #9 contains the individual tree data for each setting ID, grouped by project name.

Figure 37: Report #9 – Tree Data Report

Report 9: Tree Data Report

Date: Nov-16-2007 **Page:** 1 Of 2

Project Name: BOWMAN 1

Setting ID: 0203030313050011 **Measurement Number:** 1 **Measurement Date:** OCT-23-2007

Proc. Region: 02 **Proc. Forest:** 03 **Admin. Forest:** 03 **District:** 03 **Location:** 031305 **Stand:** 0011

Plot Number	Tag No.	Tree Status	Tree Class	Species Symbol	Tree Count	Diameter	Height	Height to Crown	Height to Break	Radial Growth	Radial Growth2	Height Growth	Tree Age	Crown Ratio	Crown Class	Crown Width	Wildlife Use	Log/Snag Decay	Treatment Option
1	1	L		PIPO	1	10.8	56.0	28		8			77	35	DO	8			
	2	L		PIPO	1	8.4	43.0	28		7			65	29	IN	10			
	3	L		PIPO	1	8.2	53.0	25						32	CO	6			
	4	L		PIPO	1	9.5	55.0	30						39	DO	9			
	5	L		PIPO	1	8.6	50.0	29						40	CO	7			
	6	L		PIPO	1	9.7	50.0	30						39	CO	8			
	7	D		PIPO	1	9.0	55.0											1	
	8	D		PIPO	1	15.0	10.0										SC	4	
	9	D		PIPO	1	13.0	16.0										SC	4	
2	1	L		PIPO	1	11.3	56.0	26		11			72	40	DO	9			
	2	L		PIPO	1	6.6	43.0	21		6			56	42	IN	7			
	3	L		PIPO	1	8.9	48.0	25						40	CO	7			
	4	L		PIPO	1	9.3	48.0	23						45	CO	6			
	5	L		PIPO	1	7.9	44.0	27						34	IN	7			
	6	L		PIPO	1	8.6	46.0	28						39	CO	7			
	7	D		PIPO	1	9.0	60.0											2	

Report #10 contains the individual tree insect and disease data for each setting ID, grouped by project name.

Figure 38: Report #10 – Tree Insect, Disease and Damage Report

Report 10: Tree Insect, Disease and Damage Report

Date: Nov-16-2007 **Page:** 1 Of 3

Project Name: BORDEAUX

Setting ID: 0207020140160203 **Measurement Number:** 1 **Measurement Date:** MAY-16-2003

Proc.Region: 02 **Proc. Forest:** 07 **Admin. Forest:** 07 **District:** 02 **Location:** 014016 **Stand:** 0203

Plot Number	Tag No.	Species Symbol	Diameter	Status	Category Name	Cat. Code	Agent Name	Agent Code	Severity Rating Code	Tree Part Code	Physical Effect Name	Effect Code	Effect Severity
1	2	PIPO	10.6	Live							crook or sweep	006	30
	3	PIPO	12.1	Live							crook or sweep	006	20
2	1	PIPO	11.6	Live							crook or sweep	006	10
	3	JUSC2	11.1	Live							forked below merch top	005	95
					Parasitic/Epiphytic Plants	23	juniper true mistletoe	022	1				
	5	PIPO	19.9	Live							crook or sweep	006	20
	7	PIPO	5.6	Live							crook or sweep	006	35
	8	PIPO	.3	Live	Competition	60	Competition	000	2				
											crook or sweep	006	90
	9	PIPO	3	Live	Competition	60	Competition	000	2				
											crook or sweep	006	75

Report #11 contains tree re-measurement data. The data is grouped by project name, setting ID, and tag number. Re-measurement data for each tree can be compared and measurement errors quickly located.

Figure 39: Report #11 – Tree Remeasurement Data Report

Report 11: Tree Remeasurement Data Report

Date: Nov-16-2007 Page: 1 Of 3

Project Name: BORDEAUX

Setting Id: 0207020140160203

Region: 02 Proc. Forest: 07 Admin. Forest: 07 District: 02 Location: 014016 Stand: 0203

Plot Number	Tag No.	Meas. Date	Tree Status	Tree Class	Species Symbol	Tree Count	Diameter	Height	Height to Crown	Height to Break	Radial Growth	Radial Growth2	Height Growth	Tree Age	Crown Ratio	Crown Class	Crown Width	Wildlife Use	Log/Snag Decay
1	1	MAY-16-2003	L		PIPO	1	10	31	14		5			95	40				
	2	MAY-16-2003	L		PIPO	1	10.6	31	20						20				
	3	MAY-16-2003	L		PIPO	1	12.1	44	13						65				
	4	MAY-16-2003	L		PIPO	1		2					1.6	20					

Report #12 contains tree re-measurement insect, disease, and damage data. The data is grouped by project name, setting ID, and tag number. Re-measurement data for each tree can be compared and measurement errors quickly located.

Figure 40: Report #12 – Tree Remeasurement Insect, Disease and Damage Report

Report 12: Tree Remeasurement Insect, Disease and Damage Report

Date: Nov-16-2007 **Page:** 2 Of 3

Project Name: BORDEAUX

Setting Id: 0207020140160203

Region: 02 Proc. Forest: 07 Admin. Forest: 07 District: 02 Location: 014016 Stand: 0203

Plot Number	Tag No.	Meas. Date	Species Symbol	Diameter	Status	Category Name	Cat. Code	Agent Name	Agent Code	Severity Rating Code	Tree Part Code	Effect Code	Effect Severity
4	10	MAY-16-2003	PIPO		Live	Wild Animals	41	rabbits or hares	007	2			
	11	MAY-16-2003	PIPO	4	Live	Competition	60	Competition	000	2			
												006	99
	12	MAY-16-2003	PIPO	1	Live	Competition	60	Competition	000	2			
												002	35
	13	MAY-16-2003	PIPO	12.2	Dead	Bark Beetles	11	Bark Beetles	000	6			

Report #13 contains the vegetation composition data on each plot, for each setting ID, grouped by project name.

Figure 41: Report #13 – Vegetation Cover Data

Report 13: Vegetation Cover Data

Date: **Nov-16-2007** **Page:** **1 Of 3**

Project Name: **STAND EXAMINATION**

Setting ID: **01020201020007** **Measurement Number:** **1** **Measurement Date:** **OCT-01-1989**

Proc Region: 01 Proc. Forest: 02 Admin. Forest: 02 District: 02 Location: 0102 Stand: 0007

Plot Number	Live/ Dead	Layer Code	Laver	Life Form	Species	Min Height	Max Height	Avg Height	Canopy Cover %	Avg Diam	Maturity	Remarks
1	L	20			2FORB			.00	10.0			
	L	23		GR	CARU			.00	30.0			
	L	54			ROSA5			1.00	10.0			
	L	72		SH	SYAL			2.00	10.0			
	L	79		SH	JUCO6			1.00	10.0			
2	L	20			2FORB			.00	10.0			
	L	72		SH	SYAL			1.00	10.0			
3	L	20			2FORB			.00	10.0			
	L	72		SH	SYAL			2.00	10.0			

Report #14 contains the ground surface cover data on each plot, for each setting ID, grouped by project name.

Figure 42: Report #14 – Surface Cover Data

Report 14: Surface Cover Data

Date: Nov-16-2007 **Page:** 1 Of 5

Project Name: STAND EXAMINATION

Setting ID: 01020201020007 **Measurement Number** 1 **Measurement Date** OCT-01-1989

Proc.Region 01 **Proc. Forest** 02 **Admin. Forest:** 02 **District:** 02 **Location:** 0102 **Stand:** 0007

Plot Number	Surface Cover Typ	Surface Cover Description	Surface Cover	Remarks
1	LITT	Litter (< 1/4")	93.0	
1	LITT	Litter (< 1/4")	20.0	
2	LITT	Litter (< 1/4")	70.0	
2	LITT	Litter (< 1/4")	30.0	
2	ROCK	Rock	30.0	
3	BARE	Bare Soil (soil particles < 2 mm)	40.0	
3	LITT	Litter (< 1/4")	50.0	
3	ROCK	Rock	20.0	

Report #15 contains the down woody data on each plot, for each setting ID, grouped by project name.

Figure 43: Report #15 – Down Woody Material

Report 15: Down Woody Material

Date: Nov-16-2007 **Page:** 1 Of 496

Project Name: E WINNIE

Setting ID: 090303000230038 **Measurement Date:** Sep-10-2005

Proc Region: 09 Proc. Forest: 03 Admin. Forest: 03 District: 03 Location: 00023 Stand: 0038 Meas Date: 10-SEP-05

Plot	1st Duff	2nd Duff	Fuel Depth	Piece Size		No. of Pieces	Decay Class	Diameter	Diameter Large End	Diameter Small End	Length	Volume	Weight
1	.3	.4	.1	0.01 -	0.24	13							
				0.25 -	0.99	1							
				1.00 -	2.99	1							
				3.00 -	999.99	1	5	5.00	6.00	4.00	16.0		
2	1	2.2	.1	0.01 -	0.24	6							
				0.25 -	0.99	2							
				1.00 -	2.99	2							
				3.00 -	999.99	1	3	8.00	10.00	4.00	38.0		
						1	4	5.00	5.00	2.00	24.0		
3	.2	.3	.1	0.01 -	0.24	5							
				3.00 -	999.99	1	2	5.00	5.00	3.00	18.0		
						1	2	7.00	8.00	2.00	48.0		
						1	3	5.00	6.00	4.00	18.0		
						1	4	4.00	6.00	2.00	28.0		
						1	5	5.00	5.00	4.00	10.0		
						1	5	6.00	6.00	6.00	4.0		
						1	5	8.00	8.00	6.00	30.0		

Total Plot Pieces : → 40

STAND TABLE REPORT

This report contains a stand table summary for each selected setting, one setting at a time. Stand characteristics such as TPA, BA/acre, SDI, and QMD are grouped by diameter classes and by four live/dead categories. The report currently does not include trees with null diameters in the first report sections. The species summary on the third page of the report does contain trees with null diameters.

The report produces the following output:

1. A summary for each setting which includes all of the species. Each setting will produce three pages:

    a. Main report with the fixed width, custom, and single-group diameter classes

    b. Statistics report with the TPA and BA/acre standard deviations and coefficient of variation

    c. Species list

2. If specie or specie group reports are requested, each species/group will produce:

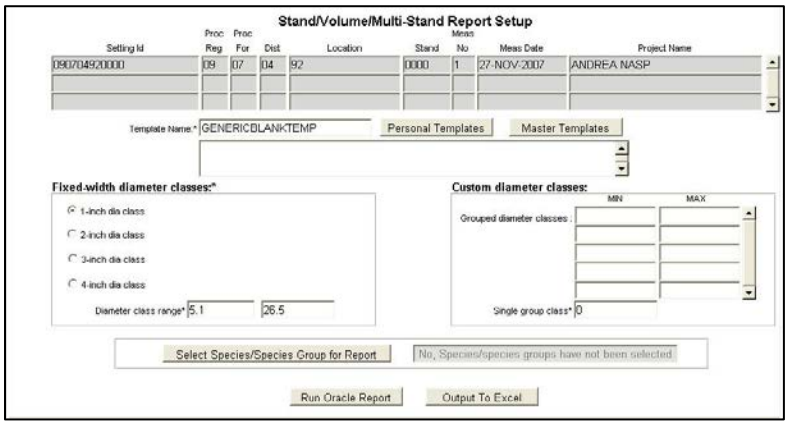
    a. Main report with the fixed width, custom, and single-group diameter classes

    b. Statistics report with the TPA and BA/acre standard deviations and coefficient of variation

First, reports are produced for each setting for all of the species. Then, reports are produced for each setting by individual species or species groups.

The top portion of the Stand Table Report setup screen contains the settings selected in the Preferences screen, or those found in the list. The Setup screen allows the user to select an existing personal or master template, or build a new personal template. To access an existing template, select either the personal or master template button, and select one of the template names that appear on the list. The user who created the template can modify the template.

Figure 44: Stand/Volume/Multi-Stand Report Setup window



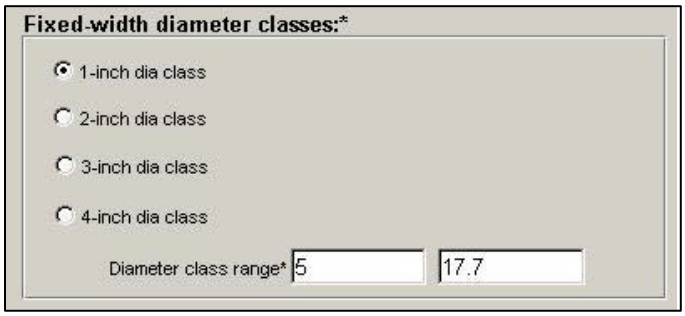
BUILDING A TEMPLATE

Each template requires a unique name option or description, and diameter range specifications for each of the three report sections.

Fixed-Width Diameter Classes

Select a fixed-width diameter class of 1-, 2-, 3- or 4-inch intervals. Enter the lower limit of the first interval in the box marked "MIN," and enter the upper limit for the last interval in the box marked "MAX." These values set the lower and upper limits for each fixed-width class.

Figure 45: Fixed-width diameter classes form



For example, if the 1-inch diameter class is chosen, the MIN set at 0 and the MAX set at 25, the classes would contain:

- 0 to 0.9 inch
- 1.0 to 1.9 inches
- 20, to 2.9 inches
- 3.0 to 25.9 inches
- 26+ inches

If the 4-inch diameter class is chosen, the MIN set at .5 and the MAX set at 27, the classes would contain:

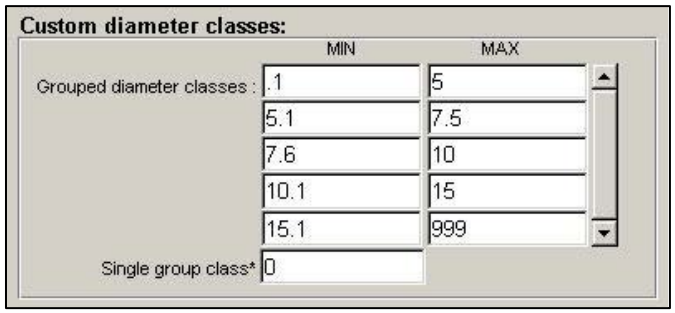
- 0.5 to 1.4 inches
- 1.5 to 2.4 inches
- 2.5 to 3.4 inches
- 3.5 to 27.5 inches
- 28+ inches

Note: the MIN value will start the setting points of each class. For example, if the MIN value is set to 0.0, each class will start at X.0 and end at X.9. If the MIN value is set at 3.5, each class will start with X.5 and end at X.4.

Custom Diameter Classes

The MIN and MAX fields contain the upper and lower diameters if an unlimited number of diameter classes. Set the MAX field in the last diameter class to "999.9."

Figure 46: Custom diameter classes form

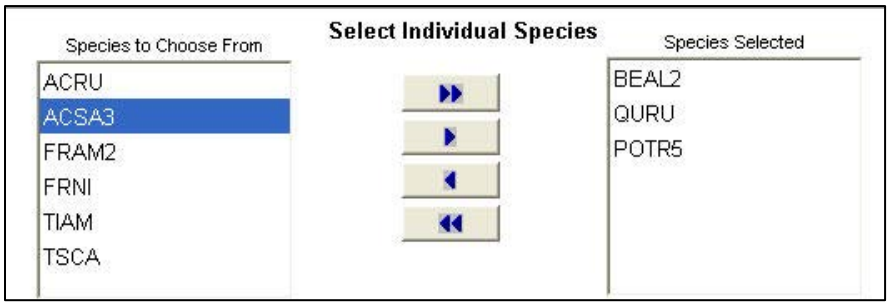


The singe group_class includes all trees above the specified MIN diameter. It is often used as a "total" line where a minimum of either 0 or 1 inch, although it can be used to summarize the characteristics for all trees above any specified diameter.

Select Species/Species Group for Report

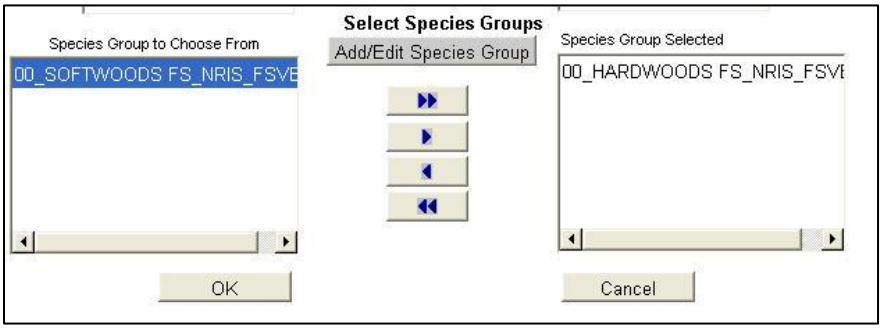
Selecting this button will bring up another screen. The top portion of the screen allows you to select individual species from the window on the left and move them to the window on the right. A stand table will be produced for each species listed in the right-hand window.

Figure 47: Select Individual Species form



The bottom portion of the screen allows you to select species groups from the window on the left and move them to the window on the right. A stand table will be produced for each species group listed in the right-hand window. You may select BOTH individual species and species groups.

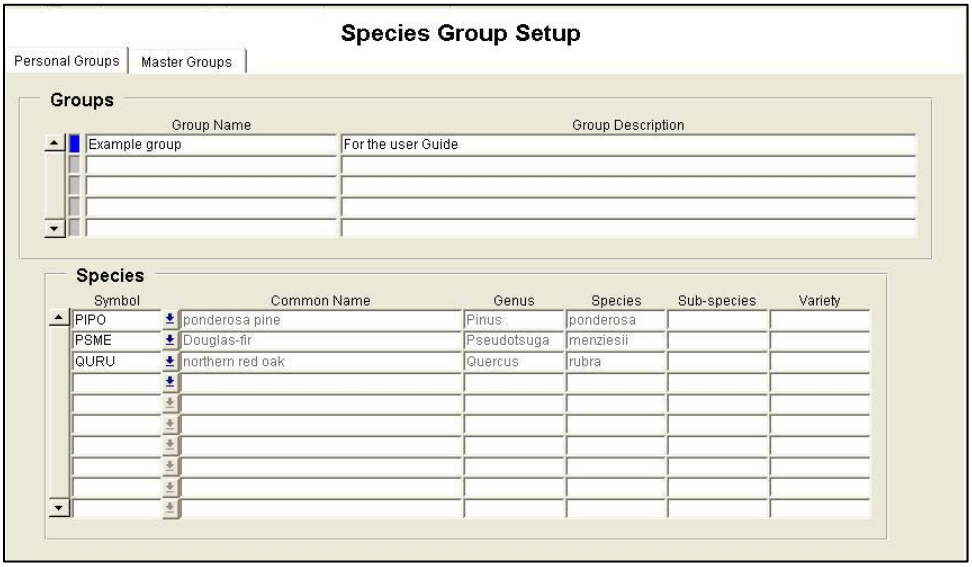
Figure 48: Select Species Groups form



To create a species group, or to add a species to an existing group, select the Add/Edit Species Group button.

A personal species group can be created or edited from the form shown in Figure 34. To create a list, enter the group name and description in the upper box. Then enter the NRCS species symbol in the lower box. If you are unsure of the correct symbol, you can use the LOV button to look up a species symbol.

Figure 49: Select Species Groups form



Only personal species groups can be created or edited here. To create or edit master groups, you must have the Wizard role and go through the "Administration" button on the main menu.

RUNNING THE REPORT

After selecting a template, editing an existing template, or creating and saving a new template, select the RUN button at the bottom of the screen.

The bottom of the report has a button "Output to Excel," that will place the report data into a MS Excel spreadsheet that can be saved and edited.

The first page of the report contains the fixed width, custom and single group diameter class tables. The stand characteristics are grouped by the diameter classes specified on the setup screen.

Figure 50: Page one of the Stand Table Report, Report #16

Date: Nov-16-2007

Report 16: BASIC STAND CHARACTERISTICS

Page: 1 Of 6

Does not include stumps (Tree status = 'S')

Project: E WINNIE Setting Id: 090303000230038 Proc Region: 09 Proc Forest: 03 District: 03 Location: 00023 Stand: 0038

Acres: 24.15 EV: ( ) PV: ( ) Slope: Aspect: Elev: Meas. No: 1 Meas. Date: SEP-10-2005

All Species

Diameter class	LIVE TPA	LIVE BA/A	LIVE SDI	LIVE QMD	LIVE AVG HT	LIVE AVG CR	LIVE AVG AGE	LIVE AVG DGR	LIVE AVG HGR	RECENT MORTALITY TPA	RECENT MORTALITY BA/A	RECENT MORTALITY QMD	RECENT MORTALITY AVG HT	OLDER DEAD TPA	OLDER DEAD BA/A	OLDER DEAD QMD	OLDER DEAD AVG HT	ALL TPA	ALL BA/A	ALL QMD	ALL AVG HT
NULL Diameter	3667				1													3667			1
0 - .9 in.	133	.0	11	.1	8													133	.0	.1	8
1 - 1.9 in.																					
2 - 2.9 in.	133	2.9	16	2.0	20													133	2.9	2.0	20
3 - 3.9 in.																					
4 - 4.9 in.	133	11.6	32	4.0	42													133	11.6	4.0	42
5 - 5.9 in.																					
6 - 6.9 in.	17	3.3	7	6.0	51									34	6.7	6.0	32	51	10.0	6.0	38
7 - 7.9 in.																					
8 - 8.9 in.	38	13.3	28	8.0	76									19	6.7	8.0	62	57	20.0	8.0	71
9 - 9.9 in.																					
10 - 10.9 in.	49	26.7	53	10.0	76									55	30.0	10.0	18	104	56.7	10.0	46
11 - 11.9 in.																					
12 - 12.9 in.	34	26.7	52	12.0	77									13	10.0	12.0	36	47	36.7	12.0	65
13 - 13.9 in.																					
14 - 14.9 in.	9	10.0	19	14.0	82													9	10.0	14.0	82
15 - 15.9 in.																					
16 - 16.9 in.	2	3.3	6	16.0	79													2	3.3	16.0	79
17 - 17.9 in.																					
18 - 18.9 in.																					
19 - 19.9 in.																					
20 - 20.9 in.																					
21 + in.																					
0 - 4.9 in.	400	14.6	59	2.6	23													400	14.6	2.6	23
5 - 6.9 in.	17	3.3	7	6.0	51									34	6.7	6.0	32	51	10.0	6.0	38
7 - 8.9 in.	38	13.3	28	8.0	76									19	6.7	8.0	62	57	20.0	8.0	71
9 - 15.9 in.	92	63.3	124	11.2	77									68	40.0	10.4	22	160	103.3	10.9	54
16 - 20.9 in.	2	3.3	6	16.0	79													2	3.3	16.0	79
21 - 29.9 in.																					
30 - 1000 in.																					
0 + in.	550	97.9	224	5.7	37									121	53.3	9.0	31	671	151.2	6.4	36
Number of tree records having HT, CR, Age, DGR & HGR measurements:					40												16				56

The second page contains the standard deviations and coefficients of variation for TPA and BA/acre of live trees in the custom and single group diameter classes and Confidence Interval and Sampling Error information. It also contains the number of plots installed by sample design.

Figure 51: Page two of Report #16, part 1: standard deviation and coefficient of variant

TPA and BA/A: Standard Deviation and Coefficient of Variation

diameter class	LIVE TPA	LIVE SD TPA	LIVE CV TPA	LIVE BA/A	LIVE SD BA/A	LIVE CV BA/A
1 - 3.9 in.						
4 - 6.9 in.						
7 - 9.9 in.	18.707	32.402	173.204	10.000	17.321	173.210
10 - 12.9 in.	12.319	21.337	173.208	10.000	17.321	173.210
13 - 16.9 in.	17.584	16.431	93.443	20.000	17.321	86.605
17 - 21 in.						
0 + in.	151.987	137.860	90.705	50.000	17.321	34.642

Figure 52: Page two of Report #16, part 2: sample size

Sample Size: The estimated number of plots required to attain a desired % sampling error in either TPA or BA/A

Confidence Interval		Desired % Sampling Error									
		5	10	15	20	25	30	35	40	45	50
68.3%	TPA	490	123	55	31	20	14	10	8	7	5
	BA/A	139	35	16	9	6	4	3	3	2	2
90%	TPA	1326	333	149	84	55	38	28	22	19	14
	BA/A	377	95	44	25	17	11	9	9	6	6
95%	TPA	1883	473	212	120	77	54	39	31	27	20
	BA/A	534	135	62	35	24	16	12	12	8	8

Figure 53: Page two of Report #16, part 3: sample design

Plots Installed by Sample Design / Selection Criteria

Selection Method	Expansion Factor	Azim	Subpop Filter	Selection Criteria No	Subpop	Subpop Min	Subpop Max	Number of Plots
BAF	40		ALL	1	DBH	5	999.99	4
BAF	40		DOWN	2	DBH	5	999.99	4
FRQ	300		LIVE	3	CVR	5	100	4
FRQ	300		DOWN	4	DIA	.01	.24	4
FRQ	300		DOWN	5	DIA	.25	.99	4
FRQ	300		DOWN	6	DIA	1	2.99	4
FRQ	300		DOWN	7	DIA	3	4.99	4

The third page of this report contains stand characteristics by species.

Figure 54: Stand characteristics by species

Date: Nov-16-2007 **Report 16: BASIC STAND CHARACTERISTICS** Page: 3 Of 6

Does not include stumps (Tree status = 'S')

Project: E WINNIE Setting Id: 090303000230038 Proc Region: 09 Proc Forest: 03 District: 03 Location: 00023 Stand: 0038

Acres: 24.15 EV: ( ) PV: ( ) Slope: Aspect: Elev: Meas. No: 1 Meas. Date: SEP-10-2005

Species Summary: Contains all diameters, including 0 and NULL.

	LIVE									RECENT MORTALITY				OLDER DEAD				ALL			
Species	TPA	BA/A	SDI	QMD	AVG HT	AVG CR	AVG AGE	AVG DGR	AVG HGR	TPA	BA/A	QMD	AVG HT	TPA	BA/A	QMD	AVG HT	TPA	BA/A	QMD	AVG HT
ABBA	479	15.4	51	3.2	13													479	15.4	3.2	13
ACRU	1867	5.8	16	4.0	3													1867	5.8	4.0	3
BEPA	24	10.0	20	8.7	59													24	10.0	8.7	59
PIBA2	71	36.7	73	9.7	79									71	23.3	7.7	40	142	60.0	8.8	59
PIGL	484	10.0	20	10.4	4													484	10.0	10.4	4
POTR5	1221	16.7	38	5.9	3									49	30.0	10.6	17	1271	46.7	7.9	4
QURU	71	3.3	6	12.0	5													71	3.3	12.0	5
Total	4216	97.9	224	5.7	6									121	53.3	9.0	31	4337	151.2	6.4	7

BA/acre and TPA information for tree class and cut/leave information are also available as part of this report.

Figure 55: BA and TPA information

TPA and BA by species and tree class

	TREE CLASS															
	AC		DE		GS		RF		RN		SV		UA		US	
Species	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A
ABBA	36	7.1	4	1.4	240	44.3					3	1.4	276	17.1	256	12.9
BEPA	2	2.9			65	1.4										
FRNI					4	1.4										
PICEA	25	7.1			38	5.7										
POBA2	4	2.9			3	1.4	2	1.4	4	1.4			59	15.7	28	12.9
THOC2	44	7.1			5	4.3	1	1.4					97	15.7	71	7.1
Total	111	27.1	4	1.4	355	58.6	2	2.9	4	1.4	3	1.4	433	48.6	355	32.9

Total Cut (Treatment Option 1) and Total Leave: TPA and BA/ac

	FIRST TREATMENT OPTION			
	TOTAL CUT		TOTAL LEAVE	
Species	TPA	BA/A	TPA	BA/A
ABBA	269	15.7	547	68.6
BEPA			68	4.3
FRNI			4	1.4
PICEA			63	12.9
POBA2	59	15.7	40	20.0
THOC2	93	10.0	125	25.7
Total	421	41.4	847	132.9

There are a number of terms used in this report, as defined in Table 8.

Table 8: Definitions

Term	Description
Live	All live trees with a recorded diameter. The total line includes trees with null diameters.
Recent Mortality	All dead trees with a recorded diameter and a log/snag decay class of "1." The total line includes trees with null diameters.
Older Dead	All dead trees with a recorded diameter and a log/snag decay class greater than "1." The total line includes trees with null diameters.
All	All trees with a recorded diameter. The total line includes trees with null diameters.
Diameter Class	The upper and lower limits of each diameter class, in inches. The report does not distinguish between measurements at breast height and measurements at root collar.
TPA	Trees per acre of trees with a recorded diameter.
BA/A	Basal area per acre of trees with a recorded diameter.

Term	Description
SDI	Stand density index, which describes a class' contribution to the total index for the stand. The SDI for this report is computed using A1 Stage's individual tree transformation of Reineke's SDI equation (Stage, A.L., 1968). This equation uses all live, on-plot trees with a diameter. When applied to a group of sampled trees, the result is numerically equivalent to Reineke's equation for that group, namely: $SDI = \left(\frac{D_q}{10}\right)^{1.6} * TPA$ where Dq is the quadratic mean diameter. This value does not include trees with null diameters, hence, it will not match with cycle zero of the Forest Vegetation Simulator (FVS) which assigns a "0.1" diameter to all trees with null diameters and uses them in the SDI calculations. To make the FVS CDI calculation the same as FSVeg, add the following keywords to FVS: Compute 0 MySDI = SpMcDBH(11,All,0,0.2,999,0,000,0,0) End
QMD	Quadratic mean diameter, in inches, of trees with a recorded diameter. This is the diameter of the tree with the average basal area.
AVG HT	Average height, in feet, of trees with a recorded height. This value is not weighted by TPA or BA/A.
AVG CR	Average crown ratio, in percent, of trees with a recorded crown ratio. This value is not weighted by TPA or BA/A.
AVG AGE	Average age, in years, of trees with a recorded age. This value is not weighted by TPA or BA/A.
AVG DGR	Average diameter growth, in inches per year, of trees with a recorded diameter increment. This value is not weighted by TPA or BA/A. Only measurements for the first increment period are included; measurements for a second increment period, if taken, are not included.
AVG HGR	Average height growth, in feet, of trees with a recorded height growth. This value is not weighted by TPA or BA/A.

Note:

1. Only trees with diameters greater than 0 are used in computing QMD and SDI for the previous tables.

2. SDI is computed using Stage's tree-by-tree version of Reineke's stand density equation (Stage, A.L., 1968. A tree-by-tree measure of site utilization for grand fir related to stand density index. U.S. Forest Service Research Note INT-77).

3. AVG HT, AVG CR, AVG AGE, AVG DGR, and AVG HGR are computed as simple averages of all non-null and nonzero per acre values within the size class. They are neither weighted by basal area nor otherwise "distributed" among non-measured stems.

4. The Sample Size is based on the single group class statistics, and is obtained using:

   $$n = \frac{t^2 CV^2}{E^2}$$

   Where "n" is the estimated number of plots required to achieve a percent sampling error (E) for a population with a coefficient of variation (CV). For the purpose of this report, estimates are computed for three different confidence intervals: 68.3% (t = 1), 90% (t = ~1.645), and 95% (t= ~1.960). The true value of the estimate (TPA, BA/ac) would be expected 68.3%, 90%, or 95% of the time (depending on the selected confidence interval) within plus or minus the desired percent sampling error (E) for the estimated sample size.

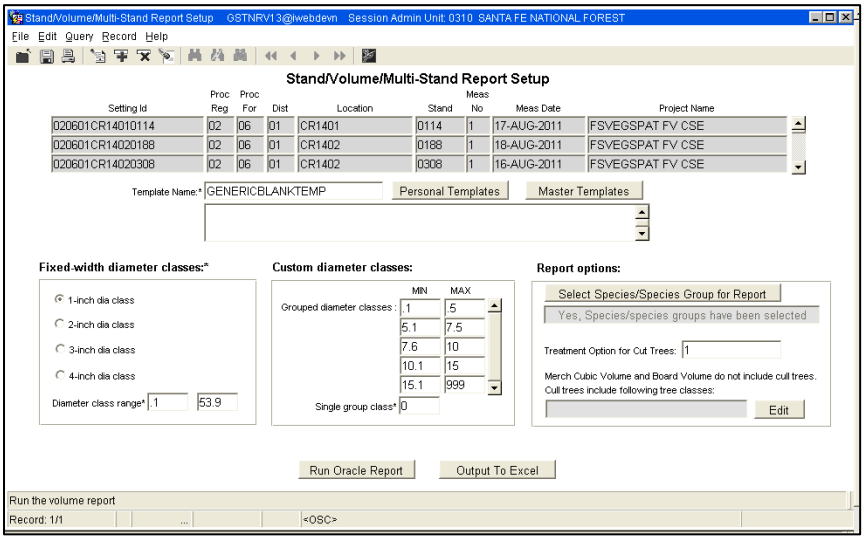
5. Trees with null diameters are displayed in the Species Summary table as well as in the "Null Diameter" class at the top of the main tables, above the fixed-width diameter classes. They are not included in either the custom diameter classes or the single class parts of these tables.

VOLUME REPORT

This report contains a volume summary for each selected setting, one setting at a time. Volumes include gross cubic foot volume, gross merchantable cubic foot volume, and gross board foot volume (*for Region 9, the values produced under these headings are the gross pulp cubic foot volume, gross sawtimber cubic foot volume, and gross sawtimber board foot volume, respectively*). The results are grouped by diameter classes and four live/dead categories. The report currently does not include trees with null diameters in the first report sections. The species summary on the third page of the report does contain trees with null diameters.

When the Volume Report is selected, a Setup screen appears. The top portion if the screen contains the settings selected in the Preferences screen. The Setup screen allows the user to select an existing personal or master template, or build a new personal template. To access an existing template, select either the personal or master template button, and select one of the template names that appear on the list. Only the template author can modify personal templates.

Figure 56: Volume Report setup screen



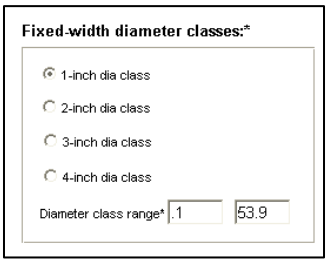
BUILDING A TEMPLATE

Each new template requires a unique name and the diameter range specifications for each of the three report sections.

Fixed Width Diameter Classes

Select a fixed-width diameter class of 1-, 2-, 3-, or 4-inch intervals. Enter the lower limit of the first interval in the box marked "MIN," and enter the upper limit for the last interval in the box marked "MAX." These values set the lower and upper limits for each fixed-width class.

Figure 57: Fixed-width diameter classes



For example, if the 1-inch diameter class is chosen, the MIN set at 0 and the MAX set at 25, the classes would contain:

- 0 to 0.9 inches
- 1.0 to 1.9 inches
- 2.0 to 2.9 inches
- 25.9 inches
- 26+ inches

If the 4-inch diameter class is chosen, the MIN set at .5 and the MAX set at 27, the classes would contain:

- 0.5 to 1.4 inches
- 1.4 to 2.4 inches
- 2.5 to 3.4 inches
- 44 to 27.5 inches
- 28+ inches

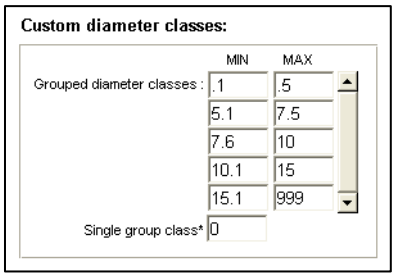
Note: the MIN value will set the starting points of each class. For example, if the MIN value is set to 0.0, each class will start at X.0 and end at X.9. If the MIN value is set at 3.5, each class will start at X.5 and end at X.4.

CUSTOM DIAMETER CLASSES

The MIN and MAX fields contain the upper and lower diameters if an unlimited number of diameter classes. Set the MAX field in the last diameter class to "999.9."

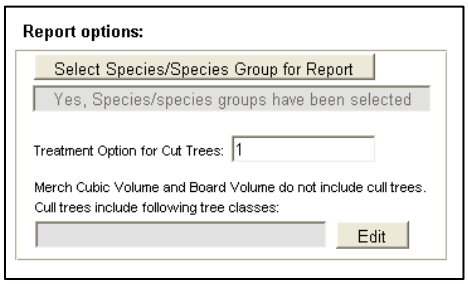
The single_group_class, as shown in the bottom of Figure 58, includes all trees above the specified MIN diameter. It is often used as a "total" line where a minimum of either 0 or 1 inch, although it can be used to summarize the characteristics for all trees above any specified diameter.

Figure 58: Custom diameter classes



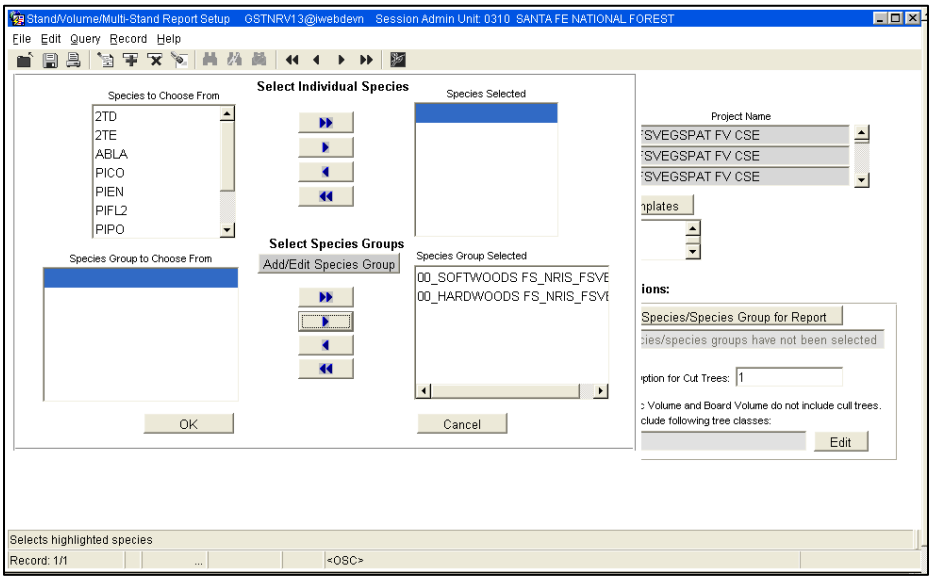
Select Species for Report

Figure 59: Report options



A volume table will be produced for each individual species selected, as shown in Figure 60.

Figure 60: Select Individual Species screen



RUNNING THE REPORT

After selecting a template, editing an existing template, or creating and saving a new template, select the RUN button at the bottom of the screen. The bottom of the report screen has a button, "Output to Excel," that will place the data in the report into a MS-Excel spread sheet which can be saved and edited.

The first page of the report contains the fixed width, custom, and single group diameter class tables. The volumes are grouped by specified diameter classes (Note: Merch cubic volume is computed to a specified top diameter and stump height. It does not take defect into account.).

If you are working in Region 9, please see the *Special Notes* section of this Chapter.

Figure 61: Page 1 of Volume Report

Date: FEB-21-2012 **Report 17: GROSS VOLUME** Page: 1 Of 7489

Does not include stumps (Tree status = 'S')

Project: FSVEGSPAT FV CSE Setting Id: 020601CR14010114 Proc Region: 02 Proc Forest: 06 District: 01 Location: CR1401 Stand: 0114

Acres: 27 EV: 217 (SAF) PV: 10504 (201) Slope: Aspect: Elev: Meas. No: 1 Meas. Date: AUG-17-2011

Part - 1 for: ALL species

Diameter class	LIVE			RECENT MORTALITY			OLDER DEAD			ALL		
	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol
.1 - 1 in.												
1.1 - 2 in.	52						2			54		
2.1 - 3 in.												
3.1 - 4 in.	16									16		
4.1 - 5 in.												
5.1 - 6 in.												
6.1 - 7 in.	381									381		
7.1 - 8 in.												
8.1 - 9 in.												
9.1 - 10 in.												
10.1 - 11 in.												
11.1 - 12 in.												
12.1 - 13 in.	1083	1026	4484				722	684	2990	1805	1709	7474
13.1 - 14 in.												
14.1 - 15 in.												
15.1 - 16 in.												
16.1 - 17 in.												
17.1 - 18 in.												
18.1 - 19 in.												
19.1 - 20 in.												
20.1 - 21 in.												
21.1 - 22 in.												
22.1 - 23 in.												
23.1 - 24 in.												
24.1 - 25 in.												
25.1 - 26 in.												
26.1 - 27 in.												
27.1 - 28 in.												

The second page contains the standard deviations of the volumes by diameter class and live/dead status.

Figure 62: Page 2 of the Volume Report

Date: FEB-21-2012 **Report 17: GROSS VOLUME** Page: 3 Of 7489

Does not include stumps (Tree status = 'S')

Project: FSVEGSPAT FV CSE Setting Id: 020601CR14010114 Proc Region: 02 Proc Forest: 06 District: 01 Location: CR1401 Stand: 0114

Acres: 27 EV: 217 (SAF) PV: 10504 (201) Slope: Aspect: Elev: Meas. No: 1 Meas. Date: AUG-17-2011

Part - 2 for: ALL species

Diameter class	LIVE			RECENT MORTALITY			OLDER DEAD			ALL		
	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol
.1 - .5 in.												
<Std Deviation>												
<Std Error>												
5.1 - 7.5 in.	381									381		
<Std Deviation>	264									264		
<Std Error>	152									152		
7.5 - 10 in.												
<Std Deviation>												
<Std Error>												
10.1 - 15 in.	1083	1026	4484				722	684	2990	1805	1709	7474
<Std Deviation>	1083	1026	4484				1250	1184	5178	625	592	2589
<Std Error>	625	592	2589				722	684	2990	361	342	1495
15.1 - 999 in.												
<Std Deviation>												
<Std Error>												
0 + in.	1532	1026	4484				724	684	2990	2256	1709	7474
<Std Deviation>	1053	1026	4484				1254	1184	5178	385	592	2589
<Std Error>	608	592	2589				724	684	2990	222	342	1495

This third part of this report contains volumes by species and the number of plots installed sample design.

Figure 63: Page 3 of the Volume Report

Date: FEB-21-2012 **Report 17: GROSS VOLUME** Page: 4 Of 7489

Does not include stumps (Tree status = 'S')

Project: FSVEGSPAT FV CSE Setting Id: 020601CR14010114 Proc Region: 02 Proc Forest: 06 District: 01 Location: CR1401 Stand: 0114

Acres: 27 EV: 217 (SAF) PV: 10504 (201) Slope: Aspect: Elev: Meas. No: 1 Meas. Date: AUG-17-2011

Part - 3 Sample Size for ALL species: The estimated number of plots required to attain a desired % sampling error.
Computed for LIVE and ALL volume categories.

		Desired % Sampling Error									
		5	10	15	20	25	30	35	40	45	50
Live	Cubic Vol	189	48	21	12	8	6	4	3	3	2
	Merch C Vol	400	100	45	25	16	12	9	7	5	4
	Board Vol	400	100	45	25	16	12	9	7	5	4
All	Cubic Vol	12	3	2	1	1	1	1	1	1	1
	Merch C Vol	48	12	6	3	2	2	1	1	1	1
	Board Vol	48	12	6	3	2	2	1	1	1	1

Plots Installed by Sample Design / Selection Criteria

Selection Method	Expansion Factor	Azim	Subpop Filter	Selection Criteria No	Subpop	Subpop Min	Subpop Max	Number of Plots
FRQ	100		LIVE	1	HGT	.5	4.49	3
FRQ	50		ALL	2	DBH	1	2.9	3
FRQ	50		ALL	3	DBH	3	4.9	3
FRQ	50		ALL	4	DBH	5	8.9	3
FRQ	50		ALL	5	DBH	9	15.9	3
FRQ	50		ALL	6	DBH	16	99.9	3
FRQ	50		LIVE	7	CVR	1	100	3
FRQ	1		DOWN	8	DIA	.01	.24	3
FRQ	1		DOWN	9	DIA	.25	.99	3
FRQ	1		DOWN	10	DIA	1	2.99	3
FRQ	1		DOWN	11	DIA	3	999.99	3

The fourth part contains the volume information for all species.

Figure 64: Part 4 of the Volume Report – Gross Volume

Date: FEB-21-2012 **Report 17: GROSS VOLUME** Page: 5 Of 7489

Does not include stumps (Tree status = 'S')

Project: FSVEGSPAT FV CSE Setting Id: 020601CR14010114 Proc Region: 02 Proc Forest: 06 District: 01 Location: CR1401 Stand: 0114

Acres: 27 EV: 217 (SAF) PV: 10504 (201) Slope: Aspect: Elev: Meas. No: 1 Meas. Date: AUG-17-2011

Part - 4 for ALL species

	LIVE			RECENT MORTALITY			OLDER DEAD			ALL		
Species	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol
POTR5	1532	1026	4484				724	684	2990	2256	1709	7474
Total	1532	1026	4484				724	684	2990	2256	1709	7474

Volumes for tree class and cut/leave information are also available as part of this report, as shown in Figure 65.

Figure 65: Tree class and cut/leave information in Volume Report

Volumes by species and tree class

	TREE CLASS NULL		
Species	Cubic Vol	Merch C. Vol	Board Vol
POTR5	2256	1709	7474
Total	2256	1709	7474

Total Cut (Treatment Option 1) and Total Leave Volumes

	FIRST TREATMENT OPTION					
	TOTAL CUT			TOTAL LEAVE		
Species	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol
POTR5				2256	1709	7474
Total				2256	1709	7474

Table 9 provides descriptions for select terms used in the Volume Report.

Table 9: Volume Report definitions

Term	Description
Live	All live trees with a recorded diameter. The total line includes trees with null diameters.
Recent Mortality	All dead trees with a recorded diameter and a log/snag decay class of "1." The total line includes trees with null diameters.
Older Dead	All dead trees with a recorded diameter and a log/snag decal class greater than "1." The total line includes trees with null diameters.
All	All trees with a recorded diameter. The total line includes trees with null diameters.
Diameter Class	The upper and lower limits of each diameter class, in inches. The report does not distinguish between measurements at breast height and measurements at root collar.
Cubic Vol	Gross cubic foot volume (for R9, this is the gross pulp cubic foot volume).
Merch C Vol	Gross merchantable cubic foot volume (for R9, this is the gross sawtimber cubic foot volume).
Board Vol	Gross board foot volume (for R9, this is the gross sawtimber board foot volume).

It should be noted that only gross volumes are represented in this report. Additionally, the Sample Size is based on the single class statistics and is obtained using:

$$n = \frac{t^2 CV^2}{E^2}$$

Where "n" is the estimated number of plots required to achieve a percent sampling error (E) for a population with a coefficient of variation (CV). For the purposes of this report, it is assumed that t = 1 (corresponding to a probability of about 68.3%0, so that the equation is reduced to:

$$n = \frac{CV^2}{E^2}$$

The true value of the estimate (TPA, BA/ac) is within plus or minus the percent sampling error 68.3% of the time.

Special Notes

There are three separate volumes calculated in FSVeg. These are cubic, merch cubic, and board foot volume. *Region 9 data is somewhat different from the other regions.* This section will help you understand the differences.

For Region 9, cubic volume is the cubic foot volume from both sawtimber and pulpwood trees calculated from stump to a 4-inch diameter top. In sawtimber trees this includes both the sawlog portion and the topwood. It never includes any limbs or the top above the 4-inch diameter.

For Region 9, merch cubic volume is the cubic foot volume in the sawlog portion of sawtimber trees. It does not include the topwood volume. It also does not include pulpwood tree volume.

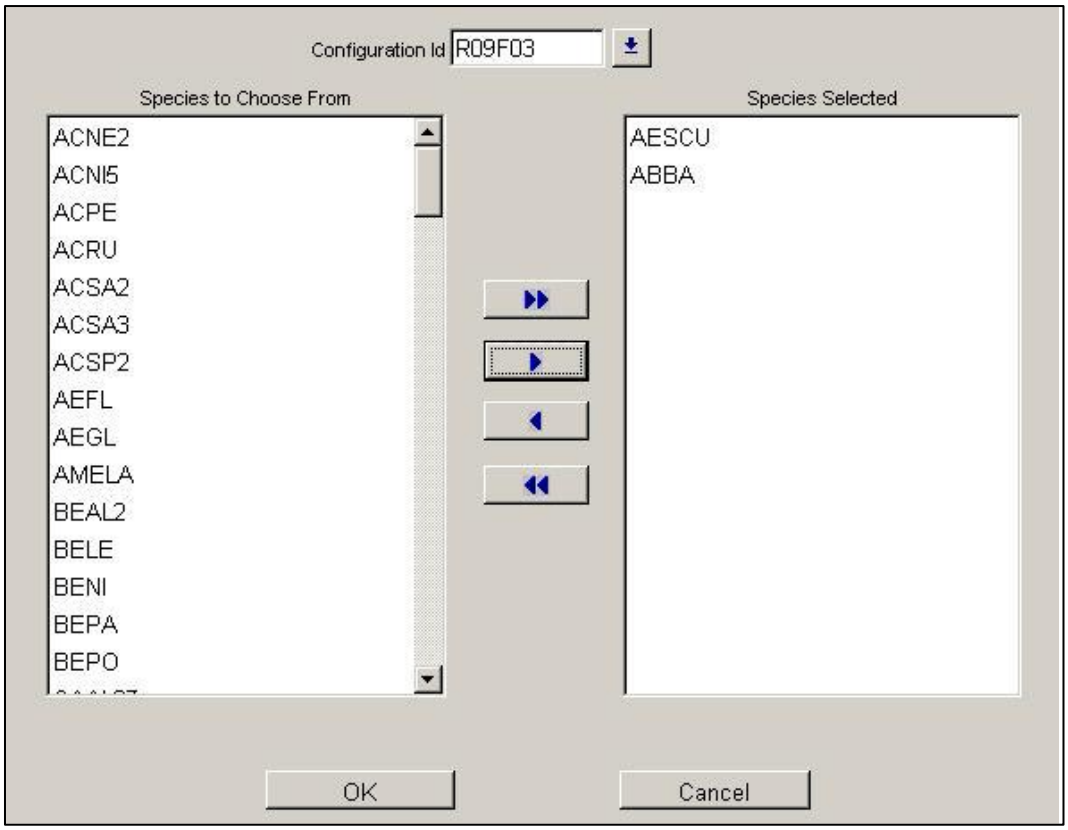
For Region 9 data, board foot volume is either the Scribner or International 1/4 board foot volume, depending on the forest. The Chippewa, Superior, Chequamegon-Nicolet, Ottawa, and Hiawatha get Scribner. All other forests get International 1/4.

Since FSVeg does not store information on whether a tree is pulpwood or sawtimber, the program must make this determination for each tree based on DBH in Region 9. Each forest has a set of minimum DBH values that the different species must meet in order to be considered pulpwood or sawtimber. Minimum pulpwood DBH is 4, 5, 6, or 8 inches depending on forest and species. Minimum sawtimber DBH is typically 7, 9, or 11 inches depending on forest and species. There is one particular species on one forest where the minimum is 8 inches.

SPECIES CONFIGURATION REPORT

This report contains the gross board foot volume equation, gross cubic foot volume equation, gross merchantable cubic foot volume equation, height equation, and Site Index for selected species by a configuration identifier. In addition, parameters of each equation are displayed.

Figure 66: Species Configuration window



Step 1. Select a configuration identifier. This may be a regionally-defined configuration set, or a user-defined set.

Step 2. Move individual or all species from the left-hand to the right-hand list.

Step 3. Select OK to run the report or Cancel to return to the main report menu.

Figure 67: Sample Species Configuration Report

Report 18: Species Configuration Report

Date: Jun-30-2008 Page: 1 Of 1

Configuration ID: R09F09		
Species: ACRU		
Board Foot Volume		
Equation: BD00031	Vol Species:	Vol Geosub:
Min DBH: 11	Seg Rule:	Even/Odd:
Log Len:	Min Log Len:	Max Log Len:
Trim:	Primary Top: 9.6	Secondary Top:
Stump:	Vol Coef1:	Vol Coef2:
Defect:	Taper Eq:	Taper Species:
Taper Geosub:	Taper Seg Len:	Tm Eq: 901DVEE316
Cubic Foot Volume		
Equation: CU00047	Vol Species:	Vol Geosub:
Min DBH: 6	Seg Rule:	Even/Odd:
Log Len:	Min Log Len:	Max Log Len:
Trim:	Primary Top: 4	Secondary Top:
Stump:	Vol Coef1:	Vol Coef2:
Defect:	Taper Eq:	Taper Species:
Taper Geosub:	Taper Seg Len:	Tm Eq: 911DVEE316
Merch Cubic Foot Volume		
Equation: CU00048	Vol Species:	Vol Geosub:
Min DBH: 11	Seg Rule:	Even/Odd:
Log Len:	Min Log Len:	Max Log Len:
Trim:	Primary Top: 9.6	Secondary Top:
Stump:	Vol Coef1:	Vol Coef2:
Defect:	Taper Eq:	Taper Species:
Taper Geosub:	Taper Seg Len:	Tm Eq: 912DVEE316
Height		
Equation: 13	Species: ACRU	Regress:
Coef1:	Coef2:	Coef3:
Site Index		
Equation: 378	Species:	Yrs To BH: 3
Bark		
Equation: 13	Species:	
Coef1:	Coef2:	

CSE COMPREHENSIVE STAND REPORT

This report contains information about the setting, sample design, plots, tree data, surface cover data, vegetation data, and down woody data. In addition, if the down woody data was collected using Brown's protocol, this report will contain an analysis of the volume and tons per acre of down woody material.

Figure 68: CSE comprehensive stand report

Report 19: CSE Comprehensive Stand Report

Date: JAN-02-2009 **Page:** 1 **of** 10

Project Name KITCHI Setting ID: 090302000110009 Measurement Date JUL-01-2007

Setting Measurements

Proc Region	Proc Forest	Admin Region	Admin Forest	District	Location	Stand
09	03	09	03	02	00011	0009

Ownership:	USFS	State:	MN
County:		Administrative Forest:	03
Measurement Date	01-JUL-07	Photo ID:	
Stratum:		Exam Purpose:	SE
Potential Veg Reference:	901	Existing Vegetation:	48
Structure:	MS	EV Reference:	FSHR9
Fuel Model	10	Potential Vegetation:	PVC
Aspect:	15	Capable Growing Area:	85
Slope Position:	FS	Elevation:	500
Examiner:	SAUTER	Slope:	10
Radial Growth Interv 2:		Stand Acres:	53.0
Precision Protocol:	CSE	Radial Growth Interval:	10
Exam Level: Tree =	1	Fuel Photo Reference:	
Veg =	1	User Code:	345
Down =	2		
Surface	1		

Remarks: for the manual

Damage Observed in the stand but not sampled on the plots:

Category Code	Category	Agent Code	Agent Common Name	Severity Code	Severity Description
20	Biotic Damage	001	damping off	1	minor

Figure 69: Species of Management Interest report

Species of Management Interest:

Species Symbol	Genus	Species	Subspecies	Variety	Common Name	Growth Habt 1
ULRU	Ulmus	rubra			slippery elm	TR

Site Index* =	82
Site Species =	POTR5
Base Age =	50
Site Index Reference:	Carmean, W.H., Hahn, J.T., and Jacobs, Rodney D. 1989. Site Index Curves for Forest Tree Species in the Eastern United States. Gen. Tech. Rep. NC-128. St. Paul, MN. 142 p.1989, p. 47. Developed from: Carmean, W.H. 1978

*Computed using only trees flaged as "site trees"

FIA Calculated EV Code** = 901 ASPEN

** Computed using the current Forest Inventory & Analysis (FIA) Stocking and Forest Typing algorithm.

Figure 70: Sample design

Sample Design

Selection Method	Expansion Factor	Azim	Plots Installed	Subpop Filter	Selection Criteria No.	Subpop	Subpop Min	Subpop Max	Remarks
BAF	10.00	360	7	ALL	1	DBH	5.00	999.99	
FRQ	100.00		7	ALL	2	DBH	.01	4.99	
FRQ	100.00		7	LIVE	3	HGT	.50	4.49	
FRQ	10.00		3	LIVE	4	CVR	.10	1.00	
TRN	7.00		4	DOWN	5	DIA	.10	.24	
TRN	7.00		4	DOWN	6	DIA	.25	.99	
TRN	14.00		4	DOWN	7	DIA	1.00	2.99	
TRN	75.00		4	DOWN	8	DIA	3.00	999.99	
FRQ	10.00		3		9	SVC	.10	1.00	

Figure 71: Plot data

Plot Data

Plot Measurements:

Plot No.	Latitude	Longitude	Cap Growth %	Aspect	Slope	Slope Position	Elevation	Existing Veg	Fuel Model	User Code
2	47 deg, 27 min, 19.10 sec	94 deg, 23 min, 43.70 sec	100	15	10	FS	500	48	10	
3	47 deg, 27 min, 19.10 sec	94 deg, 23 min, 50.90 sec	98	15	10	FS	450	48	10	
4	47 deg, 27 min, 23.80 sec	94 deg, 23 min, 51.10 sec	75	20	5	FS	500	48	10	
5	47 deg, 27 min, 24.00 sec	94 deg, 23 min, 43.90 sec	100	10	5	FS	450	48	10	
6	47 deg, 27 min, 27.90 sec	94 deg, 23 min, 39.70 sec	100	15	10	FS	500	48	10	
7	47 deg, 27 min, 28.70 sec	94 deg, 23 min, 51.20 sec	98	15	20	FS	500	48	10	
8	47 deg, 27 min, 28.60 sec	94 deg, 23 min, 56.90 sec	100	15	20	FS	500	48	10	

Plot No.	Distance to Seed Wall	Plot Remarks
2	1472849	
3	1472844	
4	1468216	
5	1468221	
6	1464402	
7	1463417	
8	1463413	

Plot History:

Plot No.	Plot History Code	Event Description	Event Date
2	14	Mining	1950
	5	Tree cutting	1980
6	11	Insect/Disease outbreak	1970
	6	Fire	1940

Figure 72: Tree Data

Tree Data

Tree Measurements:

Plot No	Tag ID	Tree Stat	Tree Clas	Site GST	Species	Tree Cnt	DRC # of Stem	Diam	Ht	Ht to Crwn	Ht to Break	Rad Grw	Ht Grw	Age	Crwn Class	Crwn Ratio	Crwn Width	WL Use	Log Sng Decay	Cone Sero	TO	Dam Cat	Dam Agt	Dam Part	Dam Sev
2	1	L	DE		POTR5	8		4.0	48.0													14	007	FO	1
2	2	L	RF		POTR5	7		2.0	35.0													21	010	RO	4
2	3	L	GS		FRNI	1		4.0	50.0		50											99	001	TO	15
2	4	L	RN		FRNI	3		2.0	35.0																
2	5	L	SV		BEPA	1		4.0	50.0																
2	6	L	UA		ACSA3	1		.2	7.0																
2	7	L	US		ACSA3	2		.6	15.0																
3	1	L			POBA2	1		6.0	55.0																
3	2	L			POBA2	1		6.0	55.0																
3	3	L			POBA2	1		6.0	55.0																
3	4	L		S	POTR5	1		5.8	56.0					21											

Figure 73: Legend for Tree Damage Codes

Legend for the Tree Damage codes:

Category Code	Category	Agent Code	Agent Common Name	Severity Code	Severity Description
14	Sucking Insects	007	pine spittlebug	1	minor
21	Root/Butt Diseases	010	annosus root disease	4	Both crown deterioration and diagnostic signs/symptoms detected
99	Physical Effects	001	Broken or missing top	15	percent affected

Legend for the Tree Species codes:

Species Code	Genus	Species	Subspecies	Variety	Common Name
BEPA	Betula	papyrifera			paper birch
QUMA2	Quercus	macrocarpa			bur oak
ACRU	Acer	rubrum			red maple
QUAL	Quercus	alba			white oak
FRNI	Fraxinus	nigra			black ash
OSVI	Ostrya	virginiana			hophornbeam
TIAM	Tilia	americana			American basswood
ACSA3	Acer	saccharum			sugar maple
POTR5	Populus	tremuloides			quaking aspen
PRSE2	Prunus	serotina			black cherry
ULAM	Ulmus	americana			American elm
ABBA	Abies	balsamea			balsam fir
POBA2	Populus	balsamifera			balsam poplar

Legend for the Tree Class codes:

Tree Class	Description
RF	Rough tree
RN	Rotten tree
SV	Salvable tree (hard)
US	Unslavable tree (soft)
UA	Unacceptable crop tree

Figure 74: Calculated Values

Calculated Values:

Plot No	Tag ID	Tree Status	Tree Class	Species	Tree Count	Diameter	Height	Treatment Option 1	Tree BA	Plot TPA Equiv	Stand TPA Equiv	Stand BA/A Equiv	Cubic Vol CF/ac	Merch Cubic CF/ac	Board Vol BF/ac
2	1	L	DE	POTR5	8	4.0	48.0		.087	800.0	114.3	10.0			
2	2	L	RF	POTR5	7	2.0	35.0		.022	700.0	100.0	2.2			
2	3	L	GS	FRNI	1	4.0	50.0		.087	100.0	14.3	1.2			
2	4	L	RN	FRNI	3	2.0	35.0		.022	300.0	42.9	.9			
2	5	L	SV	BEPA	1	4.0	50.0		.087	100.0	14.3	1.2			
2	6	L	UA	ACSA3	1	.2	7.0		.000	100.0	14.3	.0			
2	7	L	US	ACSA3	2	.6	15.0		.002	200.0	28.6	.1			
3	1	L		POBA2	1	6.0	55.0		.196	50.9	7.3	1.4	16		
3	2	L		POBA2	1	6.0	55.0		.196	50.9	7.3	1.4	16		
3	3	L		POBA2	1	6.0	55.0		.196	50.9	7.3	1.4	16		
3	4	L		POTR5	1	5.8	56.0		.183	54.5	7.8	1.4			
3	5	L		POTR5	1	6.0	55.0		.196	50.9	7.3	1.4	16		

Figure 75: Vegetation composition and surface cover measurements

Vegetation Composition:

Form Type	Plot No	Live Dead	Layer	Life Form	Species	Min Height	Avg Height	Max Height	Cover %	Avg Diam
FORM 1	3	L	TOT	TR					55	
Cover by Lifeform		L	TV						68	
		L	TOS	SH					45	
		L	TOF	FB					25	
		L	TOG	GR					10	
	5	L	TOT	TR					65	
		L	TV						75	
		L	TOS	SH					35	
		L	TOG	GR					5	
		L	TOF	FB					15	

Figure 76: Legend for layer codes and life form codes

Legend for the Layer codes:

Layer Code	Description
TOF	Total forbs
TOG	Total graminoids
TOS	Total shrubs
TOT	Total trees
TV	Total vegetation

Legend for the Life Form codes:

Lifeform Code	Description
FB	Herbaceous forb/herb
GR	Herbaceous graminoid
SH	Woody shrub
TR	Woody tree

Figure 77: Surface cover

Surface Cover:

Plot No	Grnd Surface Cover Code	Ground Surface Cover Description	% Cover
3	BARR	Barren	5
	BAFO	Basal Forb	20
	CML	Cryptogams, mosses, and lichens	25
	COGR	Coarse gravel (20-75 mm)	15
	LITT	Litter (< 1/4")	20
	ROCK	Rock	15
5	BARR	Barren	10
	BAFO	Basal Forb	20
	BOUL	Boulders (round and flat)	10
	FIGR	Fine gravel (2-5 mm)	15
	COGR	Coarse gravel (20-75 mm)	25
	CML	Cryptogams, mosses, and lichens	20

Figure 78: Downed woody data

Downed Woody Data

Fuel Depths: Plot No	Duff Depth 1 (in.)	Duff Depth 2 (in.)	Fuel Depth (feet)
2	3.0	2.0	1.0
4	3.1	2.1	.5
6	1.0	3.0	2.0
8	9.0	6.0	5.0

Brown's Protocol Duff and Fuel Depth Compilation:

Average Duff Depth	Duff Tons/acre	Average Fuel Depth	Average Diameter 3+ in. Class Sound	Average Diameter 3+ in. Class Rotten
3.7	36.5	2.1	7.9	7.5

Brown's Transect Compilation - Downed Woody Weight and Volume per acre by size class:
Downed woody data will be properly compiled in this section only if the sample design adheres to Brown's original protocol, including the 0-0.24, 0.25-0.99, 1-2.99, and 3+ class sizes.

	0 - 0.24 in. class	0.25 - 0.99 in. class	1 - 2.99 in class	Sound 3+ in. class	Rotten 3+ in. class	Total of all classes
Tons/ac	.32	4.11	9.08	13.05	1.32	27.87
StdDev	.12	1.95	3.92	9.46	1.55	11.82
Cubic Ft/ac	21.1	274.1	727.2	1,045.8	140.5	2,208.8
StdDev	7.8	130.5	313.7	757.7	165.1	906.0

FFE-FVS Initial dead fuel loads for fields 1 through 5, in tons/ac:

	FUELINIT 1 (<1 in)	FUELINIT 2 (1 - 2.9 in)	FUELINIT 3 (3 - 5.9 in)	FUELINIT 4 (6 - 11.9 in)	FUELINIT 5 (12 in +)
Tons/ac	4.422023	9.075708	.91568	5.38156	8.0704
StdDev	2.070193	3.915434	.76934964	5.239012	9.867401

Figure 79: Additional downed woody data

Downed Woody Data

Fuel Photo Reference: 31 Stereo Photos for Evaluating Jack Pine Slash Fuels. GTR NC-77. 1982

Fuel Photo Residue Description (tons/ac):

Plot No	Residue Desc Code	Fuel 1 (<1 in)	Fuel 2 (1 - 2.9 in)	Fuel 3 (3 - 5.9 in)	Fuel 4 (6 - 11.9 in)	Fuel 5 (12 in +)	Duff	Litter
1	3	3.0	3.0	4.0	.0	.0	4.0	6.0
2	7	13.0	6.0	10.0	.0	.0	10.0	2.0
3	9	6.0	6.0	5.0	.0	.0	11.0	7.0
4	6	13.0	7.0	6.0	.0	.0	15.0	3.0
5	10	.0	1.0	2.0	.0	.0	1.0	1.0

Fuel Model Data:

	Model No	Model Code	Tons/acre 1-hr	10-hr	100-hr	Fuel Bed Depth (in)
Setting	162	TU2	.95	1.80	1.25	1.00
Plot 1	8		1.50	1.00	2.50	.20
Plot 2	165	TU5	4.00	4.00	3.00	1.00
Plot 3	187	TL7	.30	1.40	8.10	.40
Plot 4	202	SB2	4.50	4.25	4.00	1.00
Plot 5	188	TL8	5.80	1.40	1.10	.30

Figure 80: Downed woody pieces per acre

Downed Woody Pieces per Acre:
Results include only those pieces where intersection diameter and piece length were recorded -- all other sampled pieces will not contribute to the per acre estimate.

Intersection Diameter Class (in.)	Pieces / Acre
3 - 4.9	79.8
5 - 9.9	120.5
10 - 14.9	26.6
15 - 19.9	15.2
20 - 24.9	
25 - 29.9	
30 - 34.9	
35 - 39.9	
40 - 44.9	
45 +	

Transect Measurements:

Plot No	Selection Method	Transect Length (ft)	Subpop	Min	Max	Number of Piece Intersections	Intersection Diameter	Large end Diameter	Small end Diameter	Decay Class	Piece Length
2	TRN	7	DIA	.10	.24	13					
	TRN	7	DIA	.25	.99	8					
	TRN	14	DIA	1.00	2.99	5					
	TRN	75	DIA	3.00	999.99	1	3	9	2	1	10
	TRN	75	DIA	3.00	999.99	1	8	12	4	3	17
	TRN	75	DIA	3.00	999.99	1	4	6	10	2	8
4	TRN	7	DIA	.10	.24	34					
	TRN	7	DIA	.25	.99	26					
	TRN	14	DIA	1.00	2.99	14					
	TRN	75	DIA	3.00	999.99	1	3	5	5	2	8

Note: The forest typing algorithm is a hierarchical procedure. The algorithm begins by comparing the live tree stocking of softwoods and hardwoods and continues in a stepwise fashion comparing successively smaller subgroups of the preceding aggregation of initial types. The aggregated initial type groups used at each step of the process are called combined type groups. Each initial type group can occur in more than one of these combined groups. The stepwise progression proceeds in most cases until a plurality of an initial type group is identified. In certain situations, the algorithm may revert to the field call. Nonstocked forest land has a live tree stocking < 10.

Figure 81: User codes

Project Name LOWLAND Setting ID: 090301000130019

User Codes

Setting User Codes:

Data ID	Data
CSE GENERIC SETTING_CODE	setc

Plot User Codes:

Plot	CSE GENERIC PLOT CODE
1	plot
2	
3	
4	

Tree User Codes:

Plot	Tag ID	Species	Diameter	Height	CSE GENERIC TREE CODE
1	0001	LALA		4	trec
2	0001	LALA		4	
3	0001	LALA		4	
3	0002	PIMA		4	
4	0001	LALA		4	
4	0002	ABBA		2	

CSE BROWN'S PROTOCOL REPORT

This report contains data collected on the Down Woody Form according to Brown's protocols. It contains an analysis of the volume and tons per acre using the formulas found in Brown's publication.

Figure 82: CSE Brown's Protocol report

Project Name: KITCHI Setting ID: 090302000110009 Measurement Date JUL-01-2007

Fuel Depths:

Plot No	Duff Depth 1 (in.)	Duff Depth 2 (in.)	Fuel Depth (feet)
2	3.0	2.0	1.0
4	3.1	2.1	.5
6	1.0	3.0	2.0
8	9.0	6.0	5.0

Brown's Protocol Duff and Fuel Depth Compilation:

Average Duff Depth	Duff Tons/acre	Average Fuel Depth	Average Diameter 3+ in. Class Sound	Average Diameter 3+ in. Class Rotten
3.7	36.5	2.1	7.9	7.5

Brown's Transect Compilation - Downed Woody Weight and Volume per acre by size class:
Downed woody data will be properly compiled in this section only if the sample design adheres to Brown's original protocol, including the 0-0.24, 0.25-0.99, 1-2.99, and 3+ class sizes.

	0 - 0.24 in. class	0.25 - 0.99 in. class	1 - 2.99 in class	Sound 3+ in. class	Rotten 3+ in. class	Total of all classes
Tons/ac	.32	4.11	9.08	13.05	1.32	27.9
StdDev	.12	1.95	3.92	9.46	1.55	11.8
Cubic Ft/ac	21.14	274.12	727.19	1,045.82	140.52	2,208.8
StdDev	7.80	130.53	313.72	757.66	165.09	906.0

FFE-FVS Initial dead fuel loads for fields 1 through 5, in tons/ac:

	FUELINIT 1 (<1 in)	FUELINIT 2 (1 - 2.9 in)	FUELINIT 3 (3 - 5.9 in)	FUELINIT 4 (6 - 11.9 in)	FUELINIT 5 (12 in +)
Tons/ac	4.422023	9.075708	.91568	5.38156	8.0704
StdDev	2.070193	3.915434	.76934964	5.239012	9.867401

Figure 83: downed woody pieces per acre

Downed Woody Pieces per Acre:
Results include only those pieces where intersection diameter and piece length were recorded -- all other sampled pieces will not contribute to the per acre estimate.

Intersection Diameter Class (in.)	Pieces / Acre
3 - 4.9	79.8
5 - 9.9	120.5
10 - 14.9	26.6
15 - 19.9	15.2
20 - 24.9	
25 - 29.9	
30 - 34.9	
35 - 39.9	
40 - 44.9	
45 +	

Figure 84: Transect measurements

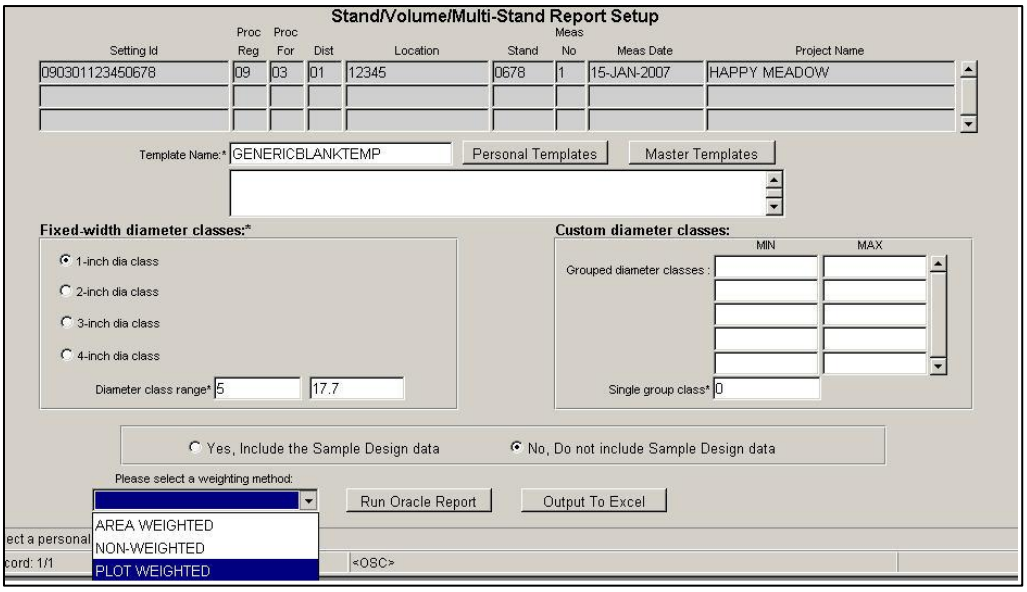
Transect Measurements

Plot No	Selection Method	Transect Length (ft)	Subpop	Min	Max	Number of Piece Intersections	Intersection Diameter	Diameter Large End	Diameter Small End	Decay Class	Piece Length
2	TRN	7	DIA	.10	.24	13					
	TRN	7	DIA	.25	.99	8					
	TRN	14	DIA	1.00	2.99	5					
	TRN	75	DIA	3.00	999.99	1	3	9	2	1	10
	TRN	75	DIA	3.00	999.99	1	8	12	4	3	17
	TRN	75	DIA	3.00	999.99	1	4	6	10	2	8
4	TRN	7	DIA	.10	.24	34					
	TRN	7	DIA	.25	.99	26					
	TRN	14	DIA	1.00	2.99	14					
	TRN	75	DIA	3.00	999.99	1	3	5	5	2	8
	TRN	75	DIA	3.00	999.99	1	14	23	10	1	20
	TRN	75	DIA	3.00	999.99	1	7	10	4	4	10
6	TRN	7	DIA	.10	.24	23					
	TRN	7	DIA	.25	.99	14					
	TRN	14	DIA	1.00	2.99	8					

MULTI-STAND REPORT

This report works exactly like the Stand Table report except it averages data for multiple stands. These stands are selected via the Preferences or List options. The pull-down box at the bottom of the screen provides the ability to weight each stand by acres (area), number of plots (plot), or equal weights (non-weighted).

Figure 85: Stand/volume/multi-stand report setup



The bottom of this report has an "Output to Excel" button that will place the data in the report into a MS-Excel spreadsheet. The spreadsheet can then be saved and edited.

The weight methods are outlined in Table 10.

Table 10: Weight methods

Method	Description
Non-weighted	The volume or stand data from each stand has equal weight: (Stand A data + Stand B data)/2
Area weighted	The volume or stand data from each stand is weighted by the number of acres in each stand. For example, if Stand A has 100 acres and Stand B has 50 acres, then: ((100 x Stand A data) + (50 x Stand B data))/150
Plot weighted	The volume or stand data from each stand is weighted by the number of plots in each stand. For example, if Stand A has 15 plots and Stand B has 7 plots, then: ((15 x Stand A data) + (7 x Stand B data))/22

Figure 86: Multi-stand summary, page 1

Report 21: MULTI-STAND SUMMARY: BASIC STAND CHARACTERISTICS

Date: NOV-16-2007 Does not include stumps (Tree status = 'S')

Weight Method: PLOT WEIGHTED Page: 1 Of 4

All Species

Diameter class	LIVE TPA	LIVE BA/A	LIVE SDI	LIVE QMD	LIVE AVG M/C HT	AVG CR	AVG AGE	AVG DGR	AVG HGR	RECENT MORTALITY TPA	RECENT MORTALITY BA/A	RECENT MORTALITY QMD	RECENT MORTALITY AVG M/C HT	OLDER DEAD TPA	OLDER DEAD BA/A	OLDER DEAD QMD	OLDER DEAD AVG M/C HT	ALL TPA	ALL BA/A	ALL QMD	ALL AVG M/C HT
NULL Diameter	4446				1.1													4446			1
4 - 5.9 in.	157	13.7	38	4.0	34.9									14	1.2	4.0	5	171	15.0	4.0	33
6 - 7.9 in.	51	10.0	22	6.0	48.4									22	4.3	6.0	42	73	14.3	6.0	43
8 - 9.9 in.	78	27.1	56	8.0	72.6									8	2.9	8.0	62	86	30.0	8.0	71
10 - 11.9 in.	47	25.7	51	10.0	75.7									24	12.9	10.0	30	71	38.6	10.0	61
12 - 13.9 in.	40	31.4	60	12.0	76.4									9	7.1	12.0	71	49	38.6	12.0	76
14 - 15.9 in.	12	12.9	24	14.0	82.1									7	7.1	14.0	32	19	20.0	14.0	69
16 - 17.9 in.	4	5.7	11	16.0	82.4													4	5.7	16.0	82
18 - 19.9 in.	2	2.9	5	18.0	81.5													2	2.9	18.0	82
20 - 21.9 in.	1	1.4	3	20.0	85.0													1	1.4	20.0	85
22 - 23.9 in.																					
24 - 25.9 in.																					
26 - 27.9 in.																					
28 - 29.9 in.																					
30 + in.																					

Figure 87: Multi-stand summary, page 3

Report 21: MULTI-STAND SUMMARY: BASIC STAND CHARACTERISTICS

Date: NOV-16-2007 Does not include stumps (Tree status = 'S')

Weight Method: PLOT WEIGHTED Page: 3 Of 4

Sample Design Data for summarized settings

Project Name	Setting ID	Measurement Date	Plots Installed	Selection Method Type	Sample Exp. Factor	Subpop Filter	Selection Criteria	Subpop	Subpop Min	Subpop Max
E WINNIE	090303000290038	09-SEP-05	4	BAF	10	ALL	1	DBH	.5	999.99
			4	FRQ	100	ALL	2	DBH	.01	4.99
			4	FRQ	100	LIVE	3	HGT	.5	4.49
			4	FRQ	10	LIVE	4	CVR	1	1
			4	TRN	7	DOWN	5	DIA	.01	.24
			4	TRN	7	DOWN	6	DIA	.25	.99
			4	TRN	14	DOWN	7	DIA	1	2.99
			4	TRN	75	DOWN	8	DIA	3	999.99
E WINNIE	090303000230038	10-SEP-05	3	BAF	10	ALL	1	DBH	.5	999.99
			3	FRQ	100	ALL	2	DBH	.01	4.99
			3	FRQ	100	LIVE	3	HGT	.5	4.49
			3	FRQ	10	LIVE	4	CVR	1	1
			3	TRN	7	DOWN	5	DIA	.01	.24
			3	TRN	7	DOWN	6	DIA	.25	.99
			3	TRN	14	DOWN	7	DIA	1	2.99
			3	TRN	75	DOWN	8	DIA	3	999.99

One of the report sections contains a description of each sample design associated with each stand included in the report.

BA/acre and TPA information for tree class and cut/leave information are also part of this report, as shown in Figure 88.

Figure 88: TPA and BA information

TPA and BA by species and tree class

	TREE CLASS															
	AC		DE		GS		RF		RN		SV		UA		US	
Species	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A	TPA	BA/A
ABBA	36	7.1	4	1.4	240	44.3					3	1.4	276	17.1	256	12.9
BEPA	2	2.9			65	1.4										
FRNI					4	1.4										
PICEA	25	7.1			38	5.7										
POBA2	4	2.9			3	1.4	2	1.4	4	1.4			59	15.7	28	12.9
THOC2	44	7.1			5	4.3	1	1.4					97	15.7	71	7.1
Total	111	27.1	4	1.4	355	58.6	2	2.9	4	1.4	3	1.4	433	48.6	355	32.9

Total Cut (Treatment Option 1) and Total Leave: TPA and BA/ac

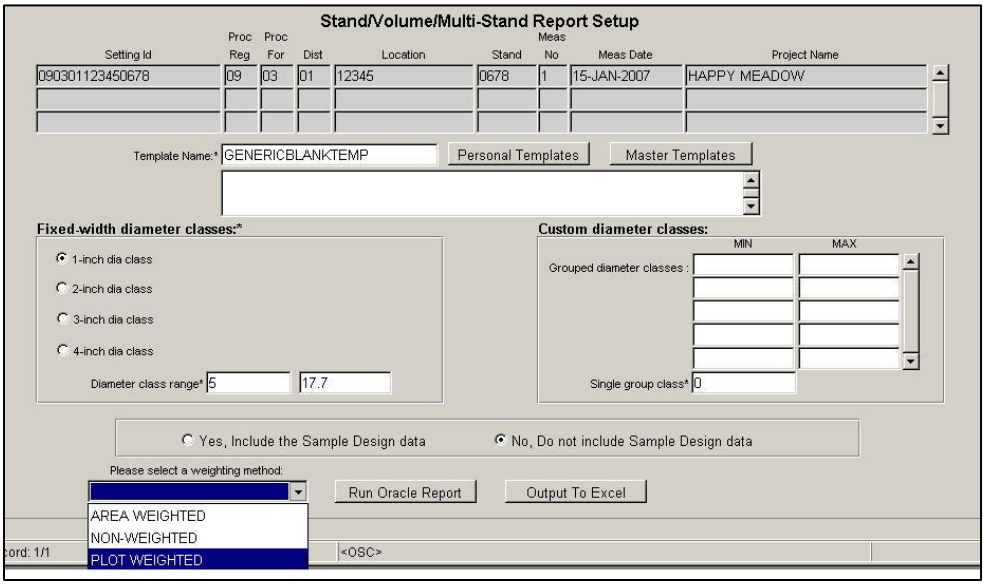
	FIRST TREATMENT OPTION			
	TOTAL CUT		TOTAL LEAVE	
Species	TPA	BA/A	TPA	BA/A
ABBA	269	15.7	547	68.6
BEPA			68	4.3
FRNI			4	1.4
PICEA			63	12.9
POBA2	59	15.7	40	20.0
THOC2	93	10.0	125	25.7
Total	421	41.4	847	132.9

MULTI-STAND VOLUME REPORT

This report works exactly like the Volume report except it averages the data for multiple stands. These stands are selected via the Preferences or List options. The pull-down box at the bottom of the screen provides the ability to weigh each stand by acres (area), number of plots (plot), or equal weights (non-weighted).

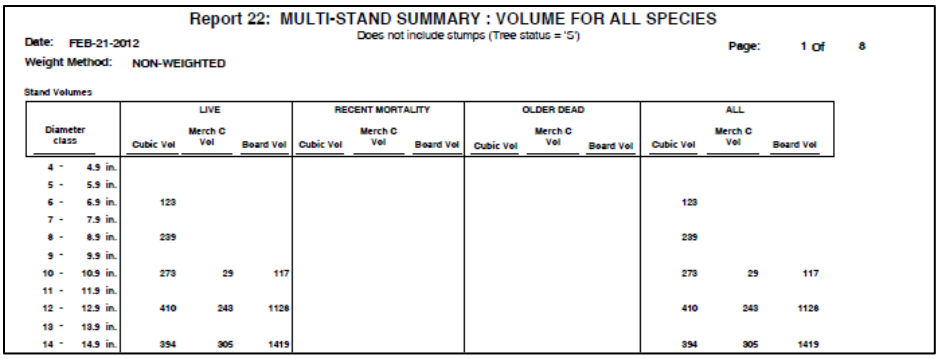
If you are working in Region 9, please read the *Special Notes* section of this Chapter.

Figure 89: Stand/volume/multi-stand report setup



The bottom of the report has a button, "Output to Excel," that will place the data in the report into a MS-Excel spread sheet. The spread sheet can then be saved and edited.

Figure 90: Multi-stand summary, page 1



Report 22: MULTI-STAND SUMMARY : VOLUME FOR ALL SPECIES

Does not include stumps (Tree status = 'S')

Date: FEB-21-2012 Page: 1 Of 8

Weight Method: NON-WEIGHTED

Stand Volumes

Diameter class	LIVE			RECENT MORTALITY			OLDER DEAD			ALL		
	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol	Cubic Vol	Merch C Vol	Board Vol
4 - 4.9 in.												
5 - 5.9 in.												
6 - 6.9 in.	123									123		
7 - 7.9 in.												
8 - 8.9 in.	239									239		
9 - 9.9 in.												
10 - 10.9 in.	273	29	117							273	29	117
11 - 11.9 in.												
12 - 12.9 in.	410	243	1128							410	243	1128
13 - 13.9 in.												
14 - 14.9 in.	394	305	1419							394	305	1419

At the top of the report, the weight method is displayed.

Figure 91: Multi-stand summary, page 3

Report 22: MULTI-STAND SUMMARY : VOLUME FOR ALL SPECIES

Does not include stumps (Tree status = 'S')

Date: NOV-16-2007 Page: 3 Of 4

Weight Method: PLOT WEIGHTED

Sample Design Data for summarized settings

Project Name	Setting ID	Measurement Date	Plots Installed	Selection Method Type	Sample Exp. Factor	Subpop Filter	Selection Criteria	Subpop	Subpop Min	Subpop Max
E WINNIE	090303000290038	09-SEP-05	4	BAF	10	ALL	1	DBH	5	999.99
			4	FRQ	100	ALL	2	DBH	.01	4.99
			4	FRQ	100	LIVE	3	HGT	.5	4.49
			4	FRQ	10	LIVE	4	CVR	1	1
			4	TRN	7	DOWN	5	DIA	.01	.24
			4	TRN	7	DOWN	6	DIA	.25	.99
			4	TRN	14	DOWN	7	DIA	1	2.99
			4	TRN	75	DOWN	8	DIA	3	999.99
E WINNIE	090303000230038	10-SEP-05	3	BAF	10	ALL	1	DBH	5	999.99
			3	FRQ	100	ALL	2	DBH	.01	4.99
			3	FRQ	100	LIVE	3	HGT	.5	4.49
			3	FRQ	10	LIVE	4	CVR	1	1
			3	TRN	7	DOWN	5	DIA	.01	.24
			3	TRN	7	DOWN	6	DIA	.25	.99
			3	TRN	14	DOWN	7	DIA	1	2.99
			3	TRN	75	DOWN	8	DIA	3	999.99

One of the report sections contains a description of each sample design.

Volumes for tree class and cut/leave information are also available as part of this report:

Figure 92: Volumes by species and tree class

Volumes by species and tree class

	TREE CLASS																				
	AC			DE			GS			RF			RN			SV			UA			US		
Species	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol
ABBA	83			22			495	84	391							16	10	50	32			26		
BEPA	71	44	205																					
FRNI							22																	
PICEA	104	16	70				54																	
POBA2	69	20	106				28			34	10	53	22						240	28	144	116	22	117
THOC2	59	32	138				76	54	237	32	28	139							234	154	703	55	43	195
Total	385	112	519	22			676	138	627	67	38	192	22			16	10	50	507	181	847	197	65	312

Total Cut (Treatment Option 1) and Total Leave Volumes

	FIRST TREATMENT OPTION					
	TOTAL CUT			TOTAL LEAVE		
Species	Cubic Vol	Merch C. Vol	Board Vol	Cubic Vol	Merch C. Vol	Board Vol
ABBA		16		658	93	441
BEPA				71	44	205
FRNI				22		
PICEA				158	16	70
POBA2	240	28	144	270	53	275
THOC2	120	64	284	337	246	1128
Total	376	92	428	1516	452	2119

SPECIAL NOTES:

There are three separate volumes calculated in FSVeg. These are cubic, merch cubic, and board foot volume. *Region 9 data is somewhat different from the other regions.* This section will help you understand the differences.

For Region 9, cubic volume is the cubic foot volume from both sawtimber and pulpwood trees calculated from stump to a 4-inch diameter top. In sawtimber trees this includes both the sawlog portion and the topwood. It never includes any limbs or the top above the 4-inch diameter.

For Region 9, merch cubic volume is the cubic foot volume in the sawlog portion of sawtimber trees. It does not include the topwood volume. It also does not include pulpwood tree volume.

For Region 9 data, board foot volume is either the Scribner or International 1/4 board foot volume, depending on the forest. The Chippewa, Superior, Chequamegon-Nicolet, Ottawa, and Hiawatha get Scribner. All other forests get International 1/4.

Since FSVeg does not store information on whether a tree is pulpwood or sawtimber, the program must make this determination for each tree based on DBHin Region 9. Each forest has a set of minimum DBH values that the different species must meet in order to be considered pulpwood or sawtimber. Minimum pulpwood DBH is 4, 5, 6, or 8 inches depending on forest and species. Minimum sawtimber DBH is typically 7, 9, or 11 inches depending on forest and species. There is one particular species on one forest where the minimum is 8 inches.

ACRES BY AGE CLASS REPORT

This report contains the acres in each age class for two or more settings. The "Year of Origin" value must be populated for each setting. This value is NOT populated via the CSE forms; it may be populated via the Data Table forms.

Figure 93: Acres by age class report

Report 23: Acres by Age Class

Date: NOV-16-2007

Acres by Forest Type and Ten-Year Age* Class

Page 1 of 1

Forest Type	Null **	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	111-120	121-130	131-140	141-150	151-160	161+	Total	%
NULL Forest Type	0	0	0	0	0	0	0	27.42	24.15	0	0	0	0	0	28.72	0	0	0	80.29	100%
Total:	0	0	0	0	0	0	0	27.42	24.15	0	0	0	0	0	28.72	0	0	0	80.29	100%
Percent	.00	.00	.00	.00	.00	.00	.00	34.15	30.08	.00	.00	.00	.00	.00	35.77	.00	.00	.00		

* Stand Age = current year - stand_year_of_origin.
It is not computed directly from the tree measurements.

** The acres in this column represent settings that do not have stand_year_of_origin values.

Setting ID	Measurement Date
090303000230038	SEP-10-2005
090303000290024	SEP-09-2005
090303000290038	SEP-09-2005

Grand Total for all acres in this report: 80.29

Total Number of Settings: 3

VEGETATION STRUCTURAL STAGE REPORT

This report calculates the vegetation structural stage (VSS) for Regions 2, 3, and 4.

Figure 94: Vegetative structural stage report

Date: NOV-16-2007 **Report 24: Vegetative Structural Stage** **Page 1 of 1**

Project: BRIGGS		**Setting Id:** 0203030408040101		**Measurement Date:** Aug. 17, 2007		**Meas No:** 1	
Proc Region: 02	**Proc Forest** 03	**District:** 03	**Location:** 040804		**Stand:** 0101	**Acres:** 40	

Forest Cover Type:	PP	**Max SDI For Type:**	450
Stand Site Index:	77	**Stand SDI:**	266.6
Stand Site Index Species:	PIPO	**% SDI of Max SDI:**	59.25
Site Index Base Age:	100		
Site Index Reference:	Hann, David W. 1975. Site Index and Maximum Gross Yield Capability Equations for Ponderosa Pine in the Black Hills. Res. Note: INT-19. USDA Forest Service.		

Figure 95: Class sizes

Size Classes

	GRS/FRB/ Seedlings	Saplings	Young Forest	Mid-Age Forest	Mature Forest	Old Forest
	0-.9 "	1-4.9 "	5-11.9 "	12-17.9 "	18 - 23.9"	24"+
# Trees In Class	660.0	.0	198.3	65.9	.0	.0
BA For Class	.2	.0	78.0	72.0	.0	.0
QMD For Class	.2	.0	8.5	14.2	.0	.0
SDI In Class	1.3	.0	150.6	114.7	.0	.0
% SDI In Class	.50	.00	56.49	43.00	.00	.00

Structure Stage: 3CSS Stand structure is evenaged.
60% or more of the BA is between diameter 9.0 - 16.9
(Actual % BA in range is 75.92)

Figure 96: Stand density index rating

Stand Density Index Rating

Diameter Groups

	Points	.1-4.9"	5-11.9"	12-17.9"	18-23.9"	24"+
# Trees		660.0	198.3	65.9	.0	.0
BA		.2	78.0	72.0	.0	.0
QMD		.2	8.5	14.2	.0	.0
SDI		1.3	150.6	114.7	.0	.0
%SDI		.50	56.49	43.00	.00	.00
Total:	5					
Understocked:	5	(Either nonstocked or less than 15% of Max SDI)				
SDI Rating:	99.06400.59					

NOTE: As of 11/1/1997--
SDI for STRUCTURAL STAGE is a summation of SDI by individual tree, with an SDI calculated for all live trees with a diameter 0.1"+.

The VSS Report was built on the basis of processes developed by Regions 2, 3, and 4 to address VSS issues. These routines used Shaw's summation method of computing VSS, using all live, on-plot trees with a diameter ≥ 1:

$$SDI = \sum \left(\frac{D_j}{10} \right)^{1.6} * tpa_j$$

In this equation, Dj is the diameter of an individual tree record and tpaj is the TPA that record represents at the stand level.

This equation is used because the Regions that built the original routines believe a summation approach yields better results when dealing with uneven-aged stands.

COVER SUMMARY REPORT

This report calculates setting level vegetation composition and surface cover characteristics.

Figure 97: cover by lifeform

Project: KITCHI	Setting Id: 090302000110009	Proc Region: 09	Proc Forest: 03	District: 02			
Location 00011	Stand: 0009	Meas No: 1	Meas Date: Jul. 1, 2007	Acres: 53			

Form 1

Cover by Lifeform

Layer		Avg. Cover %	Avg. Predom Ht.	Avg. Predom Dia.	User Field
TOF	Total Forbs	18.3			
TOG	Total Graminoids	6.7			
TOS	Total shrub	38.0			
TOT	Total tree	61.7			
TV	Total vegetation	74.3			

Figure 98: Cover by surface cover

Form 4

Cover by Surface Cover

Surface Cover Code	Avg. Cover %
LITT	6.7
CML	21.7
ROCK	5.0
BARR	10.0
BOUL	10.0
COGR	13.3
COBB	6.7
BAFO	20.0
FIGR	6.7

LIVE TREE STOCKING REPORT

Setting level report of live trees-per-acre and basal area-per-acre by species and standard diameter classes. The report includes quadratic mean diameter by species. This report has the ability to place the output in an MS Excel spreadsheet.

Figure 99: Live tree stocking report

Report 26: Live Tree Stocking Report

AUG-04-2011 Page 1 of 1

Setting Id 0903019990999	Region 09	Forest 03	District 01	Location 999	Stand 0999	Acres	
Size Density 0	EV Code		Year of Origin	No. of Plots 2	Meas Date.	AUG-01-2011	
Remarks:							

Live Trees Per Acre/Basal Area Per Acre

Diameter Classes

Species		Null	< 1"	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32+	Total	QMD >0	QMD >=5
ACSA2	TPA																					
	BA/A																					
QUMA2	TPA																					
	BA/A																					
Total	TPA																					
	BA/A																					

The diameter class limits are as follows:

Class	Min Dia	Max Dia
<1	0"	0.99"
2	1"	2.99"
4	3"	4.99"
6	5"	6.99"
-	-	-
-	-	-
-	-	-
32	31"	n/a

If you run this report using Region 9 data, the Size Density parameter is also included. All other regions will report the GIS Link.

Figure 100: Live tree stocking report

Report 26: Live Tree Stocking Report

JUN-23-2011 Page 1 of 2

Setting Id 0903010000680001	Region 09	Forest 03	District 01	Location 00068	Stand 0001	Acres 37	
Size Density 9	EV Code		Year of Origin 1952	No. of Plots 3	Meas Date.	DEC-07-2007	
Remarks:							

Live Trees Per Acre/Basal Area Per Acre

Diameter Classes

Figure 101: Live tree stocking report

Report 26: Live Tree Stocking Report

JUN-23-2011 Page 1 of 1

Setting Id 0604025500009023	Region 06	Forest 04	District 02	Location 5500000	Stand 9023	Acres 11	
GIS Link 60455000009023	EV Code CP		Year of Origin	No. of Plots 4	Meas Date.	NOV-29-2007	
Remarks:							

Live Trees Per Acre/Basal Area Per Acre

Diameter Classes

NEPA-R TPA

This report is a setting level compilation of TPA by diameter and species classes, formatted for use with Region 10's NEAT-R program. The report can produce MS-Excel output in the "A" format. The setup for the report uses the Stand and Volume Multi-Stand Report Setup Screen.

Figure 102: NEAT-R report

Date: NOV-16-2007

Report 27: NEAT-R: Volume Strata Characteristics
Live and Dead Merch Trees per Acre
(All Trees Except Those with Tree Class of 'RN', 'US' or NULL)

Page: 1 of

Project Name:	E WINNIE
Setting Id:	090303000230038
Measurement Date:	SEP-10-2005
Number of Plots:	3
Sampling Error:	Note: This is the sampling error at T=1 (68.3%) for the number of plots.

Trees Per Acre

DBH	CHNO	PISI	THPL	TSHE	TSME
5	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00
30 +	0.00	0.00	0.00	0.00	0.00
Totals:	0.00	0.00	0.00	0.00	0.00

Figure 103: statistics report

Statistics: Standard deviation, standard error and coefficient of variance

	CHNO	PISI	THPL	TSHE	TSME
SD	.00	.00	.00	.00	.00
SE	.00	.00	.00	.00	.00
CV					

Figure 104: Sample size

Sample Size: The estimated number of plots required to attain a desired % sampling error.
(Computed for 0 + inch trees except trees with tree class of 'RN' and 'US')

	Desired % Sampling Error									
	5	10	15	20	25	30	35	40	45	50
CHNO										
PISI										
THPL										
TSHE										
TSME										
ALL										

NEAT-R VOLUME

This report is a setting compilation of volume per acre by diameter and species classes, formatted for use with the Region 10 NEAT-R program. The report can produce Excel output in either the "A" or "B" formats. The setup for the report uses the Stand and Volume Multi-Stand Report Setup Screen.

Figure 105: NEAT-R Volume report, page 1

Date: NOV-16-2007 **Report 28: NEAT - R: Volume Strata Characteristics** Page: 1 of 4

Live and Dead Merch Volume per Acre

(All Trees Except Those With Tree Class of 'RN', 'US' or NULL)

Project Name:	E WINNIE
Setting Id:	090303000230038
Measurement Date:	SEP-10-2005
Number of Plots:	3
Sampling Error (%):	Note: This is the sampling error at T=1 (68.3%) for the number of plots

Gross Standing Volume Per Acre (MBF)

DBH	CHNO	PISI	THPL	TSHE	TSME
5	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00

Figure 106: NEAT-R Volume report, page 2

Date: NOV-16-2007 **Report 28: NEAT - R: Volume Strata Characteristics** Page:

Live and Dead Merch Volume per Acre

(All Trees Except Those With Tree Class of 'RN', 'US' or NULL)

Project Name:	E WINNIE
Setting Id:	090303000230038
Measurement Date:	SEP-10-2005
Number of Plots:	3
Sampling Error (%):	Note: This is the sampling error at T=1 (68.3%) for the number of plots

Statistics: Standard deviation, standard error and coefficient of variance

	CHNO	PISI	THPL	TSHE	TSME
SD	0.00	0.00	0.00	0.00	0.00
SE	0.00	0.00	0.00	0.00	0.00
CV					

Sample Size: The estimated number of plots required to attain a desired % sampling error.

(Computed for 0 + inch trees except trees with tree class of 'RN' and 'US')

	Desired % Sampling Error									
	5	10	15	20	25	30	35	40	45	50
CHNO										
PISI										
THPL										
TSHE										
TSME										
ALL										

USER CODE REPORT

This report displays user defined codes and values associated with the setting, tree, plot, and/or cover tables. Specifically, this is the data that is stored in the nrv_data_code_setmeas, nrv_data_code_treemeas and nrv_data_covmeas tables.

Figure 107: Run user codes report

Select which codes and values are to be displayed in the report.

Figure 108: Setting, plot, tree, and cover user codes

Report 30: Setting, Plot, Tree and Cover User Codes

04-SEP-09

Setting User Code:

PROJECT_NAME	SETTING_ID	MEASUREMENT DATE	CSE GENERIC SETTING_CODE
LOWLAND	090301000130019	13-FEB-06	setc

Plot User Code:

PROJECT_NAME	SETTING_ID	MEASUREMENT DATE	PLOT	CSE GENERIC PLOT CODE
LOWLAND	090301000130019	13-FEB-06	1	plot
			2	
			3	
			4	

Tree User Code:

PROJECT_NAME	SETTING_ID	MEASUREMENT DATE	PLOT	TAG ID	SPECIES	DIA	CSE GENERIC TREE CODE
LOWLAND	090301000130019	13-FEB-06	1	0001	LALA		trec
			2	0001	LALA		
			3	0001	LALA		
				0002	PIMA		
			4	0001	LALA		
				0002	ABBA		

Cover User Code:

PROJECT_NAME	SETTING_ID	MEASUREMENT DATE	PLOT	FORM TYPE	LAYER	SPECIES	SURFACE COVER

STAND EXAM DATA SOURCE REPORT

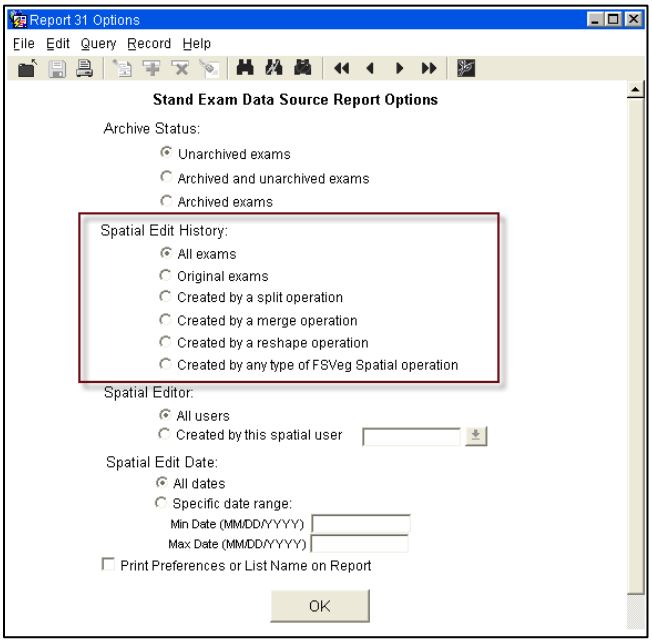
This report is designed to support spatial data operations by identifying the origins of a selected group of stand exams. In the course of spatial editing, stand boundaries can undergo significant manipulation, and it is important that the tabular data associated with the affected area be dealt with appropriately so that it accurately reflects the new situation on the ground. The FSVeg Spatial software, coupled with key decisions made by the Spatial Editor, will ensure that tabular data in FSVeg will keep in step with the splits, merges, links, archiving, and so on that can occur.

Once the dust of a spatial editing session clears, it is occasionally helpful to be able to identify the provenance of the resultant stands in the tabular database. Sometimes, one is interested in just the stands that were created as a result of a particular spatial edit operation, such as splits or merges. In other cases, one might be interested in seeing everything including stands that were not edited as well as the stands that got archived, and everything in between. Or you may be a Spatial Steward who wishes to keep tabs on the recent changes made by a Spatial Editor under your supervision. Report 31 will address these and other questions regarding the origin, or derivation, of the tabular data for a set of stand exams which have been subjected to spatial edit operations. It should be noted that this report provides only a broad overview and does not delve deeply into the details of all the spatial operations that may have occurred to a particular stand—the task of displaying such details is handled by Report 32, Stand Exam Data Source Detail.

The Stand Exam Data Source Report Options form is shown below. On this form you can specify what archive status, spatial edit history, spatial editor, or spatial edit date range to retrieve for the report. Click OK when you are ready to produce the report.

Figure 109 shows the Stand Exam Data Source Report Options screen where you can narrow your search by selecting specific spatial editing functions performed by FSVeg Spatial.

Figure 109: Narrow search using Spatia Edit History



The report contains information dependent upon the preferences you set in the previous forms. The example in Figure 110 identifies a stand that had its origins in an FSVeg Spatial merge.

Figure 110: Stand exam data source report

Report 31: Stand Exam Data Source

09/24/2009 Page 1 of 1

Unarchived Settings Only, Any Type of Spatial Operation Exams, All Users, All Dates

Data Source by Setting

Data Source	Project Name	Setting ID	Plots	Spatial Editor	Created By	Created Date	Modified By	Modified Date
MergeStands	EGLEY	06070456110008002	8	euebler	EUEBLER	03/10/2009	EUEBLER	03/10/2009

Synopsis

Data Source	Unarchived	Archived	Archived + Unarchived
MergeStands	1	0	1

STAND EXAM DATA SOURCE

Report 32 is very similar in concept to Report 31, but takes the output a step further in that it will produce the unvarnished, blow-by-blow details of the sequence of spatial edit operations that occurred to bring a particular stand into existence (or, in some cases, that led to it's getting archived). Warning: Because the minutiae of the spatial edit histories will be displayed, the output can necessarily become rather lengthy and complex. Operations for a given stand are listed in chronological order, with sets of boxes outlining groups of related operations.

Bounded by the choices made in the Preferences form, this report will produce detailed information on FSVeg Spatial edit operations for the selected stands.

Figure 111: Stand exam data source detail report

Report 32: Stand Exam Data Source Detail

Date: Sep-24-2009

Original Setting:

06070456110008002	MergeStands	1	11/28/2007	SE	EGLEY	Y	euebler	11/28/2007

Checkout Name:NRV_CHECKOUT_0604_95 Date Checked In: 03/10/2009 04:45 PM EUEBLER

Operation: MergeStands 03/10/2009 01:52 PM

06070456110008002	8	1	11/28/2007	SE	EGLEY	Y	euebler	03/10/2009
06070456110008002	8	1	11/28/2007	MergeStands			euebler	03/10/2009

Original Setting:

06070456110008002	MergeStands	1	11/28/2007	SE	EGLEY	Y	euebler	11/28/2007

Checkout Name:NRV_CHECKOUT_0604_95 Date Checked In: 03/10/2009 04:45 PM EUEBLER

Operation: MergeStands 03/10/2009 01:52 PM

06070456110008002	8	1	11/28/2007	SE	EGLEY	Y	euebler	03/10/2009
06070456110008002	8	1	11/28/2007	MergeStands			euebler	03/10/2009

SUMMARY DATA

A summary:

- Is easy to use
- Is flexible; the data are summarized any way the user specifies
- Is permanent; the data are stored in permanent Oracle tables
- Contains one line of data for each setting included in the summary
- Is portable; data can be accessed via MS Access or MS Excel
- Is versatile; multiple summaries can be created to summarize the data in different ways
- Is current; summaries can be refreshed anytime to include recently inventoried stands

Table 11 provides a list of all steps involved and a description of each step, which are outlined in more detail following the table.

Table 11: Summary data steps

Step	Description
1	Obtain the NRV_Summary Oracle role
2	Access the Summary forms
3	Create the Summary header record
4	Define the settings to include the Summary
4A	• Spatial Option
4B	• Non-Spatial Option
5	Define the data priorities to use in the Summary
6	Select/Create one or more Groups to use in the Summary
6A	• Select an Existing Group
6B	• Create a New Group
7	Create one or more Subgroups for each group
8	Execute the Summary
9	View the Summary Results
9A	• Characteristics

Step	Description
9B	• Summary Report
9C	• Groups

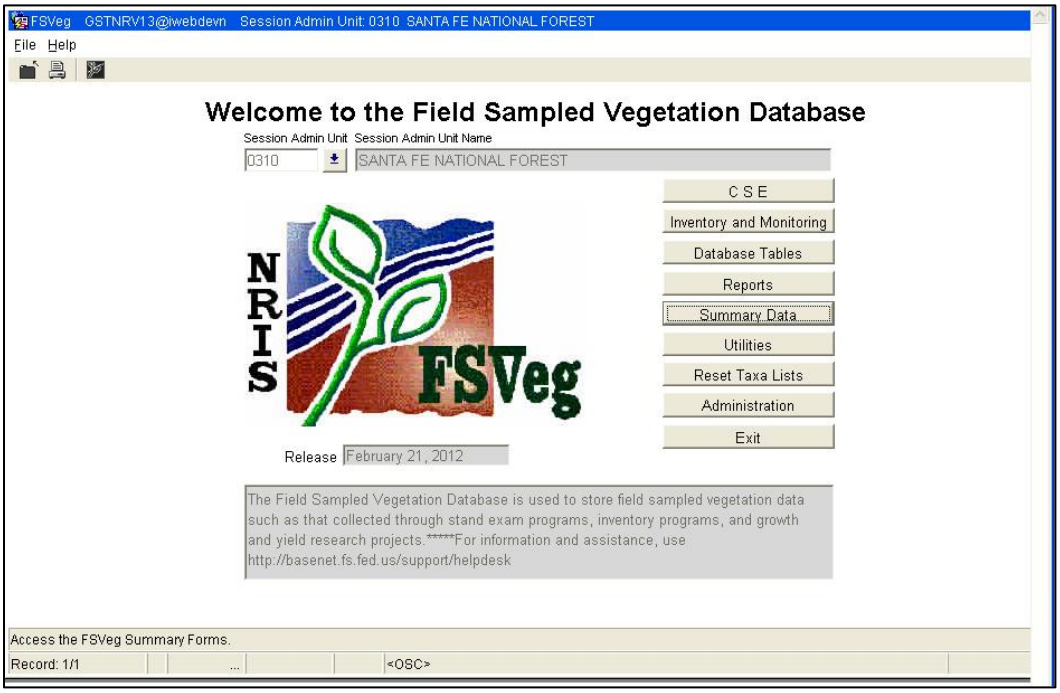
STEP 1: OBTAIN THE NRV_SUMMARY ORACLE ROLE

Anyone may look at and use summary data, but the "NRV_Summary" Oracle role is required to create a Summary. To request this role, you must go through the User Management Application (UMA) process. Additional information is available on the User Management Application Help webpage.

STEP 2: ACCESS THE SUMMARY FORMS

These forms are accessed from the main FSVeg screen, shown in Figure 112.

Figure 112: FSVeg welcome screen



STEP 3: CREATE THE SUMMARY HEADER RECORD

The first screen is called the "Summary Strategies" screen and is used to: select an existing summary, create a new summary, run an existing summary, or re-run an existing summary.

Figure 113: Summary strategies screen

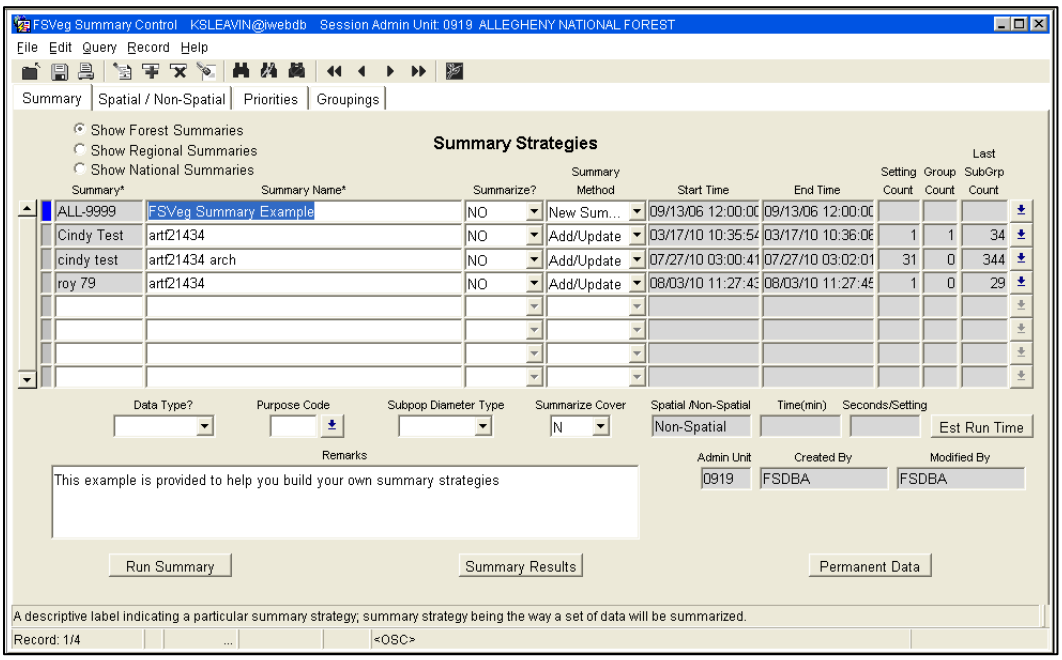


Table 12: Summary header steps

Step	Field	Command
3.1	Show	Show all the summaries created across the nation, only those summaries created in your Region, or only those summaries created in your Forest.
3.2	Summary*	Required. Enter a unique identifier, less than or equal to 10 characters. The identifier may include letters, numbers, and special characters (except "%," a comma, or double quotes). A dash, underscore, or space is allowed.
3.3	Summary Name*	Required. Enter a descriptive name, less than or equal to 30 characters.

Step	Field	Command
3.4	Summarize?	This field defaults to "No" for new summaries. Once the summary is completely defined, this field can be set to "Yes" to create the summary: • Yes: Run this summary when the "Run Summary" button is selected. When this form is exited, the user is prompted to set all "Yes" values to "No." • No: Do not run this summary when the "Run Summary" button is selected. • Running: Indicates a summary is currently running. • Lock: Only the creator of the Summary Table may update it, change it, or unlock it.
3.5	Summary Method	Set this field to "New Summary." Once the summary has been created, it can be re-run with the "Add/Update" option: • New Summary: Existing summary data is deleted prior to re-running the summary. • Add/Update: Existing summary data is not deleted unless the data is flagged to be re-summarized. In addition, newly inventoried stands may be added to the summary.
3.6	Start/End Times	These fields cannot be edited. If a summary has already been run, this is the time the summary was started and the time the summary completed. This will provide an indication of how long it took the summary to process.
3.7	Setting Count	This field cannot be edited. If a summary has already been run, this is the number of settings included in the summary.
3.8	Group/ Subgroup Count	This field cannot be edited. If a summary has been run, this is the number of groups and subgroups included in the summary.
3.9	Data Type	Set this field to specify stand or cluster data. Most data is stand data. Stand and cluster data cannot be mixed in the same summary. • Stand: Only stand data will be used in the summary. • Cluster: Only cluster data will be used in the summary.
3.10	Purpose Code	Only data with the specified purpose code will be included in the summary. Most summaries leave this field Null.

Step	Field	Command
3.11	Diameter Type	Which diameter type should be used to calculate average diameter. Choices include: • AVG: Average diameter • QMD: Using all trees • QMD1: Using only trees 1-inch and above in diameter; Spatial FSVeg default • QMD5: Using only trees 5-inches and above in diameter
3.12	Summarize Cover	Should the understory and surface cover subgroups be included in the summary? This could produce a tremendous amount of data.
3.13	Remarks	Enter remarks about the summary in this field. The rest of the fields on this screen are filled in after the summary is executed. These will be discussed in Step 9: View the Summary Results.
3.14	Spatial/Non-Spatial	Select the "Spatial/Non-Spatial" tab at the top of the screen and continue to Step 4.

STEP 4: DEFINE THE SETTINGS TO INCLUDE IN THE SUMMARY

Table 13: Define setting steps

Step	Field	Command
4.1	Spatial/Non-Spatial	Decide if you want to select the setting IDs by the Spatial or Non-Spatial option, and select the appropriate radio button on the left-hand part of the screen. The corresponding section of this screen is activated. Go to Step 4A for the Spatial option, and Step 4B for the non-spatial option.

Step 4A: Spatial Option

This option provides the ability to create a summary for all settings in the specified feature class(s). The polygon IDs are obtained from the feature class and from that, a list of stands to summarize is created. The GIS_LINK column in NRV_Setting_Measurements contains the polygon ID. The summary process cross-references the data in this list to the GIS_LINK column in FSVeg to obtain the attribute data to summarize. If multiple feature classes are listed, all of the polygons across all of the feature classes are summarized. If two or more feature classes contain the same polygon ID, the data for that polygon will only get summarized once. To use this option, you must have access to ArcGIS.

Figure 114: Spatial settings form

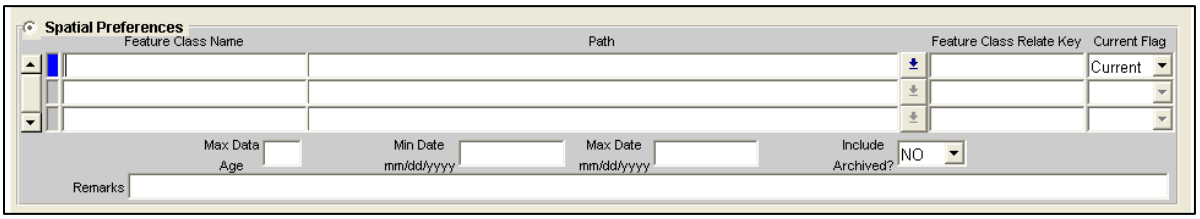


Table 14: Spatial setting steps

Step	Field	Command
4A.1	Feature Class Name	Decide if you want to select the setting IDs by the Spatial or Non-Spatial option, and select the appropriate radio button on the left-hand part of the screen. The corresponding section of this screen is activated. Go to Step 4A for the Spatial option, and Step 4B for the non-spatial option.
4A.2	Path	Enter the path to where the coverage is stored on the server such as: "/fsfiles/ref/library/my_forest." Do not include a slash at the end of the path. Use the Down Arrow to navigate to the coverage(s) and obtain the coverage name and the path.
4A.3	Feature Class Relate Key	Enter the item name in the coverage that contains the polygon ID or key that links the polygon to the attribute data in FSVeg. In FSVeg, the polygon ID is stored in "GIS_LINK."
4A.4	Current Flag	Indicate if this is a current or historic coverage. This is for documentation purposes only. Regardless of this flag, all coverages listed on this form are not used to generate the list of stands.
4A.5	Max Age	The maximum age of a stand that will be included in the summary.
4A.6	Min/Max Date	The minimum and/or maximum survey dates to include in the summary.
4A.7	Archive?	Should archived data be included in the summary?
4A.8	Remarks	Enter remarks about the coverage(s) and the stand(s) that will be extracted.

Step 4B: Non-Spatial Option

This option provides the ability to create a summary for all settings that match the designated criteria.

Figure 115: Non-spatial settings form

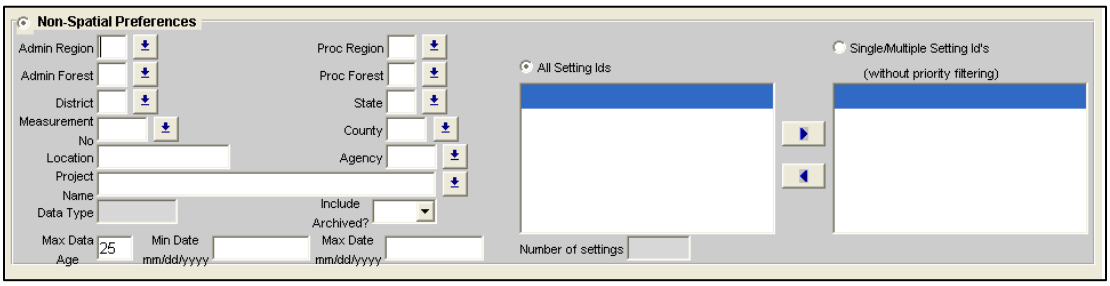


Table 15: Non-spatial setting steps

Step	Field	Command
4B.1	Admin Region	Enter the administrative Region of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.2	Admin Forest	Enter the administrative Forest of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.3	District	Enter the District of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.4	Measurement No.	Enter the measurement number of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.5	Location	Enter the location of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.6	Project Name	Enter the project name of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.7	Data Type	Is this "Stand" or "Cluster" data?
4B.8	Proc. Region	Enter the Proclaimed Region of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.

Step	Field	Command
4B.9	Proc. Forest	Enter the Proclaimed Forest of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.10	State	Enter the state of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.11	County	Enter the county of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.12	Agency	Enter the agency of the settings to include in the summary. If left blank, this field will not be used to select stands to include in the summary.
4B.13	All Setting IDs	Select this radio button if you want all settings that match the criteria entered above to be included in the summary.
4B.14	Max Age	The maximum age of a stand that will be included in the summary.
4B.15	Min/Max Date	The minimum and/or maximum survey dates to include in the summary.
4B.16	Single/Multiple Setting IDs	Select this radio button if you want to select SOME of the settings that match the criteria entered above to be included in the summary. A list of all setting IDs matching the criteria will appear in the list on the left. Highlight settings to be included in the summary and move them from the left-hand list to the right-hand list using the arrows. All setting IDs listed in the right-hand list will be included in the summary.
4B.17	Number of Settings	The total number of settings in the list.
4B.18	Priorities	Select the Priorities tab at the top of the screen and continue to Step 5.

STEP 5: DEFINE THE DATA PRIORITIES TO USE IN THE SUMMARY

If multiple data sets exist for a setting, this screen sets the priorities on which data set to use first, second, third, and so on. If setting data does not exist in any of the priority options, the setting will not be included in the summary.

Figure 116: Data priority form

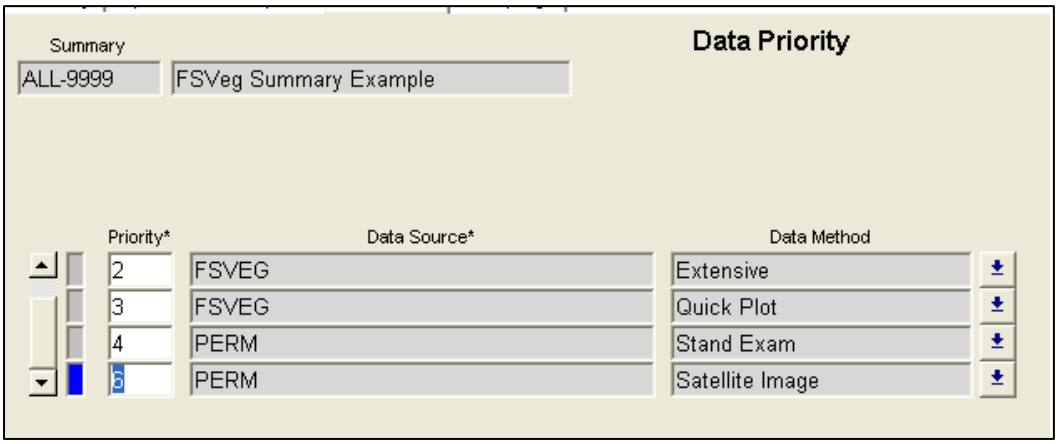


Table 16: Define data priorities steps

Step	Field	Command
5.1	Priority	Required. Enter the priority number, in descending order, of the data to use for each setting in the summary.
5.2	Data Source	Required. Enter the data source for each priority. "FSVeg" refers to the data stored in the FSVeg Oracle database tables and "PERM" refers to data migrated into the "perm" tables such as satellite and photo interpretation data.
5.3	Data Method	Enter how the data was collected: • Intensive: CSE intensive data • Extensive: CSE extensive data • Quick Plot: CSE quick plot data • Stand Exam: Legacy summarized stand exam data (PERM source only) • Photo Interpretation: Photo interpretations data (PERM source only) • Satellite Image: Satellite imagery data • No Tree Data Collected: Stand with down woody, cover, or surface cover data only
5.4	Cluster?	If the data is cluster data, set the Data Source to "FSVeg" and set the Data Method to "Intensive."
5.5	Groupings	Select the "Groupings" tab at the top of the screen and continue to Step 6.

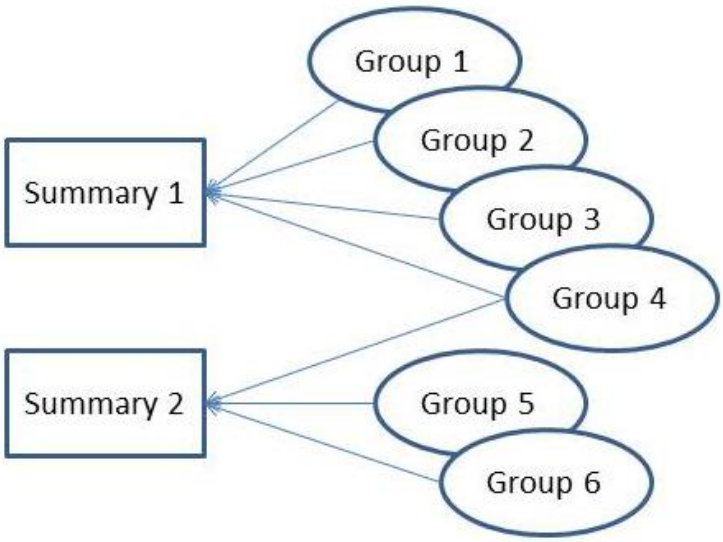
STEP 6: SELECT/CREATE ONE OR MORE GROUPS TO USE IN THE SUMMARY

The data in each Summary can be "grouped" into logical categories. Examples include:

- Tree Diameters: group the data by tree diameters
- Species: group the data by species
- Live/Dead: group the data by live and dead categories
- Wildlife: group the data by a variety of wildlife habitat categories

Each Summary may include one or more groups and each group may be used in one or more summaries, as shown in Figure 117.

Figure 117: Summary/group diagram



Once a group is created for a summary, it can be used by any subsequent summaries.

If a group is used in a summary it cannot be changed, it must first be deleted from the summary or summaries that use it. Then it can be changed and added back to the summary or summaries that use it. When one of the summaries that use the group is re-run, the new group will be used to create the summary data.

When a group is deleted, the data created for that group is deleted from the summary dataset.

Step 6A: Select an Existing Group

You may select an existing group(s) to use in your summary.

Figure 118: Select a group

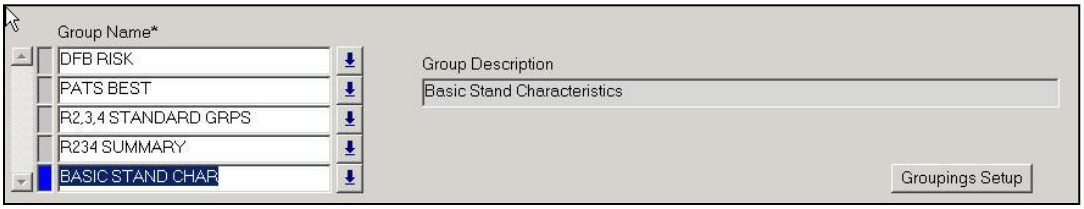


Table 17: Select an existing group steps

Step	Field	Command
6A.1	Group Name	Required. Select the down arrow on the right end of the field to select a Group that has already been defined. The group name and description are automatically populated. This group and all its subgroups will be used in creating the Summary data when the summary is run.

Step 6B: Create a New Group

If none of the existing groups are what you want or need in your Summary, you may create a new group by clicking on the "Groupings Setup" button.

Figure 119: Group setup form

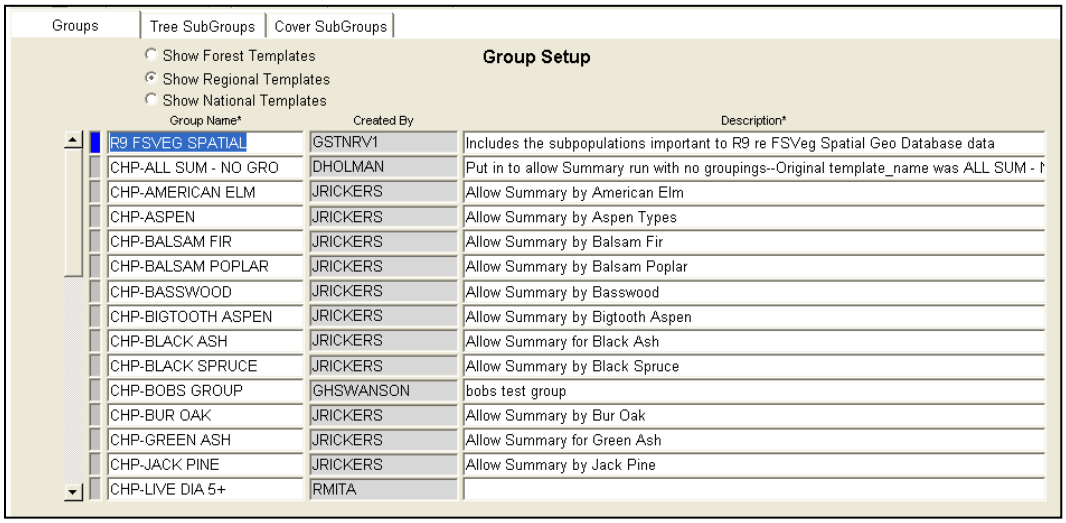


Table 18: Create a new group steps

Step	Field	Command
6B.1	Templates	Select the template grouping.
6B.2	Group Name	Required. Scroll down to the bottom of this screen and enter a new, unique Group Name.
6B.3	Created By	The system will enter the user name of the person who created the template.
6B.4	Description	Required. Enter a description of the new group being created.
6B.5	Save	Save this new group by selecting File/Save or the yellow disc icon at the top of the screen.
6B.6	Tree Groupings	Select the "Tree Subgroups" tab at the top of the page and continue to Step 7.

STEP 7: CREATE ONE OR MORE SUBGROUPS FOR EACH GROUP

Each group contains one or more tree or cover "subgroups." A subgroup defines how the data will be combined and summarized. For example, the "Tree Diameter" group may contain the following subgroups:

1. Oaks greater than 8 inches in diameter
2. All trees less than 5 inches in diameter
3. All trees between 5 and 7.9 inches in diameter
4. All trees between 8 and 15.9 inches in diameter
5. All trees between 16 and 24.9 inches in diameter
6. All trees 25 inches in diameter and greater

Figure 120: Tree subgroup setup screen

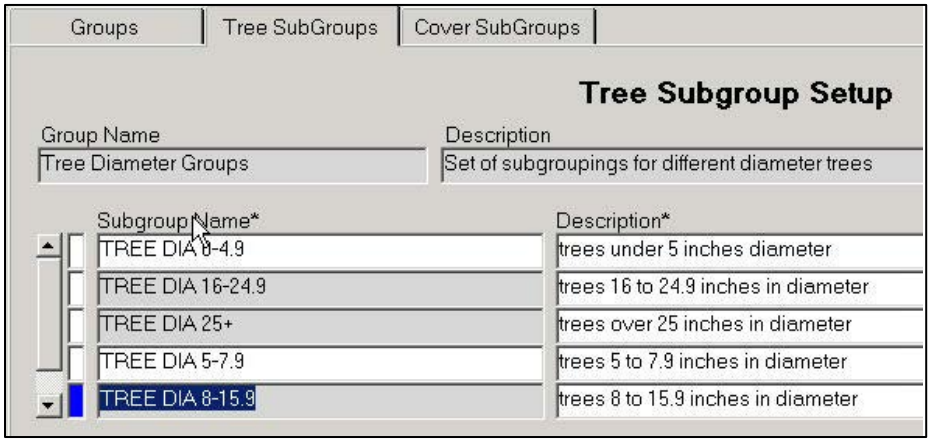
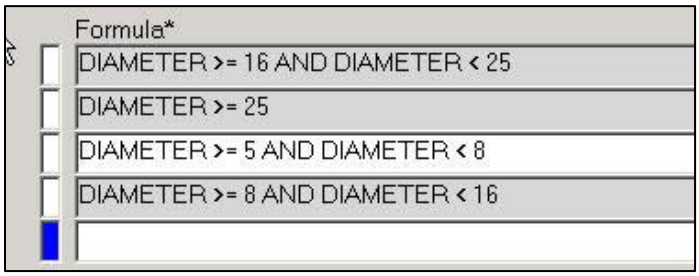


Table 19: Create subgroups steps

Step	Field	Command
7.1	Subgroup Name	Required. Enter a subgroup name, up to 30 characters, for each subgroup.
7.2	Description	Required. Enter a description for each subgroup.
7.3	Formula	Required. This is an SQL statement, or a formula, which determines exactly how the trees will be combined in each subgroup. In the example shown in Figure 121, the trees will be grouped into four subgroups: • 5-8 inches in diameter • 8-16 inches in diameter • 16-25 inches in diameter • 16+ inches in diameter
7.4	LOV	The LOV button (down arrow) at the end of a blank formula line will bring up a list of previously defined formulas that can be copied and used or modified as needed, as shown in Figure 123.
7.5	All	If you want to create your own formula from scratch, the box at the bottom of the screen contains all of the stand variables (such as age and diameter) that can be used in the formulas.
7.6	LOV	This LOV button will query, by Region, Forest and District, for all the values of the "Column Name" variable currently stored in FSVeg. For example if the user selected the first row and requested R09F05D21, the system would return all the stand ages stored in FSVeg for data for Region 9, Administrative Forest 5 and District 21. If there is a LOT of data and/or if this query requires a lot of calculations this query may take a long time!! The values that result from the query will eventually be displayed to the left of the form. Another "add to Formula" button will appear. If you highlight a value in the list, it will be selected at the end of the current formula record.

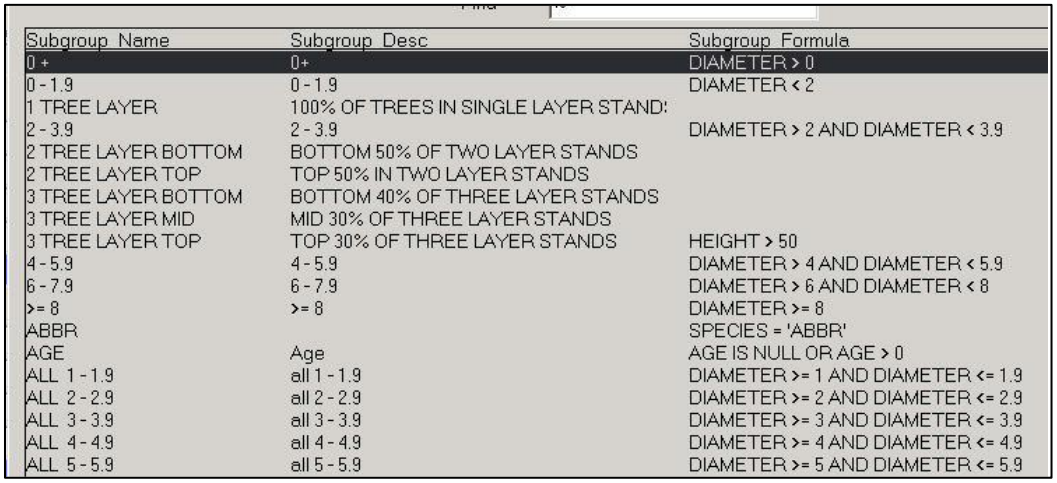
Step 7 can be repeated using any of the cover attributes. To use cover attributes, select the "Cover Subgroups" instead of the "Tree Subgroups" tab in Step 6B.5 and continue with Step 7 using the cover attributes displayed.

Figure 121: Formula



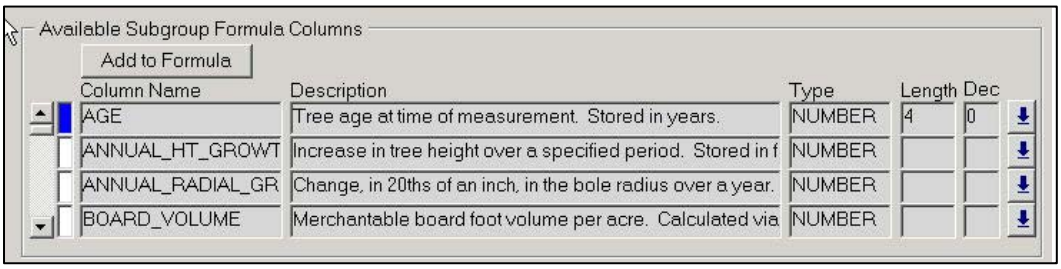
Formula*
DIAMETER >= 16 AND DIAMETER < 25
DIAMETER >= 25
DIAMETER >= 5 AND DIAMETER < 8
DIAMETER >= 8 AND DIAMETER < 16

Figure 122: Subgroups listing



Subgroup_Name	Subgroup_Desc	Subgroup_Formula
0 +	0+	DIAMETER > 0
0 - 1.9	0 - 1.9	DIAMETER < 2
1 TREE LAYER	100% OF TREES IN SINGLE LAYER STAND:	
2 - 3.9	2 - 3.9	DIAMETER > 2 AND DIAMETER < 3.9
2 TREE LAYER BOTTOM	BOTTOM 50% OF TWO LAYER STANDS	
2 TREE LAYER TOP	TOP 50% IN TWO LAYER STANDS	
3 TREE LAYER BOTTOM	BOTTOM 40% OF THREE LAYER STANDS	
3 TREE LAYER MID	MID 30% OF THREE LAYER STANDS	
3 TREE LAYER TOP	TOP 30% OF THREE LAYER STANDS	HEIGHT > 50
4 - 5.9	4 - 5.9	DIAMETER > 4 AND DIAMETER < 5.9
6 - 7.9	6 - 7.9	DIAMETER > 6 AND DIAMETER < 8
>= 8	>= 8	DIAMETER >= 8
ABBR		SPECIES = 'ABBR'
AGE	Age	AGE IS NULL OR AGE > 0
ALL 1 - 1.9	all 1 - 1.9	DIAMETER >= 1 AND DIAMETER <= 1.9
ALL 2 - 2.9	all 2 - 2.9	DIAMETER >= 2 AND DIAMETER <= 2.9
ALL 3 - 3.9	all 3 - 3.9	DIAMETER >= 3 AND DIAMETER <= 3.9
ALL 4 - 4.9	all 4 - 4.9	DIAMETER >= 4 AND DIAMETER <= 4.9
ALL 5 - 5.9	all 5 - 5.9	DIAMETER >= 5 AND DIAMETER <= 5.9

Figure 123: Available subgroup formula columns

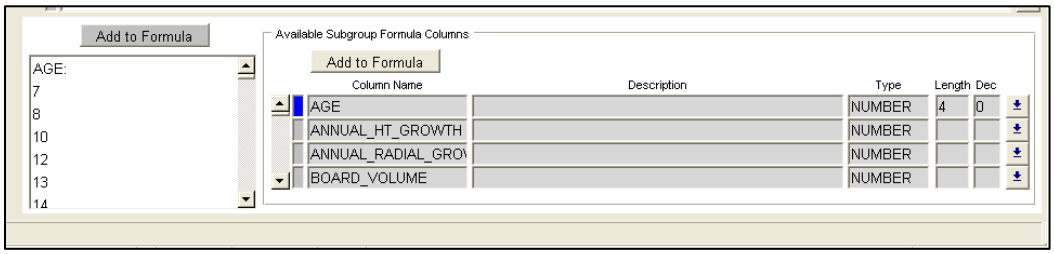


Available Subgroup Formula Columns

Add to Formula

Column Name	Description	Type	Length	Dec
AGE	Tree age at time of measurement. Stored in years.	NUMBER	4	0
ANNUAL_HT_GROWT	Increase in tree height over a specified period. Stored in f	NUMBER		
ANNUAL_RADIAL_GR	Change, in 20ths of an inch, in the bole radius over a year.	NUMBER		
BOARD_VOLUME	Merchantable board foot volume per acre. Calculated via	NUMBER		

Figure 124: Add to formula



Add to Formula

AGE:
7
8
10
12
13
14

Available Subgroup Formula Columns

Add to Formula

Column Name	Description	Type	Length	Dec
AGE		NUMBER	4	0
ANNUAL_HT_GROWTH		NUMBER		
ANNUAL_RADIAL_GRO		NUMBER		
BOARD_VOLUME		NUMBER		

STEP 8: EXECUTE THE SUMMARY

Once the summary header record, settings, data priorities, groups, and subgroups have been defined, the summary can be executed. The current session of FSVeg will remain active until the summary is completed. This may take several hours. You can minimize this session window and start another session to complete additional FSVeg work.

Table 20: Execute summary steps

Step	Field	Command
8.1	(none)	Return to the main summary screen.
8.2	Summarize?	Change this field from "No" to "Yes" for the summary to be executed.
8.3	Run Summary	Click on this button. Any summary that has the "Summarize?" column set to "Yes" will be executed.
8.4	(none)	When the summary has finished executing, the shaded fields to the right of the screen will be filled in with data about the execution. Table 21 provides an explanation of these fields.

Table 21: Execution fields

Field	Description
Start Time	Time the summary started executing.
End Time	Time the summary finished executing.
Setting Count	Number of settings included in the summary.
Group Count	Number of groups included in the summary.
Subgroup Count	Number of subgroups included in the summary.
History	Information about all of the past times this summary has been executed.
Spatial/Non-Spatial	Indicates if the summary used a spatial or non-spatial approach to include settings.
Time (min)	The number of minutes it took to execute the summary.
Seconds/Setting	The number of seconds it took to summarize each setting. If this value exceeds 5 seconds, contact the FSVeg staff to determine how to speed up the execution time.

Field	Description
Est. Run Time	An estimate of how long it will take to execute the summary.
Created By	The person who created the summary.
Modified By	The person who last modified the summary.

STEP 9: VIEW THE SUMMARY RESULTS

Step 9A: View the Summary Results – Characterizations

All of the summary results are stored in two FSVeg Oracle tables. The results can be accessed in FSVeg via the summary forms or pulled into an Excel spreadsheet.

Table 22: Summary results steps

Step	Field	Command
9A.1	(none)	Return to the main summary screen.
9A.2	Summary Results	Click on the "Summary Results" button at the bottom of the screen.
9A.3	Reg/For/Nat	At the top of the screen, select "Forest," "Region," or "National" to display a list of summaries at the Forest, Region, or National level.
9A.4	Summary	Highlight the summary that you are interested in.
9A.5	Spatial/Non-Spatial	At the top of the screen, click on the "Spatial/Non-Spatial" tab to see information about the spatial or non-spatial method used to select settings which were included in the summary.
9A.6	Priorities	At the top of the form, click on the "Priorities" tab to see information about the data priorities used to select data for each setting.
9A.7	Groupings	At the top of the form, click on the "Groupings" tab to see information about the groups and subgroups used in the summary.
9A.8	Characterizations	Summarized information about each setting in the summary. The top portion of the screen contains the coverage name (if a spatial option was used), data source, data method, setting ID, and GIS link for each summary item. Select one of the setting ID records to view the summary data in the bottom portion of the screen. This data is stored in NRV_Characterization.

Figure 125: Example of spatial preferences

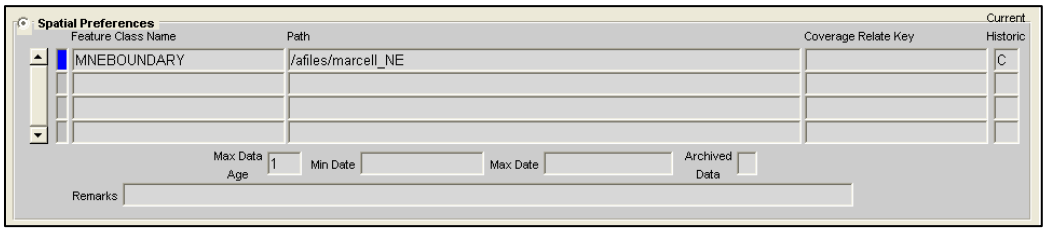
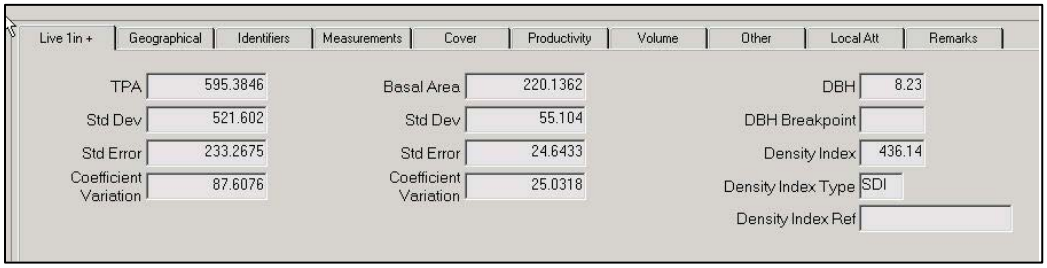


Figure 126: Example of non-spatial preferences



Step 9B: View the Summary Results – Summary Report

Table 23: View summary results steps

Step	Field	Command
9B.1	File/Preferences	From the top menu bar, select "File" then "Preferences" and select one or more settings to include in the report. Then select "Close" to return to the results menu.
9B.2	Run Report from Preferences	Select this button to create the report.
9B.3	Display Calculations?	To display how each of the summary values was calculated, select "Yes." The example in Figure 127 is from a portion of the report.

Figure 127: View polygon characterization results

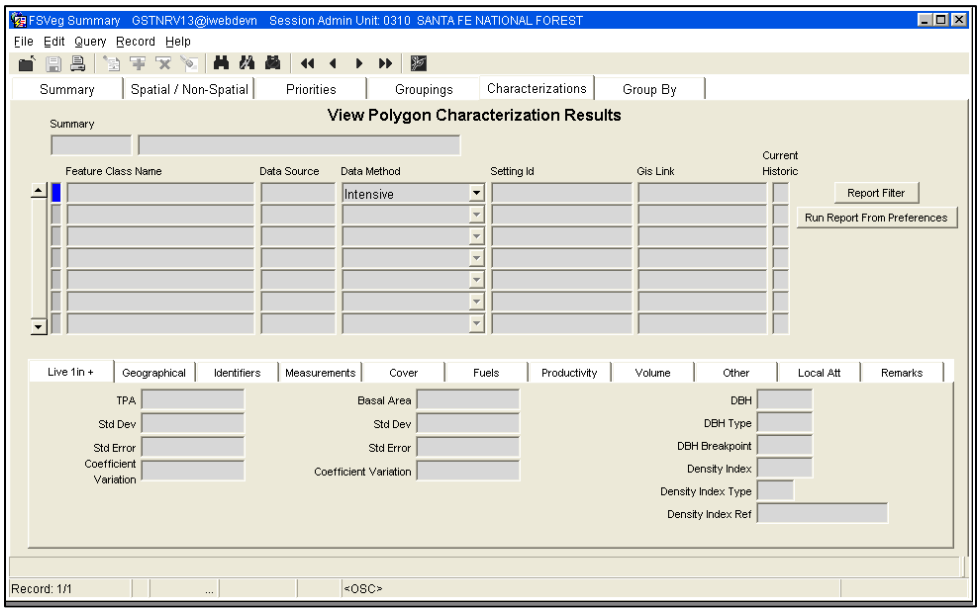


Figure 128: Summary results

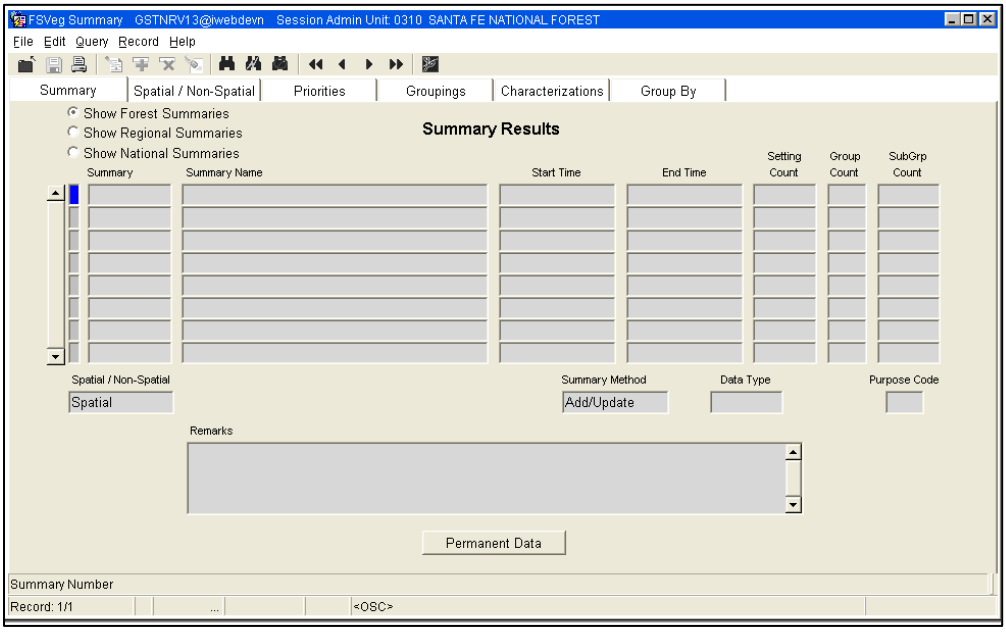
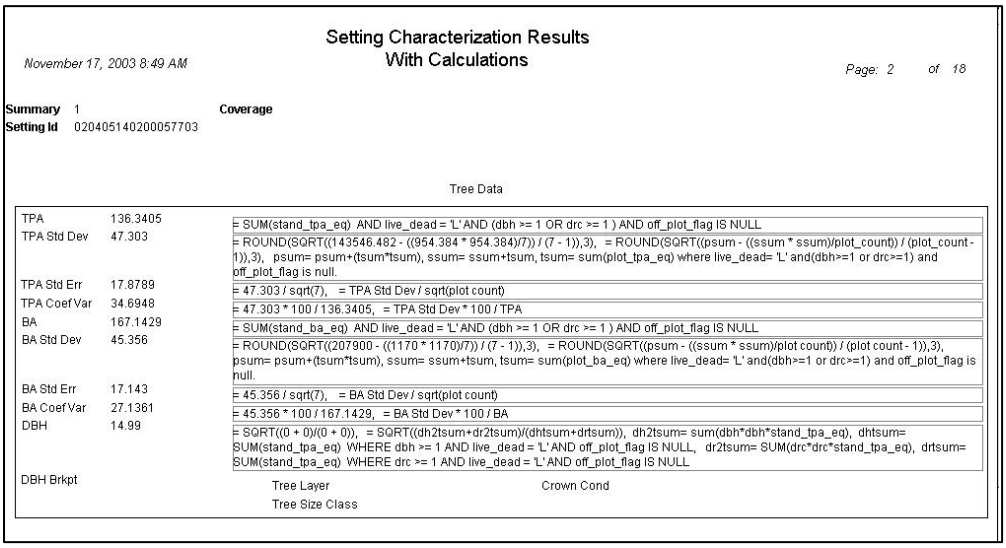


Figure 129: Setting characterization results with calculations



Setting Characterization Results
With Calculations

November 17, 2003 8:49 AM

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Summary 1 **Coverage**
Setting Id 020405140200057703

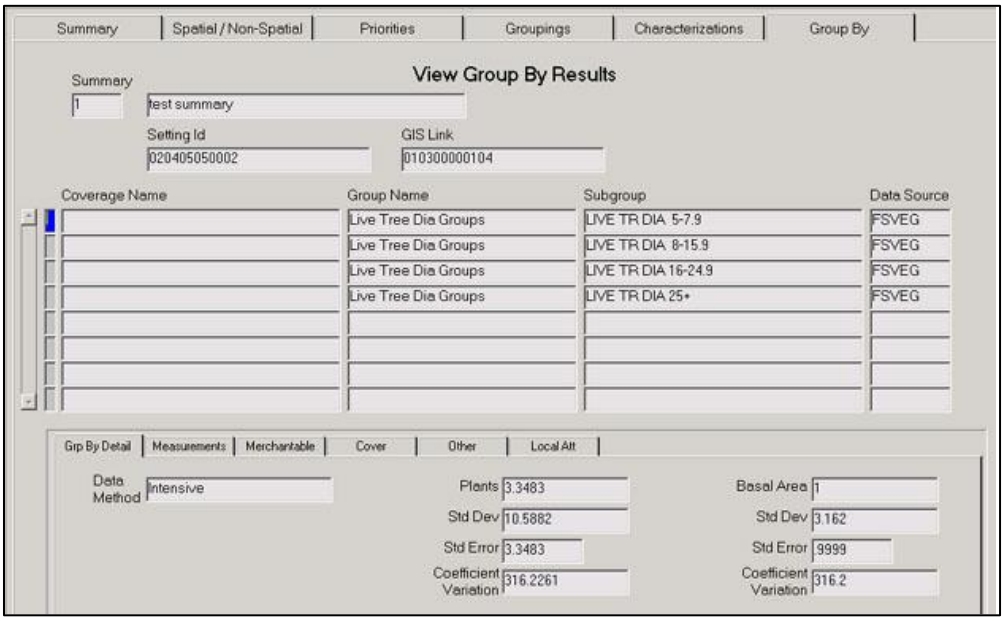
Tree Data

TPA	136.3405	= SUM(stand_tpa_eq) AND live_dead = 'L' AND (dbh >= 1 OR drc >= 1) AND off_plot_flag IS NULL
TPA Std Dev	47.303	= ROUND(SQRT((143546.482 - ((954.384 * 954.384)/7)) / (7 - 1)),3), = ROUND(SQRT((psum - ((ssum * ssum)/plot_count)) / (plot_count - 1)),3), psum= psum+(tsum*tsum), ssum= ssum+tsum, tsum= sum(plot_tpa_eq) where live_dead= 'L' and(dbh>=1 or drc>=1) and off_plot_flag is null.
TPA Std Err	17.8789	= 47.303 / sqrt(7), = TPA Std Dev / sqrt(plot count)
TPA Coef Var	34.6948	= 47.303 * 100 / 136.3405, = TPA Std Dev * 100 / TPA
BA	167.1429	= SUM(stand_ba_eq) AND live_dead = 'L' AND (dbh >= 1 OR drc >= 1) AND off_plot_flag IS NULL
BA Std Dev	45.356	= ROUND(SQRT((207900 - ((1170 * 1170)/7)) / (7 - 1)),3), = ROUND(SQRT((psum - ((ssum * ssum)/plot count)) / (plot count - 1)),3), psum= psum+(tsum*tsum), ssum= ssum+tsum, tsum= sum(plot_ba_eq) where live_dead= 'L' and(dbh>=1 or drc>=1) and off_plot_flag is null.
BA Std Err	17.143	= 45.356 / sqrt(7), = BA Std Dev / sqrt(plot count)
BA Coef Var	27.1361	= 45.356 * 100 / 167.1429, = BA Std Dev * 100 / BA
DBH	14.99	= SQRT((0 + 0)/(0 + 0)), = SQRT((dh2tsum+dr2tsum)/(dhtsum+drtsum)), dh2tsum= sum(dbh*dbh*stand_tpa_eq), dhtsum= SUM(stand_tpa_eq) WHERE dbh >= 1 AND live_dead = 'L' AND off_plot_flag IS NULL, dr2tsum= SUM(drc*drc*stand_tpa_eq), drtsum= SUM(stand_tpa_eq) WHERE drc >= 1 AND live_dead = 'L' AND off_plot_flag IS NULL
DBH Brkpt		Tree Layer / Tree Size Class / Crown Cond

Step 9C: View the Summary Results – Groups

The "Group By" tab contains summary information for each setting ID, organized by group and subgroup. In Figure 130 below, the setting has an average basal area of 126.6667 square feet for trees with a diameter between 5 and 10.9 inches DBH.

Figure 130: View group by results



Summary | Spatial / Non-Spatial | Priorities | Groupings | Characterizations | Group By

View Group By Results

Summary: 1 test summary
Setting Id: 020405050002
GIS Link: 010300000104

Coverage Name	Group Name	Subgroup	Data Source
	Live Tree Dia Groups	LIVE TR DIA 5-7.9	FSVEG
	Live Tree Dia Groups	LIVE TR DIA 8-15.9	FSVEG
	Live Tree Dia Groups	LIVE TR DIA 16-24.9	FSVEG
	Live Tree Dia Groups	LIVE TR DIA 25+	FSVEG

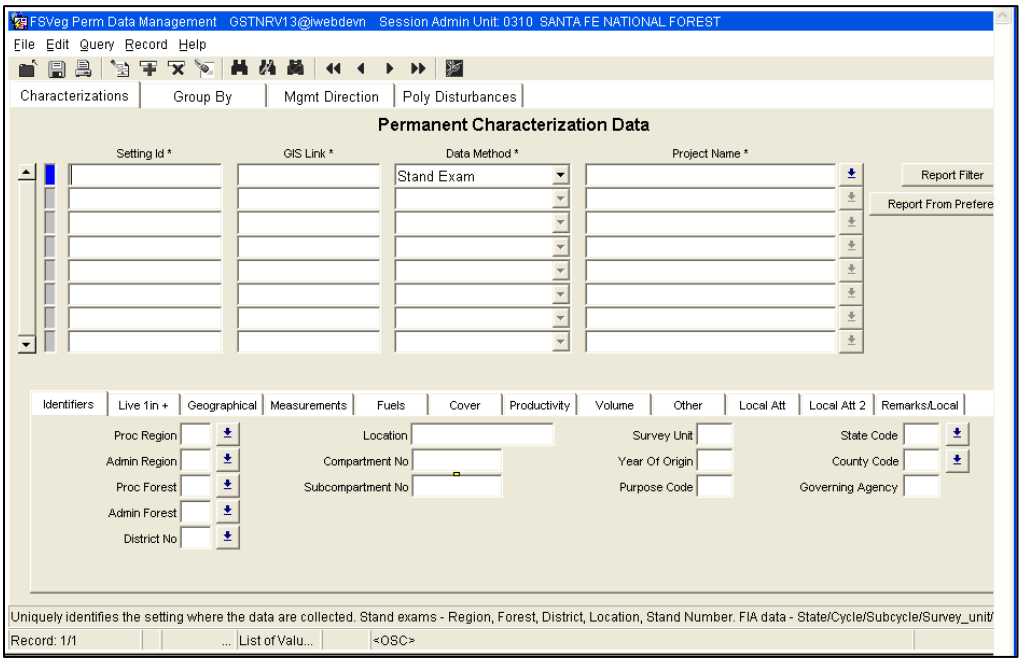
Grp By Detail | Measurements | Merchantable | Cover | Other | Local Att

Data Method: Intensive

Plants	3.3483	Basal Area	1
Std Dev	10.5882	Std Dev	3.162
Std Error	3.3483	Std Error	9999
Coefficient Variation	316.2261	Coefficient Variation	316.2

To access the permanent summary data stored in FSVeg, such as migrated legacy summaries or aerial photos summaries, select "Permanent Data" from the main Summary screen.

Figure 131: Permanent characterization data form



Access the data stored in the summary tables, (NRV_Characterizations, and NRV_Group_By) via either MS-Access or MS-Excel. Refer to the previous sections in this chapter for directions on using MS-Access and MS-Excel.

ACCESSING FSVEG DATA VIA MICROSOFT EXCEL

There are three steps involved in accessing FSVeg data through Microsoft Excel:

- Step 1: Download and install Add-in tool
- Step 2: Connect to I-Web
- Step 3: Created a customized query

Due to a documented bug in Microsoft Excel (see the Microsoft knowledge base article for additional information) that now affects NRM applications, the following workaround has been developed to enable extracting data into an Excel spreadsheet directly from FSVeg or FSVeg Spatial:

Figure 132: Add-Ins/I-Web/Create ODBC Connection

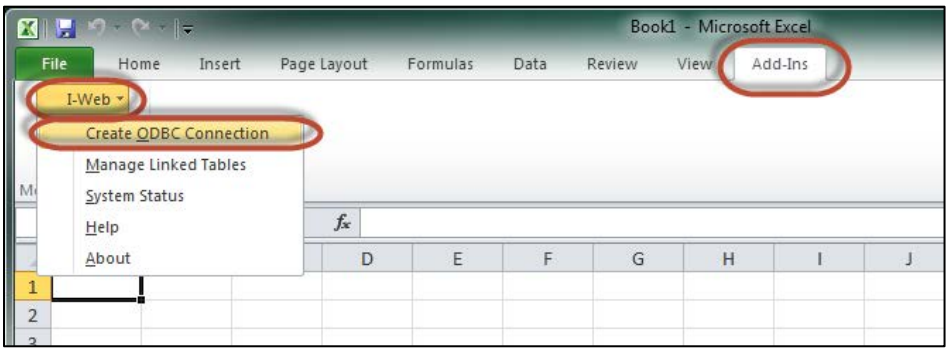


Figure 133: Production

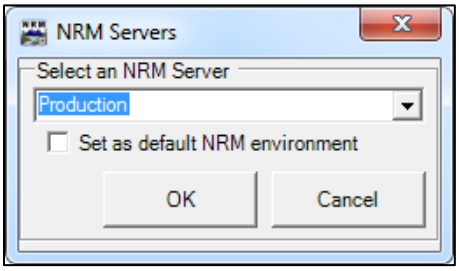
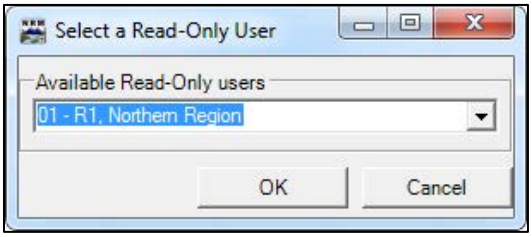


Figure 134: eAuth

In the window shown in Figure 135, pick anything for a Read-Only user; it affects neither FSVeg nor FSVeg Spatial.

Figure 135: Select a read-only user



You will then get the message shown in Figure 136, when it appears acknowledge it by clicking on the OK button.

Figure 136: Select a read-only user

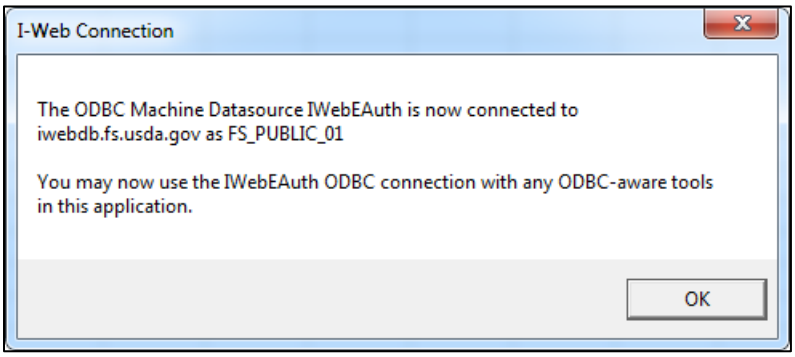
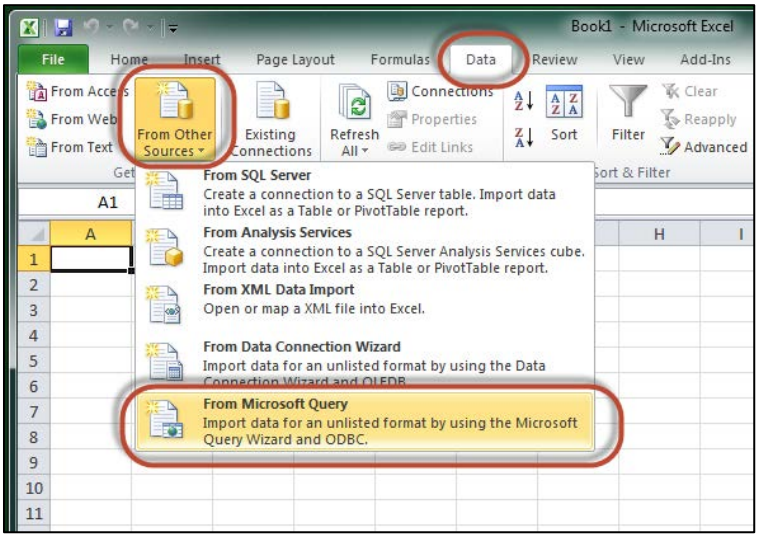
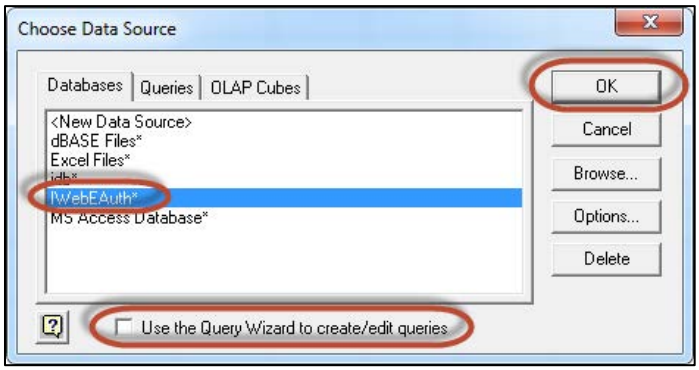


Figure 137: Data > From Other Sources > From Microsoft Query



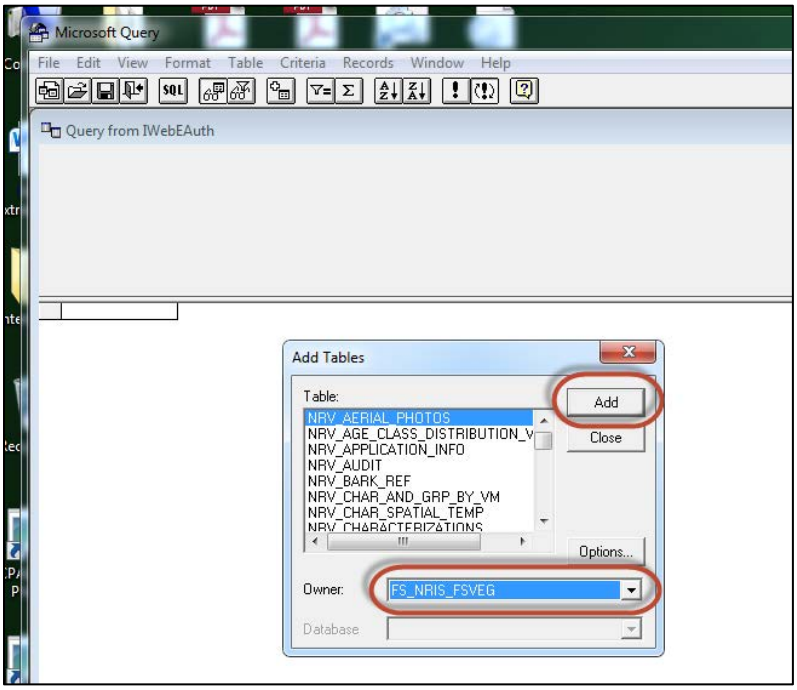
Next, uncheck Use the Query Wizard to create/edit queries and click on IWebEAuth*, then select OK, as shown in Figure 138.

Figure 138: Choose Data Source window



The Microsoft Query window, as shown in Figure 138, will begin to open and there will be a long delay (up to two minutes) before you can go further. Eventually, the Add Tables window appears. In the Owner box, enter an "F" (a quick way to get to the owners that start with "F"), then scroll down to FS_NRIS_FSVEG if using FSVeg (if using FSVeg Spatial, select the appropriate schema, such as S_R02_BKF), then select Add. (Note: It doesn't matter what table is selected at this point, in this example the selected table is nrv_aerial_photos.)

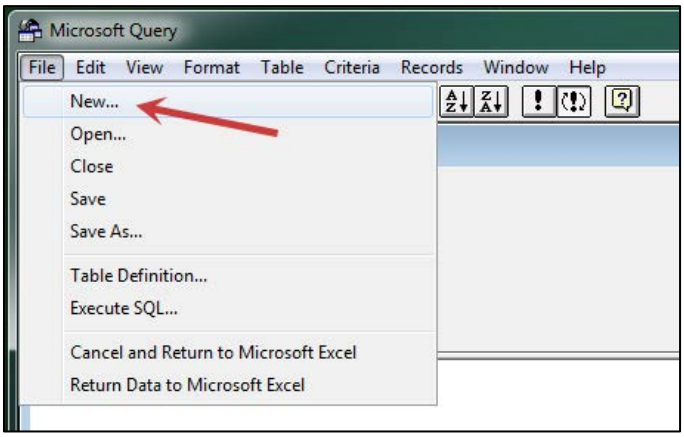
Figure 139: Microsoft Query, Query from IWebEAuth, Add Tables window



Then choose the Add Tables window.

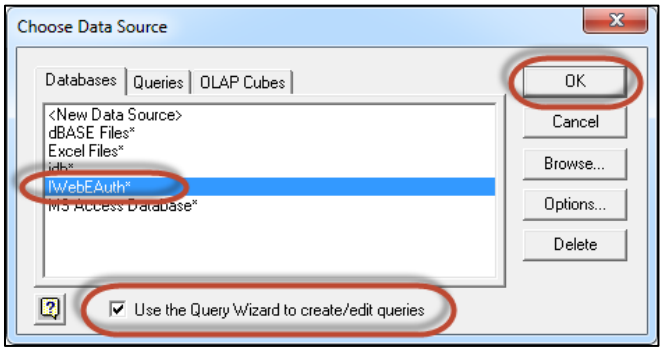
In the Microsoft Query window, select File / New, as shown in Figure 140.

Figure 140: Microsoft Query window



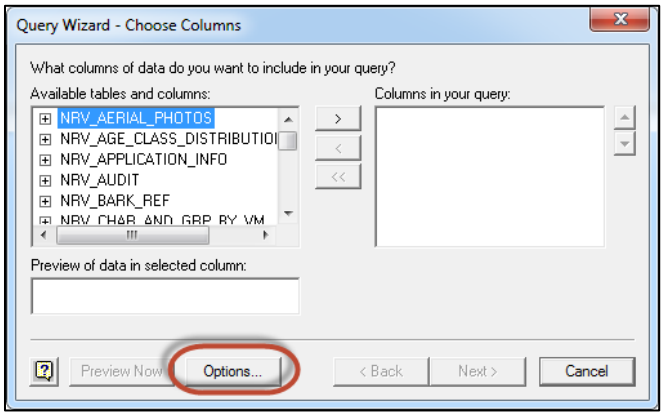
Check the Use the Query Wizard to create/edit queries box, then highlight IWebEAuth* and then click OK, as shown in Figure 141.

Figure 141: Choose Data Source window



Then click on the Options button, as shown in Figure 142.

Figure 142: Query Qizard - Choose Columns window



For FSVeg, make sure that the Owner is still FS_NRIS_FSVEG, and that both Tables and Views are checked, as shown in Figure 143.

Figure 143: Table Options window

Alternatively, for FSVeg Spatial, you'll want to select the appropriate schema, such as S_R02_BKF, and ensure that only Views are checked, as shown in Figure 144.

Figure 144: Table Options window

From this point forward, you can choose tables and columns of interest, specify selection criteria, specify the sort order, and extract the data to a spreadsheet in the same manner as existed prior to the emergency of the Microsoft Excel bug.

In the following example, stand and tree data are selected from the view nrv_stand_plot_tree_vm, as shown in Figure 145.

Figure 145: Query Wizard - Choose Columns window

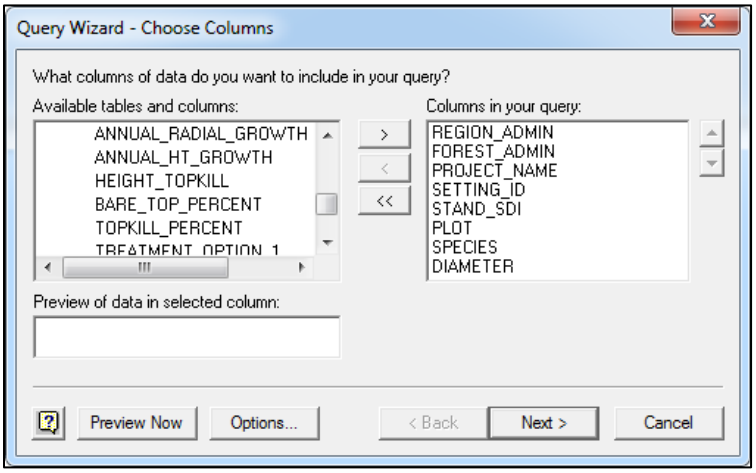


Figure 146: Query Qizard - Filter Data window

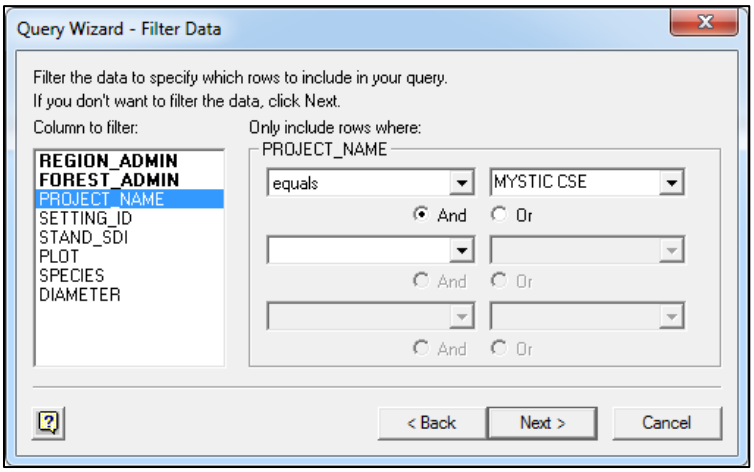


Figure 147: Query Wizard - Sort Order window

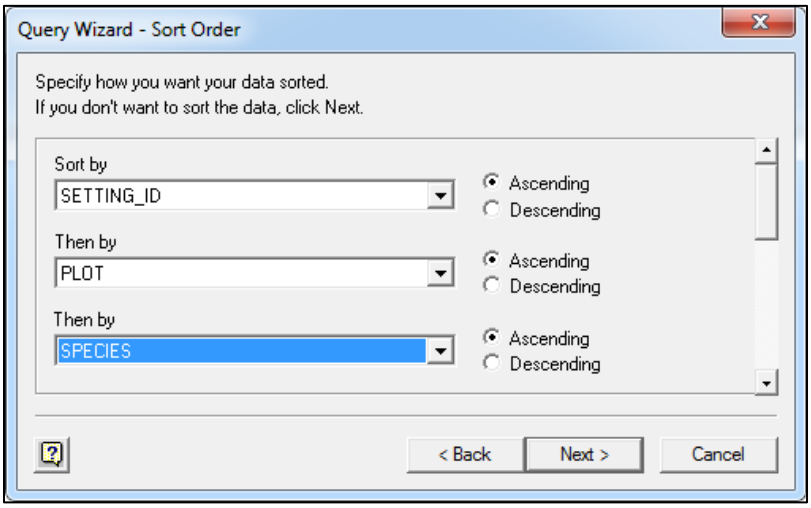


Figure 148: Query Wizard - Finish window

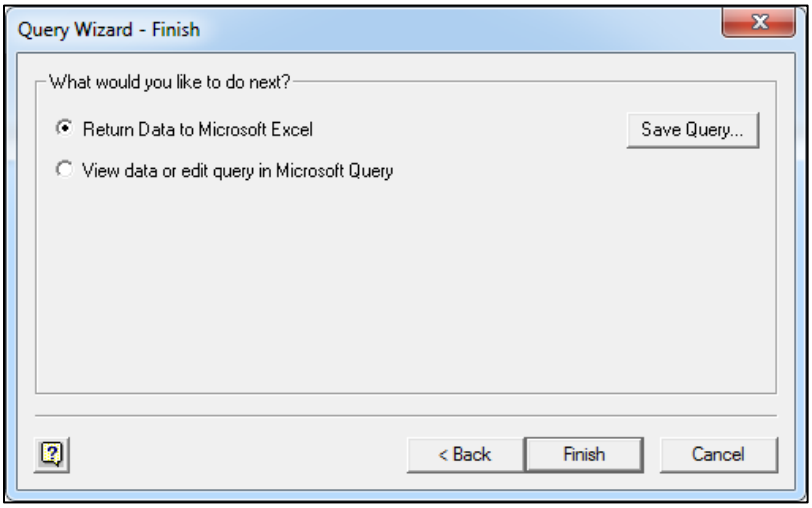
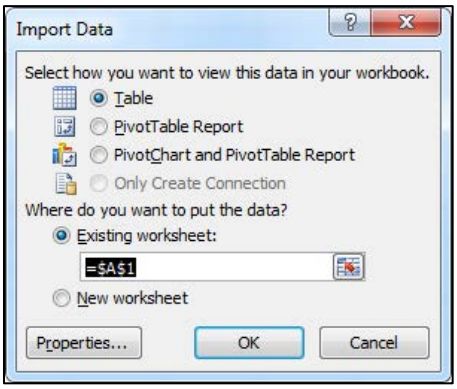
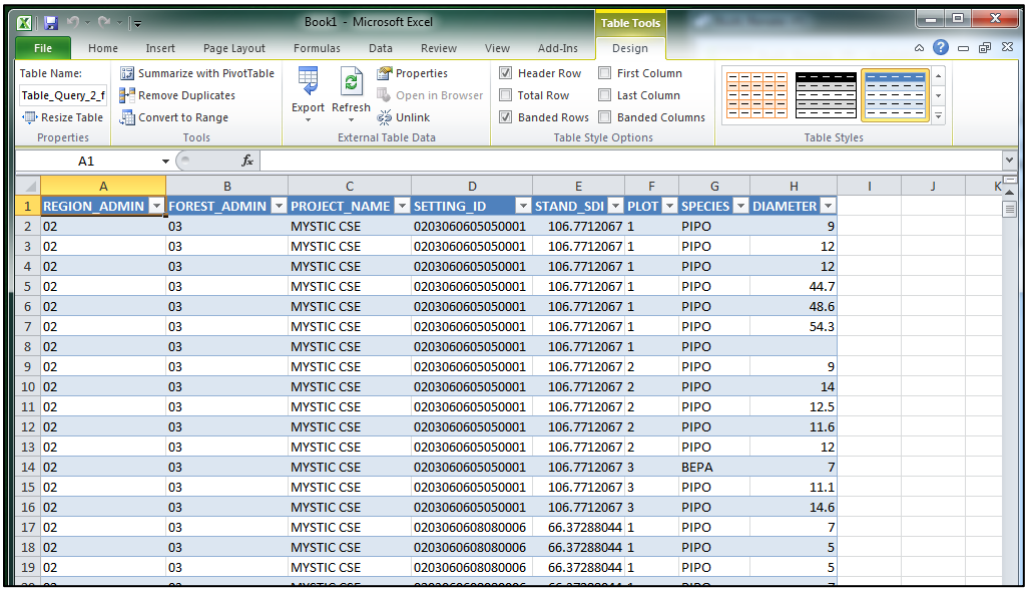


Figure 149: Import Data window



The data are returned to a spreadsheet, as shown in Figure 150.

Figure 150: Query data returned in Excel spreadsheet



	A	B	C	D	E	F	G	H
1	REGION_ADMIN	FOREST_ADMIN	PROJECT_NAME	SETTING_ID	STAND_SDI	PLOT	SPECIES	DIAMETER
2	02	03	MYSTIC CSE	0203060605050001	106.7712067	1	PIPO	9
3	02	03	MYSTIC CSE	0203060605050001	106.7712067	1	PIPO	12
4	02	03	MYSTIC CSE	0203060605050001	106.7712067	1	PIPO	12
5	02	03	MYSTIC CSE	0203060605050001	106.7712067	1	PIPO	44.7
6	02	03	MYSTIC CSE	0203060605050001	106.7712067	1	PIPO	48.6
7	02	03	MYSTIC CSE	0203060605050001	106.7712067	1	PIPO	54.3
8	02	03	MYSTIC CSE	0203060605050001	106.7712067	1	PIPO	
9	02	03	MYSTIC CSE	0203060605050001	106.7712067	2	PIPO	9
10	02	03	MYSTIC CSE	0203060605050001	106.7712067	2	PIPO	14
11	02	03	MYSTIC CSE	0203060605050001	106.7712067	2	PIPO	12.5
12	02	03	MYSTIC CSE	0203060605050001	106.7712067	2	PIPO	11.6
13	02	03	MYSTIC CSE	0203060605050001	106.7712067	2	PIPO	12
14	02	03	MYSTIC CSE	0203060605050001	106.7712067	3	BEPA	7
15	02	03	MYSTIC CSE	0203060605050001	106.7712067	3	PIPO	11.1
16	02	03	MYSTIC CSE	0203060605050001	106.7712067	3	PIPO	14.6
17	02	03	MYSTIC CSE	0203060608080006	66.37288044	1	PIPO	7
18	02	03	MYSTIC CSE	0203060608080006	66.37288044	1	PIPO	5
19	02	03	MYSTIC CSE	0203060608080006	66.37288044	1	PIPO	5

You will notice that the original Microsoft Query window disappears.

Step 1: Download and Install the Add-In Tool

The I-Web Office Add-in of Access and Excel is a tool that plugs in to the Microsoft Access and Excel menu bars. The tool must be downloaded and installed on your computer before you can use it. The following process will install the Office Add-In tool in both Access and Excel simultaneously. This step only needs to be done once per computer. If this step has already been completed for your computer, skip to Step 2.

Table 24: Download and install steps

Step	Directions
1.1	To install, be sure to right-click and select Run Elevated.
1.2	Log into the I-Web Main Menu. Select the default dashboard and enter your eAuth username and password. Expand the TOOLS folder, click on the Remote Queries folder, and click on the Access and Excel Add-In, as shown in Figure 151.
1.3	Scroll to the bottom of the page and click on the Download button, as shown in Figure 152. A standard File Download box will be displayed.
1.4	Click Run and the program will automatically install. Close the I-Web Access and Excel Add-In window when done.

Figure 151: I-Web Main Menu screen

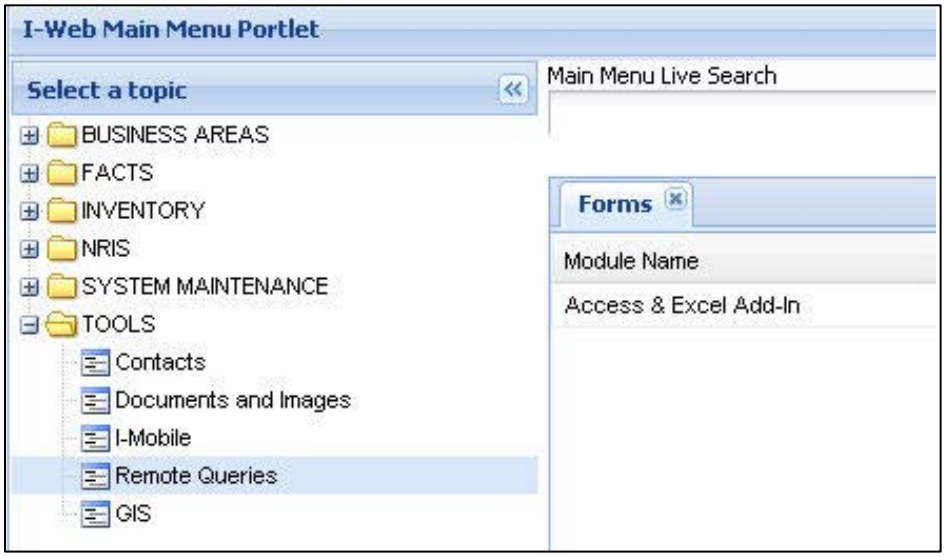


Figure 152: Download button

STEP 2: CONNECT TO I-WEB

Table 25: Connect to I-Web steps

Step	Directions
2.1	From the PC desktop, launch Microsoft Excel from an icon or Start>Programs>Microsoft Excel
2.2	From the I-Web menu, select the "Add-Ins" tab, then you will see the I-Web on the toolbar, as shown in Figure 153.
2.3	Click on I-Web and then on Create ODBC Connection, as shown in Figure 154.
2.4	Select "Production" to set it as your default environment, then click "OK," as shown in Figure 155.
2.5	Provide your eAuth credentials. You are then prompted to select a Read-Only user account, as shown in Figure 156. It does not matter what account you select, FSVeg does NOT filter based on these accounts. Select "All Units" and click the "OK" button. An intermediate window will appear telling you the connection is set up as an FS_Public account. Click "OK."

Figure 153: I-Web showing in the toolbar

Figure 154: Create ODBC Connection link

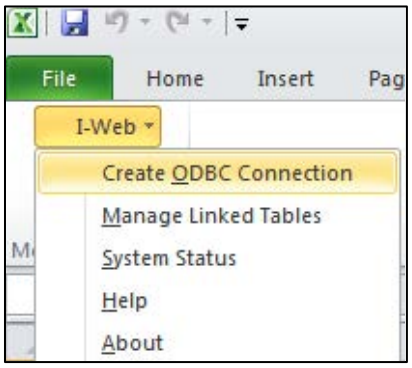
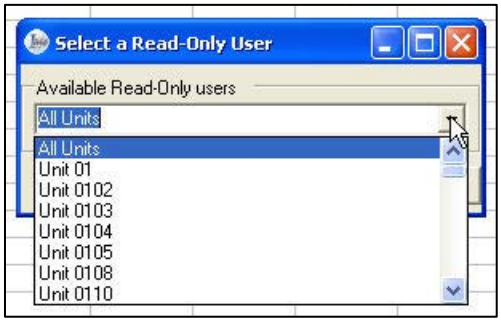


Figure 155: Set Production environment

Figure 156: Select a Read-Only User



Find the I-Web Connection

If you cannot find the I-Web connection on your Excel Add-In tab:

1. In Excel, click Alt-F
2. Click "Excel Options" then click "Add-Ins" on the left of the Excel Options window
3. Select "Disabled Items" from the list next to "Manage" near the bottom of the window, and click "Go"
4. If "mscoree.dll" is in the list, select it then click the "Enable" button
5. Close the dialogs, exit Excel and launch it again

If this does not enable the Excel Add-In, the best alternative may be to run Excel from Citrix:

1. Open Internet Explorer and go to the Citrix login page by entering https://apps.fs.fed.us/Citrix/auth/login.aspx (you may want to add this to your Favorites)
2. Log in with your Active Directory username and password
3. Navigate to "\Office Automation\MS Office" in the Applications window and open Excel

STEP 3: CREATE A CUSTOMIZED QUERY

Table 26: Create customized query steps

Step	Directions
3.1	From the Excel main menu, select "Data," "From Other Sources," and then "From Microsoft Query," as shown in Figure 157.
3.2	From the "Choose Data Source" window and the "Databases" tab, select "IWebEAuth*," and then select "OK," as shown in Figure 158.
3.3	After a few seconds, a window titled "Choose Columns" should appear. Select the "Options" button, as shown in Figure 159. Under the "Show" section, toggle the types of items you need ("Views" was selected here, since the view nrv_cse_all_vm is used later in the example). In the "Owner" section, scroll down to and select "FS_NRIS_FSVEG". These actions will greatly reduce the list that will appear in "Available tables and columns" by eliminating apparent duplicates as well as displaying only items in the FSVeg database. Select "OK" to confirm your choices and return to the Query Wizard – Choose Columns window.
3.4	Scroll down to the "NRV_CSE_ALL_VM" view or the table/view of your choice, as shown in Figure 160. If there is more than one listing, the views will be listed first, then the synonyms and then the tables of the same name. Select the first name if multiple names appear. Click the "+" box next to the table or view to see all the column in the table or view, then select "Next."
3.5	To select all of the columns in a table or view, highlight the table or view name, click the ">" symbol to move them to the box on the right. However, it is suggested that only select specific columns are selected. Selecting a large amount of data may slow the query down.
3.6	To select individual columns in a table or view, highlight the column names, one at a time, then click the > symbol, as shown in Figure 161. The column name will be displayed in the box on the right. Be sure to select Region (Proc or Admin), Forest (Proc or Admin) and District. To unselect a column, highlight it in the box on the right, and click the < symbol. To unselect all columns, click the << symbol.
3.7	The "Preview Now" button will display all the data in a column in the box above the button. WARNING: Do not select this button unless absolutely necessary!!! You are essentially querying the whole database of 5 million plus records! This will tie up the system and the query may eventually fail.
3.8	Once all the columns you want displayed are selected, select "Next."

Step	Directions
3.9	For each column selected, the data can be filtered with logical expressions, as shown in Figure 162. Each column selected can be filtered with up to three logical expressions. Additional filtering can be done later. Highlight a column. To specify the filters, use the drop down arrows and/or type in the parameters.
3.10	Be sure to select the Region (Proc or Admin) column and set it EQUAL to your Region (i.e., 09). Be sure to select the Forest (Proc or Admin) column and set it EQUAL to your Forest (i.e., 13). Be sure to select the District column and set it equal to your District (i.e., 05). When all filtering has been entered, select "Next."
3.11	The data can be brought into Excel sorted, in ascending or descending order, on a maximum of three columns. Once the data is in Excel, it can be sorted using Excel sort functions, as shown in Figure 163. When all of the sort selections have been entered, select "Next."
3.12	If you want to save a version of your query as is, select "Save Query," as shown in Figure 164. It is recommended that you View the data or edit the query before you place the data in an Excel spreadsheet. Click "Finish."

Figure 157: Select a Read-Only User

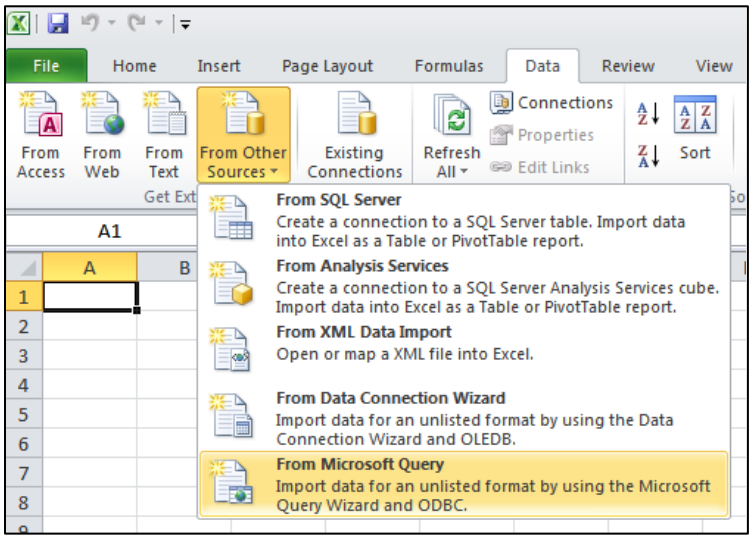


Figure 158: Choose data source

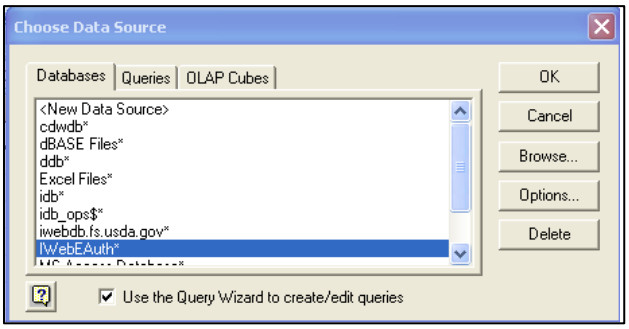


Figure 159: Query Wizard

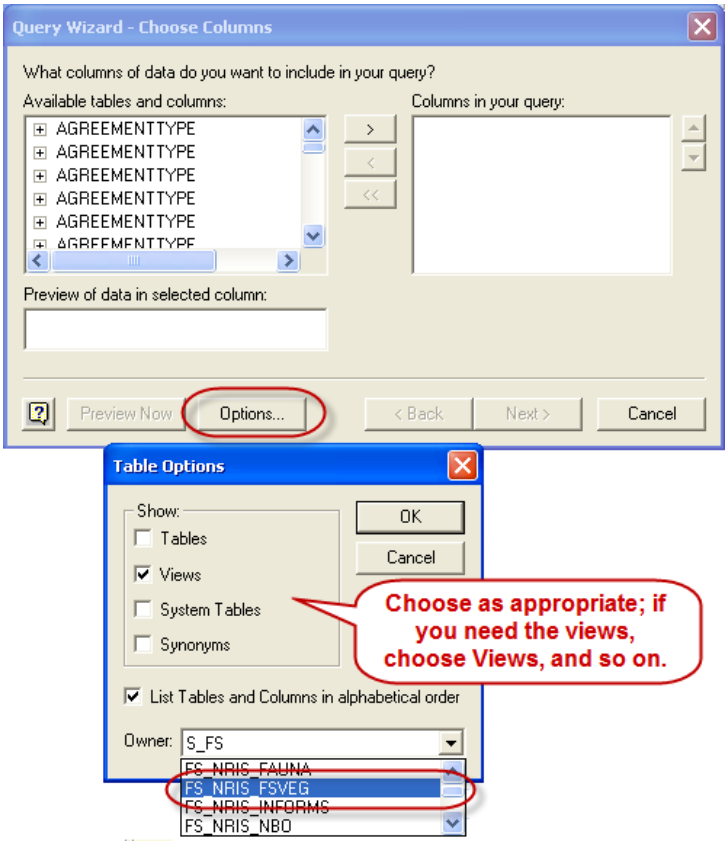


Figure 160: Choose columns

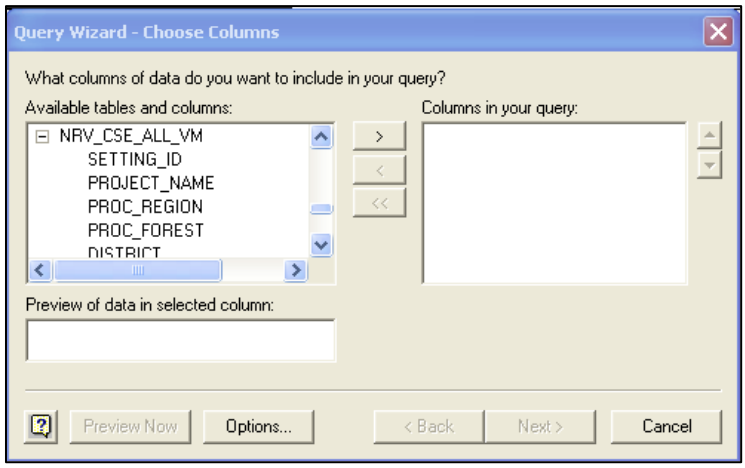


Figure 161: Choose columns

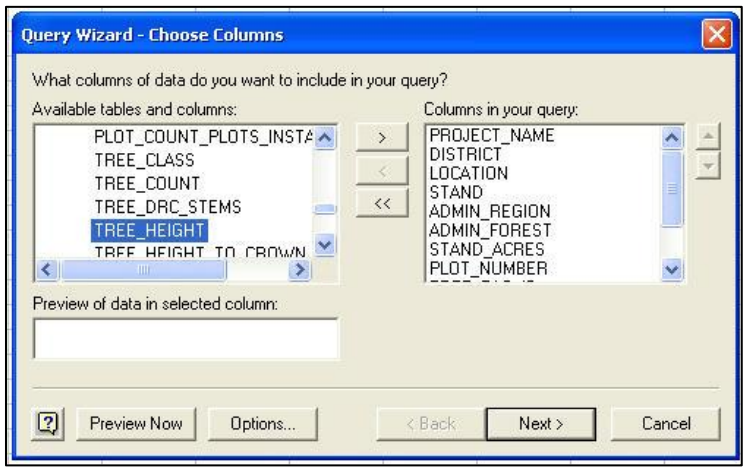


Figure 162: Filter data

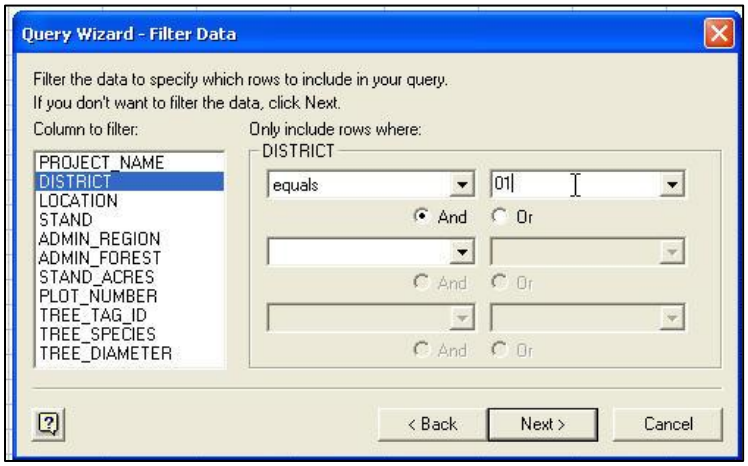


Figure 163: Sort order

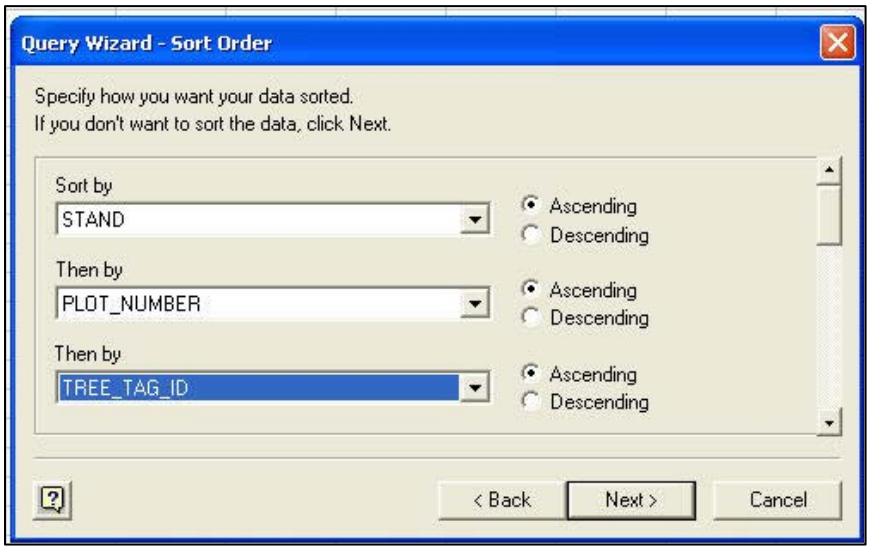
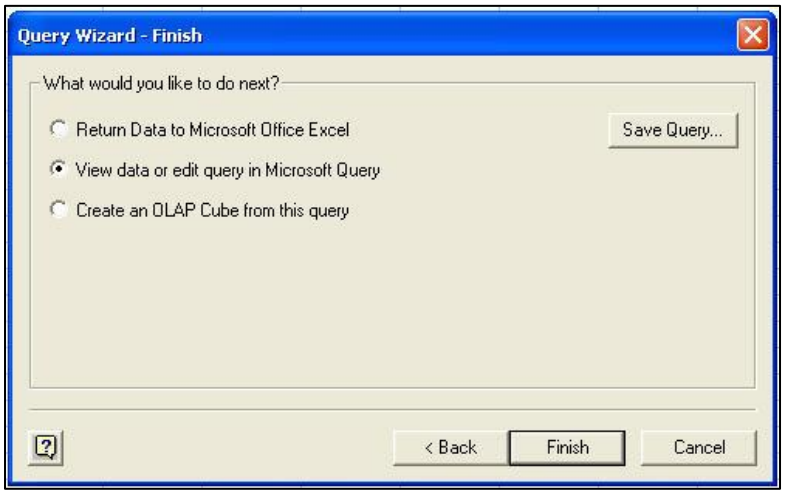


Figure 164: Finish query wizard



STEP 4: USING MICROSOFT QUERY

Table 27: Microsoft Query operations

Operation	Description
Menu/Toolbar	Most functionality can be accessed through either the menu bar or the tool bar, as shown in Figure 165. As in most Microsoft applications, placing your mouse cursor on an icon on the tool bar will pop up a brief description of its function. Selecting a menu item will bring up submenus.

Operation	Description
Object Display Section	As columns are added to or deleted from the query, they are displayed or disappear from this area, as shown in Figure 166. Stretching the frame around the object may be necessary to view the entire name of the columns.
Filter Display Section	Displays any selection criteria applied to the query, as shown in Figure 167. This section may not exist if no criteria were added.
Data Display Section	All data that fits the selection criteria is displayed here, as shown in Figure 168. Columns can be resized, inserted, deleted, or added.
Record Section	Contains the current record number, as shown in Figure 169. Select the ">|" symbol to jump to the last record and obtain the total number of records returned by the query.
Add a Column	Either: • Double click on the column name in the Object Display Section; the data will be added to the first blank column in the spreadsheet, or • Go to the first blank column, select the column from the pull-down list, as shown in Figure 170. If the added column name
Delete a Column	Highlight the column and either: • Select the "Delete" key on the keyboard, or • Select Edit > Delete on the menu bar
Hide/Show a Column	Use "FORMAT" on the menu bar.
Change the Filtering Criteria	Select Criteria/Add Criteria and the "Add Criteria" dialog box will pop up, as shown in Figure 171. Select Criteria/Remove all Criteria to delete all current criteria for a column. • Choose the column, operator, and values from the pull-down lists. The "Values" button will bring up a list of all values in the specified field. • If the column is numeric, you can select to sum or average the data using the "Total" pull-down list. • Once a new filter has been applied, the data should automatically refresh. If it does not, select the "!" symbol in the tool bar to refresh the data.

Operation	Description
Sort	On the menu bar, go to Records>Sort, as shown in Figure 152. This will open the "Sort" dialog box. Select columns from the pull-down list and select "Add." They will move to the bottom box with any columns already selected. Choose an Ascending or Descending sort when you select the column before adding it to the list. Highlighting a column name in the bottom box allows you to change the direction of the sort or remove that column from the sort selection. Data sorting is applied in the order the columns are listed in the bottom box. Select "Close" when finished.
View SQL Code	Select the "SQL" button in the toolbar to display the SQL query statement based on your selection criteria. Edits to the SQL query statement are reflected in the data output display.
Save the Query	Once the Query is completed it can be saved and used again. Go to File>Save and name the query accordingly. If you do not specify a path name, Excel will default to C:\Documents and Settings\<user name>\Application Data\Microsoft\Queries.

Figure 165: Select a Read-Only User

Figure 166: Query from CSE_data

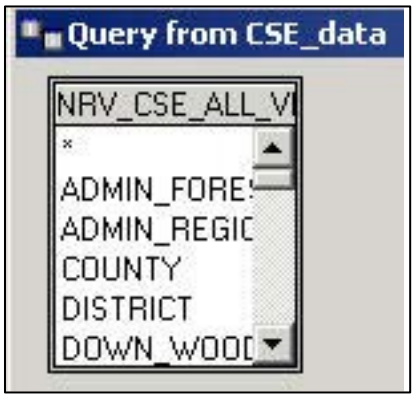


Figure 167: Criteria field

Figure 168: Setting list

SETTING_ID	PROC_REGI	DISTRICT	STAND	STAND_ACRES
01010155550001	01	01	0001	
01010155550001	01	01	0001	
01010155550001	01	01	0001	
01010155550001	01	01	0001	
01010155550001	01	01	0001	
01010155550001	01	01	0001	
01010155550001	01	01	0001	
010101ABCD0001	01	01	1	
010101ABCD0001	01	01	1	
010101ABCD0001	01	01	1	
010101ABCD0001	01	01	1	
010101ABCD0001	01	01	1	
010101ABCD0001	01	01	1	

Figure 169: Record number field

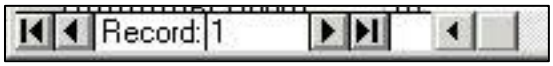


Figure 170: Exam purpose codes

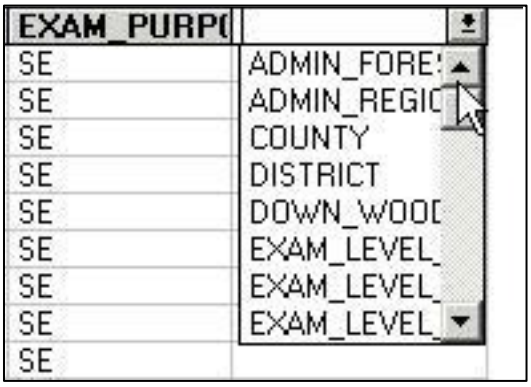


Figure 171: Add criteria

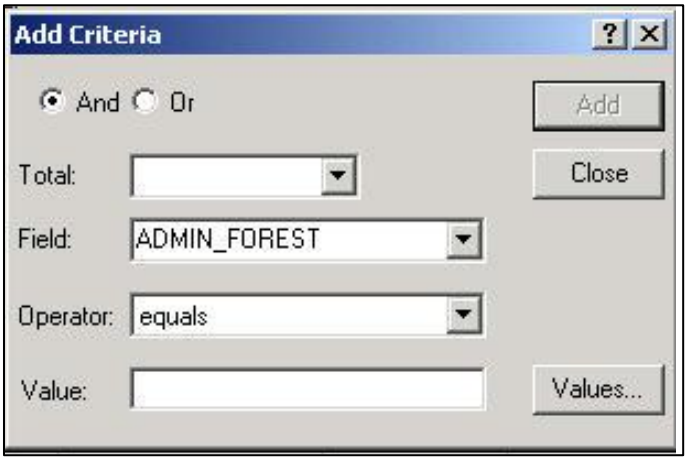
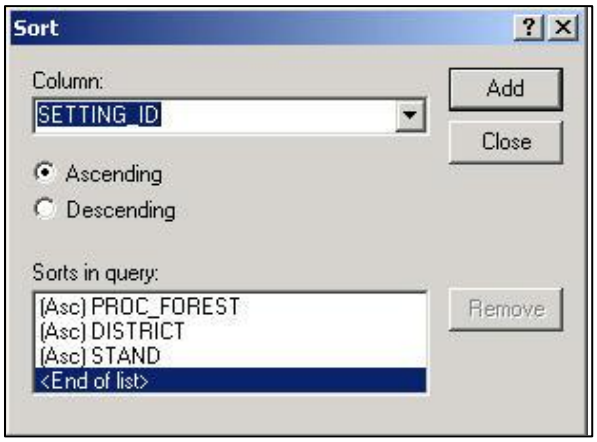


Figure 172: Sort



STEP 5: PLACE THE RESULTS INTO AN EXCEL WORKSHEET

Table 28: Place results in worksheet steps

Step	Directions
5.1	Select File>Return Data to Microsoft Excel, as shown in Figure 173. This will open a new Microsoft Excel spreadsheet. By default the first cell is selected.
5.2	You are then asked where to place the data, see Figure 174 below. Unless you are appending the data to an existing worksheet, take the default. You may choose a different starting place on the worksheet to place the data. Selecting a new worksheet prevents the data from overwriting existing data if the query has been run more than once. Select "OK" to finish.
5.3	Any changes made to the column headings, column width, deleted columns, etc., revert to those returned by the query.

Figure 173: Return data to Microsoft Excel

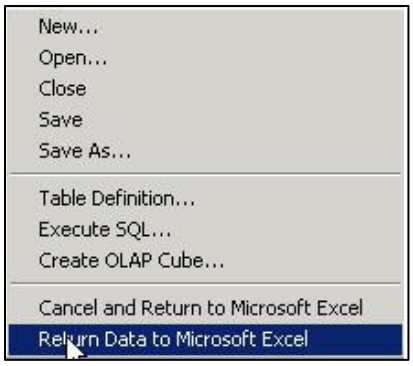
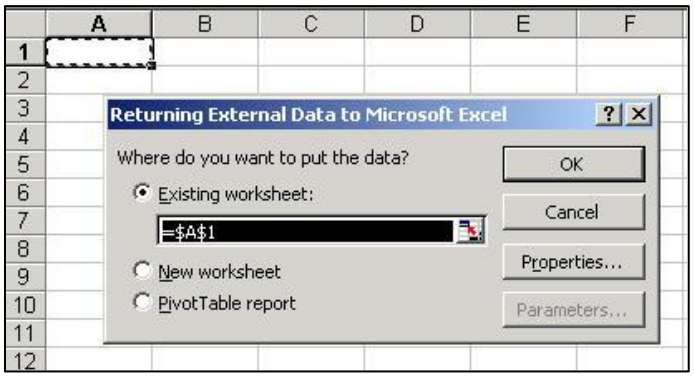


Figure 174: Return external data to Microsoft Excel



STEP 6: EDITING EXISTING QUERIES

Any saved queries can be re-used as is or edited to create a new query.

Table 29: Editing existing queries steps

Step	Directions
6.1	From a blank Excel spreadsheet, go to Data > Get External Data > Run Saved Query, as shown in Figure 175.
6.2	This will bring up the "Run Query" dialog box, as shown in Figure 176. Select the query, then "Get Data" to bring the data into a new spreadsheet.
6.3	Specify where to put the data, as shown in Figure 177.
6.4	You will be prompted to connect to the database via eAuth. Upon connection the query will be run and the data will be placed in the spreadsheet.
6.5	Once the query is run, it may be edited by going into Data > Get External Data > Edit Query.

Figure 175: Get external data

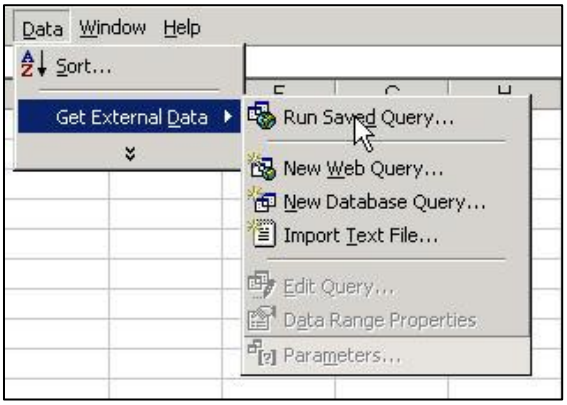


Figure 176: Run query

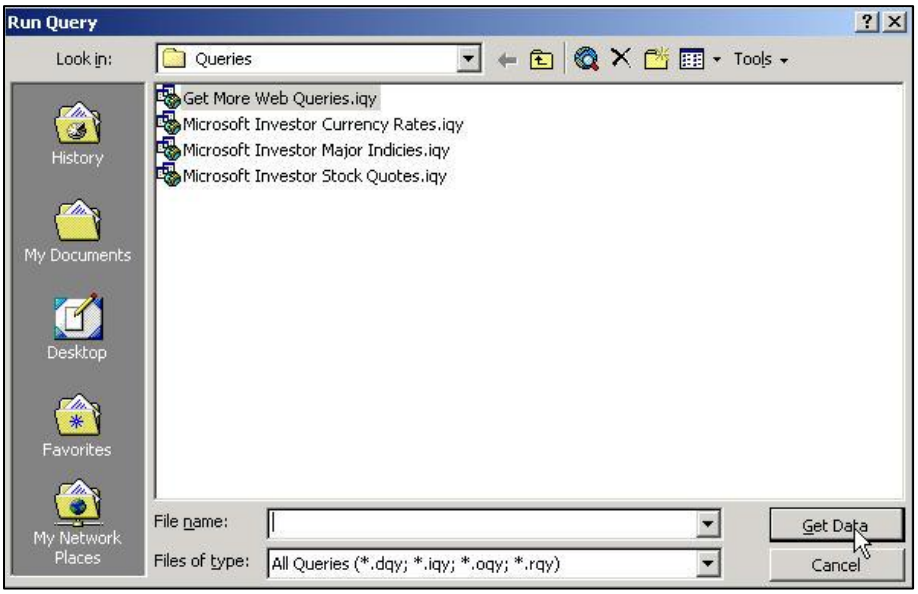
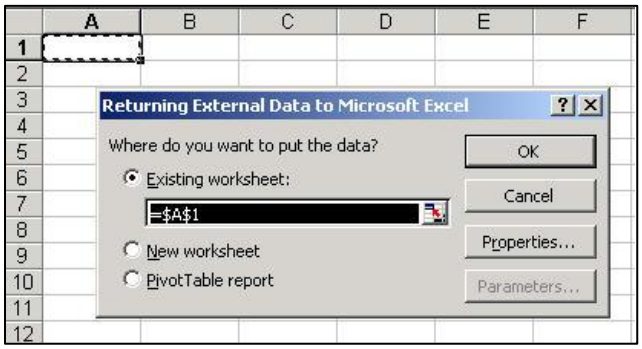


Figure 177: Returning external data to Excel



STEP 7: PERFORM CALCULATIONS

You may create your own data from existing data stored in the spreadsheet.

Table 30: Perform calculations steps

Step	Directions
7.1	Select the cell you want to contain a formula or calculated data. You may want to insert a new column or row to contain the calculated data.
7.2	Press the equal sign (=) to activate the Formula Bar.
7.3	Type the formula, without spaces, and then press Enter when done.

Step	Directions
7.4	Examples: • =A1/2+100 (Divide the value in cell A1 by 2, then add 100) • =A1+4*5 (Multiply 4x5, then add to the value in cell A1) • =(A1-2)*4 (Subtract 2 from the value in cell A1, then multiply by 4)
7.5	To copy a formula across a range of cells: • Select the cell containing the formula then drag the fill handle over the adjacent cells.

STEP 8: CREATE CHARTS AND GRAPHS

You may create charts and graphs from data stored in the spreadsheet.

Table 31: Create charts and graphs steps

Step	Directions
8.1	Select the cells you wish to include in the chart or graph by clicking and dragging.
8.2	To create a chart, select the column chart, line chart, or pie chart icon.
8.3	To cut a pie chart into slices, click on a pie slice until a handle appears around its edges then drag the slice away from the pie.

USING EXCEL TO CREATE A LIST OF STANDS FOR FSVEG REPORTS

Step 1. If you have not already done so, refer to the Accessing FSVeg Data via Microsoft Excel section of this document and install the I-Web Add-In for Microsoft Excel.

Step 2. Follow Step 2 in the Accessing FSVeg Data via Microsoft Excel section to connect to I-Web.

Step 3. Follow Step 3.1 through Step 3.3 in the Accessing FSVeg Data via Microsoft Excel section to create a customized query. In Step 3.3, connect to NRM_STAND_VM if you only want to query stand level attributes. Connect to NRV_CSE_ALL_VM if you will be querying plot or tree level attributes. You can then skip Step 3.4

Step 4. In Step 3.5, ALWAYS select the following:

- PROJECT_NAME
- REGION_PROC
- FOREST_PROC
- DISTRICT
- LOCATION
- STAND
- SETTING_ID

Step 5. Skip Step 3.6, perform Step 3.7.

Step 6. In Step 3.8, ALWAYS set the following filters:

Table 32: Set Filters

Required Fields	Filter	Code	Description
REGION_PROC	equals	06	2-digit Region value
FOREST_PROC	equals	03	2-digit Forest value
DISTRIC	equals	34	2-digit District value
LOCATION	equals	00765	Location value, if you know it
PROJECT_NAME	equals	XYZ	Project, ,if you know it

Step 7. Now comes the part where you get to Customize the query for the stands you are looking for. There is no limit to what you can look for. The following six examples are only interested in STAND level attributes, so in Step 3.3, connect to NRV_STAND_VM.

Example 1: Stands containing Loblolly pine which are 40-60 years old

In Step 3.5, select the following:

- EV
- EV_REF
- AGE

In Step 3.8, select the following filters:

Table 33: Set Filters

Field	Filter	Code
EV	equals	13
EV	or equals	31
EV	or equals	29
EV	or equals	28
EV_REF	equals	FSHR8
AGE	greater than	39
AGE	less than	61

Example 2: Stands above 3000 feet in elevation

In Step 3.5, select the following:

- ELEVATION

In Step 3.8, select the following:

- ELEVATION greater than 2999

Example 3: Stands between 10% and 20% slope

In Step 3.5, select the following:

- SLOPE

In Step 3.8, select the following:

- SLOPE greater than 09 and less than 21

Example 4: Stands established before 1950

In Step 3.5, select the following:

- ORIGIN_YEAR

In Step 3.8, select the following:

- ORIGIN_YEAR less than 1951

Example 5: Stands with an existing vegetation longleaf, loblolly, ro shortleaf pine

In Step 3.5, select the following:

- EV
- EV_REF

In Step 3.8, select the following:

- EV_REF equals FSHR8
- EV equals 21, or
- EV equals 31, or
- EV equals 32

Example 6: Stands containing loblolly pine trees, and above a certain stocking

In Step 3.5, select the following:

- EV
- MERCH_CUBIC_STOCKING

In Step 3.8, select the following:

- EV equals XX (2-digit code for Loblolly pine stands)
- MERCH_CUBIC_STOCKING greater than XXX (your minimum value)

Step 8. The following examples are interested in tree level attributes, so in Step 3.3, connect to the NRV_CSE_ALL_VM.

Example 1: Stands containing trees of Species A over X inches in diameter and Y feet in height

In Step 3.5, select the following:

- TREE_SPECIES
- TREE_DIAMETER
- TREE_HEIGHT

In Step 3.8, select the following:

- TREE_SPECIES equals XXXX (NRCS species code)
- TREE_DIAMETER greater than XXXX (your minimum value)
- TREE_HEIGHT greater than XXXX (your minimum value)

Example 2: Stands containing any Port Orford species

In Step 3.5, select the following:

- TREE_SPECIES

In Step 3.8, select the following:

- TREE_SPECIES equals CHLA

Example 3: Stand containing dead trees over X inches in diameter and Y feet in height and decay class of 3 or more

In Step 3.5, select the following:

- TREE_LOG_SNAG_DECAY
- TREE_DIAMETER
- TREE_HEIGHT

In Step 3.8, select the following:

- TREE_LOG_SNAG_DECAY greater than 2
- TREE_DIAMETER greater than XXXX (your minimum value)
- TREE_HEIGHT greater than XXXX (your minimum value)

Example 4: Stands containing trees with dwarf mistletoe ratings above a value of 2

In Step 3.5, select the following:

- TREE_DAMAGE_AGENT1
- TREE_DAMAGE_AGENT2
- TREE_DAMAGE_AGENT3
- TREE_DAMAGE_AGENT4
- TREE_DAMAGE_AGENT5
- TREE_DAMAGE_CATEGORY1
- TREE_DAMAGE_CATEGORY2
- TREE_DAMAGE_CATEGORY3
- TREE_DAMAGE_CATEGORY4
- TREE_DAMAGE_CATEGORY5
- TREE_DAMAGE_SEV1

- TREE_DAMAGE_SEV2
- TREE_DAMAGE_SEV3
- TREE_DAMAGE_SEV4
- TREE_DAMAGE_SEV5

In Step 3.8, select the following:

- TREE_DAMAGE_AGENT1 equals 23
- TREE_DAMAGE_AGENT2 equals 23
- TREE_DAMAGE_AGENT3 equals 23
- TREE_DAMAGE_AGENT4 equals 23
- TREE_DAMAGE_AGENT5 equals 23
- TREE_DAMAGE_CATEGORY1 equals 001
- TREE_DAMAGE_CATEGORY2 equals 001
- TREE_DAMAGE_CATEGORY3 equals 001
- TREE_DAMAGE_CATEGORY4 equals 001
- TREE_DAMAGE_CATEGORY5 equals 001
- TREE_DAMAGE_SEV1 greater than 2
- TREE_DAMAGE_SEV2 greater than 2
- TREE_DAMAGE_SEV3 greater than 2
- TREE_DAMAGE_SEV4 greater than 2
- TREE_DAMAGE_SEV5 greater than 2

Step 9. These queries can be saved to be run at a later time and can be easily modified.

Step 10. Once you have the list of stands that meet your criteria, you can go into FSVeg and use the list building function to create a list of stands and use that list with any of the reports.

ACCESSING FSVEG DATA VIA MICROSOFT ACCESS

STEP 1: DOWNLOAD AND INSTALL THE ADD-IN TOOL

The I-Web Office Add-in of Access and Excel is a tool that plugs in to the Microsoft Access and Excel menu bars. The tool must be downloaded and installed on your computer before you can use it. The following process will install the Office Add-in tool in both Access and Excel simultaneously. This step only needs to be done once per computer. If this step has already been completed for your computer, skip to Step 2.

Table 34: Download and install Add-In steps

Step	Directions
1.1	To install, be sure to right-click and select Run Elevated.
1.2	Log into the I-Web Main Menu. Select the default dashboard and enter your eAuth username and password. Expand the Tools folder, click on the Remote Queries folder, and click on the Access & Excel Add-In, as shown in Figure 178.
1.3	Scroll to the bottom of the page and click on the "Download" button, as shown in Figure 179. A standard File Download box will be displayed.
1.4	Click "Run" and the program will automatically install. Close the I-Web Access and Excel Add-In window when done.

Figure 178: I-Web main menu

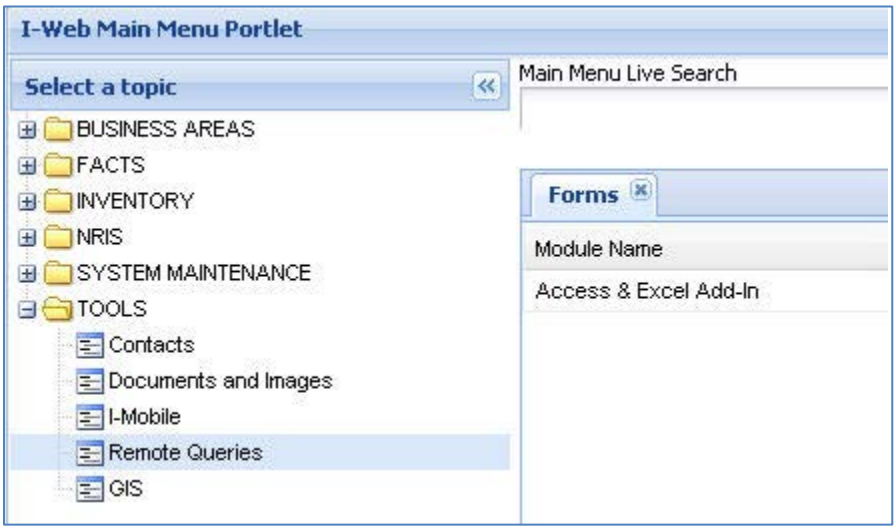


Figure 179: Download button

STEP 2: CONNECT TO I-WEB

Table 35: Connect to I-Web steps

Step	Directions
2.1	From the PC desktop, launch Microsoft Access from an icon or the Start menu. Open up a new or pre-existing Access database, as shown in Figure 180.
2.2	Click the "Add-Ins" tab and you will see "I-Web" on the toolbar, as shown in Figure 181.
2.3	Select "Production," set as your default environment, and click "OK," as shown in Figure 182.
2.4	Provide your eAuth credentials. You are then prompted to select a Read-Only user account, as shown in Figure 183. It does not matter what account you select, FSVeg does NOT filter based on these accounts. Select "All Units" and click the "OK" button. An intermediate window will appear telling you the connection is set up as an FS_Public account. Click "OK."

Figure 180: Access File menu

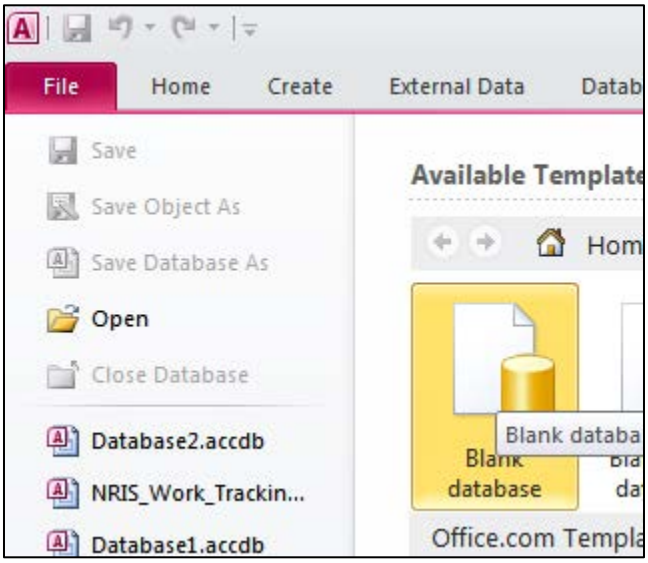


Figure 181: Access Add-Ins tab

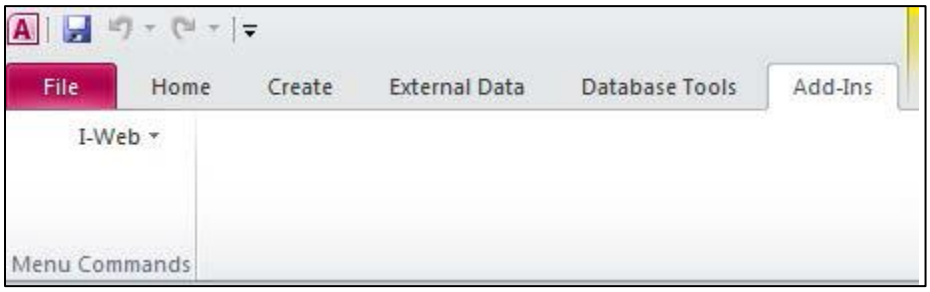
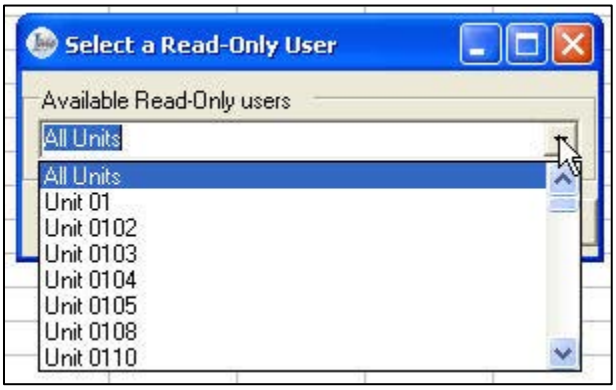


Figure 182: Select I-Web server

Figure 183: Select a read-only user



STEP 3: CREATE A CUSTOMIZED QUERY

Table 36: Editing existing queries steps

Step	Directions
3.1	From the MS-Access main menu, select "ODBC Database," as shown in Figure 184.
3.2	Select the "Import the source data into a new table in the current database" option and click on the "OK" button.

Step	Directions
3.3	Click on the "Machine Data Source" tab, as shown in Figure 185. Highlight "IWebEarth" and then click on "OK."
3.4	After a few seconds, a window titled "Link Tables" should appear. Scroll down and highlight the "FS_NRIS_FSVEG.NRV_CSE_ALL_VM" view, as shown in Figure 186, or the table/view of your choice. Then click the "OK" button.
3.5	Select up to 10 fields to uniquely identify each report. It is suggested that you select the Setting ID and the Measurement Date, as shown in Figure 187. Then select "OK."
3.6	The table is now linked to your Access database, as shown in Figure 188.
3.7	Select Insert > Query, as shown in Figure 189.
3.8	Make certain that Design View is highlighted in the New Query window that appears, then select "OK," as shown in Figure 190.
3.9	Use the query window shown in Figure 191 to narrow down the records to be retrieved.
3.10	All the columns in the view or table are available and listed in the upper window. By double-clicking on each column, it will appear in the query portion in the lower window. To specify what values to retrieve, enter criteria in the application columns. The process fails if it attempts to retrieve too many records. To include columns that can limit the retrieval to only those records needed for analysis, an example of which is shown in Figure 192. To do this: 1. Include either: a. PROC_REGION and PROC_FOREST b. ADMIN_REGION and ADMIN_FOREST 2. Specify values for them such as PROC_REGION = "09" 3. Include other columns, such as DISTRICT, PROJECT_NAME, and LOCATION to retrieve only the records needed Include data columns needed for the analysis. If the query was saved, it can be edited and re-run to pick up the needed data.
3.11	Select "Run" from the query toolbar or Query > Run from the main menu bar, as shown in Figure 193.
3.12	Results appear in a spreadsheet-like window, such as that shown in Figure 194.

Figure 184: ODBC Database choice in Access External Data menu

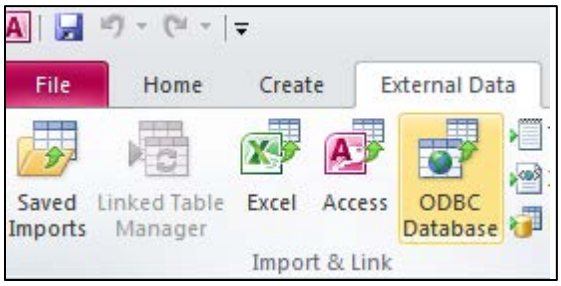


Figure 185: Select Data Source window

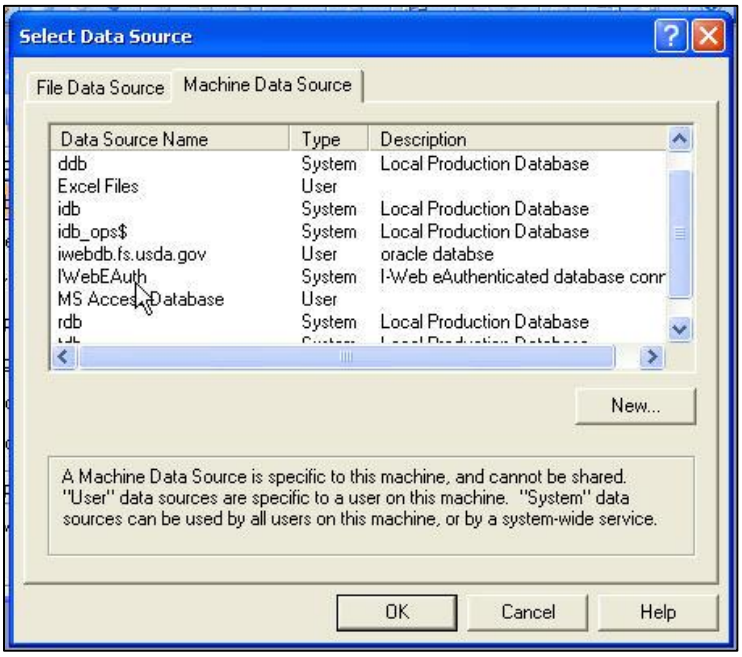


Figure 186: Link Tables window

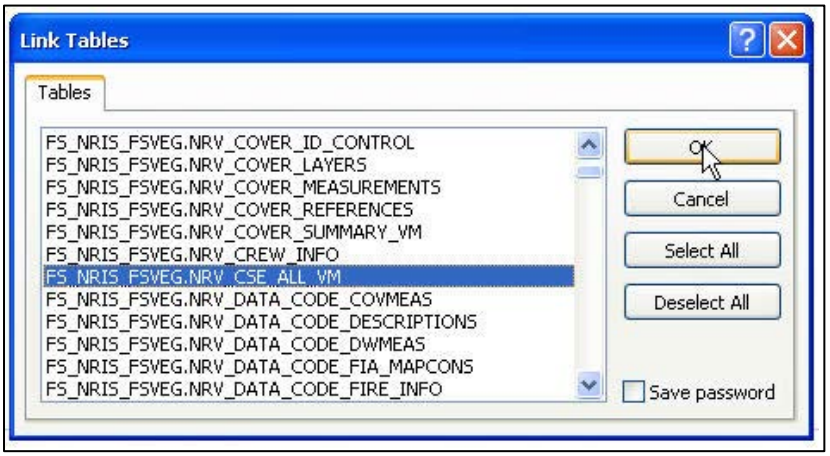


Figure 187: Select Unique Record Identifier window

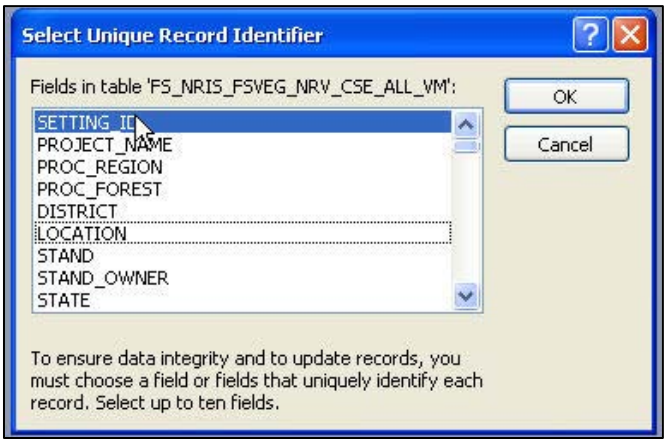


Figure 188: db3: Database (Access 2000 file format) window

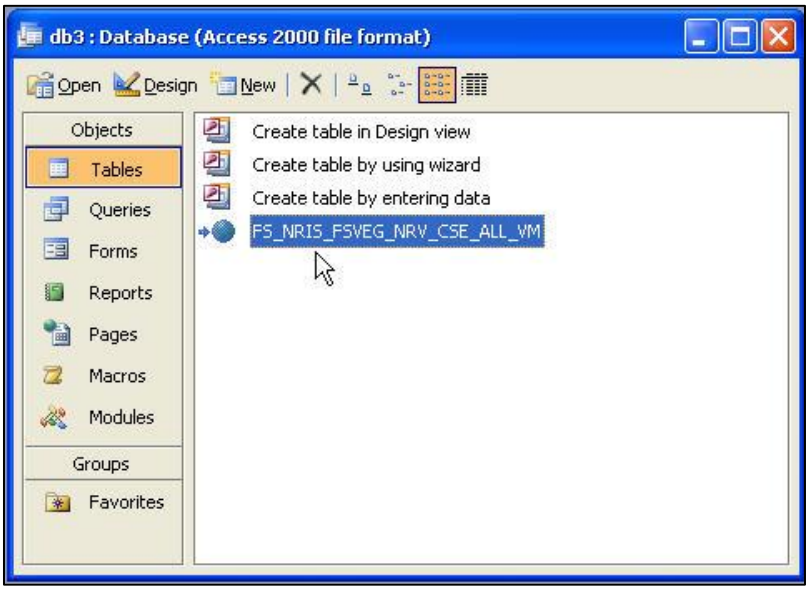


Figure 189: Microsoft Access window, Insert > Query highlighted

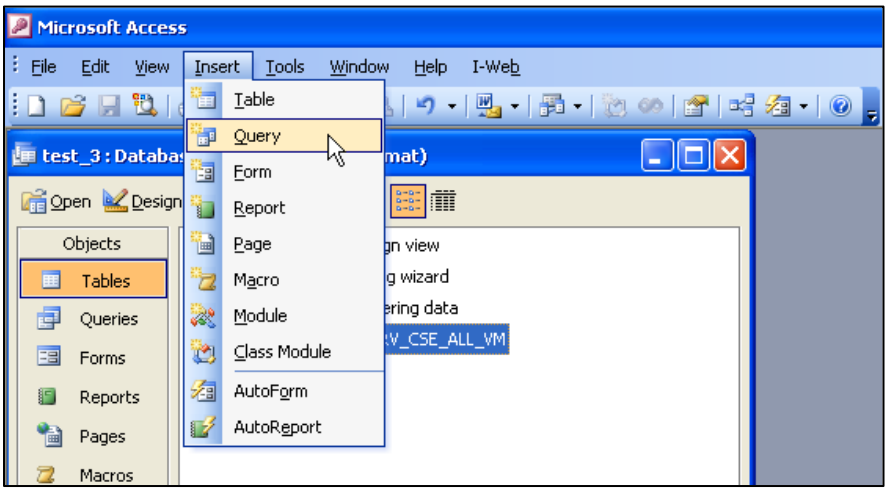


Figure 190: New Query window

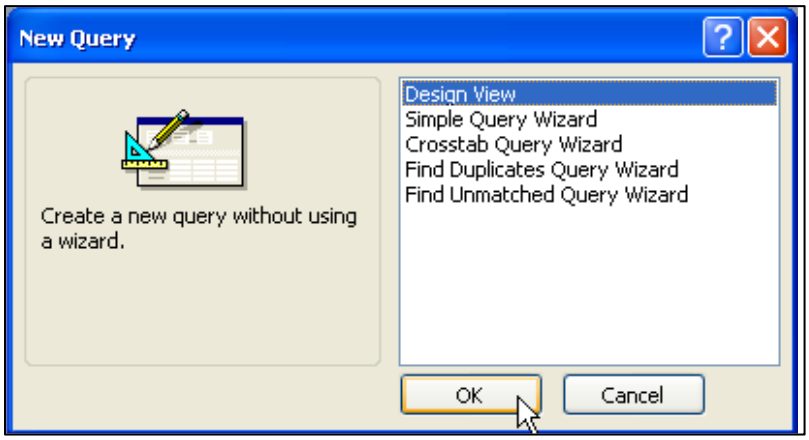


Figure 191: Query 1: Select Query window

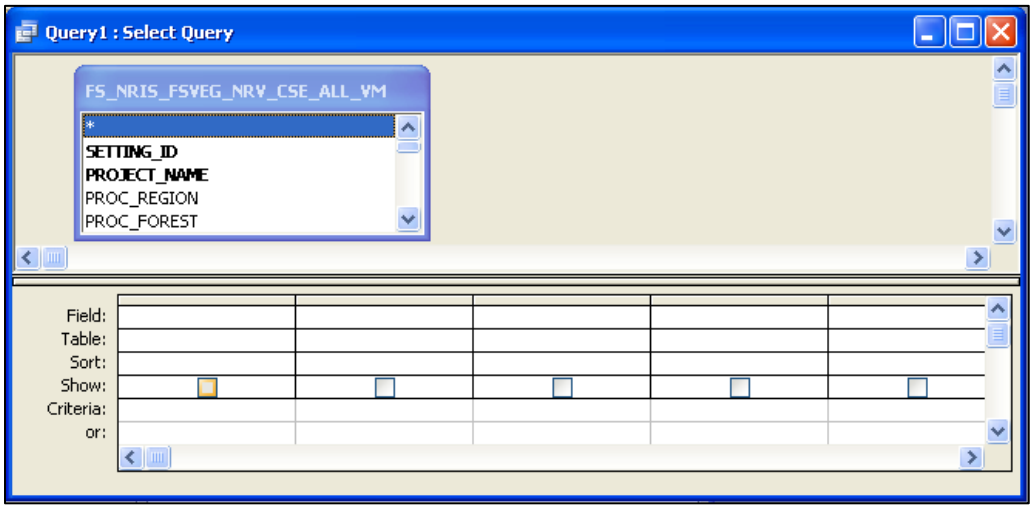


Figure 192: Select Query window filled in

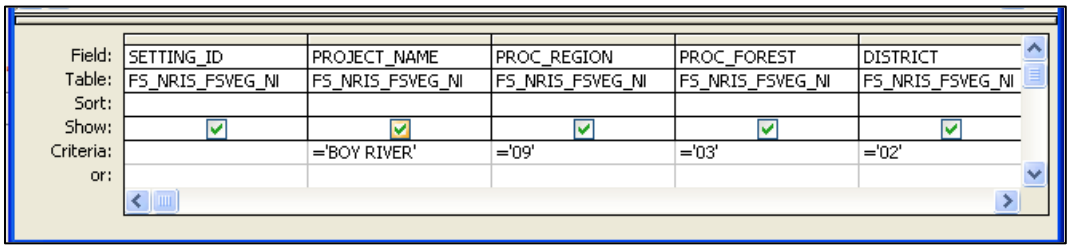


Figure 193: Microsoft Access window

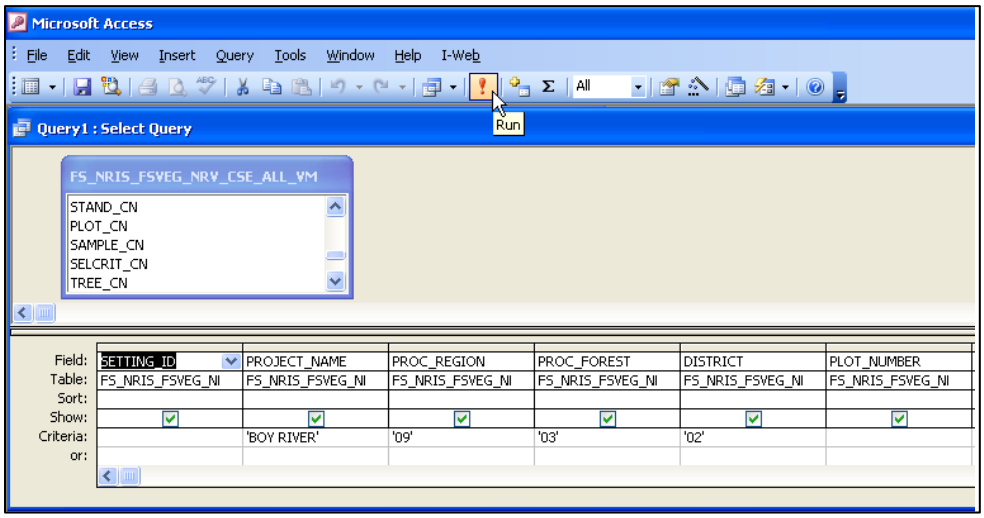
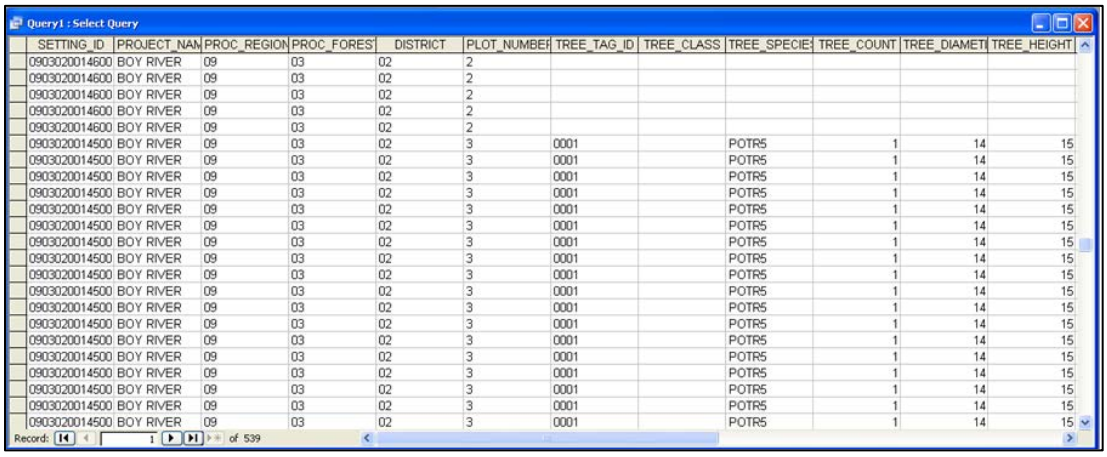


Figure 194: Query 1: Select Query data records window



Query1 : Select Query

SETTING_ID	PROJECT_NAM	PROC_REGION	PROC_FORES	DISTRICT	PLOT_NUMBER	TREE_TAG_ID	TREE_CLASS	TREE_SPECIES	TREE_COUNT	TREE_DIAMETI	TREE_HEIGHT
0903020014600	BOY RIVER	09	03	02	2						
0903020014600	BOY RIVER	09	03	02	2						
0903020014600	BOY RIVER	09	03	02	2						
0903020014600	BOY RIVER	09	03	02	2						
0903020014600	BOY RIVER	09	03	02	2						
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15
0903020014500	BOY RIVER	09	03	02	3	0001		POTR5	1	14	15

Record: 1 of 539