#### **FOR 451**

#### Introduction to FVS

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#### Intro to FVS

- Predicts forest stand dynamics
  - Extensively used in the US
  - Summarize current stand conditions
  - Predict future stand conditions
  - Update inventory statistics
- This program is <u>not</u> restricted to timber management
  - Effect of management practices on stand structure and composition
  - Wildlife habitat
  - Estimate hazard ratings for insect, diseases and fire
  - Predict losses from fire, or insect and disease outbreaks

# **Getting FVS**

http://www.fs.fed.us/fmsc/fvs/

#### The Parts of FVS

- Presuppose
  - reads inventory data from various sources and produces the suppose data files
- Data translators
  - reads ASCII data files and produce data files, stand lists and locations needed by suppose
- Suppose
  - a graphical user interface for FVS
- FVS
  - the Forest Vegetation Simulator growth model
- Post-processors
  - are programs which read FVS output files and produce reports
- SVS
  - The stand visualization system, takes an FVS output file and creates a drawing of how the stand might look on the ground

#### Data requirements of FVS

- Site Conditions
  - Slope
  - Aspect
  - Elevation
  - Habitat type
  - Location
  - Site Index
  - SDI or Basal area Maximums

#### Data requirements of FVS

- Inventory design
  - Basal area factor
  - Fixed plot size
  - Critical diameters for multiple fixed plots
  - Number of inventory plots

#### Data requirements of FVS

- Tree variables
  - Plot identification
  - Species
  - Current DBH
  - Other variables include:
    - Height
    - Crown Ratio
    - Tree damage and severity
    - Etc...

### Managing files in FVS

- Location Files
  - Information about the lists of stands and or inventory plots
  - Has the extension .loc
- Stand List File
  - Contain the stand level information and inventory methods for each stand in the project
  - Has the extension .slf
- Tree Data Input File
  - Each plot or stand has its own tree data file where each tree has an entry

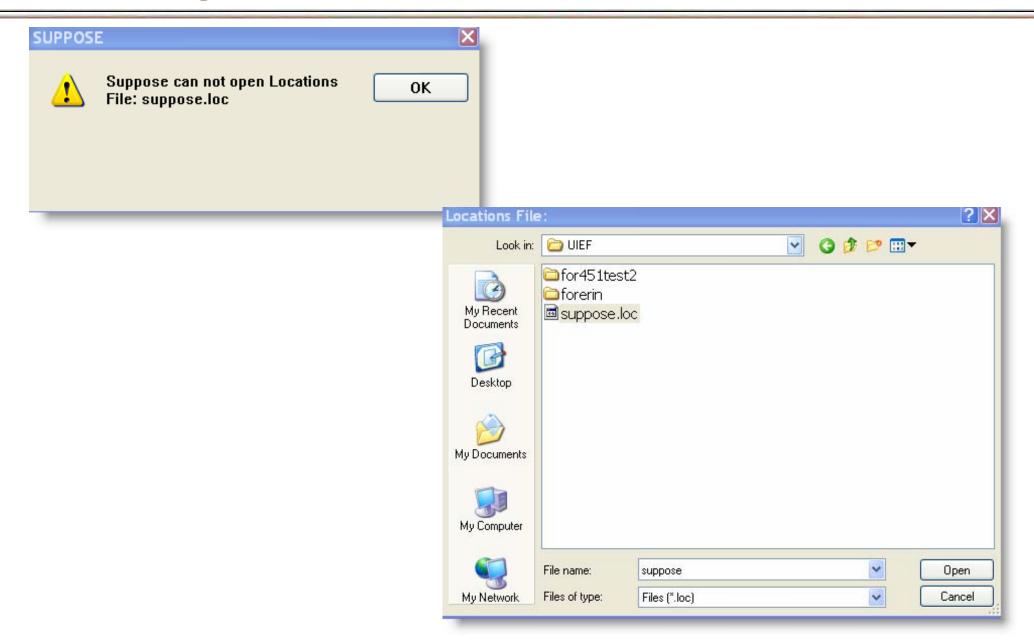
# Stumbling around in FVS

Entering data into FVS

### **Entering Data**

- Creating the suppose location file
  - Open suppose
  - Click options and select edit locations file
    - Click Ok when warning button comes up
  - Click the browse button and navigate to the FVSData folder
  - Create a new folder named UIEF
  - Enter suppose.loc in the file name field

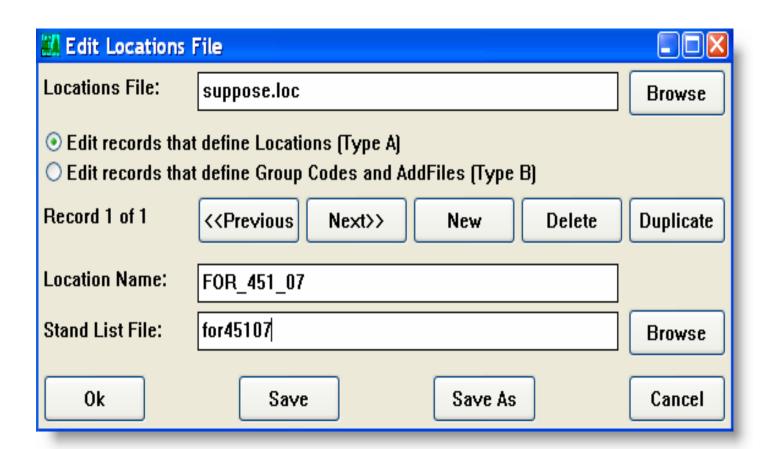
## Creating the suppose location file



#### Creating the suppose location file

- Click open
  - You will get another warning window just click OK
- In the edit Locations File Window enter the Location Name: FOR\_451\_07
- Enter the Stand List File for 45107
- Click save than ok
  - Another warning window will pop up click ok in both cases

#### Creating the suppose location file



- In suppose click on file in the menu bar
- Select open locations file
- Go to FVSData\uief and open the suppose.loc file we just created
- From the Suppose window menu select options and than select edit stand list files
- Set the stand list file to for45107
  - NOTE this needs to be exactly as we entered it befor

- Enter all data applicable to your stand
  - Stand ID
  - FVS tree file
    - typically this is similar to the stand id plus a .fvs extension
  - FVS Variant code
    - ie = Inland Empire (determines the variant that will be used)
  - Inventory Year
  - Location Code
  - Habitat type
  - Aspect
  - Slope
  - Elevation
    - entered in 100 of feet (3000 feet = 30)
  - BAF
  - Inverse of fixed plot size
  - Break Point diameter
  - Number of plots
  - Group codes

Edit Stand List File					
Stand List File: C:\Fvsc	data\UIEF\F0R4	151test.slf	Browse		
Record 1 of 1 < <pre></pre>			Duplicate		
Stand ID: 10001 Find:					
FVS tree file: 10001.fv	s		Browse		
FVS tree data contains plot-level site data.     FVS tree data contains NO plot-level site data.					
FVS Variant code(s):	ni	ni = Inland Empire, Northern	ID - Wes		
Inventory year: 2002	Sta	ate: ID County	/:		
Model type:	Physio. regi	on: Forest type	* <b></b>		
Latitude:		Longitude:	ذ 🗆		
Location code:	118	118 = St. Joe	<u> </u>		
Hab type/Plant Assoc:	510	510 = ABGR/XETE	<u> </u>		
Stand year of origin:		Aspect (degrees): 0	<b>—</b>		
Slope (percent):	0	Elevation: 30	<u> </u>		
Basal area factor:	22.5	Inverse of fixed plot size:			
Break point diameter:	6	Number of plots: 2			
Number non-stockable:		Stand sampling weight:	>		
Fircent					

 Once you have entered the data and double checked it click save and than OK

#### **Creating the FVS Tree Data File**

- From the suppose window select options than edit FVS Tree Data
- Enter the FVS tree data file name (exactly as you entered in the stand list file)
- Enter the variant code
- Then enter all the information for each tree

# **Creating the FVS Tree Data File**

Edit FVS Tree Data File		_ _X		
FVS Tree Data File:	10001.fvs Bro	wse		
Codes for variant:	Inland Empire - 23 species			
Record 1 of 1	< <pre> Next&gt;&gt; New Delete Dupl</pre>	icate		
+1+2+3+4+5+6 1 1 11DF				
Plot ID (1-4): 1	Tree ID (5-7): 1 Tree count (8-13): 1			
Tree history (14):	1 = live tree	•		
Species (15-17):	DF = Douglas-fir	<b>▼</b>		
DBH (18-21):	8.0 DBH Growth (22-24):			
Height (25-27):	55 Height to topkill (28-30):			
Ht Growth (31-34):	Crown ratio (35):			
Damage code 1 (36-37)	): 25 Severity 1 (38-39): 10 Help	1		
Damage code 2 (40-41)	Severity 2 (42-43): Help	1		
Damage code 3 (44-45	Severity 3 (46-47): Help	1		
Tree value class (48):	Prescription code (49): Help			
Ok Save	Save As Template Import Canc	el		

#### **Creating the FVS Tree Data File**

- Once you are done entering the first tree click the new button and repeat the process
- After all your data has been entered click save and then ok

#### • Notes:

- All tree records need to have species and DBH but height, and crown ratio are recommended
- Stand variables should include habitat type, aspect, slope, elevation, site index and the inventory methods are also recommended

#### You can now run your data in FVS

