Scope & Group Tutorial

Learning Objectives

- To understand how the Scope & Group tool relates to LMS and the “toggle” spreadsheet tool.
- To understand how Scope & Group helps use information from LMS to analyze a landscape.
- To understand how to “load” the Scope & Group spreadsheet with information from LMS.
- Demonstrate Scoping process.
- Demonstrate Grouping process.

Purpose of Scope & Group

- Scope & Group is a decision support tool – currently implemented as an Microsoft Excel workbook with multiple linked worksheets.
- Using summary information from LMS, Scope & Group helps stratify a landscape into ecologically similar groups of stands by providing a number of charts and graphs that provide descriptive information about a landscape.
- This information can be used to group individual stands into a limited number (6 in this example) of groups for further analysis of possible silvicultural pathways using “toggle”.

Why Group Stands?

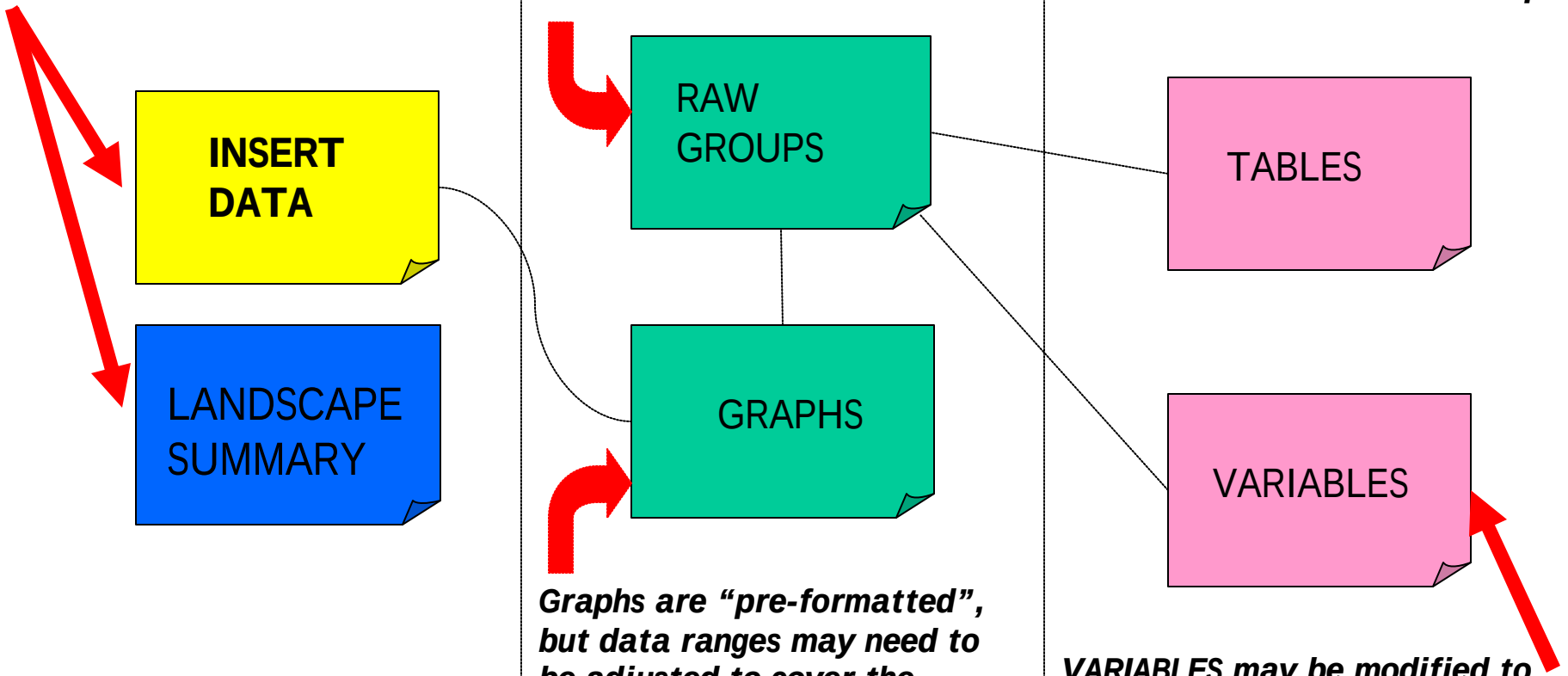
- Grouping stands allows you to work with a manageable amount of information. The goal of the grouping process is to minimize the variation within each group. It is not possible to eliminate variation, and indeed, there will be more variation in each group than within each stand.
- The systems concept supports making this "complexity/variation" tradeoff to better understand the system. We accept the loss of variation to assist in the analysis and adaptive management of the system.

Key Steps in Scope & Group

Transfer information from LMS to the INSERT DATA and LANDSCAPE SUMMARY worksheets

RAW GROUPS is where groups are defined based on the examination of the GRAPHS, TABLES, and VARIABLES worksheets

TABLES requires no modification, it draws on data from other sheets and provides you with useful information about the landscape



Graphs are "pre-formatted", but data ranges may need to be adjusted to cover the current range of data pasted into the "INSERT DATA" worksheet

VARIABLES may be modified to adjust the ranges of data in the worksheets

Information Requirements for Scope & Group

The Scope & Group spreadsheet requires input from the following three LMS tables:

- Attributes Table
- Consequences Table (trimmed down)
- Summary Table

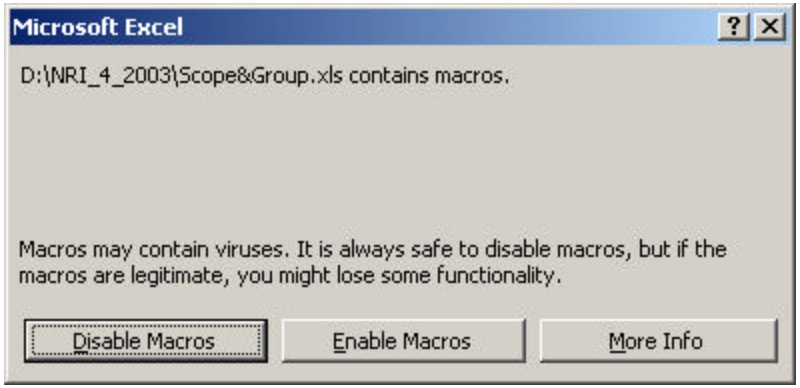
The following steps will facilitate the input of necessary data into Scope & Group from LMS

Open Scope & Group spreadsheet

Open the Scope&Group.xls file provided. This is a large spreadsheet that will take a few moments to open. After it begins to open you will see a warning about macros contained in the spreadsheet. These macros are required to run the functions of the spreadsheet.

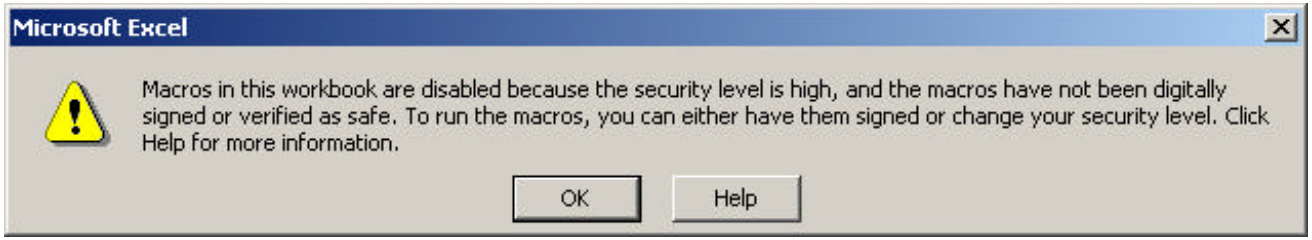
Select Enable Macros to use the features of the spreadsheet.

If this dialog does not appear the security settings will need to be modified for Excel.



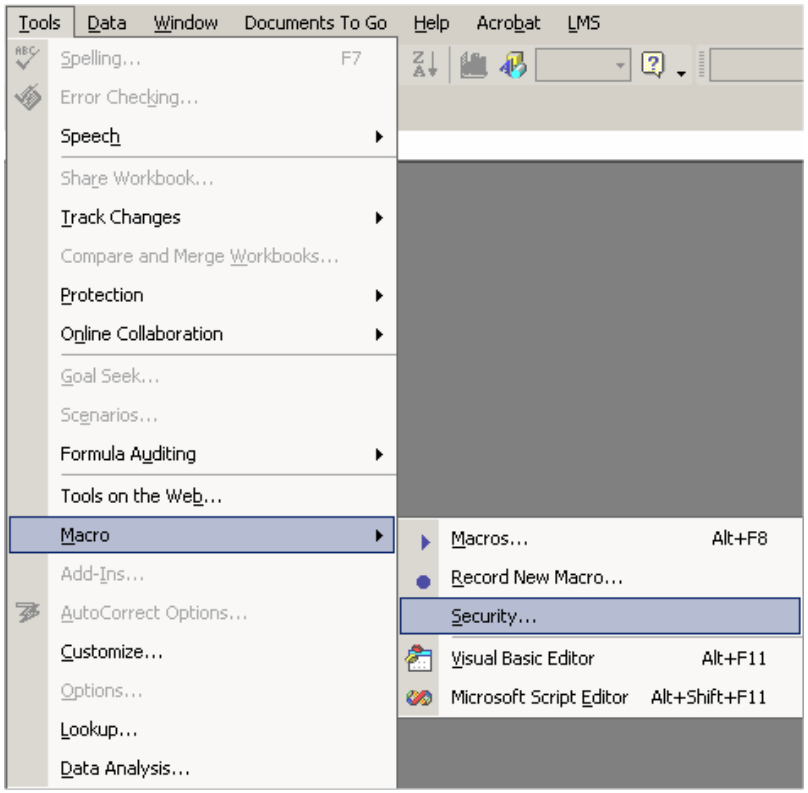
Macro Security Settings

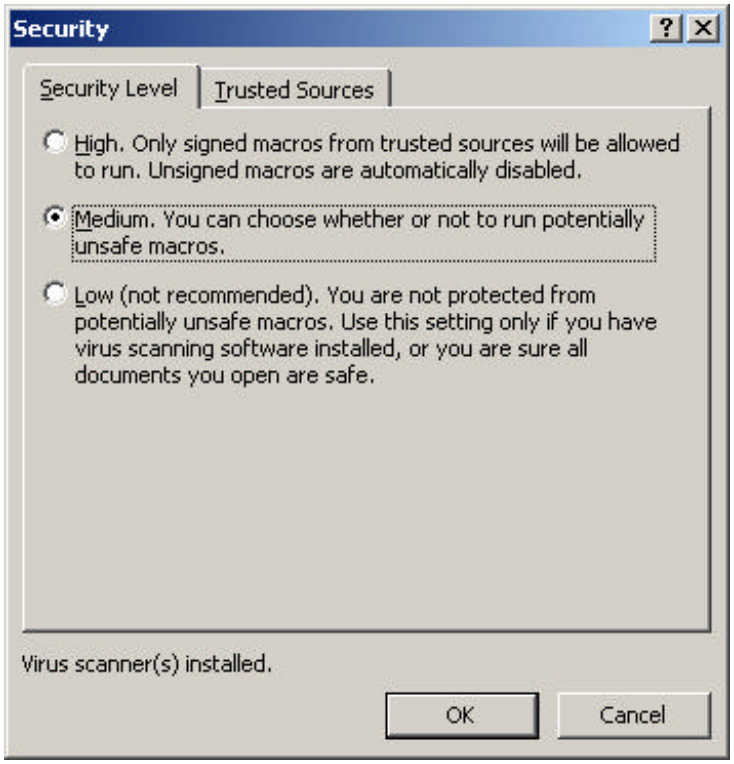
The Macro Security Settings may be set to high, disabling the macros required to use this spreadsheet. If you see the following dialog, the security settings on your computer need to be changed.



Changing Macro Security Settings

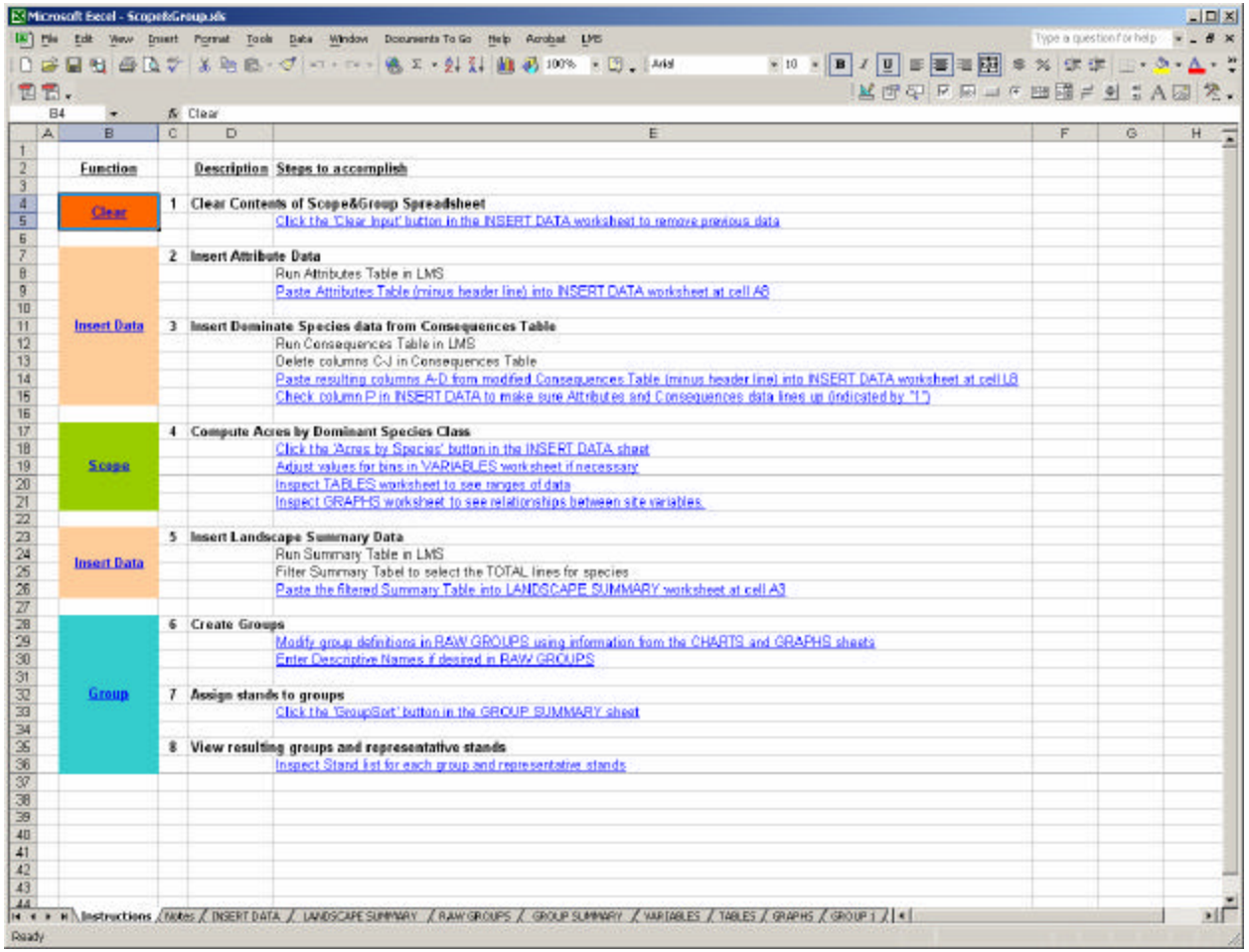
Select the Tools/Macro/Security menu item to change the Security Level. Select Medium in the dialog and press the OK button.





Start at Instructions worksheet

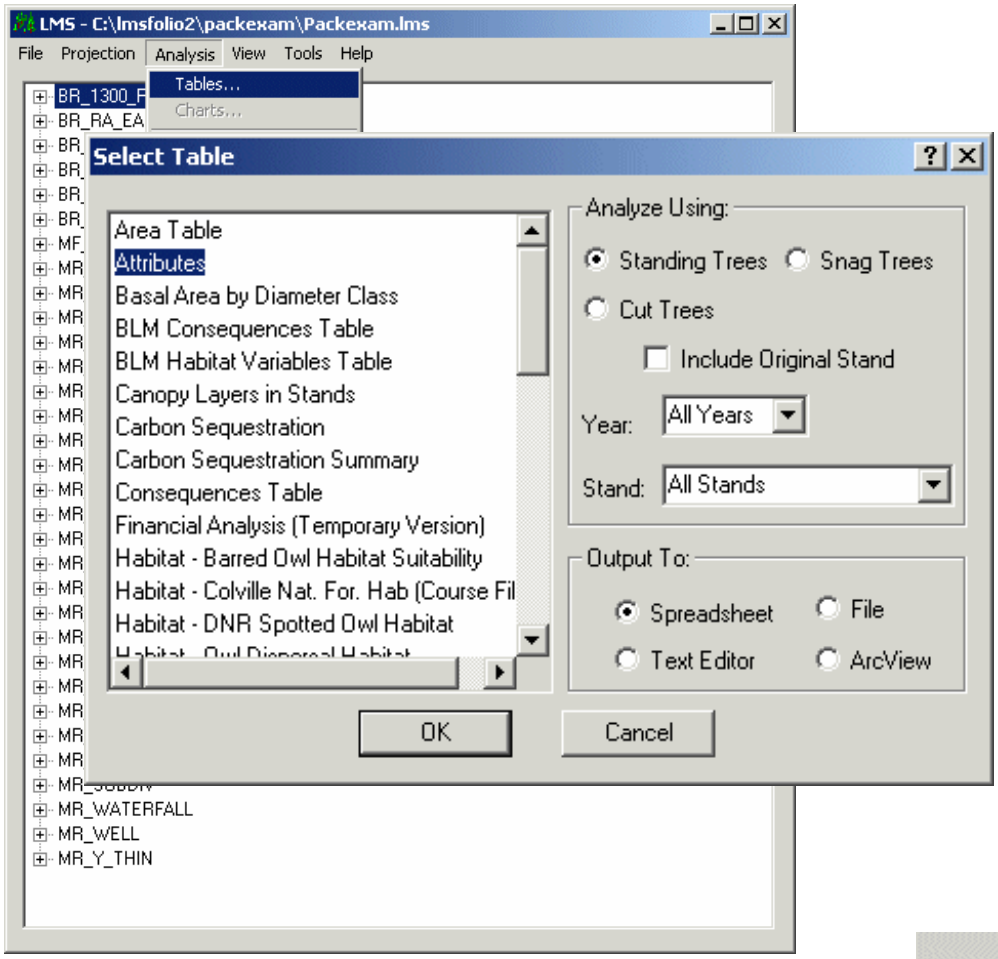
The Instructions worksheet can be used to navigate the functions of the Scope & Group spreadsheet.



Insert Data into Scope & Group

- Run Attributes table in LMS and insert into INPUT DATA worksheet.
- Run Consequences table in LMS and insert part of the table into INPUT DATA worksheet.
- Run Summary table in LMS and insert data into the LANDSCAPE SUMMARY worksheet.

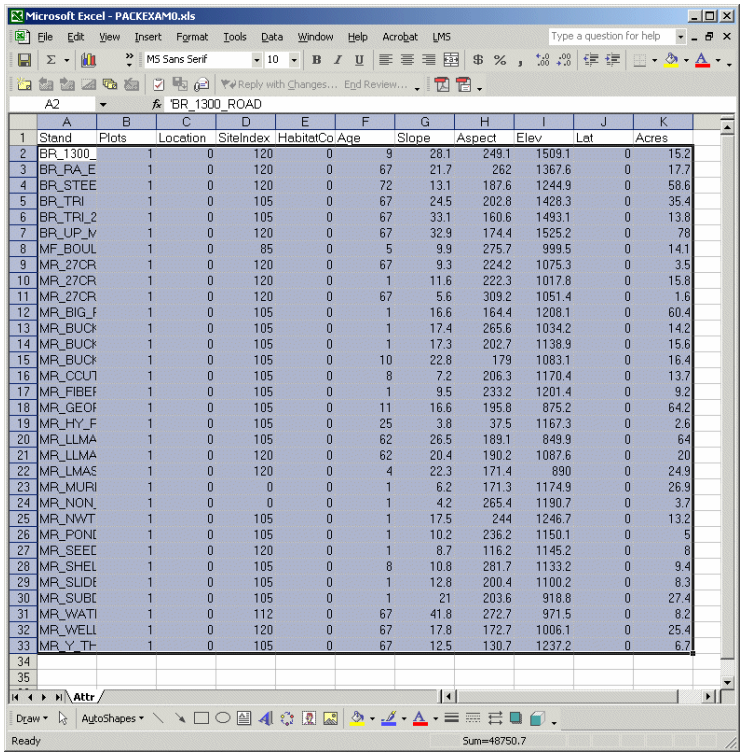
Attributes table

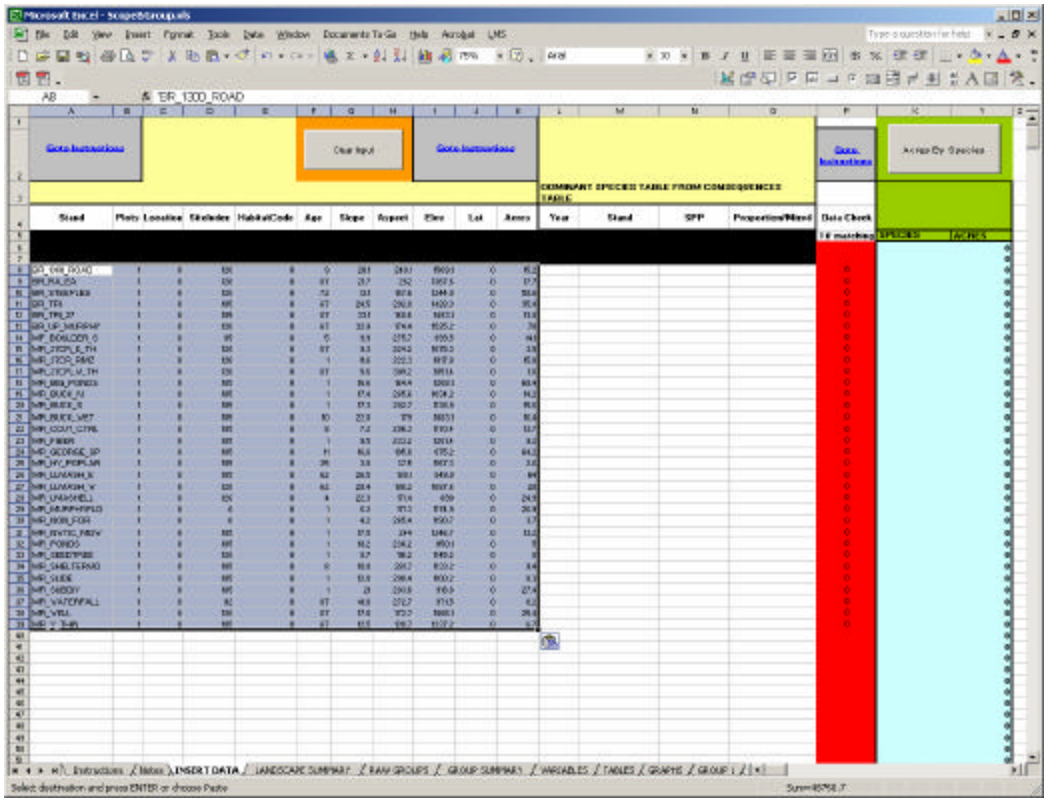


Retrieve the Attributes table from LMS

After requesting the table Excel will not come up on top of other applications, rather it will open another window which you will notice on the task bar. Click on the new task bar icon to open the spreadsheet.

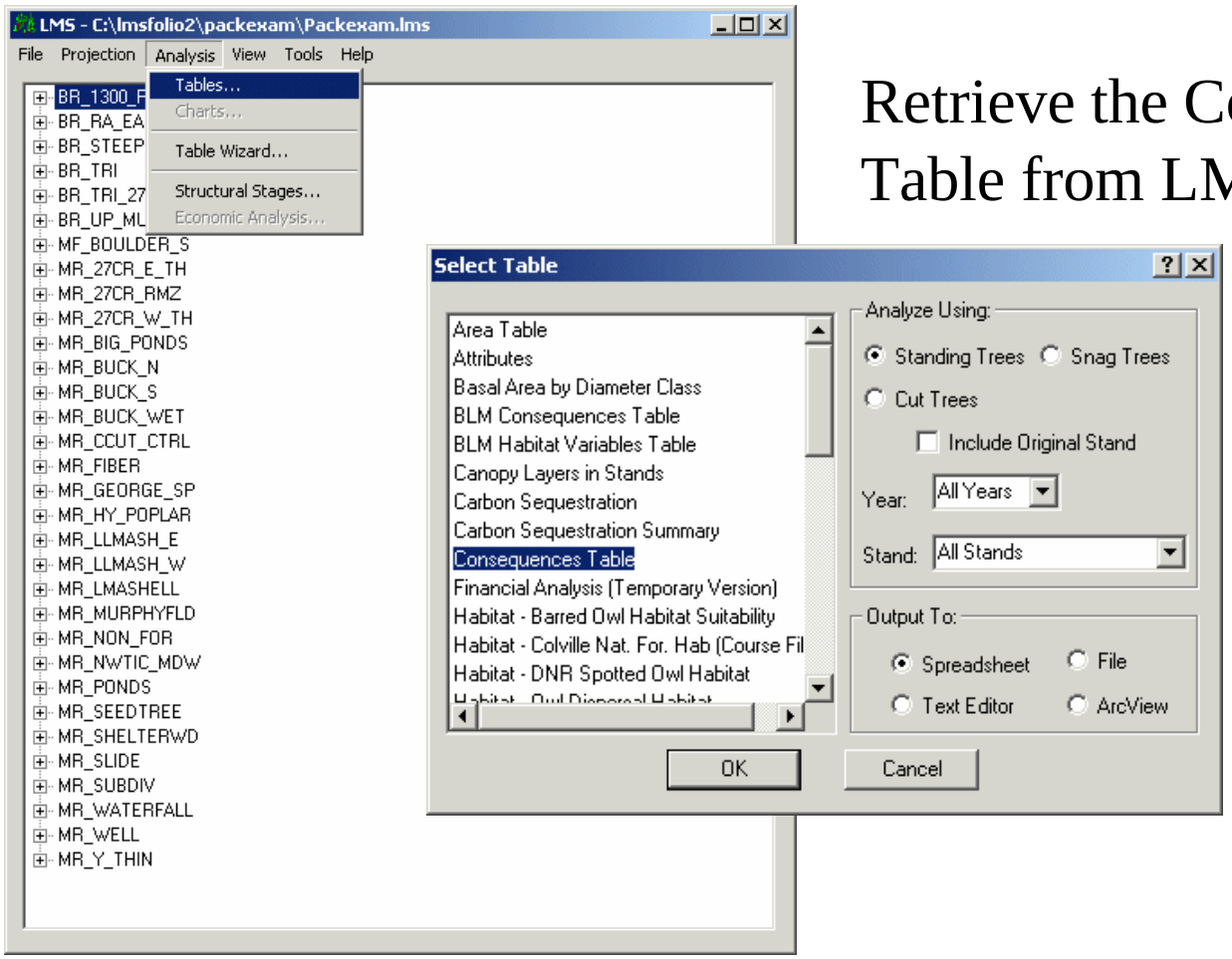
Paste Attributes Table





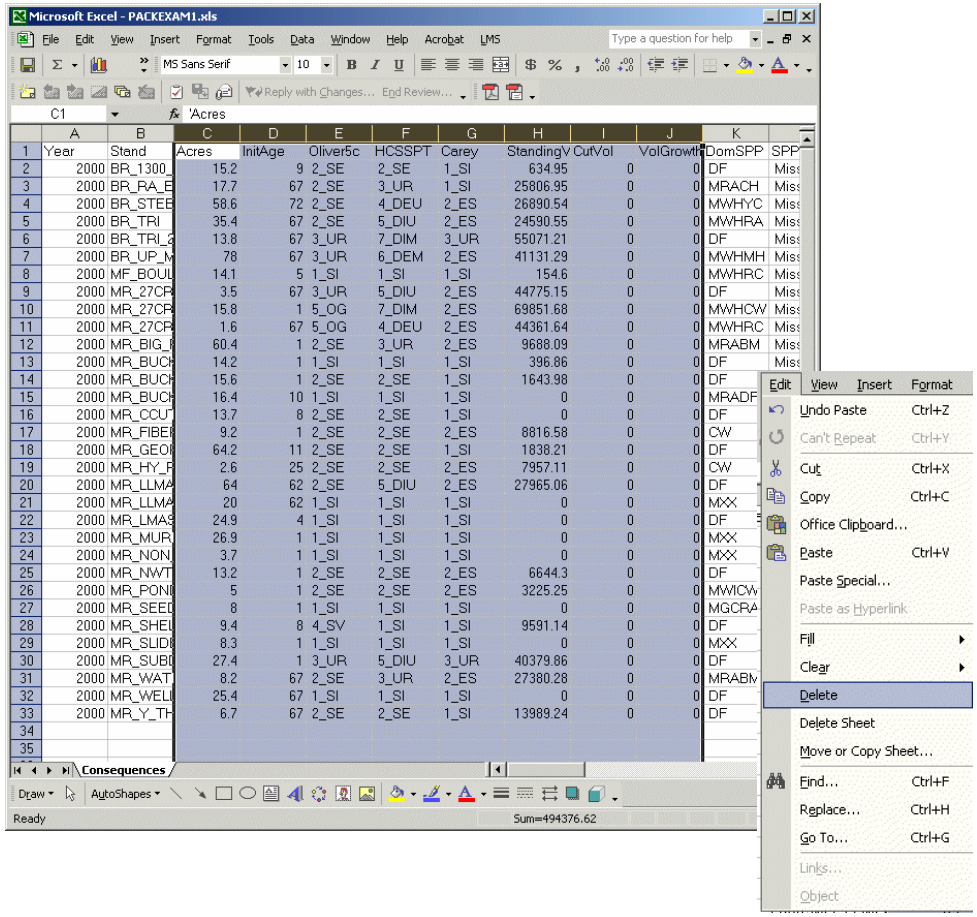
Select the body (no headers) of the attributes data and paste into cell A8 of INSERT DATA worksheet.

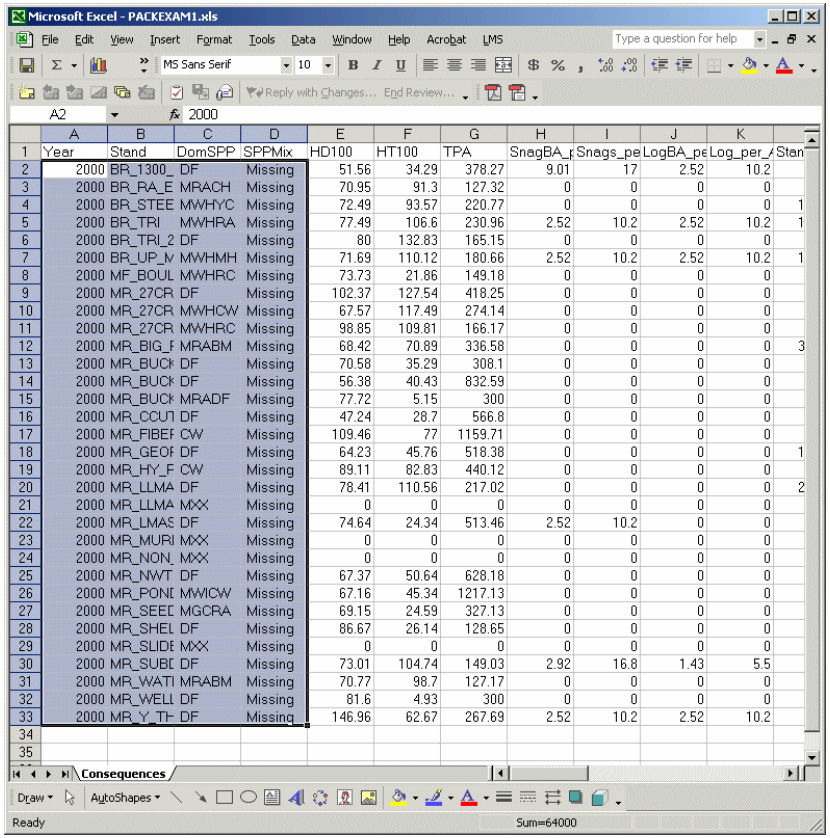
Consequences Table



Retrieve the Consequences Table from LMS.

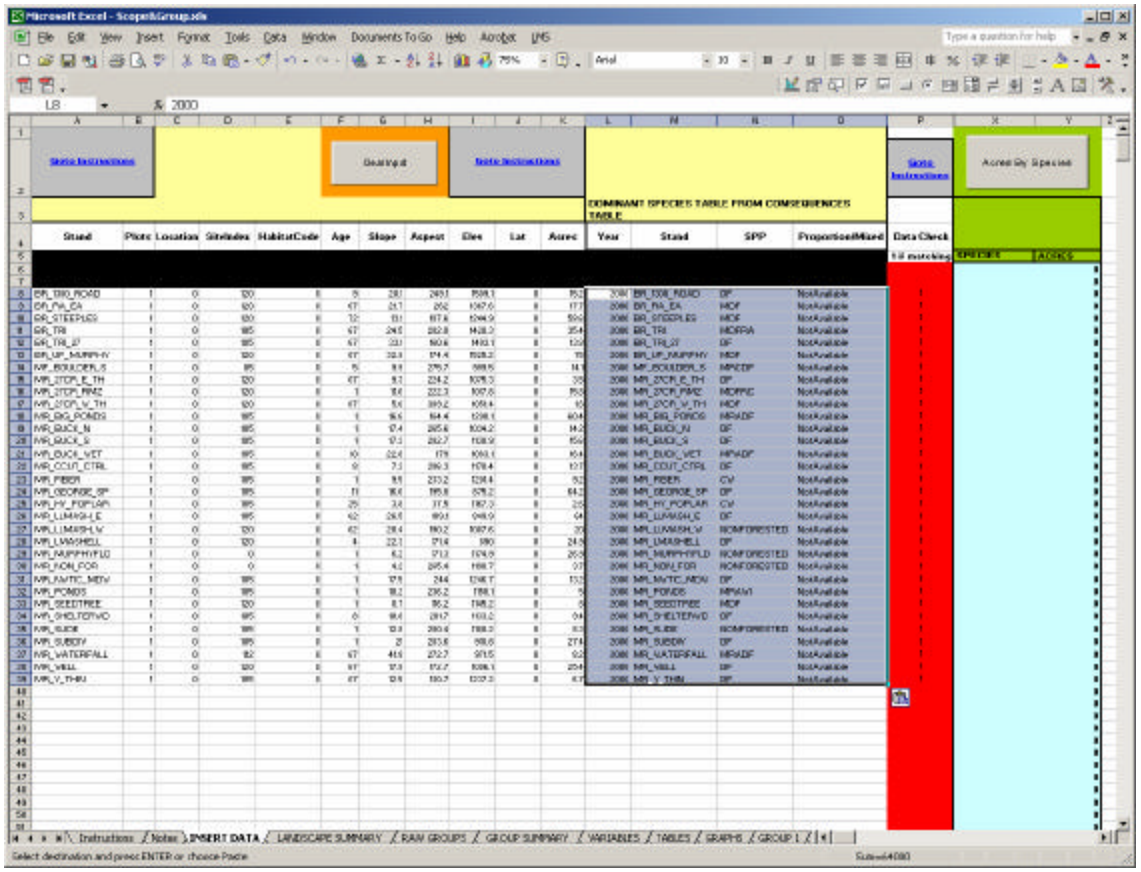
Trim Consequences Table





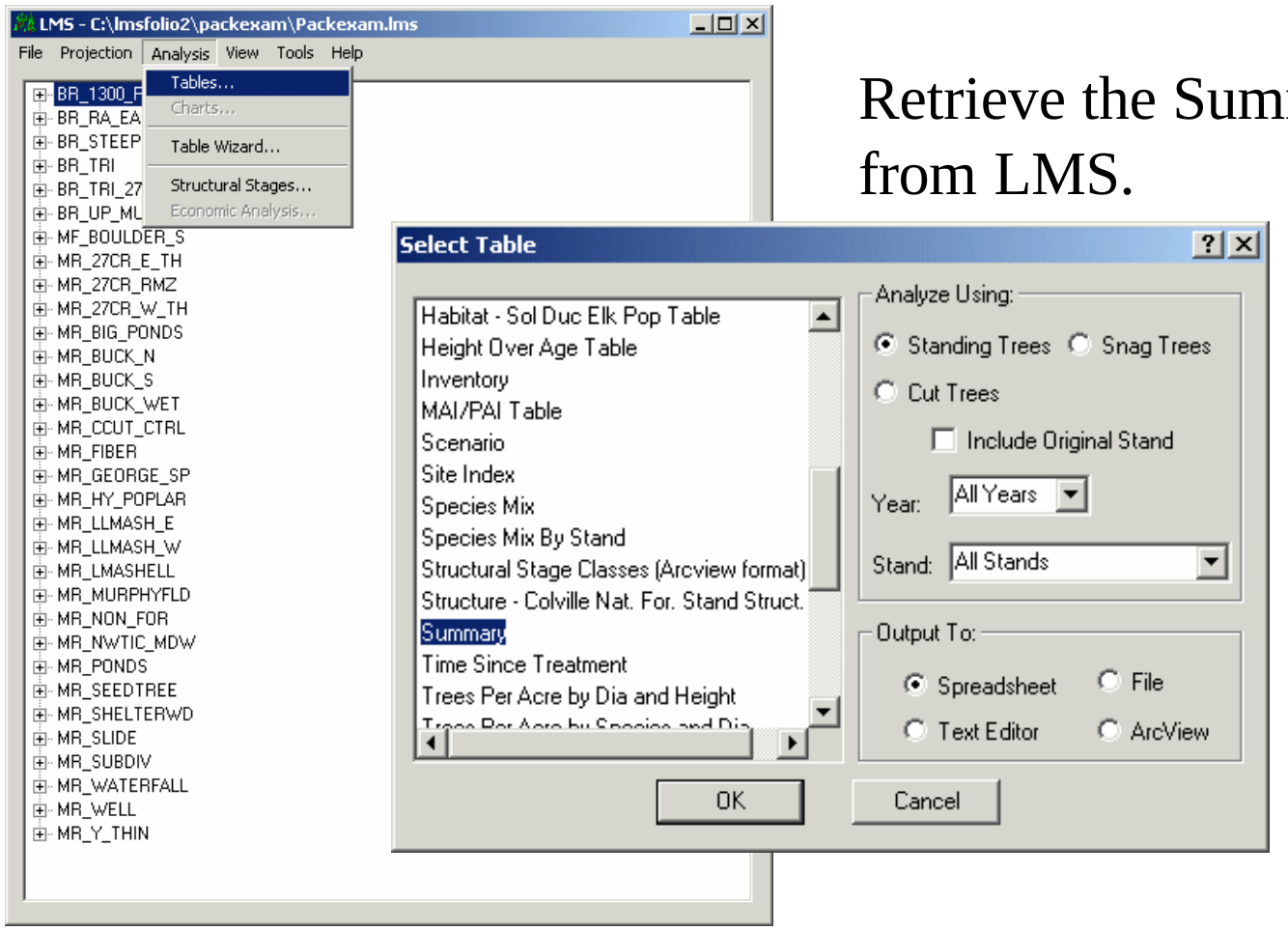
Delete columns C-J (Acres thru VolGrowth). Highlight and copy the first four columns of the body of the consequences table.

Paste Consequences Table



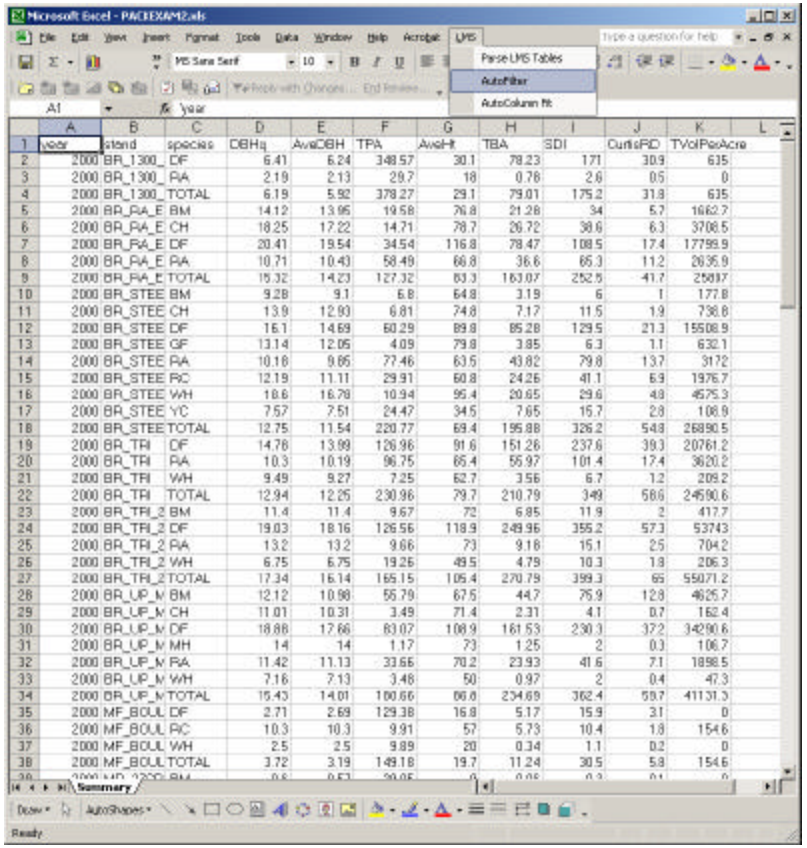
Paste the trimmed down portion of the Consequences table to cell L8 of the INSERT DATA worksheet. Notice that column P should show as all "1" indicating that all the stand names match between the two tables.

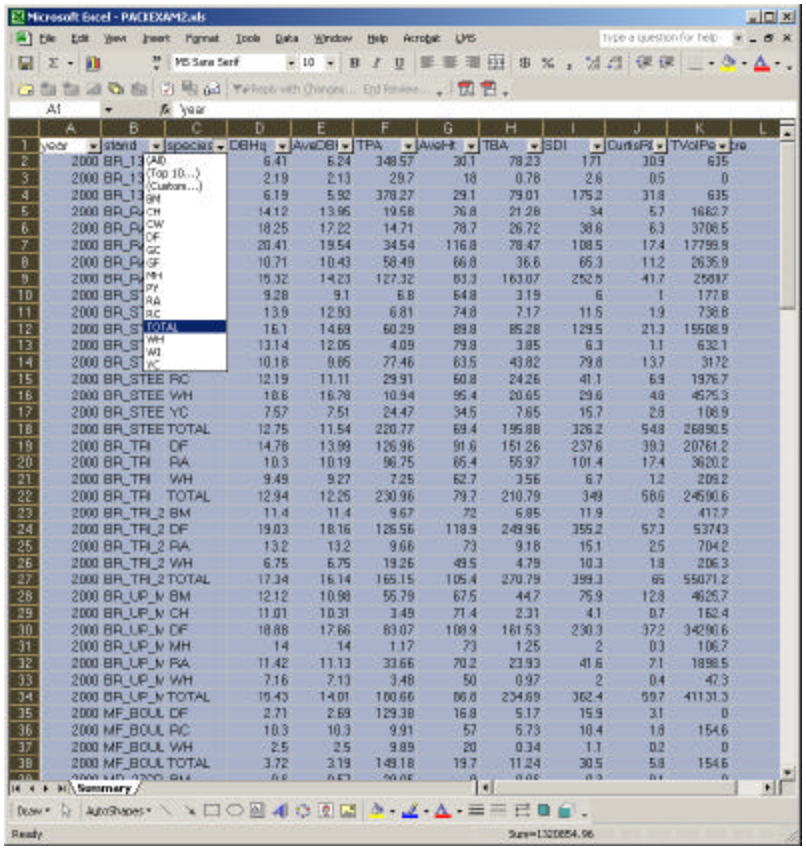
Summary Table



Retrieve the Summary Table from LMS.

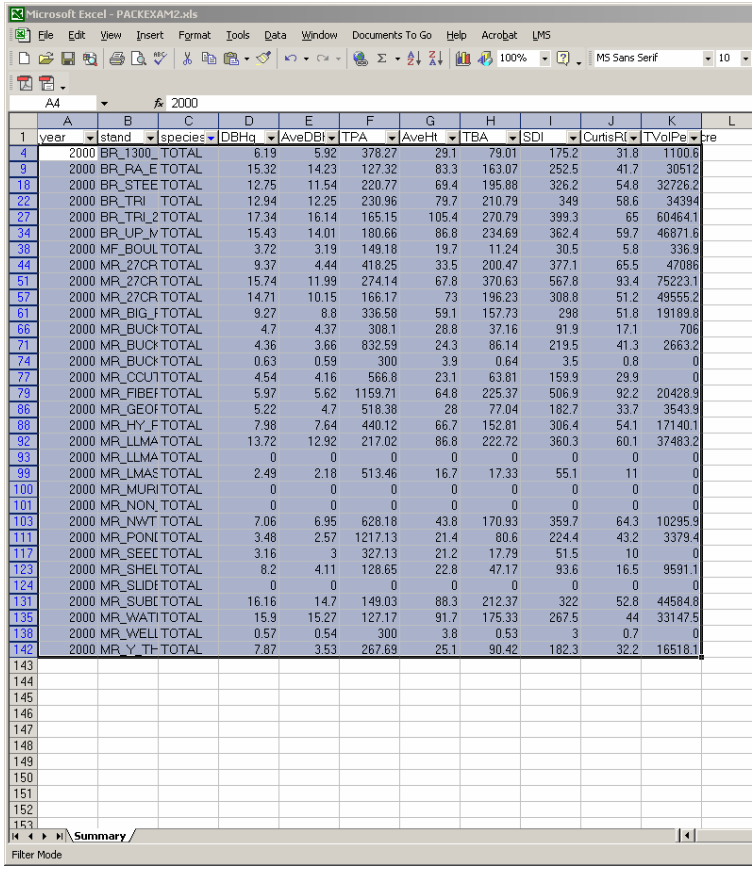
Filter Summary Table

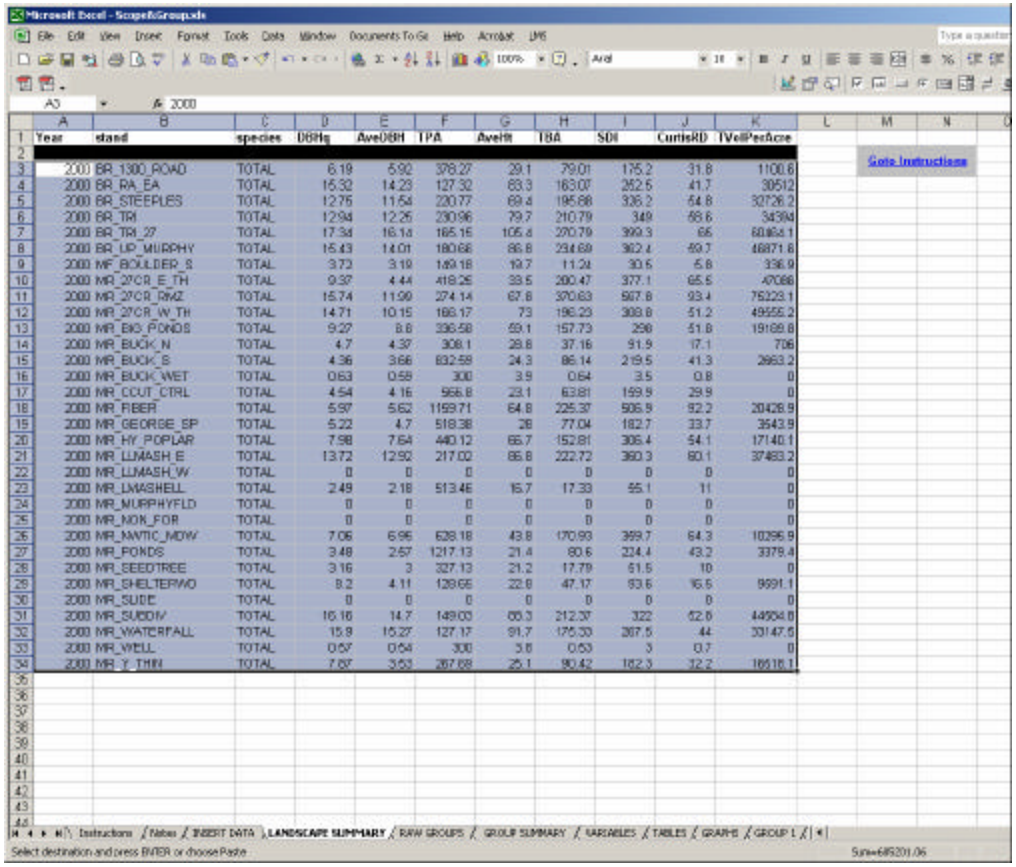




Use the LMS Menu to “AutoFilter” the summary table and then select the “TOTAL” lines for species. This selects the stand totals for each stand.

Past Summary Table





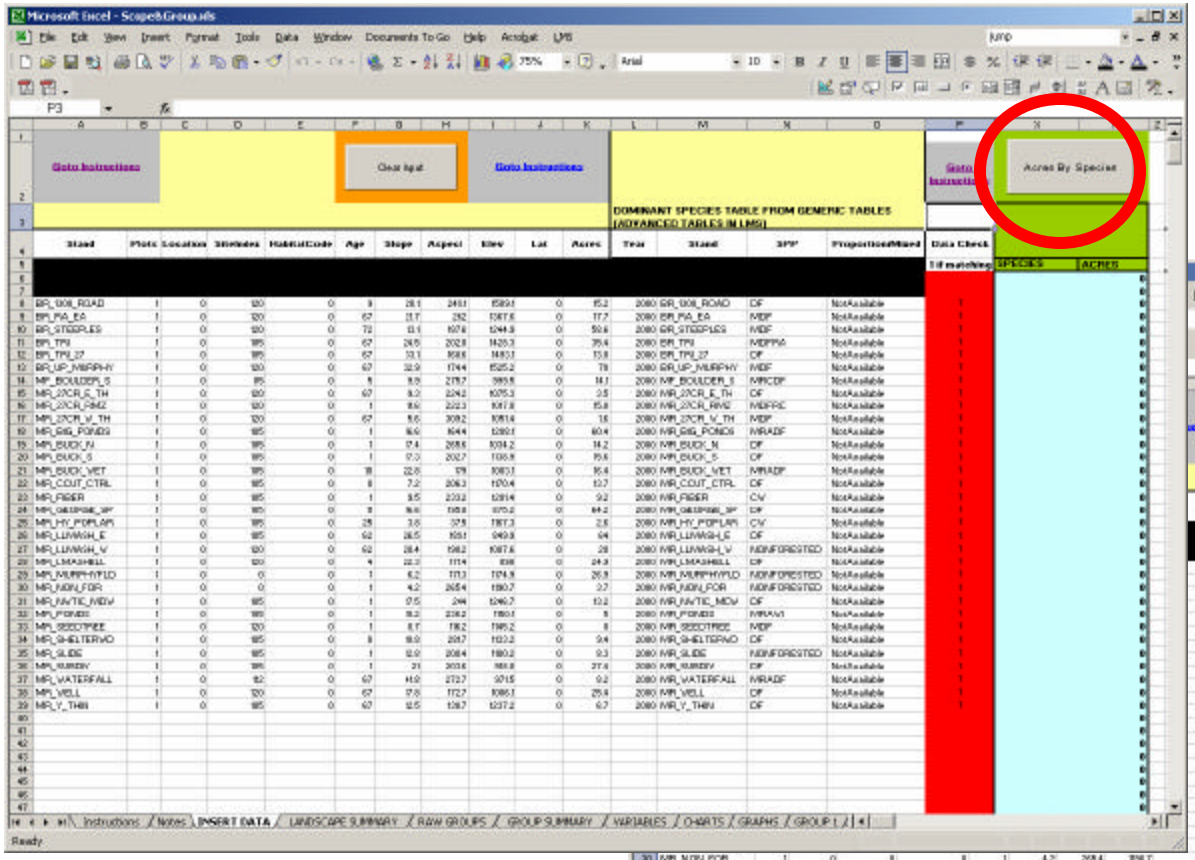
Highlight the body of the filtered table and copy to cell A2 of the LANDSCAPE SUMMARY worksheet.

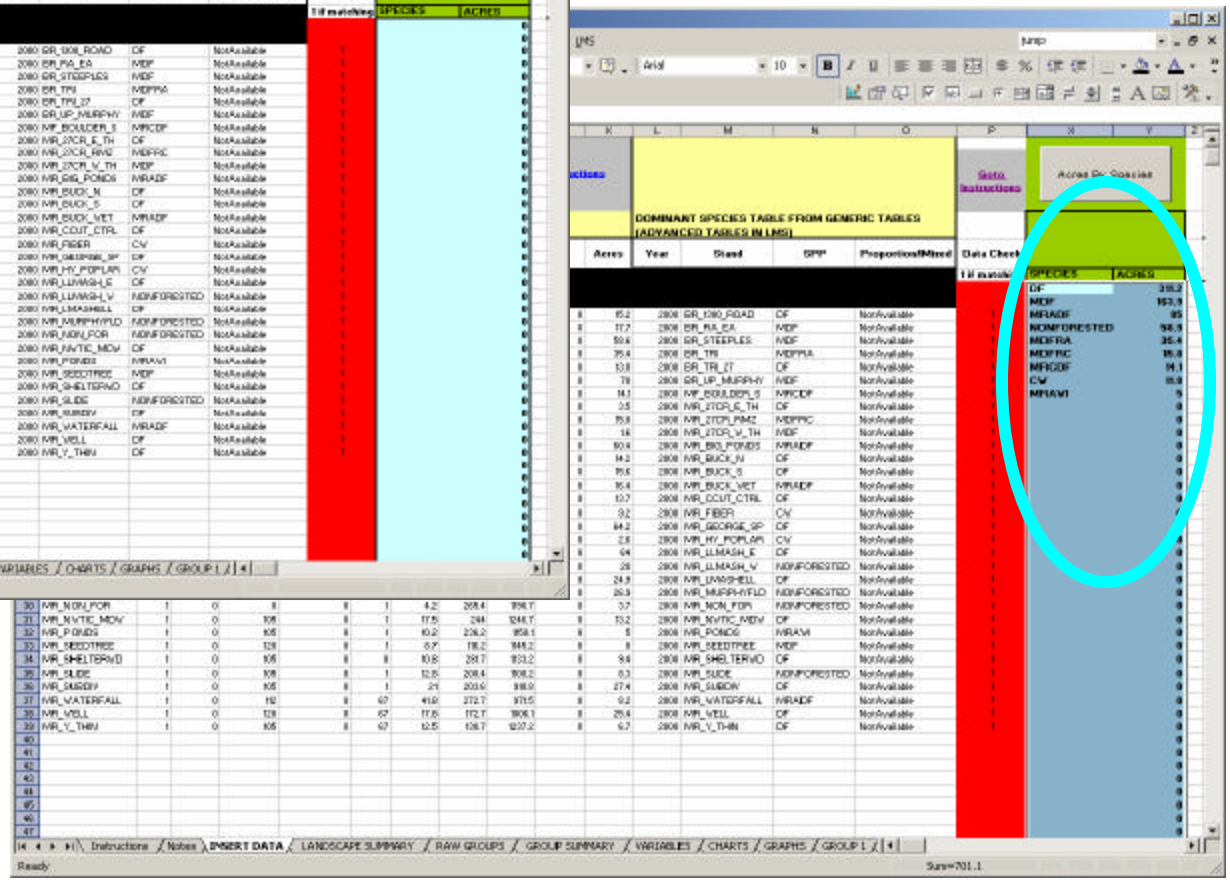
Scoping Process

- Use Microsoft Excel formulas and macros to provide series of table and graphs that summarize the landscape based on stand level information (from Attributes and Consequences) tables.

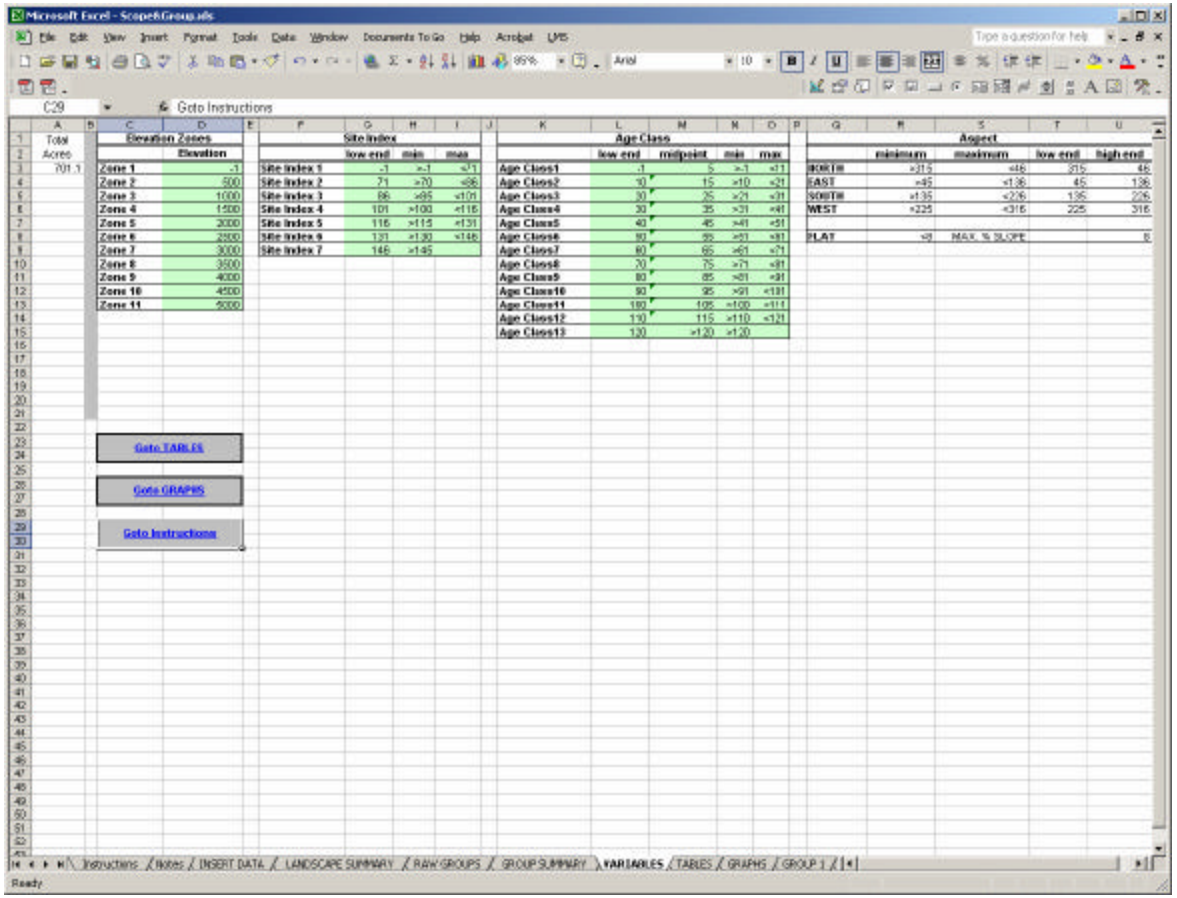
Scoping Functions

Click the Acres By Species button to do the scoping process. This does a classification of the attribute data and provides charts and graphical output of the cross tabulation.



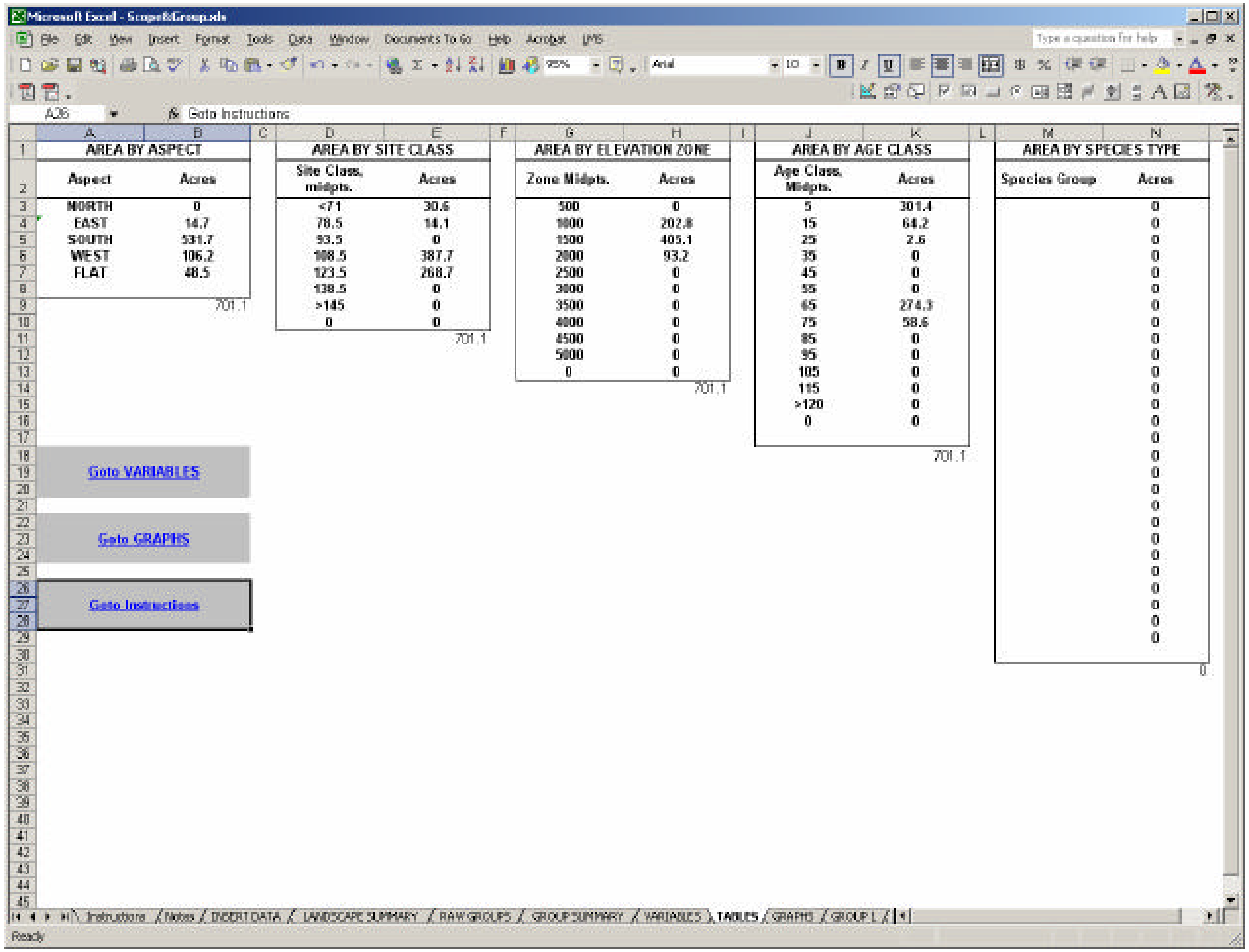


Adjust VARIABLES Spreadsheet



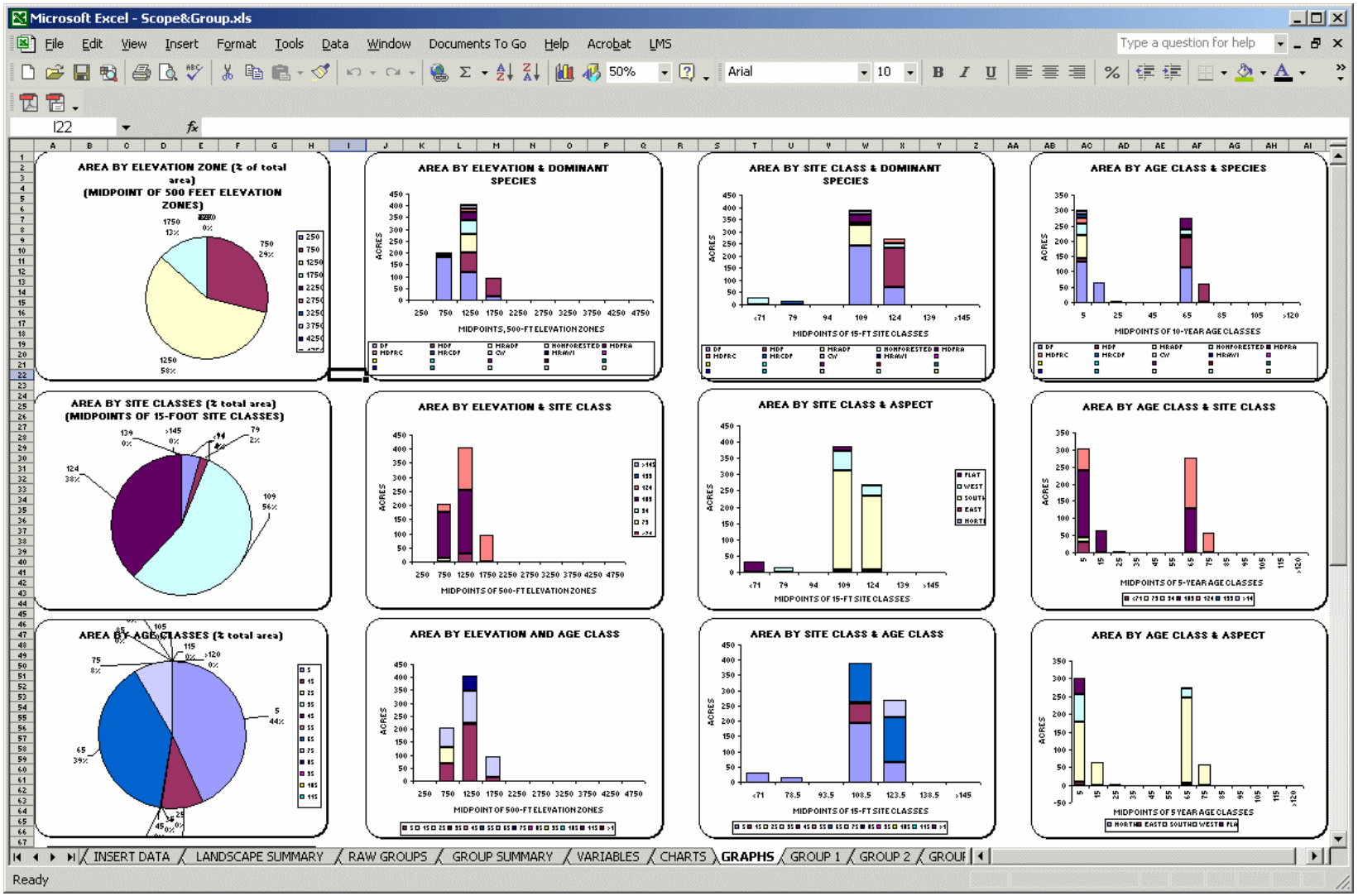
The VARIABLES worksheet provides the "bins" used for the classification. If necessary Adjust the ranges and bin boundaries as needed. Consult the TABLES worksheet to see how the data is arranged for each variable.

TABLES Spreadsheet (View only)



The TABLES worksheet provides tabular summaries of acres by each classification.

Landscape Graphs



The GRAPHS worksheet provides graphical output of each classification plotted against each other classification.

Grouping Process

- Use information from Scoping process (and possibly additional information) to divide the landscape into groups of similar stands.
- The Scope&Group.xls file includes macros that do much of the work of sorting the stands into groups defined by the user, and then picking a representative stand for each group.

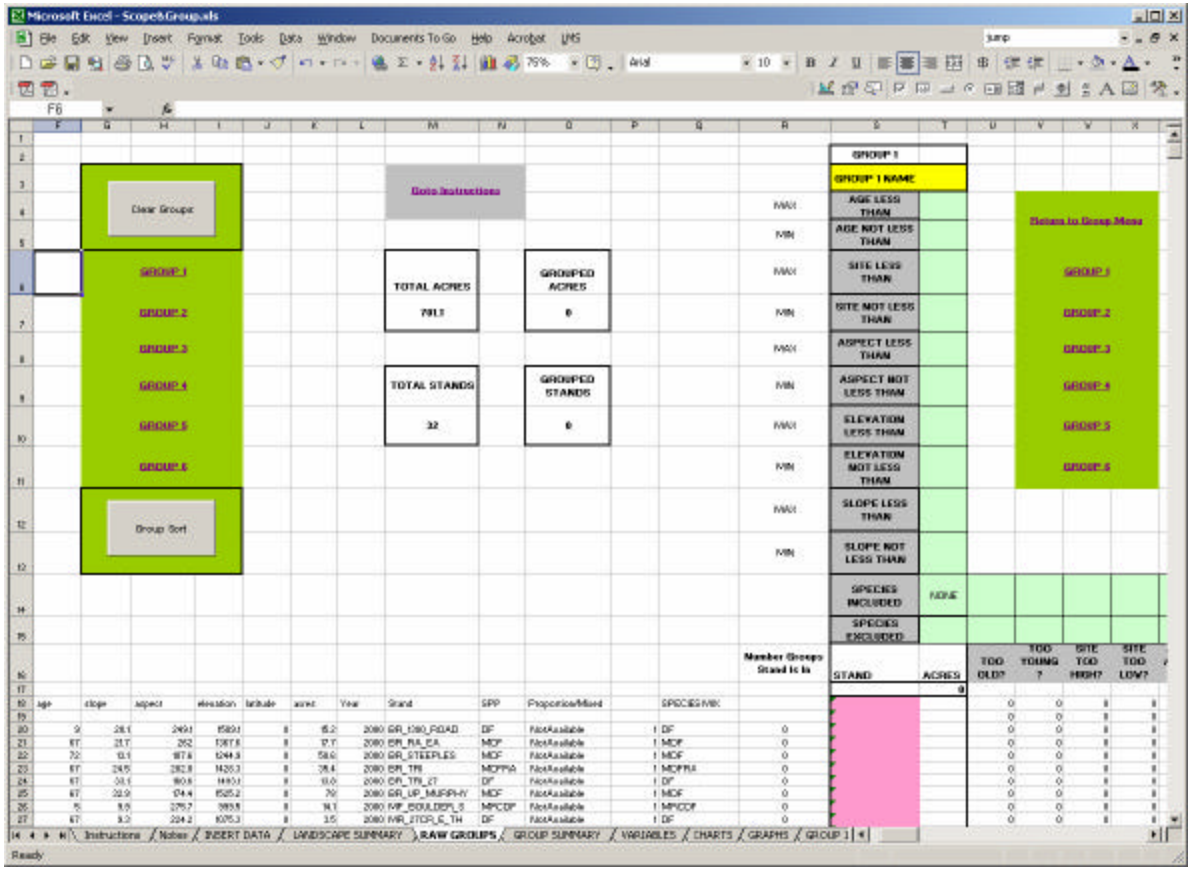
Information for Grouping process

- Tables and Graphs from Scoping process.
- Additional LMS tables.

- In addition it may be useful to:
  - Create maps/visualizations with Envision to provide further insight.
    - Change viewpoints in Envision to look at the landscape from another perspective.
    - Overlay shape files to provide the context of roads, streams, etc on the landscape.
  - Create maps with ArcView to provide further insight.
  - Reference other sources of information about the area (e.g. soil survey maps, topography, etc).

Navigate between groups using the Group Menu

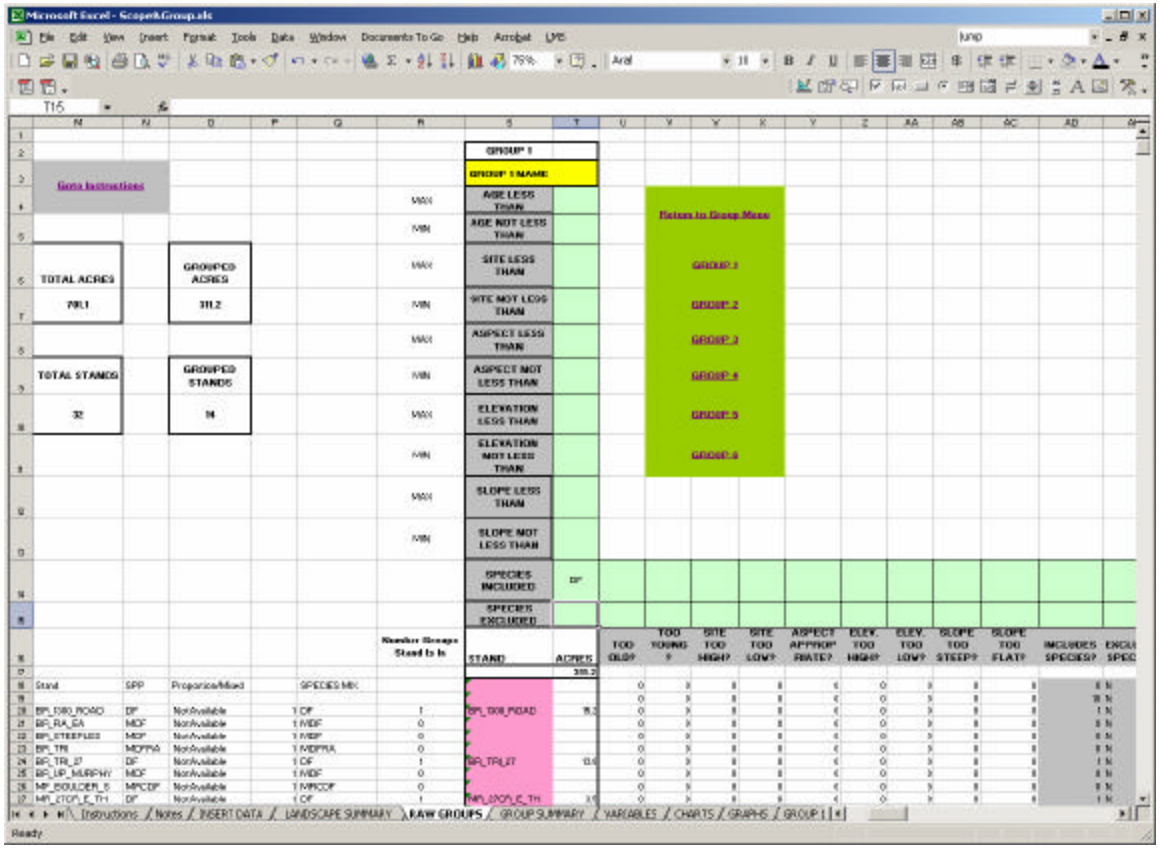
Jump to each group using the hyperlinks in the Group Menu.



Define Groups

Once the Scoping outputs are examined we can begin to divide the landscape into groups. These groups can then be defined in the spreadsheet in the RAW GROUPS worksheet.

The example at right shows the variables used for grouping for GROUP 1. Removing the NONE from SPECIES INCLUDED will include all stand in this group. Entering 15 in AGE LESS THAN will define GROUP 1 as all stands less than 15 years of age. Follow the process for each group to define the desired number of groups.

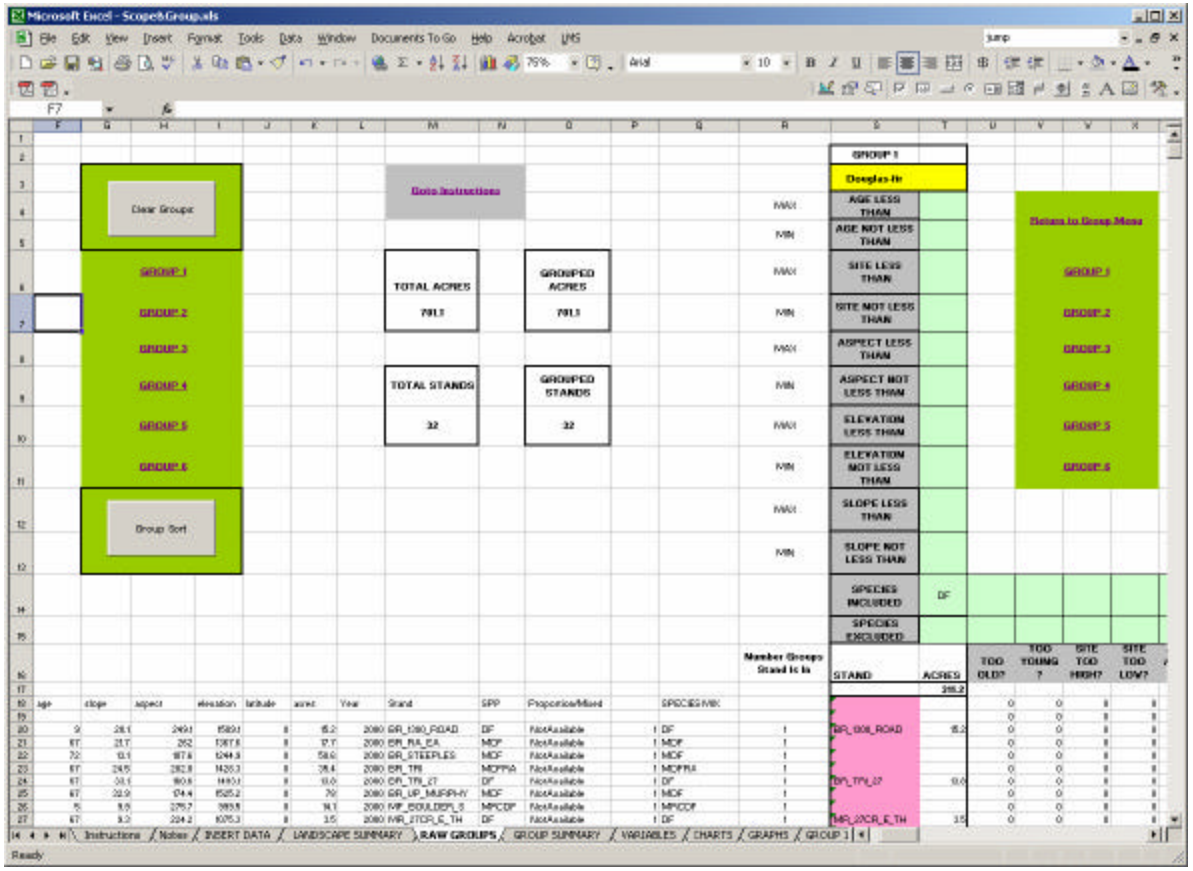


Groups should be designed so that they are mutually exclusive – no single stands should appear in more than one group. This can be checked by the number of acres to the left of GROUP 1.

Examine Group Totals

Examine the Grouped Acres and Grouped Stands cells to see how much of the landscape has been grouped.

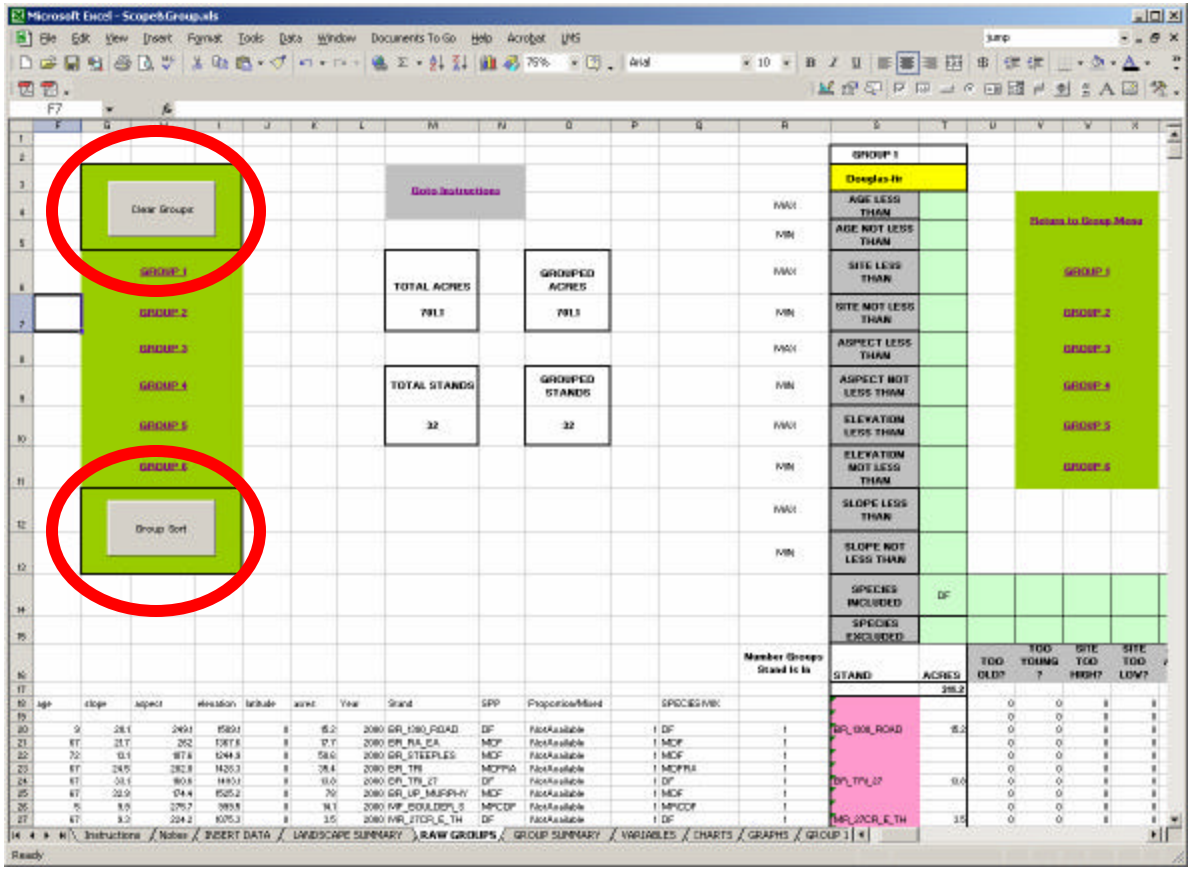
The number of groups each stand has been assigned to in listed in column R.



Assign Stands to Groups

Click the Group Sort button once groups have been designed. Click the Clear Groups button to start over.

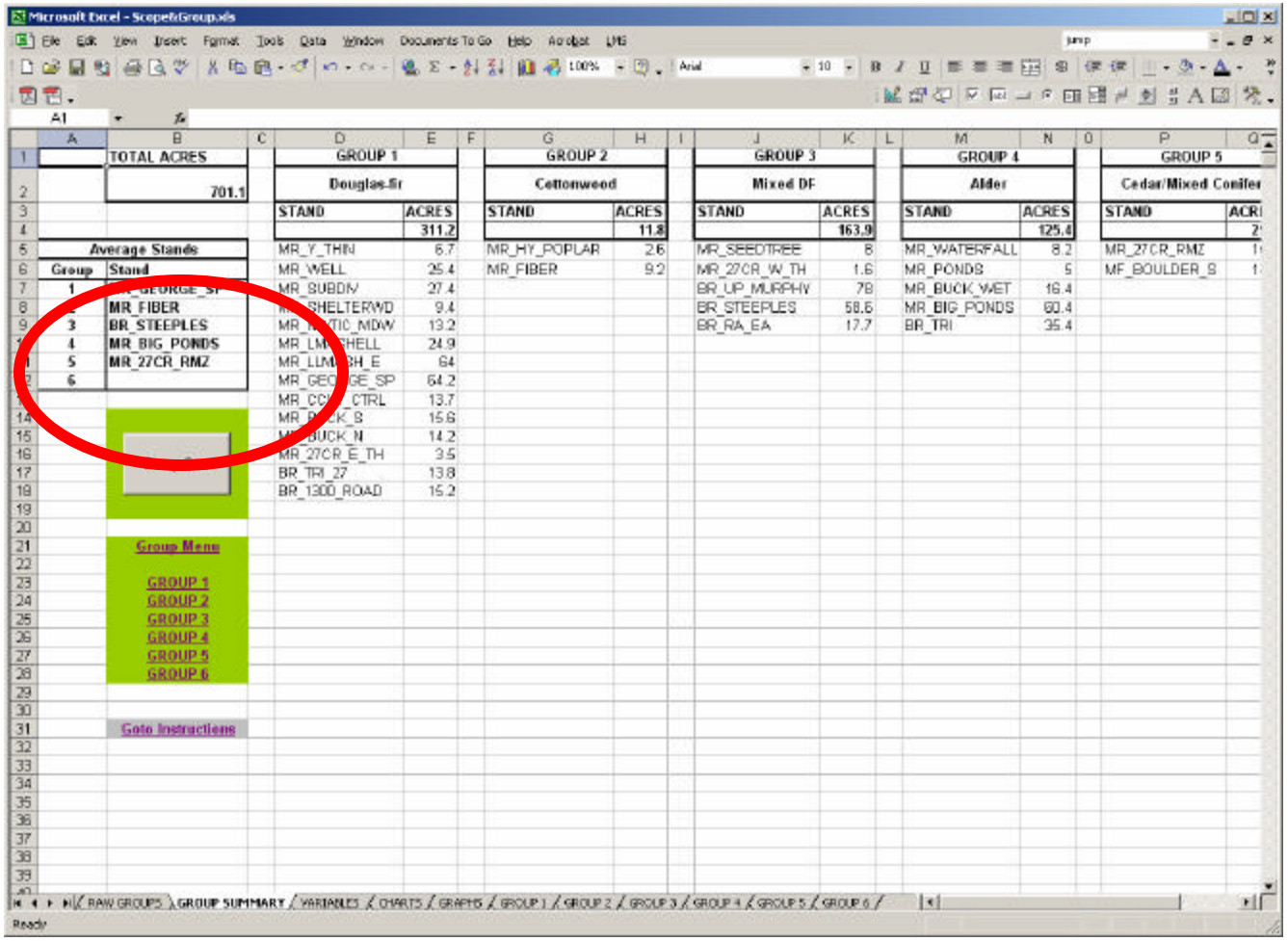
The Group Sort button will assign stands to groups and pick a representative stand for each group. The Group Sort button will jump to the GROUP SUMMARY worksheet.



Representative Stands

Representative stands will be listed in the table for each group.

If a stand name does not show for a group it is because there is no data (or no variation) in the summary information for the stands in the group. In this case the groups should be re-defined, or a representative stand can be selected manually.



Save File

Save this file for a use later as the “Stand Suitability Table”. Save a the file to some name that is easy to remember.

Relationship between Scope&Group and Toggle spreadsheets

- Scope&Group helps define groups and assign stands to each group. Note: No data is moved from Scope&Group to Toggle.
- New LMS portfolios are then created using the representative stand for each group.
- Silvicultural pathways are developed for each representative stand.
- The silvicultural pathways are simulated with LMS and the results (using the Consequences Table) are pasted into the Toggle spreadsheet.
- Toggle is used to evaluate the silvicultural pathways and develop alternative management approaches.