Tables

This Section will introduce the LMS user to **Analysis Tables** and **MS Excel** as a companion program.

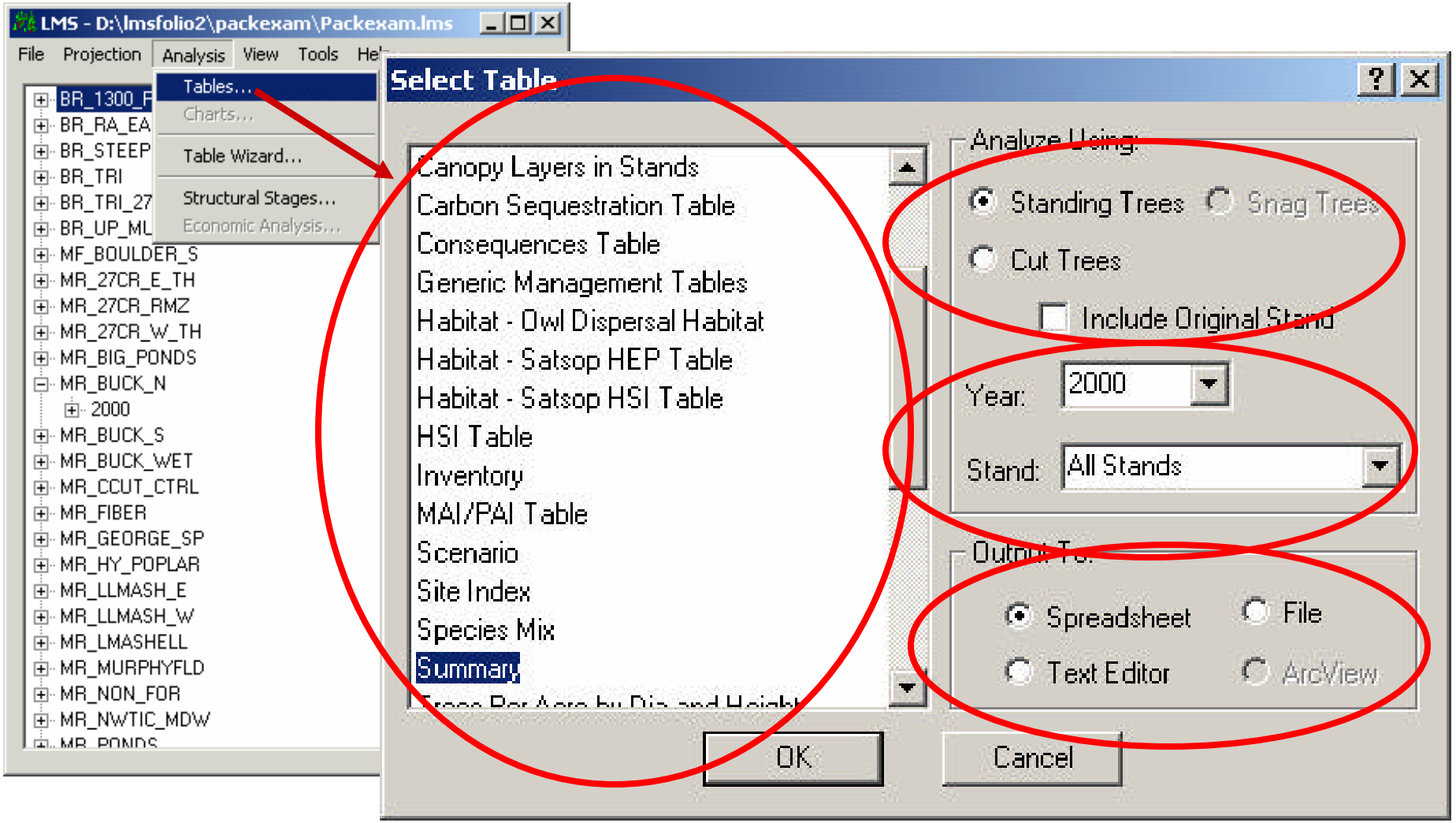


Figure 4.1 In the **Analysis Drop Down** select **Tables** and a dialogue window will open to offer the user a selection of output tables on the left. On the right, the user is asked to click analysis parameters and output destination. Output destinations include **Spreadsheet** which brings table data directly into **MS Excel**.

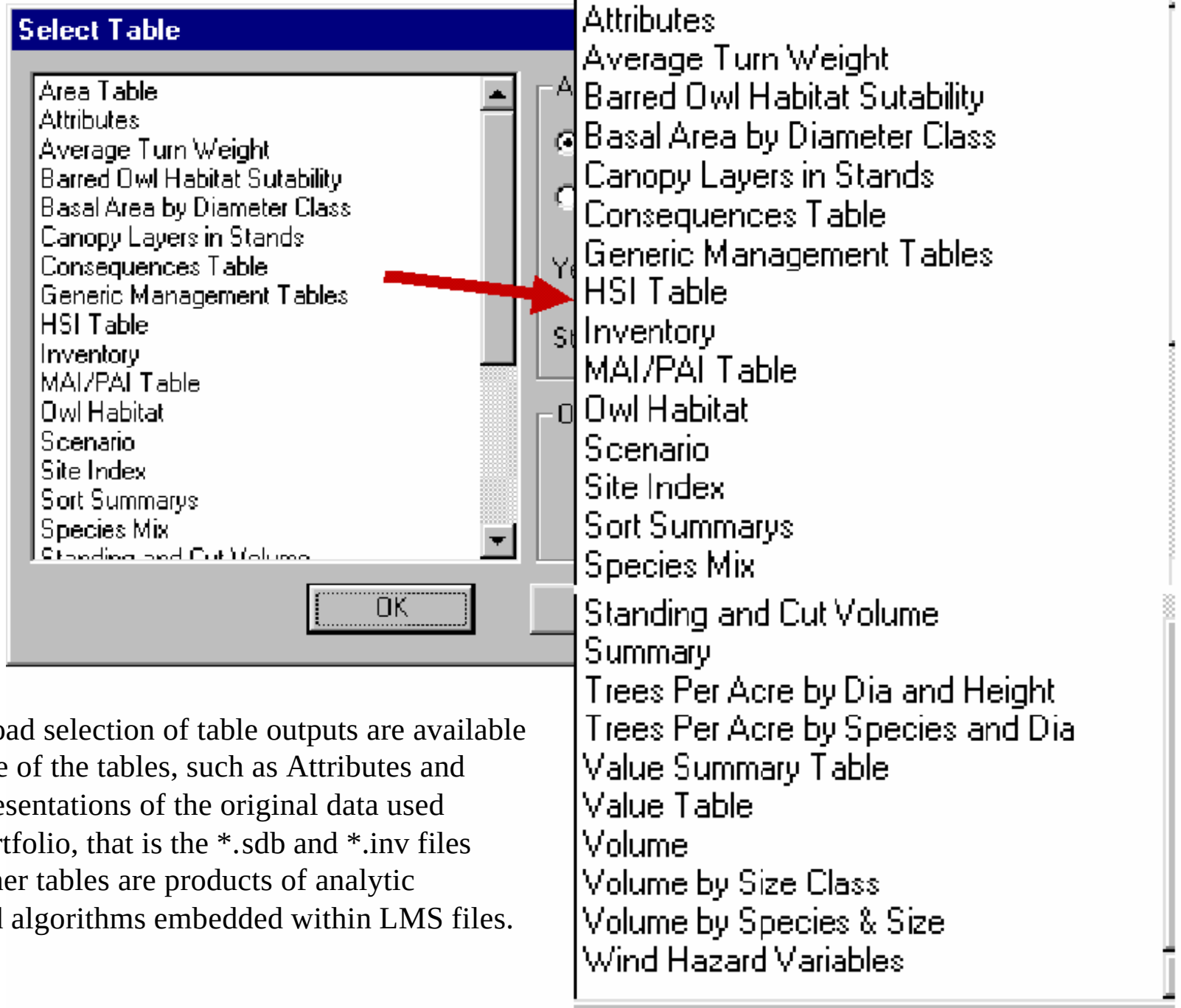


Figure 4.2. A broad selection of table outputs are available from LMS. Some of the tables, such as Attributes and Inventory, are presentations of the original data used to prepare the portfolio, that is the *.sdb and *.inv files respectively. Other tables are products of analytic computations and algorithms embedded within LMS files.

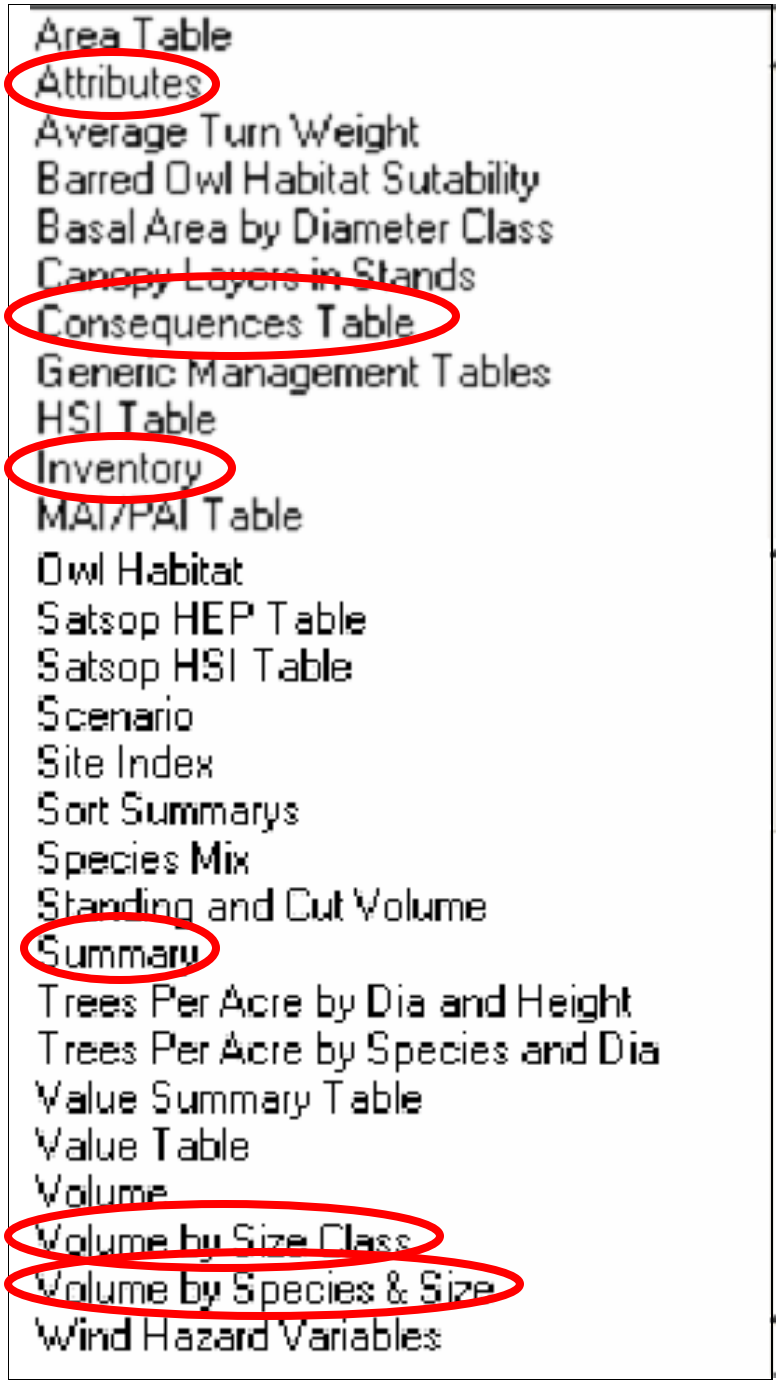


Figure 4.3. The LMS tables list reflects a spectrum of table options some of which have broad application for many types of analysis others of which are highly specialized and were created to serve very specific user needs. As the number of LMS users increases, the list of available tables has expanded in response to user requests. However, the next few tutorial sections are intended to teach the LMS user not only to benefit from existing tables but to create new customized tables in Excel spread sheets.
Some of the tables used in this tutorial are circled in the list on the left. These include:

1) Attributes.
2) Consequences
3) Inventory
4) Summary
5) Volume by Size Class
6) Volume by Species and Size

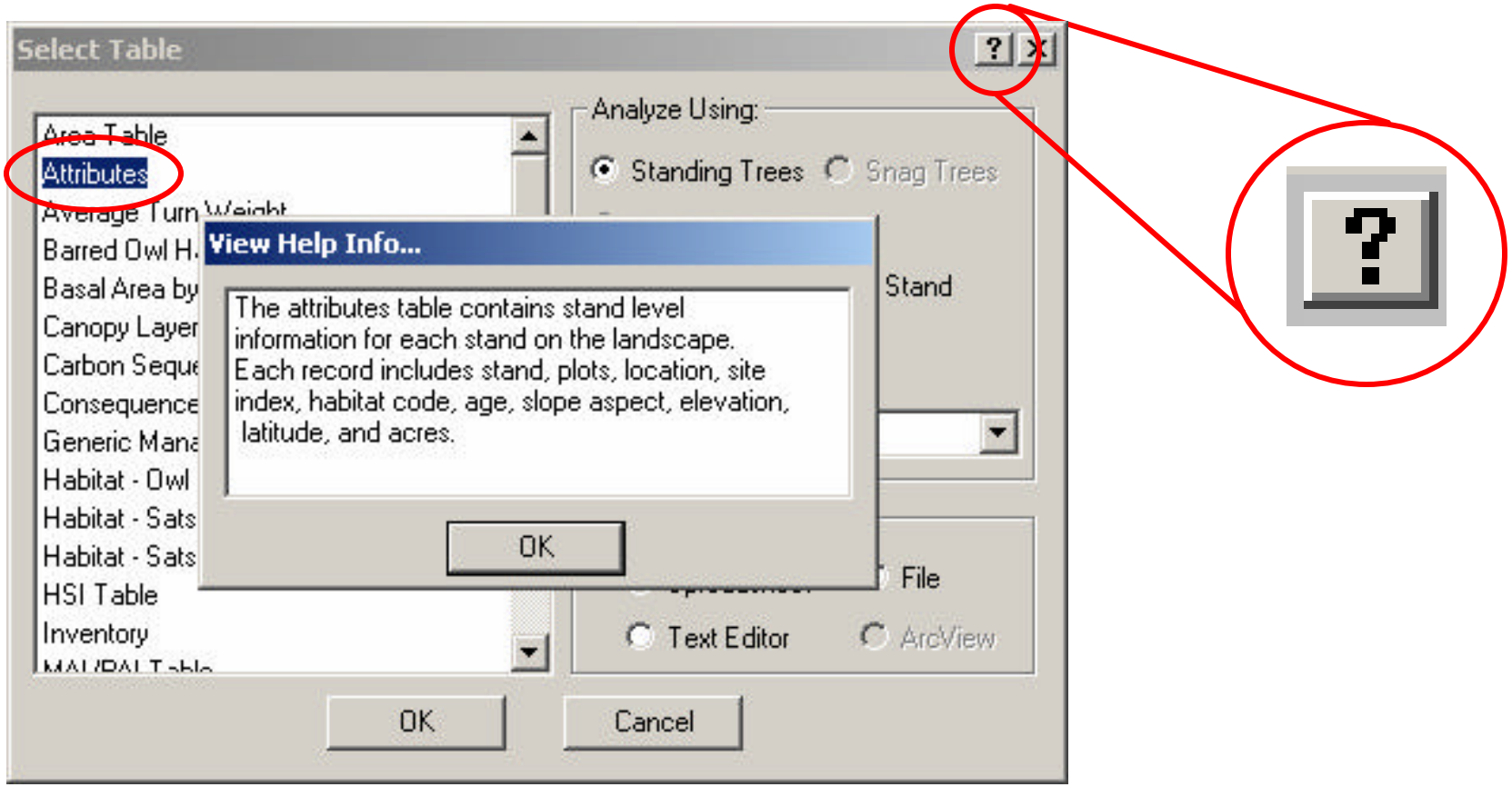


Figure 4.4 To find out what information is available within each table, click on the question mark in the upper left hand corner of the Select Table dialogue. Then click on the table of interest from the Select Table list. A View Help window will open containing a description of the select table. In this case the Attributes table was selected.

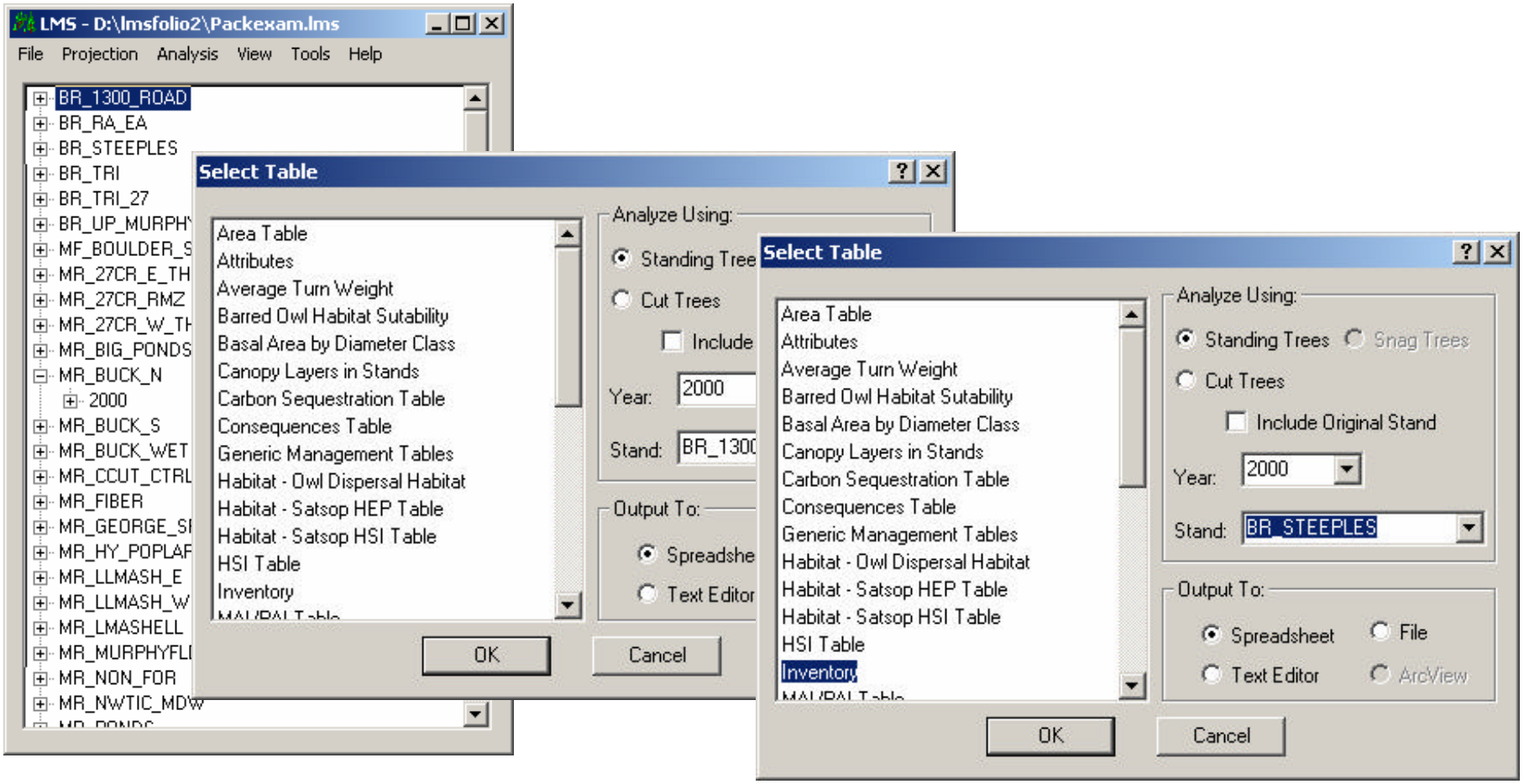
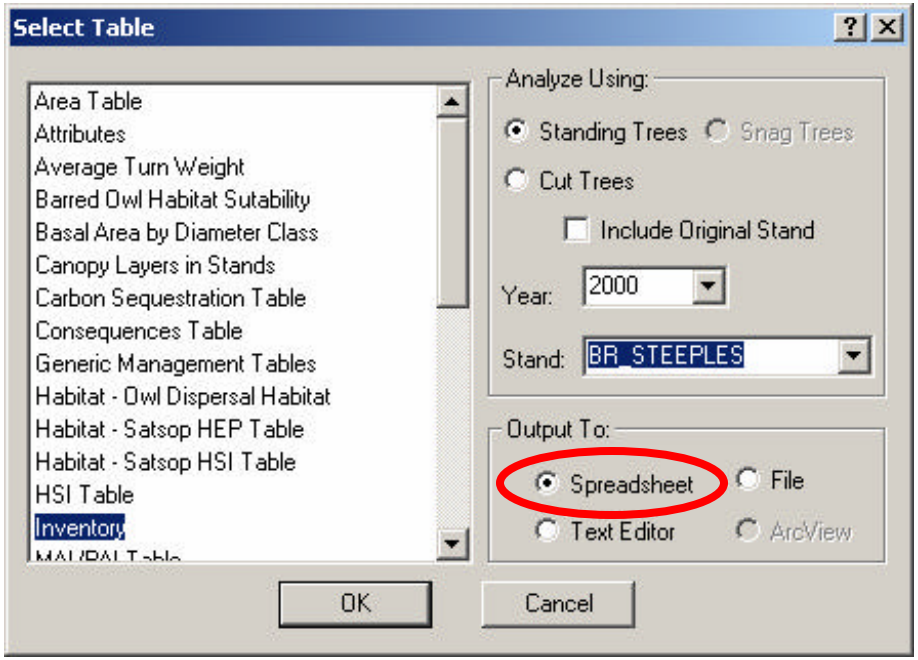
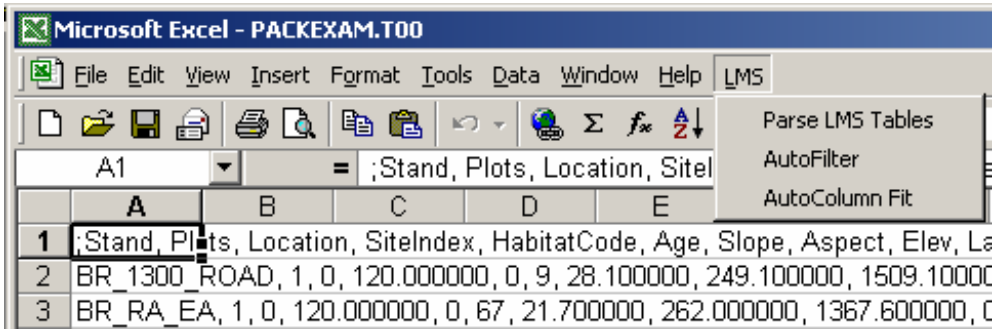


Figure 4.5. Once a table has been selected the user has the option to view outputs from a single year or all years and from a single stand or all stands within the portfolio projection. Projection and simulated treatment of individual stands or entire landscapes are discussed in further sections. Other analysis criteria such as snags and cut trees will be addressed later in the tutorial. The user must also select the output destination for table data. For most situations tables are sent to a spreadsheet and LMS automatically opens Excel. For this example the Inventory table for the stand, BR_STEEPLES, in the year 2000 will be opened as a spreadsheet.

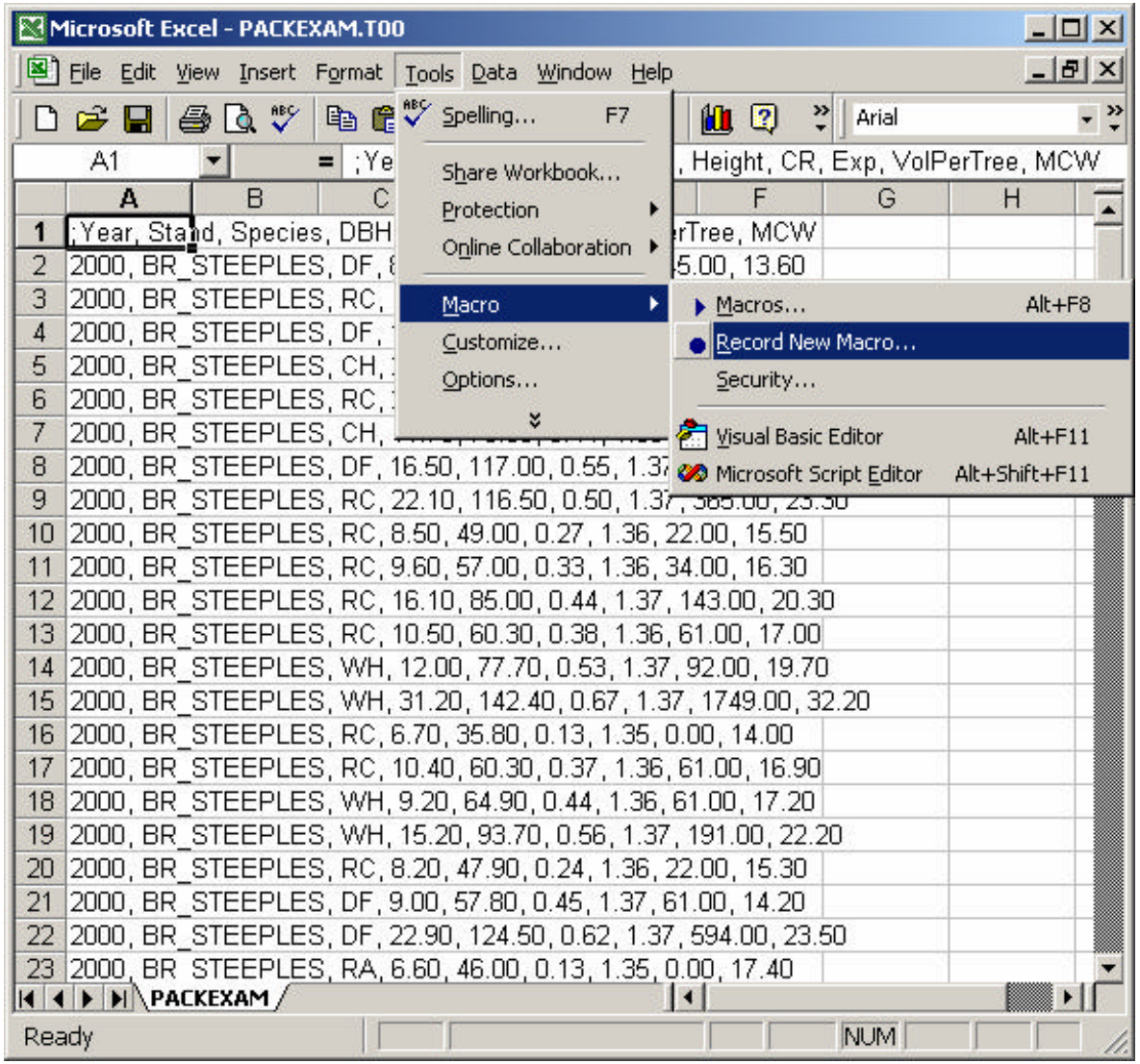
Tables in LMS can be output to several sources: Spreadsheet, Text Editor, or File. When tables are opened in the spreadsheet the text needs to be "parsed" to make it usable for computations in Excel. This can be done by using the LMS Menu in Excel (installed as part of the LMS installation process) or by recording your own macro and saving it in the personal macro worksheet. Recording a macro is shown on the following pages.



LMS Versions starting with 2.0.44 now open tables directly in Excel. The step of parsing the numbers to create a usable spreadsheet has been simplified.

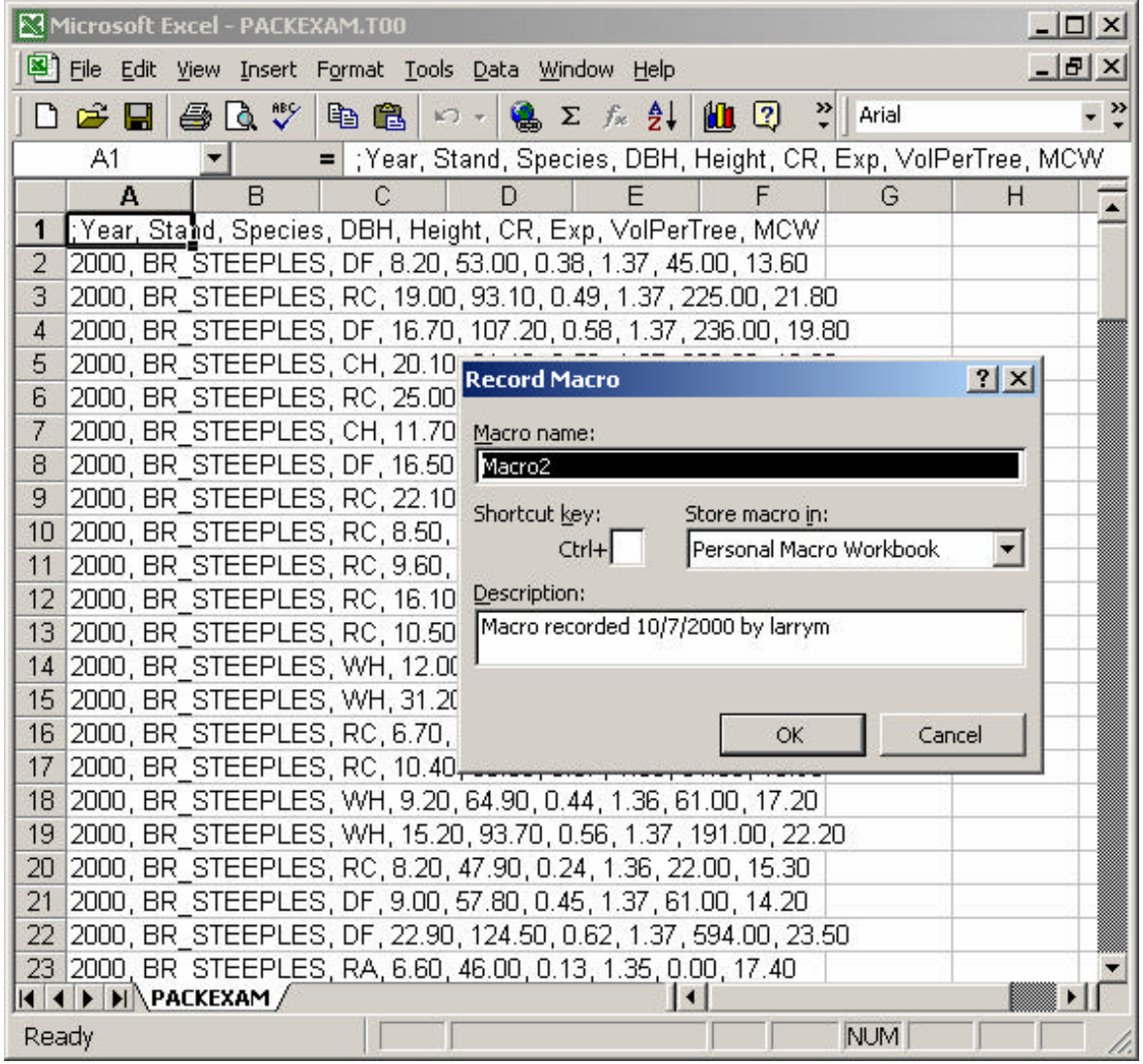


Previously, to turn the LMS table into usable numbers you had to select LMS Menu|Parse LMS Table. In addition filters can be turned off and column widths adjusted from the LMS menu.



Example of creating a macro to change an Excel spreadsheet text to columns, and to create an Excel macro

Figure 4.6. When table data is exported to a spreadsheet it appears in a comma delimited form or text format. The data must be converted from text to columns to be useable in Excel. Such conversions are made simple by creating a macro in Excel. A Macro is a small program created to automate customized functions. Click **Tools/Macro/Record New Macro** …



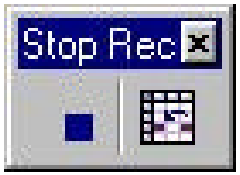


Figure 4.6. A **Record Macro** dialogue window will open. The Macro must be named and given a shortcut key. For this example, name **short cut key** CTRL+L (for LMS). **Name** could be default Macro or LMS or whatever seems appropriate. Store macro in**: Personal Macro Workbook** so that it will be available for use with future imported LMS data sets. Click **OK** and a **Stop Rec** button will appear that will be used to stop recording when the macro is complete.

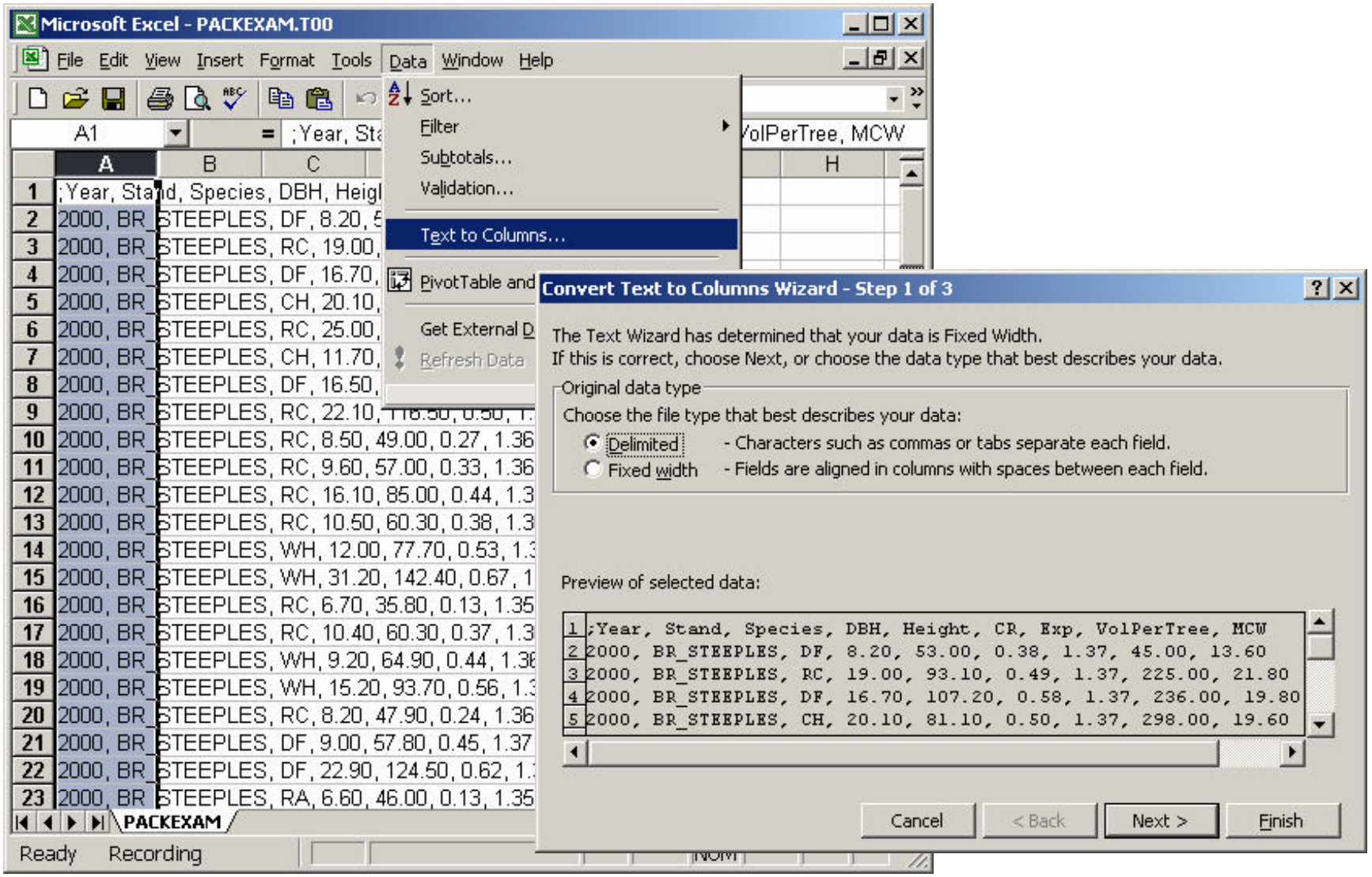
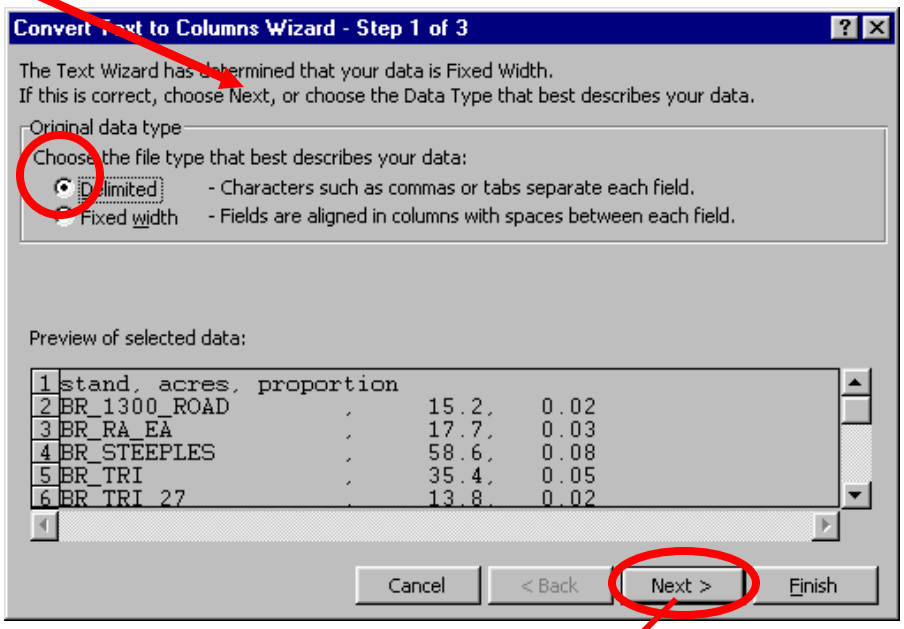
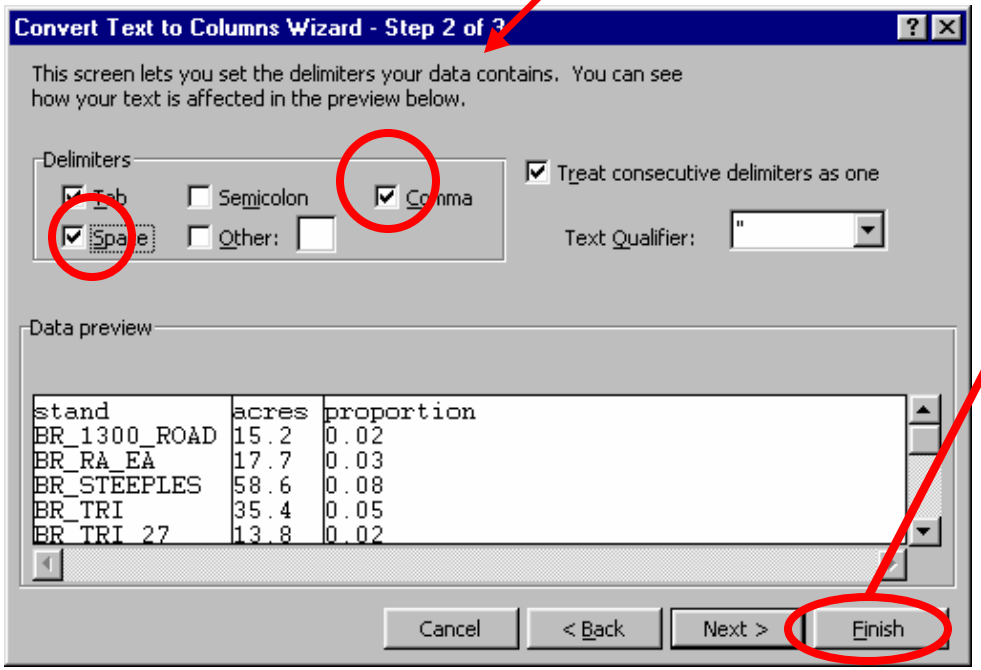


Figure 4.7. Click A to **highlight column A**. Then click **Data/Text to Columns**… The Convert Text to Columns Wizard will open. Select **Delimited** and click Next.





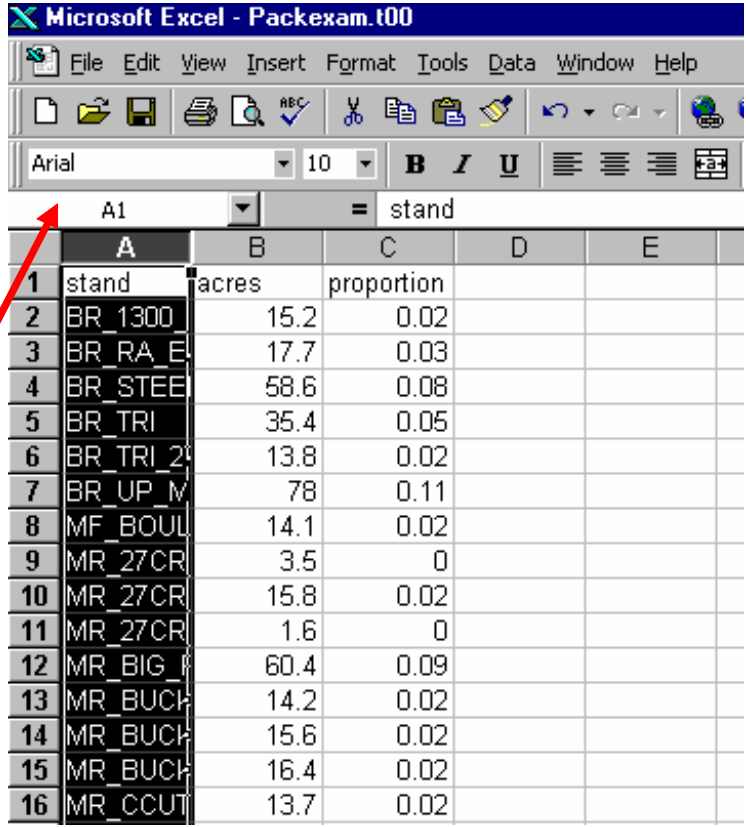


Figure 4.8. In the next window click **Comma, Space, and Finish**. Table data is then converted to Excel columns.

This is the reverse process described later in the **Create New Portfolio** section where *.xls files are converted to *.csv (comma delimited) files to input tree and stand data to the **New Portfolio Wizard.**

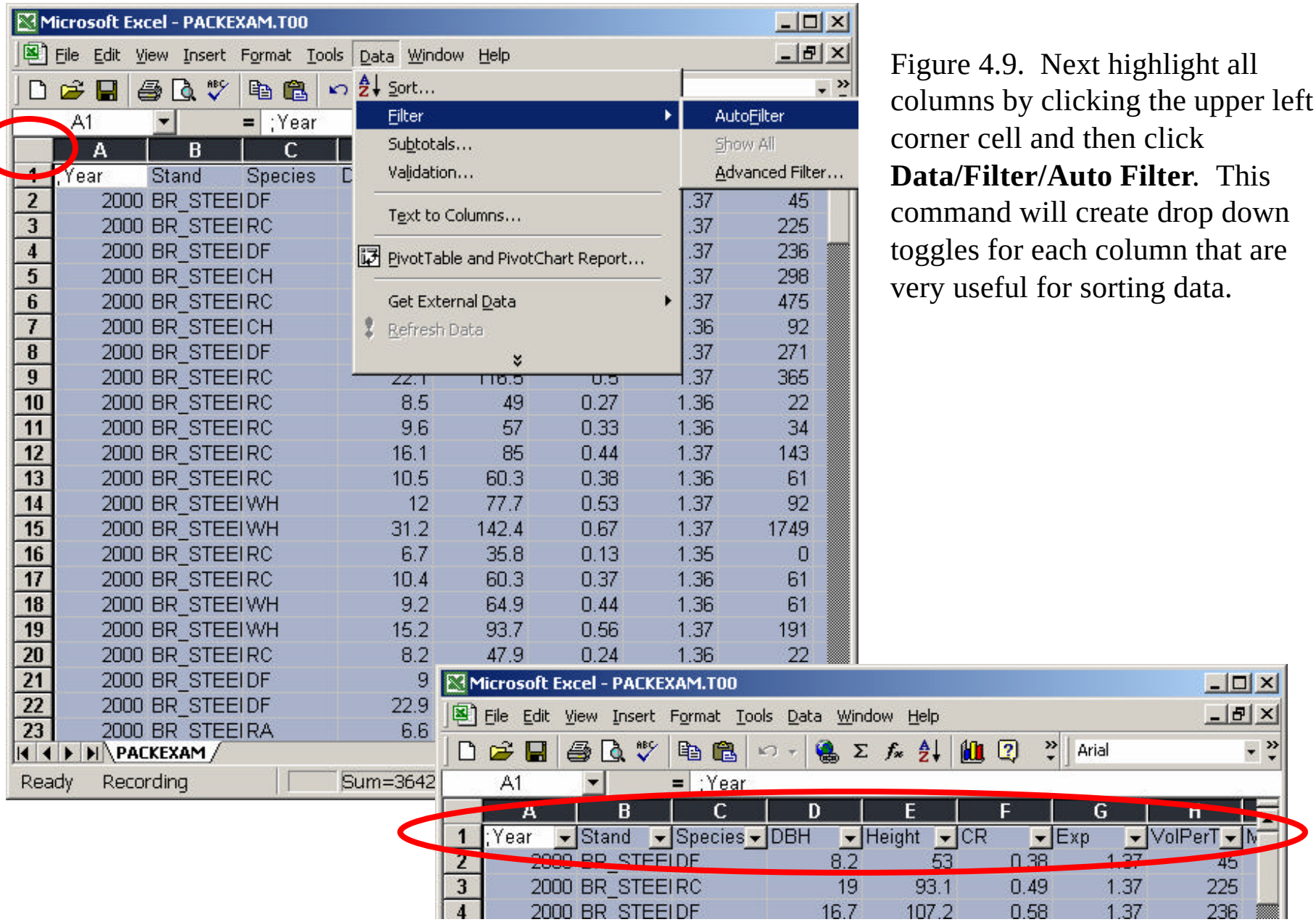


Figure 4.9. Next highlight all columns by clicking the upper left corner cell and then click **Data/Filter/Auto Filter**. This command will create drop down toggles for each column that are very useful for sorting data.

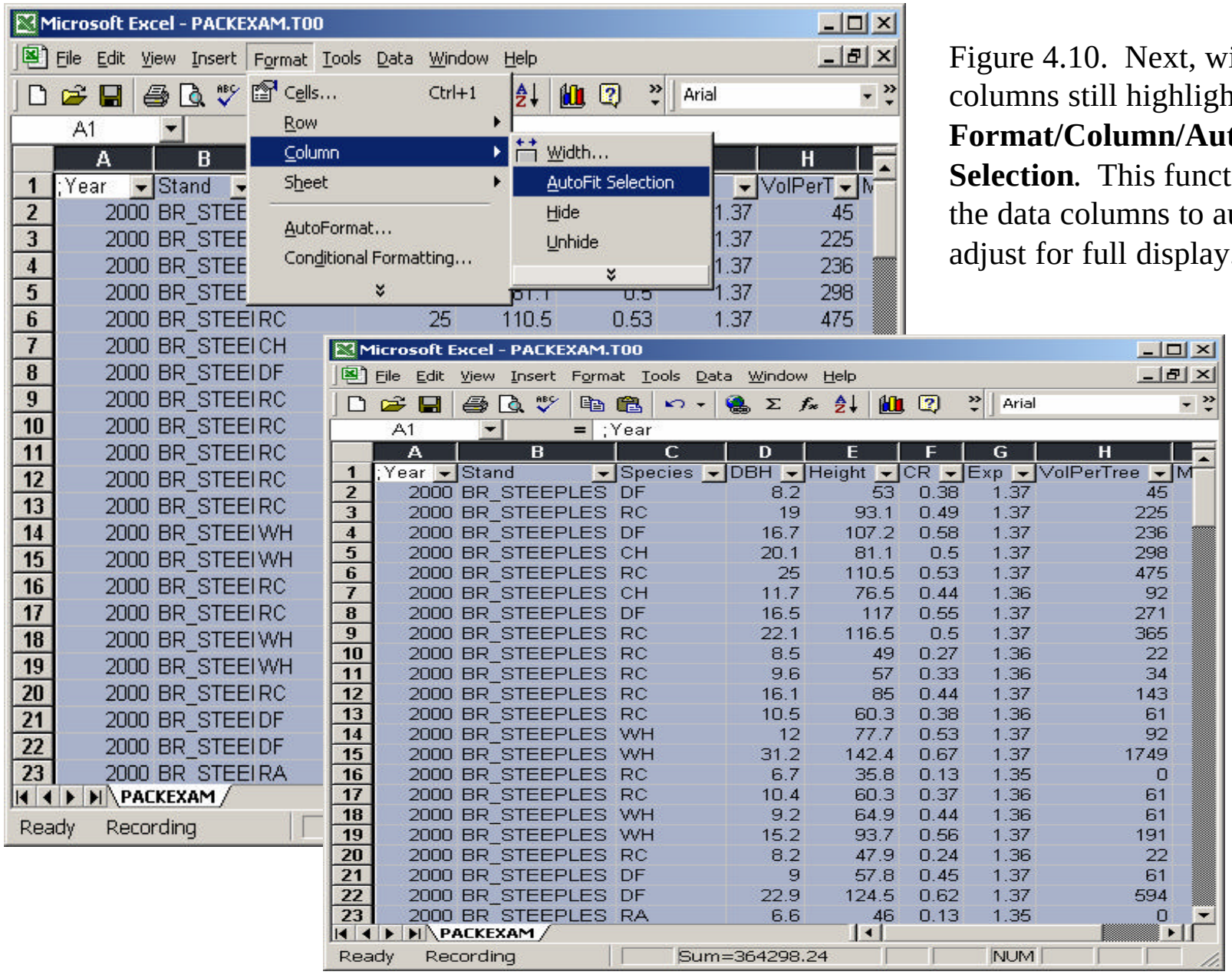


Figure 4.10. Next, with all columns still highlighted, click **Format/Column/AutoFit Selection**. This function spaces the data columns to automatically adjust for full display.

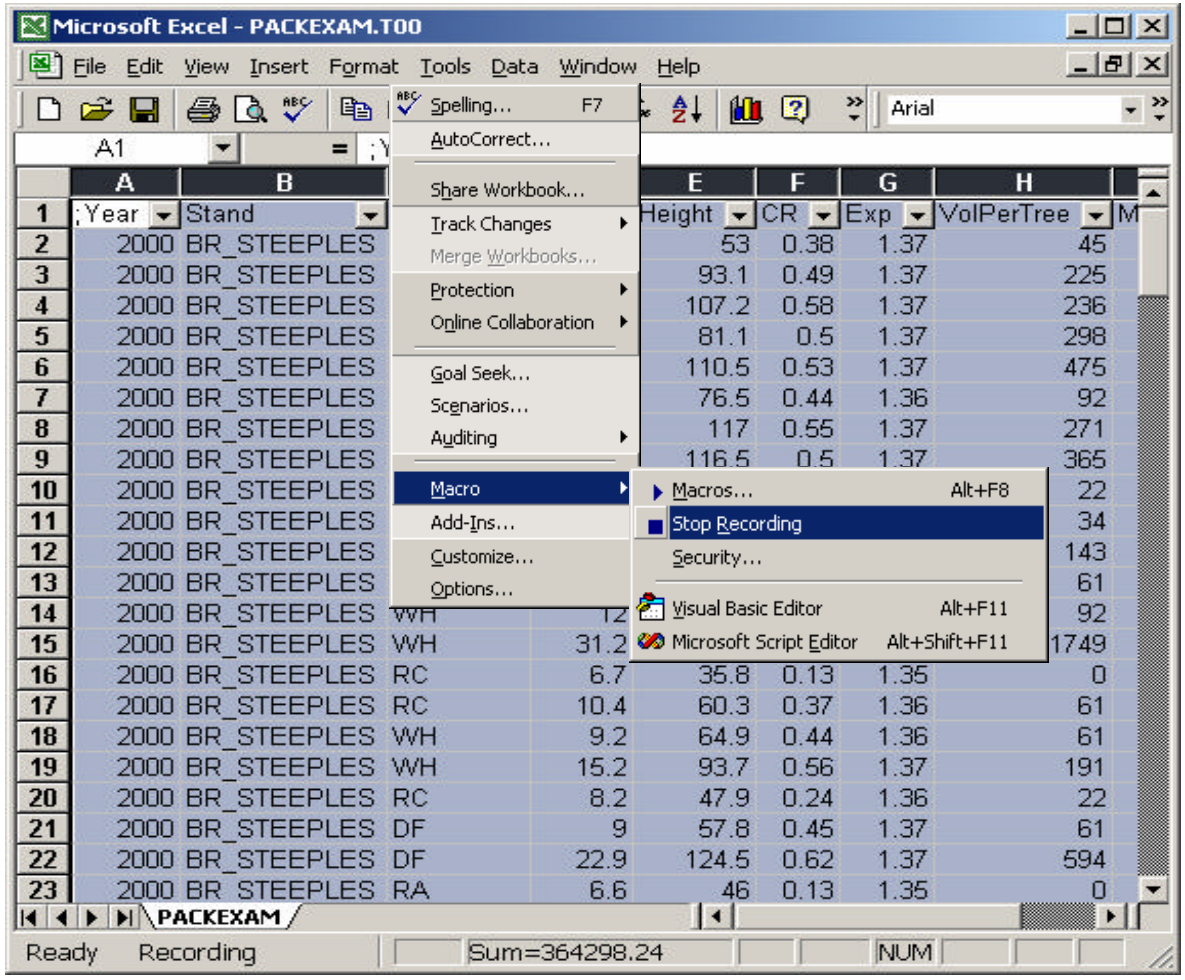


Figure 4.11. Click **Macro stop record** either with the Macro stop button or from the Tools/ Macro drop down menu and the macro is complete. Save in your **Personal Macro Workbook**. The next time that an LMS table is imported into Excel, click the shortcut key CTRL+L and the data will automatically format itself.

The following series of slides are examples of available LMS Tables.

Area table

stand	acres	proportion	
BR_1300_ROAD	15.2	0.02	
BR_RA_EA	17.7	0.03	
BR_STEEPLES	58.6	0.08	
BR_TRI	35.4	0.05	
BR_TRI_27	13.8	0.02	
BR_UP_MURPHY	78	0.11	

Attributes table

;Stand	Plots	Location	SiteIndex	HabitatCod	Age	Slope	Aspect	Elev	Lat	Acres	
BR_1300_ROAD	1	0	120	0	9	28.1	249.1	1509.1	0	15.2	
BR_RA_EA	1	0	120	0	67	21.7	262	1367.6	0	17.7	
BR_STEEPLES	1	0	120	0	72	13.1	187.6	1244.9	0	58.6	
BR_TRI	1	0	105	0	67	24.5	202.8	1428.3	0	35.4	
BR_TRI_27	1	0	105	0	67	33.1	160.6	1493.1	0	13.8	
BR_UP_MURPHY	1	0	120	0	67	32.9	174.4	1525.2	0	78	

Basal Area by Diameter Class table

Year	Stand	Species	DClass	BA	TPA	
2000	BR_1300_ROAD	ALL	2	0.94	34.68	
2000	BR_1300_ROAD	ALL	4	6.8	64.71	
2000	BR_1300_ROAD	ALL	6	22.32	124.5	
2000	BR_1300_ROAD	ALL	8	46.74	149.4	
2000	BR_1300_ROAD	ALL	10	2.2	4.98	
2000	BR_1300_ROAD	DF	2	0.16	4.98	
2000	BR_1300_ROAD	DF	4	6.8	64.71	
2000	BR_1300_ROAD	DF	6	22.32	124.5	

Canopy Layers in Stands table

year	stand	layers	
2000	BR_1300_ROAD	1	
2000	BR_RA_EA	1	
2000	BR_STEEPLES	2	
2000	BR_TRI	2	
2000	BR_TRI_27	2	
2000	BR_UP_MURPHY	3	

Carbon sequestration table

;year	stand	species	Dbh	Ht	Cr	Tpha	Vol	Mcw	Foliage	LitterFall	Stem+Bark	Branch	Root	StemCarbon	CrownCarbon	SoilCarbon
2000	BR_1300_ROAD	DF	18.03	9.97	0.76	12.31	0	3.84	97.84	57.02	1257.2	148.44	271.11	643.69	96.9	138.81
2000	BR_1300_ROAD	DF	13.72	9.02	0.76	12.31	0	3.32	61.42	35.32	622.16	82.68	129.73	318.55	55.7	66.42
2000	BR_1300_ROAD	DF	18.54	9.36	0.76	12.31	0	3.9	102.57	59.86	1350.26	157.52	292.17	691.33	102.52	149.59
2000	BR_1300_ROAD	DF	11.94	8.23	0.76	12.31	0	3.08	48.5	27.7	435.49	61.44	89.26	222.97	42.11	45.7
2000	BR_1300_ROAD	RA	5.33	5.52	0.76	12.23	0	3.05	8.76	9.17	40.35	10.34	10.44	20.01	4.92	5.18
2000	BR_1300_ROAD	RA	5.33	5.73	0.76	12.23	0	3.11	8.86	9.17	41.54	10.34	10.8	20.6	4.97	5.35
2000	BR_1300_ROAD	DF	13.21	9.17	0.76	12.31	0	3.26	57.6	33.06	564.66	76.27	117.2	289.11	51.62	60
2000	BR_1300_ROAD	RA	2.79	3.47	0.76	12.23	0	2.29	6.7	4.53	7.33	2.15	2.82	3.64	2.14	1.4

Carbon sequestration summary table

;Year	Stand	Species	Foliage	LitterFall	Stem+Bark	Branch	Root	StemCarb	CrwnCarb	RootCarb
2000	BR_1300_ROAD	DF	5688.16	3304.59	70186.41	8423.55	15083.17	35935.44	5533.25	7722.58
2000	BR_1300_ROAD	RA	54.8	56.16	278.35	70.48	70.92	138.06	34.28	35.18
2000	BR_1300_ROAD	TOTAL	5742.96	3360.75	70464.75	8494.04	15154.09	36073.5	5567.53	7757.76
2000	BR_RA_EA	BM	363.24	287.25	30825.09	4244.32	25731.93	15289.25	2142.87	12763.04
2000	BR_RA_EA	CH	402.86	273.04	49343.15	6174.61	26325.01	24474.2	3126.99	13057.2
2000	BR_RA_EA	DF	4010.83	2469.71	138260.03	9944.88	34241.89	70789.13	5880.84	17531.85
2000	BR_RA_EA	RA	3173.05	625.66	45841.04	6581.77	11474.52	22737.16	4528.06	5691.36
2000	BR_RA_EA	TOTAL	7949.98	3655.65	264269.31	26945.57	97773.35	133289.74	15678.77	49043.45
2000	BR_STEEPLES	BM	63.71	62.61	3496.35	535.63	2889.51	1734.19	266.22	1433.2
2000	BR_STEEPLES	CH	118.99	92.55	11242.57	1496.42	5965.51	5576.32	755.34	2958.89
2000	BR_STEEPLES	DF	4567.06	2789.15	140227.07	10606.09	34329.91	71796.26	6340.6	17576.91
2000	BR_STEEPLES	GF	219.65	132.77	5626.14	465.73	1343.81	2880.58	282.94	688.03
2000	BR_STEEPLES	RA	3643.67	778.94	52701.72	7776.29	13130.75	26140.05	5277.95	6512.85
2000	BR_STEEPLES	RC	1404.94	846.68	6198.69	3720.2	8331.84	3173.73	2190.57	4265.9
2000	BR_STEEPLES	WH	1632.86	348.55	21773.37	8594.25	9486.87	11147.96	5057.82	4857.28
2000	BR_STEEPLES	YC	0	0	0	0	0	0	0	0
2000	BR_STEEPLES	TOTAL	11650.88	5051.25	241265.91	33194.61	75478.2	122449.1	20171.44	38293.07

Consequences table

Year	Stand	Oliver5c	HCSSPT	Carey	StandingV	CutVol	VolGrowth	DomSPP	Prop/Mix	H/D(100)	HT(100)	TPA	SnagBA/A	Snags/Acr	LogBA/Ac	Log/Acre	StandPole
2000	BR_1300_ROAD	2_SE	2_SE	1_SI	1015.92	0	0	DF	0.99	51.55	34.3	378.27	0	0	0	0	0.83
2000	BR_RA_EA	2_SE	3_UR	1_SI	30376.3	0	0	MIXED	0.48(DF):	70.91	91.25	127.32	0	0	0	0	0
2000	BR_STEEPLES	2_SE	4_DEU	2_ES	32810.08	0	0	MIXED	0.44(DF):	72.49	93.53	220.77	0	0	0	0	1.75
2000	BR_TRI	2_SE	5_DIU	2_ES	34325.4	0	0	MIXED	0.72(DF):0	77.46	106.55	230.96	0	0	0	0	0
2000	BR_TRI_27	3_UR	7_DIM	3_UR	60123.45	0	0	DF	0.92	79.93	132.71	165.15	0	0	0	0	0
2000	BR_UP_MURPHY	3_UR	6_DEM	2_ES	46852.77	0	0	MIXED	0.69(DF):	71.64	110.05	180.66	0	0	0	0	0
2000	MF_BOULDER_S	1_SI	1_SI	1_SI	336.94	0	0	MIXED	0.51(RC):0	74.13	21.9	149.18	0	0	0	0	0
2000	MR_27CR_E_TH	3_UR	5_DIU	2_ES	47085.96	0	0	DF	1	102.53	127.53	418.25	0	0	0	0	0
2000	MR_27CR_RMZ	3_UR	7_DIM	2_ES	75328.96	0	0	MIXED	0.44(DF):0	67.49	117.43	274.14	0	0	0	0	0
2000	MR_27CR_W_TH	5_OG	4_DEU	2_ES	49555.18	0	0	MIXED	0.71(DF):	98.85	109.82	166.17	0	0	0	0	0
2000	MR_BIG_PONDS	2_SE	3_UR	2_ES	19186.7	0	0	MIXED	0.67(RA):0	68.34	70.75	336.58	0	0	0	0	0
2000	MR_BUCK_N	1_SI	1_SI	1_SI	586.44	0	0	DF	0.82	70.72	35.38	308.1	0	0	0	0	3.11
2000	MR_BUCK_S	2_SE	2_SE	1_SI	2563.86	0	0	DF	0.86	56.15	40.26	832.59	0	0	0	0	2.56
2000	MR_BUCK_WET	1_SI	1_SI	1_SI	0	0	0	MIXED	0.59(RA):0	77.54	5.08	300	0	0	0	0	0
2000	MR_CCUT_CTRL	2_SE	2_SE	1_SI	0	0	0	DF	0.97	47.19	28.72	566.8	0	0	0	0	0
2000	MR_FIBER	2_SE	2_SE	2_ES	20642.33	0	0	CO	1	109.18	76.8	1159.71	0	0	0	0	0
2000	MR_GEORGE_SP	2_SE	2_SE	1_SI	3427.32	0	0	DF	0.99	64.17	45.72	518.38	0	0	0	0	11.93
2000	MR_HY_POPLAR	2_SE	2_SE	2_ES	17228.55	0	0	CO	1	89.04	82.84	440.12	0	0	0	0	0
2000	MR_LLMASH_E	2_SE	5_DIU	2_ES	37250.83	0	0	DF	0.89	78.37	110.47	217.02	0	0	0	0	0

Habitat - Barred Owl Habitat Suitability table

year	stand	TPA>20"	AveDBH	Cancov	Bar_Owl_HSI	
2000	BR_1300_ROAD	0	5.92	761.51	0.0784	
2000	BR_RA_EA	29.62	14.23	2098.11	0.7845	
2000	BR_STEEPLES	21.93	11.54	2525.46	0.6604	
2000	BR_TRI	9.8	12.25	3490.21	0.6953	
2000	BR_TRI_27	48.71	16.14	4359.68	0.8619	
2000	BR_UP_MURPHY	40.95	14.01	3238.11	0.7752	

Habitat – DNR Spotted Owl Habitat table

Year	Stand	HabType
2000	BR_1300_ROAD	NonHab
2000	BR_RA_EA	NonHab
2000	BR_STEEPLES	SMVD
2000	BR_TRI	SMVD
2000	BR_TRI_27	SMVD
2000	BR_UP_MURPHY	SMVD
2000	MF_BOULDER_S	NonHab
2000	MR_27CR_E_TH	NonHab
2000	MR_27CR_RMZ	SMVD
2000	MR_27CR_W_TH	NonHab
2000	MR_BIG_PONDS	NonHab
2000	MR_BUCK_N	NonHab
2000	MR_BUCK_S	NonHab
2000	MR_BUCK_WET	NonHab
2000	MR_CCUT_CTRL	NonHab
2000	MR_FIBER	NonHab

Habitat - Owl Dispersal Habitat table

Year	Stand	DNRDisp	Martin	AvTail	AvTurn	Acres	Prop	Dq	PCCC	FMCC	RD	N>85	QMD(100)	
2000	BR_1300_ROAD	0	0	9	326.6	15.2	0.02	6.2	49	68.9	31.2	0	7.9	
2000	BR_RA_EA	0	0	26.2	28629.9	17.7	0.03	15.3	58.8	80	41.7	44.3	16.8	
2000	BR_STEEPLES	1	1	29	17834	58.6	0.08	12.8	71.3	87.4	54.8	47.9	16.8	
2000	BR_TRI	1	1	23.2	17834.5	35.4	0.05	12.9	74.8	89.4	58.6	87.8	16.4	
2000	BR_TRI_27	1	1	30.3	43686.4	13.8	0.02	17.3	80.8	93.3	65	107.1	20.8	
2000	BR_UP_MURPHY	1	1	29.4	31121.1	78	0.11	15.4	75.9	90.5	59.7	78.4	19.2	
2000	MF_BOULDER_S	0	0	10.3	271	14.1	0.02	3.7	25.1	18.8	5.8	0	4.2	
2000	MR_27CR_E_TH	1	1	25.4	13509.4	3.5	0	9.4	81.3	91.6	65.5	88.2	19.2	

Habitat – Satsop HEP and HIS tables

Stand	2000_CType
BR_1300_ROAD	C2
BR_RA_EA	M3T
BR_STEEPLES	M2
BR_TRI	M3
BR_TRI_27	C4T
BR_UP_MURPHY	M3
MF_BOULDER_S	B
MR_27CR_E_TH	C4T
MR_27CR_RMZ	C4T
MR_27CR_W_TH	C4T
MR_BIG_PONDS	M2

Stand	2000_CHawk	2000_SRVole	2000_PWoodpecker	2000_STowhee
BR_1300_ROAD	0.5511	0.7605	0	0.2
BR_RA_EA	1	0.2559	0.8124	0.6
BR_STEEPLES	0.7201	0.9249	0.7409	0.4
BR_TRI	0.6084	1	0.4014	0.6
BR_TRI_27	0.4354	1	0.922	0.5
BR_UP_MURPHY	0.7213	0.9227	1	0.6
MF_BOULDER_S	0.243	0.0695	0	0.1721
MR_27CR_E_TH	0.6113	1	0.7785	0.5
MR_27CR_RMZ	0.3295	1	0.922	0.5
MR_27CR_W_TH	0.6377	1	0.4187	0.5
MR_BIG_PONDS	0.9487	0.2528	0	0.4

Habitat – Sol Duc Elk Population table

Year	Stand	Acres	CC	ElkPot	HighDensRd	LowDensRd	HiHar
2000	BR_1300_ROAD	15.2	60.3188	0.015	0.015	0.015	0.013
2000	BR_RA_EA	17.7	66.0933	0.014	0.014	0.014	0.012
2000	BR_STEEPLES	58.6	75.6354	0.01	0.011	0.01	0.01
2000	BR_TRI	35.4	79.5488	0.01	0.011	0.01	0.01
2000	BR_TRI_27	13.8	71.2549	0.012	0.019	0.023	0.014
2000	BR_UP_MURPHY	78	76.2944	0.01	0.011	0.01	0.01
2000	MF_BOULDER_S	14.1	17.718	0.045	0.022	0.04	0.011
2000	MR_27CR_E_TH	3.5	55.9762	0.018	0.018	0.018	0.015
2000	MR_27CR_RMZ	15.8	80.5063	0.009	0.009	0.009	0.009
2000	MR_27CR_W_TH	1.6	59.4437	0.018	0.018	0.018	0.015
2000	MR_BIG_PONDS	60.4	88.3899	0.005	0.005	0.005	0.005

Inventory table

;Year	Stand	Tree#	Species	DBH	Height	CR	TPA	VolPerTree(BF)	VolPerTree(CU)	VolPerTree(MC)	MCW
2000	BR_1300_ROAD	1	DF	7.1	33	0.75	4.98	0	3.6	0	12.6
2000	BR_1300_ROAD	2	DF	5.4	30	0.75	4.98	0	1.9	0	10.9
2000	BR_1300_ROAD	3	DF	7.3	31	0.75	4.98	0	3.5	0	12.8
2000	BR_1300_ROAD	4	DF	4.7	27	0.75	4.98	0	1.3	0	10.1
2000	BR_1300_ROAD	5	RA	2.1	18	0.75	4.95	0	0.2	0	10.1
2000	BR_1300_ROAD	6	RA	2.1	19	0.75	4.95	0	0.2	0	10.1
2000	BR_1300_ROAD	7	DF	5.2	30	0.75	4.98	0	1.7	0	10.6
2000	BR_1300_ROAD	8	RA	1.1	11	0.75	4.95	0	0	0	7.4
2000	BR_1300_ROAD	9	DF	5.3	29	0.75	4.98	0	1.8	0	10.8
2000	BR_1300_ROAD	10	DF	4.9	27	0.75	4.98	0	1.4	0	10.3
2000	BR_1300_ROAD	11	DF	3.5	21	0.75	4.98	0	0.6	0	8.6

MAI/PAI table

Stand	Year	MAI	PAI	
BR_UP_MURPHY	2000	699.3	0	

Scenario table

;Year	Stand	Species	DBH	Height	CR	Exp	Vol	MCW	
2000	BR_1300_ROAD	DF	7.1	32.7	0.76	4.98	0	12.6	
2000	BR_1300_ROAD	DF	5.4	29.6	0.76	4.98	0	10.9	
2000	BR_1300_ROAD	DF	7.3	30.7	0.76	4.98	0	12.8	
2000	BR_1300_ROAD	DF	4.7	27	0.76	4.98	0	10.1	
2000	BR_1300_ROAD	RA	2.1	18.1	0.76	4.95	0	10	
2000	BR_1300_ROAD	RA	2.1	18.8	0.76	4.95	0	10.2	

Site Index table

stand	species	site_index	
BR_1300_ROAD	DF	120	
BR_RA_EA	DF	120	
BR_STEEPLES	DF	120	
BR_TRI	DF	105	
BR_TRI_27	DF	105	
BR_UP_MURPHY	DF	120	

Species Mix table

year	species	proptpa	propba	propvol	
2000	ALL	1	1	1	
2000	BC	0.01	0.01	0.01	
2000	BM	0.04	0.05	0.04	
2000	CO	0.08	0.03	0.03	
2000	DF	0.56	0.67	0.72	
2000	GC	0.03	0	0	

Site Index table

stand	species	site_index	
BR_1300_ROAD	DF	120	
BR_RA_EA	DF	120	
BR_STEEPLES	DF	120	
BR_TRI	DF	105	
BR_TRI_27	DF	105	
BR_UP_MURPHY	DF	120	

Trees per Acre by Diameter & Height table

year	stand	height	0- 2	2- 4	4- 6	6- 8	8-10	12-Oct	14-Dec	14-16	16-18	18-20
2000	BR_1300_ROAD	0- 9	0	0	0	0	0	0	0	0	0	0
2000	BR_1300_ROAD	10- 19	4.95	24.78	0	0	0	0	0	0	0	0
2000	BR_1300_ROAD	20- 29	0	19.86	119.52	29.88	0	0	0	0	0	0
2000	BR_1300_ROAD	30- 39	0	0	14.94	124.5	39.84	0	0	0	0	0
2000	BR_1300_ROAD	40- 49	0	0	0	0	0	0	0	0	0	0
2000	BR_1300_ROAD	50- 59	0	0	0	0	0	0	0	0	0	0

Trees per Acre by Species & Diameter table

year	stand	SPP	0- 2	2- 4	4- 6	6- 8	8-10	12-Oct	14-Dec	14-16	16-18
2000	BR_1300_ROAD	DF	0	19.89	134.46	154.38	39.84	0	0	0	0
2000	BR_1300_ROAD	RA	4.95	24.75	0	0	0	0	0	0	0
2000	BR_RA_EA	BC	0	0	0	0	4.88	0	0	0	0
2000	BR_RA_EA	BM	0	0	0	0	0	9.78	0	0	9.8
2000	BR_RA_EA	DF	0	0	0	4.91	0	0	0	4.93	0
2000	BR_RA_EA	RA	0	0	0	9.7	24.33	4.88	9.78	9.8	0

Volume table

year	species	volume(mbf/stand)	
2000	ALL	15509	

Volume - Standing & Cut table

year	species	stand_vol(mbf/stand)	cut_vol(mbf/stand)	
2000	ALL	15509	0	

Volume - Standing & Cut (KZ) table

;Year	Stand	Species	Stand_BoardFt	Cut_BoardFt	Stand_CubicFt	Cut_CubicFt	Stand_MerchCubicFt	Cut_merchCubicFt
2000	BR_1300_ROAD	DF	634.95	0	876.47	0	221.61	0
2000	BR_1300_ROAD	RA	0	0	6.93	0	0	0
2000	BR_1300_ROAD	TOTAL	634.95	0	883.4	0	221.61	0
2000	BR_RA_EA	BM	1662.68	0	617.46	0	617.46	0
2000	BR_RA_EA	CH	3708.46	0	852.08	0	852.08	0
2000	BR_RA_EA	DF	17799.94	0	3455.51	0	3455.51	0
2000	BR_RA_EA	RA	2635.87	0	1080.9	0	1080.9	0
2000	BR_RA_EA	TOTAL	25806.95	0	6005.94	0	6005.94	0
2000	BR_STEEPLES	BM	177.75	0	86.77	0	79.15	0
2000	BR_STEEPLES	CH	738.84	0	221.6	0	215.93	0
2000	BR_STEEPLES	DF	15508.9	0	3312.22	0	3302.5	0

Volume by Species & Size table

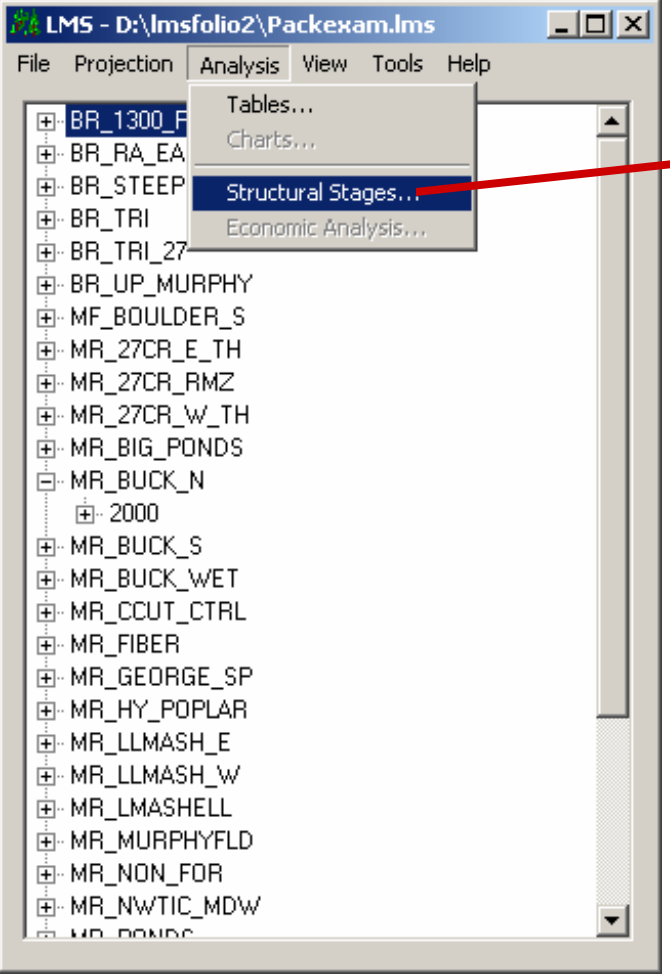
year	species	pole(mbf/sta	sawtimber(mbf/stand)	large_sawtimber(mbf/stand)		
2000	BC	26	124	47		
2000	BM	197	340	79		
2000	CO	235	3	162		
2000	DF	1122	6721	3275		
2000	GC	0	0	0		
2000	GF	6	36	0		

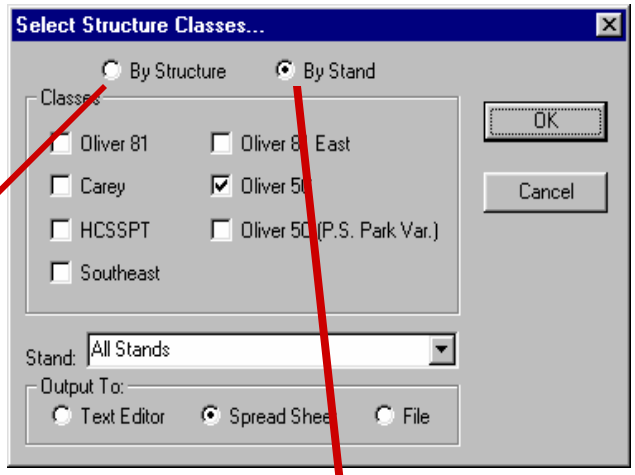
Volume by Size Class table

year	stand	pole(<12)	sawtimber	large_sawtimber(>24)-(mbf/stand)		
2000	BR_1300_ROAD	15	0	0		
2000	BR_RA_EA	62	379	97		
2000	BR_STEEPLES	386	874	663		
2000	BR_TRI	325	826	64		
2000	BR_TRI_27	29	589	212		
2000	BR_UP_MURPHY	341	2129	1184		

Wind Hazard Variables table

Year	Stand	H/D	Height	TPA	
2000	BR_1300_ROAD	51.55	34.3	378.27	
2000	BR_RA_EA	70.91	91.25	127.32	
2000	BR_STEEPLES	72.49	93.53	220.77	
2000	BR_TRI	77.46	106.55	230.96	
2000	BR_TRI_27	79.93	132.71	165.15	
2000	BR_UP_MURPHY	71.64	110.05	180.66	



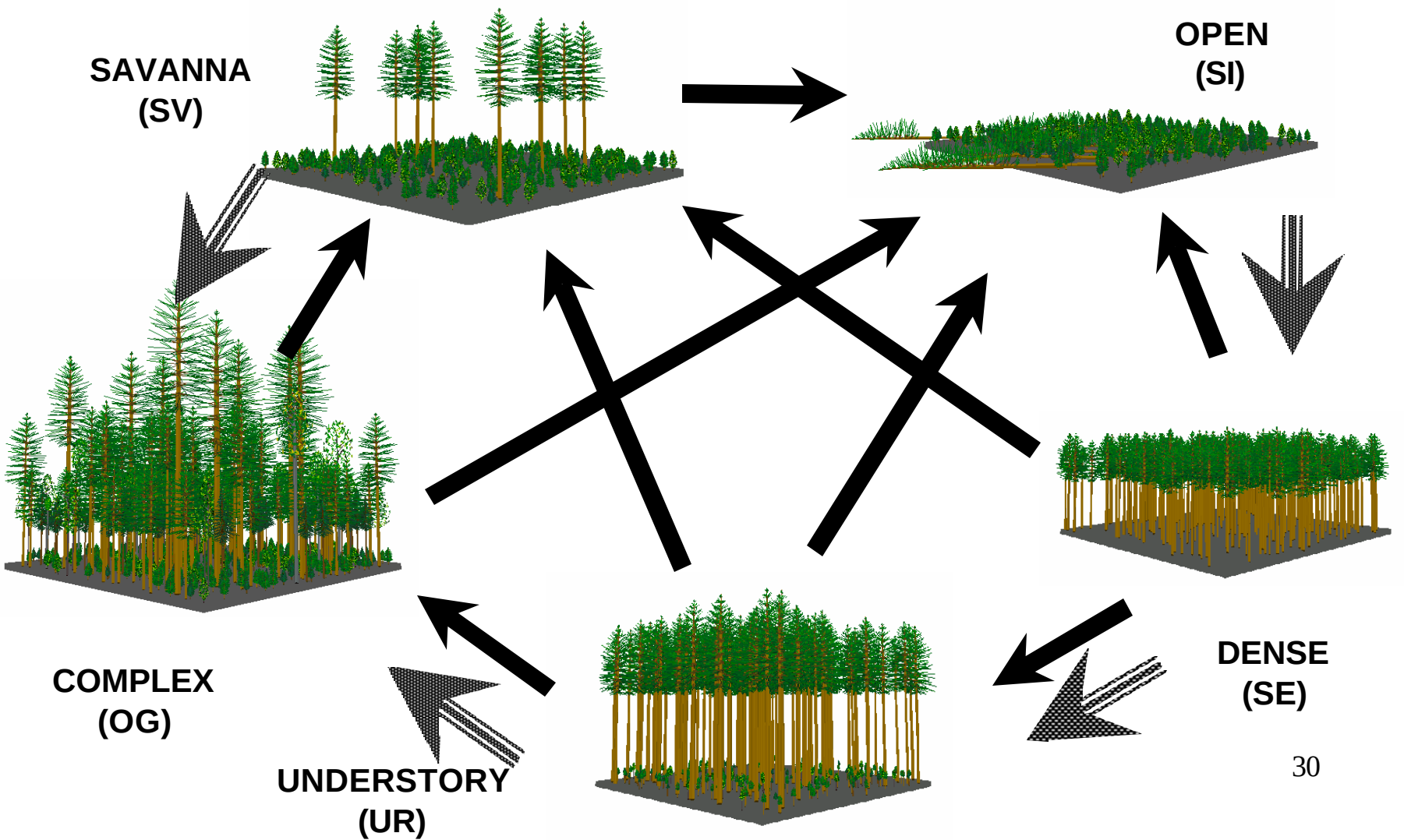


year	struct.	prop
2000	1_SI	0.230923
2000	2_SE	0.555841
2000	3_UR	0.175011
2000	4_SV	0.013408
2000	5_OG	0.024818

year	stand	Oliver5c	big_tpa	shade_tpa	sv_big_tpa	sv_med_tp	can_clsr	qd40
2000	BR_1300_ROAD	2_SE	0	0	0	278.88	49.53	8.7
2000	BR_RA_EA	2_SE	0	0	34.53	92.79	58.84	22.44
2000	BR_STEEPLES	2_SE	0	10.96	28.78	191.99	71.25	21.96
2000	BR_TRI	2_SE	0	0	29.36	201.6	74.79	19.75
2000	BR_TRI_27	3_UR	0	0	68.19	96.96	80.84	26.4
2000	BR_UP_MURPH	3_UR	0	0	50.31	126.87	75.86	23.97

Figure 4.12. From the **Analysis Drop Down** the user can access additional specialized tables such as **Structural Stages**. Structural stages are are based upon stand characteristics as interpreted by algorithms within LMS. A number of structural stage evaluations are available. The classification system shown here is the **Oliver 5c** (SI = Stand Initiation, SE = Stem Exclusion, UR = Understory Initiation, SV = Savanna, and OG = Old Growth or Complex). When evaluated by **Structure**, the proportion of each landscape in each class for each growth period is presented. When evaluated by **Stand**, a stand by stand report appears for each growth period.

Figure 4.13. Below are stand visualization examples of **Oliver 5c** structural classifications. Arrows reflect pathways that one condition might take to become another in response to disturbances or silvicultural operations.



Stand Structure Classification Systems

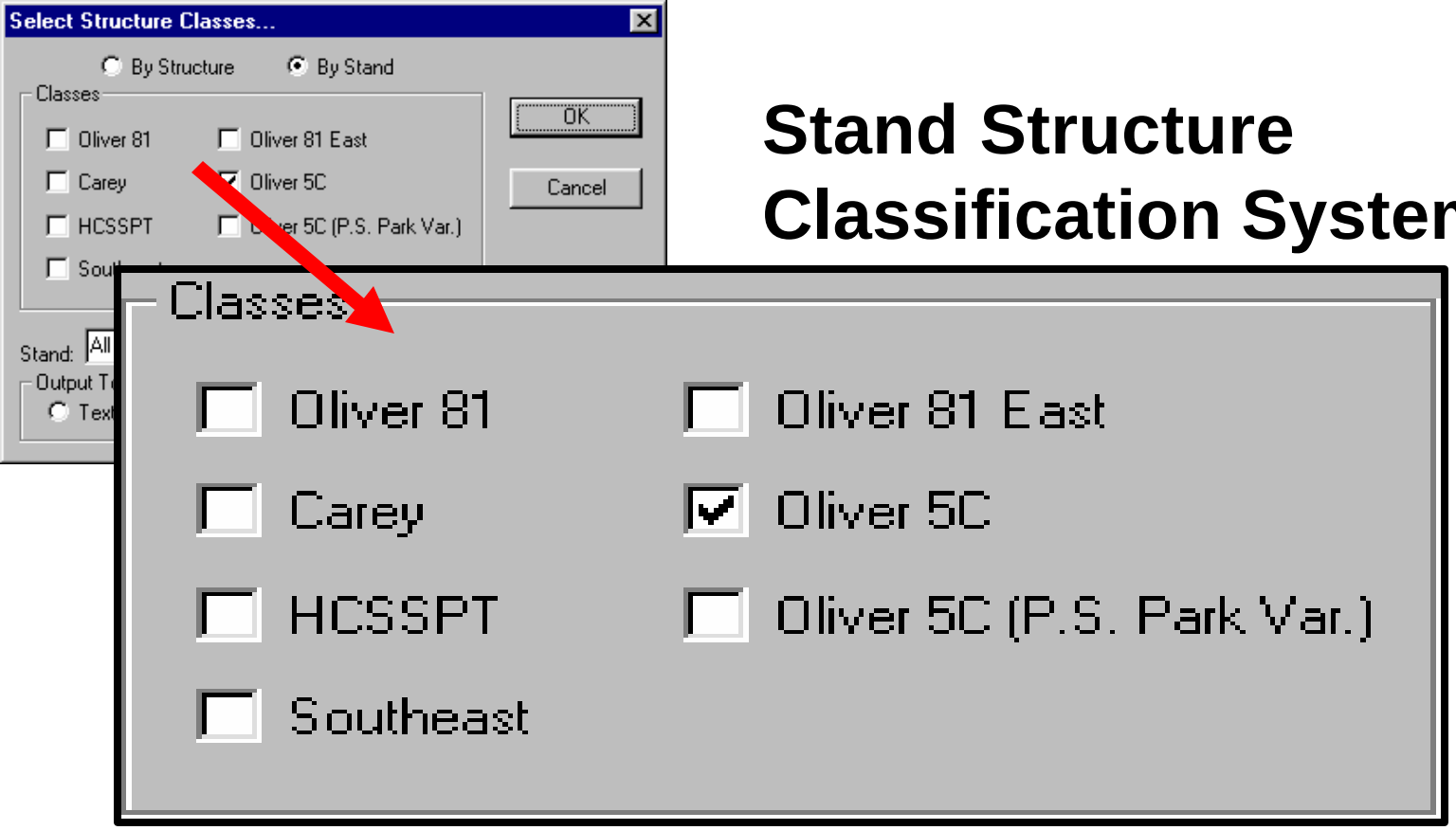


Figure 4.14. A number of structural classification tables have been designed for use in LMS. Structural classification is a way to group stands depending upon their individual inventory characteristics. Classifications can be designed to group stands according to age class, management potential, other structural attributes, or habitat type. Some structural stages such as such as Carey and Oliver seek to sort stands based upon quantification of natural forest succession. Other stage classifications, such as HCSSPT (Habitat Classification System, Southern Puget Trough), were designed to identify managed stands relative to habitat structures. All classification systems rely upon measurable criteria such as tree size, tree density, tree species mixtures, snags, down logs, and canopy closure taken from other LMS tables to segregate stands according to user criteria of interest.

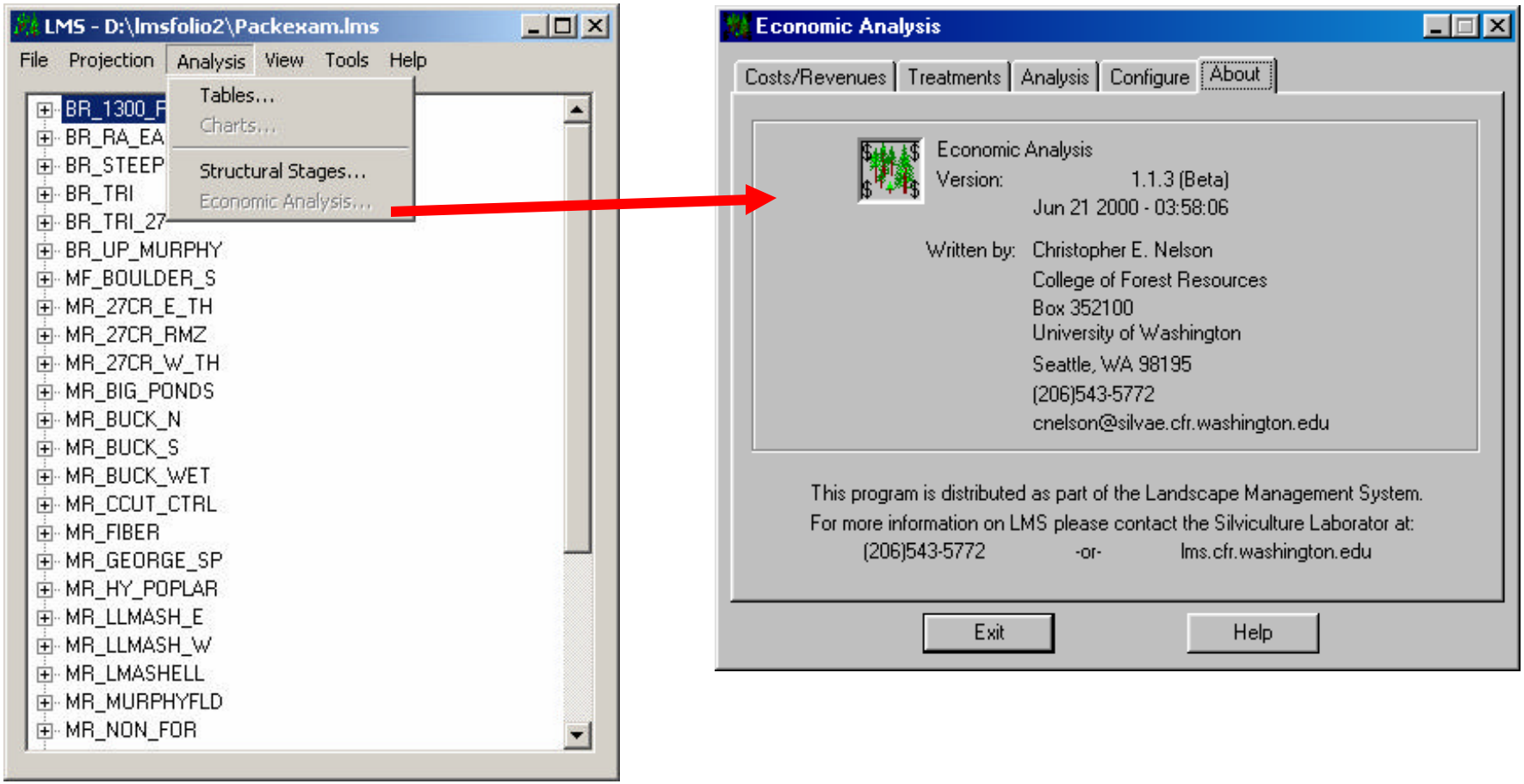


Figure 4.15. From the **Analysis Drop Down**, **Economic Analysis** may be selected. This option is still in development.

Exercise

- **Create the following tables in Excel, copy them to one file, renaming the worksheets**
  - **Attributes**
  - **Inventory**
  - **Consequences**
  - **Volume by size class**
  - **Oliver5c structures**

  - **Save this new file as Sect4.xls with other exercise files in the C:/lmsfolio2/packexam/Exercise_files directory**