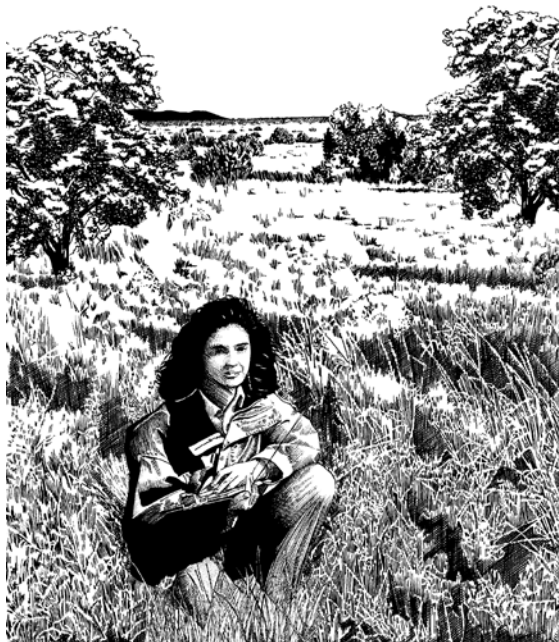# User Manual

Digital Field Data Collection

MS Excel Forms 2010 Edition

For the BLM Range Natural Resource Program

Presented by the

Service First Oregon and Washington Mobile GIS Team for FY11-12

Based on USDA Forest Service and DOI BLM Interagency
Technical Reference Manual 1734-3
UTILIZATION STUDIES AND RESIDUAL MEASUREMENTS
And BLM Technical Reference Manual 1734-4
SAMPLING VEGETATION ATTRIBUTES

Table of Contents

Background:

Richard Mayberry BLM Washington Office (WO) Range Lead, and Bob Bewley, BLM WO Senior Geographer tasked Oregon and Washington BLM GIS staff to create digital data forms in MS Excel in July 2010 from the paper versions in the Range Technical Reference Manuals. The forms were to:

- be printable,
- be usable in the field on a small Windows CE data collector, such as the Trimble Juno,
- automatically run calculations
- download into the BLM computer network for permanent record management.

Where Do I Get Help?

- BLM National Training Center Knowledge Learning Resource
  - Trimble Juno-SB GPS Receiver: Hardware & Software
  http://www.ntc.blm.gov/krc/uploads/403/DSherba_GPS.htm
- Your state or local Range Lead
- Michael Karl, National Operations Center BLM
- Aaron Dick or Cindy Lou McDonald, Oregon-Washington BLM Mobile GIS Technical Support

What is the Future Direction?

- Range Leads may choose to collect digital spatial data in the future.
- Data standards are needed so range data can be used with other BLM Information Systems.

Proposal for
Integration of Spatial Data Management from Field
Collection to Enterprise Dissemination

For the BLM Range Natural Resource Program

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And BLM Technical Reference Manual 1734-4
SAMPLING VEGETATION ATTRIBUTES

Format of the book

The exercises presented in this manual read more or less like a cookbook. If you take the time to carefully read the directions, you can get through the exercises with minimal difficulty. Any Challenge steps in the exercises are optional.

The format of this notebook is as follows:

- Indented paragraphs preceded by a square bullet (□) are specific instructions for you to follow.
- General paragraphs are left justified and explain what you will see either before or after taking a specific action.
- *Italicized* sentences are comments and hints from the author.
- Paragraphs proceeded by a graphical icon (see further) provide additional information, tips, important notes, or warnings to the user related to the topic at hand.

 = Note, tip, or for your information (FYI)

 = Important note, warning, show stopper

Course disclaimer

The functions and procedures presented in this manual are under constant revision. Screen captures and specific instructions presented in this manual may no longer be current.   The datasets used in the examples and exercises are for training purposes only, and should not be used for actual analysis or reporting.

Exercise 1: Equipment Check

Exercise goal: The intent of the exercise is to ensure that the user has all of the hardware and software they will need to complete the training and to collect field Range Data.

Upon completion of the exercise, the student will be able to…

✓ Ensure the correct software is loaded on the computer.
✓ Ensure the correct Operating System and software is loaded on the Mobile Device.
✓ Charge the Mobile Device
✓ Copy Data to the Mobile Device

FIELD DATA COLLECTION STEP DESCRIPTION   **PAGE**

1   Ensure the correct software is loaded on the computer   1-

2   Ensure the correct Operating System and software is loaded on the Data Collector   1-

3   Charging the Data Collector   1-

4. Copy Data to the Field Data Collector

Step 1: Ensure the correct software is loaded on the computer

For Non-Citrix Users:

☐ Log in to your BLM Computer. Click on the Start Button in the lower left corner. Look for Microsoft Office Excel in the list of program shortcuts. If you use Citrix to access Microsoft programs, please log in to your Citrix Farm to look for the software.
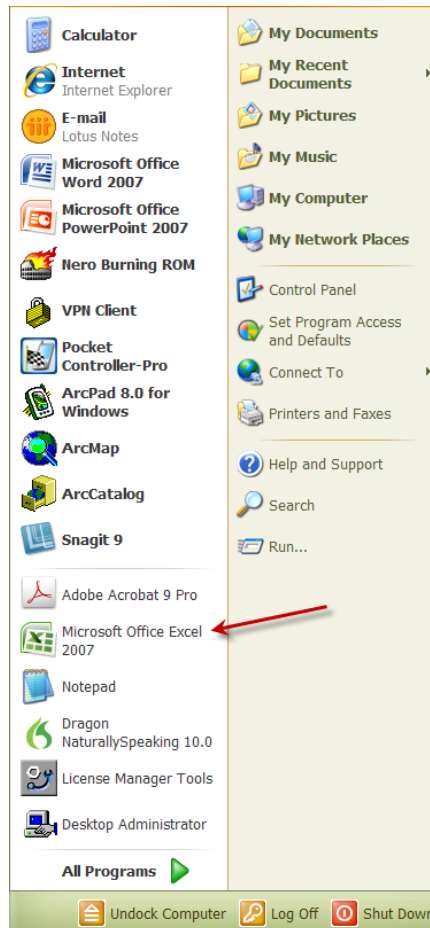
☐ If you do not see MSExcel, Click on All Programs and check in the MSOffice Suite of Programs for Microsoft Excel
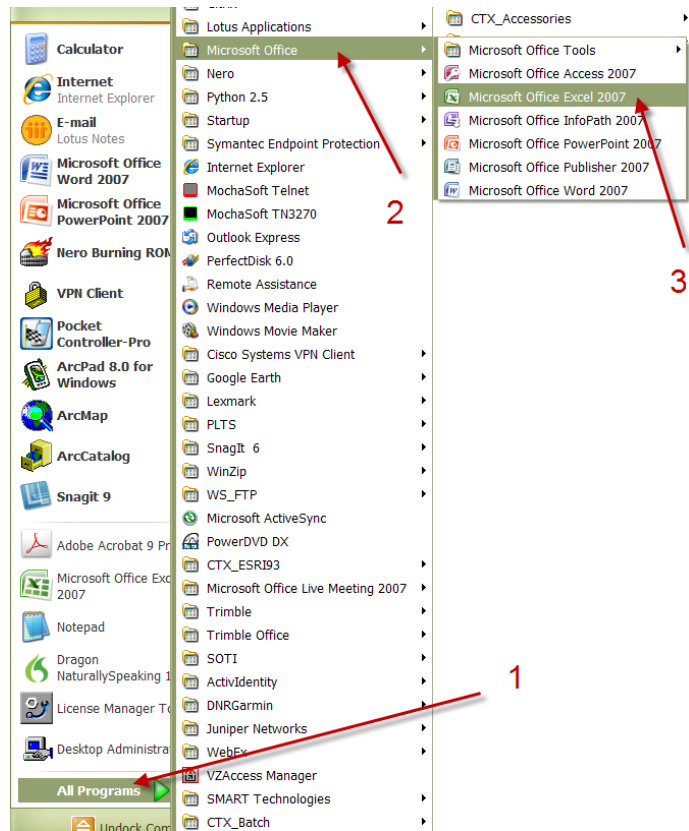
☐ While you are in the All Programs menus, check to see if Microsoft ActiveSync is installed.
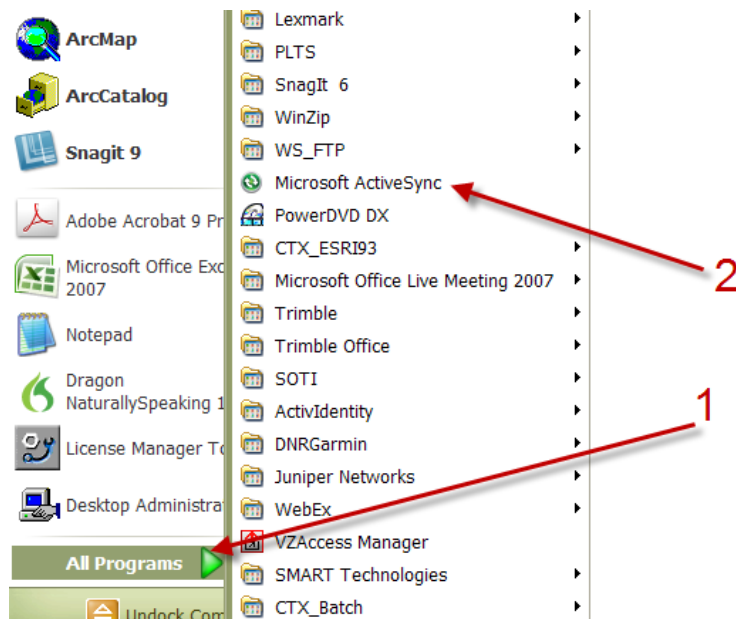

For Citrix Users:

☐ If you access computer programs through Citrix, log into your Citrix Farm as you normally would. One way to check for the application is to click on the Citrix Icon in the computer system tray in the lower right corner of your computer screen.

☐ To check for MS Excel, Left click on the Citrix icon. You may need to left click on the Citrix (CTX) MS Office group of programs before you see CTX Excel.
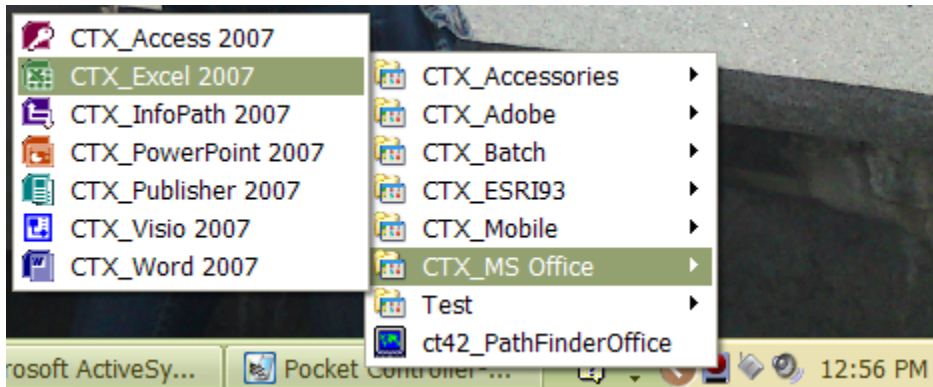
☐ To look for MS Activesync, left click on Citrix. MS Activesync may be listed in the group of CTX_Accessories, CTX_Mobile, CTX MS Office or another group of programs.
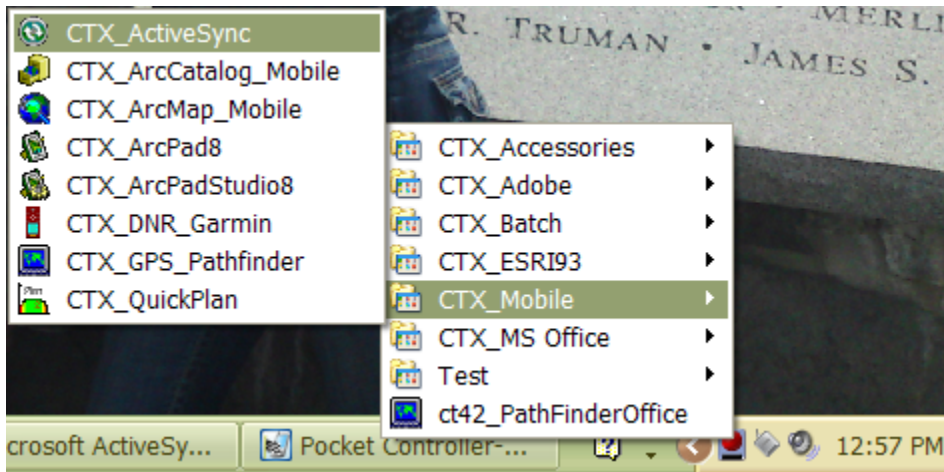
Caution: If you are missing either program, put in a Help Desk Ticket to have the software installed. MS Activesync is free and downloadable from Microsoft.com. You cannot complete the training or the data collection until both softwares are loaded.

Congratulations! You now know about:

1 *Ensure the correct software is loaded on the computer*

Step 2: Ensure the correct Operating System and software is loaded on the Data Collector

☐ Turn on the Data Collector. In our examples, we will use a Trimble Juno. The Power Button is a silver button on the upper right side of the unit.


Tip: Learn from BLM experience! Note that in the photograph the wrist lanyard is attached to the lower right corner of the Juno. Be sure to attach and use the lanyard or you will inadvertently throw it (against a rock) or drop it (in a lake).

☐ Pull the stylus from the upper right corner of the Juno. Tap on the Start button on the Juno (may be in upper right corner of the screen).
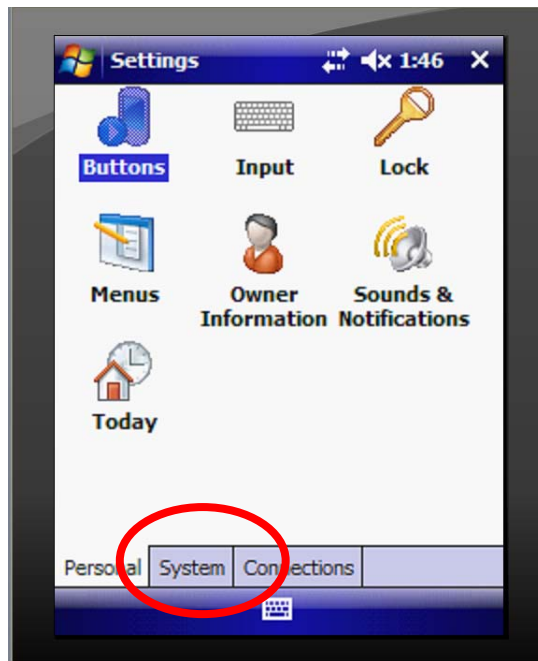

☐ Tap on Office Mobile in the drop down list to check for Excel Mobile.
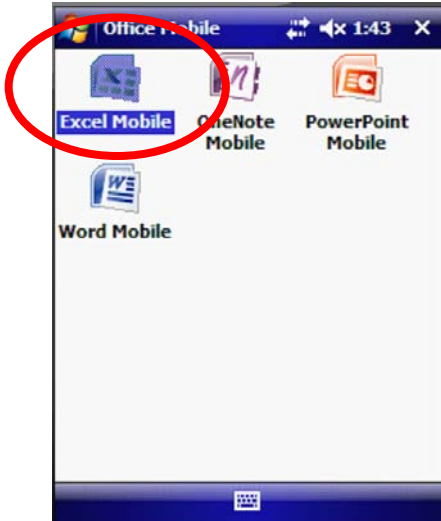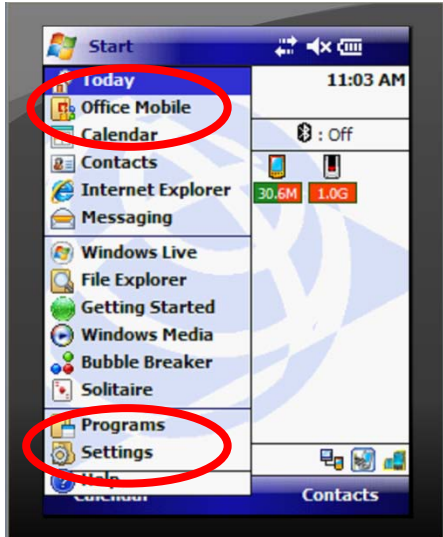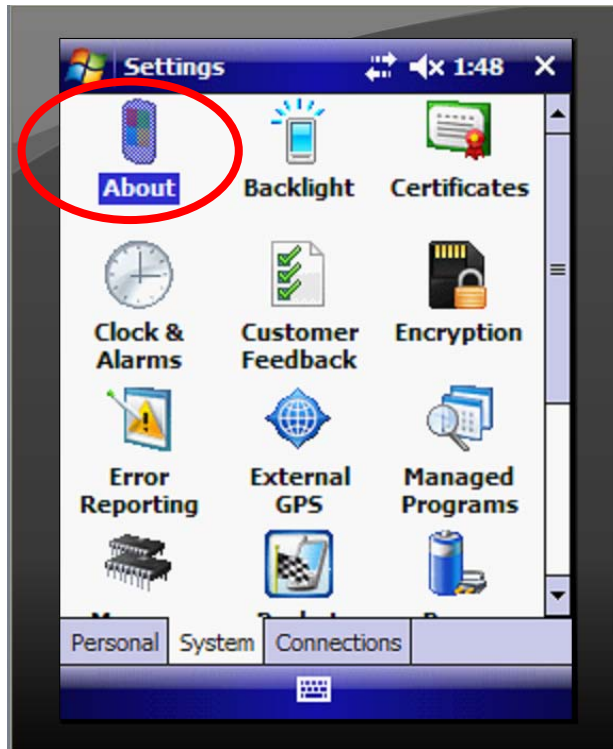
□ Click the X in the upper right corner of Office Mobile to close the last window.

□ Tap on the Start Button again on the main welcome page. This time go nearly to the bottom of the dropdown list and tap on Settings.


□ There are three tabs near the bottom of the screen: Personal, System and Connections. Tap on the System tab.

Tip: Note that the Systems screen will allow you to align your screen, set the date and time, control your backlight and power consumption and much more. These are not covered in this training but please explore these settings for your own preference.

☐ Tap on the "About" icon. The next screen will indicate your operating system. Ensure that it is Windows Mobile.
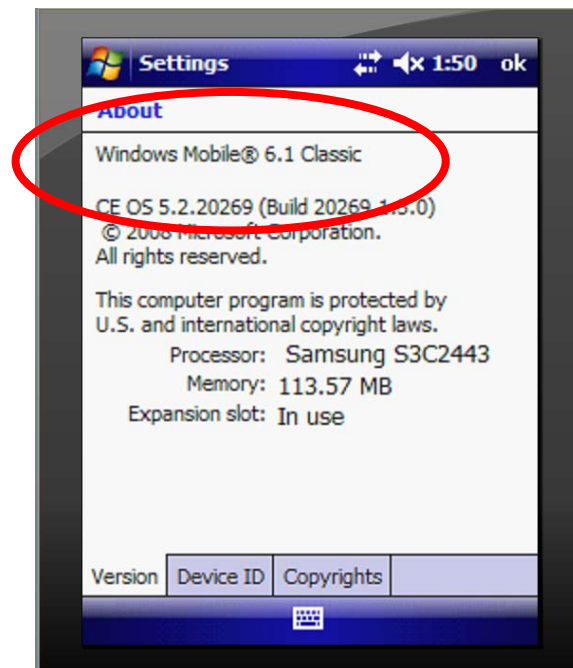
☐ Click OK and X in the uppoer right corner to close the Settings and the System windows and return to the main Welcome screen.
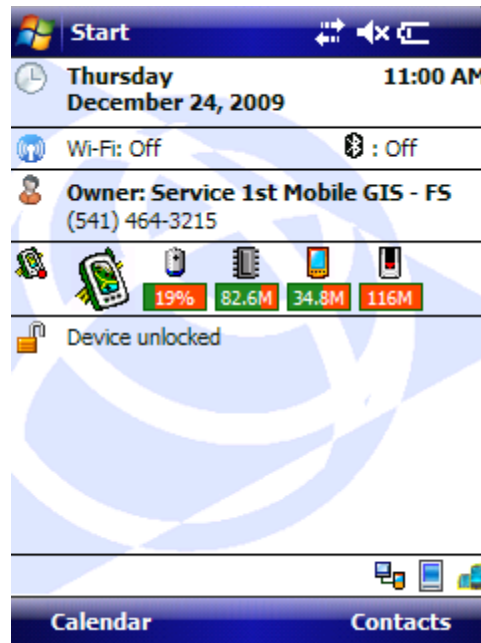
Caution: If you are missing either program, put in a Help Desk Ticket to have the software installed. You may proceed cautiously if you have any version of MSExcel on the Juno device. The MS Excel forms may work with other versions but may be less predictable.

Ensure all the cables work between the computer and the Data Collector

Congratulations! You now know about:

2   *Ensure the correct Operating System and software is loaded on the Data Collector*

Step 3: Charging the Data Collector

☐ Plug in the power cord to a surge protected wall outlet. Plug the other end into the power port at the bottom edge of the Juno.
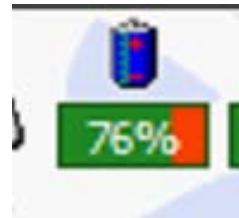
☐ Look on your GPS unit to see that the icon on the front welcome page has changed to indicate that it is charging.
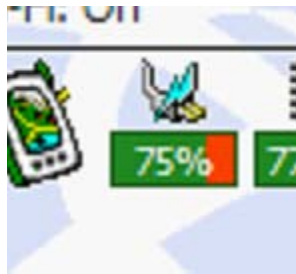
Charging   Not Charging

 Tip: You can charge your Juno from the computer battery when it is connected to the computer. However, we have found that sometimes, the unit gets very low and requires a full recharge from a power outlet.

Congratulations! You now know about:

3 *Charging the Data Collector*

Step 4: Copy Data to the Field Data Collector

☐ Connect the computer cable to the USB port of your computer. Connect the other end to the port on the lower edge of the Juno. You will have to raise the rubber curtain to get to the port.


☐ ActiveSync will probably come up on your computer screen. If not, Go to your system tray or to the Start Menu and click on the Activync idcon. A wizard may appear to synchronize your computer and Juno files. Do not synch your Juno.Tap cancel.
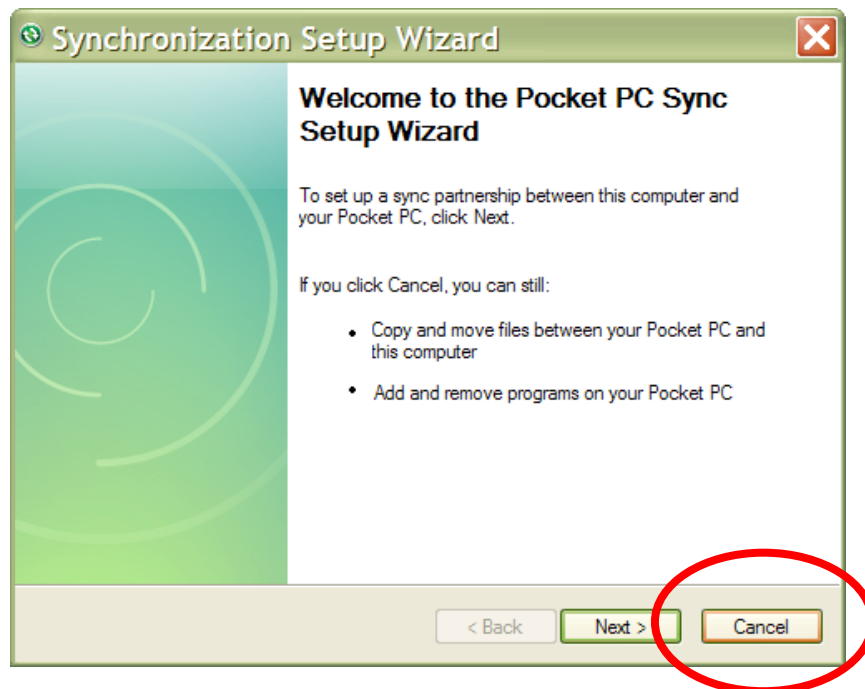
☐ The next window will show that you are connected. Close or minimize the window by clicking on the X or the bar tool in the upper right of the ActiveSync window.
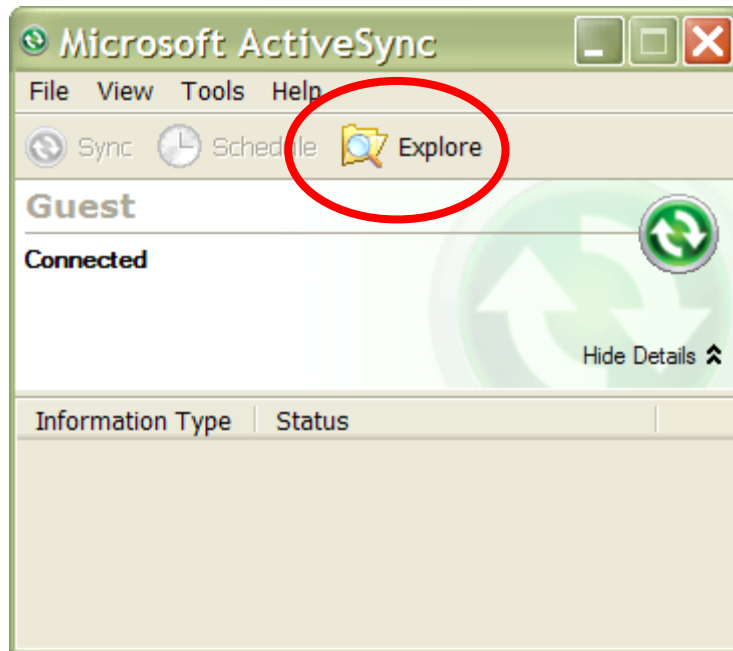

☐ Tap the Explore icon in the Microsoft Activesync Window. This will open Windows Explorer to the correct locations whether you are using Citrix or not. Windows Explorer will open the files on the Mobile Device (the Data Collector).
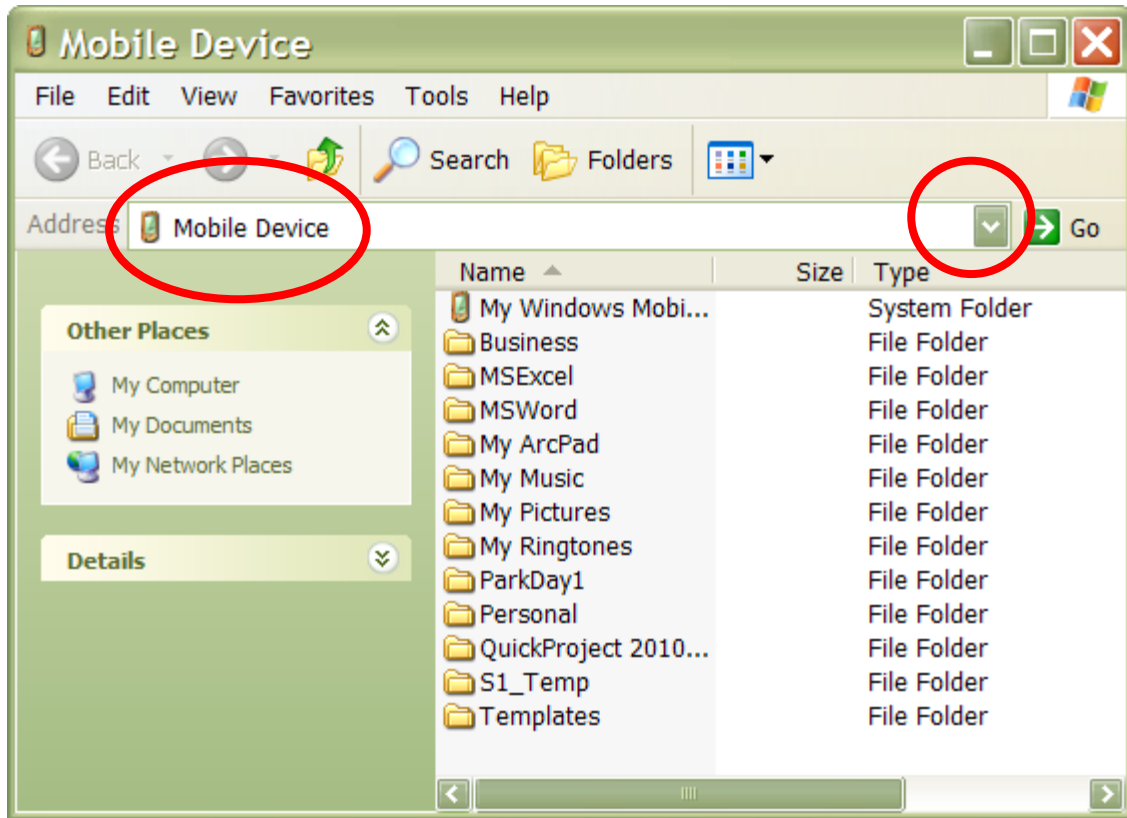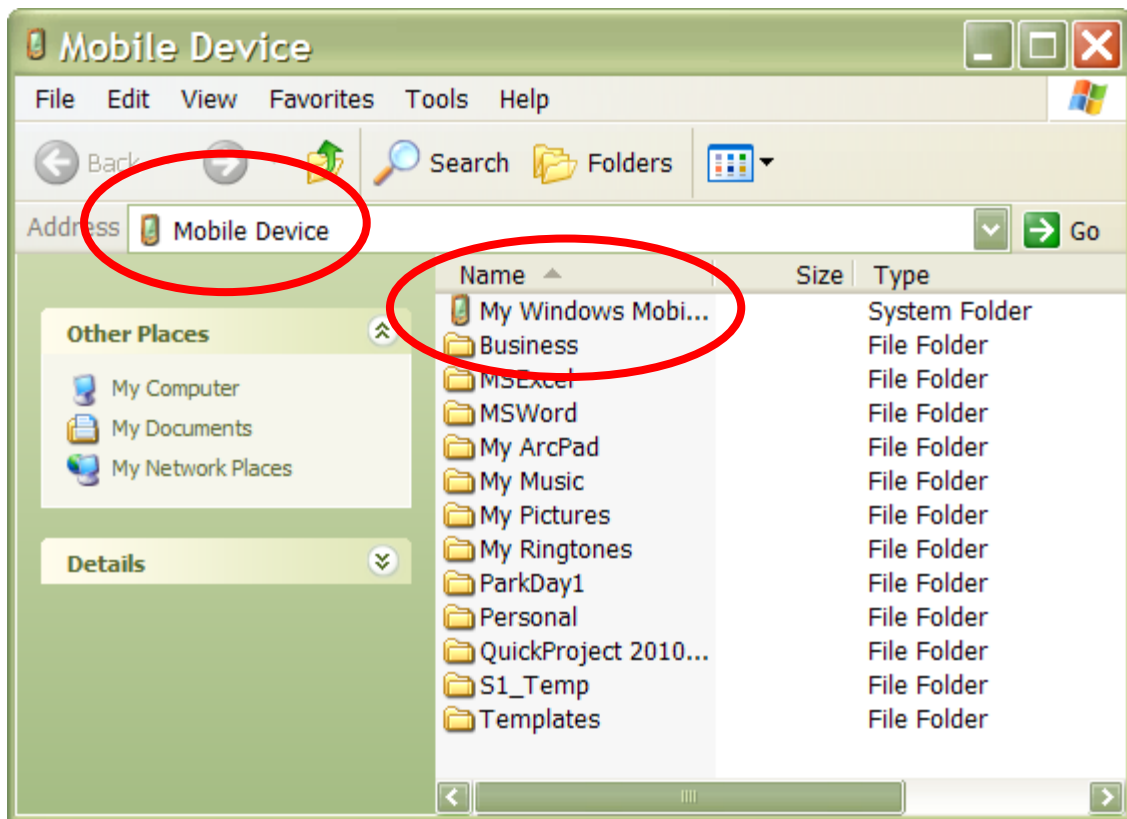
☐ Click the drop down arrow in the Address bar and navigate to the location where you have the MSExcel spreadsheet (currently named Master_Range_Monitor_Forms_v7_2010.xlsx).
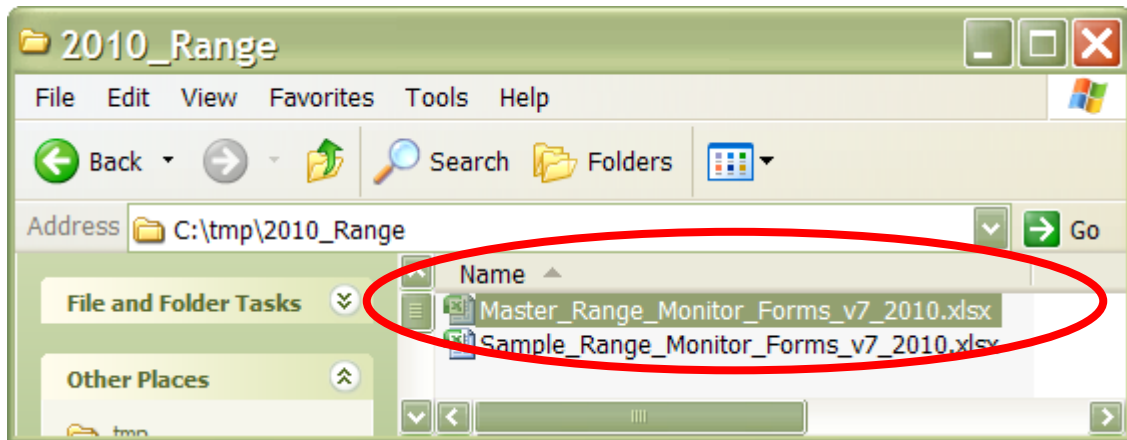

☐ Click the drop down arrow in the Address bar and navigate to the location where you have the MSExcel spreadsheet. Tap once on the Master_Range_Monitor_Forms_v7_2010.xlsx file to select it.
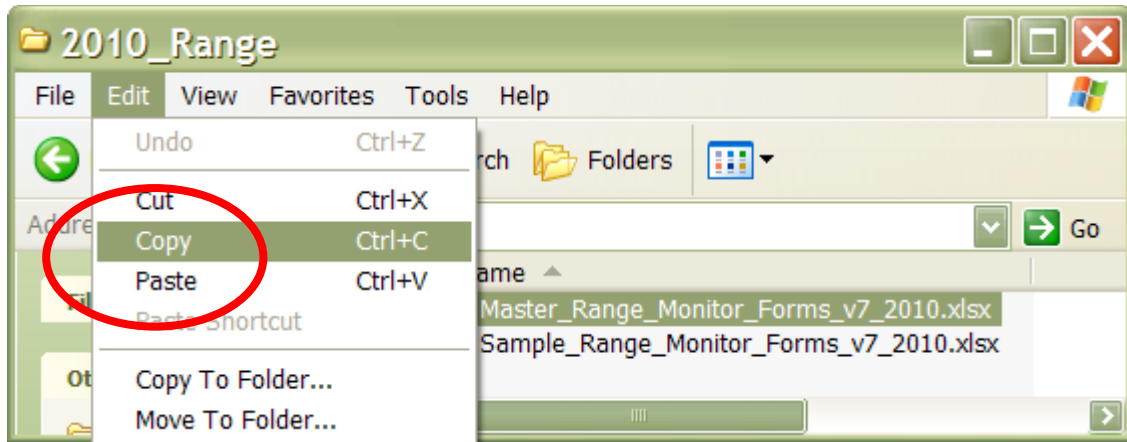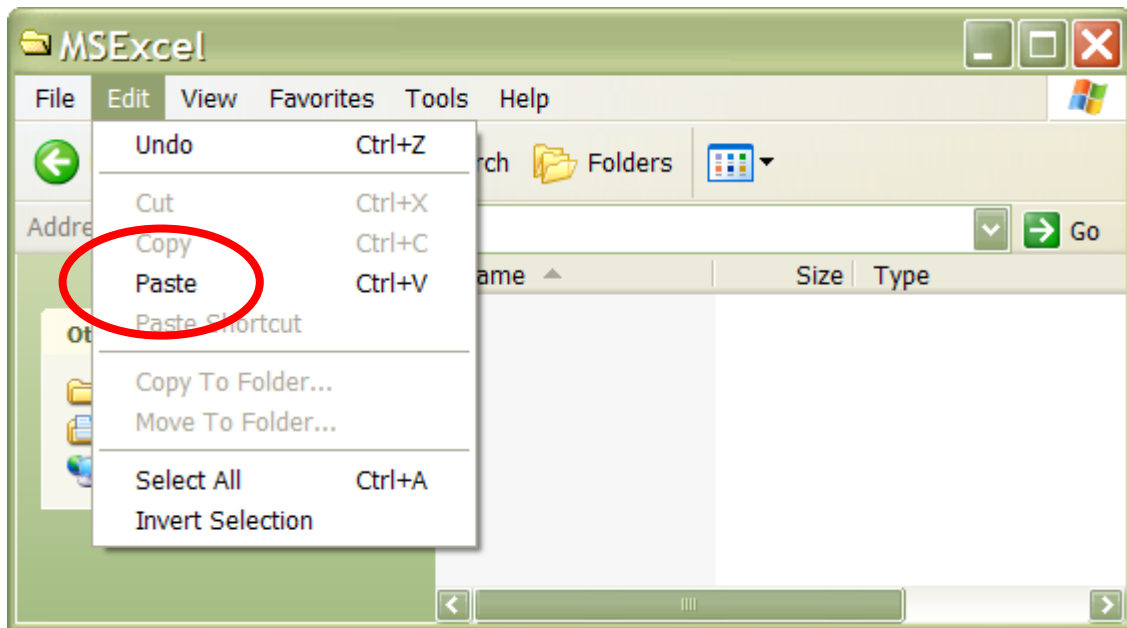
□ Tap on the edit menu under the title bar. From the dropdown list, tap on the Copy command.

□ Tap on the dropdown arrow to the right of the address bar. Scroll toward the bottom to find the Mobile Device. Click on Mobile Device. Click on My Windows Mobile Based Device in the lower window.
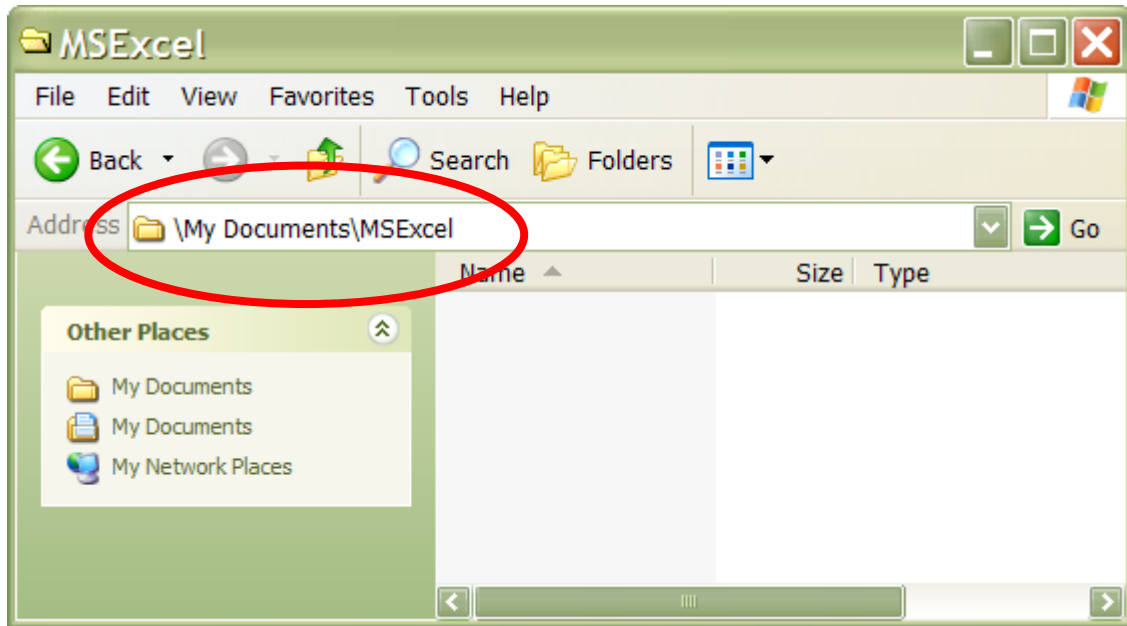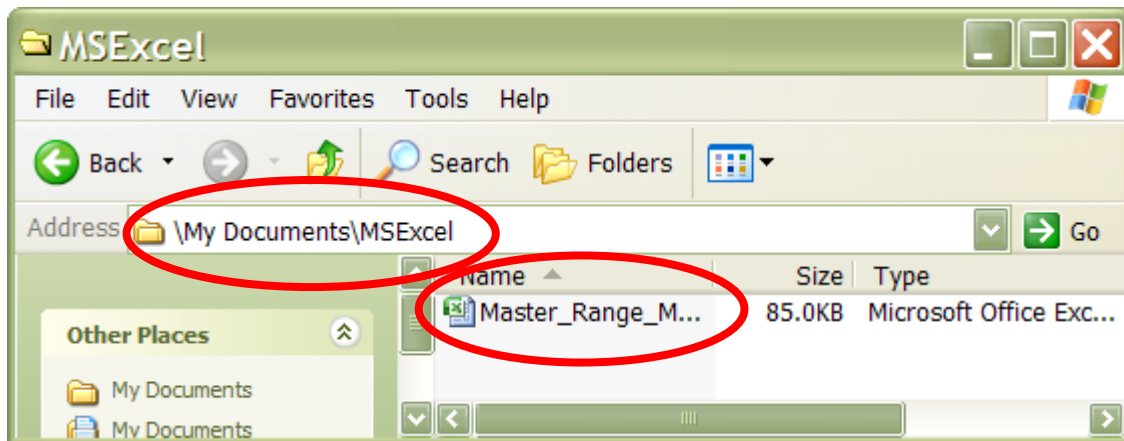
☐ Tap on the My Documents folder. Tap on the MSExcel folder. It may or may not be empty. We will want to paste our MSExcel spreadsheet here.
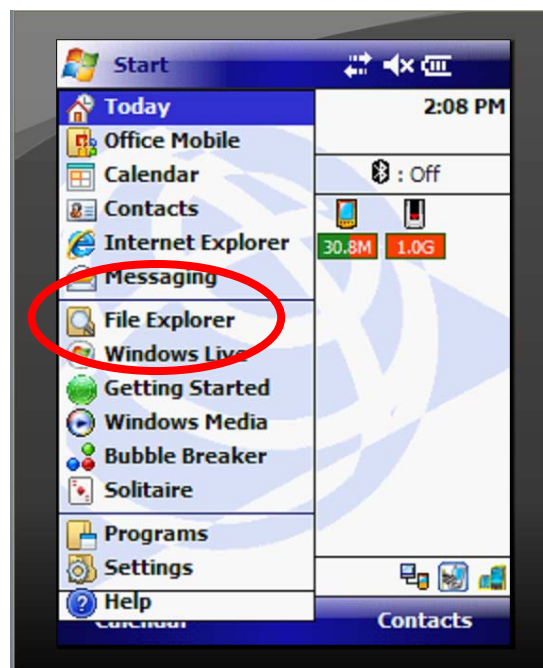

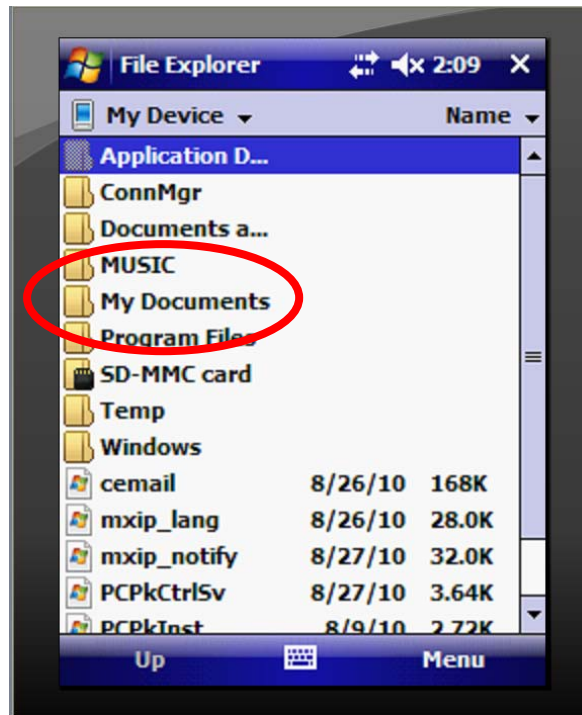☐ Tap on the Edit menu and tap on Paste from the drop down list.
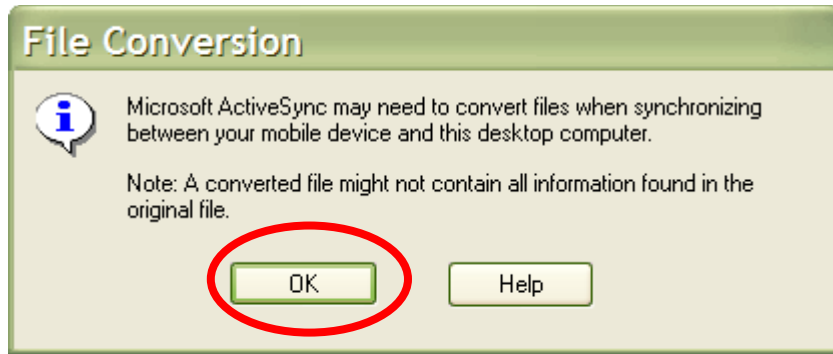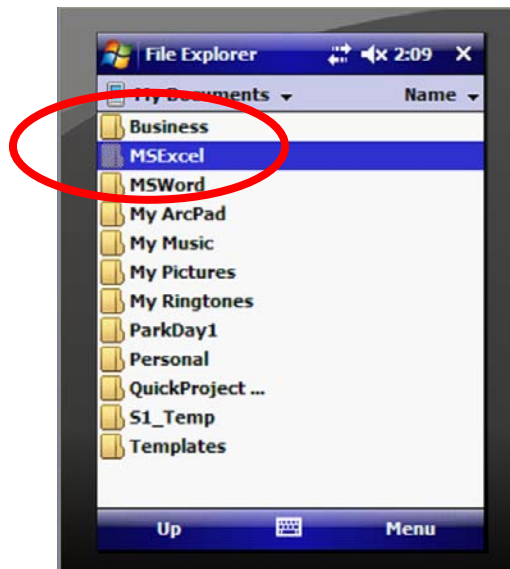
☐ When you see the File Conversion message, Tap OK.

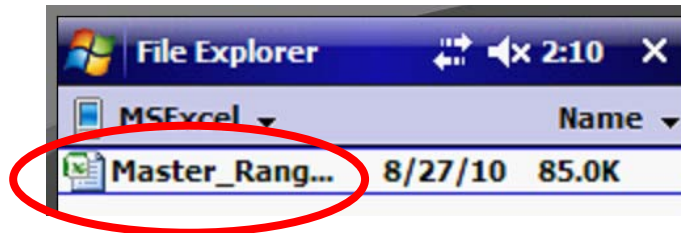☐ When you have pasted the Master Range Range Monitor forms, the title will appear in the window.

☐ Pick up your Juno Mobile Device. Be sure it is turned on. Tap on the start button. From the dropdown list, tap on File Explorer.
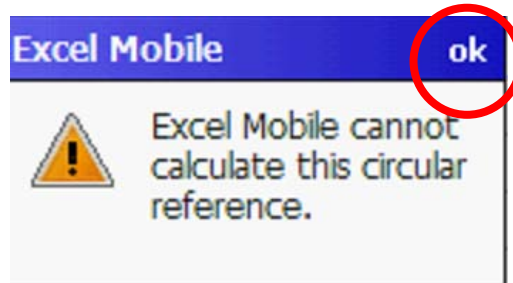

☐ Tap on My Documents.

☐ Tap on the MS Excelfolder. Tap on Master Range Monitor Forms.xlxs.

☐ Tap on Master Range Monitor Forms.xlxs.

☐ Tap OK on the warning window. Despite multiple error checks on the formulas, the cause of this error has not been found. It does not appear to affect performance. Please phone Cindy Lou McDonald (ORWA BLM)and notify your range lead if you can resolve this issue so we can get rid of the blasted thing!
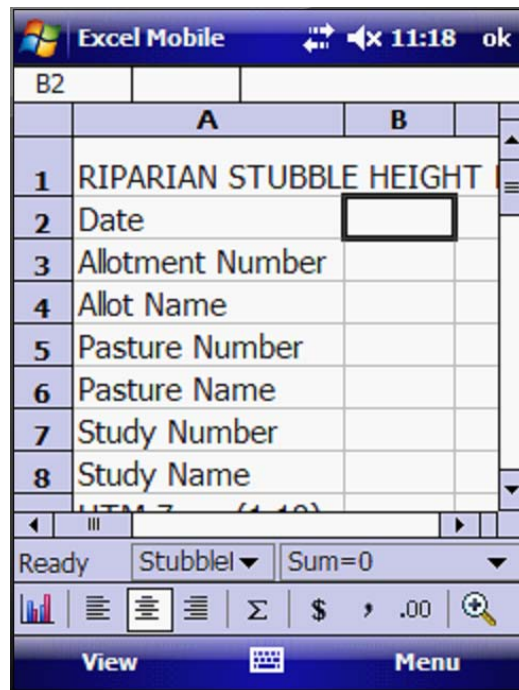
☐ The MSExcel Spreadsheet Opens. Leave the screen open as you are now ready to move on the Exercise 2.

Congratulations! You now know about:

4   Copy Data to the Field Data Collector

Summary Exercise 1

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

- ✓ Ensure the correct software is loaded on the computer.
- ✓ Ensure the correct Operating System and software is loaded on the Mobile Device.
- ✓ Charge the Mobile Device
- ✓ Copy Data to the Mobile Device

End Exercise 1

Exercise 2
Complete the Stubble Height Form

Exercise goal: The intent of the exercise is to ensure that the user is familiar with the Stubble Height Form in the Computer and can complete and save the form on the Mobile Device.
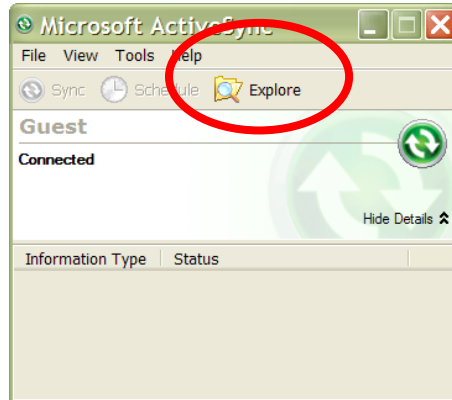
Upon completion of the exercise, the student will be able to…

✓ Open and review the Sample Stubble Height Form in the computer.
✓ Use the keyboard to complete the Stubble Height Form on the Mobile Device
✓ Test to ensure the calculations are automatically working on the Mobile Device
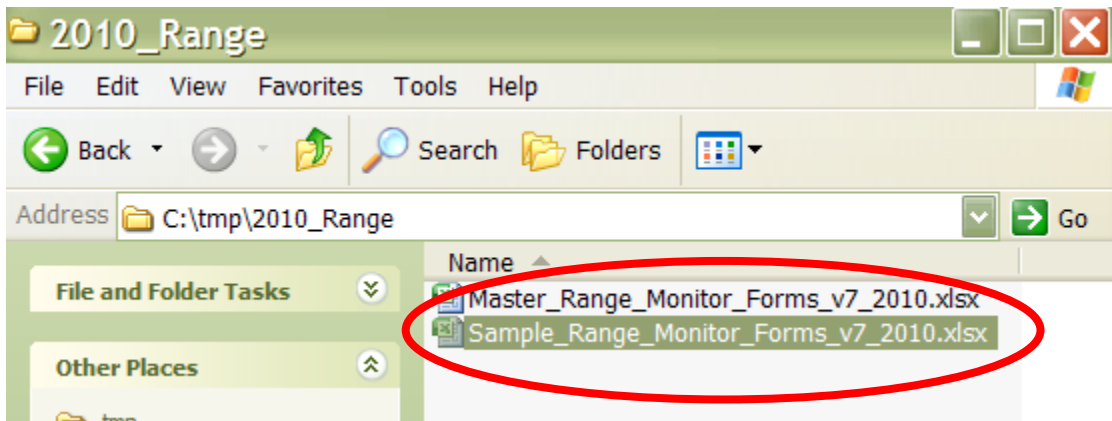✓ Save the MSExcel spreadsheet with a new name on the Mobile Device

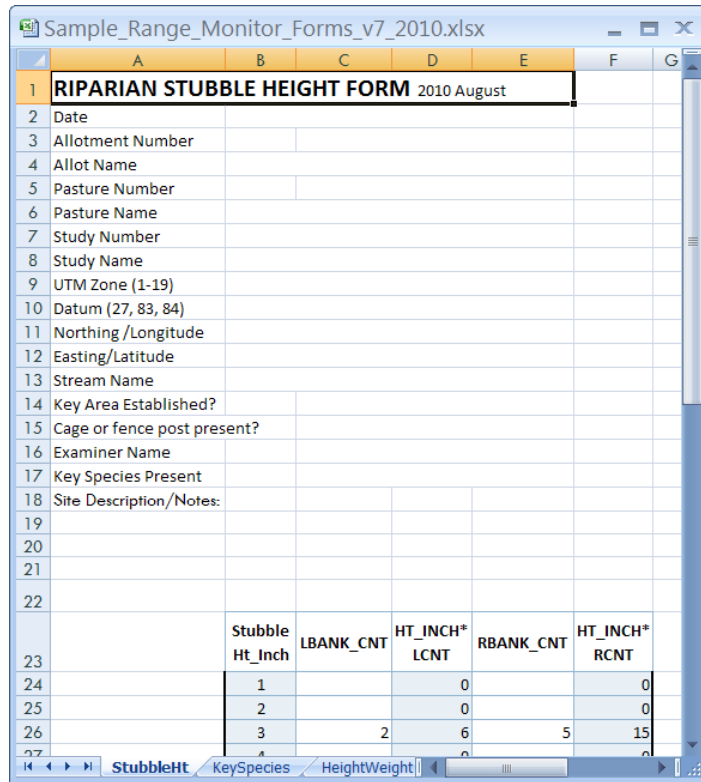## Step 1: Open and review the Sample Stubble Height Form in the computer
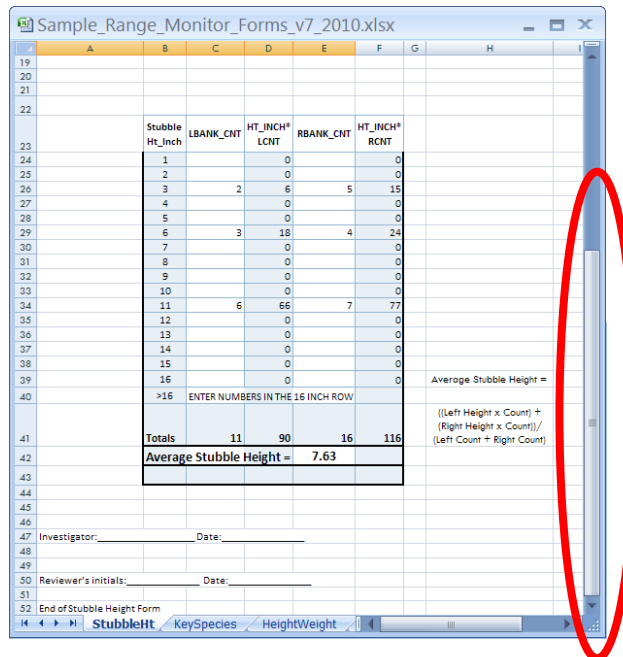
☐ Connect the Mobile Device to the computer.

☐ In the Active Sync Connection Window, Tap Explore.

☐ Navigate to the drive on the computer where you have stored the Sample and Master Range Monitor Spreadsheets. Double click on the Sample Range Monitor Form to open it.

Sample_Range_Monitor_Forms_v7_2010.xlsx

	A	B	C	D	E	F
1	**RIPARIAN STUBBLE HEIGHT FORM** 2010 August					
2	Date					
3	Allotment Number					
4	Allot Name					
5	Pasture Number					
6	Pasture Name					
7	Study Number					
8	Study Name					
9	UTM Zone (1-19)					
10	Datum (27, 83, 84)					
11	Northing /Longitude					
12	Easting/Latitude					
13	Stream Name					
14	Key Area Established?					
15	Cage or fence post present?					
16	Examiner Name					
17	Key Species Present					
18	Site Description/Notes:					

	Stubble Ht_Inch	LBANK_CNT	HT_INCH* LCNT	RBANK_CNT	HT_INCH* RCNT
24	1		0		0
25	2		0		0
26	3	2	6	5	15

Sheet tabs: **StubbleHt** / KeySpecies / HeightWeight

☐ Double click on the file to open it.

Sample_Range_Monitor_Forms_v7_2010.xlsx

|	Stubble Ht_Inch	LBANK_CNT	HT_INCH* LCNT	RBANK_CNT	HT_INCH* RCNT		H
24	1		0		0		
25	2		0		0		
26	3	2	6	5	15		
27	4		0		0		
28	5		0		0		
29	6	3	18	4	24		
30	7		0		0		
31	8		0		0		
32	9		0		0		
33	10		0		0		
34	11	6	66	7	77		
35	12		0		0		
36	13		0		0		
37	14		0		0		
38	15		0		0		
39	16		0		0		Average Stubble Height =
40	>16	ENTER NUMBERS IN THE 16 INCH ROW					
41	Totals	11	90	16	116		((Left Height x Count) + (Right Height x Count))/ (Left Count + Right Count)
42	Average Stubble Height =		7.63				
47	Investigator:_____ Date:_____						
50	Reviewer's initials:_____ Date:_____						
52	End of Stubble Height Form						

Sheet tabs: **StubbleHt** / KeySpecies / HeightWeight

☐ Scroll down to the bottom of the form. Note that the far left column is a list of possible stubble height measures, from 1 to more than 16 inches. Your job is to count the number of times you find each stubble height on the right or left bank. Therefore, your data entries will always be consecutive, as "1, 2, 3, etc" in the corresponding height column. Both the Height in inches

1 26

column and the overall Average Stubble Height are calculated automatically each time a new count **is measured.**
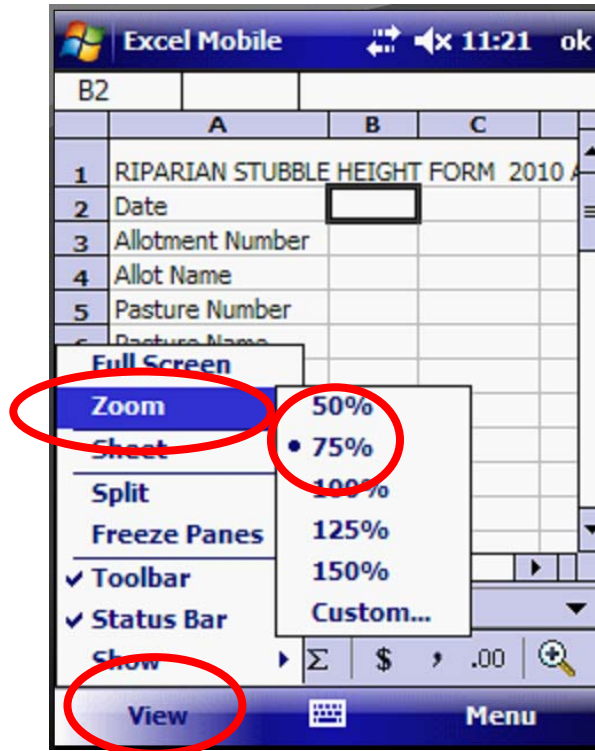
Congratulations! You now know about:

## 1   Open and review the Sample Stubble Height Form in the computer

## *Step 2: Use the keyboard to complete the Stubble Height Form on the Mobile Device*
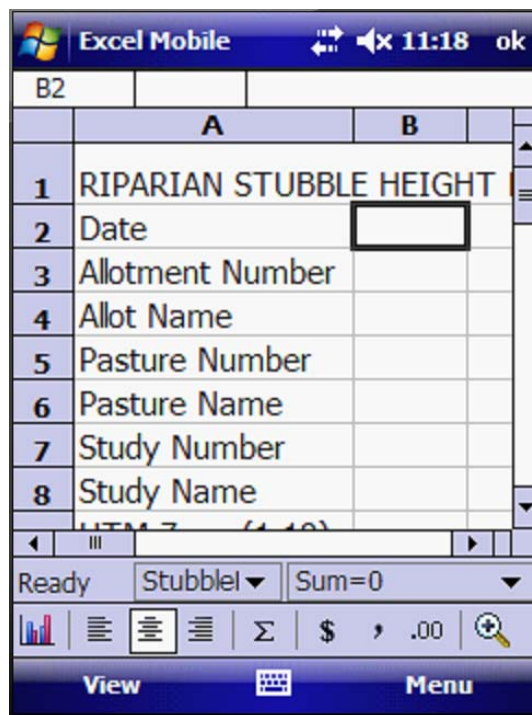
☐ Turn to your Juno Mobile Device, which is already opened to the Stubble Height Form from Exercise 1.

☐ With your stylus, tap on the View command in the lower left portion of your screen. Tap on Zoom. Tap on 75%. This will allow you to see more of the form in your view. When you are working in bright sun, you may need to increase the zoom so you can see the screen.
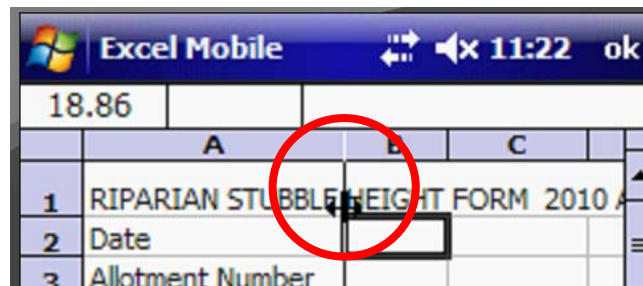
☐ Tap on the line at the top between the A and B column and drag the A column wider so you can read all the items in the column.
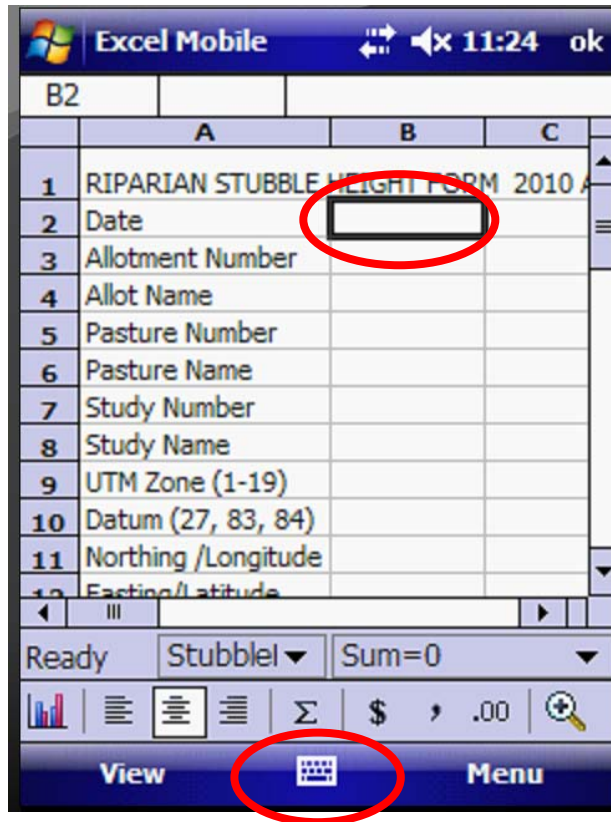
☐ Tap on the keyboard icon in the bottom center bar. This will unfold the keyboard on your screen. Tap in cell B2 and enter today's date using the keypad.
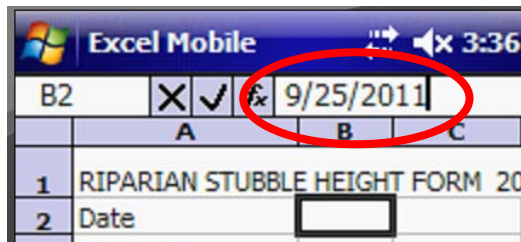
☐ Note that the data does not enter into the cell. You must first enter it in one of three ways. Use whichever technique you prefer:

1. Tap on the check mark near the top of the screen OR
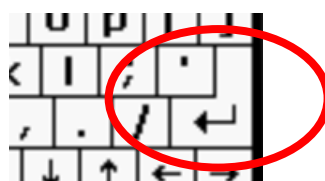
2. Tap on the "Enter" (carriage return) key on the keyboard, OR

3. Tap on Cell B3 to begin entering the Allotment Number. The date will pop into the B2 Date cell

 Tip: If the "B" column is too narrow, the date displays as ####. Use the skills learned previously in this exercise to widen the B column. You will then see the date properly displayed.
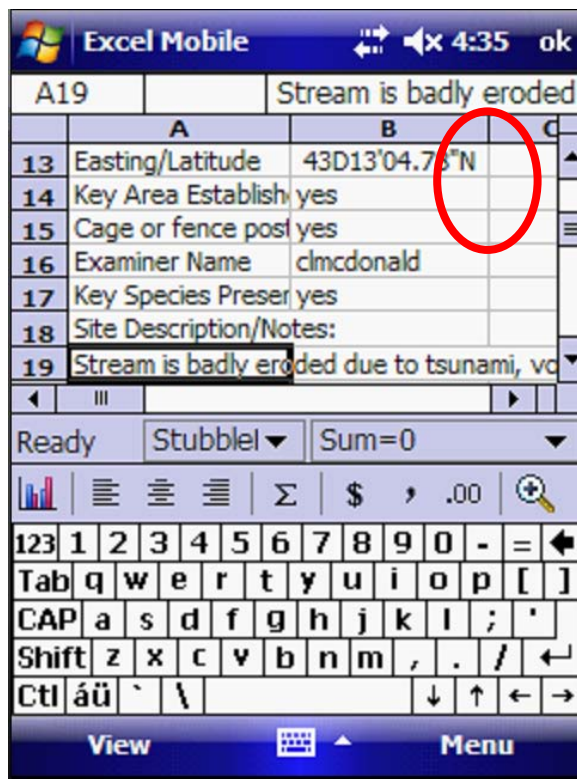
☐ Using the stylus, type in the stream name. Continue to complete the remainder of the top of the Stubble Height form.

Tip: If you tap and hold on a cell with the stylus, a menu will pop up that allows you to cut, copy, paste, clear and complete other functions. On the Juno, a "tap and hold" is the same as a right mouse click on a computer.
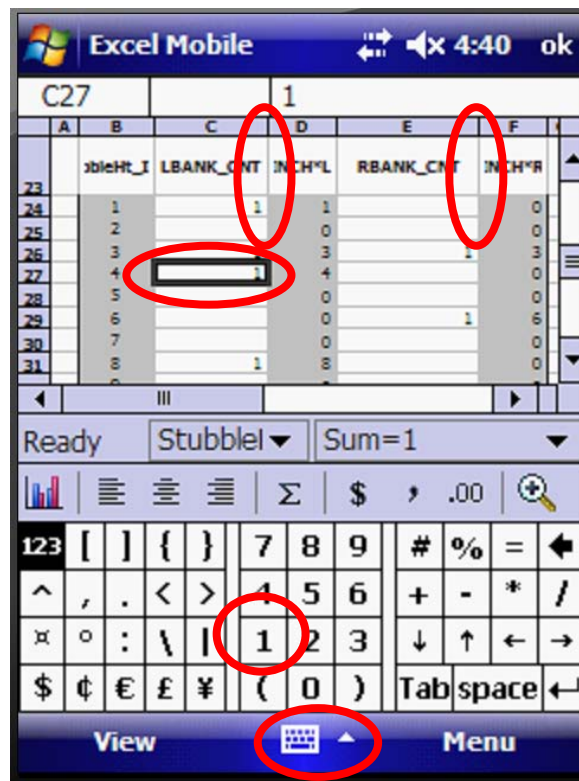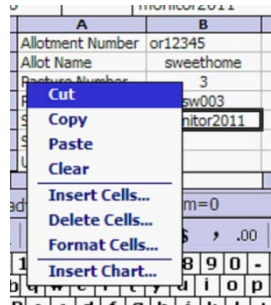
☐ Scroll down to the data entry table. Resize the columns so you can easily enter data.

☐ Practice entering data. Be sure each cell starts at "1" and moves up progressively (2, 3, 4, …), to mimic your actual field data entry.

Congratulations! You now know about:

2   Use the keyboard to complete the Stubble Height Form on the Mobile Device

Step 3: Test to ensure the calculations are automatically working on the Mobile Device
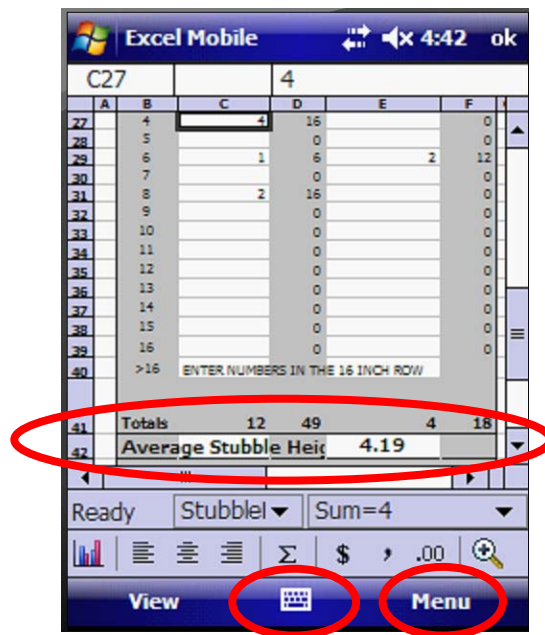
☐ Tap on the keyboard icon at the bottom of the screen to fold it up.
Scroll down to the bottom. Make sure that the formulas in Column D, in
Column F, in the Totals at the bottom and on the Average Stubble Height
are automatically working.

Tip: If the formulas are not working, test the Master in the Computer. If it is working, copy the form back into your Mobile Device as instructed in Exercise 1 and test it again. If the Master in the Computer is broken, download a new copy from your technical support staff person.

Congratulations! You now know about:

3   Test to ensure the calculations are automatically working on the Mobile Device

Step 4: Save the MSExcel spreadsheet with a new name on the Mobile Device
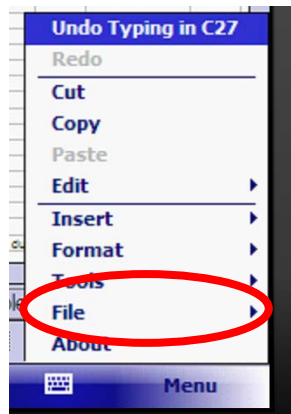
☐ Tap on Menu in the lower right corner of the screen. From the popup list, choose File. You will now save your work.
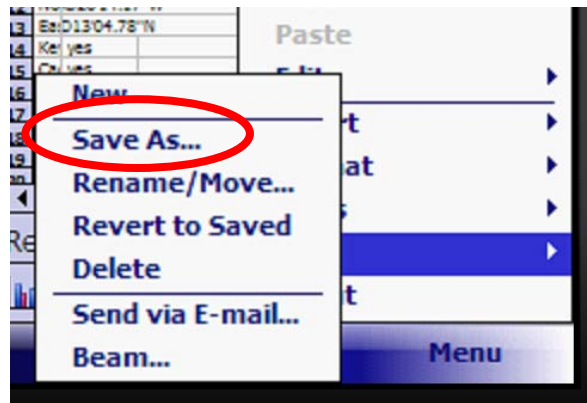
☐ In the next list that pops up to the right of the File command, choose "Save As…"

☐ A warning message appears. Tap OK in the upper right corner of the warning message box.
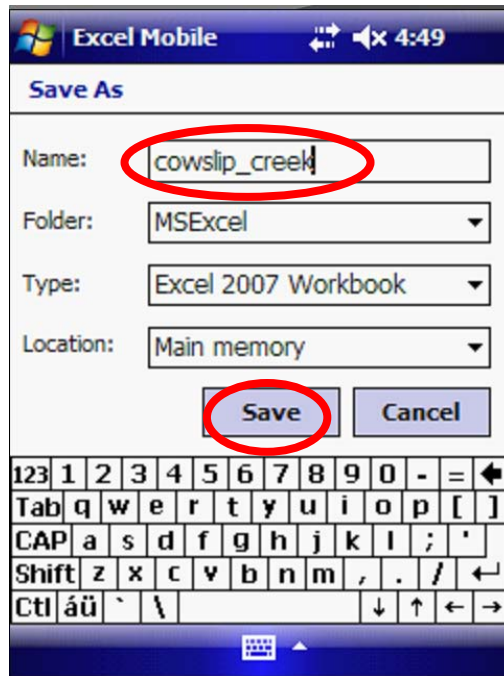
☐ In the next window, using the keyboard, type in the name of your project or file. Leave the rest of the entries at their default. Tap the Save button.

Tip: If you have many projects, you may wish to save them to the SD card instead of the main memory. If this is your workflow, in the Save As window, you should change the Location: from the Main Memory to the SD Card, using the drop down arrow to the right of the Location: data entry cell.

Tip: You have already learned how to show and hide the keyboard by tapping on the keyboard icon in the lower center of your screen. You can also toggle between the number and the alphabet keyboard. When you see the QWERTY alphabet keyboard, tap on the 123 key in the upper right side of the keyboard.

This will bring up numbers and symbols. To return to the QWERTY alphabet keyboard, tap the 123 key again, in the upper right corner.
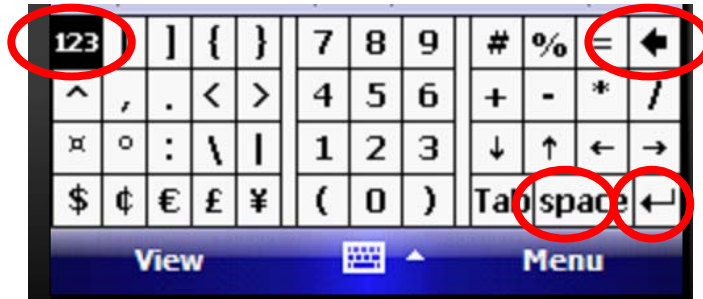
OFrom the QWERTY alphabet keyboard, you also have a CAP key to CAPITALIZE the letters. This is also a toggle. Tap CAP a second time to return to entering lower case letters.

On all three keyboards, you also have a backspace (or delete) key, an "enter" key, and a space key. These three items are circled on all three keyboards, above.
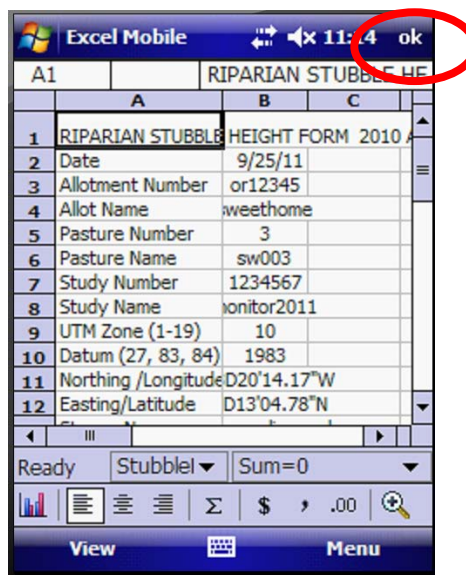
☐ Tap OK on the Stubble Height Form after you have saved it. This will close the form.
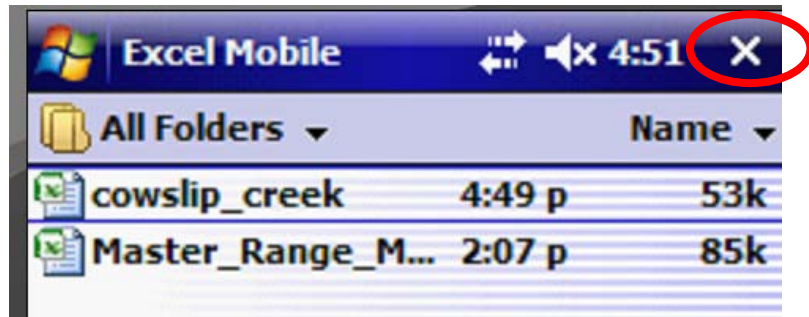
☐ Tap on the "x" to close the MSExcel directory. Note that your new project appears in the folder with the master spreadsheets.
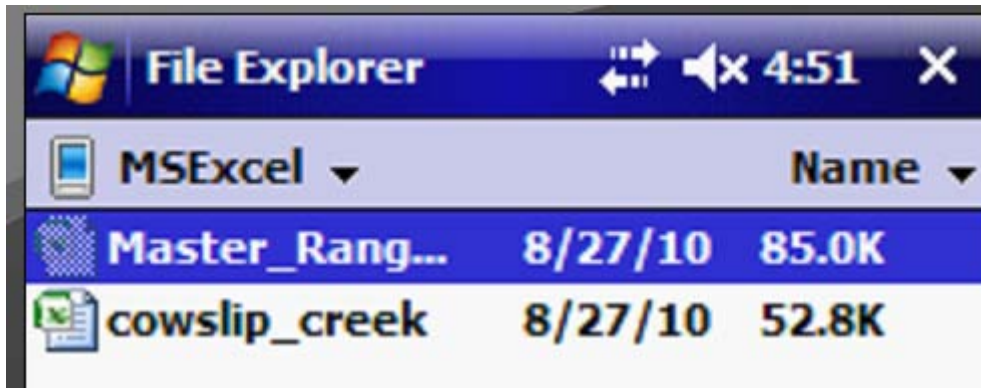
☐ Tap on the "x" to close the File Explorer window.
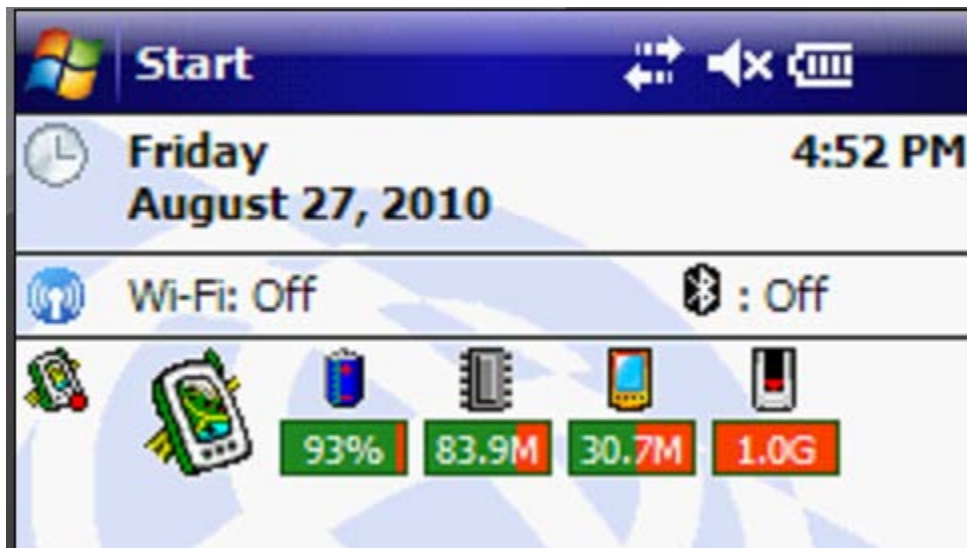
☐ You are returned to the main Welcome screen. Turn off the Juno by holding the Power button on the upper right side for about 5 seconds. It will not consume additional battery power when turned off this way.

Tip: To just turn off or suspend the screen, hold the Power button for less than one second until the screen goes blank. The screen is turned off, but the Juno is still active and consuming battery power when suspended.

Congratulations! You now know about:

4   Save the MSExcel spreadsheet with a new name on the Mobile Device

Summary Exercise 2

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

- ✓ Open and review the Sample Stubble Height Form in the computer.
- ✓ Use the keyboard to complete the Stubble Height Form on the Mobile Device
- ✓ Test to ensure the calculations are automatically working on the Mobile Device
- ✓ Save the MSExcel spreadsheet with a new name on the Mobile Device

End Exercise 2

Exercise 3
Complete the Key Species Form

Exercise goal: The intent of the exercise is to ensure that the user is familiar with the Key Species Form in the Computer and in the Mobile Device

Upon completion of the exercise, the student will be able to…

✓ Open and review the Sample Key Species Form in the computer.
✓ Copy and Paste Data on the Mobile Device
✓ Complete the Key Species Form on the Mobile Device

Note: Basic commands in the Juno are covered in Exercises 1 and 2. Please complete these introductory exercises before you attempt Exercise 3.

Step 1: Open and review the Sample Key Species Form in the computer

☐ Connect the Mobile Device to the computer.
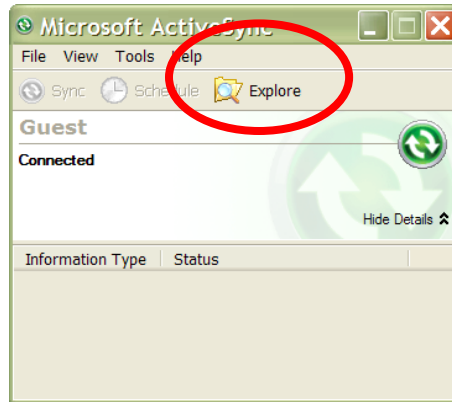
☐ In the Active Sync Connection Window, Tap Explore. Navigate to the drive on the computer where you have stored the Sample and Master Range Monitor Spreadsheets.

☐ Double click on the Sample Range Monitor Form to open it.

□ At the bottom of the screen, tap on the second tab "KeySpecies" to open the worksheet.
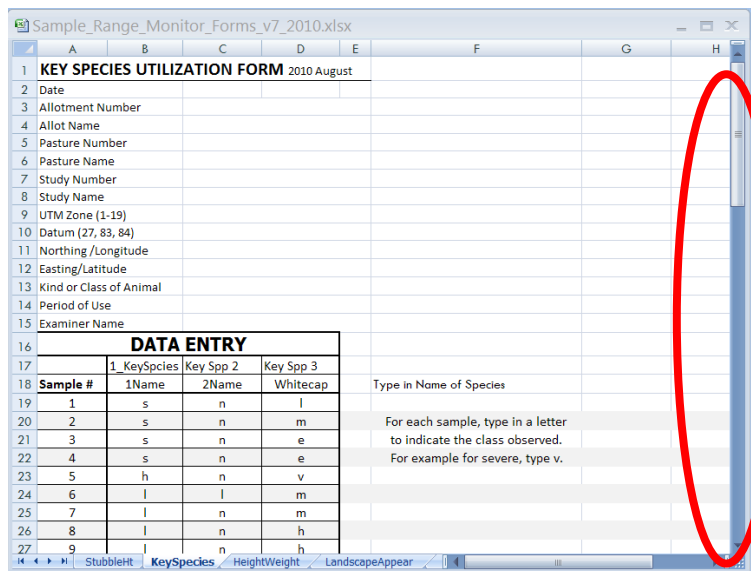
□ Scroll down to look at the entire worksheet.

ℹ️ **Tip:** Note that the center of the worksheet has Totals at the bottom of the Data Entry Form, a Class Interval Calculation chart and a Summary of Percent Utilization by Species Chart. The user will not enter anything into these charts as they are automatically calculated. The bottom of the page has a chart that guides the user on the letters to enter in the Data entry form near the top of the worksheet. The choices are n, s, l, m, h, s or e.

☐ Scroll back up until you can see the title on the form. Minimize the spreadsheet so you may easily open it again in Exercise 4.

Congratulations! You now know about:

1   Open and review the Sample Key Species Form in the computer

Step 2: Copy and Paste Data on the Mobile Device
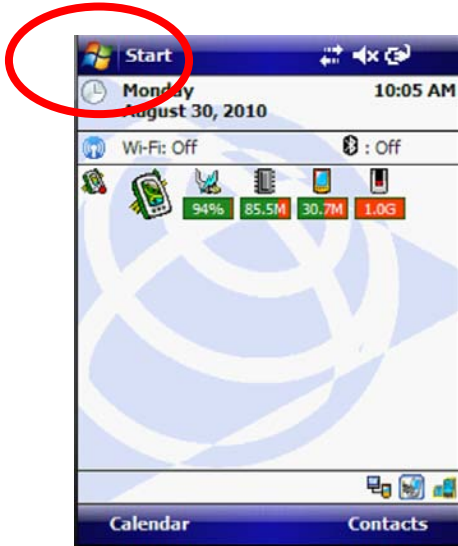
☐ Turn on your Juno Mobile Device. If your Cowslip Creek spreadsheet is not open, tap on the Start button.
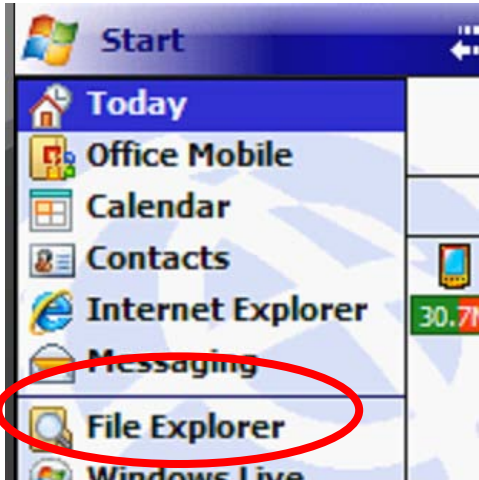
☐ Tap on File Explorer
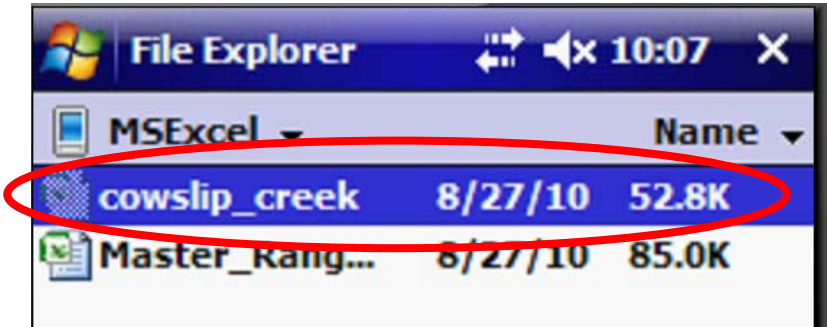
☐ Tap on Cowslip Creek to open it.
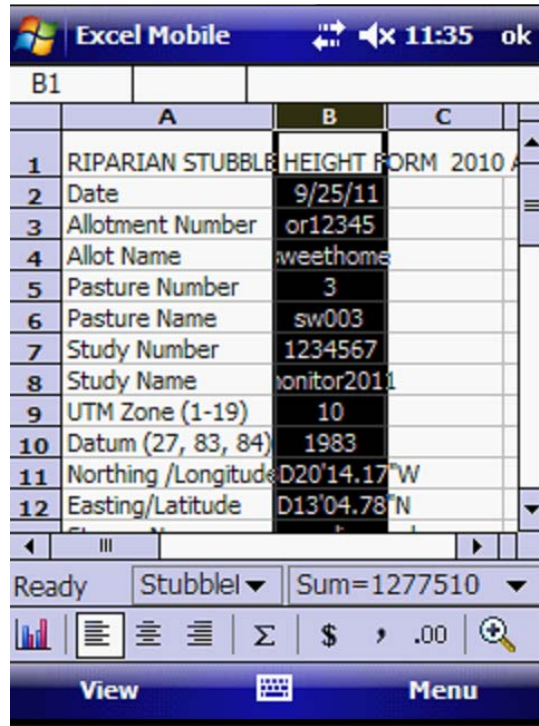
☐ The Riparian Stubble Height form opens.
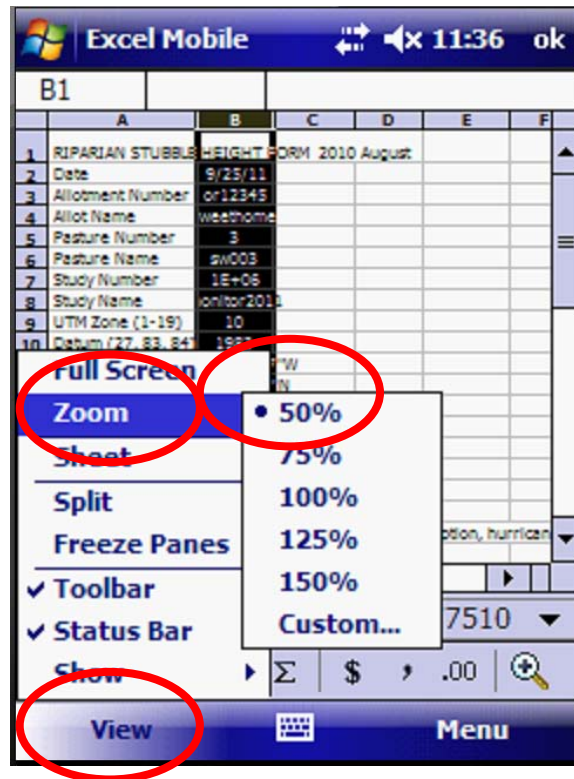
☐ Go to View and Zoom and choose 50% so you can see rows 2 through 12 on your screen. These rows are the same in all forms. If you are working in
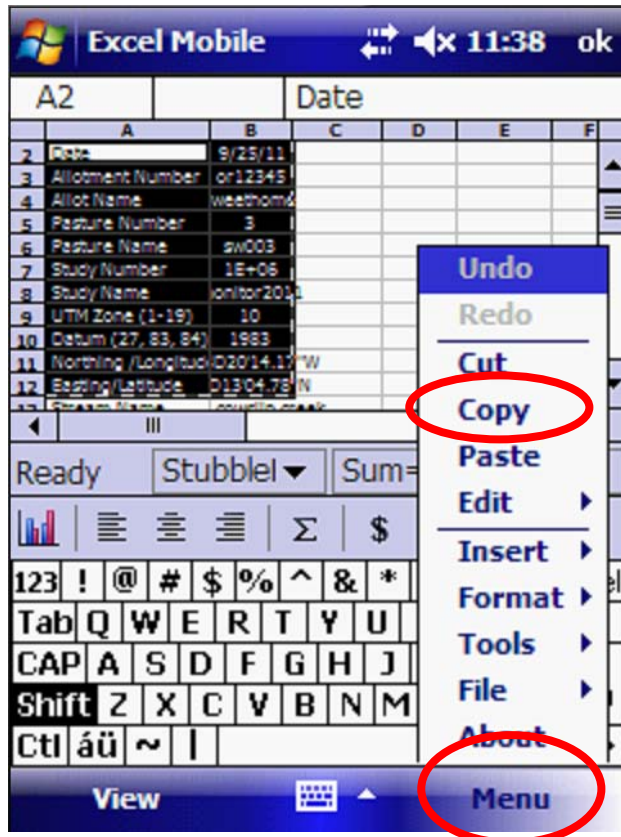
the same area on the same project, we will copy and paste the data you
entered in Exercise 1 to save time.
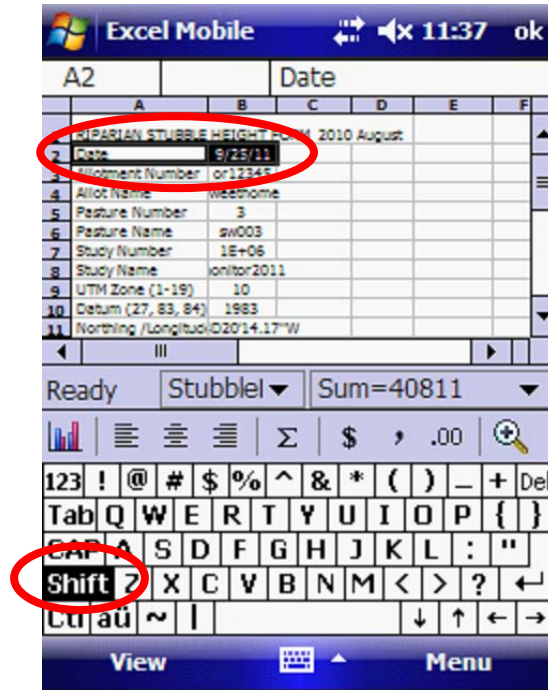
☐ Tap on cell A2 Date. On the keyboard, tap on the Shift key. Tap on cell
B2. Both are selected.
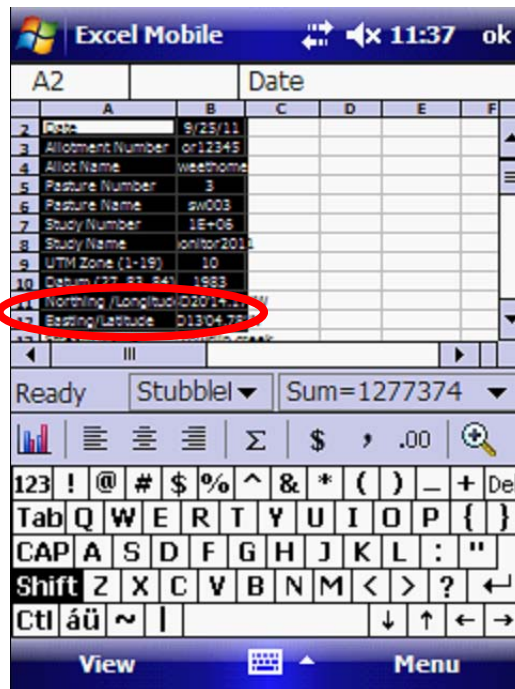
☐ Scroll to row 12. Tap on cell A12 and B12. Rows 2-12 in Columns A-B are
now highlighted and selected.

☐ Tap on Menu in the lower right corner. Tap on Copy.
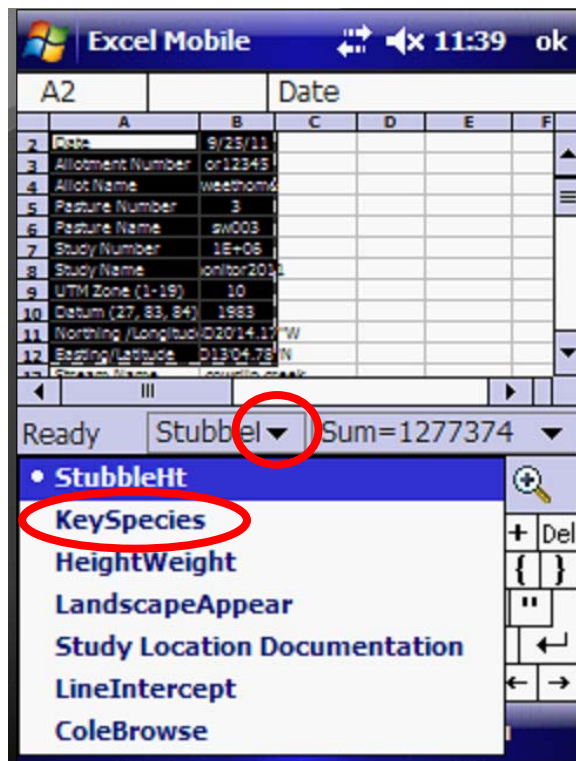
☐ Tap on the drop down arrow to the right of the StubbleHeight tab between the form and the keyboard. Tap on KeySpecies.
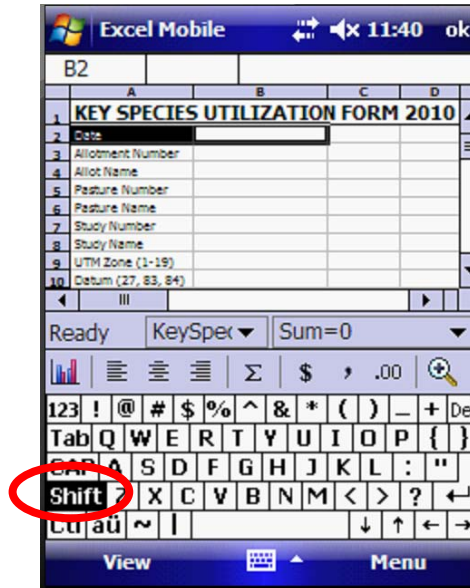
☐ When the KeySpecies form opens, note that the Shift key is still on. Tap on the Shift key to deactivate it.

Tip: Note that every time you open a new worksheet, the shift key may still be activated. To complete this Exercise easily, be sure to deactivate the shift key as soon as you open a worksheet. Select your first cell, then reactivate the shift key to select more cells. If you do not deactivate the Shift, you will unintentionally select more cells than you intend to select.

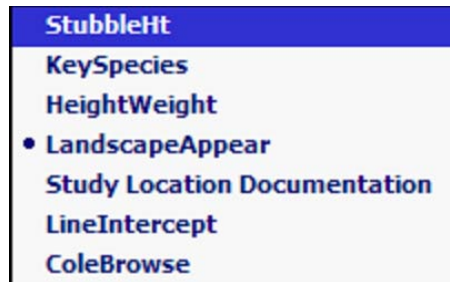☐ Tap on cell A2.
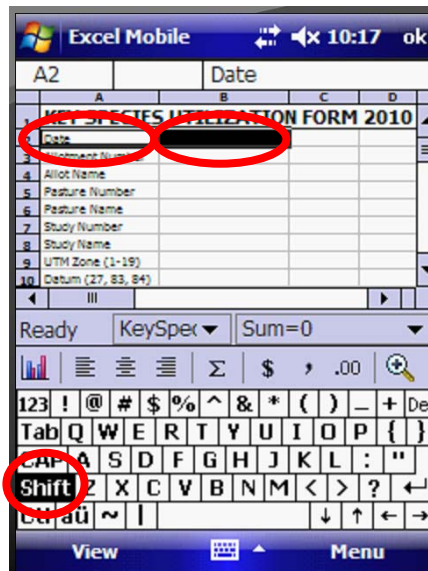
☐ Tap on the Shift Key to reactivate it.

☐ Repeat the steps from the Stubble Height form to select rows 2 through 12, column A and B.
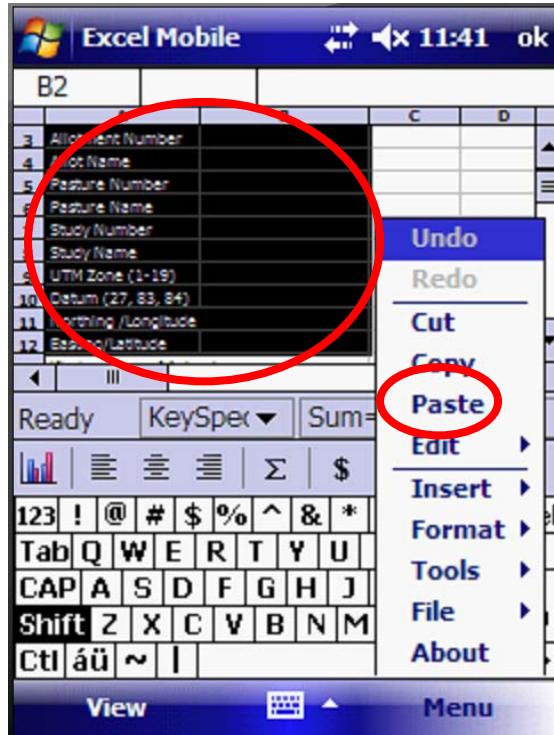

☐ Tap on the Menu button. Tap on Paste.
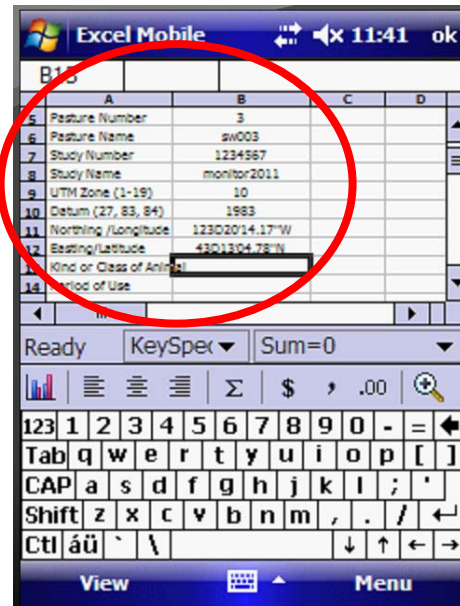
The Key Species form is completed through row 12. We will work on the same project at the same location for all of the forms.


 Continue to select each worksheet, select cell A2 through cell B12 and paste the repeated information for each one. There is no need to copy the cells again. Just open each worksheet, select the cells and paste them.
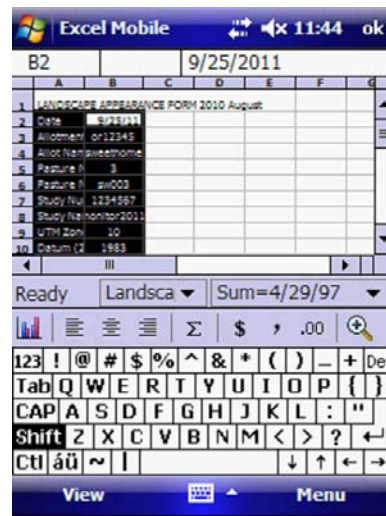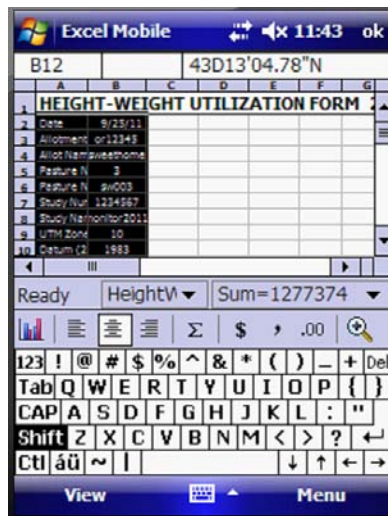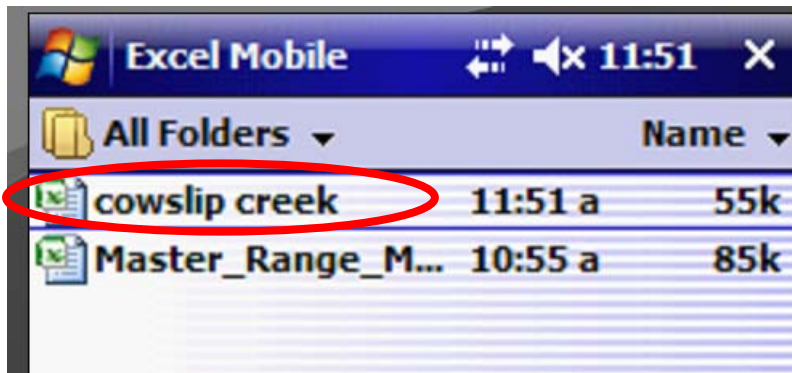

 Paste the information for the Height-Weight and the Landscape Appearance Form.

1 49
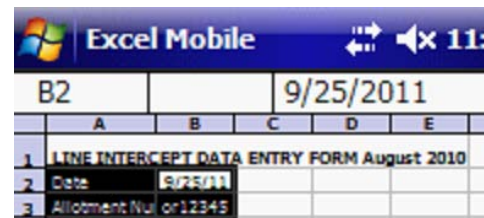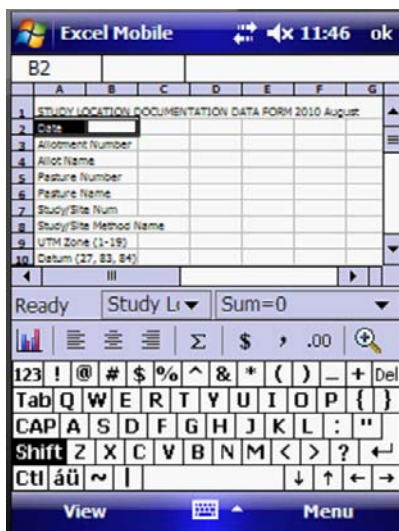
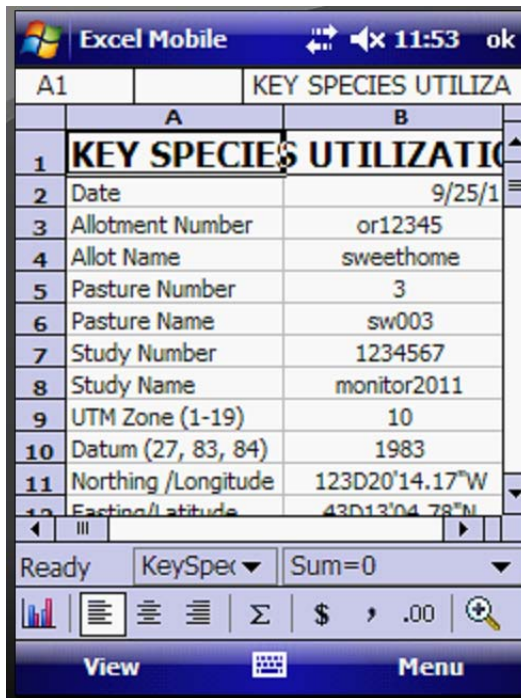☐ Paste the information for the Study Location Documentation and the Line Intercept Form
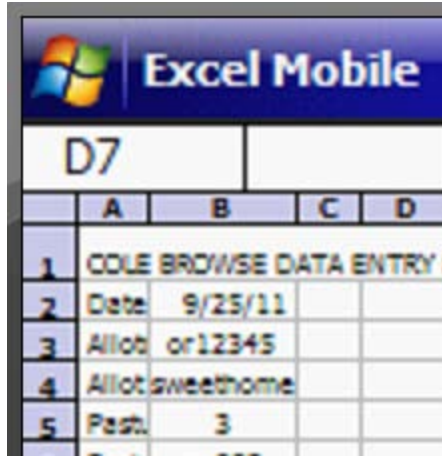
☐ Paste the information for the Cole Browse Form. Tap OK at the top right corner of the screen to save and close your changes. There is no save command.

☐ Tap on cowslip creek to open the spreadsheet again. It will open to the Riparian Stubble Form every time. It does not change, even if a different form was open when the project was closed.
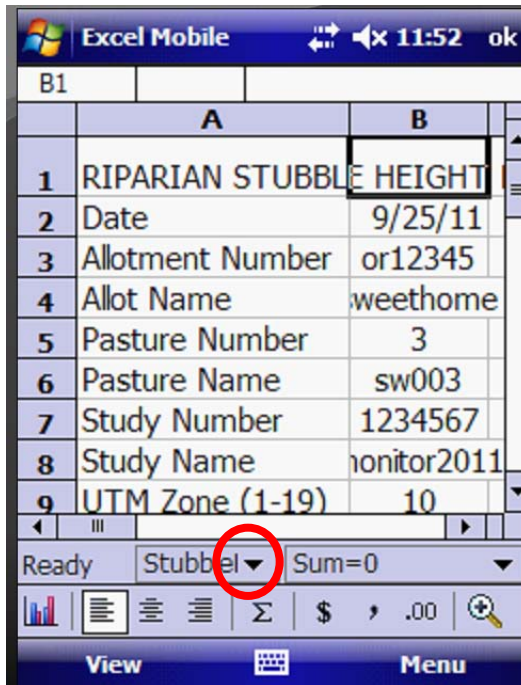
□ Using the dropdown arrow on the Stubble Height tab in the center of the screen, open the Key Species form.

Congratulations! You now know about:

2 Copy and Paste Data on the Mobile Device

## *Step 3: Complete the Key Species Form on the Mobile Device*

☐ Use the keyboard to complete the remaining information on the top of the Key Species form for kind of animal, period of use and your name.


☐ Before you begin your data entry, you may wish to scroll to the bottom of the screen to look at the Class Interval chart. Your data entries will be either upper or lower case letters of n, s, l, m h, s or v
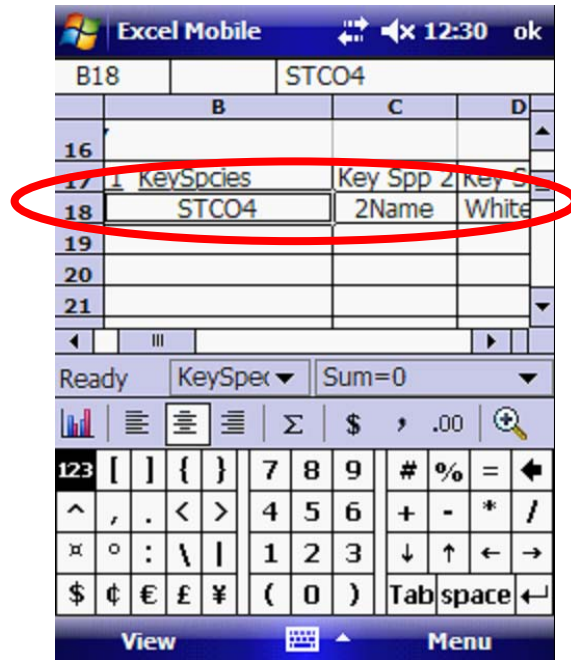
□ Scroll to the Data Entry Table. On line 18 in columns B, C and D, enter in the three key species for this project. These names will automatically populate the summary tables at the bottom of the form. Do not enter them on line 17.
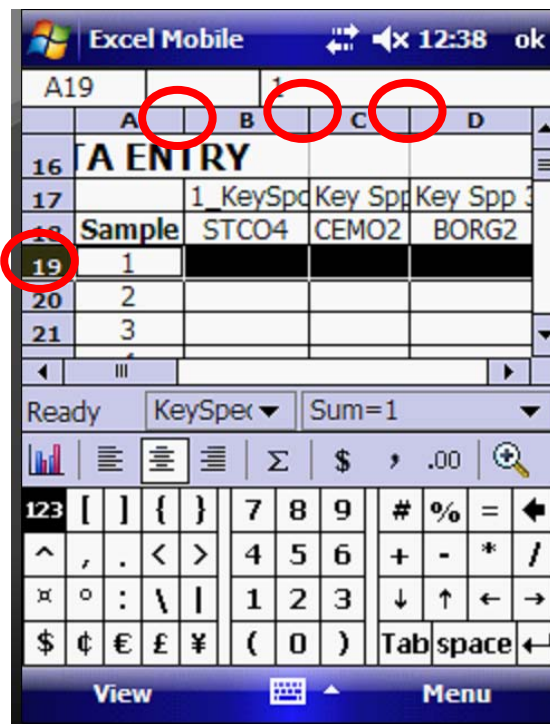
□ Resize the columns so you can see the sample number and the three species in one screen (Columns A-D). Click on the left side of the screen on row 19 to activate the entire row.
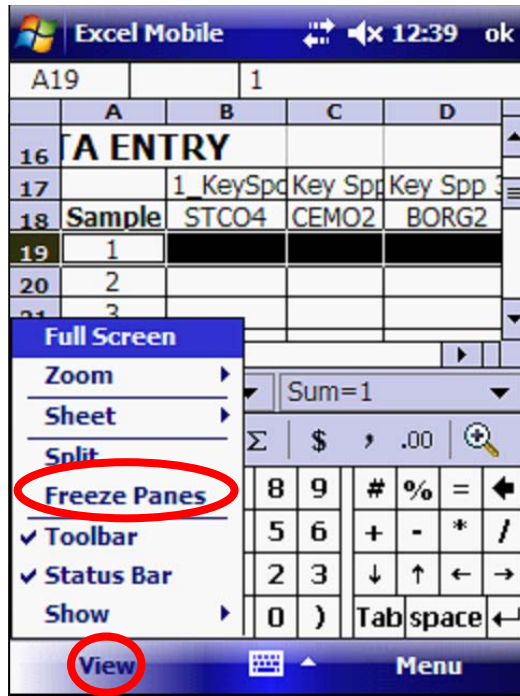
☐ Click on the View command at the bottom left of the screen. Click on Freeze Panes. This will freeze the names of the key species so they will remain visible on your screen as you scroll farther down the screen.
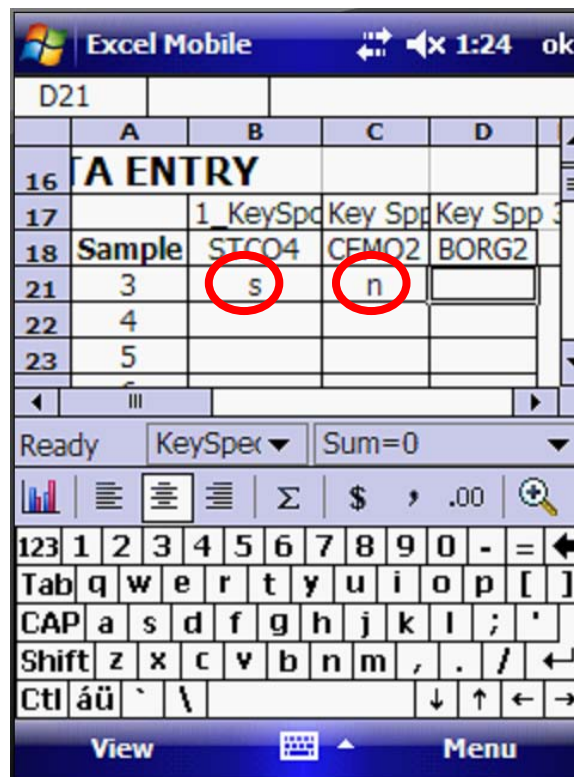
☐ Tap in the Sample 1 row and begin entering the class interval for each species. Your data entries will be either upper or lower case letters of n,

s, l, m h, s or v. As you continue to scroll down through the samples, the Species names are frozen at the top of your window.
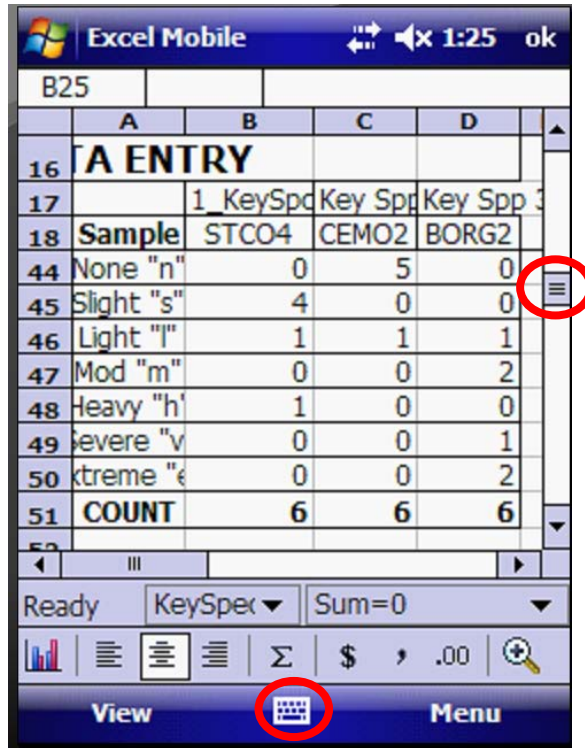
☐ When you are done with your samples, scroll down to view the total counts that begin on row 44. Note they are already calculated. Close the keyboard so you can view the totals for all species.
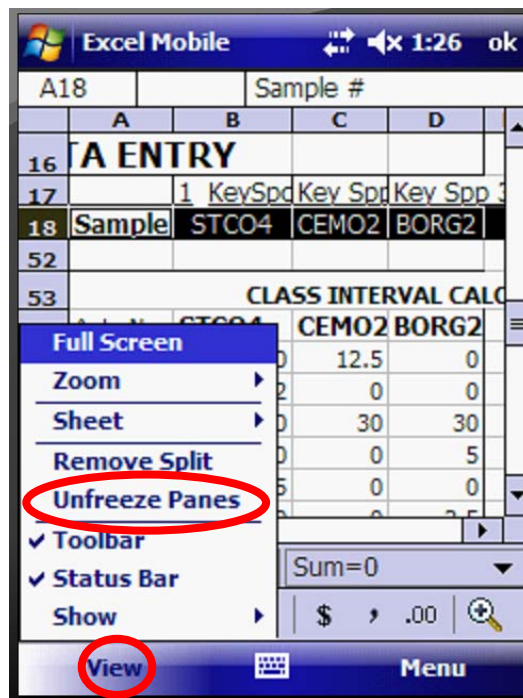
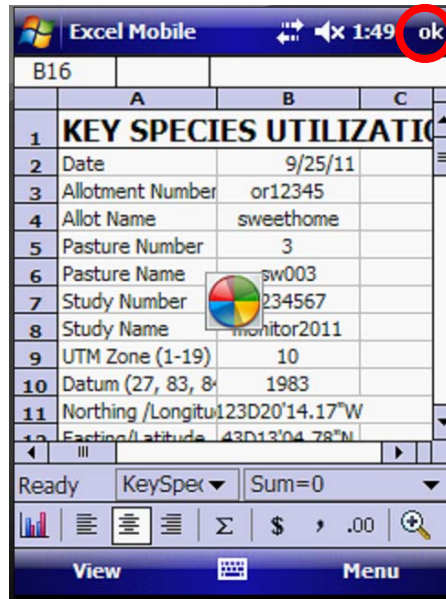☐ Tap on the View command. Tap Unfreeze Panes from the popup menu so the three species are no longer locked at the top of your screen.


☐ Scroll down and look at the Class Interval Calculations Table. It is already completed.

☐ Scroll down and review the Percent Utilization by Species Table. It is completed and ready for reporting.

☐ Scroll up to the top of the form. To save your work, just tap OK at the top right of the screen. The turning pinwheel indicates that your information is being saved in the cowslip creek project file.
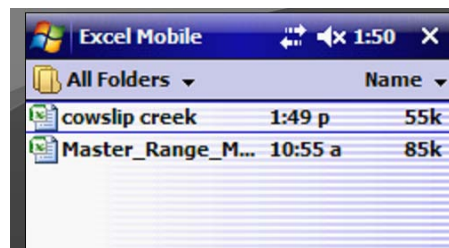
☐ When it is done saving, the file closes and you may remain at the view of the inside of the MSExcel folder.

Congratulations! You now know about:

3   Complete the Key Species Form on the Mobile Device

Summary Exercise 3

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

✓ 1   Open and review the Sample Key Species Form in the computer.
✓
o   Copy and Paste Data on the Mobile Device
o
✓   Complete the Key Species Form on the Mobile Device
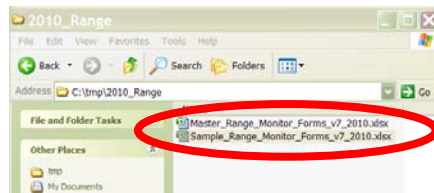**End Exercise 3**

Exercise 4

Exercise goal: The intent of the exercise is to ensure that the user is familiar with the Height Weight Form in the Computer and in the Mobile Device
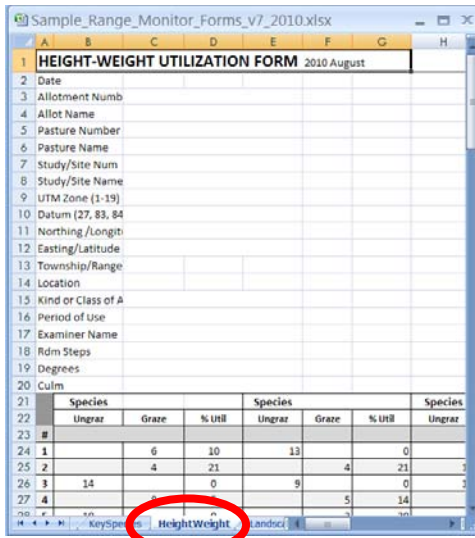
Upon completion of the exercise, the student will be able to…

- ✓ Open and review the Height Weight Form in the computer.
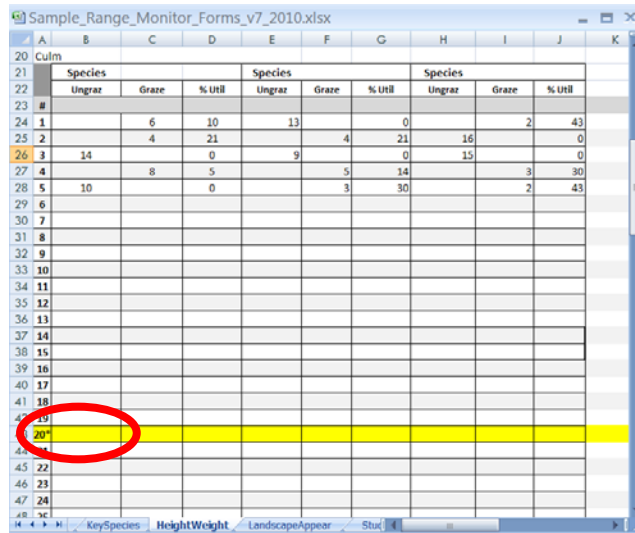- ✓ Complete the Height Weight Form on the Mobile Device

Step 1: Open and review the Height Weight Form in the computer.

☐ Open the Sample Range Monitor Forms on the Computer if it is not still open from Exercise 3.

Sample_Range_Monitor_Forms_v7_2010.xlsx

HEIGHT-WEIGHT UTILIZATION FORM 2010 August

2	Date
3	Allotment Numb
4	Allot Name
5	Pasture Number
6	Pasture Name
7	Study/Site Num
8	Study/Site Name
9	UTM Zone (1-19)
10	Datum (27, 83, 84
11	Northing /Longitu
12	Easting/Latitude
13	Township/Range
14	Location
15	Kind or Class of A
16	Period of Use
17	Examiner Name
18	Rdm Steps
19	Degrees
20	Culm

	Species			Species			Species
	Ungraz	Graze	% Util	Ungraz	Graze	% Util	Ungraz
#							
1		6	10	13		0	
2		4	21		4	21	
3	14		0	9		0	
4					5	14	

KeySpe... **HeightWeight** Landsc...

☐ Click on the Height Weight Tab at the bottom of the screen. This form records, for three key species, the measurement in inches of the height of grazed and ungrazed plants. The user will also need to be familiar with using the Utilization gauge to record the data for each sample.

Sample_Range_Monitor_Forms_v7_2010.xlsx

	20 Culm								
21	Species			Species			Species		
22	Ungraz	Graze	% Util	Ungraz	Graze	% Util	Ungraz	Graze	% Util
23 #									
24 1		6	10	13		0		2	43
25 2		4	21		4	21	16		0
26 3	14		0	9		0	15		0
27 4		8	5		5	14		3	30
28 5	10		0		3	30		2	43
29 6									
30 7									
31 8									
32 9									
33 10									
34 11									
35 12									
36 13									
37 14									
38 15									
39 16									
40 17									
41 18									
42 19									
43 20*									
44 21									
45 22									
46 23									
47 24									

KeySpecies **HeightWeight** LandscapeAppear Stud...

☐ Scroll down and note that a yellow band marks the minimum number of samples (20). However, the user is allowed to enter up to 60 samples on one form.

1 59

Sample_Range_Monitor_Forms_v7_2010.xlsx

	Ungraz	Graze	% Util	Ungraz	Graze	% Util	Ungraz	Graze	% Util
78 55									
79 56									
80 57									
81 58									
82 59									
83 60									
85	Total Height of Ungrazed Plants	24		Total Height of Ungrazed Plants	22		Total Height of Ungrazed Plants	31	
86	Number of Ungrazed Plants	2		Number of Ungrazed Plants	2		Number of Ungrazed Plants	2	
87	Total percent utilization	36		Total percent utilization	65		Total percent utilization	116	
88	Number of sampled plants	5		Number of sampled plants	5		Number of sampled plants	5	
89	Average Ungrazed Plant Height	12		Average Ungrazed Plant Height	11		Average Ungrazed Plant Height	15.5	
90	Average Utilization	7.2		Average Utilization	13		Average Utilization	23.2	
91	Standard Deviation	8.75785362		Standard Deviation	13.15295		Standard Deviation	21.833461	
92	90% Confidence	6.4228504		90% Confidence	9.675319		90% Confidence	16.060713	
94	Investigator:_____ Date:_____								
96	Reviewer's initials:_____ Date:_____								
98	End of Height Weight Form								

Sheet tabs: KeySpecies | **HeightWeight** | LandscapeAppear | Stud

☐ Scroll to the bottom of the form. Note that the spreadsheet will calculate automatically the total height of each species, the count for each species, the total and average percent utilized, the average ungrazed plant height, the standard deviation and 90% confidence value in the data.

Caution: Unfortunately, the 90% Confidence is the only calculation that will not work in the mobile version of MS Excel. This means that when Height Weight data sheets are brought back in to the office, the user will need to manually copy the formula into those cells. Once the formula is copied, the spreadsheet will calculate the confidence values. This should be done before the form is printed and the technique is shown in Exercise 9.

Congratulations! You now know about:

1   Open and review the Height Weight Form in the computer.
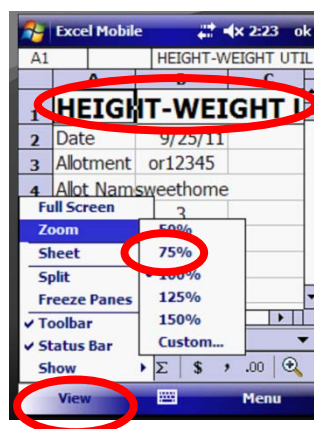
## *Step 2: Complete the Height Weight Form on the Mobile Device*
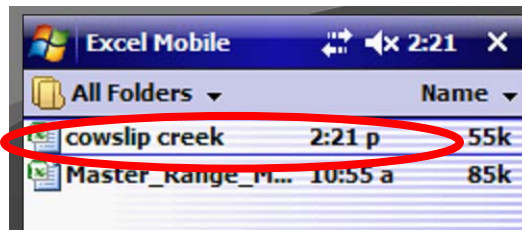
☐ On the Juno Mobile Device, tap on the cowslip creek project saved in the MSExcel folder.
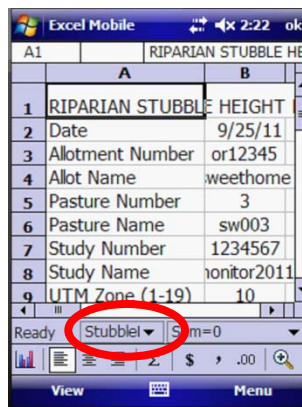
☐ The default Riparian Stubble Height From will open. Tap the dropdown arrow on the Worksheet selector button in the lower central portion of your screen. Select the Height Weight Form.
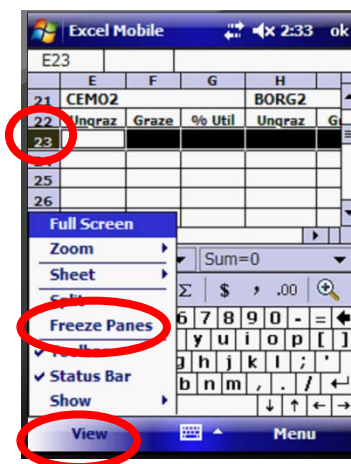

☐ The default zoom level of 100% should be changed by clicking the View button, Zoom and 75%.
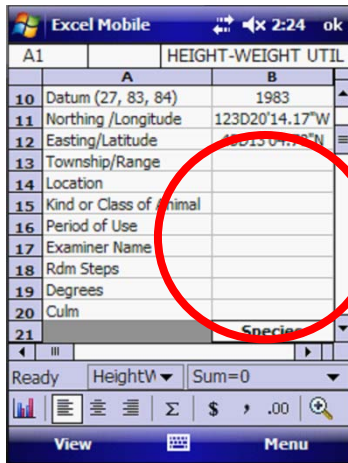
☐ Note that the top part of the form is completed since we pasted the information in Exercise 3. Using the keyboard, manually complete the information on kind of animal, degrees, culm and other information.
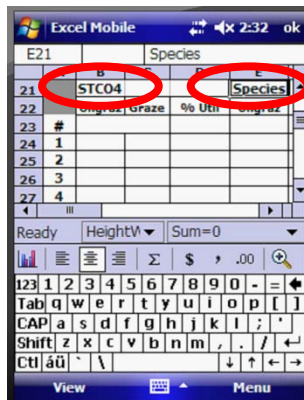
☐ On row 21, enter the three key species for this area.

☐ Tap on the far left of row 23 to select the entire row. Go to View and Freeze Panes so you will always be able to see the species and column headings, no matter which sample you are entering.
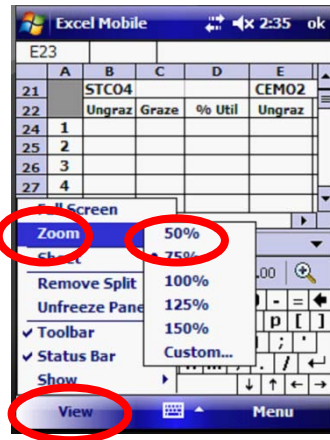
☐ Tap on View and Zoom. Tap on 50%. If you can see well enough to enter the data on this form, this screen size will keep you from scrolling from right to left.
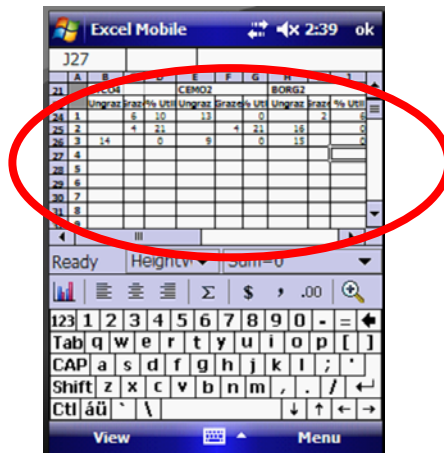
☐ Resize the columns on the data entry form so you can see all nine columns (three columns for each of three species) and the sample number on the screen without scrolling.

☐ Tap on the keyboard and begin entering data in the sample rows.
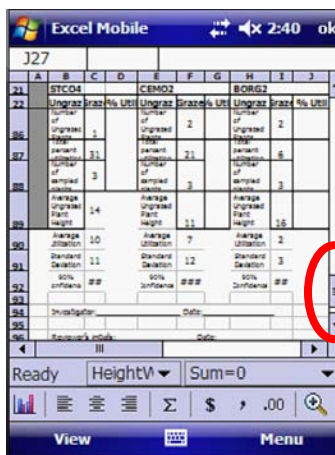
☐ For this exercise, complete three to six samples. You do not need to complete the 20 minimum samples. When done, scroll to the bottom of the screen and note that all calculations are completed, except for the 90% confidence, as noted earlier.
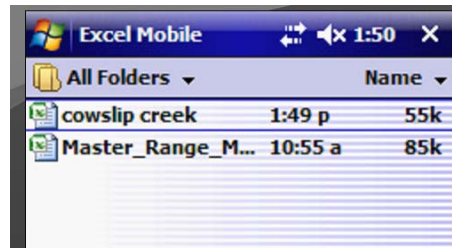
☐ Tap OK in the upper right corner of the worksheet to save and close the project.

Congratulations! You now know about:

2   Complete the Height Weight Form on the Mobile Device

Summary Exercise 4

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

✓ Open and review the Height Weight Form in the computer.
✓ Complete the Height Weight Form on the Mobile Device

End Exercise 4

Exercise 5
Complete the Landscape Appearance Form

Exercise goal: The intent of the exercise is to ensure that the user is familiar with the Landscape Appearance Form in the Computer and in the Mobile Device

Upon completion of the exercise, the student will be able to…

✓ Open and review the Sample Landscape Appearance Form in the computer.
✓ Complete the Landscape Appearance Form on the Mobile Device

FIELD DATA COLLECTION STEP DESCRIPTION   **PAGE**

Step 1: Open and review the Sample Landscape Appearance Form in the computer

☐ Open the Sample Range Monitoring Spreadsheet on your Computer. Click on the LandscapeAppear tab at the bottom of the screen to open the Landscape Appearance Form.
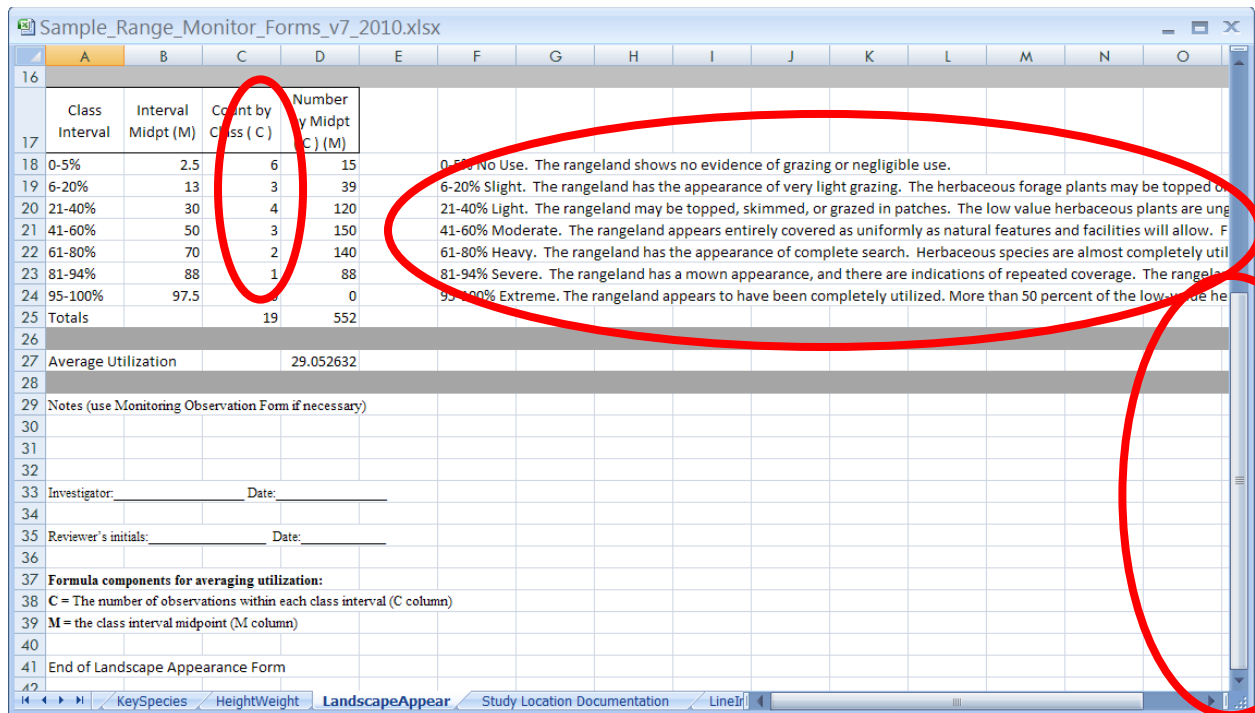
☐ Scroll to the bottom. In this form you just enter the count of various classes of used landscapes. This count is entered 1, 2, 3…. in any given cell for the cumulative observations. The spreadsheet calculates column D, the total utilization by class, the total number of samples and the total utilization for all classes. At the bottom, it also calculates the average utilization for the entire project.

☐ Scroll to the right. The full description from the Technical Reference Manual is included to the right of the form. This description does not wrap on multiple rows so it keeps the form short. You will need to continue scrolling right to read the entire description.

Congratulations! You now know about:

1   Open and review the Sample Landscape Appearance Form in the computer

Step 2: Complete the Landscape Appearance Form on the Mobile Device
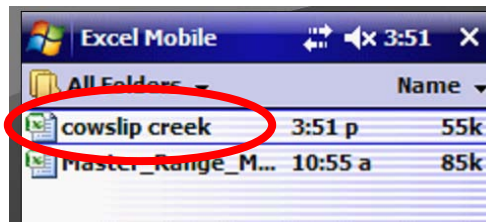
☐ Tap on the cowslip creek project in the Excel Mobile folder on the Juno Mobile Device.
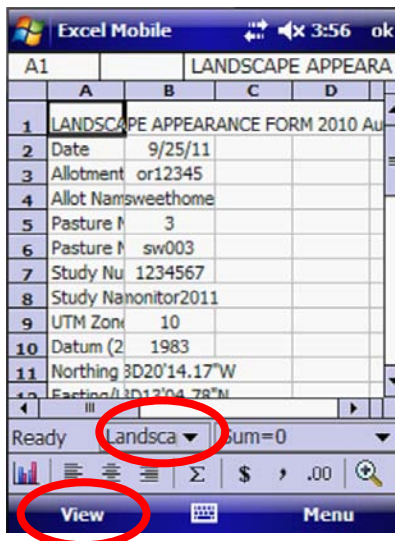
☐ Open the Landscape Appearance Form and Zoom the View to 75%.
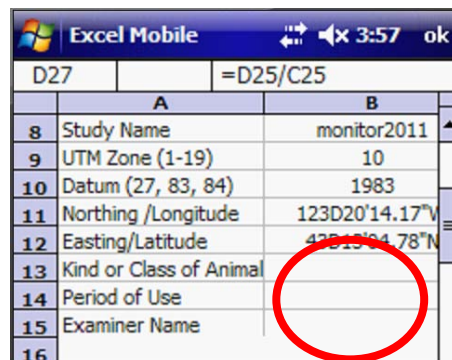
☐ Scroll halfway down the page and manually enter in the Kind of Animal, Period of use and your name.
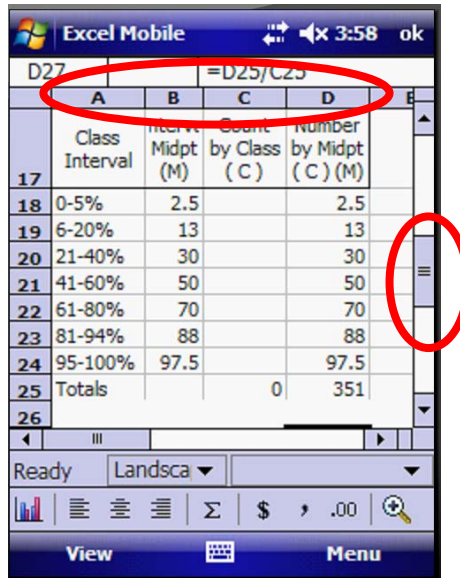
☐ Scroll down to the Data Entry Form. Resize the columns so you can see the entire table on your screen. You may not need to Freeze the panes for this worksheet because it is a small table
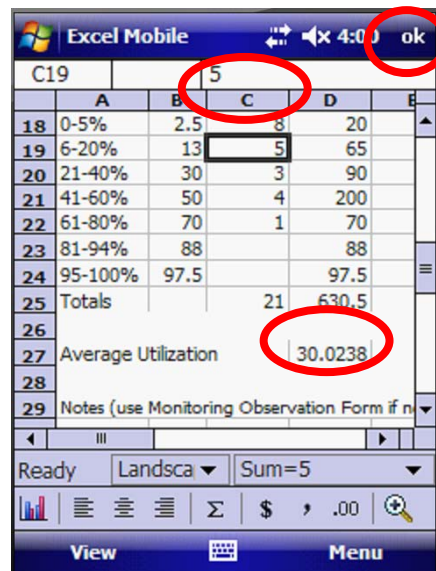
☐ Enter your observations in Column C, counting 1, 2, 3, etc for each observation in each class interval

☐ Close the keyboard and verify that all calculations in column D, Row 25 and Row 27 have been correctly completed.

☐ Tap OK at the top right corner to save your work and close the project.

1 68
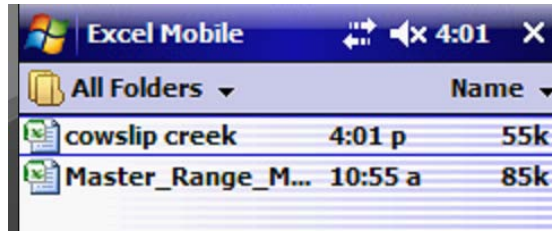
Congratulations! You now know about:

2   Complete the Landscape Appearance Form on the Mobile Device

Summary Exercise 5

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

✓ Open and review the Sample Landscape Appearance Form in the computer.
✓ Complete the Landscape Appearance Form on the Mobile Device

End Exercise 5

Exercise 6
Complete the Study Location Documentation Form

Exercise goal: The intent of the exercise is to ensure that the user is familiar with the Study Location Documentation Form in the Computer and in the Mobile Device

Upon completion of the exercise, the student will be able to…

✓ Open and review the Study Location Documentation Form in the computer.
✓ Complete the Study Location Documentation Form on the Mobile Device

Step 1: Open and review the Study Location Documentation Form in the computer

☐ Open the Sample Range Monitor Form in the Computer.

☐ Click on the tab at the bottom of the Spreadsheet to open the Study Location Documentation Form.
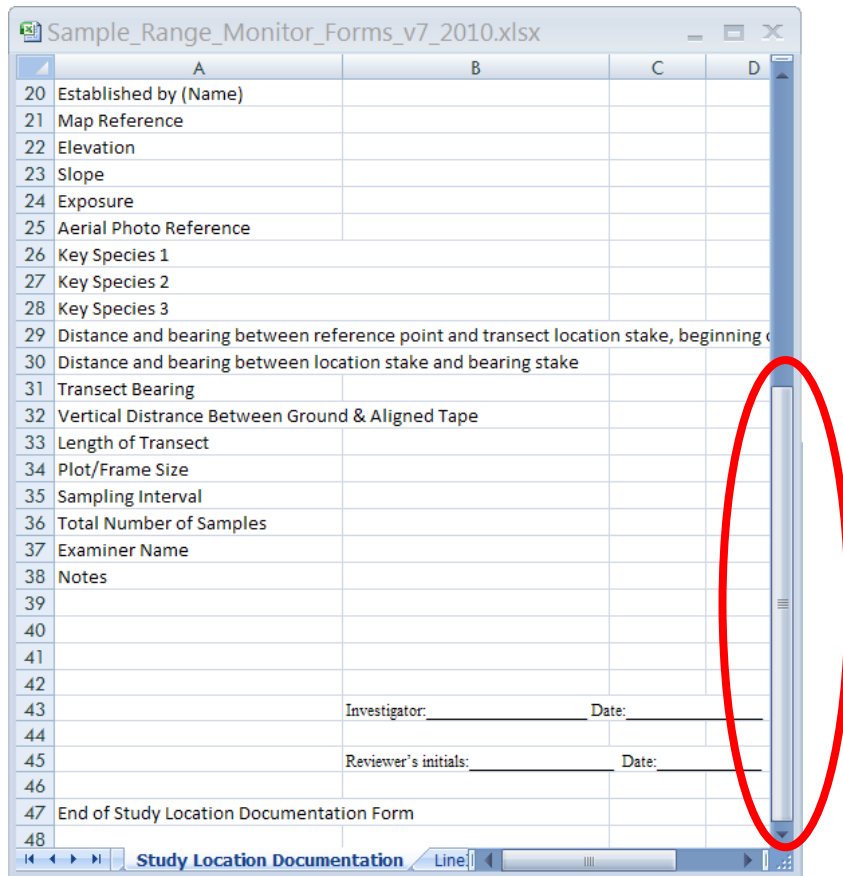
☐ Scroll to the bottom of the form. Note that this form is different from all others in that there is really no monitoring data entered. This data solely documents the location of the study plot so future staff can find the location.

Congratulations! You now know about:

1 **Open and review the Study Location Documentation Form in the computer**

Step 2: Complete the Study Location Documentation Form on the Mobile Device

☐ Open the Cowslip Creek MSExcel Spreadsheet on the Juno Mobile Device.

☐ Using the dropdown arrow on the tab at the bottom of the Stubble Height Spreadsheet, Tap Study Location Documentstion to open the worksheet.

☐ Zoom to 75%. Resize the columns so only A and B are visible, as you have been taught in previous chapters.
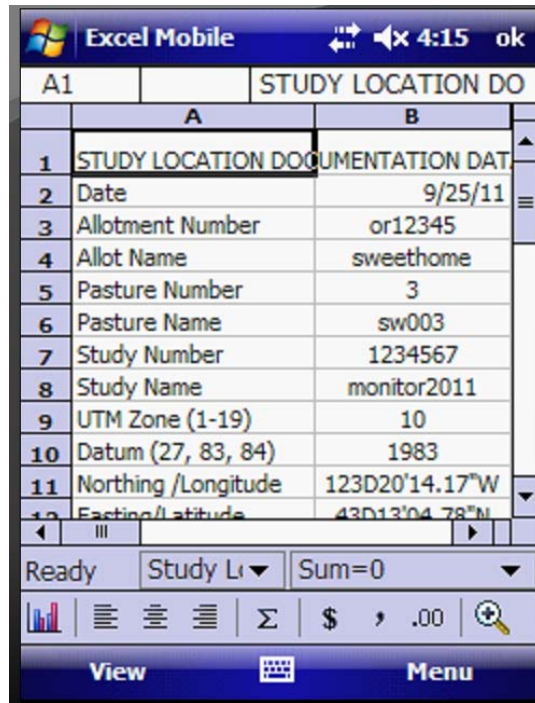
☐ Notice that the top part of the form is already completed from a previous exercise.
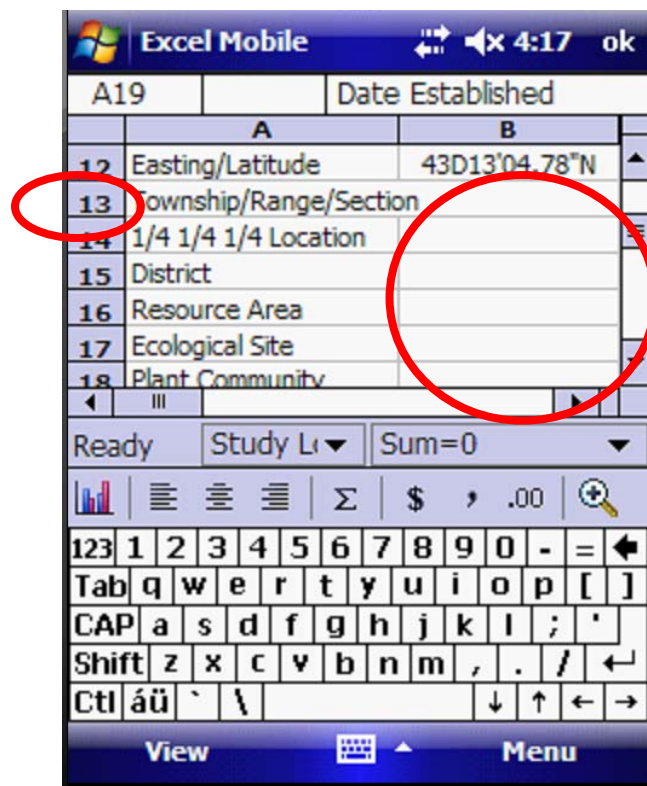
☐ Scroll to line 13. Open the keyboard and enter the information for the remainder of the form.

☐ When you are done entering information, tap OK at the top right corner to save your work and close the spreadsheet.

Congratulations! You now know about:

2 Complete the Study Location Documentation Form on the Mobile Device

Summary Exercise 6

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

✓ Open and review the Study Location Documentation Form in the computer.
✓ Complete the Study Location Documentation Form on the Mobile Device

End Exercise 6

Exercise 7 Complete the Line Intercept Form

Exercise goal: The intent of the exercise is to ensure that the user is familiar with the Line Intercept Form in the Computer and in the Mobile Device

Upon completion of the exercise, the student will be able to...

✓ Open and review the Sample Line Intercept Form in the computer.
✓ Complete the Line Intercept Form on the Mobile Device

FIELD DATA COLLECTION STEP DESCRIPTION   **PAGE**

1   Open and review the Sample Line Intercept Form in the computer   7-1

2   Complete the Line Intercept Form on the Mobile Device   7-3

Step 1: Open and review the Sample Line Intercept Form in the computer

☐ Open the Sample Range Monitor Form on your computer.

☐ Click on the tab for the worksheet named LineIntercept to open the form.

☐ This form is to record up to six species each of grass, forbs and shrubs and their distance along a 100 foot transect. You have space to enter 30 transects on a form. The distance is entered to the nearest 1/100th of a foot.

☐ Scroll to the bottom of the Grass data and note that the form will calculate your total distance, the Percent of Cover and the perent of Composition for each of the grass species.

☐ Scroll to the bottom of the form. Note that the Totals are calculated for forbs and shrubs at the bottom of their charts. At the very bottom of all of the charts, the spreadsheet calculates the overall length, percent cover and percent composition for all the collected species of grass forbs and shrubs.

Congratulations! You now know about:

1   Open and review the Sample Line Intercept Form in the computer

Step 2: Complete the Line Intercept Form on the Mobile Device

☐ Turn to your GPS unit. Open the Cowslip Creek spreadsheet.

☐ Tap on the dropdown arrow on the tab for Stubble Height near the bottom of the screen. Tap LineIntercept to Open the Form.
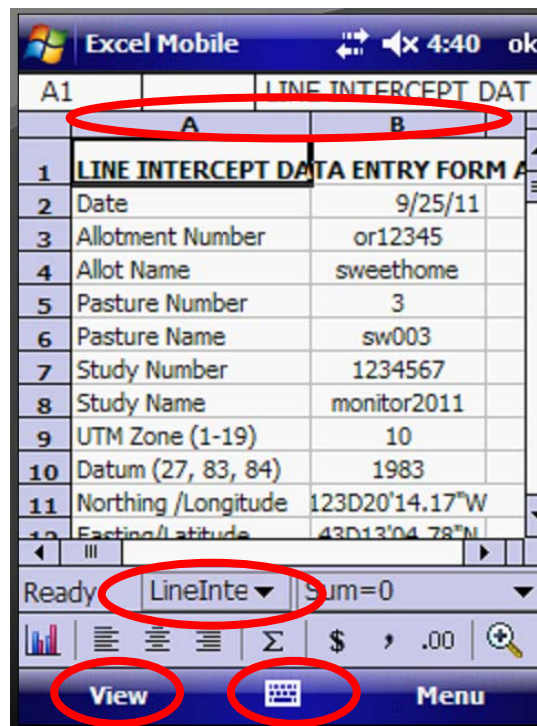
☐ Zoom the View to 75%. Resize your columns to fit the screen. Note that the first 12 entries are completed for you.

☐ Scroll down to row 13. Open the keyboard and complete rows 13-18.

☐ Resize your columns after scrolling down to the Grass Species chart. You should be able to see 4-6 columns at once in your screen.
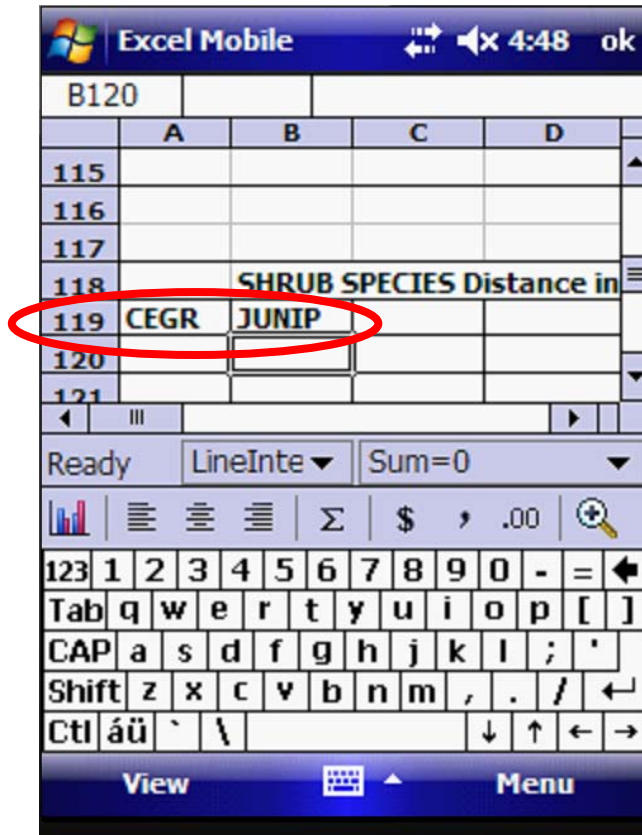
☐ On line 22, enter the grass species you will be measuring.

☐ Likewise, on line 70, enter the Forb Species you will be measuring

☐ On line 119, enter the Shrub Species you will be measuring

☐ Start walking your transect. Measure and enter the distance when you reach the first of one of your key species.
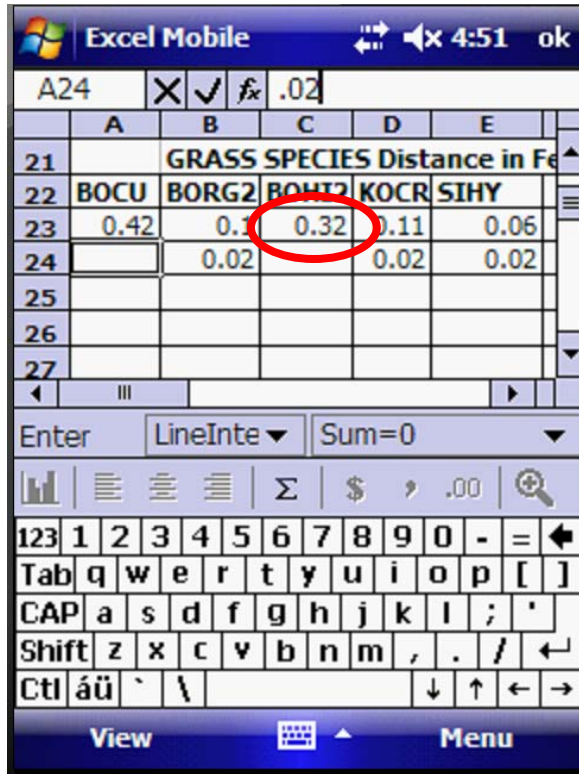
☐ Continue measuring and entering the distances until you have an adequate sample.
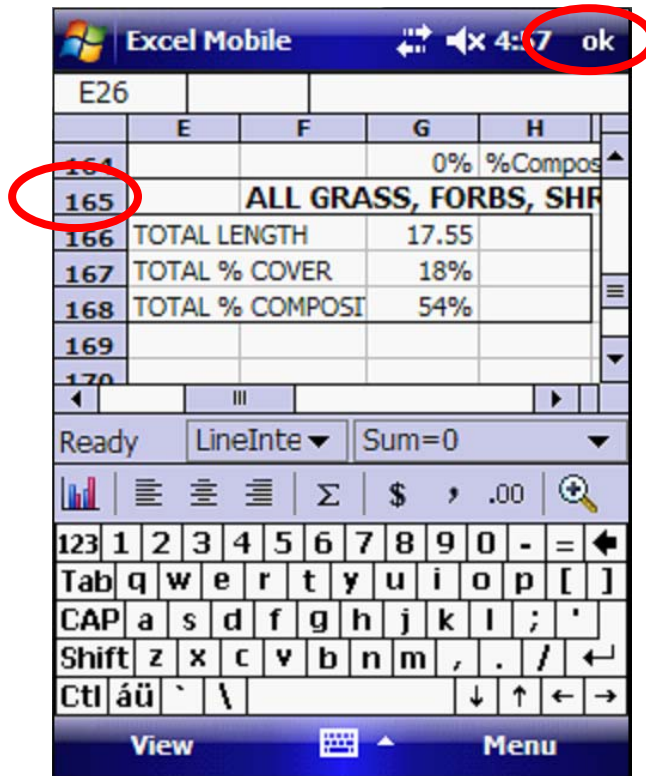
☐ Scroll down to Row 165 where you can view the overall length cover and composition of your species. You can also view the cover and composition of each shrub species on rows 163 and 164, for each forb species on rows 114 and 115 and for each grass species on rows 66 and 67.

☐ Tap OK to save and close the spreadsheet.

Congratulations! You now know about:

2   Complete the Line Intercept Form on the Mobile Device

Summary Exercise 7

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

✓ Open and review the Sample Line Intercept Form in the computer.
✓ Complete the Line Intercept Form on the Mobile Device

End Exercise 7

Exercise 8 Complete the Cole Browse Form

Exercise goal: The intent of the exercise is to ensure that the user is familiar with the Cole Browse Form in the Computer and in the Mobile Device. The user will also be able to copy and paste entire worksheets in the mobile device when multiple blank worksheets are required.

Upon completion of the exercise, the student will be able to…

✓ Open and review the Sample Cole Browse Form in the computer.
✓ Copy and paste the Cole Browse Form on the Mobile Device
✓ Complete the Cole Browse Form on the Mobile Device

Step 1: Open and review the Sample Cole Browse Form in the computer

☐ Open the Sample Range Monitor Forms Spreadsheet on your computer.

☐ Click on the tab at the bottom labeled ColeBrowse to open the Cole Browse Form.

☐ Note that in this form, you must enter codes for Form Class, Age Class and Leader Use. You also must enter a series of leader lengths in inches for each plant. The two right columns are automatic calculations of Total Leader Length and a count of the total number of leaders you measure on the plant.
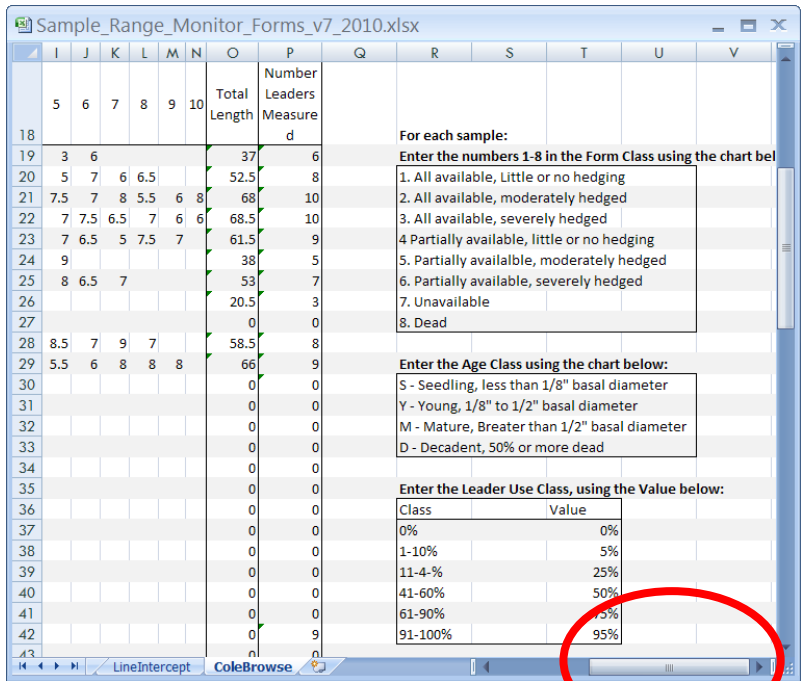
☐ Scroll to the right side of the form. Note that there are three tables that will guide you through the data entries of the Cole Browse Form. The top table explains codes 1-8 for the Form Class column data entry. The second table provides a guide to the four alphabet codes for the Age Class data entry column. The last table gives the six possible percentages that are allowed as cell values to enter in the Leader Use Class column.
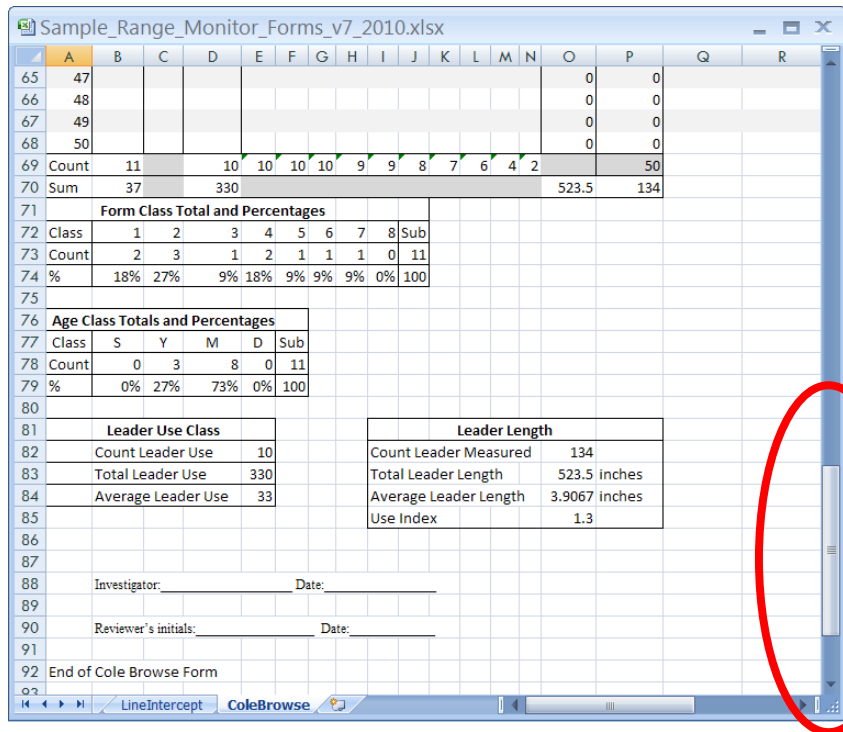
☐ Scroll to the bottom of the form. Note that the data entry form calculates the counts and sums for some columns of data.

Tip: You In separate tables near the bottom, the Form Classes and Age Classes are totaled and the percentages calculated. The Leader Use Class and the Leader Length is also summarized in separate tables near the bottom. Note that in the Leader Length, the Use Index is also calculated for you.

Congratulations! You now know about:

1   Open and review the Sample Cole Browse Form in the computer

Step 2: Copy and paste the Cole Browse Form on the Mobile Device

☐ Turn to your Juno Mobile Device. Open the Cowslip Creek project.

☐ Using the dropdown arrow on the tab at the bottom of the Stubble Height Form, tap ColeBrowse to open the Form.
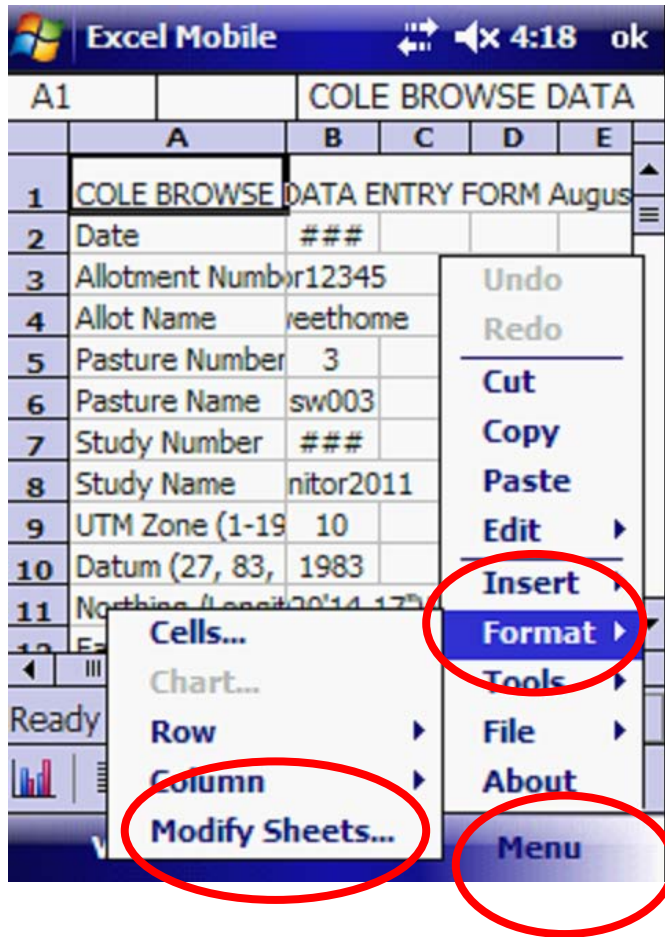
☐ Tap the Menu button on the lower right corner of your screen. We will be creating a new, blank worksheet in the Cowslip Creek Project. You may need to create 25 of more of these Cole Browse Worksheets, one for each species.
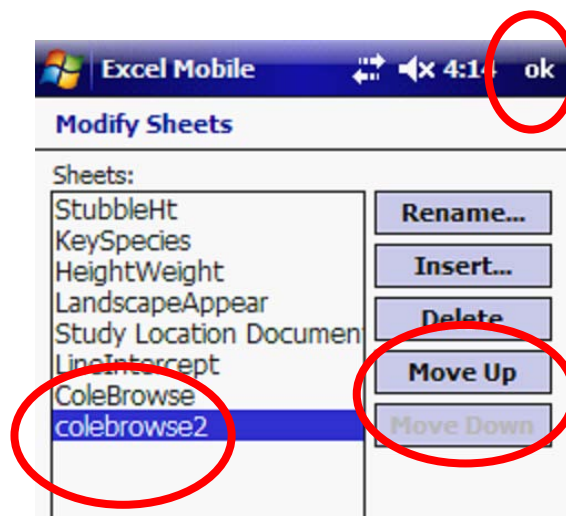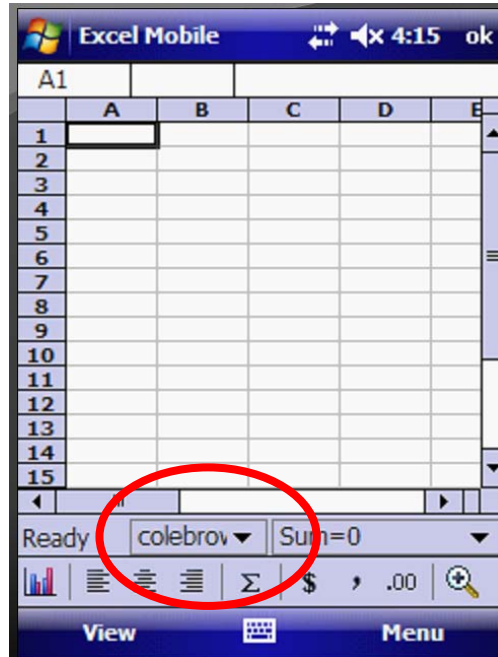
☐ Tap Format.

☐ Tap Modify Sheets….
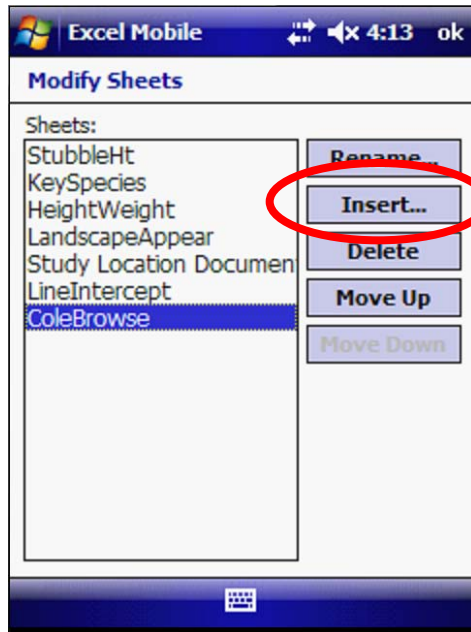
□ Tap Insert.
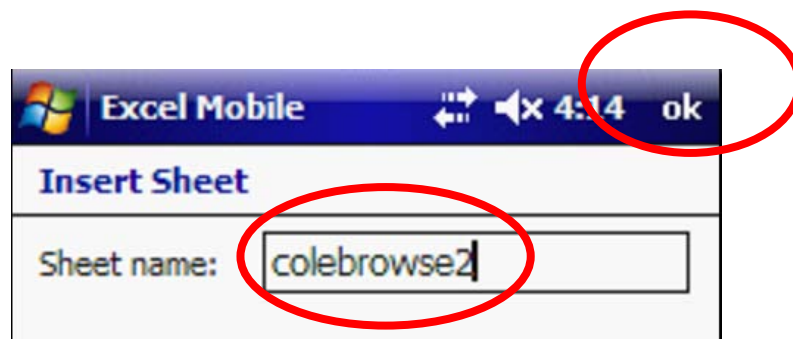
□ In the new window that opens, type the name of the new worksheet. You may wish to name it SIHY Cole Browse after the species you will record on that sheet. For this exercise, I have named it colebrowse2.

□ Tap OK

☐ Tap Move Up or Move Down to sort the order of your sheets as you please. I have moved colebrowse2 to the bottom of the list. Tap OK.
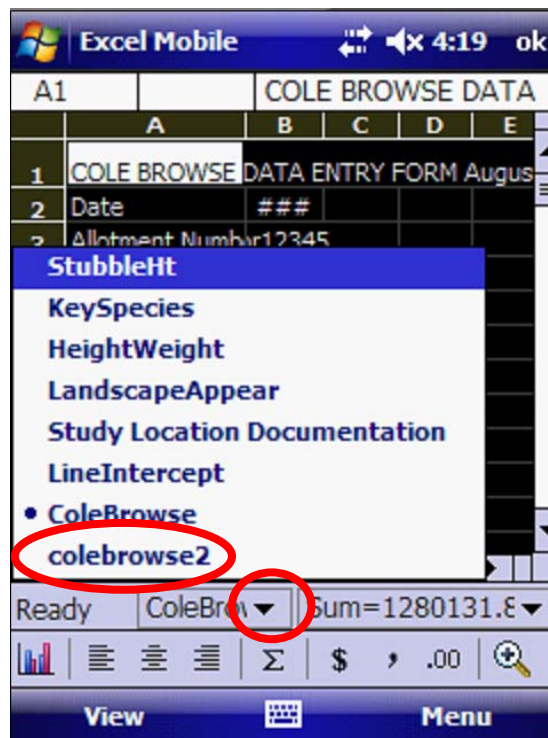

☐ A new, blank worksheet opens. Tap the dropdown arrow near colebrowse2 to navigate back to the ColeBrowse worksheet. We will now copy the data from the master form into this worksheet. It will even copy all of our formulas to calculate information!
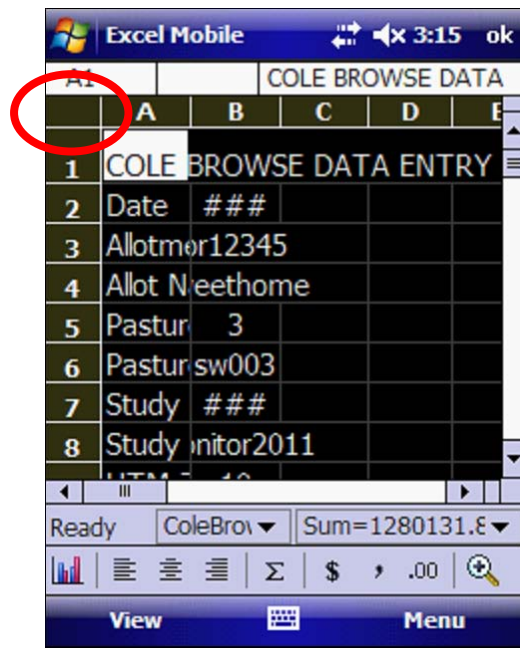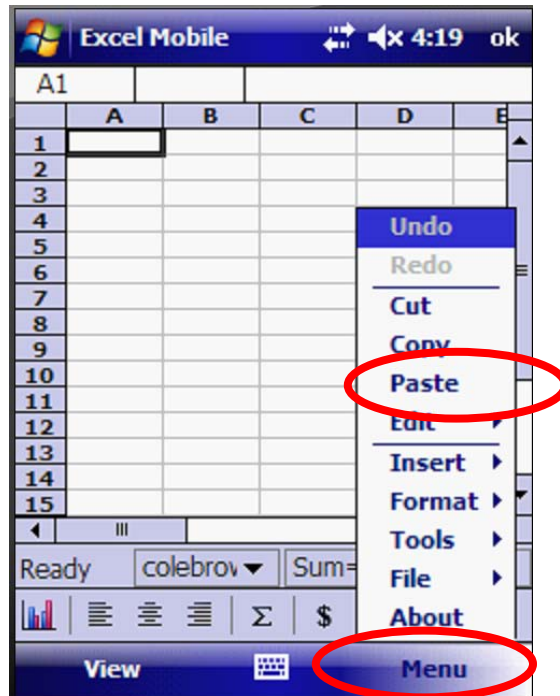
☐ Tap in the upper left corner of the worksheet in the cell under A1 to select the entire worksheet (it will turn black when selected).
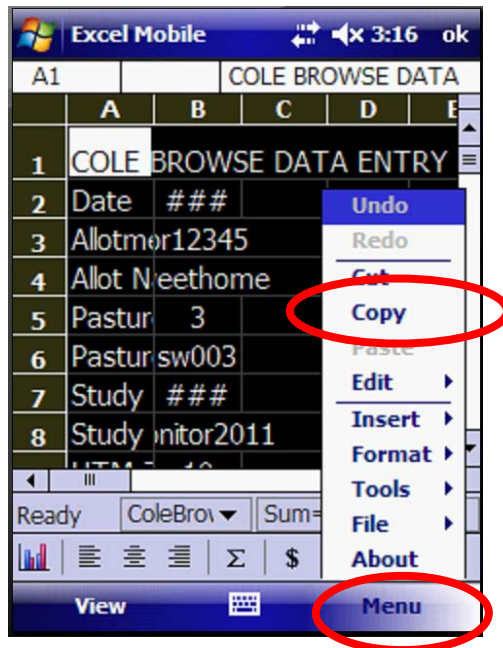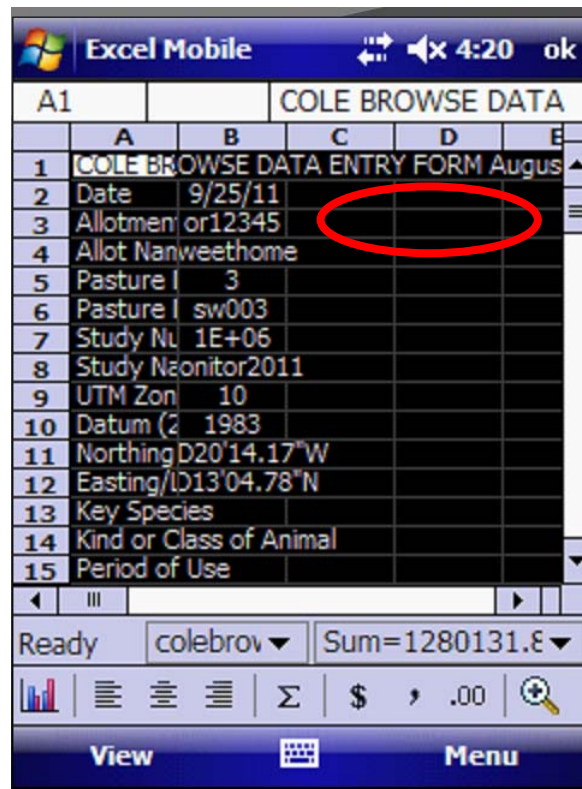

☐ Tap on the Menu button in the lower right corner of the screen. Tap copy.

☐ Tap the dropdown arrow on the bottom tab and select colebrowse2 to open your new, blank worksheet

☐ Tap Menu. Tap Paste.

☐ All of your Cole Browse Form is copied to the new worksheet. Tap any cell to unselect the entire worksheet. You are now ready to begin completing this
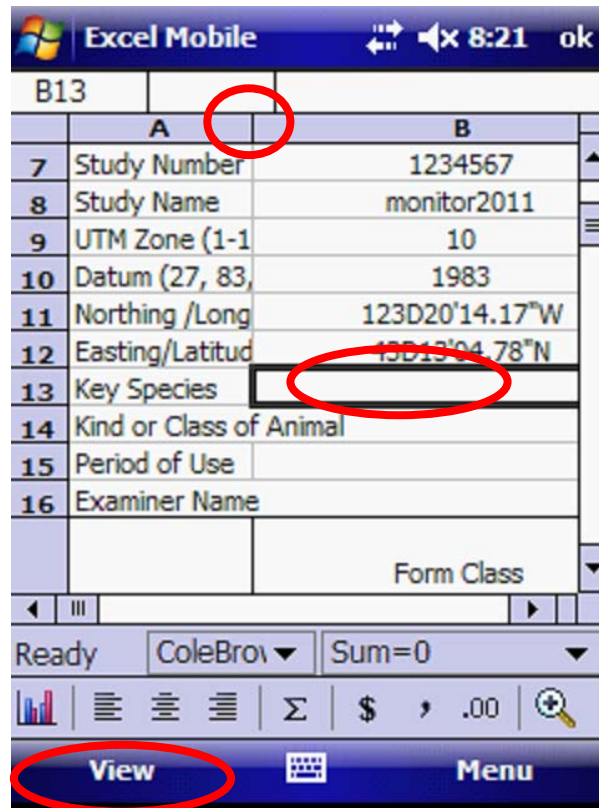
worksheet. You may wish to retain one Cole Browse worksheet as a blank master so you can copy from it over and over again.
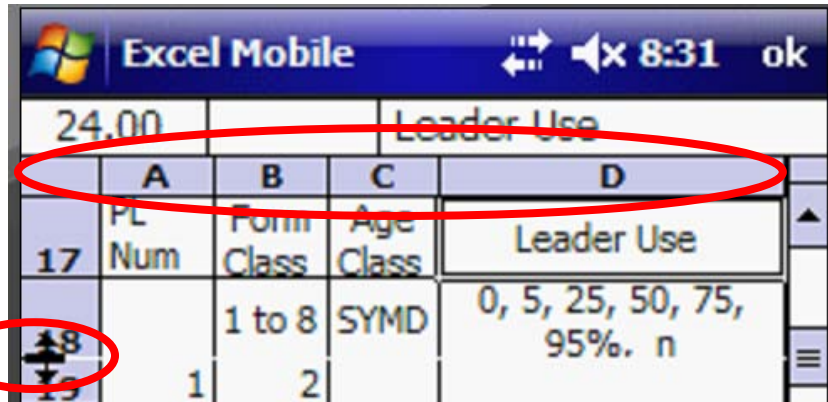
Congratulations! You now know about:

✓ **2   Copy and paste the Cole Browse Form on the Mobile Device**

Step 3: Complete the Cole Browse Form on the Mobile Device

☐ Change the View to Zoom to 75%.

☐ Scroll down to Row 13, where you must begin entering data for the Key Species, etc. Resize columns A and B and complete the four data entry fields.

☐ Scroll down so Row 17, with the column titles, is at the top of your screen.

☐ Resize the columns so you can see columns A-D without scrolling to the right or left. Do not make column D too narrow or Row 18 will be unnecessarily tall. You may need to resize Row 18 to be sure it is no taller than two rows. This is important to make sure the keyboard does not hide your data entry as you complete the form.
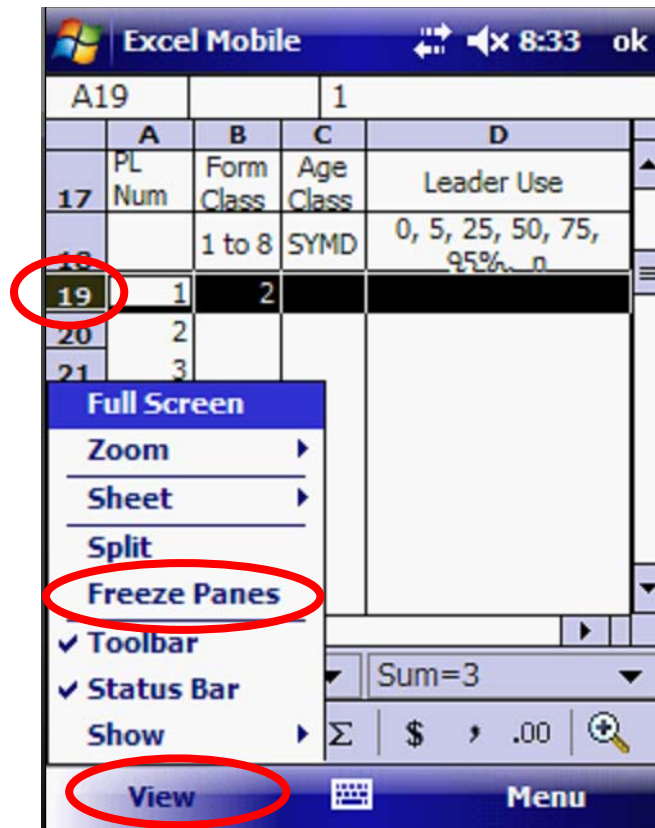

☐ Tap on the left side, Row 19, the first data entry row, to activate it.

☐ Tap on the View Menu. Tap Freeze Panes from the popup menu. This will ensure that the column headings remain at the top of your screen no matter which plant number you are surveying.
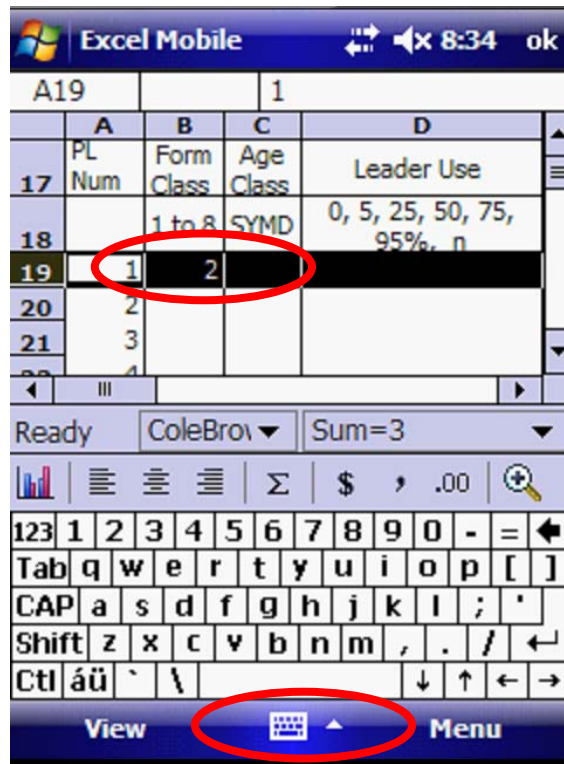

☐ Open the keyboard and make sure you can see the headings and your data entry row over the top of the keyboard. If not, go back to the previous steps and resize the height of rows 17 and 18 to make them shorter.

☐ Begin entering data.
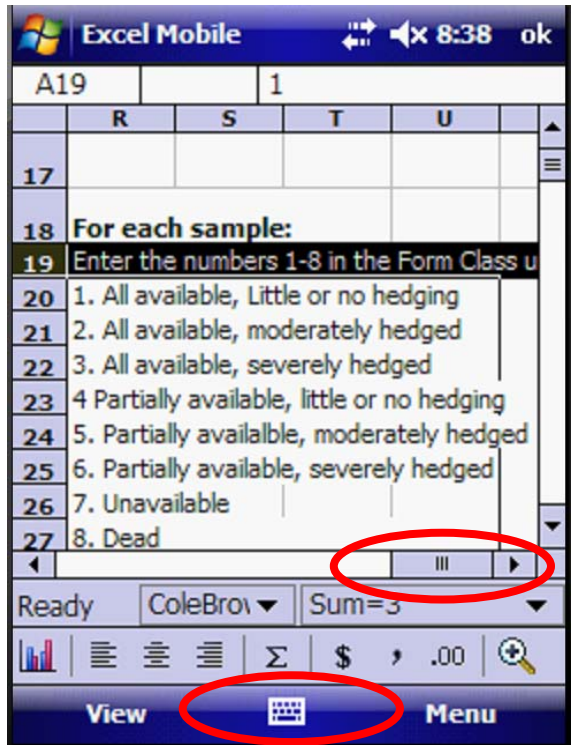
☐ Scroll to the right to view the tables as a guide to the appropriate codes
to enter. Be sure to close the keyboard so you can view the entire table on
one screen.
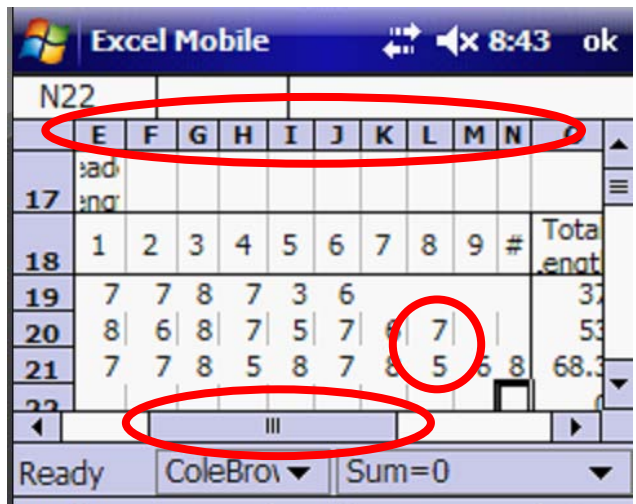
☐ As you complete the data in Column A-D, Scroll to the right to enter the
leader lengths that you measure for each plant. You may resize the columns so
you can see all ten measurements at once on the screen. You may enter one
decimal place in the data entry columns and the fractions are retained in the
data calculations, even though your view rounds the numbers up to the nearest
whole number.

☐ Resize a column where you entered decimal places so the decimal data entry will show. In the example above, I entered 5.25 in column L. The form rounded it up to 5.3 and this is the number used in the data calculations, even when the columns are so narrow it only shows a rounded whole number.

☐ Scroll to the right to view columns O and P. Note that the form has calculated the total length and count of all the leaders you measured.
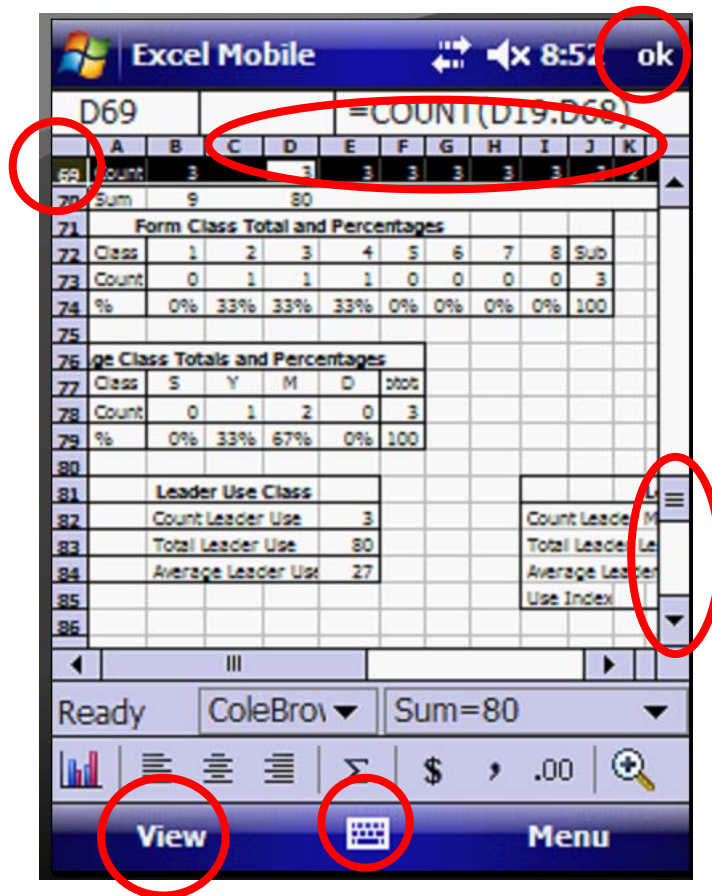
☐ When you are done entering data, close the keyboard. Scroll to the bottom of the page. Activate Row 69 where your count is totaled for the entire chart. Tap View and Unfreeze Panes.

☐ Tap View and Zoom to 50% so you can see more of the data calculations.

☐ Resize the columns large enough so you can see the data calculations. If the columns are too narrow, some calculations will show as a # pound sign.

☐ Scroll to view all of the calculations to ensure they have calculated correctly. If they have not calculated corrected, you will need to repair the worksheet back in the office (this is shown in Exercise 9).

☐ Tap OK in the upper left corner to save your changes and close the spreadsheet..

☐ Tap the X in the upper right corner to close the Excel Mobile folder

☐ Tap the X in the upper right corner to close the File Explorer.

☐ When you get to the Welcome screen, turn off the power button on the Juno unit. Turn off the Juno by holding the Power button on the upper right side for about 5 seconds. It will not consume additional battery power when turned off this way. To just turn off the screen, just hold the Power button for less than one second until the screen goes blank.

Congratulations! You now know about:

3 Complete the Cole Browse Form on the Mobile Device

Summary Exercise 8

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

- ✓ Open and review the Sample Cole Browse Form in the computer.
- ✓ Copy and paste the Cole Browse Form on the Mobile Device
- ✓ Complete the Cole Browse Form on the Mobile Device

End Exercise 8

Exercise 9
Copy the Forms back to the Computer, Print, Troubleshoot Formulas

Exercise goal: The intent of the exercise is to ensure that the user is familiar with copying the data from the Mobile device back to the Computer, creating Adobe Acrobat pdf images of the worksheets, printing the worksheets and troubleshooting formulas in the Excel Spreadsheet

Upon completion of the exercise, the student will be able to…

✓ Copy and paste the data from the Mobile Device to the Computer.
✓ Export and print a worksheet as an Adobe Acrobat pdf document.
✓ Troubleshoot formulas

Step 1: Copy and paste the data from the Mobile Device to the Computer

☐ Turn on the Juno GPS unit. Leave it on the Welcome screen. Do not open the spreadsheet. Connect the cable from the GPS to the USB port on the computer.
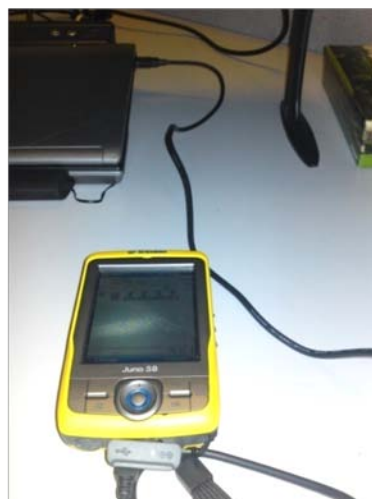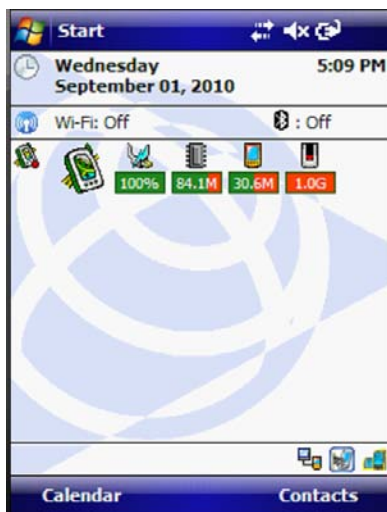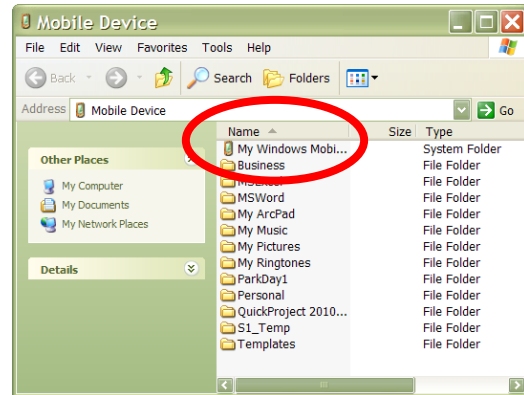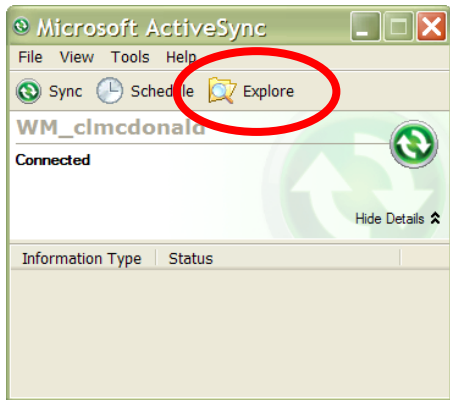

☐ Connect the cable from the GPS to the USB port on the computer.
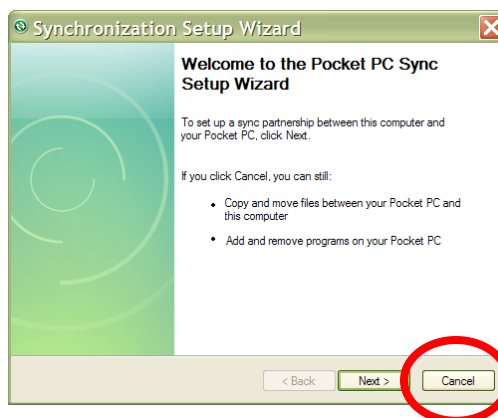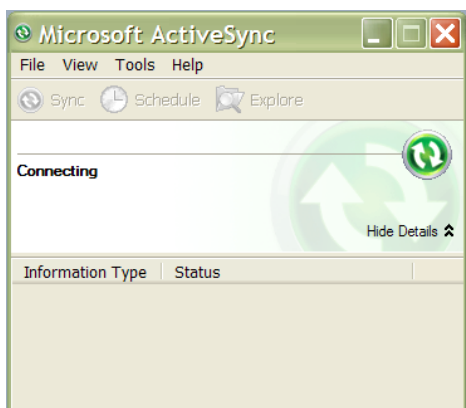
☐ ActiveSync will pop up on your screen. If it does not, try another port or manually open it from Start and All Programs.
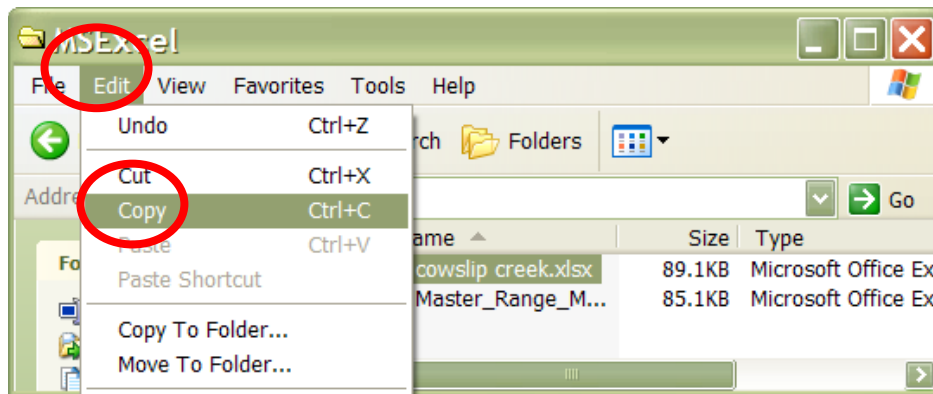
☐ On the Welcome Screen, click Cancel so you do not synchronize the Juno mobile device with the computer.
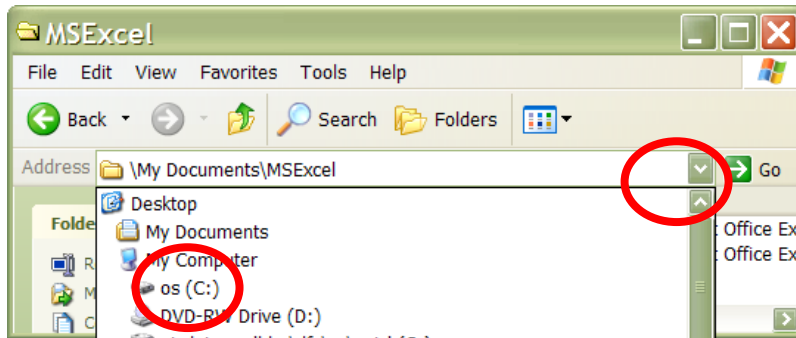
☐ When you are connected, click the Explore icon near the top of the window. It will open to your Mobile Device.
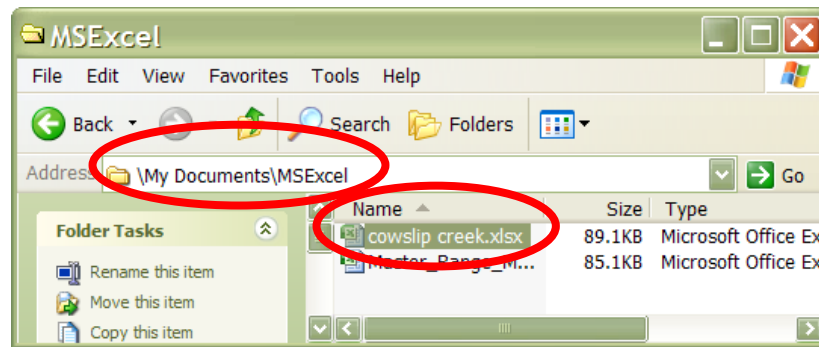
☐ Click on My Windows Mobile Based Device. Click on My Documents. Click on MSExcel. Left Click once on Cowslip Creek.xlsx.


☐ Click on the Edit menu. Click on Copy from the dropdown list.

☐ Click the dropdown arrow on the address line. Navigate to the project folder where you save the files from this project. We have a folder named Brush Mountain Allotment. I will navigate to that folder and open it.

Tip : Save your data on a server, not on the C drive. In the BLM, the servers are backed up daily by Information Resource Management (IRM). Your "C" drive, or any hard drive on your computer, is not backed up by IRM.
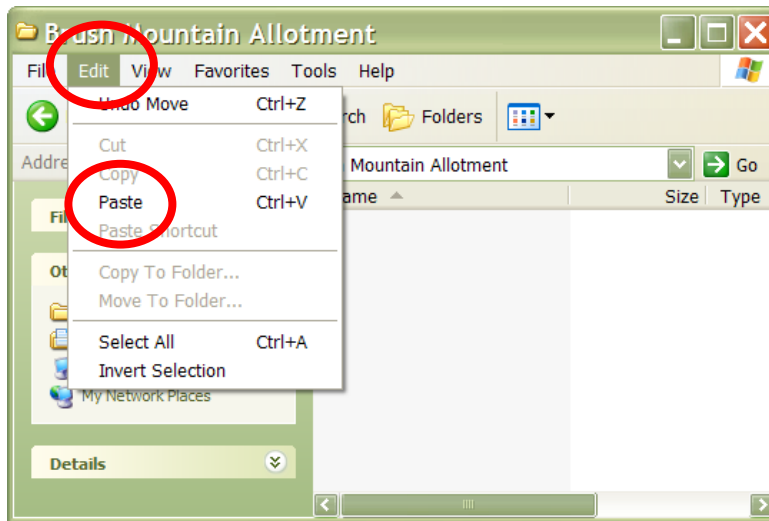
☐ When the correct folder is open and listed in the address line, click Edit. Click Paste from the dropdown list.
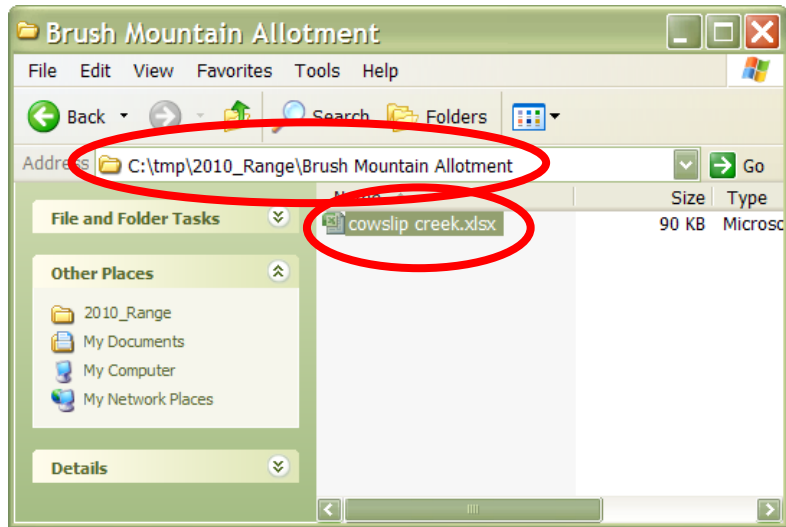
☐ The file with all of your forms, Cowslip Creek.xlsx is pasted on the server.

☐ The
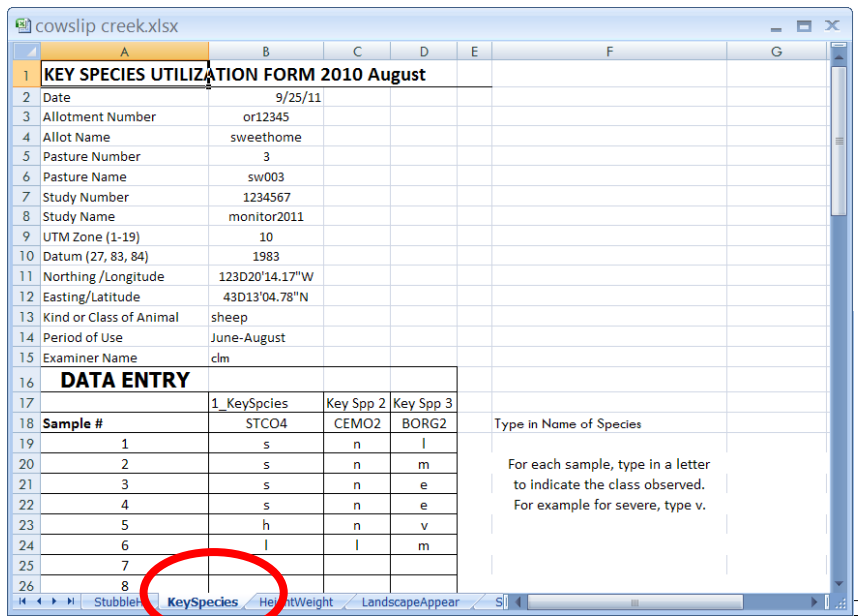
☐ Double click on the file to open it. Click the Key Species form and check to see that your data is still there and the formulas have calculated correctly (Check each form before you print them).
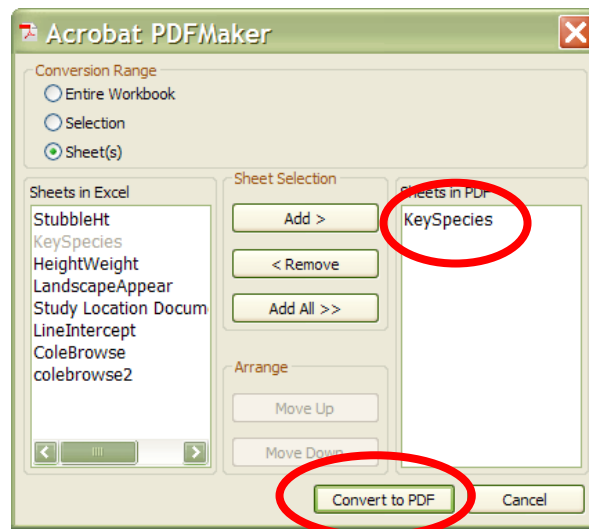
Congratulations! You now know about:

1 **Copy and paste the data from the Mobile Device to the Computer**

## *Step 2: Export and print a worksheet as an Adobe Acrobat pdf document*
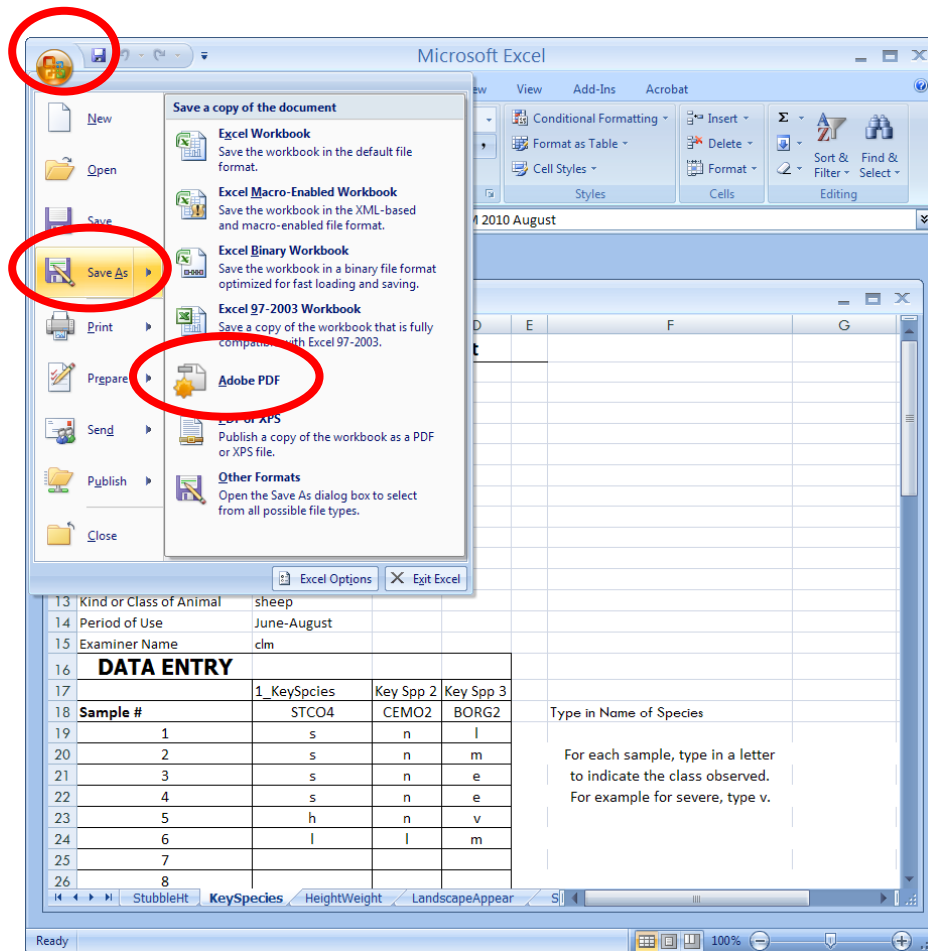
☐ Click on the MSOffice logo in the upper left corner of your screen. Click Save As. Click Adobe PDF.

☐ The worksheet you have active on your screen will already be added as the sheet to export to a pdf. Click Convert to PDF.

Tip: It is easier to find your documents if you export each sheet one at a time. In this window, you could add all of the worksheets at once. If you do this, you will get one pdf with all of the pages of the various worksheets in the one document.
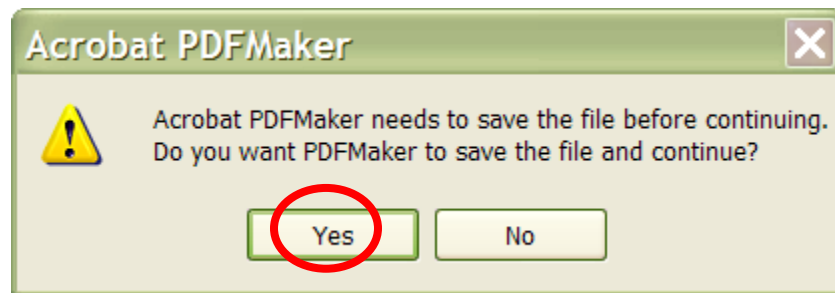

☐ Click Yes on the window to save the file and continue.
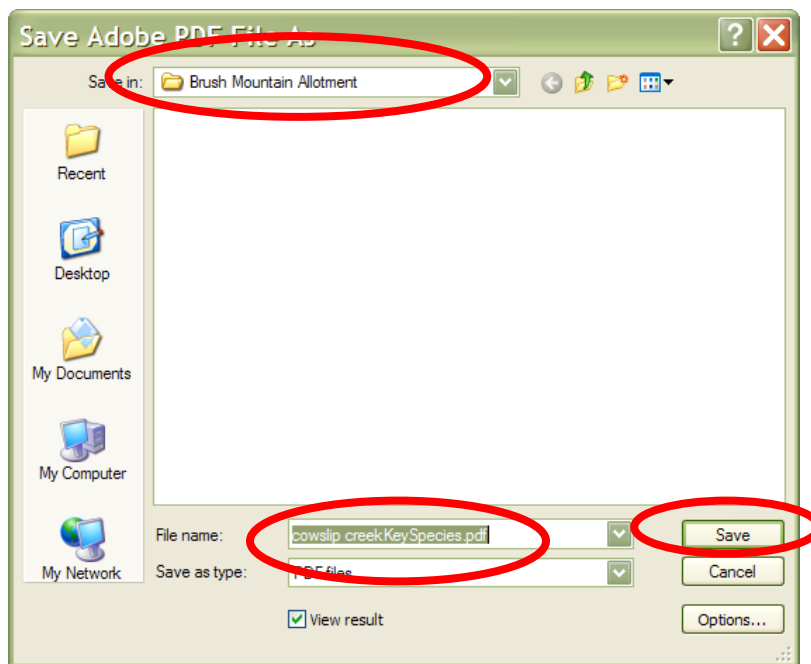
☐ Be sure the pdf is in the correct project folder. In this case we are correctly Saving In: Brush Mountain Allotment. Change the file name to the name of the project and the worksheet, i.e. Cowslip Creek Key Species. Leave the box checked at the bottom to View Result. Click Save.
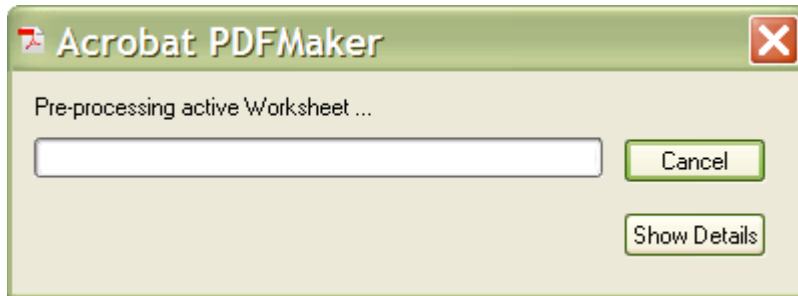
☐ A progress bar will pop up. Wait for the pdf to be created.
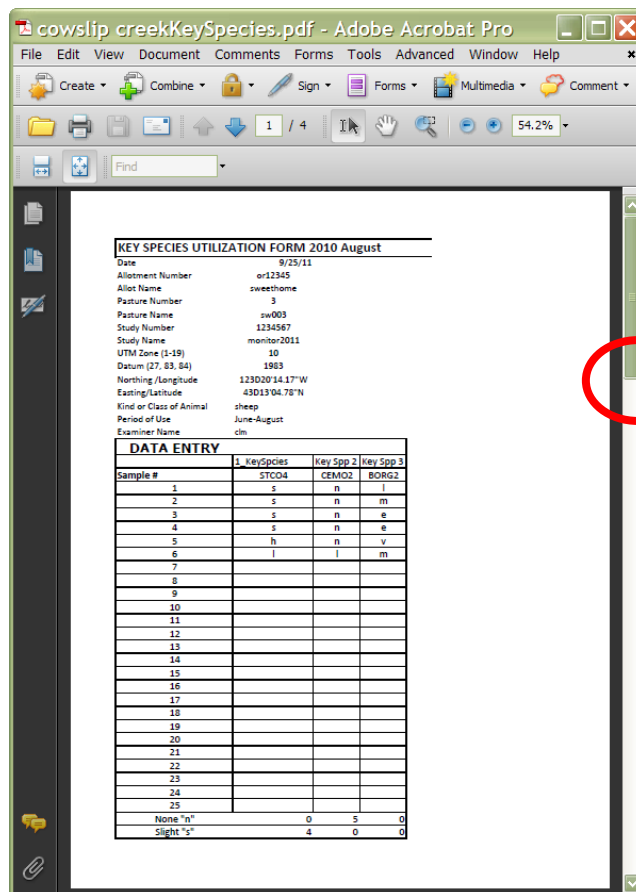
☐ Your pdf document will appear. The Key Species form is created on 2-4 sheets. You may scroll and view them.
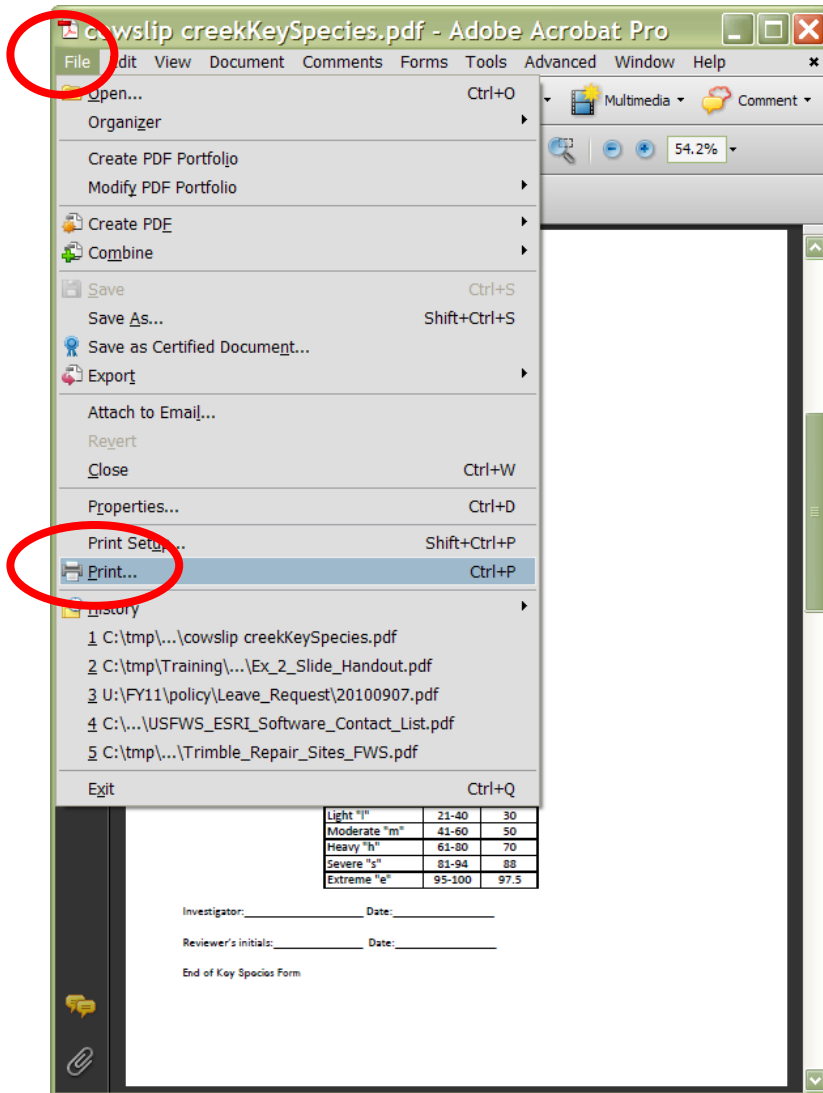
☐ Click on the file menu. Click Print from the dropdown list. We only want to print the first two pages so be sure to indicate that in the print screen. You will now have a paper record of the Key Species for your files. You also will have the digital pdf copy that you can share with your colleagues.

Congratulations! You now know about:

2   Export and print a worksheet as an Adobe Acrobat pdf document

Step 3: Troubleshoot formulas

☐ The Height Weight Confidence formula is not recognized by the
operating system in the Juno Mobile Device. Therefore it has not
been calculated correctly in your worksheet.

☐ Click on the HeightWeight tab in the Cowslip Creek.xlsx spreadsheet
in the computer to open the worksheet.

☐ Scroll to the bottom of the worksheet. Highlight one of the cells
that has the broken formula.
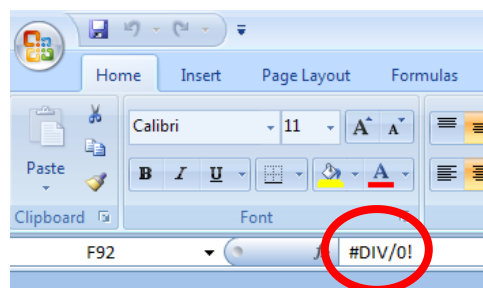
☐ Note that the formula shown is wrong in the upper window of MSExcel.
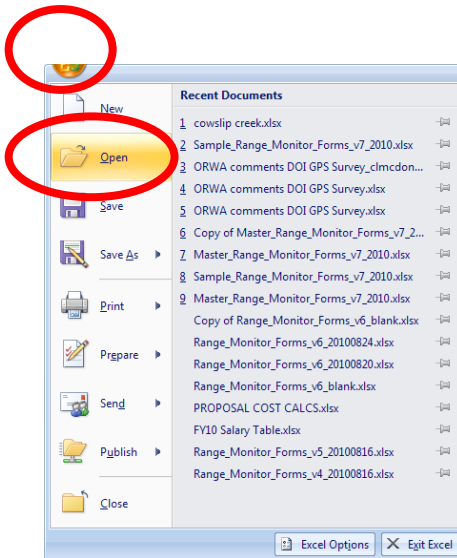
☐ Click on the MSOffice icon. Click Open from the dropdown list.
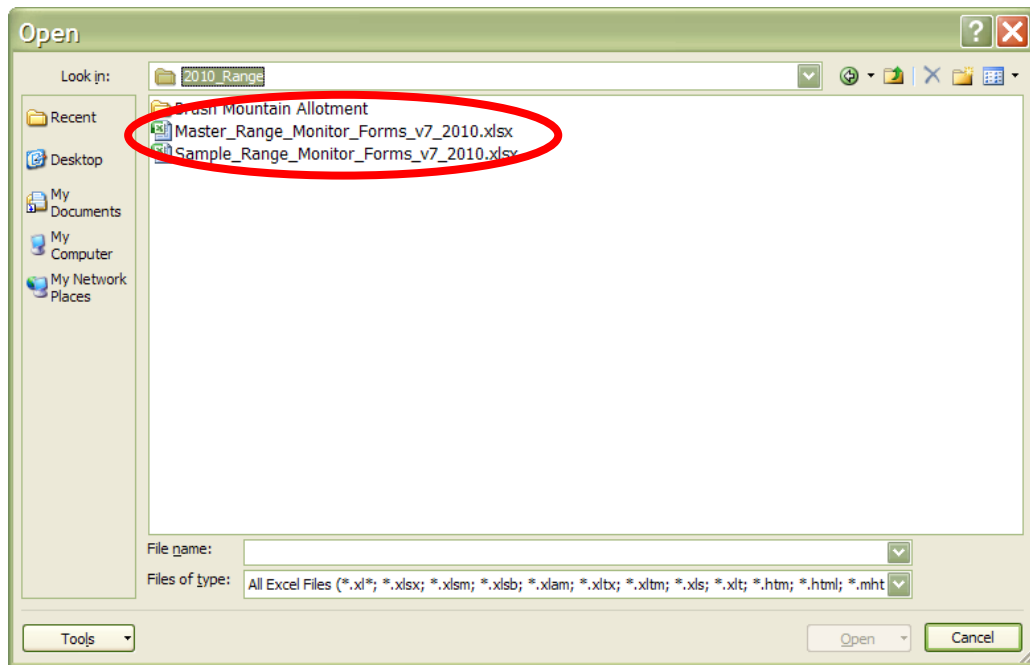
☐ Navigate to the location where you have the Master spreadsheet. Click
    once on the Master Range Monitor Forms file. Click Open.
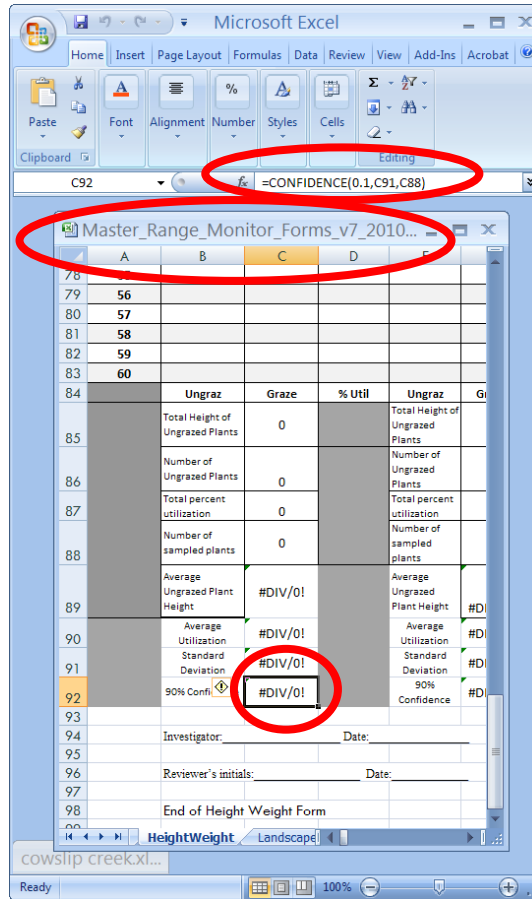
☐ When it opens, Click on the HeightWeight tab to open the form. Scroll to the bottom. Click once in the cell for the Confidence calculations.
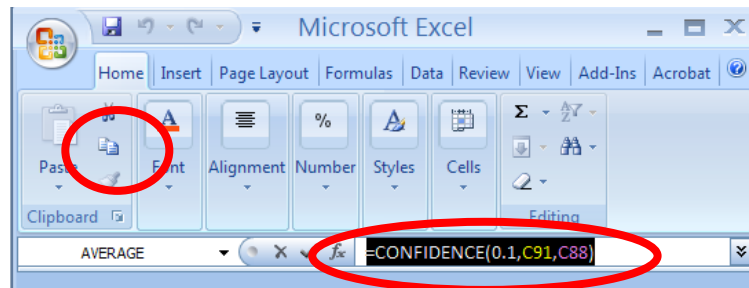
☐ The formula is correct at the top of the page. Highlight the formula. Click the copy button.

☐ Click the Escape key on the upper left corner of your keyboard to release the formula.
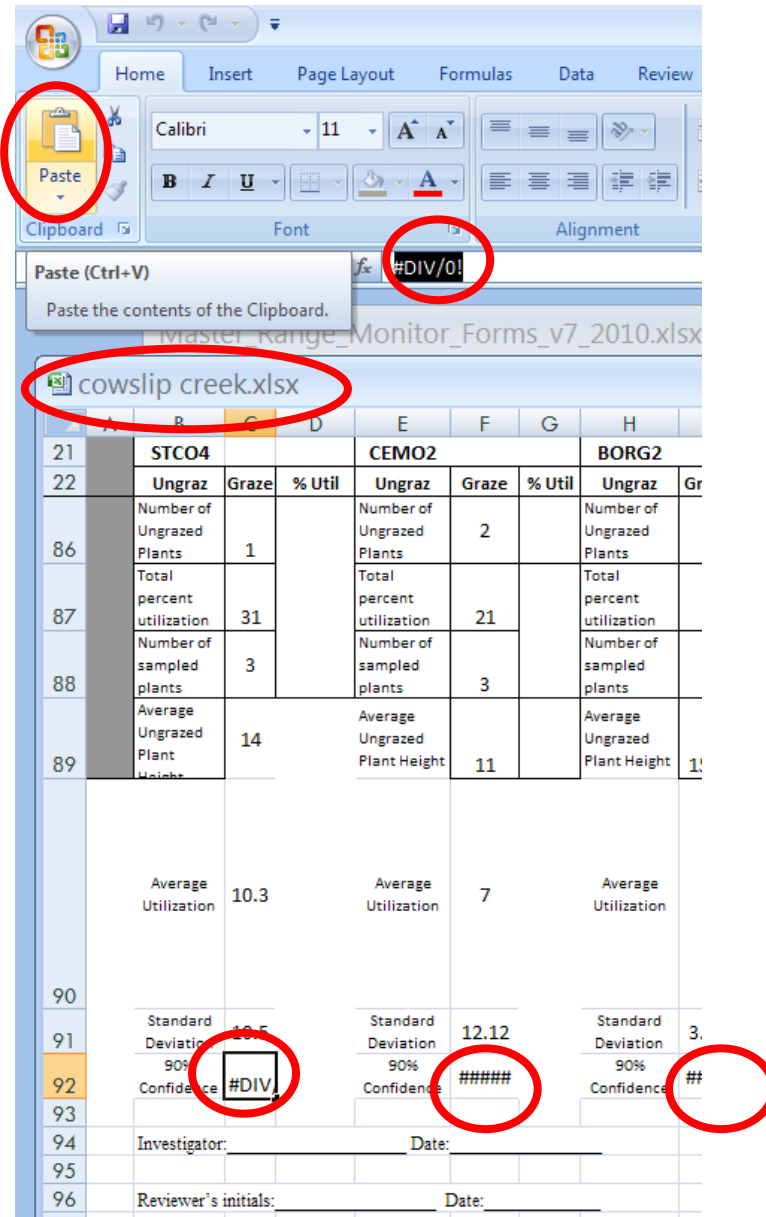
☐ Open the Cowslip Creek.xlsx file to the Height Weight form. Click once in the first cell with the broken Confidence formula.

☐ Highlight the broken formula near the top of the page. Click the paste button. The calculation is immediately made.

☐ Click on the broken confidence cell for the second species. Repeat the last step. Repeat these steps again for the third species. There is no need to return to the master and copy the formula.

cowslip creek.xlsx

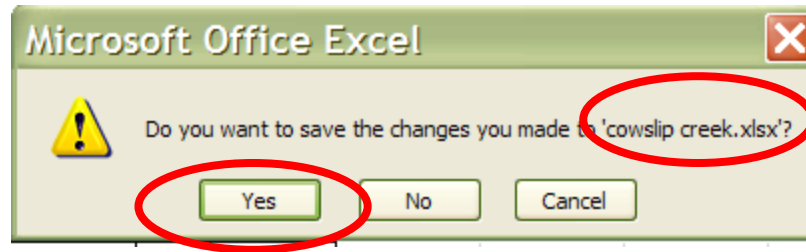|	STCO4			CEMO2			BORG2		
	Ungraz	Graze	% Util	Ungraz	Graze	% Util	Ungraz	Graze	% Util
86	Number of Ungrazed Plants	1		Number of Ungrazed Plants	2		Number of Ungrazed Plants	2	
87	Total percent utilization	31		Total percent utilization	21		Total percent utilization	6	
88	Number of sampled plants	3		Number of sampled plants	3		Number of sampled plants	3	
89	Average Ungrazed Plant Height	14		Average Ungrazed Plant Height	11		Average Ungrazed Plant Height	15.5	
90	Average Utilization	10.3		Average Utilization	7		Average Utilization	2	
91	Standard Deviation	10.5		Standard Deviation	12.12		Standard Deviation	3.46	
92	90% Confidence	9.98		90% Confidence	9.975		90% Confidence	9.98	
93									
94	Investigator:_____ Date:_____								
95									
96	Reviewer's initials:_____ Date:_____								
97									
98	End of Height Weight Form								

StubbleHt / KeySpecies / **HeightWeigh**

☐ The calculation is made for all three species. You may proceed to export to pdf and print the form.

Microsoft Office Excel

⚠ Do you want to save the changes you made to 'Master_Range_Monitor_Forms_v_2010.xlsx'?

[Yes] [No] [Cancel]
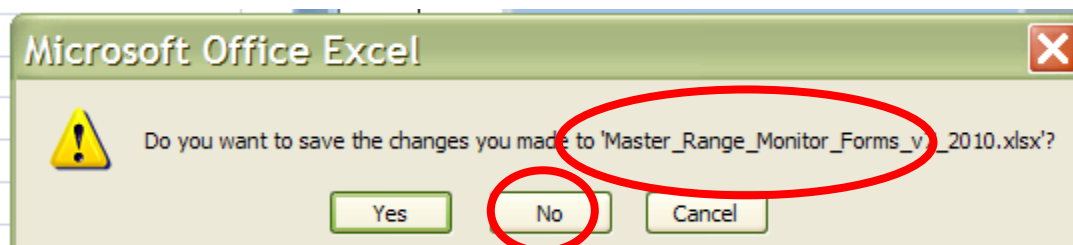
☐ When you close the Master Range Monitor Form, DO NOT save your changes.

1 110

☐ When you close the Cowslip Creek.xlsx file, DO save the changes.

Congratulations! You now know about:

3   Troubleshoot formulas

Summary Exercise 9

At the beginning of the exercise, we indicated that you would learn the following items. If you are not comfortable with any of these items, please contact your local technical support advisor or trainer.

- ✓ Copy and paste the data from the Mobile Device to the Computer.
- ✓ Export and print a worksheet as an Adobe Acrobat pdf document.
- ✓ Troubleshoot formulas

End Exercise 9