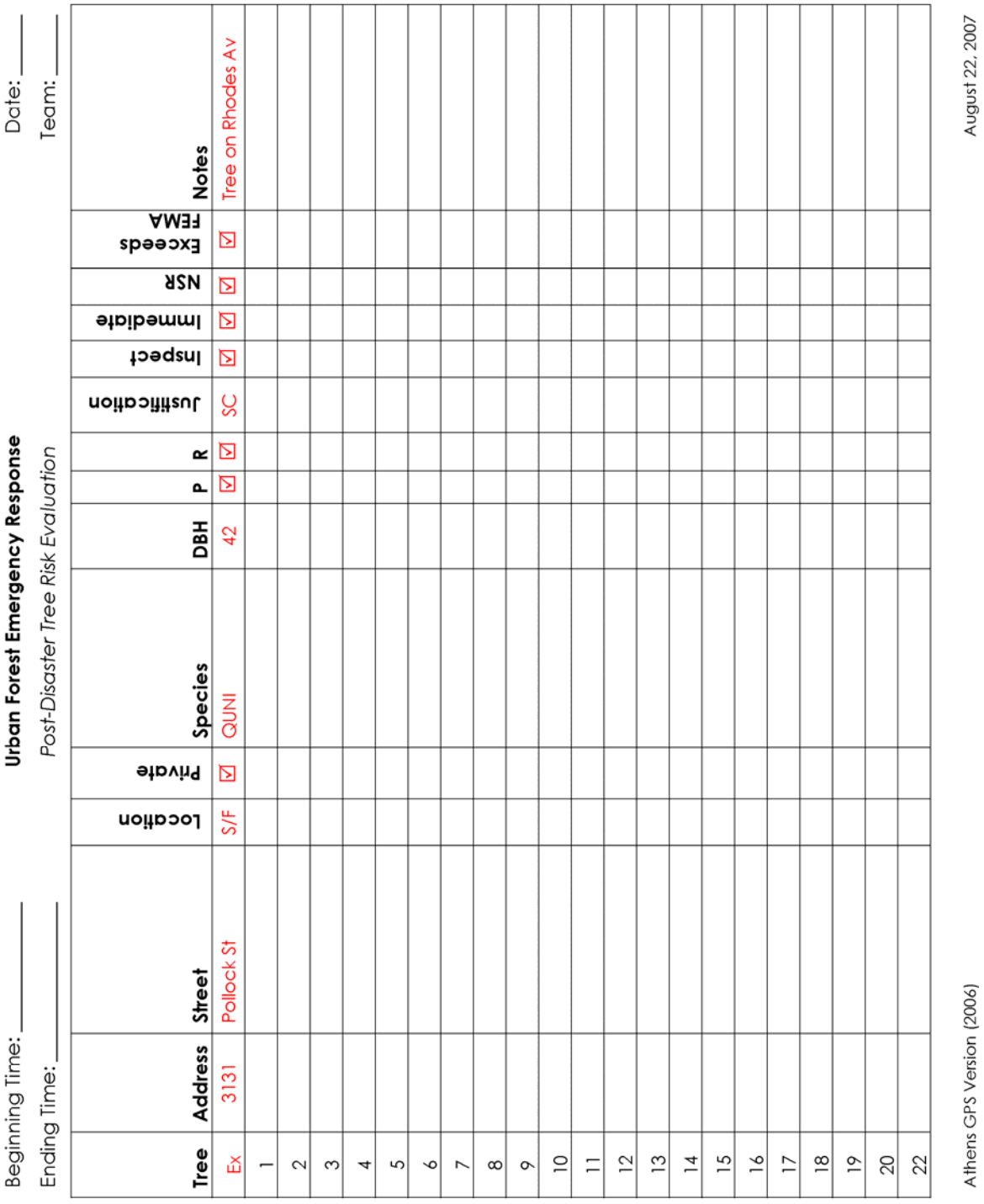
Chapter 4 – Risk Data Collection



Urban Forest Emergency Response
Post-Disaster Tree Risk Evaluation

Beginning Time: _____ Date: _____
Ending Time: _____ Team: _____

Tree	Address	Street	Location	Private	Species	DBH	P	R	Justification	Inspect	Immediate	NSR	Exceeds FEMA	Notes
Ex	3131	Pollock St	S/F	☑	QUNI	42	☑	☑	SC	☑	☑	☑	☑	Tree on Rhodes Av
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
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17														
18														
19														
20														
22														

Athens GPS Version (2006) August 22, 2007

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Address:	Street number of location
Street:	Street name or code
Location:	Defaults to "front" (leave blank), enter "S" for side yard
Private:	Check if location is on private property (i.e. not ROW)
Species:	Enter species code
DBH:	Tree diameter
P:	Check if a hazard pruning
R:	Check if a hazard removal
Justification:	Enter Code
Inspect:	Check if additional inspection is desired (i.e. 2nd opinion)
Immediate:	Check if city should eliminate this risk IMMEDIATELY (i.e. extreme danger)
NSR:	Check if hazard/risk is not storm related (i.e. FEMA won't pay)
Exceeds FEMA:	Check if hazard/risk exceeds FEMA guide or risk threshold (i.e. FEMA won't pay)
Notes:	If location = "S", please enter cross street name here, otherwise freeform

Species:	AC = Red maple
	CA = Pecan
	CO = Dogwood
	OT = Other
	PI = Pine sp.
	PY = Bradford pear
	QUNI = Water oak
	QUPH = Willow oak
	UL = Elm sp.

Justification:	AD = Advanced decline
	DE = Dead
	DW = Deadwood
	ES = Excessive storm damage (massive crown damage; multiple injuries from storm)
	HA = Hanger
	LE = Lean
	LC = Limb crack
	RP = Root plate disturbed
	SC = Stem crack

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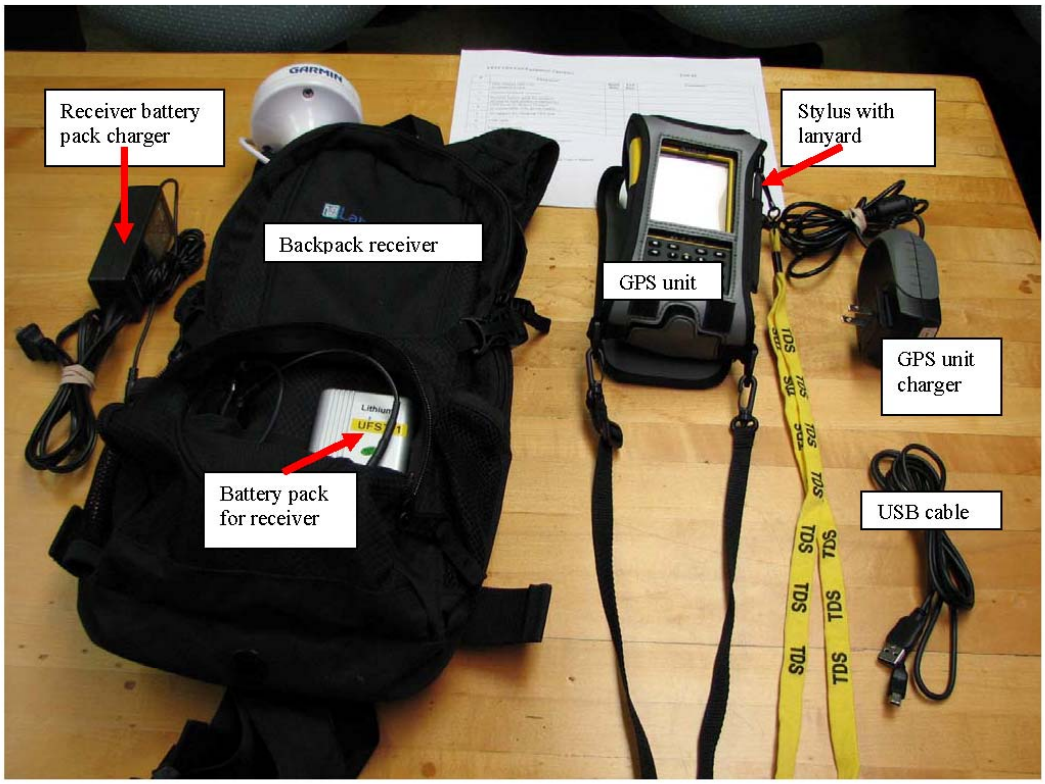
Chapter 4 – Risk Data Collection

Quick Start Guide for Using TDS NOMAD GPS Equipment

Initial Unit Check

For each GPS unit, ensure you have:

- TDS NOMAD GPS Unit
- Garmin backpack receiver (antenna)
- Portable battery pack for receiver (usually found in the back pocket of backpack)
- GPS Receiver Battery Charger w/ connectable 110v power supply
- AC adapter for charging your GPS unit
- Stylus with a lanyard to enter data from unit display (do not use a ballpoint pen)



Make sure the GPS receiver battery is charged by depressing the "TEST" button on top of the battery. All four lights should come on when the battery is completely charged. If charging is needed, plug the barrel adapter into the large port on the side of the battery pack labeled "Antenna/Charger" and then plug the charger into an electrical outlet for several hours.

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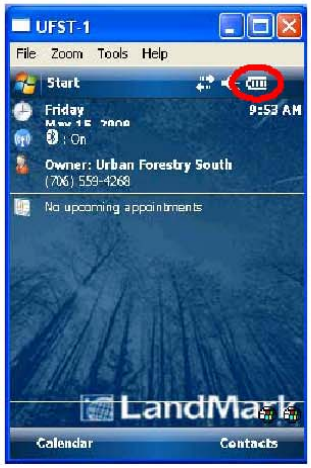
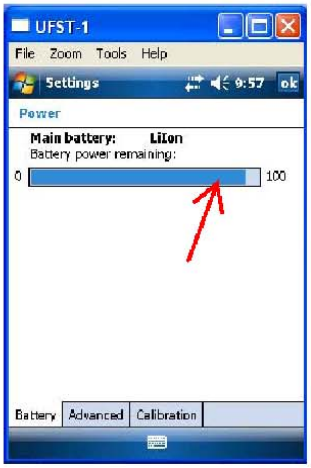
Make sure the GPS unit is charged by depressing the green on/off button in the lower, left-hand portion of the unit, tap on the display screen to minimize the Owner Information screen, and tap on the battery icon in the upper, right-hand portion of the display.





The main battery display box should be light blue from 0 to 100. If not, charge the unit for several hours using the AC charging adapter. The barrel adaptor from the charger plugs into the port on the bottom of the unit.

Depending on the type of boot the GPS unit has on the bottom of the unit, the charger will plug into the circular port on the right-hand side of the boot.

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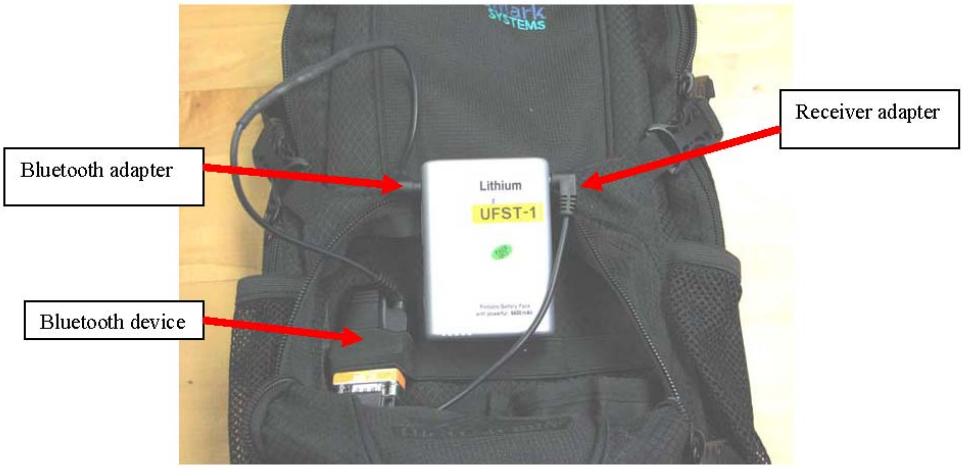
Preparing the GPS Unit for Data Collection

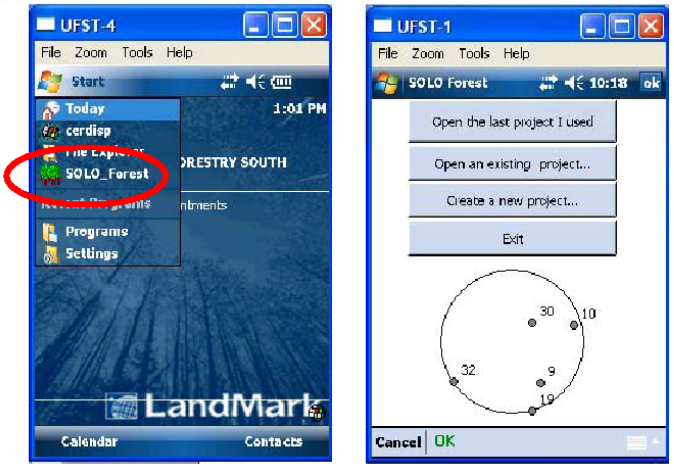
Before leaving the command center, follow these instructions.

Connect battery and Bluetooth cables to receiver. In the back pocket of the backpack, insert the larger, barrel adapter into the receiver battery pack located on the side and labeled "Antenna/Charger". Insert the smaller barrel adapter into the port labeled "Bluetooth Adapter". Ensure that the adapters are fully seated in the battery.



Turn on GPS unit. Depress the green on/off button in the lower, left-hand portion of the unit.

Start SOLO_Forest software. Tap on the display screen to minimize the Owner Information screen. Tap on the "Start" icon in the upper, left-hand corner of the display window, and then tap on "SOLO_Forest".



After a few moments, the application will appear on the display showing the present satellite configuration and giving you the option of opening an existing project, creating a new project, or exiting.

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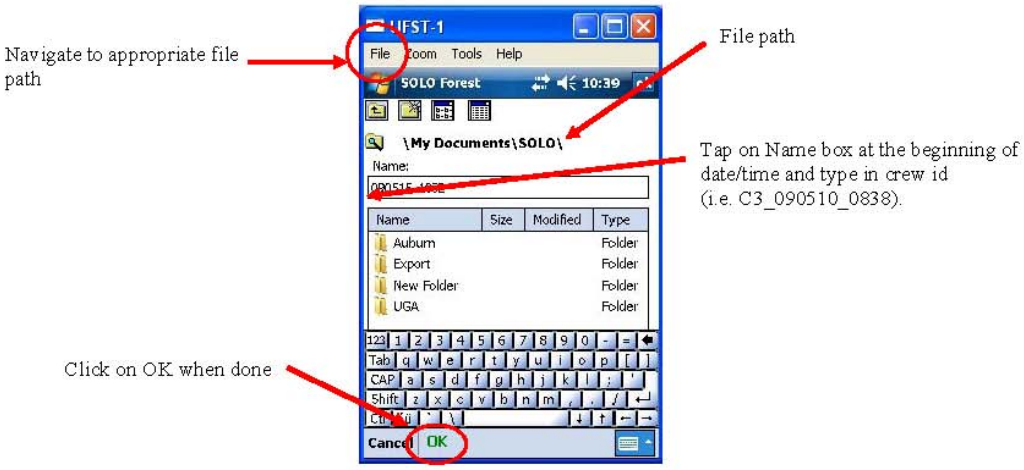
Before leaving the command center, follow these instructions.

Create a new project. Tap on "Create a new project…" to reveal a screen that will allow you to name your file. The file path will be displayed near the top of the screen. Ensure that it reads "\My Documents\SOLO\". All files should be stored in "\My Documents\SOLO\". If another path is displayed, navigate to it by tapping on the icon with the up-arrow in the folder until the path name reads "\My Documents\SOLO\". In the Name box, the date and time will appear by default in the form of yymmdd_tttt (military time). **Always keep this date and time in the file name**. This will help organize the data files. If the curser is not flashing at the beginning of the date and time in the box, tap on the box near the beginning of the date and move it to the beginning using the directional arrows on the screens pop-up keyboard. Type in the crew number (i.e. C3_) which should also be the number on the GPS unit label. Use an underscore or hyphen to separate the crew id number from the date/time. Tap on the green "OK" at the bottom of the screen when you are done naming your file.



Tap on the green OK at the lower, left-hand side of the display to skip the project settings.

If the GPS unit is functioning properly and displaying adequate satellite lock, it is then alright to leave the command center and proceed to your designated area of work. If the unit does not seem to be functioning properly, see your team leader before leaving the command center.

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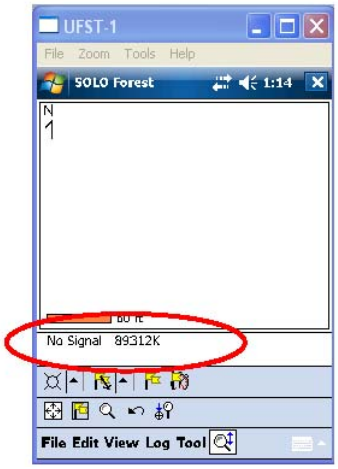
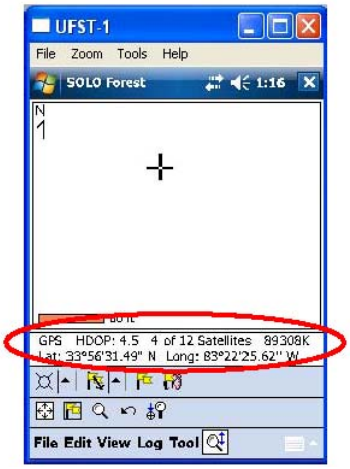
Collecting GPS Data

Verify GPS precision. If your GPS unit has a lock on the appropriate number of satellites (usually 4 satellites), you should have a blinking crosshairs on your display. Underneath that box with the blinking crosshairs will be displayed GPS precision information such as HDOP, the number of satellites locked, and latitude/longitude coordinates. If you do not see any of these, your GPS unit does not have an adequate lock onto satellites. You may need to move to an area that will give you an open view of the sky (i.e. an open parking lot or a ball field). Occasionally, the Bluetooth cable connections from the battery pack become loose. Ensure the cable connections are fully seated.

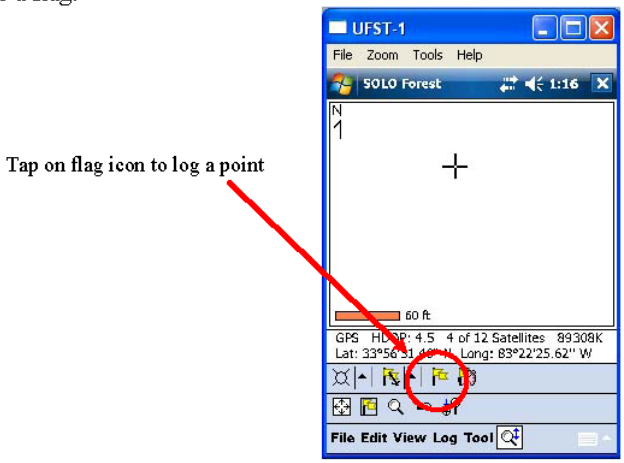


Example of GPS unit without an adequate lock on satellites. No cross-hairs nor GPS precision information.



Example of GPS unit with an adequate lock on satellites. Crosshairs and GPS precision information are displayed.

Log a point. To begin collecting data on a feature (i.e. damaged tree), place the backpack receiver next to the tree, on the south side if possible, and tap the icon at the bottom of the screen that looks like a flag.



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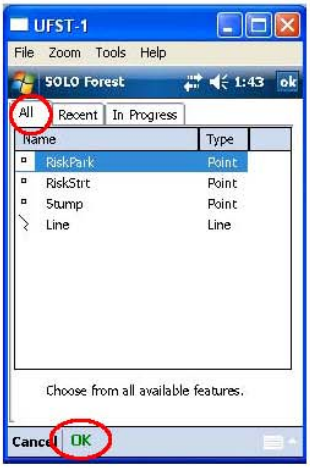
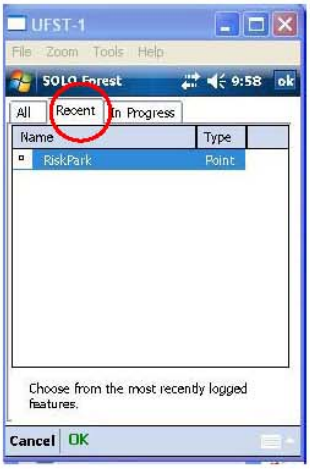
Select your feature. The feature log screen has three tabs at the top of the display from which to choose. For the first point logged in a new project, all available features will be displayed automatically under the "**All**" tab. Choose the feature you wish to record (i.e. park tree, street tree, or stump) by tapping on it, and then tapping on the green OK at the bottom of the screen.



With each subsequent feature that will be logged, the most recently logged feature will be displayed under the "**Recent**" tab. **CAUTION:** The attributes assigned to the previous tree will be displayed, so ensure that all of the feature's attributes represent the current tree.



Assign attributes and ensure GPS precision. The two tabs at the top of the display labeled "Attributes" and "GPS Status" allow you to assign attributes to the damaged tree and monitor the precision of its spatial location. Tap on the "Attributes" tab to complete the on-screen survey. For the first feature of a new project, make sure each crew enters their team and crew number (i.e. T1C3). This will help the GIS technician keep track of the data. After completing the attribute survey, tap on the "GPS Status" tab to ensure its spatial integrity. If the precision is adequate (Dev:

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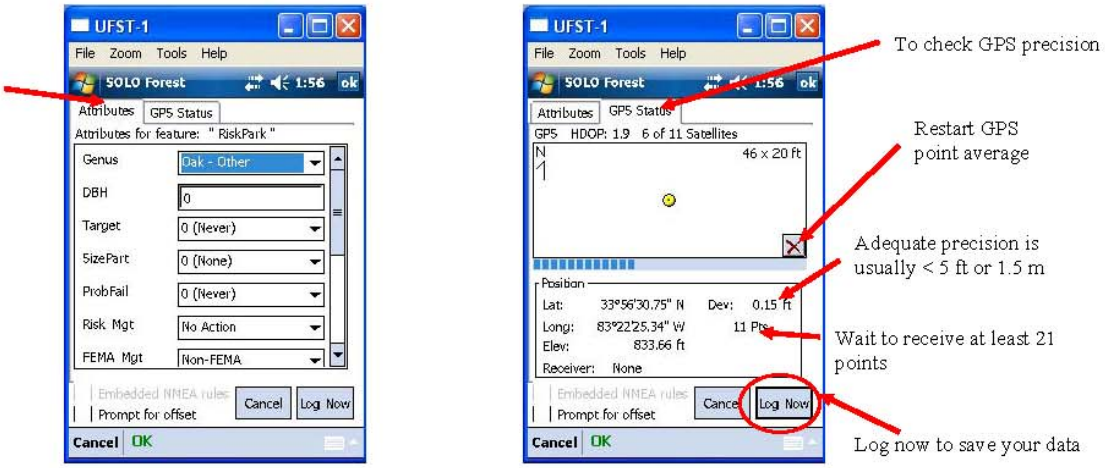
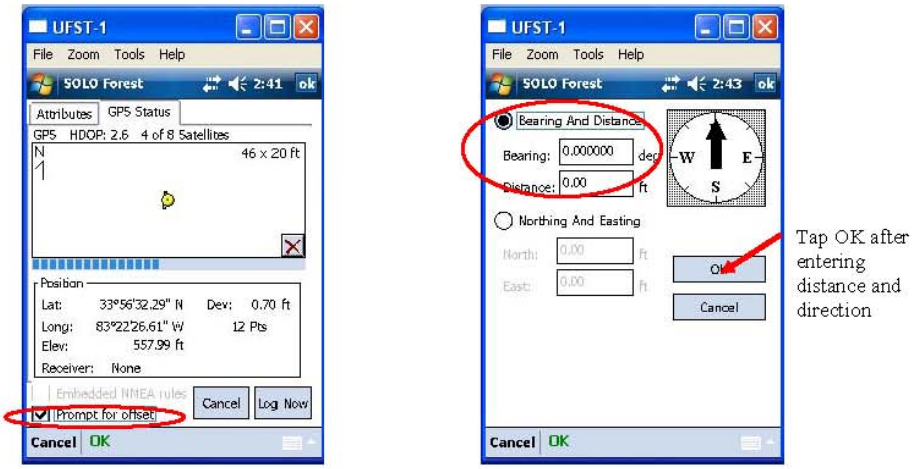
< 5 ft) and you have collected 21 points, tap on the "Log Now" box to save the data. If the precision is not acceptable, tap on the icon at the lower, right-hand portion of the point display screen to restart the GPS point averaging.



Offsets: Occasionally GPS precision is inadequate due to dense tree canopy or building interference. You may need to place the receiver away from the intended target in order to get a better view of the sky and lock onto satellites. After entering attributes for the target and before logging your point, tap on the "prompt for offset" box. Now when you tap on the "Log Now" box, an offset dialogue window will appear asking for a bearing and distance. Enter the compass bearing (in degrees) from the receiver to the target and the distance (in feet or meters, whichever is asked for). Tap on the OK box in the dialogue window to log the feature and save the data.



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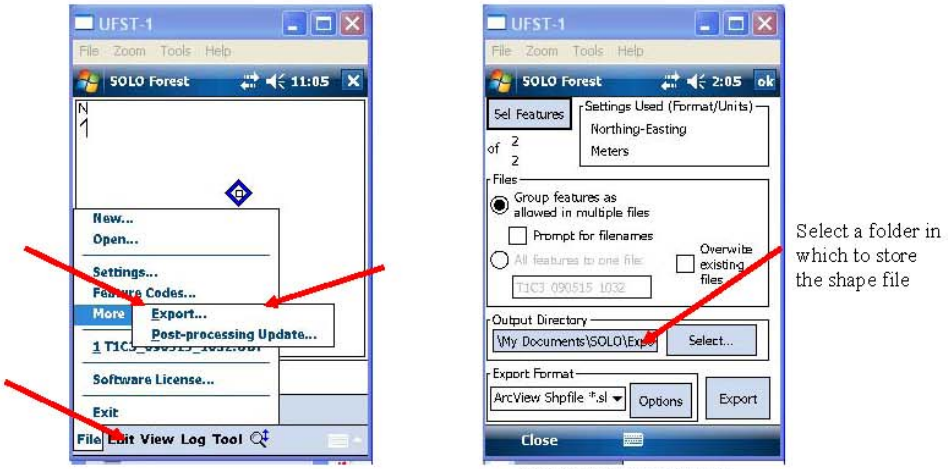
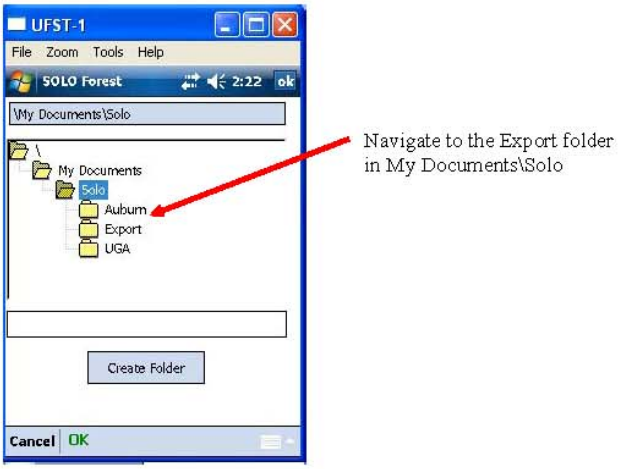
Exporting Data to Shape Files

Set up default export features. After collecting data for the day, export the data into a shape file so that the data can be displayed in a GIS project. On your GPS unit while in your current project, tap on File (at the bottom of the display), tap on "More" in the pop-up window, and tap on "Export…" to display the export dialogue window.



Export dialogue window

In the export dialogue window, tap on the "Select…" box next to the Output Directory to select a folder in which to put the shape file. Shape files should be stored in "My Documents\SOLO\Export". If the file path does not point to the Export folder in Solo, then navigate to and select it, and tap on the green OK at the bottom of the display.



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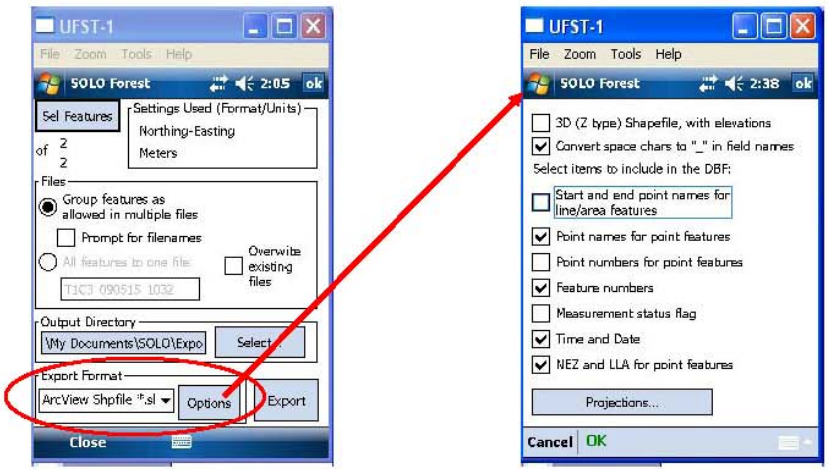
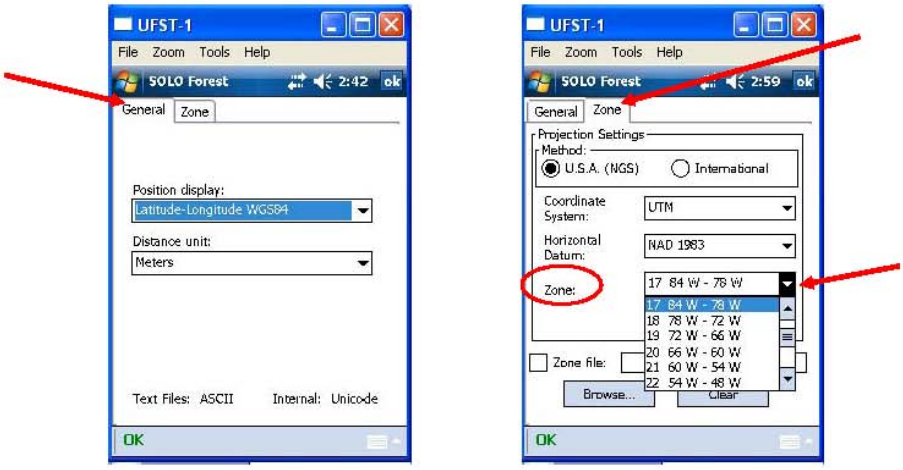
Ensure that the data are being stored in an ArcView Shape file by selecting it in the Export Format box, and then tap on the Options box. Make sure the options display looks like the following:



Tap on the "Projections…" box near the bottom of the display. There are two tabs at the top of the display, General and Zone. Under General, set the "Position display" to "Latitude-Longitude WGS84" and the "Distance unit" to "Meters". Under Zone, ensure the correct zone is displayed (you should not need to change the Coordinate System or the Horizontal Datum boxes). Tap on the green OK at the bottom of the display.



After making these changes, SOLO_Forest will use them as the default for all subsequent projects, so this procedure needs to be done at the end of the first day's data collection. However, it is always a good idea to recheck occasionally to make sure these settings have not been changed inadvertently.

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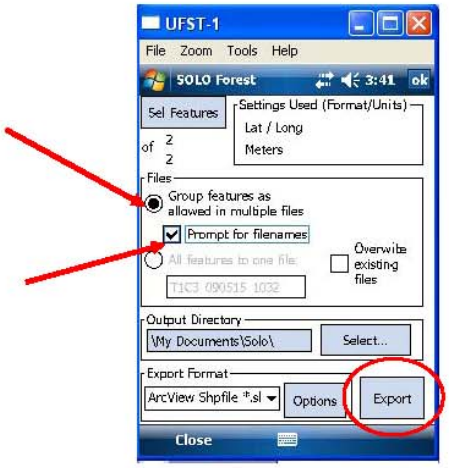
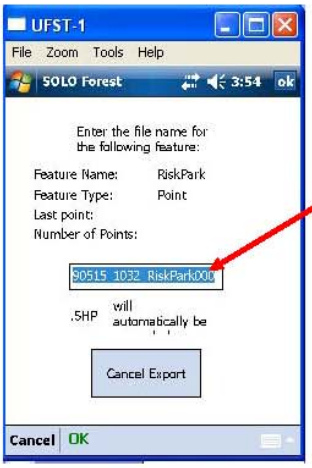
Export the data. While in the project that you want to export, open the export dialogue window (tap on File, tap on "More", and tap on "Export…") and check that the default export features are accurate (see Set up default export features above). Ensure that the radio button next to "Group features as allowed in multiple files" is populated and a check mark is in the box next to "Prompt for filenames", and then tap on the "Export" box.



Name each feature by tapping on the file name box and removing the last three zeros on the end of the file name. Tap on the green OK at the bottom of the screen. Each feature type (RiskPark, RiskStrt, and Stump) will be named similarly.



Click on the box and remove the last three zeros from the file name

A pop-up window will appear indicating the number of files written to the export folder. Tap OK, and then tap on "Close" at the bottom of the display screen. If you are done with the GPS unit, tap on File and then Exit.

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