

## Introduction to Solo Forest

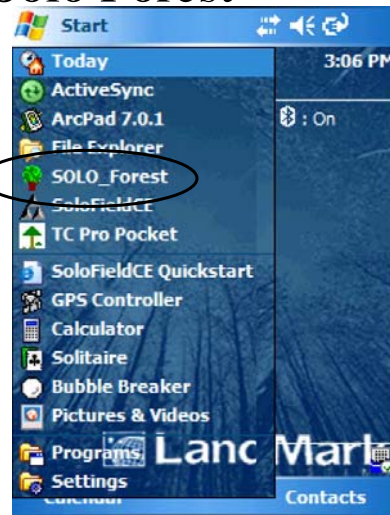
- Project Settings
- Collecting Data
- Office Procedures
  - Exporting Shapefiles
  - Syncing with the PC
  - Transferring files



## Opening Solo Forest

To open Solo Forest , select Start > **Solo Forest**.

If you programmed Solo Forest as one of your Button shortcuts, you may also open it by selecting the **upper right button** on the Recon X or Ranger X.



## Creating a UDF Project

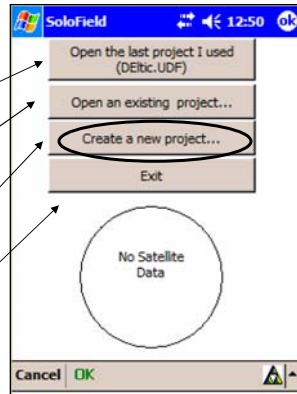
After executing the Solo shortcut, you will be faced with this screen:

Opens the last project that was used

Opens a project that has been previously created but was not the last used

Begins a completely new Solo Forest project

Exits out of Solo Forest



## No GPS Data Screen

If you do not have GPS going when you open the Solo Forest program, Solo will let you know that it does not see any GPS data by displaying the following screen. It is not an error. It is simply a fact that it is not receiving any GPS data.

When this occurs, simply select the Do not repeat this message again this session box and it will not harass you again during the current session.



## Naming the Project

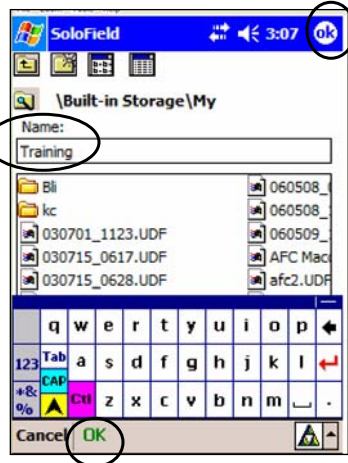
When you begin a new project, Solo takes you to one of the following default Solo folder locations:

Pocket PC – Built-in Storage\My Documents\Solo

Windows Mobile – My Documents\Solo

To begin a new project, we must first name it. In this example, we will use the name Training. The default name that appears is a number string that represents the year, the month, the day, and the time. To type training, simply double click the numbers in the Name: cell and use your keyboard to enter “**Training**”.

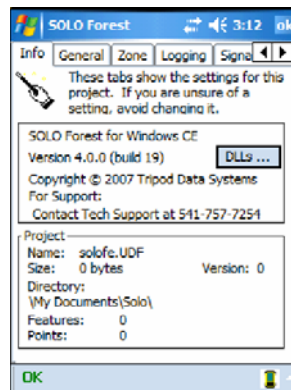
Select OK at the top right or bottom left and you will go to the Settings Options in Solo Forest. 99% of the time you will not need to modify any settings, but you do need to understand them.



## Solo Forest Settings

### Info Tab

The Info Tab gives the Solo Forest Version Information along with the Project Name and the Directory it is being stored. It also gives the number of features that has been collected. Sin this is a new project, there is no feature or point data.

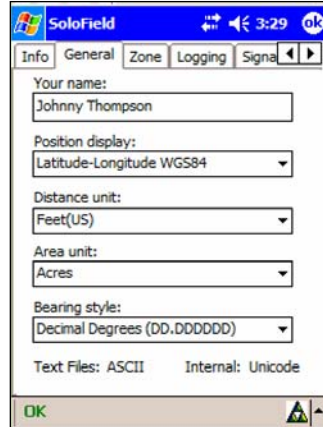


# Solo Forest Settings

## General Tab

The General Tab allows you to determine how you want to see your data in the field. Most people like to see Latitude-Longitude and Feet.

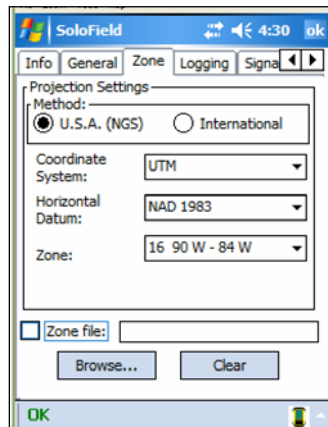
After you have finished mapping your features you can export your shapefiles as Lat-Long (i.e.. Geographic), or, if you set the Position display to Northing-Easting and your Distance unit as Meters, then Solo will export your shapefiles in the Coordinate system, Datum, and Zone that are set up on the Zone tab (for example UTM, NAD83, Zone 16). ArcGIS can handle either method, but fGIS has to have the GPS data match the basemap data.



# Solo Forest Settings

## Zone Tab

The Zone Tab allows us to configure the Projection Settings which include the Coordinate System, Horizontal Datum, and Zone. If you plan on using Base Maps/Images in the field, you will want to set this to match those.

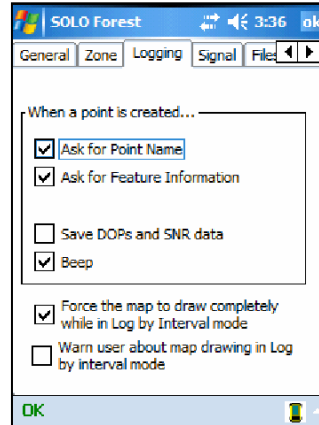


# Solo Forest Settings

## Logging Tab

The Logging Tab gives us an opportunity to set some parameters around how we want to collect data. We can determine what we want to happen when we begin collecting data by configuring the “When a point is created...” box.

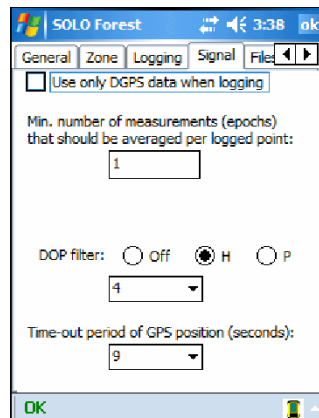
These are the recommended settings.



# Solo Forest Settings

## Signal Tab

The Signal Tab is where we set our parameters for maximum allowable HDOP or PDOP. We can also select the minimum number of observations to be collected during a static point. You may also want to choose whether or not you want to accept data if it is not being differentially corrected RealTime (DGPS). We recommend *not* checking this box unless you are doing a mapping project that requires DGPS data only. Please read through these options before continuing.



# Solo Forest Settings

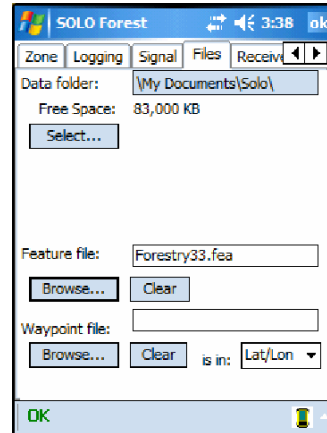
## Files Tab

The Files Tab is where we can set up the folders where we want our data stored and backed up. You will have one of the following locations depending upon your operating system:

Pocket PC – Built-in Storage\My Documents \Solo

Windows Mobile – My Documents\Solo

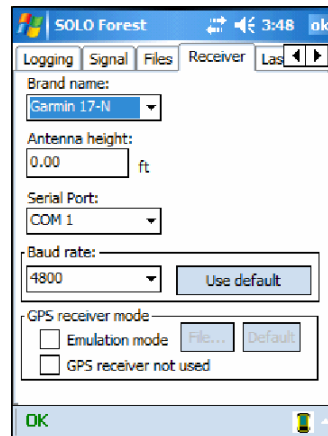
Do not change or modify these folders. Also, we can select the Feature File we wish to use for the project and we can load or clear a waypoint or grid file.



# Solo Forest Settings

## Receiver Tab

The Receiver Tab allows us to choose the type of GPS receiver with which we will be collecting data. Garmin 17-N applies to all Garmin receivers. COM 1 applies to any receiver that will be plugged in the 9 pin Serial Port on the bottom of the handheld. If you are using a Bluetooth GPS receiver, you will usually select COM 8. If you have all of the GPS peripherals connected and are not receiving a signal, make sure the “GPS receiver not used” box is not selected.

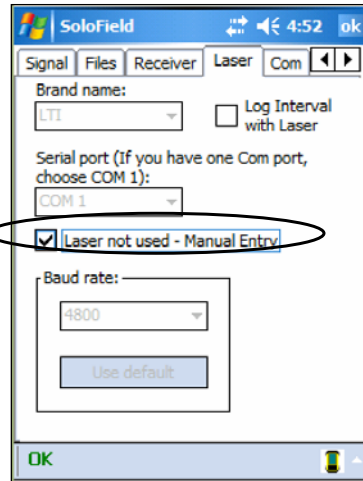


## Solo Forest Settings

### Laser Tab

Be sure and check the Laser not used – Manual Entry box on the Laser tab because we will need that set up correctly when we use the Log by Laser technique under the Advanced GPS section.

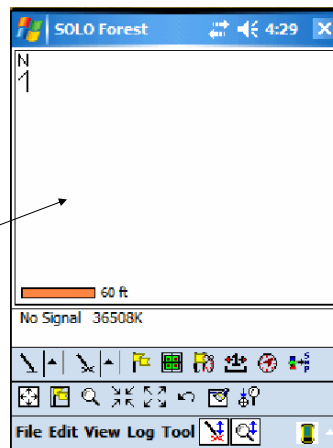
You can now select OK in either the top right or bottom left corners.



## Solo Forest Main Screen

### 4 Parts

- Map Area
- Data Collection Toolbar
- Zoom Toolbar
- Menus



## Solo Forest Menus

### File Menu

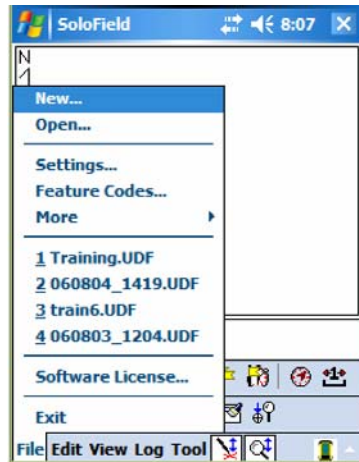
**New** = Start a new project

**Open** = Open an existing project

**Settings** = Settings

**Feature Codes** = Edit Feature Codes

**More > Export** = Export mapped features as shapefiles



## Solo Forest Menus

### Edit Menu

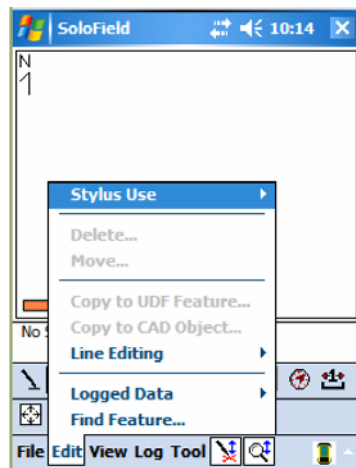
**Delete** = Delete a node or feature

**Move** = Move a node

**Copy to UDF Feature** = used in Freehand Redlining

**Logged Data > Logged Features** = a way to see all logged data

**Find Feature** = a way to search through shapefile attributes



## Solo Forest Menus

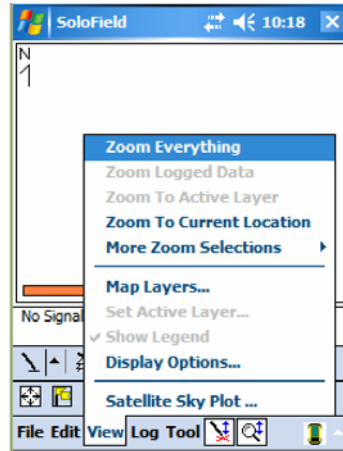
### View Menu

**Zoom Options** = ignore and use the Zoom Toolbar

**Map Layers** = Where to go to add a basemap layer

**Display Options** = where to go to change Toolbar icons, etc.

**Satellite Sky Plot** = shows satellite status

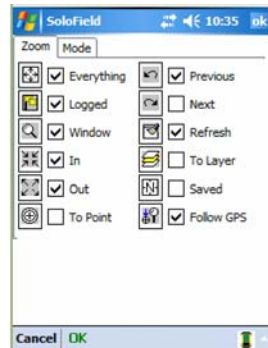


## Solo Forest Menus

### Changing Toolbar Icons

To change the icons on the Toolbars, go to View > Display Options > Toolbars > **Toolbar Buttons...**

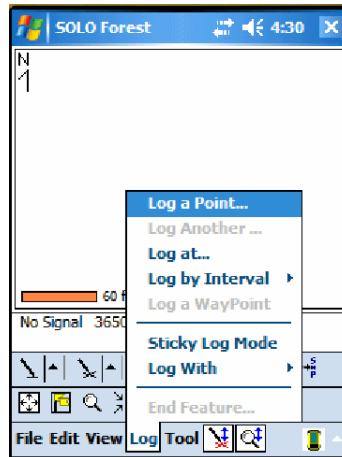
and set the Zoom and Mode Toolbars to what you like.



## Solo Forest Menus

### Log Menu

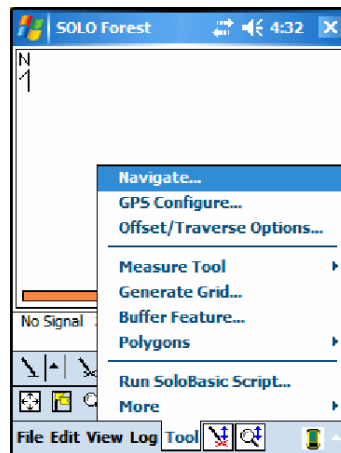
- Log a Point** = Log Static
- Log at...** = Allows node to node joining of 2 features
- Log by Interval > Log by Interval** = Log Dynamic
- Sticky Log** = Heads up digitizing



## Solo Forest Menus

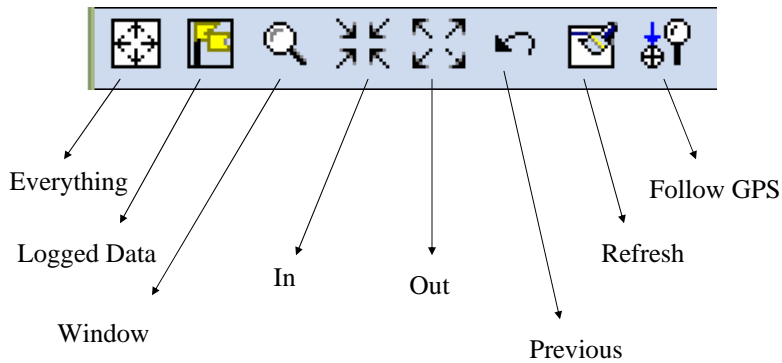
### Tool Menu

- Navigate** = Navigate
- GPS Configure** = Way to restart GPS or reconnect Bluetooth
- Generate Grid** = Grid Generator
- Buffer Feature** = Create buffers
- Polygons > Split/Merge** = Merge or split polygons
- More > RTI** = Initialize RTI script



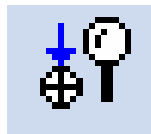
## Solo Forest Toolbars

### Zoom Toolbar



## Solo Forest Toolbars

### Zoom Toolbar: Follow GPS Icon



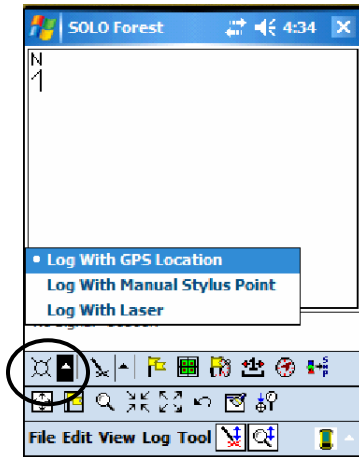
Note: If you select this icon, then the screen will move as you move. If this icon is unselected, the screen will not move as you do and you can walk off the screen as you move around or collect data.

This icon is especially important to understand when you want to select a dynamic area to check acres or when you have a basemap loaded and want to zoom into an area of the basemap that is not where you are currently located. If the Follow GPS icon is selected, you will not be able to zoom in to that selection because you have told Solo Forest to keep you on the screen at all times. Uncheck this box and then zoom in again.

You can also access this setting from the Menu box on the Log by Interval screen.

## Solo Forest Toolbars

### Mode Toolbar: 2 Drop Lists

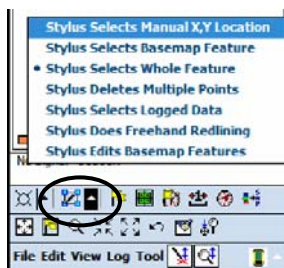


The **first Drop List** allows us to select which method we want to log with.

Most of the time we will **Log with GPS Location**, but sometimes we may want to log manually or use Log with Laser to enter property descriptions (line lengths and azimuths).

## Solo Forest Toolbars

### Mode Toolbar: 2 Dropdown Lists



The **second Dropdown List** allows us to select what we want to do with our Stylus.

Most of the time we will select **Stylus Selects Whole Feature**, but sometimes we will want to select something else.

**Manual X,Y** will give the coordinates of the point at which the stylus touches the screen

**Basemap Feature** selects the Basemap Layer/Image that has been loaded, if any

**Whole Feature** will allow you to click anywhere on the feature and select it

**Deletes Multiple Points** will allow you select individual nodes and delete all of them at once by going to Edit > Delete

**Logged Data** selects the feature data that has been collected

**Freehand Redlining** allows the user to use the Freehand Redlining option

**Edits Basemap Feature** allows the user to edit spatial and database info about the basemap

## Solo Forest Toolbars Mode Toolbar: Shortcut Icons



Log  
Static

Create  
Grid

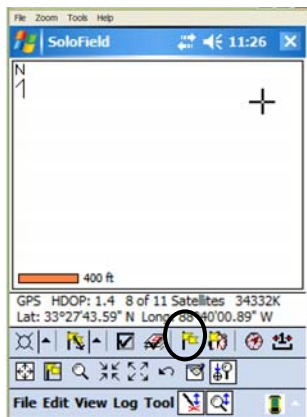
Log  
Dynamic

Measure

Navigate

Export  
Shapefile

## Logging a Static Feature



### Step #1 – Single Flag

We will begin collecting a static point by going to a corner and pressing the **Single Flag button**.

## Logging a Static Feature

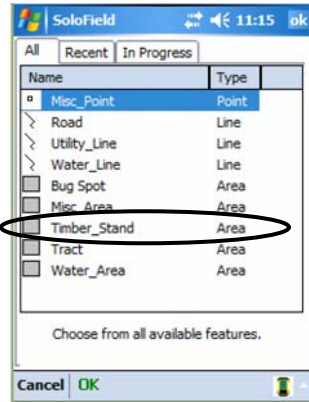
### Step # 2 – Select Feature

We can now select the type of feature we wish to map. In this case we choose Timber\_Stand. **We will log a static point, but the overall feature will be an area feature.**

Note that we are selecting this off of the All Tab. Be sure and stay out of the Rent Tab. The In Progress Tab will be discussed later.

You can select OK or Double click the feature.

Also make sure you are standing with your antenna over the static location you want to collect because the OK button is the “trigger” to begin collecting the observations for static point averaging.

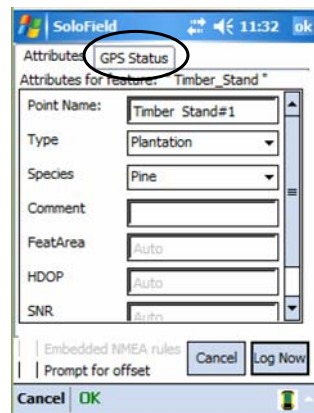


## Logging a Static Feature

### Step #3 - Attributes

After selecting our feature, the following screen will appear. This screen allows us to enter attribute information about the feature on the **Attributes Tab**.

Next you want to select the **GPS Status Tab**.

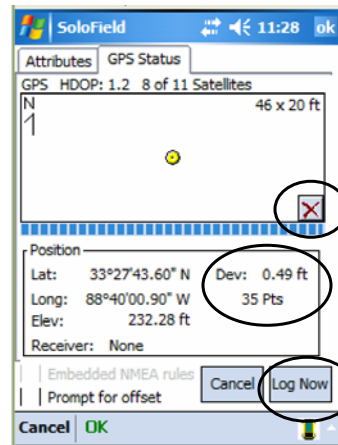


## Logging a Static Feature

### Step #4 – Check Deviation and Log Now

The GPS Status Tab gives you the ability to view the **number of points** and the static spread or **deviation** of the observations between them at 1 SD. This allows you to judge the integrity of the static point as you collect the data. If you do not like the “spread” and wish to reject the point, press the **small X button**.

On you have collected 25-30 points with a acceptable deviation (maybe < 5 feet), press the **Log Now button**. This will average all of the collected points together to make 1 point.

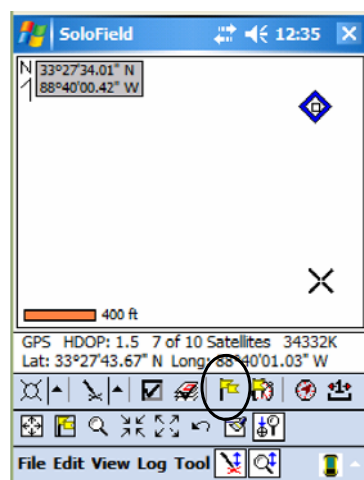


## Logging a Static Feature

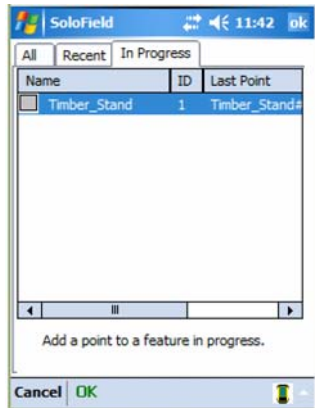
The Property Corner is now represented on the screen. Remember, there will always be a blue diamond around the last point logged.

### Step # 5 – Single Flag again

To add another corner to this Timber Stand Area Feature, we need to walk to that corner and then select **Single Flag** again.



## Logging a Static Feature



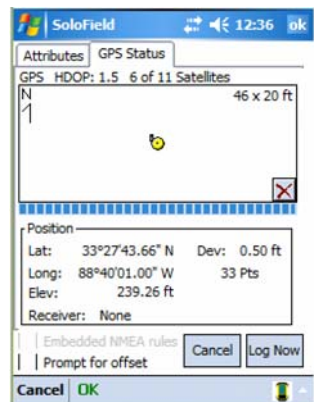
### Step #6 – In Progress

The next screen you see is basically asking, “What do you want to do?” And the answer is, **“Add another Static Point to the Timber Stand in progress!!”**

If you wanted to begin a new feature, you would go the All tab and select a new feature off of the Feature List.

Since the correct Timber\_Stand feature is already selected, click OK.

## Logging a Static Feature

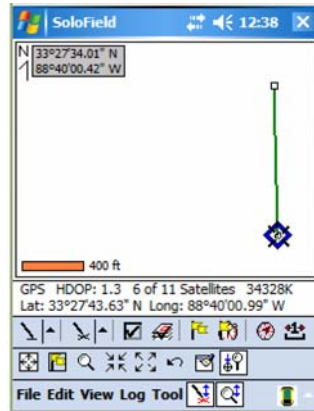


### Step # 7 – Check Deviation and Log Now

Log 30 more seconds of data and check the deviation. If it is OK, press Log Now.

## Logging a Static Feature

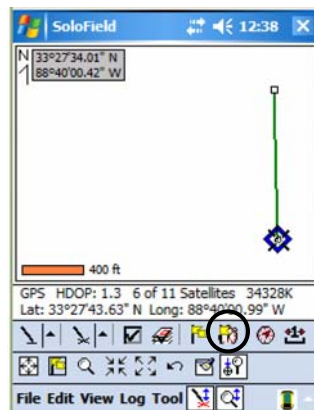
The second Static point has now been added to the Timber Stand area feature.



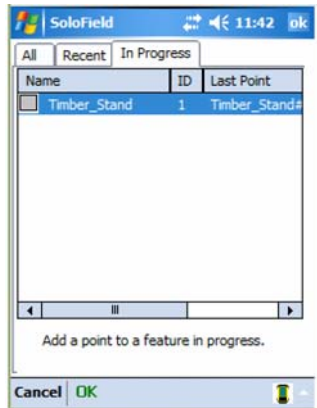
## Logging a Dynamic Feature

Step #1 – Flag with a Stopwatch

To add a Dynamic line to the Timber Stand feature already started, or if you want to begin a new Dynamic feature, select the **Flag with a Stopwatch** icon.



## Logging a Dynamic Feature



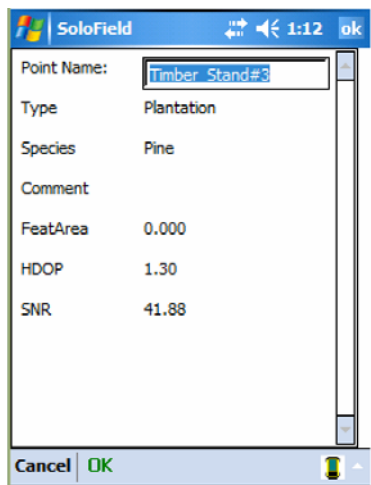
### Step #2 – In Progress

The next screen you see is asking, “What do you want to do?” And the answer is, **“Add a Dynamic Line to the Timber Stand in progress!!”**

If you wanted to begin a new feature, you would go the All tab and select a new feature off of the Feature List.

Since the correct Timber\_Stand feature is already selected, click OK.

## Logging a Dynamic Feature



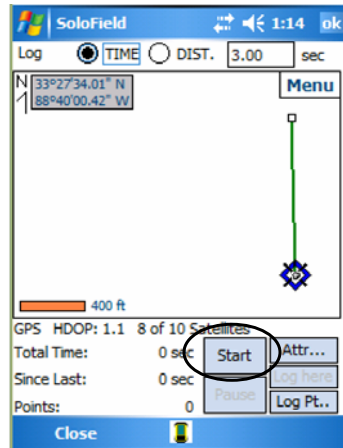
Step #4 – Select OK at the Attribute screen.

## Logging a Dynamic Feature

Step #5 – Select Time or Distance and then Start

In the Log by Interval screen, you can choose to log by Time or Distance. Use a 1 second interval if you are moving fast and 5-8 if you are moving slow because it is thick. Use Log by Distance if you are stopping frequently to paint a line or tie flagging. Note the Start and Pause Buttons.

When you are ready to start, press **Start**.



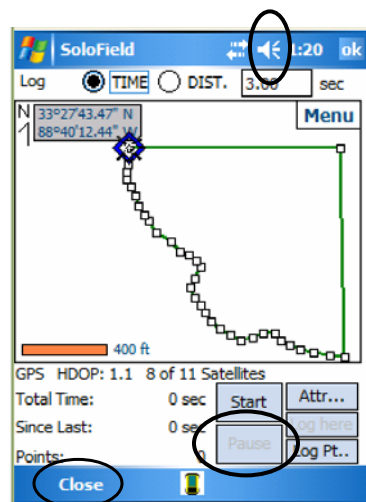
## Logging a Dynamic Feature

Step #6 – Pause and Close

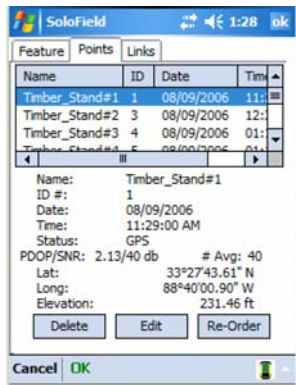
Pay attention as you traverse the rest of the area feature. Be sure and turn up your handheld volume by selecting the **little speaker** at the top of the page because Solo Forest should beep at you letting you know that nodes are being logged.

Select **Pause** when you want to take a break or have finished the dynamic feature.

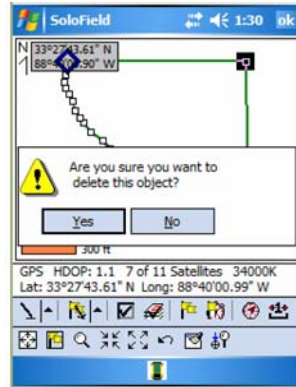
Select **Close** to return to the Main Screen.



## Editing Data in Solo Forest



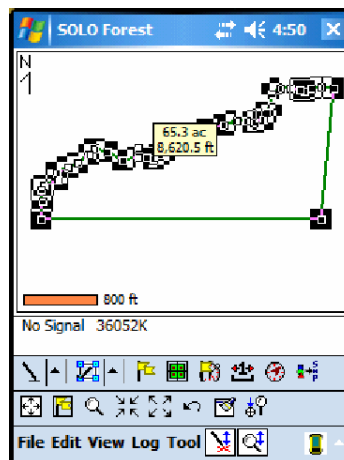
OR



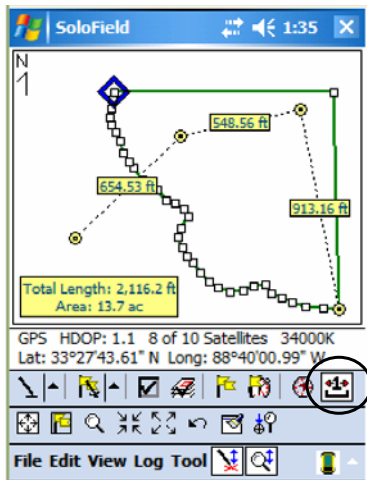
To edit data in the field, **double tap** on the point/feature you wish to edit. Here, you can delete, edit position information, and/or re-order the point. If you wish to delete or edit the entire feature, make sure the feature tab is selected. **Or** you can simply select the feature or node and then press **Edit > Delete** and Yes.

## Viewing Acres In-The-Field

To view the acres and circumference of an area feature (or the length of a line feature), set your **Stylus to Selects Whole Feature**, and then simply click anywhere on that feature.



## Measure Tool

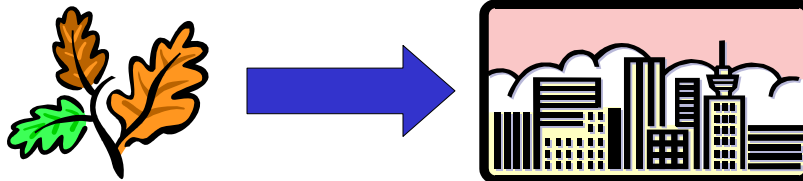


To measure distance in the field, simply press the **Tape Measure** icon and click on the screen. You will see the individual line lengths, the total line length, and the area of the polygon that you created.

What your Stylus is set to affects how this tool works.

To clear the measurements, simply select the Measure Tool again.

## Office Procedures



- A. Exporting Shapefiles on the handheld
- B. Syncing the handheld with the computer
- C. Transferring the Shapefiles to the computer

## A. Exporting Shapefiles

### Why do you have to do this?

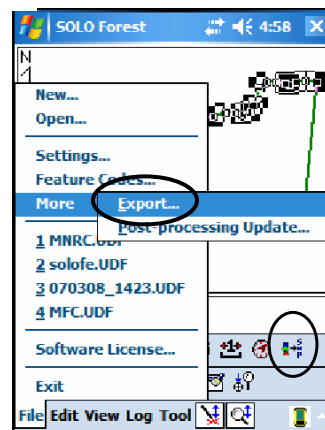
So far you have mapped GPS features in a UDF file. To get these features in a format that your GIS can use, you need to export them as Shapefiles. ArcGIS Users have the option of exporting their features in a Geographic (Lat-Long) or Projected (UTM) coordinate system. This is possible because ArcGIS can recognize both and reproject your data on the fly to make it line up with your basemaps. For any other GIS (like fGIS), however, you must export your mapped features in the same coordinate system, datum, and zone as your basemap. Regardless, it is probably best to go ahead and export your shapefiles to match your basemap files whatever they may be.

Solo Forest allows you to set the Export projection in the Export dialogue before you create the shapefiles. Here is how that works.

## Exporting Shapefiles

### Step #1 – Go to the Export Dialogue

Select the **Export Shapefile Icon** or go to **File > More > Export**.

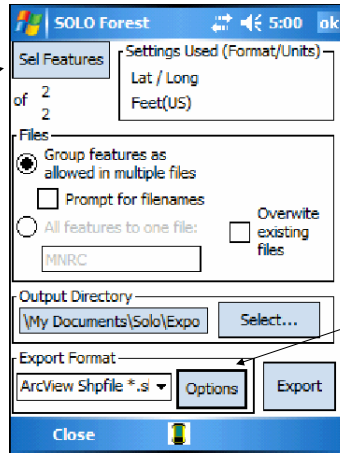


# Exporting Shapefiles

## Step #2 – Settings

You can select the features you want to export.

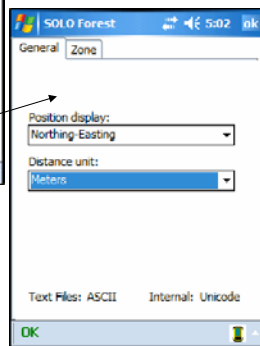
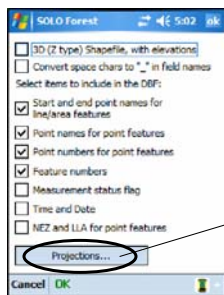
Make sure ArcView Shapefile is selected here.



To set the Export Projection select Options.

# Exporting Shapefiles

## Step #3 – Make Project Settings match your Basemaps



If needed, select **Projections** and then change the **Position Display** to Northing Easting and make the **Distance unit** be Meters. When you select Northing-Easting, Solo Forest looks at the Zone Tab and uses whatever is described there for the shapefiles.

Example: UTM, NAD83, Zone 16

# Exporting Shapefiles

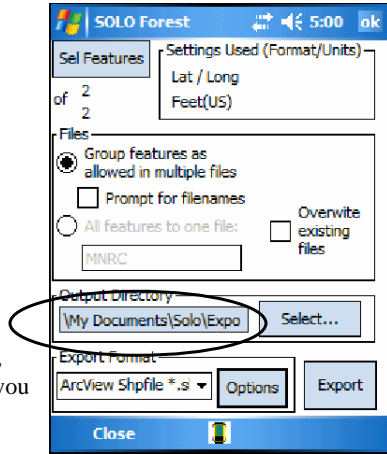
## Step #4 – Output Directory

By default, the Export folder in which your shapefiles will be created is one of the following:

**PocketPC2003** = Built-in Storage\My Documents\Solo\Export

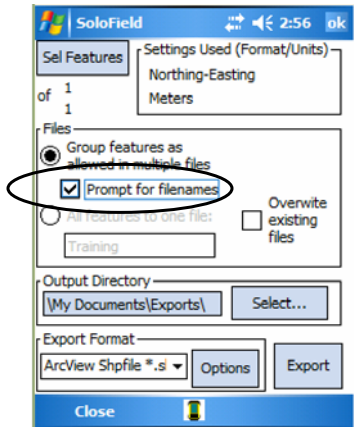
**Windows Mobile** = My Documents\Solo\Export

You can set it temporarily to something else, but it will default back to that the next time you open Solo.



# Exporting Shapefiles

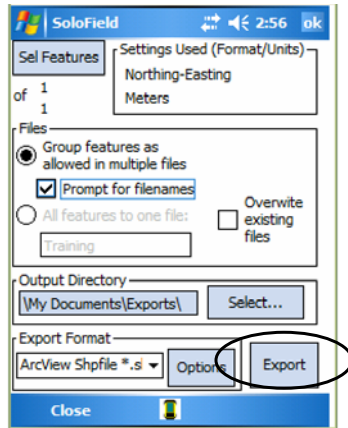
## Step #5 – Name the Shapefiles or Use Feature Names



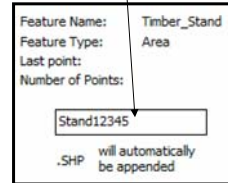
After you make sure the Project settings are correct and choose the Output Directory, you need to decide if you want to name your shapefiles or simply use the default Feature name + "000" (ex. Timber\_Stand000). If you want to name them as they are created, select **Prompt for filenames**.

## Exporting Shapefiles

### Step #6 – Select Export



The last step is to Select **Export**. If you selected Prompt for Filename , you can then enter the new name here.



Note: you will have one shapefile for every different feature you chose from your feature list.

After you have named all of the shapefiles, it will tell you that that they have been created in the My Documents\Export Folder. Close that screen and go to Step B.

## B. Syncing with Your PC

### Step #1 – Install Microsoft Activesync

Microsoft Activesync is a free program that allows a handheld device to be synchronized with a computer. If you are using a computer that does not have Microsoft ActiveSync installed (i.e. look at All Programs under the start menu), then **you will need to install it** from your LandMark Customer CD, or download and install it from the internet (<http://www.microsoft.com/windowsmobile/downloads/activesync42.mspx>).

## Syncing with Your PC

### Step #2 – Plug in your Handheld

When you finish installing it, it will ask you if you want it to search for a Mobile Devi (i.e.. Recon or Ranger). **Plug your handheld into your PC with the supplied download cable and then select “Yes”.**

You will hear an obnoxious dinging noise and as it scans your computer’s ports to try to find the new Mobile Devi.



Data Transfer Port

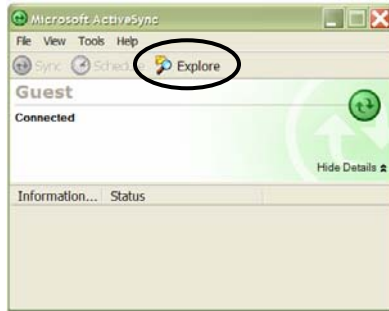
## Syncing with Your PC

### Step #3 – Cancel the Partnership



On you are connected you should see the Partnership dialogue box on your screen. You will **ALWAYS** select **Cancel** unless you want to use your handheld as a PDA and transfer email, schedules, contacts etc. back and forth.

## Syncing with Your PC Step #4 – Select Explore



If you see the Microsoft ActiveSync dialog box as shown to the left, you have connected correctly and are ready to begin file transfer.

To find the shapefiles on your handheld, click **Explore** and then navigate to the correct Export directory.

## Troubleshooting ActiveSync #1 – Check the Handheld

If you are having trouble syncing with the computer, you need to make sure that ActiveSync on the handheld is configured correctly as shown below.



**With Pocket PC**, open ActiveSync from the Start menu, and then go to Tools > Options and then Options again to get to the PC Synchronization Options. Make sure the connection is set to USB Default and that the **Enable PC Sync using this connection Box** is checked.

**With Windows Mobile 5**, open ActiveSync from the Start menu, and then go to Menu > Connections make sure the “**When cradled Synchronize all PCs using this connection**” **Box** is Checked and that it is set to USB.

## Troubleshooting ActiveSync

### #2 – Check your PC

If you have successfully installed ActiveSync, checked the handheld parameters, and are still having trouble, then open the Activesync Dialogue box on your Computer check the **Connection Settings** under **File**.



Depending upon your connection type, make sure that the **Allow USB connection** boxes are selected. Then select **Connect**.

## C. Transferring Shapefiles to Your PC

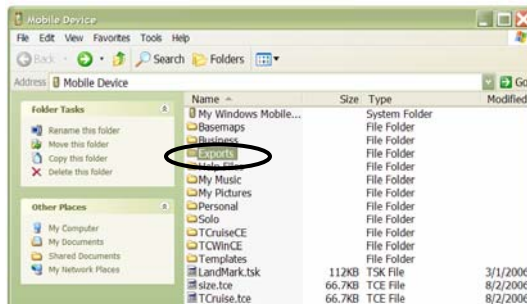
### Step #1 – Select the Export Folder

On you select **Explore** on the ActiveSync screen, you will be directed to the Mobile Devi Folder in your Windows Explorer. At this point, your computer looks at the handheld as just another external hard drive. Now you can transfer files to or from the Recon and PC.

To get to the shapefiles so that you can transfer them to your PC you need to select the Shortcut to the **Export Folder**. That will take you to one of the following locations:

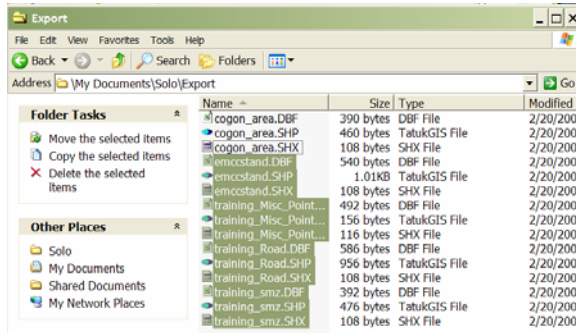
Pocket PC – Built-in Storage\  
My Documents\Solo\Export

Windows Mobile – My  
Documents\Solo\Export



## Transferring Shapefiles to Your PC

### Step # 2 – Highlight and Cut the Shapefiles

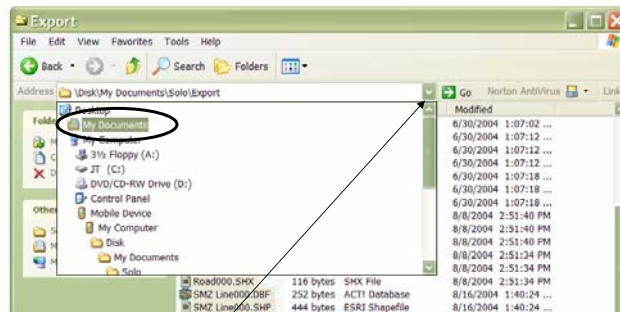


Make sure you can see Details under the View Menu and then select Modified to sort all the files by date. Now you can easily identify the shapefiles you just created in Part A.

Next, highlight the Shapefiles you want by clicking on the first one and then press the Shift key and click on the Last one. All of the files should be highlighted. Cut the files by going to Edit > Cut or by right mouse clicking in the highlighted area and then selecting Cut. Note: a shapefile consists of 3 different files (.shp, .shx, and .dbf) and you need all 3. I like to keep this directory empty so that the next time I export to it on the handheld, I know that all the shapefiles in it are ones from my current project.

## Transferring Shapefiles to Your PC

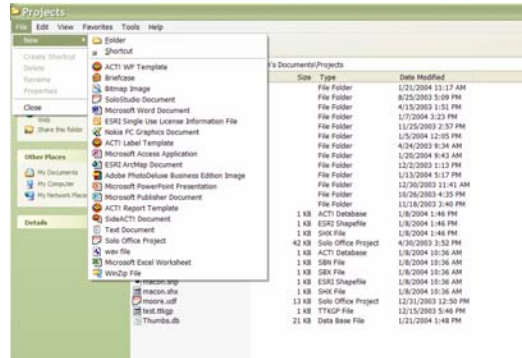
### Step # 3 – Go to My Documents on your PC



Next, click on the Address Bar and go to My Documents at the top of the list of locations.

## Transferring Shapefiles to Your PC

### Step # 4 – Create a Subfolder and Paste the Files



When you get to My Documents, make a new subfolder called GPS Projects by clicking **File > New > Folder** and then make another subfolder under GPS Projects that corresponds to the GPS Project name. Name that folder, right click on it, and click Paste to transfer the shapefiles from your handheld to your PC.