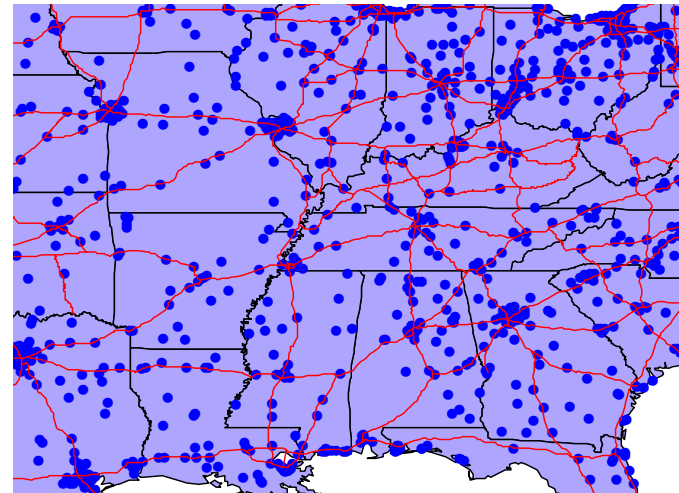


GIS and Mapping Procedures in ArcView 3.x



- Coordinate Systems, Units and the Importance of Each
- Viewing and Editing GPS Data
- Preparing and Printing the Map
- Saving the Project

Coordinate Systems/Units

Before we view the GPS data, we need to make sure we know which coordinate system (zone) was used to collect our data and in what units (feet, meters, etc.). If you are unsure, go back to Solo Field on your handheld and open the file in use. Press View → Settings → General tab (units) and Zone tab (zone).

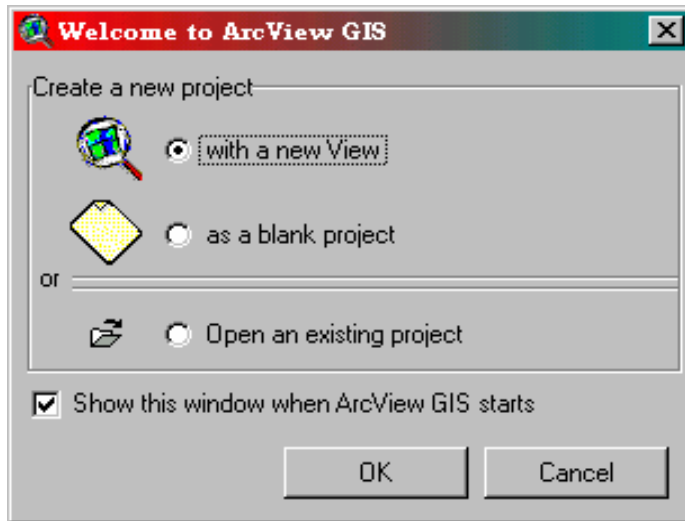


ArcView GIS 3.2a

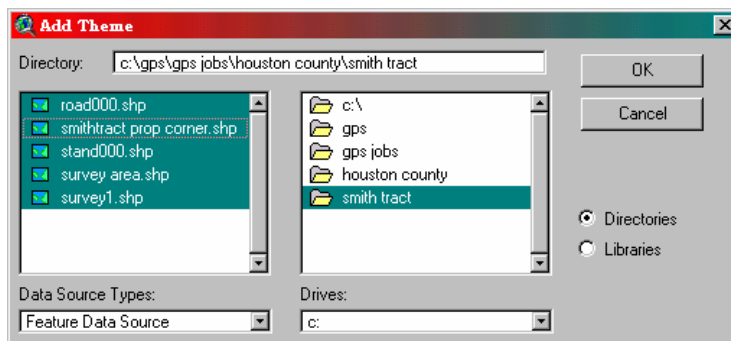
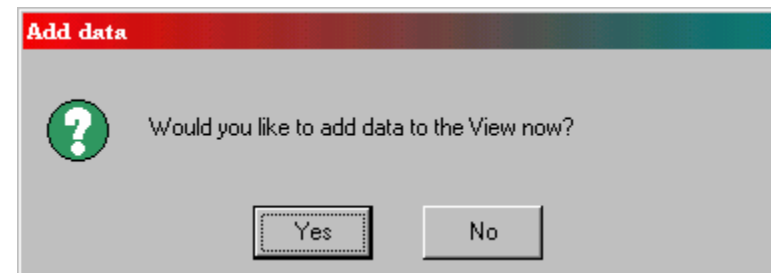


Now that we know our coordinate system and units, we are ready to open ArcView. Execute the ArcView program by double-clicking on the shortcut on your desktop.

Viewing the GPS Data

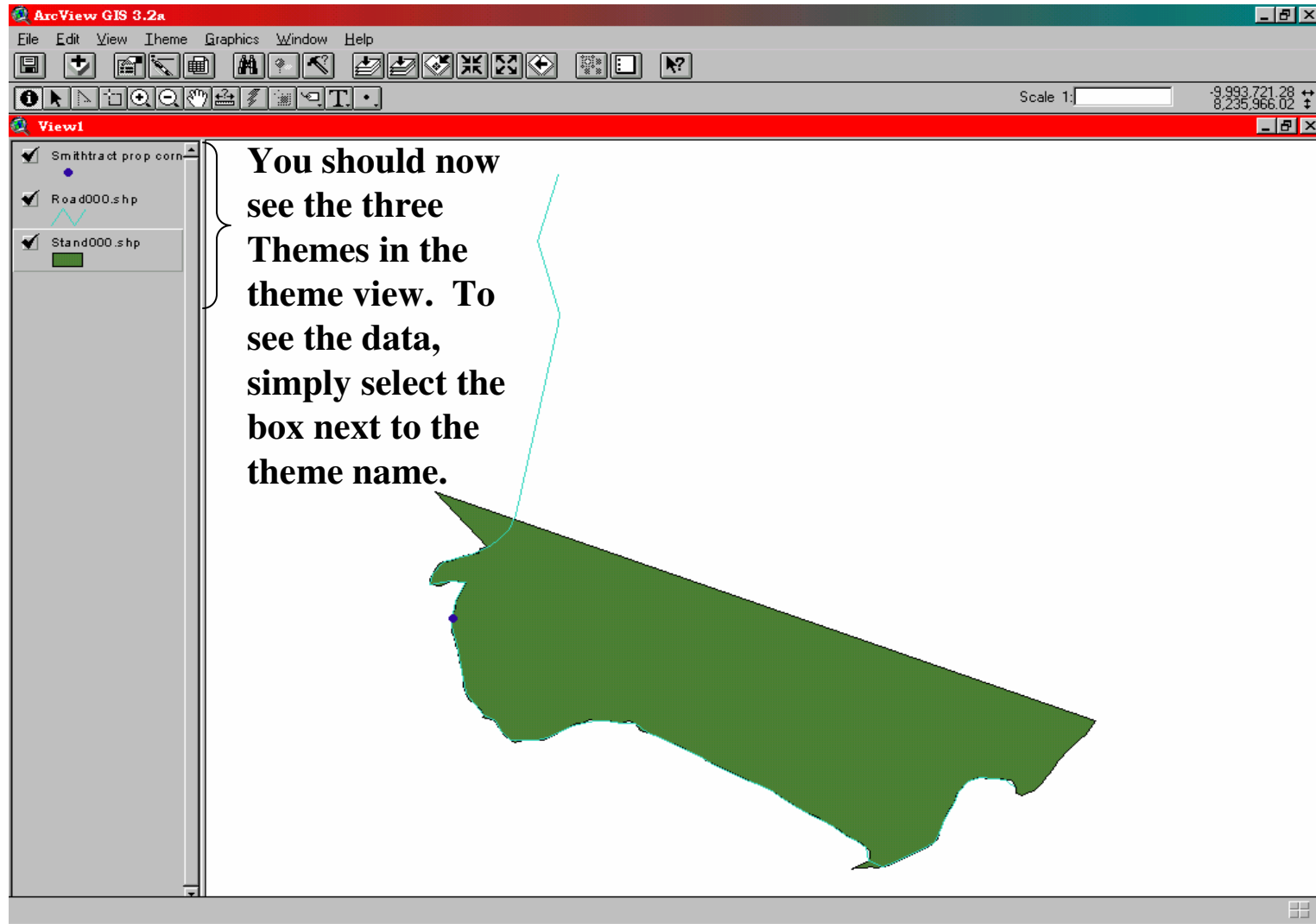


After executing the shortcut to ArcView, you will be asked if you want to Create a new project or Open an existing project. Since this is the first time we will be viewing the data, we will Create a new project **with a new view** and add data to the view when prompted.



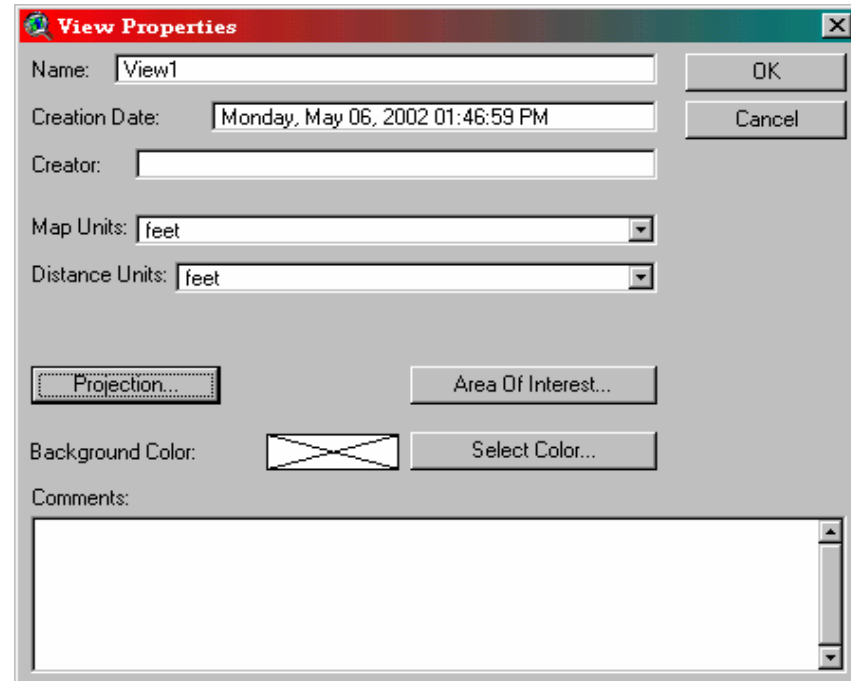
Navigate through the directory and find the files you wish to view in ArcView. Press OK.

Viewing the GPS Data



Editing the GPS Data

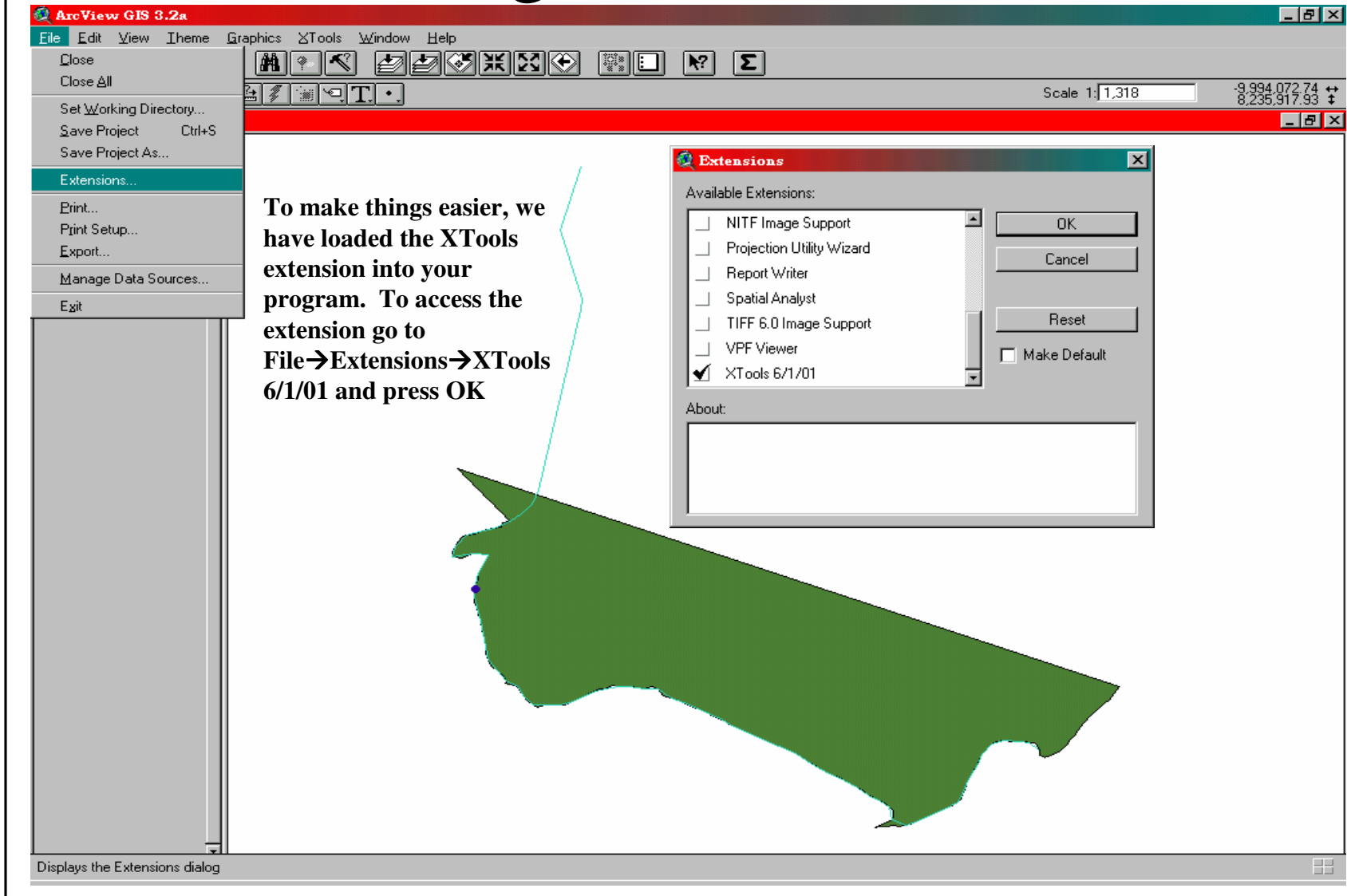
One of the first things we need to do is make sure that our map and projection units are the same as the way they were collected. To do this select View → Properties and change the Map and Distance Units via the drop-down box.



The screenshot shows the 'View Properties' dialog box with the following fields and controls:

- Name: View1
- Creation Date: Monday, May 06, 2002 01:46:59 PM
- Creator: (empty text box)
- Map Units: feet (dropdown menu)
- Distance Units: feet (dropdown menu)
- Projection... (button)
- Area Of Interest... (button)
- Background Color: (color selection icon) Select Color... (button)
- Comments: (text area)
- OK (button)
- Cancel (button)

Editing the GPS Data



The screenshot shows the ArcView GIS 3.2a interface. The File menu is open, and the XTools extension is selected. The XTools extension is also visible in the Extensions dialog box. A map of a green area is shown in the main window.

To make things easier, we have loaded the XTools extension into your program. To access the extension go to **File→**Extensions**→**XTools 6/1/01** and press OK**

Available Extensions:

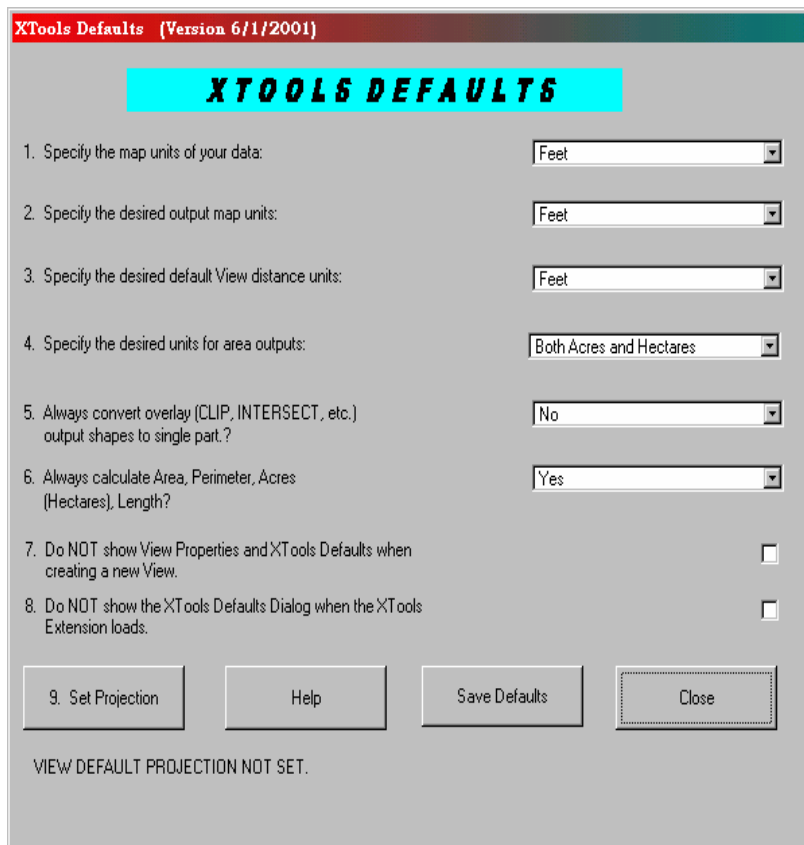
- NITF Image Support
- Projection Utility Wizard
- Report Writer
- Spatial Analyst
- TIFF 6.0 Image Support
- VPF Viewer
- XTools 6/1/01

Buttons: OK, Cancel, Reset, Make Default

About:

Displays the Extensions dialog

Editing the GPS Data



XTools Defaults (Version 6/1/2001)

XTOOLS DEFAULTS

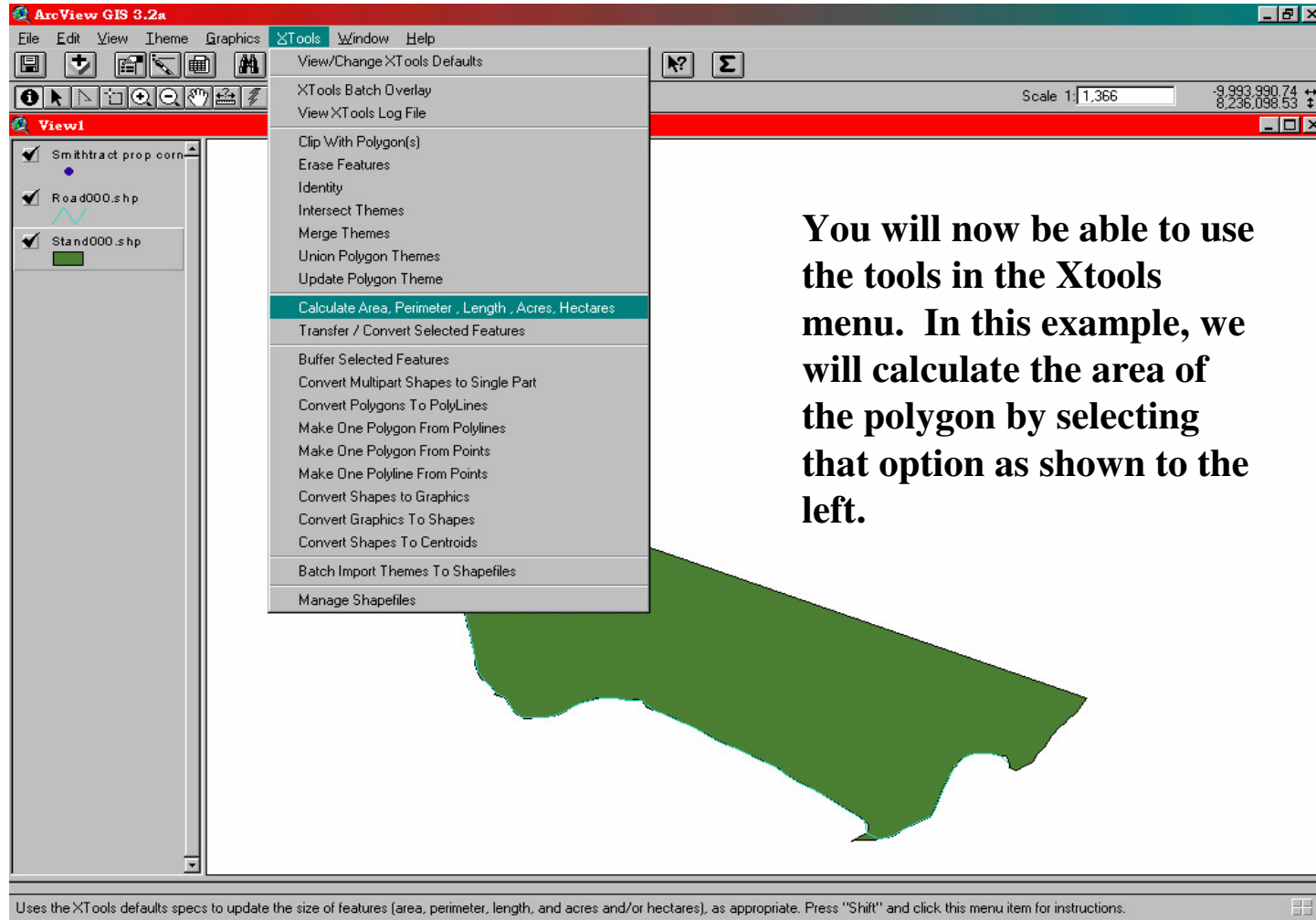
1. Specify the map units of your data:
2. Specify the desired output map units:
3. Specify the desired default View distance units:
4. Specify the desired units for area outputs:
5. Always convert overlay (CLIP, INTERSECT, etc.) output shapes to single part?
6. Always calculate Area, Perimeter, Acres (Hectares), Length?
7. Do NOT show View Properties and XTools Defaults when creating a new View.
8. Do NOT show the XTools Defaults Dialog when the XTools Extension loads.

9. Set Projection Help Save Defaults Close

VIEW DEFAULT PROJECTION NOT SET.

After loading the extension, you will see this dialog box appear. Make sure the map, output, and desired default units are correct and press close.

Editing the GPS Data

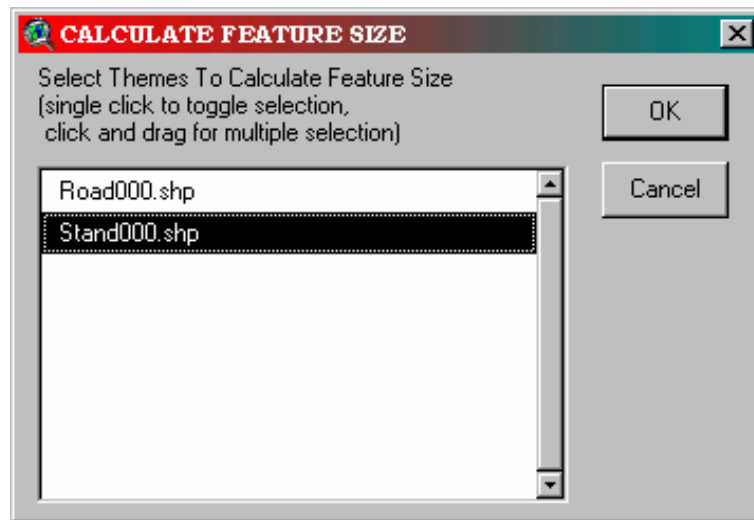


The screenshot shows the ArcView GIS 3.2a interface. The 'Xtools' menu is open, and the option 'Calculate Area, Perimeter, Length, Acres, Hectares' is highlighted. The map area shows a green polygon. The left sidebar lists loaded data: 'Smithtract prop corn', 'Road000.shp', and 'Stand000.shp'. The top status bar shows a scale of 1:1,366 and coordinates.

You will now be able to use the tools in the Xtools menu. In this example, we will calculate the area of the polygon by selecting that option as shown to the left.

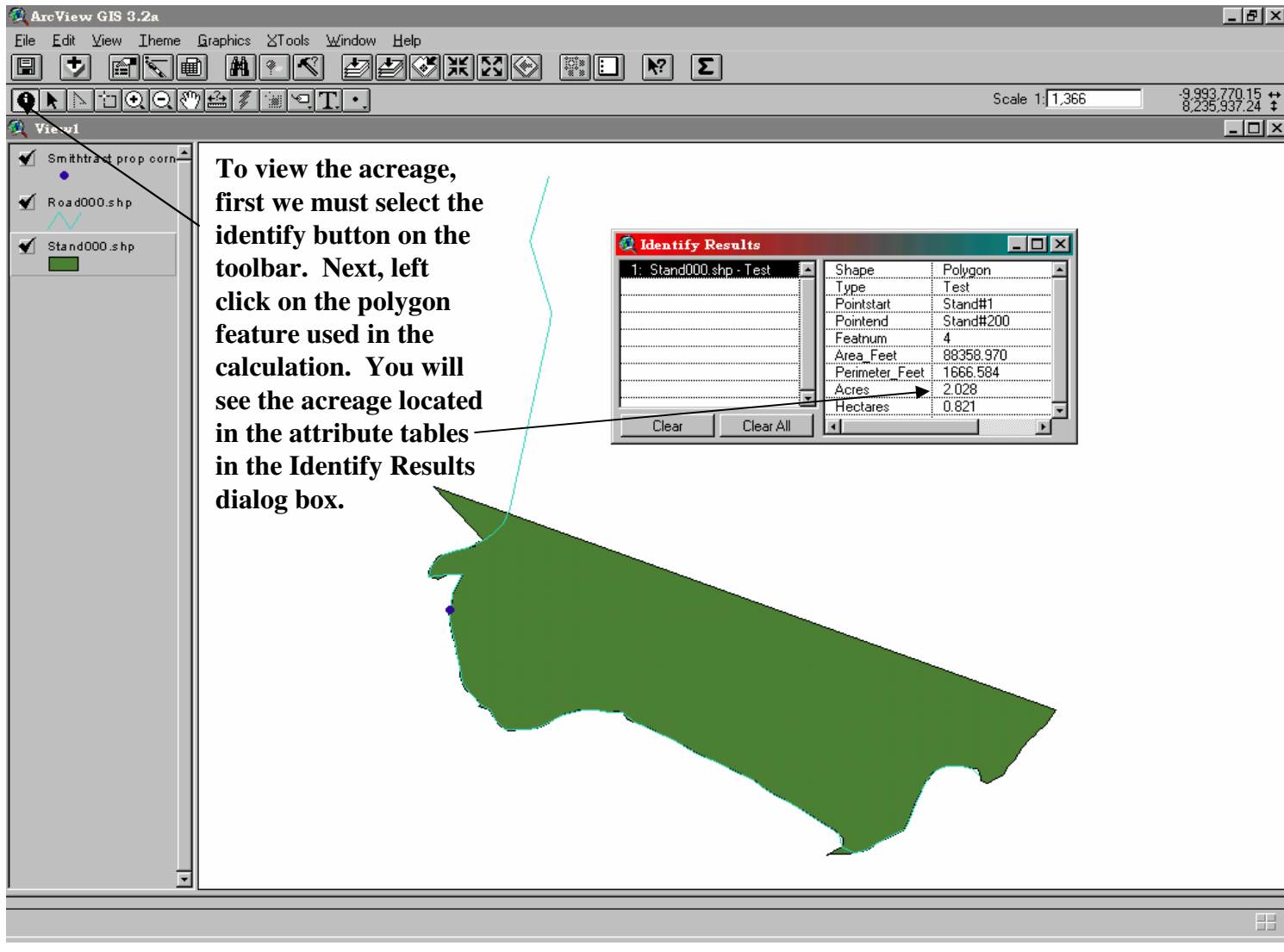
Uses the XTools defaults specs to update the size of features (area, perimeter, length, and acres and/or hectares), as appropriate. Press "Shift" and click this menu item for instructions.

Editing the GPS Data



In this example we will select the Stand000.shp as the feature to calculate acres. After selecting the feature, press OK

Editing the GPS Data

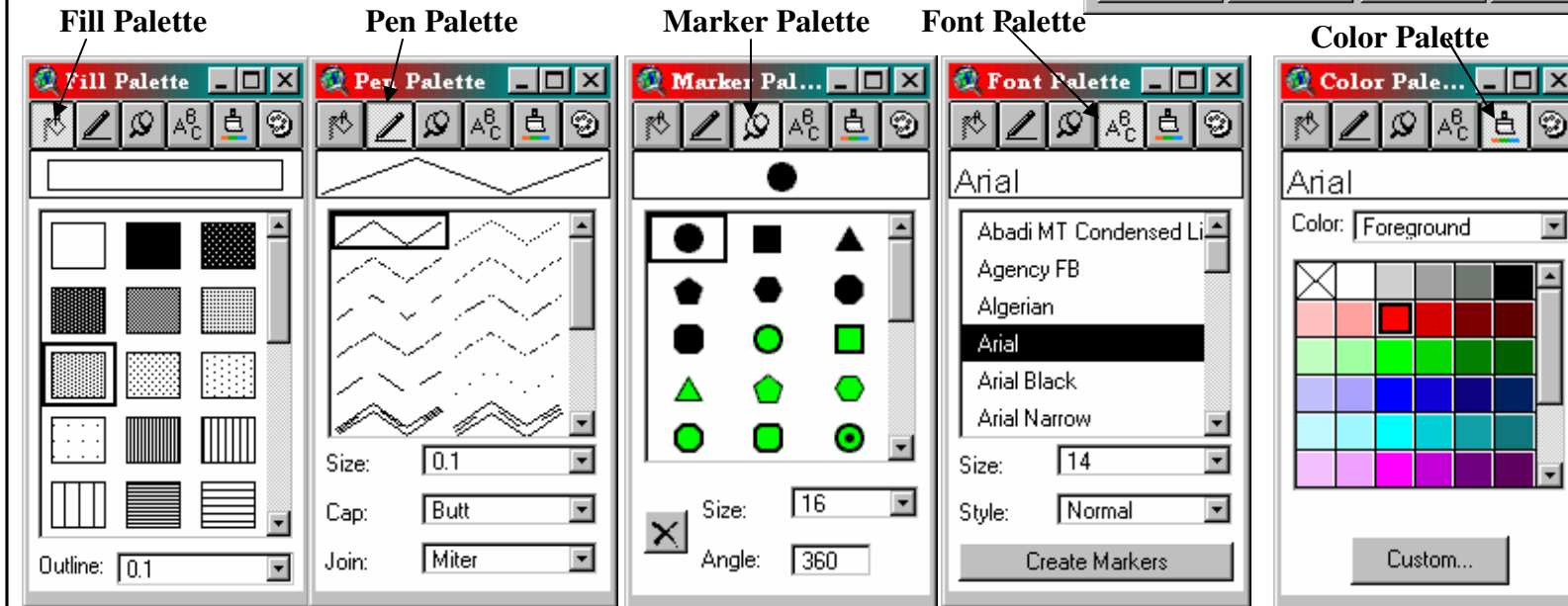
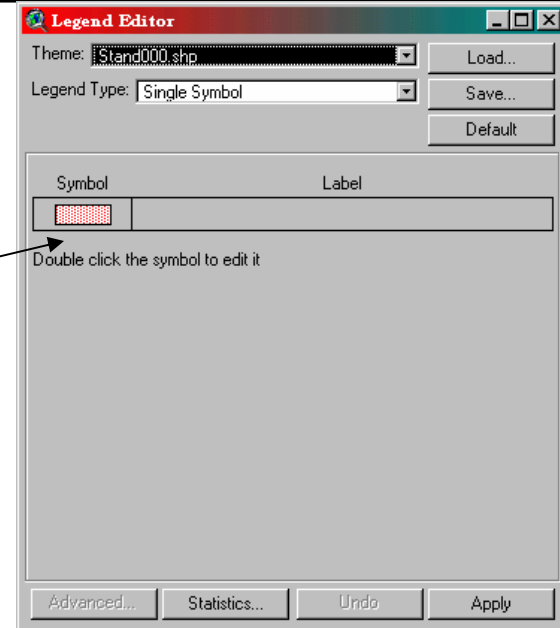


To view the acreage, first we must select the identify button on the toolbar. Next, left click on the polygon feature used in the calculation. You will see the acreage located in the attribute tables in the Identify Results dialog box.

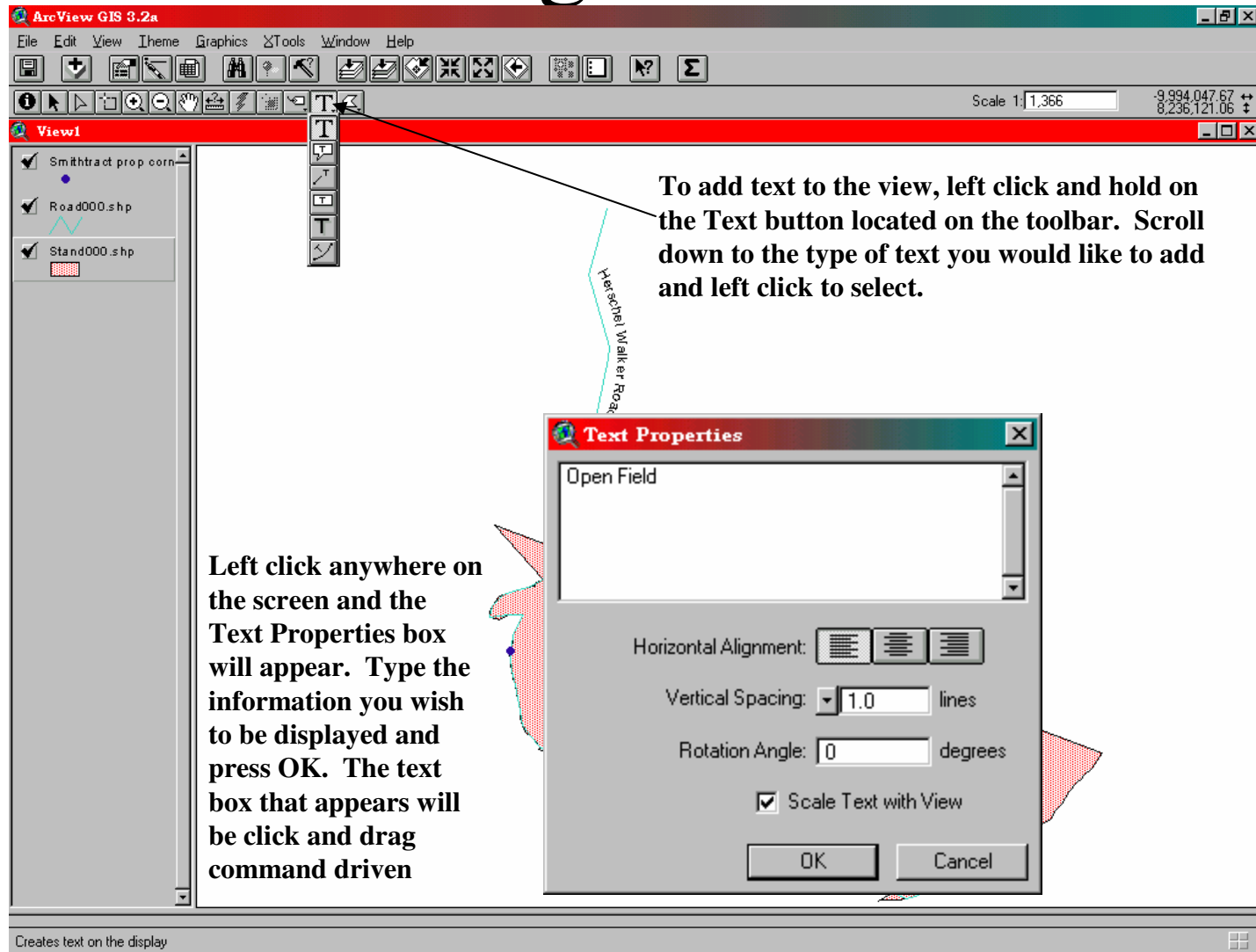
Shape	Polygon
Type	Test
Pointstart	Stand#1
Pointend	Stand#200
Featnum	4
Area_Feet	88358.970
Perimeter_Feet	1666.584
Acres	2.028
Hectares	0.821

Editing the GPS Data

By double clicking on the Theme Symbol in the Theme View, you can change the patterns for each feature to give it a distinct appearance.



Adding Text



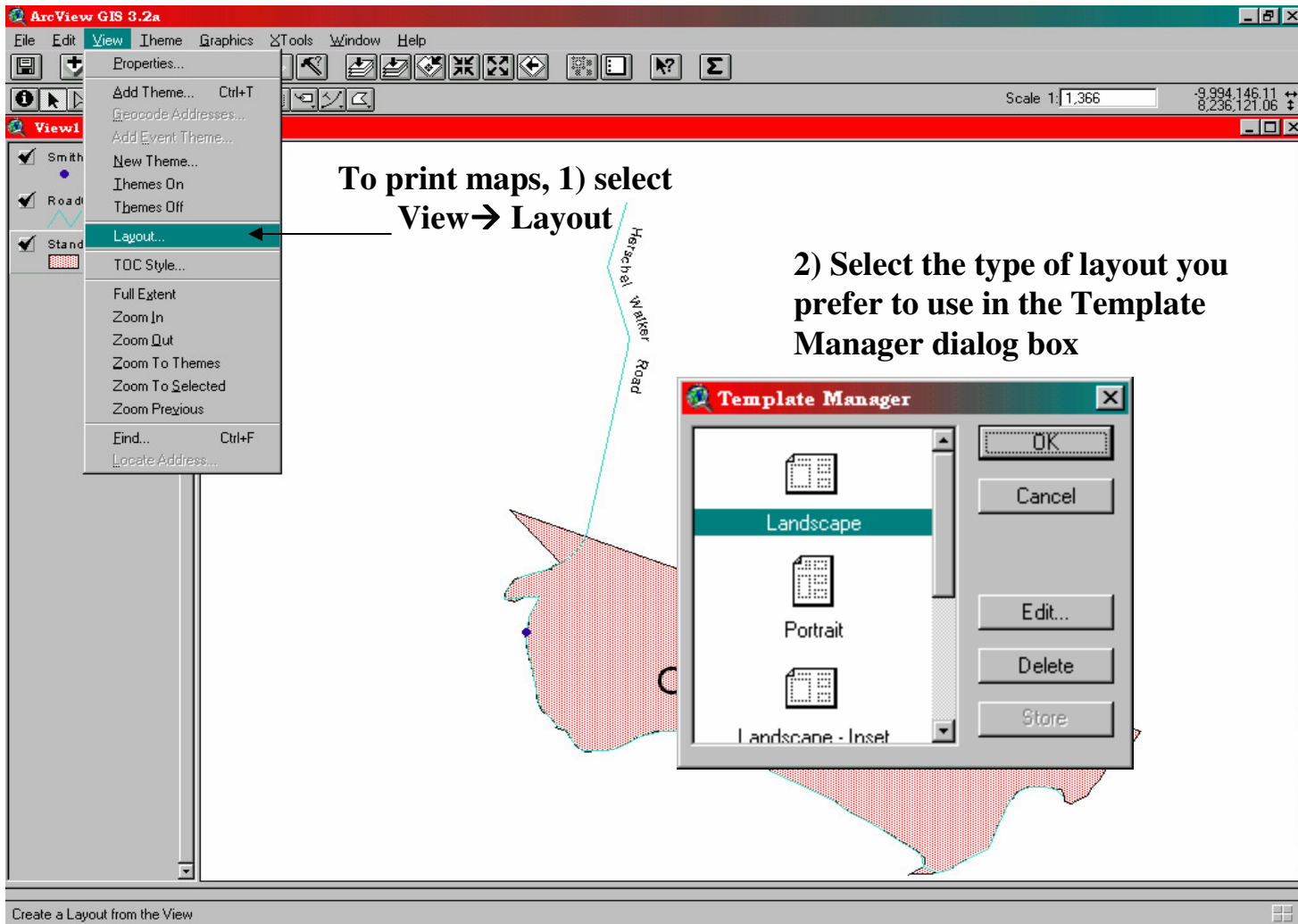
The screenshot shows the ArcView GIS 3.2a interface. The main window displays a map with a toolbar at the top. The 'Text' button, represented by a 'T' icon, is highlighted in the toolbar. A red arrow points from the text 'To add text to the view, left click and hold on the Text button located on the toolbar. Scroll down to the type of text you would like to add and left click to select.' to the 'Text' button. Below the toolbar, the 'View1' window shows a map with a red dot and a red rectangle. A red arrow points from the text 'Left click anywhere on the screen and the Text Properties box will appear. Type the information you wish to be displayed and press OK. The text box that appears will be click and drag command driven' to the red dot on the map. The 'Text Properties' dialog box is open, showing a text input field with 'Open Field', and options for Horizontal Alignment, Vertical Spacing (1.0 lines), Rotation Angle (0 degrees), and a checked 'Scale Text with View' option. The dialog box has 'OK' and 'Cancel' buttons. At the bottom of the ArcView window, a status bar reads 'Creates text on the display'.

To add text to the view, left click and hold on the Text button located on the toolbar. Scroll down to the type of text you would like to add and left click to select.

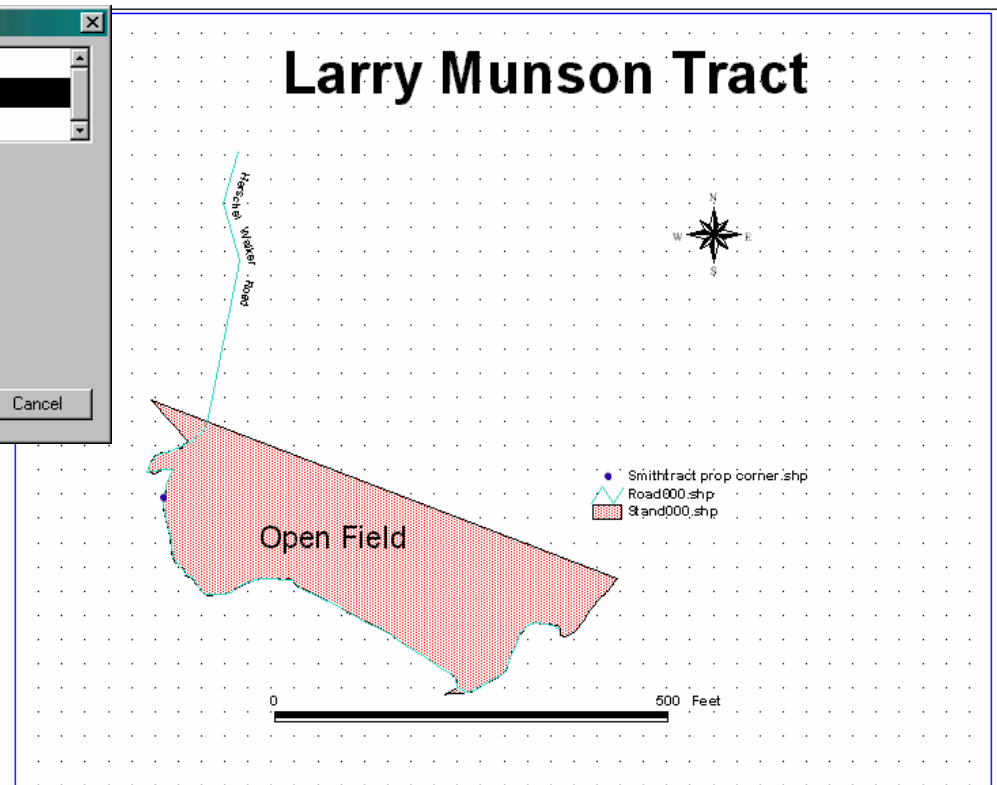
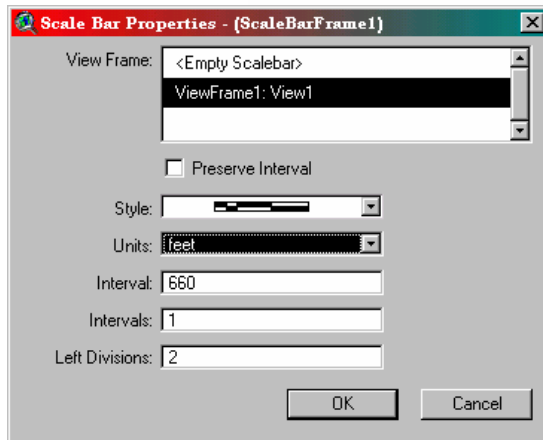
Left click anywhere on the screen and the Text Properties box will appear. Type the information you wish to be displayed and press OK. The text box that appears will be click and drag command driven

Creates text on the display

Printing Maps

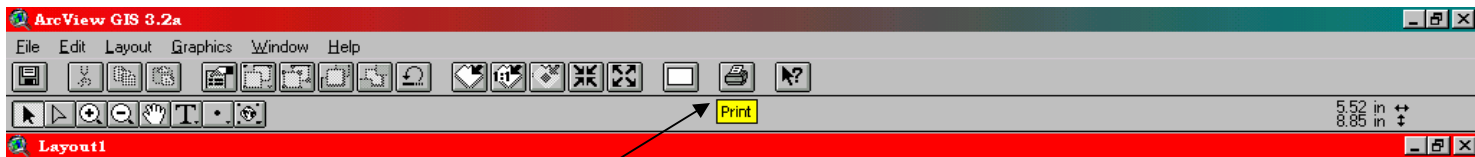


Printing Maps

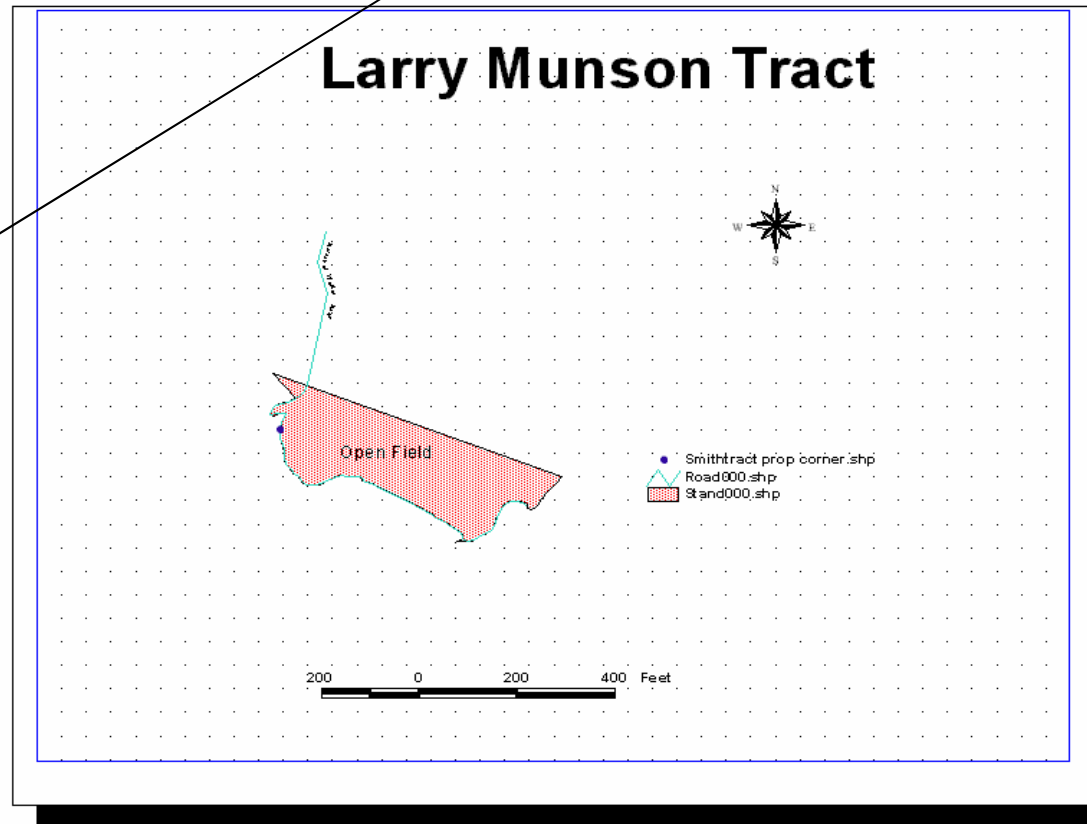


All text boxes (View name, Scale, North Arrow) can be customized by double clicking on the text box itself. In this example we are customizing the Scale.

Printing Maps

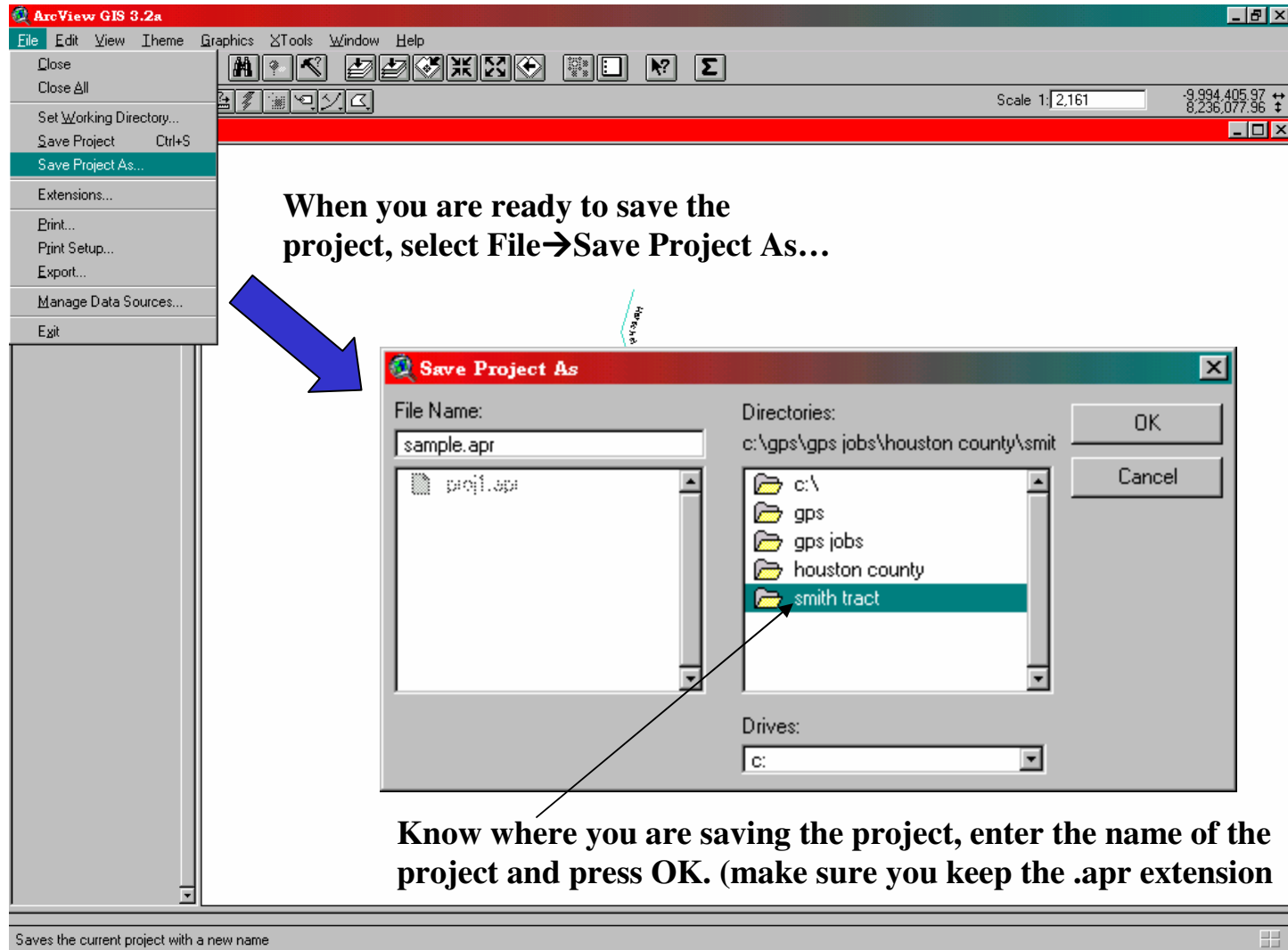


When you are ready to print the map, press the print button located on the toolbar



Prints the layout

Saving the Project



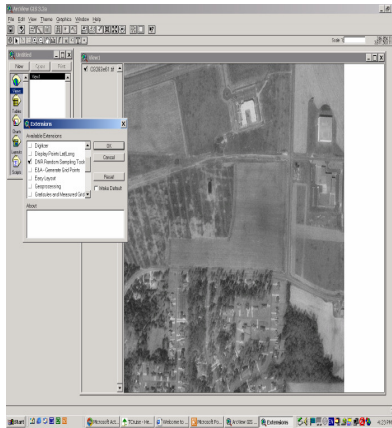
The screenshot shows the ArcView GIS 3.2a interface. The File menu is open, with 'Save Project As...' selected. A blue arrow points from this menu item to the 'Save Project As' dialog box. The dialog box shows the file name 'sample.apr' and the directory 'c:\gps\gps jobs\houston county\smit'. The 'smith tract' folder is selected in the directory list. The 'OK' button is highlighted.

When you are ready to save the project, select File→Save Project As...

Know where you are saving the project, enter the name of the project and press OK. (make sure you keep the .apr extension)

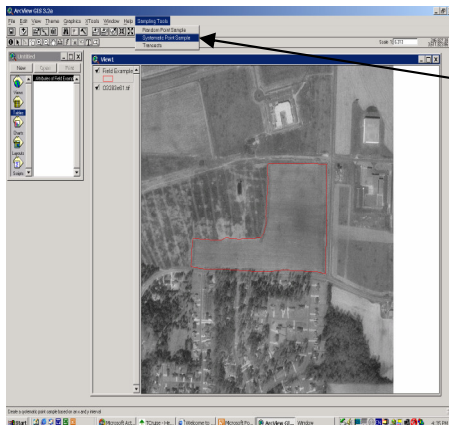
Saves the current project with a new name

Generating a Systematic Point Sample in ArcView 3.X



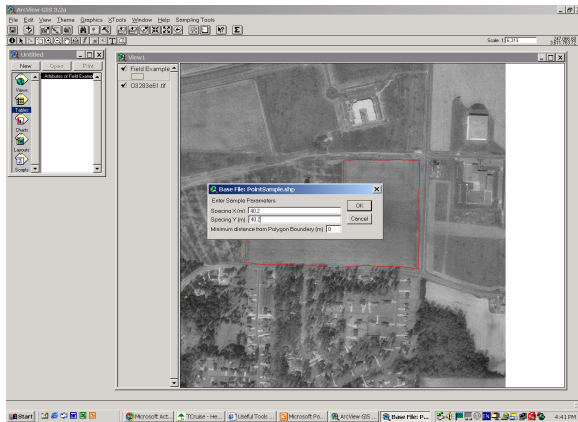
1. In ArcView open a project and load the DNR Sampling Tools extension by selecting File , Extensions, DNR Sampling Tools. Sampling Tools will then appear on the menu bar.

2. Next select the polygon or polygons in which you want the sampling points placed.



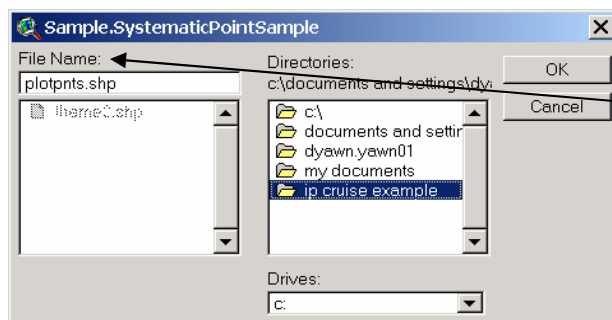
3. Select Sampling Tools from the menu bar and choose Systematic Point Sample.

Generating a Systematic Point Sample in ArcView 3.X



4. Now in the Enter Sampling Parameters window enter the X and Y spacing and minimum distance from polygon boundary (if desired).

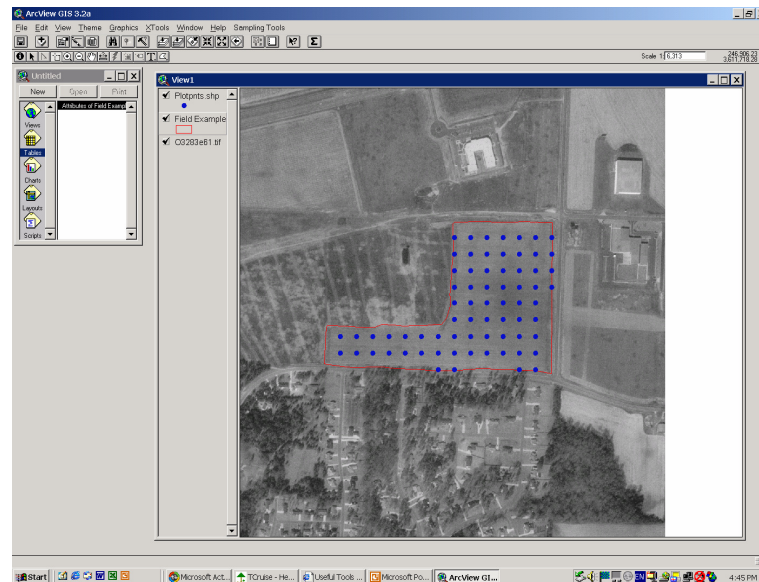
In the example our image is projected in UTM NAD 83 Zone 17 meters so the 2chain by 2chain grid we want will have to be converted to meters (40.2 meters in this case). We have also elected not to set a minimum distance from polygon boundary.



5. After clicking OK, you are prompted to enter and output file name and directory. A new theme with the sampling points will be added to the view.

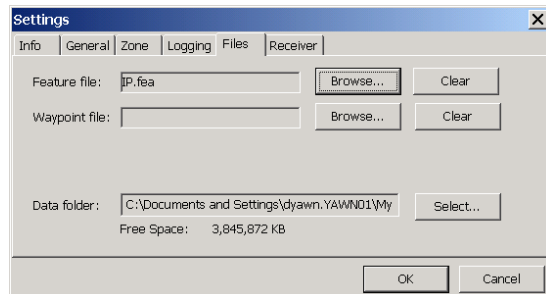
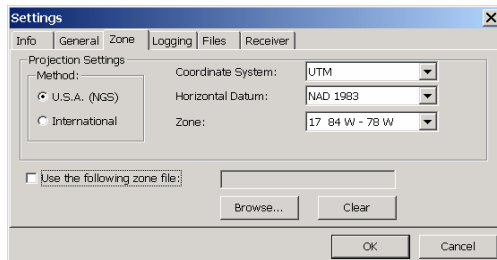
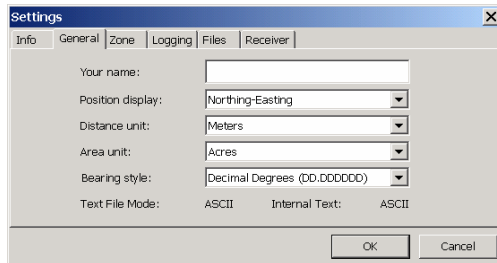
***** Note The default file name is plotpnts.shp, You should change this to a more meaningful name as this will prevent problems later when converting shapefiles to waypoints in SoloOffice. Also pay attention to where this file will be stored, you will need to be able to find it later.**

Generating a Systematic Point Sample in ArcView 3.X



6. Here the new plots have been added to the view. We can now repeat the process for other polygons or close out of ArcView and open SoloOffice to begin converting the shapefiles to a waypoint file to be used in SoloFieldCE.

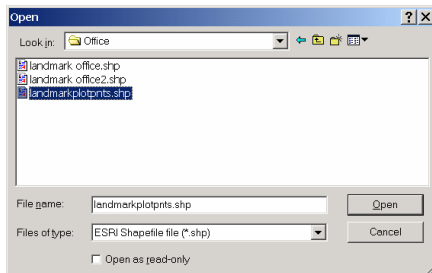
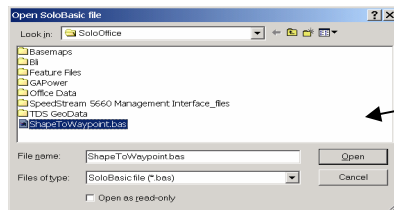
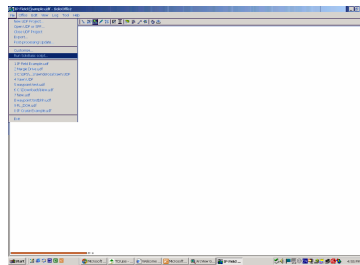
Converting Shapefiles to Waypoint Files in SoloOffice



7. Now we will prepare new Solo project to be later exported to a field data recorder. First, open SoloOffice and select File, New UDF project and name it. The settings window will then be displayed.

Our example is projected in UTM NAD 83 Zone 17 meters so we will match our settings accordingly on the different tabs.

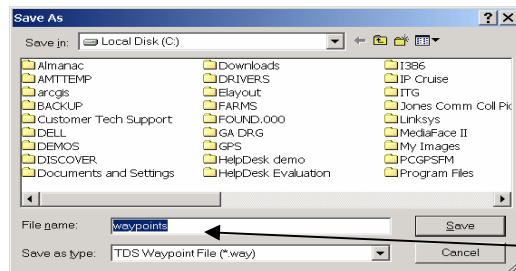
Converting Shapefiles to Waypoint Files in SoloOffice



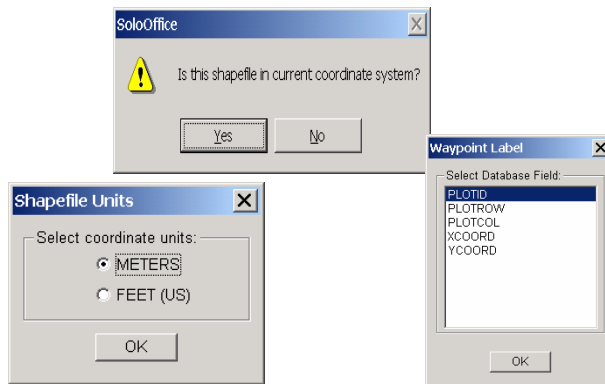
8. Now we are ready to convert the sample plot shapefile to a waypoint file. To accomplish this select File from the menu bar and then Run Solo Basic Script. You will then navigate to the folder where you have stored your scripts and select ShapetoWaypoint.bas and Open.

You will then navigate to the folder where your shapefile with the sample plots is stored, select the file, and hit OK.

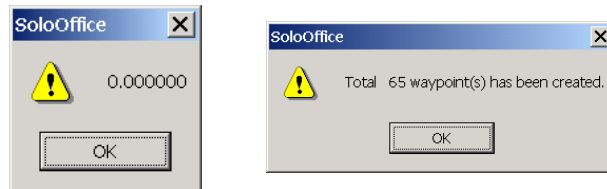
Converting Shapefiles to Waypoint Files in SoloOffice



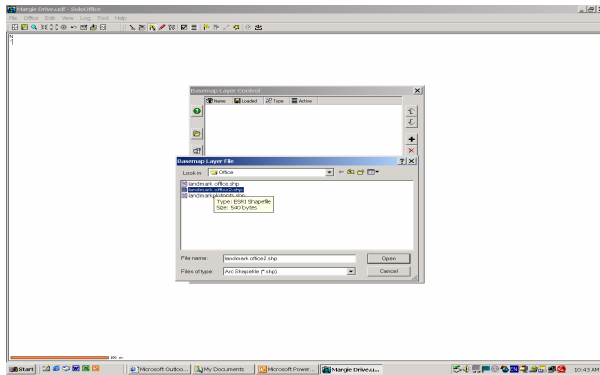
9. You will then have the opportunity to name the waypoint file and select the directory it is saved in. The default filename is waypoint and you should definitely rename it with a meaningful filename and store it in a location that can be easily found.



10. Next, there will be a series of windows prompts. Make the appropriate selections and the conversion will be complete.

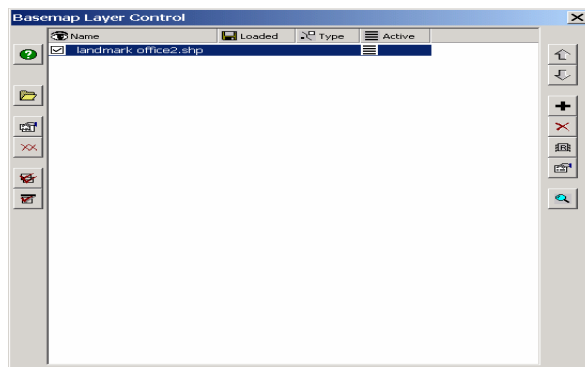


Converting Shapefiles to Waypoint Files in SoloOffice



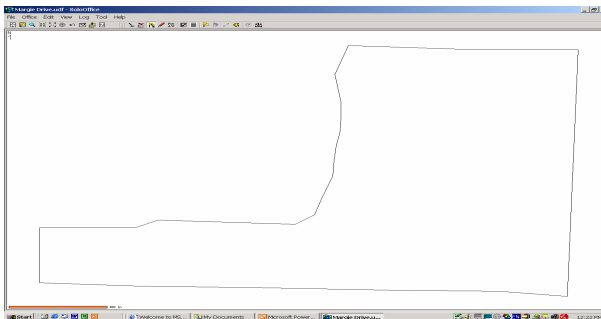
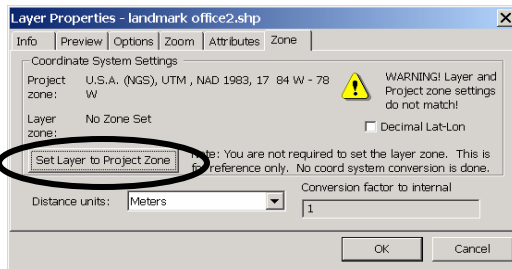
11. Now we'll load the stand boundary shapefile as a basemap by selecting View, Basemap Options. This will take you to the Basemap Layer Control window.

Select the + button and navigate to the folder with shapefile and select the file and press Open. Make sure the Files of Type is set for shapefile.



12. Now the shapefile will be selected in the Basemap Layer Control Window.

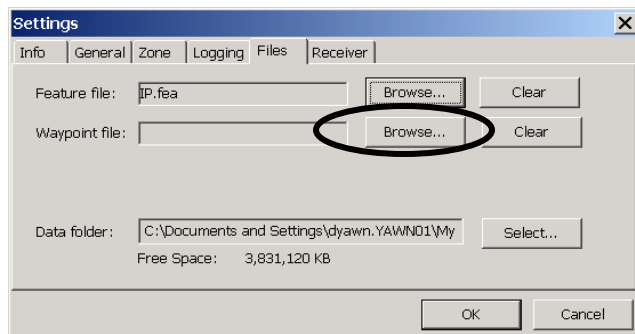
Converting Shapefiles to Waypoint Files in SoloOffice



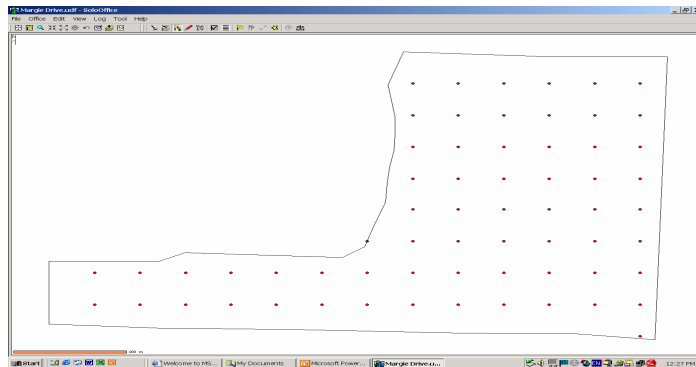
13. Next, select the Layer Properties button and go to the Zone tab and select **Set Layer Project Zone**, then OK. Now you will be back at the Basemap Layer Control screen and you should hit the X to get back to the main screen. Select yes, when prompted to save to Basemap configuration file this will name the file the name of project with a .bmc extension.

14. The shapefile should now be displayed as a basemap.

Opening Waypoint Files in SoloOffice

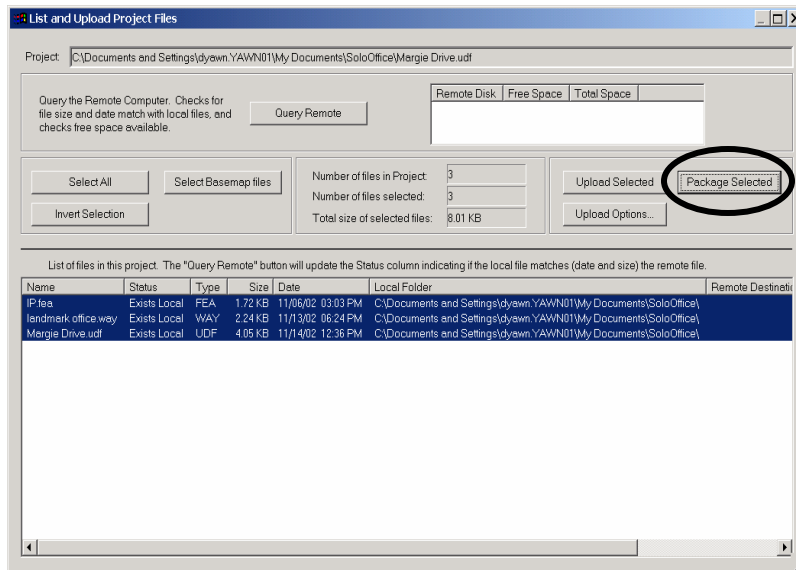


15. To display the plots in the waypoint file select View, then Settings, and go to the Files tab. Select **Browse** next to Waypoint File and navigate to the appropriate file and press OK, then OK again to exit out of the Settings window. The plots should be displayed.



16. Next you can create a Solo Package file to transfer all of the files to SoloField.

Creating a Solo Package File



- Go to Office on the menu bar and select Project File List/Upload and select all the files you wish to combine in the package : .fea, .udf, .way, .shp or other basemap file, etc. When you are done hit the **Package Selected** button, name the file, and you're ready to transfer the package file to your field data recorder.