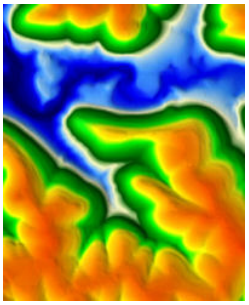
GIS and Mapping Procedures in fGIS



- Beginning a fGIS Project
- Adding Basemap Data
- Adding GPS Data
- Editing Layer Properties
- Checking Feature Attributes
- Adding Acres to Area Features
- Adding Acres Labels to Maps
- Creating Shapefiles and Digitizing
- Printing a Simple Map in TatukGIS Viewer
- Exporting Maps and Legends to MS Word

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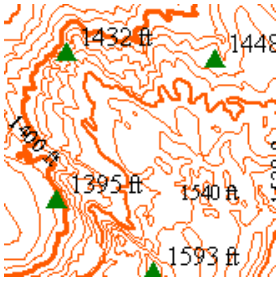
Coordinate Systems/Units

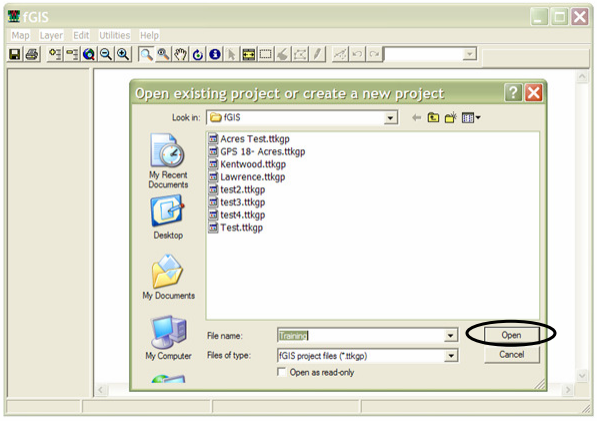
For GPS data to line up with basemap data in fGIS, you must export the GPS data out of SoloFieldCE in the same coordinate system and zone as the basemap. As mentioned in the Advanced GPS/GIS section, the BASEMAP is the starting point for determining which coordinate system and zone you should work in.



After you have correctly exported your GPS data from SoloField CE, you are ready to open fGIS. Execute the fGIS program by double-clicking on the shortcut on your desktop.

Beginning a Project in fGIS

The following screens will appear. Either navigate to and select an existing project, or navigate to where you want to store and new project, name it, and click **Open**.



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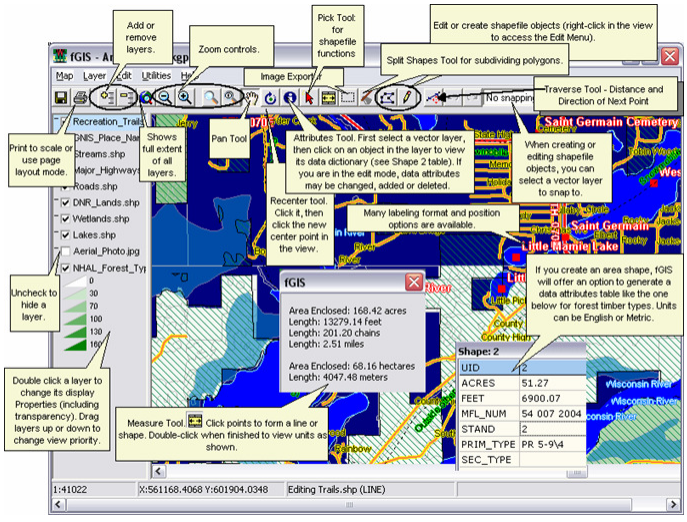
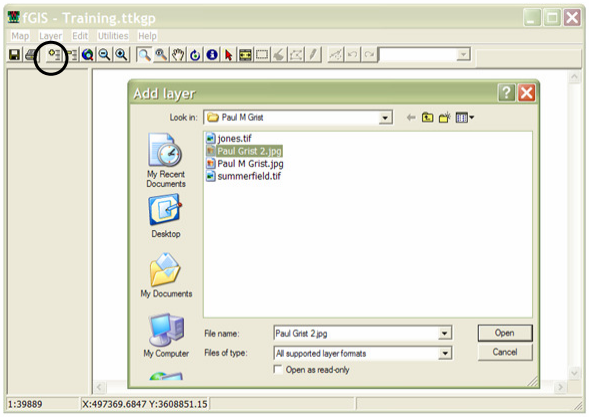
fGIS Toolbars



Adding Basemap Data

I like to add Basemap data to my project first. To do this, click the "**Add Layer" button**.

Next navigate to your basemap files and open the appropriate file or files. fGIS can utilize .sid files, geotiffs, geojpgs, or .ecw files (and more).



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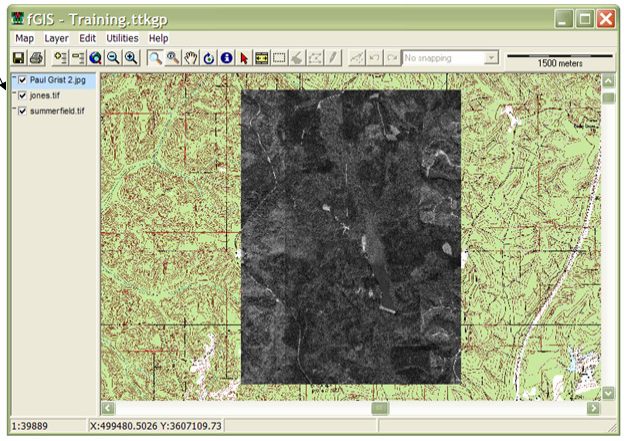
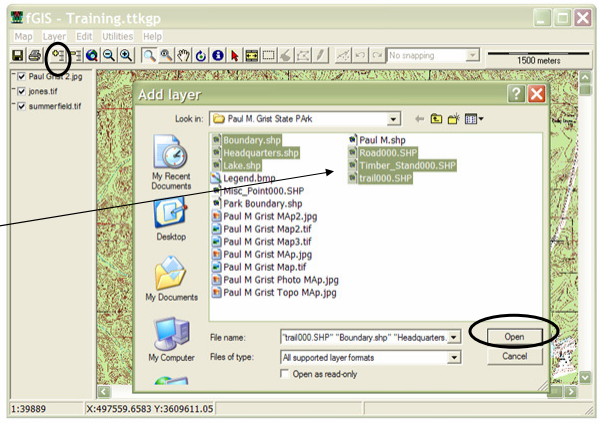
Adding Basemap Data

Multiple layers can be added. Make sure that the bottom layers are in the bottom of the legend and the top layer is on top. To move layers, simply left click on it and drag it to the appropriate location.



Adding GPS Data

Add GPS Data just like basemaps. Simply click the **Add Layer** button, navigate to wherever you stored your shapefiles from SoloField, click as many shapefiles as you want, and click **Open**.



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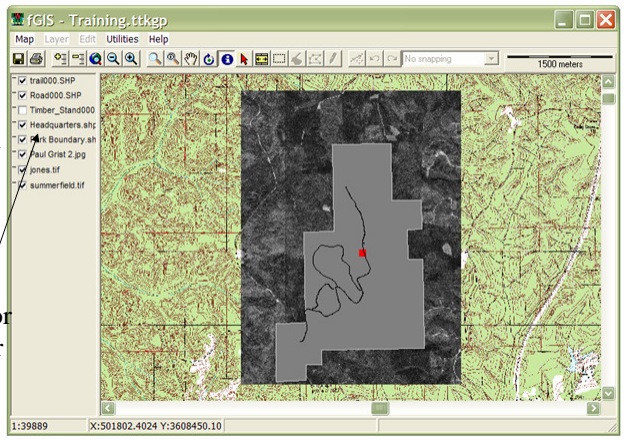
Arranging and Viewing Layers

As with the Basemap layers, you need to arrange the shapefile layers in the order that you want to see them bottom to top.

You can also turn certain layers on or off by checking or unchecking the box by the name.

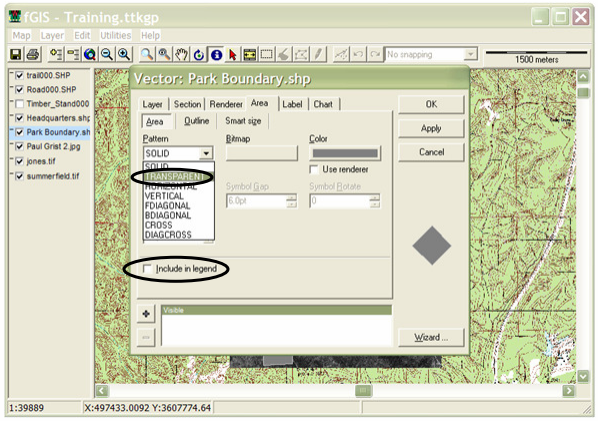


Editing Layer Properties

Shapefile layers properties can be edited if you double left click the shapefile.

Here I will make the Property Boundary layer be **Transparent**.

Click the **Include in Legend Box** to make the colored line show up.



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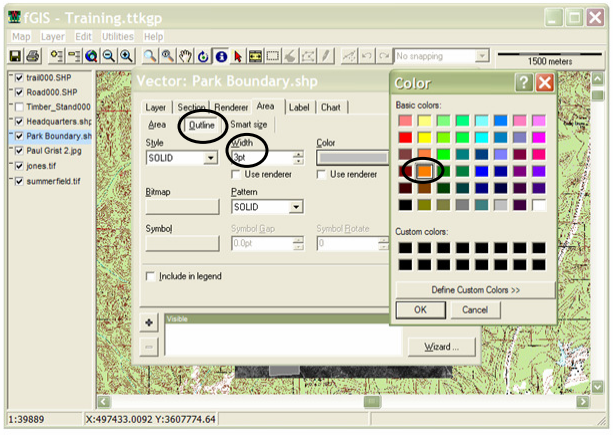
Editing Layer Properties

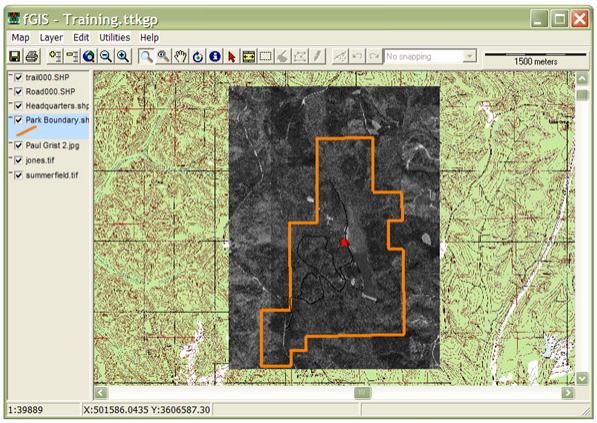
Next I will select the **Outline** tab and make the Property Boundary layer be **3 points wide** and colored **Orange**.



Editing Layer Properties

The resulting view looks like this.

Next I will change the other shapefile layers so that they will stand out on the photo.



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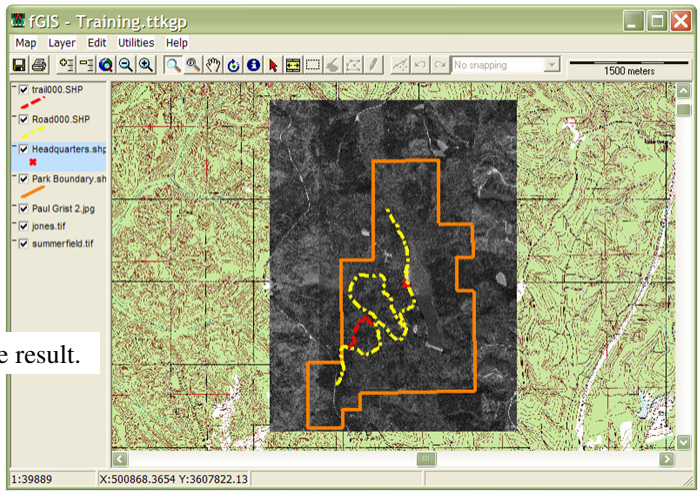
Editing Layer Properties

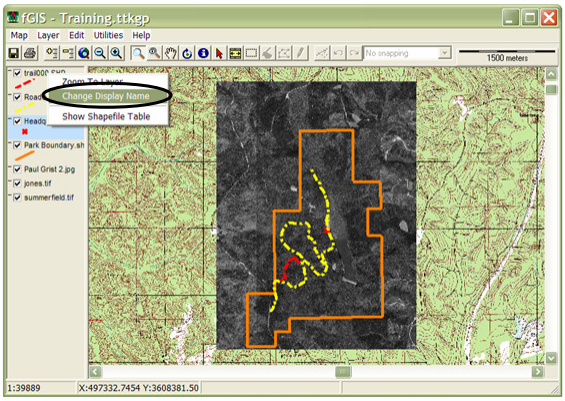
Here is the result.



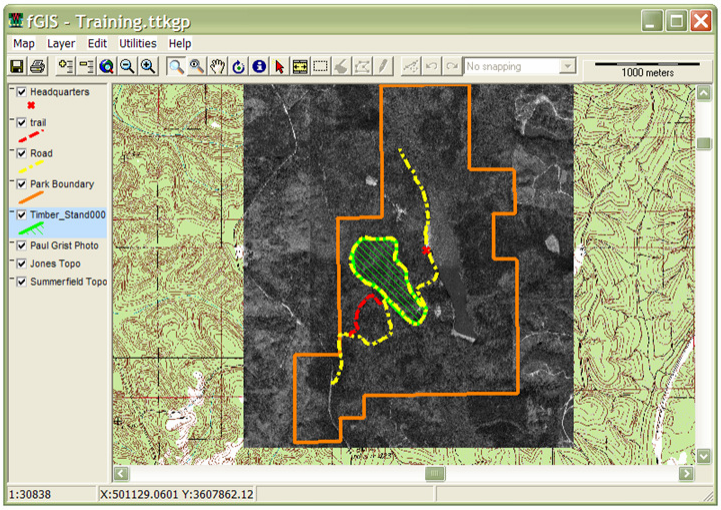
Layer Options

You can change the name of the displayed layer if you right click on the layer and select **Change Display Name**.

Change all names that you want.



Modified Map

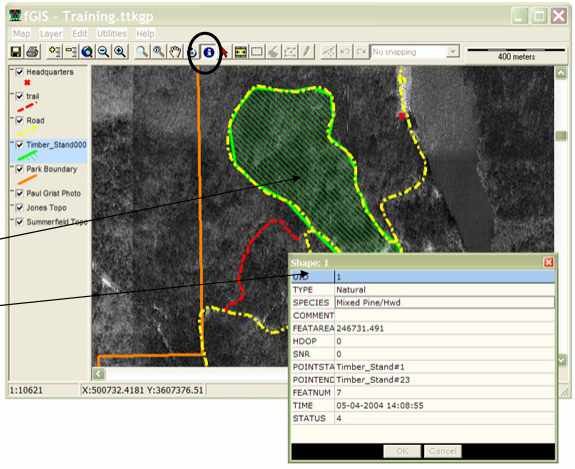


Checking Feature Attributes

The Attributes of a Feature that were entered in SoloField can be viewed if you select the **Info** Button and then click on the feature in question.

The Attributes are then displayed.

Notice that Acres is not displayed.

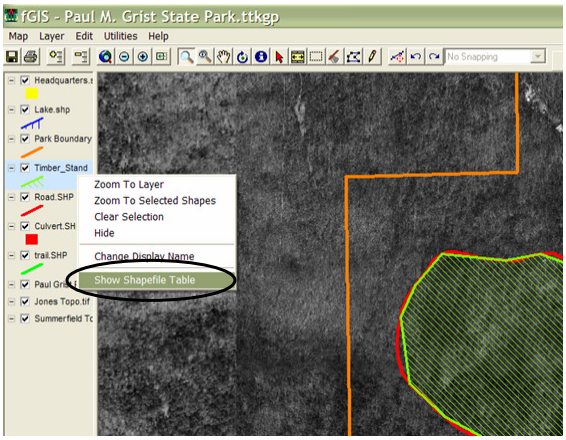


Adding Acres to Area Features

To get acres to show up in the Attribute Info screen we need to add an attribute field to the Timber Stand shapefile.

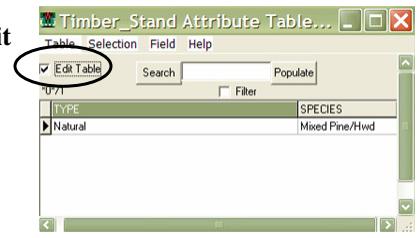
Do the following:

1. Right click on the Timber Stand Layer
2. Select **Show Shapefile Table**

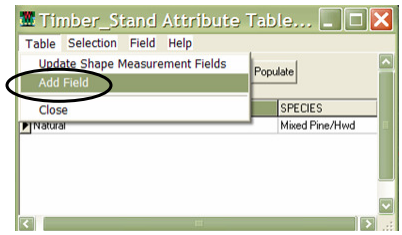


Adding Acres to Area Features

3. Click on the **Edit Table Box**



4. Select Table > **Add Field**



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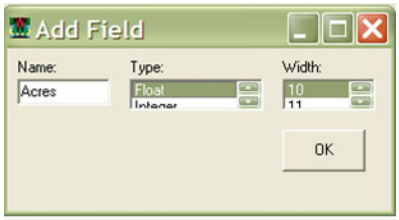
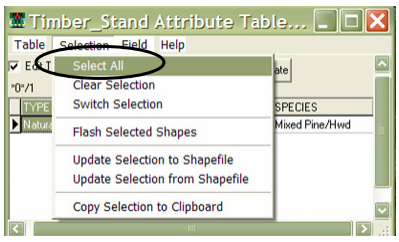
Adding Acres to Area Features

5. In the Add Field Box, Type **Acres** for the Name, Select **Float** as the Type, and leave the Width at 10.



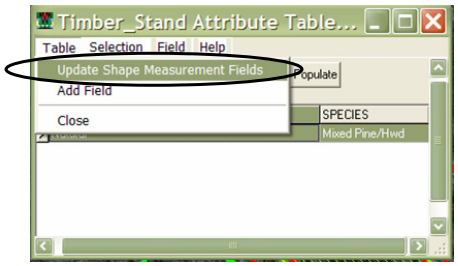
6. Click **OK**.

7. Select Selection > **Select All** to select all of the fields in the Timber Stand Shapefile.

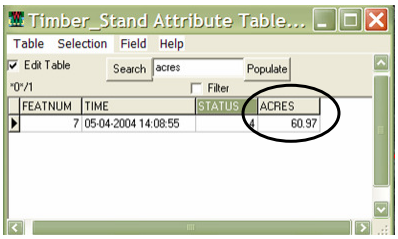


Adding Acres to Area Features

8. Lastly, Select Table > **Update Shape Measurement Fields**



The **Acres column** now has the correct acres for that Shapefile Area and can be checked in the Attribute Table or with the Attribute Info button on the map.



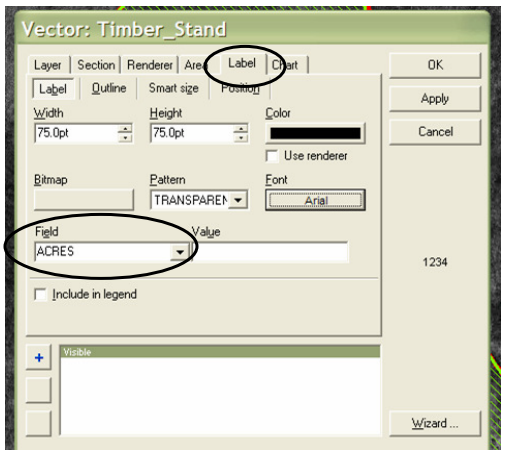
Adding an Acres Label to the Map

To add an Acres label to the map,

1. Double click the Timber Stand Layer

2. Select the **Label** Tab

3. Make the **Field = Acres**

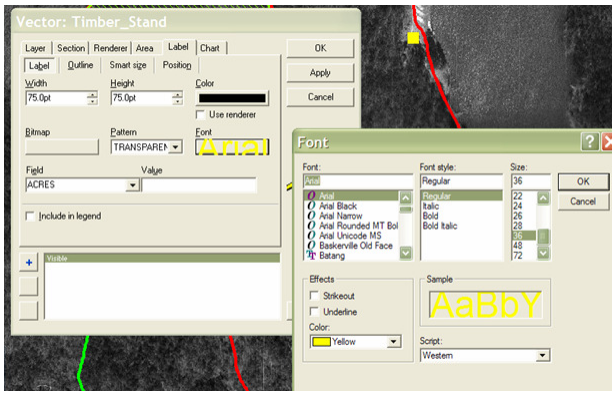


Adding an Acres Label to the Map

4. Make the Color = Black

5. Select the Font Box and then select an appropriate Color and Size (i.e. Yellow and 36)

6. Select OK 2X

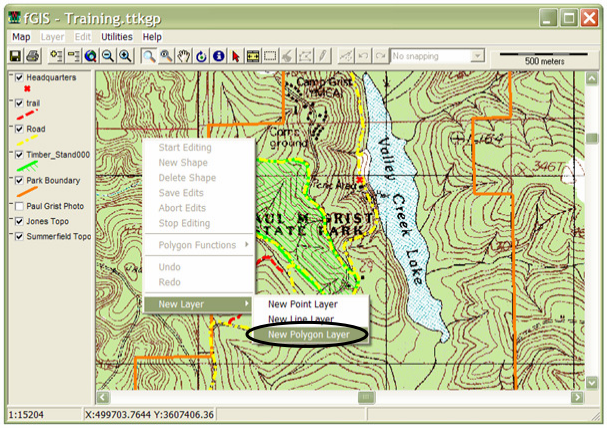


Creating Shapefiles by Digitizing

Sometimes it is useful to create shapefiles in a GIS program by heads-up-digitizing.

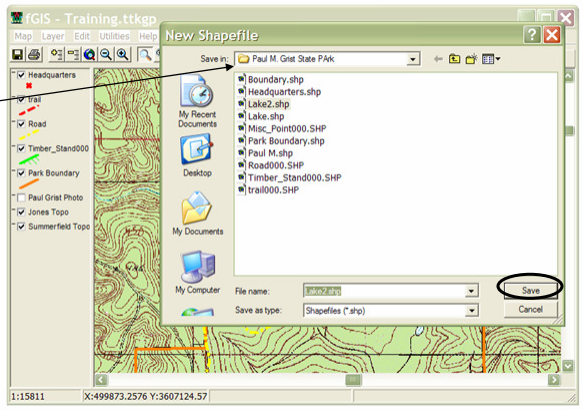
Do the following to create a "Lake" shapefile:

1. Right click on the basemap layer and select New Layer then **New Polygon Layer.**



Creating Shapefiles by Digitizing

2. Navigate to the folder where you want to store your new shapefile, and then name and **Save** it.



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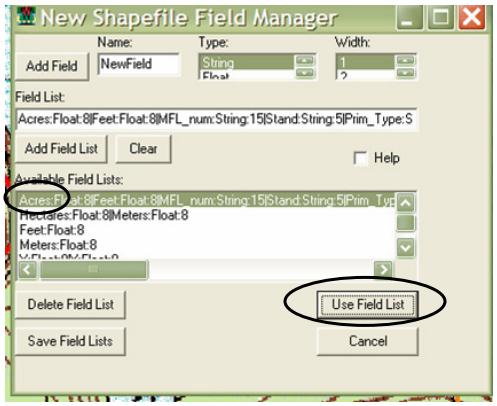
Creating Shapefiles by Digitizing

3. Select **Acres** from the Available Field List and select Use Field List.

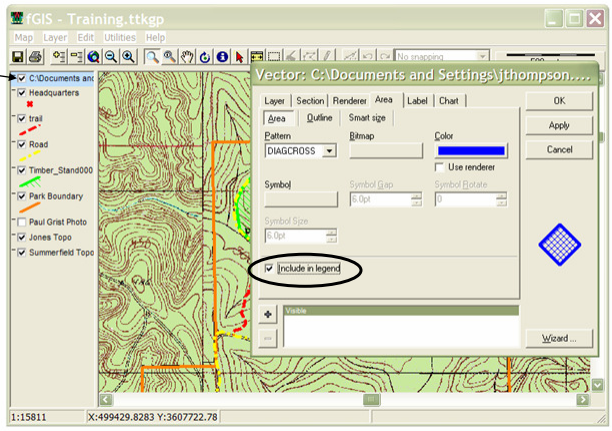
If you want to add some more attribute fields for this shape, you can select them from the Available Field List or create them with the Add Field dialogue.



Creating Shapefiles by Digitizing

4. Rename the new shapefile by right clicking and select **Change Display Name**.

5. Change the layer properties by double clicking on the layer. Be sure and check the **Include in Legend box**.



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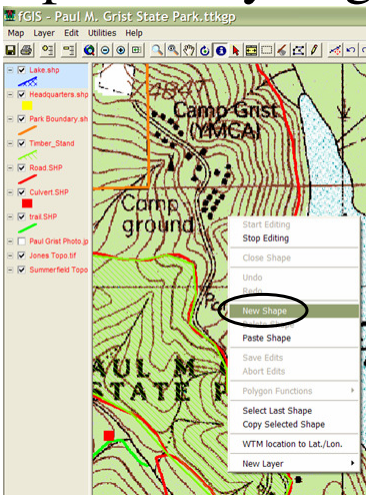
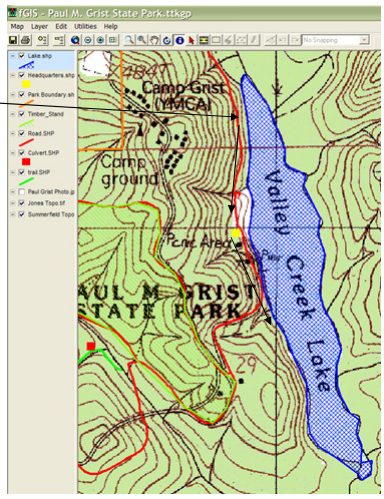
Creating Shapefiles by Digitizing

7. With the Lake Layer highlighted, right click on the basemap and select **New Shape.**



Creating Shapefiles by Digitizing

8. Begin digitizing by left clicking on the edge of the new polygon you wish to map and then travel around the shape in a counter clockwise manner clicking everywhere you want to "drop" a node.



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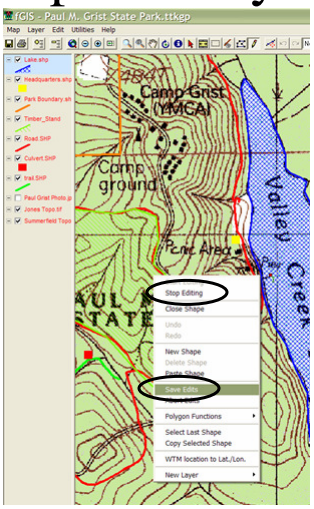
Creating Shapefiles by Digitizing

9. When you finish going around the area you are mapping, right click on the basemap and select "**Save Edits**".

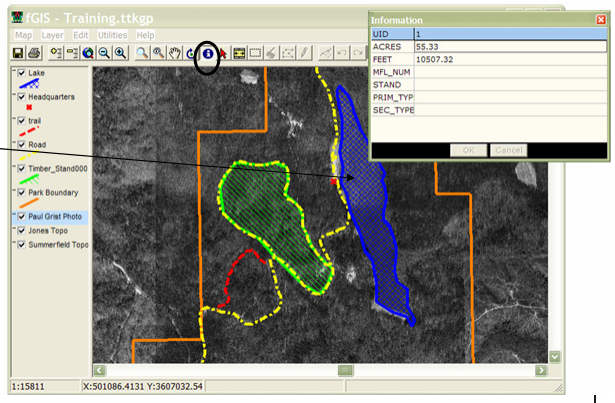
11. If you are finished editing, right click again and select "**Stop Editing**".



Creating Shapefiles by Digitizing

If you select the **Attribute Info** button and click on the Lake, you can see the Attribute info.

The new shapefile can be exported to your handheld and used in SoloField CE as a basemap. Be sure and copy all 3 files (.shp, .shx, and .dbf).



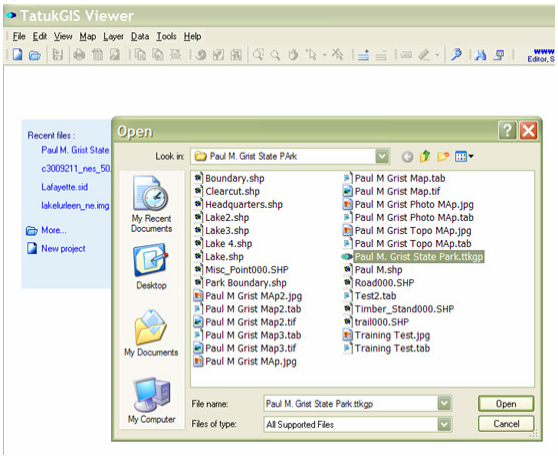
Printing a Simple Map in TatukGIS Viewer

You can print a simple map in fGIS by selecting the Printer icon or Map > Print > Print Map.

You can get a better map easier by saving your fGIS project and then printing it in TatukGIS Viewer. This program is on your customer CD or you can download and install the Free Viewer from https://shop.tatukgis.com/downloads/DownloadList.aspx. You will have to register with Tatuk before you download.

Printing a Simple Map in TatukGIS Viewer

Once you load the program, open it and select File > Open Project and then navigate to the correct folder and select the fGIS project (NOTE – this will be a .ttkgp file).



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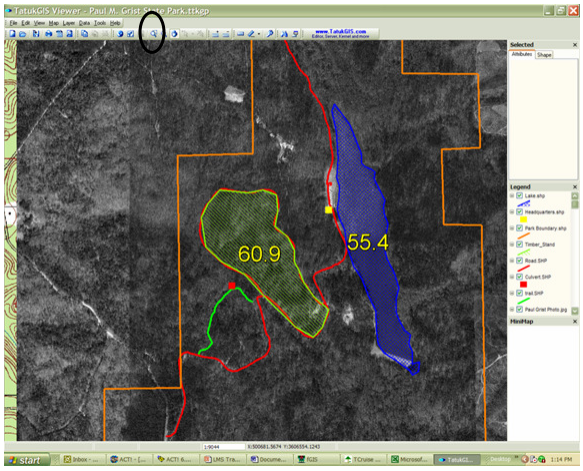
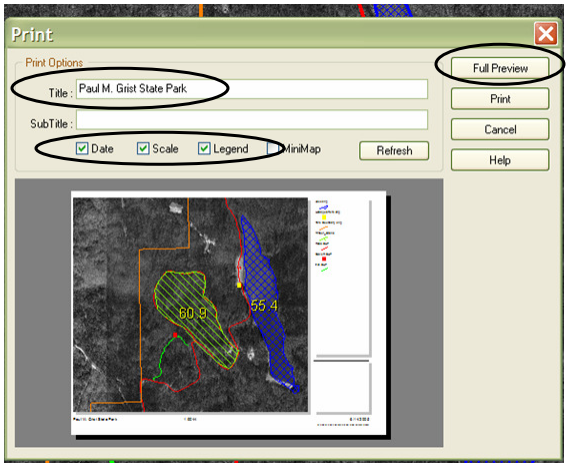
Printing a Simple Map in TatukGIS Viewer

Use the **Zoom Mode button** to Zoom into the view that you want to display on your map.



Printing a Simple Map in TatukGIS Viewer

Lastly, select File > Print Preview and enter a map Title and Subtitle and select if you want the **Date, Scale, and Legend**. You can see a full screen preview as well. Then Print.

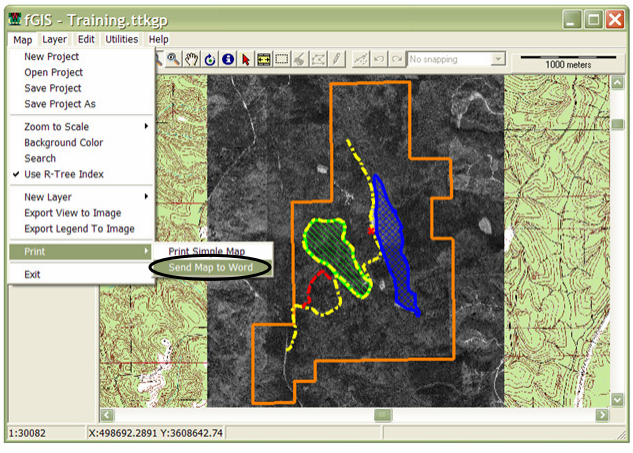


Exporting Maps and Legends to MS Word

Once you finish editing your map and legend, zoom in or out to show the map you want to create.

To print your map, it is best to send it to MS Word, where you can use the Draw Tools to add text and/or arrows, etc.

1. Click Map > Print > **Send Map to Word**. Then select the resolution (1-2 is OK), the correct folder and file type (I like .jpg), name it, and save it.

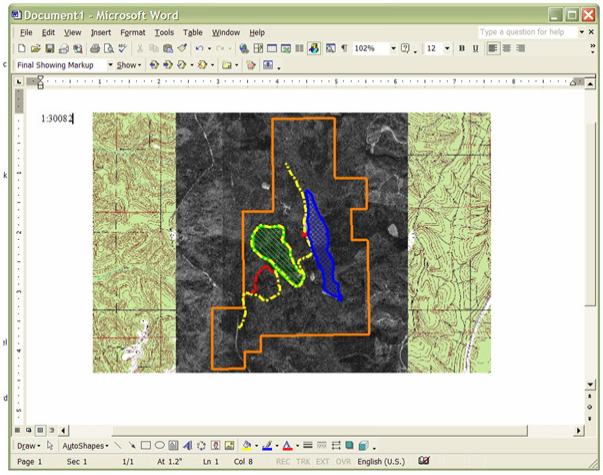


Exporting Maps and Legends to MS Word

You exported view should appear in MS Word with the actual scale.

2. Turn on the Drawing Toolbar by going to View > Toolbars and select Drawing.

Now you can crop your map.



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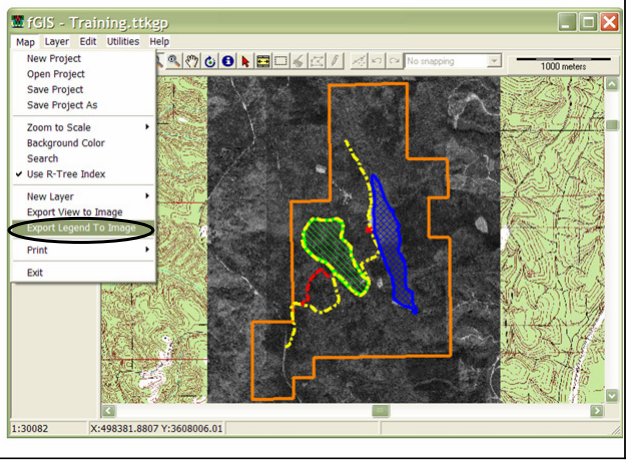
Exporting Maps and Legends to MS Word

3. You can Export the Legend out of fGIS as well by clicking Map, **Export Legend to Image** and then selecting the folder, naming your Image, and Saving it.



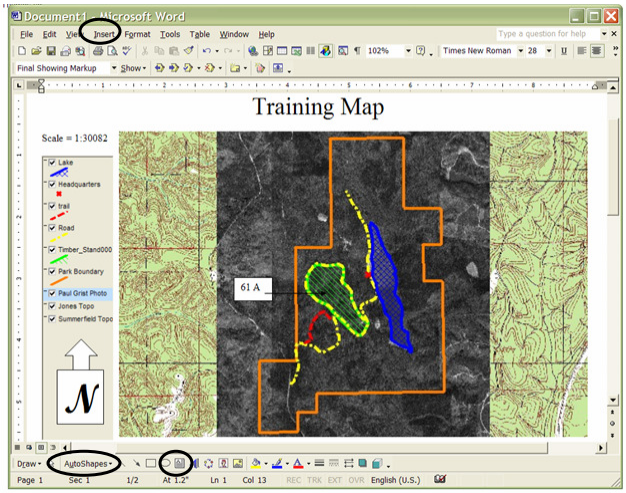
Exporting Maps and Legends to MS Word

3. Next import the legend by selecting **Insert** > Picture > From File, and then navigate to the correct directory and Insert.

4. Use an **AutoShape** and a **Textbox** to create a N arrow.

5. Use a Textbox to add any labels.

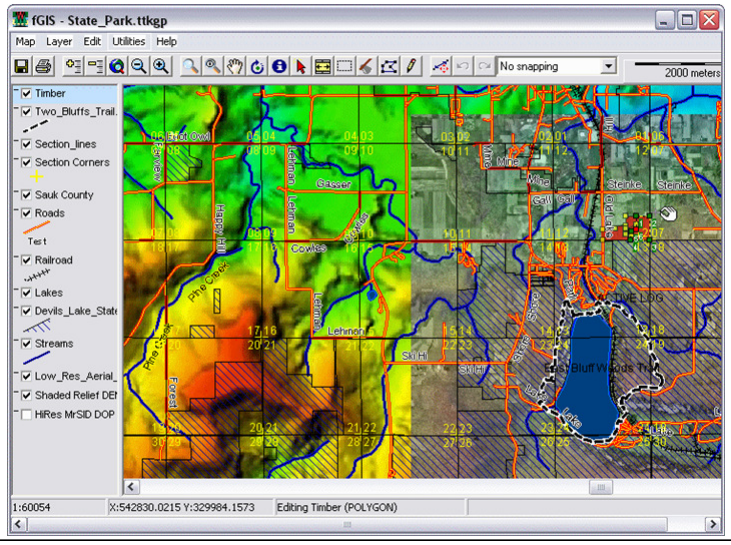
6. Save the map and print it.



Other fGIS Functions

- The fGIS Help menu is excellent and even includes several tutorials. I strongly encourage spending some time here.
- Other Functions include:
  - Reprojecting shapefiles
  - Joining dBase tables to shapefiles
  - Exporting geotiffs and geojpgs
  - Creating islands and Splitting shapes
  - Sending maps to a custom Diagram Designer
  - Using custom symbols, labels, classification, and DEMs
  - Much more

Sample Map


fGIS - State_Park.ttkgp
Map Layer Edit Utilities Help
No snapping
2000 meters
Timber
Two_Bluffs_Trail
Section_lines
Section Corners
Sauk County
Roads
Test
Railroad
Lakes
Devils_Lake_State
Streams
Low_Res_Aerial
Shaded Relief DEM
HiRes MrSID DOP
Lehmen
Cowles
Pine Creek
Steinke
Ski Hi
1:60054
X:542830.0215 Y:329984.1573
Editing Timber (POLYGON)