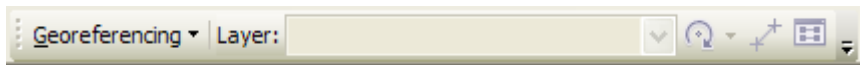



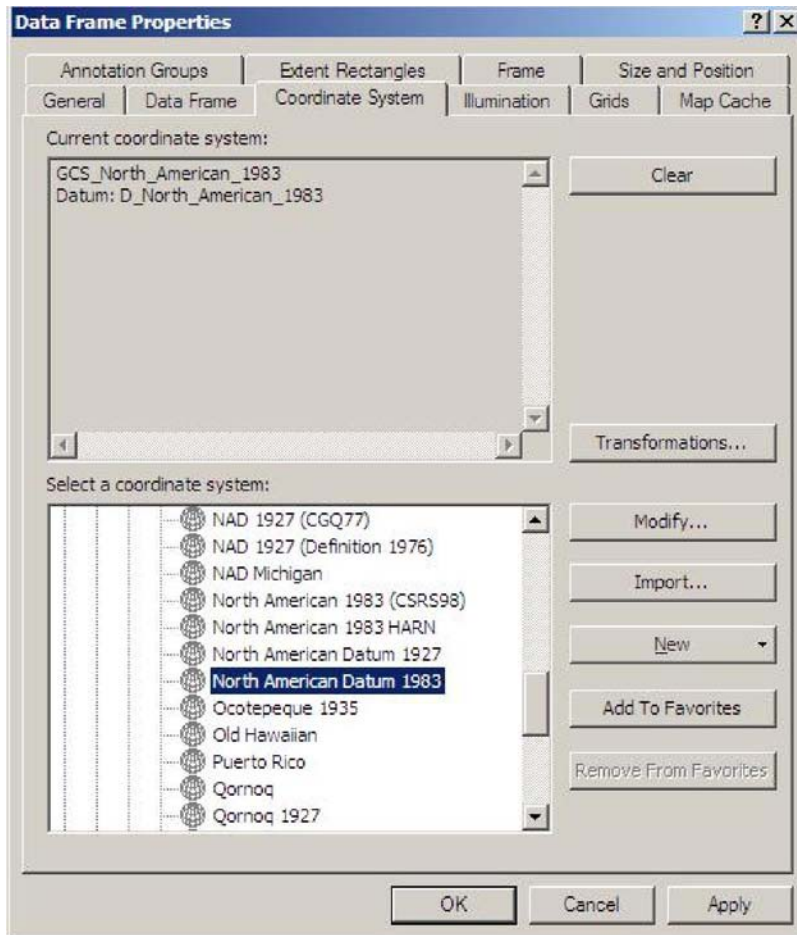
Georeferencing


While using ArcMap software, you may encounter a topo map or parcels map that has no spatial data associated with it. After adding it to ArcMap, the image is nowhere close to where it should be. This type of data needs to be georeferenced before it is usable. For this exercise we will georeference a topographic map from TopoZone.

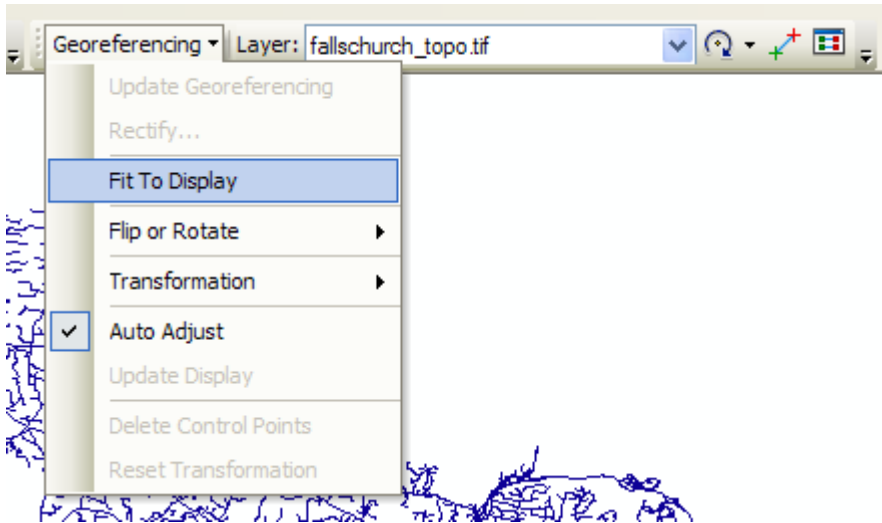
- Open a new blank map on ArcMap 10.
- In the Main Menu, Select “Customize” tab and then select “Toolbars” item.
- Then turn on the “Georeferencing toolbar” by just selecting it. The toolbar will be visible with the following options,



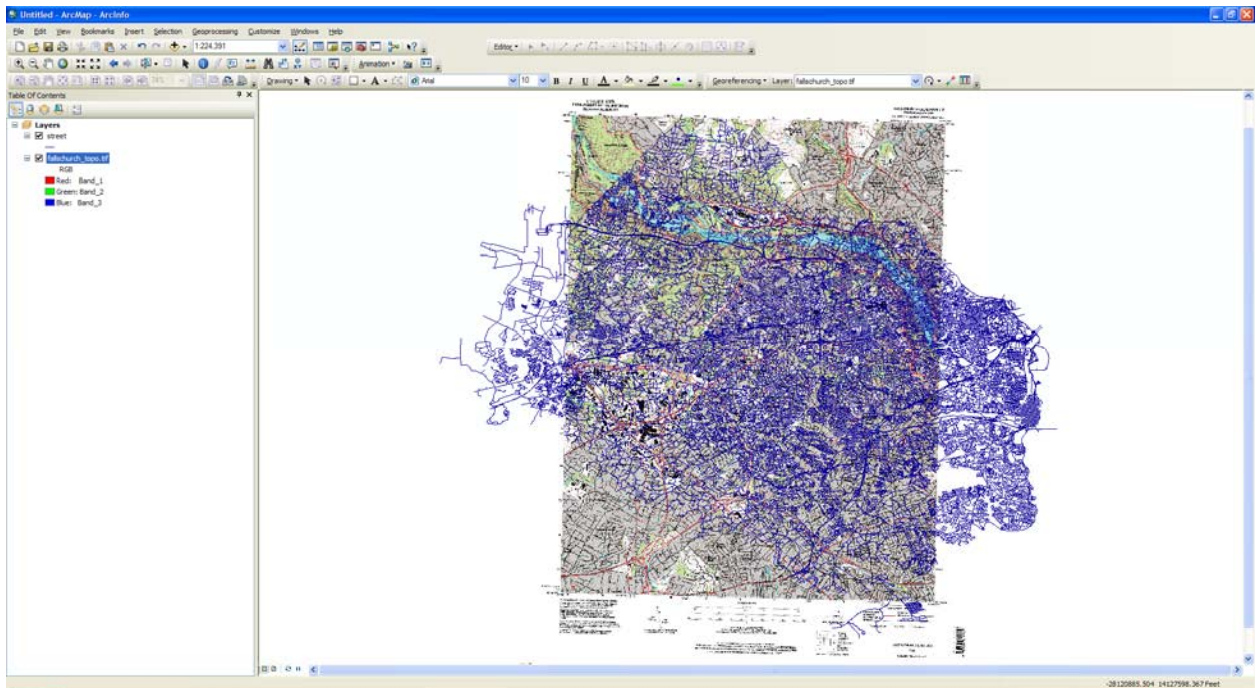
- Use the  add data button to add the streets layer to the view by navigating to your local folder where you extracted the tutorial files using Connect to Folder and then select the streets shapefile.
- Right click on “Layers” in the table of contents and click “Properties.”
- Go to the “**Coordinate System**” tab.
- Change the projection to “**North American Datum 1983**” located in the folders **Predefined>Geographic Coordinate System>North America** (You may want a different projection depending on where the map is located but for this map we are using North American Datum 1983).
- Click “**Apply**” and “**OK**” to close the window. Say “Yes” or “OK” to any prompt that appears.



- Again use the  add data button to add the “fallschurch_topo” tiff image to the layer.
- Note that the added image is not visible immediately.
- To make the tiff image visible, select “Georeferencing” option in the “Georeferencing Toolbar”. And then click on the “Fit to Display” option.



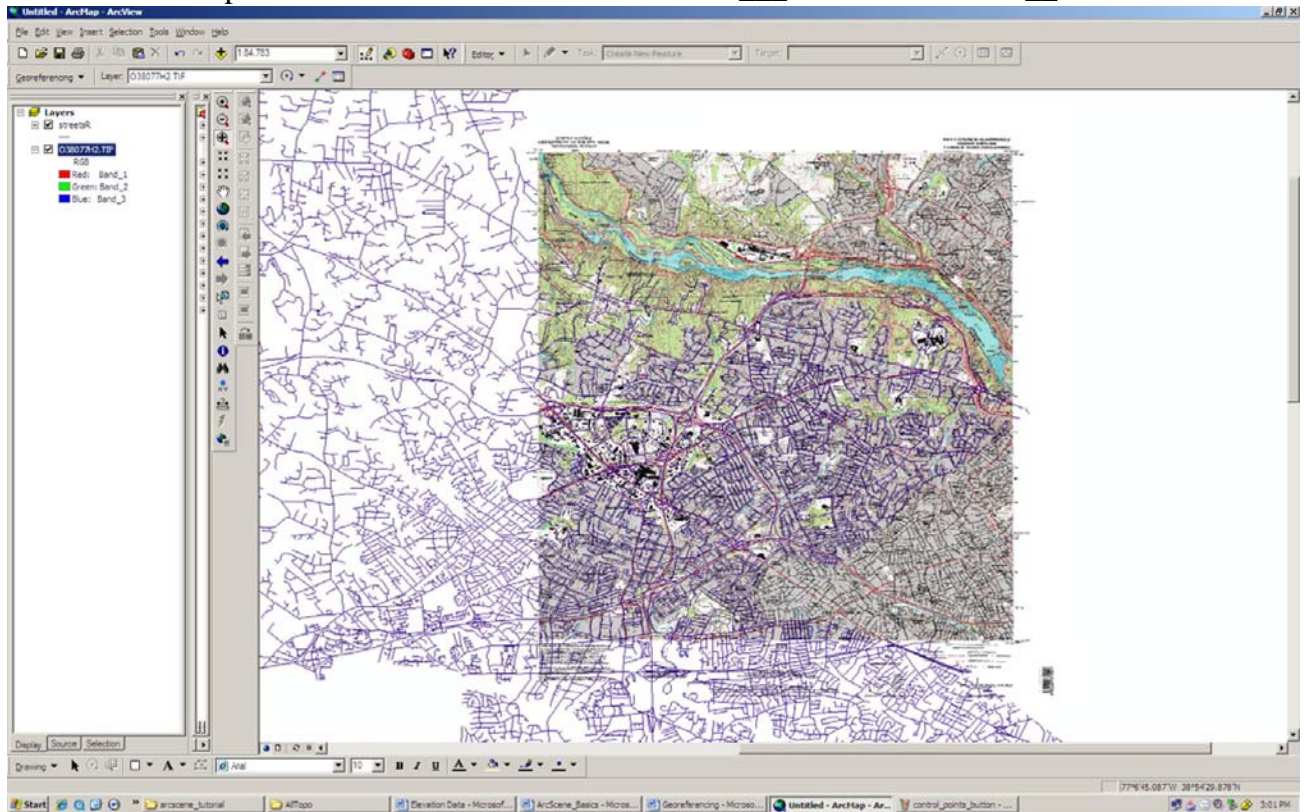
- Then you will be able to see the tiff image Overlaying on the streets layer.



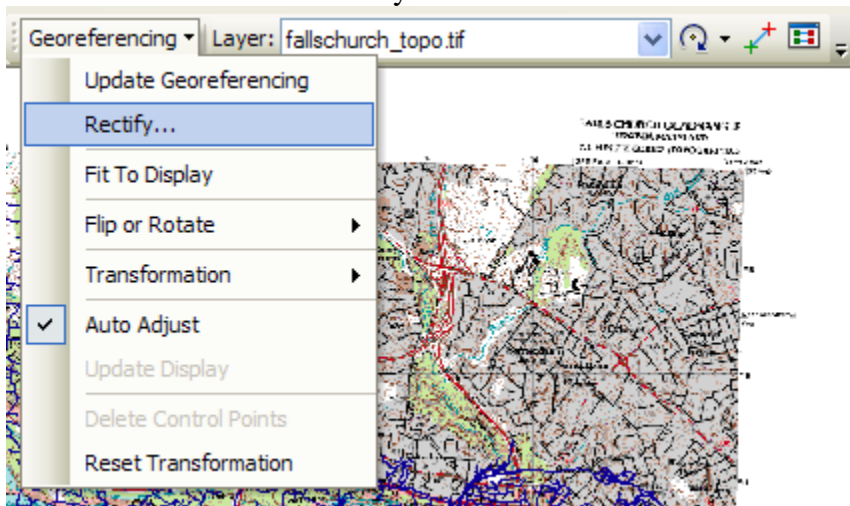
- To open the georeferencing tool, right click in an empty space in your toolbar and click on “Georeferencing” to put a check next to it. The toolbar should now appear and you can move it where you wish.
- Georeferencing an image turns the image into a rubber sheet that can be bent and stretched to fit almost anything. In ArcMap you need to find points in your image that you can recognize in streets.shp. Road intersections are very good reference points for georeferencing as they do not move or change often.
- Once you find familiar reference points, click the “Add Control Points” button located in

your georeferencing toolbar.

- Click on a point in the image, then click its corresponding point in streetsr.shp.
- Do the same for several points. As you do this, the image should move and reshape to fit the roads.



- Once you are done georeferencing, you must save your work into a new raster file.
- To do this, Select the option “Georeferencing” in the “Georeferencing toolbar” and click “Rectify...”



- In the window that appears, choose a location to save your raster and a new name then click “Save”. The topographic map is now georeferenced and ready for use.

If you have any questions on this tutorial, please contact Joy Suh, hsuh1@gmu.edu

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