

Using *All Topo Maps* to Bring in a Background Quad Map in Pathfinder Office or ArcView

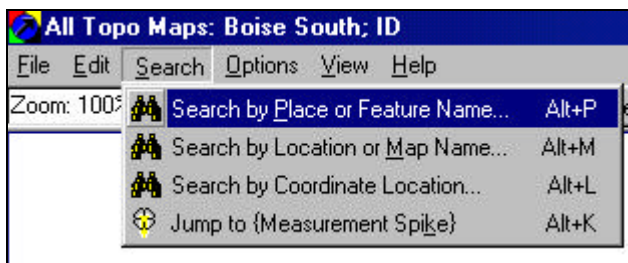
Pathfinder Office, ArcView, and ArcExplorer can all display background image files, such as Digital Raster Graphics (scanned images of USGS quad maps). These DRG files are often available for free on the Internet; for example, the Idaho Department of Lands and the Montana State Library both make collarless DRG's available for free. (Since DRG's are simply scanned images of USGS quad maps, they have the white border, or 'collar,' with the title, scale, etc. on them. Some agencies have removed these collars from their downloadable DRG's so they can be tiled.) However, an individual quad map is several megabytes in size, and often a person needs quad maps for quite a large area. It can be quite time-consuming and confusing to download individual files and try to keep the names straight.

There are several topo map programs commercially available, such as Delorme 3D Topo Quad and iGage's All Topo Map product. For a small price, you can get the quad maps for an entire state and view it seamlessly. However, Delorme's maps, for example, are not exportable in a georeferenced format that is usable by Pathfinder Office or ArcView. All Topo Maps, however, will let you easily find the area you want, then create a seamless background file of the size you specify for use in Pathfinder Office or ArcView. This tech note is designed to show you the steps in creating a background file for anywhere in your state.

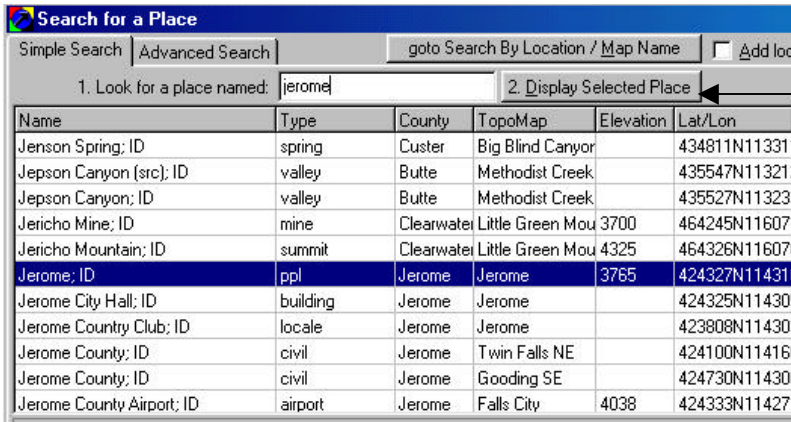
The All Topo Map product contains 3 main modules: the All Topo Map Viewer, Big Topo Map Tool, and All Topo Map GPS Tool. The Map Viewer will allow you to search for and work with individual quad maps. You may search by place name or quad map name, if you know it. The Big Topo Map Tool will be used to create a seamless tiled map containing multiple quad maps. The size of this Big Topo Map is user-specified. The GPS Tool allows you to transfer waypoints and routes, as well as display your GPS position on a topo map. We will not be using it for this exercise.

Select the Quad Map of Interest

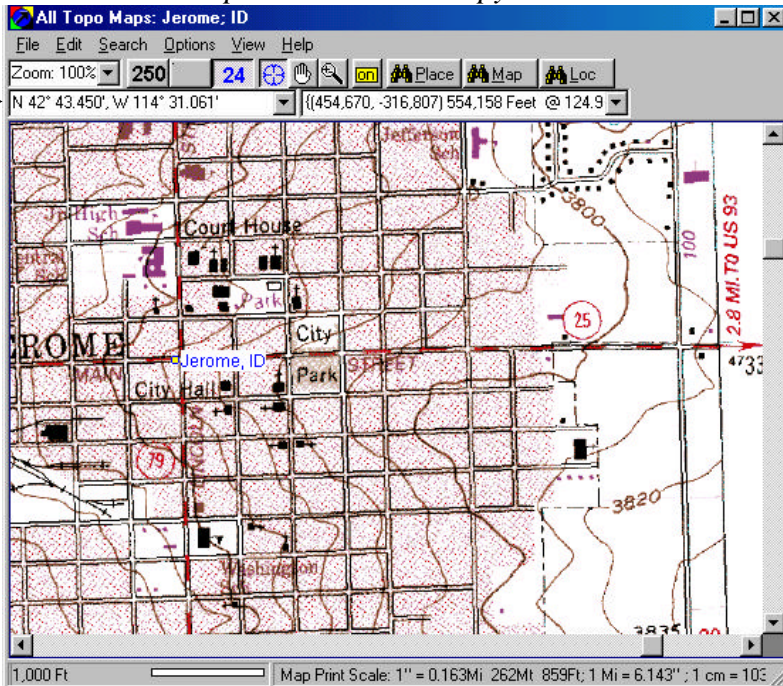
- 1) First of all, open the All Topo Map Viewer by double-clicking on the All Topo Maps icon on your desktop.
- 2) Next, from the Search menu, select Search by Place or Feature Name... You could also search by Map Name if you knew the name of your quad map.



- 3) If you know the complete name of the place you're searching for, like Jerome, ID, or Rock Creek, type it in on the Simple Search tab. If you only know part of the name, click on Advanced Search and type in the partial string. When the place of interest is highlighted on the list, press the Display Selected Place button. All Topo Maps brings up the appropriate quad map. (You may be prompted to enter the correct CD with your map on it.)



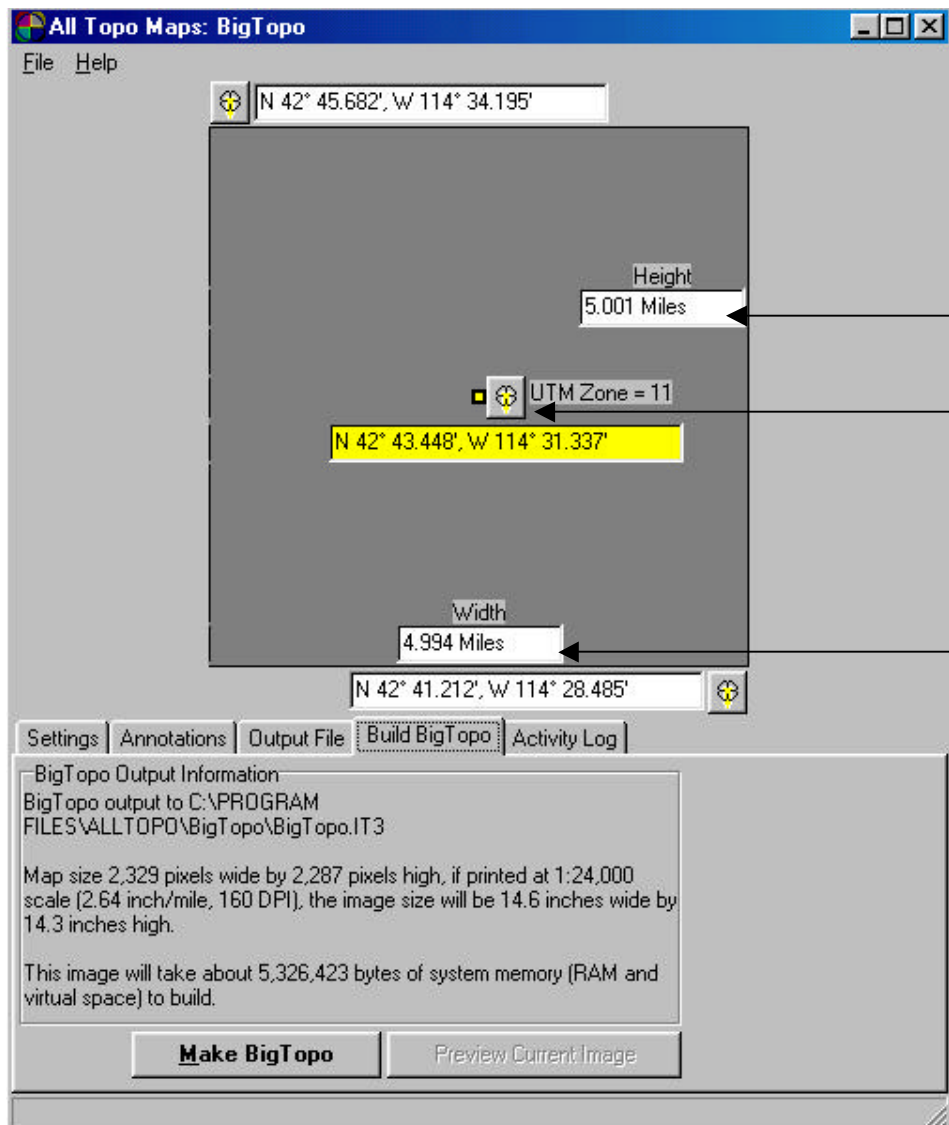
- 4) The quad map containing Jerome is displayed. I am already close to the edge of this map, so I will want to use the Big Topo Map tool to create a seamless tiled map that's centered on Jerome and is 5 miles square (this could be any number). In order to do this, either make a note of the coordinates shown in the status bar, or *put your map cursor wherever you will want the center of your Big Topo map to be and press **Ctrl + X** to copy the coordinate to the clipboard.*



Make Big Topo Map

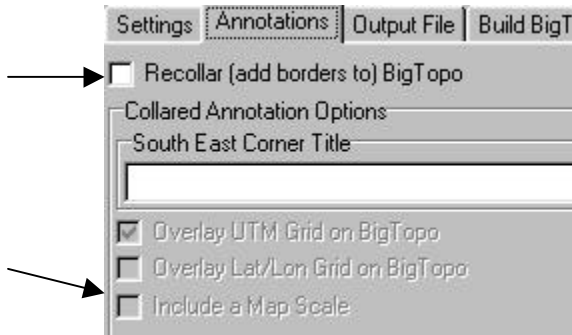
**Note: To skip making a Big Topo map and simply export the single quad map currently displayed, go to step 11. The single quad map will still have the collar.*

- 5) Open the Big Topo Map program by double-clicking on the icon on your desktop. The display shows the center coordinate of your output map as well as the height and width. *If you pressed **Ctrl + X** in the last step to copy coordinates to the clipboard, simply press the button in the center of the screen. Otherwise, click on the coordinate value and type in the coordinate from step 3.*

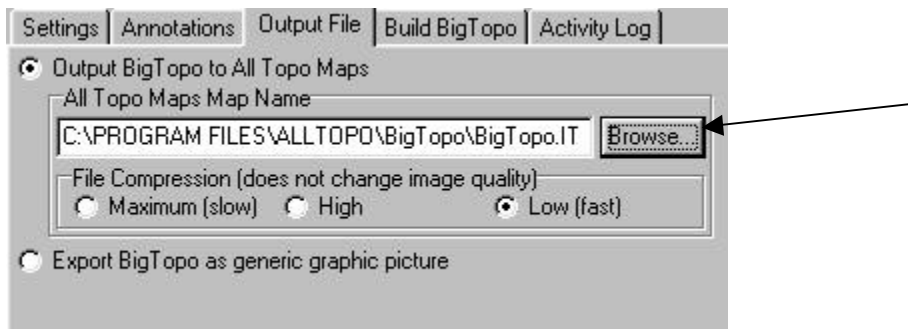


- 6) Next, type the height and width of your desired output map in the appropriate text boxes. These can be in any unit of measure. Simply type the unit of measure or its abbreviation after the number.

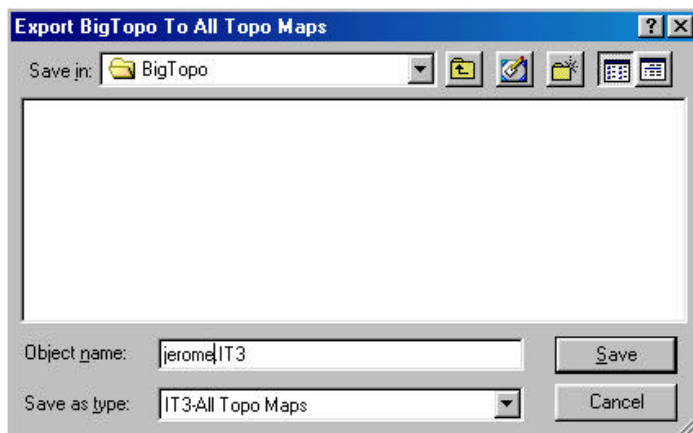
- 7) Now click on the Annotations tab. Unless you want your resulting map to be recollared with a Map Scale Bar, uncheck the Include a Map Scale button, and then uncheck the Recollar (add borders to) BigTopo option.



- 8) Next click on the Output File tab. Click on the Browse button to specify a different path and file name.



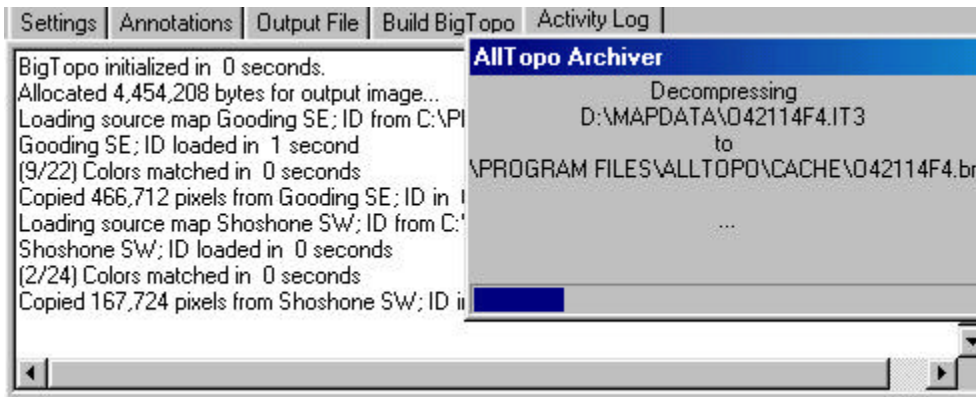
Type in the file name and press Save.



- 9) Next click on the Build Big Topo tab and press the Make Big Topo button.



The Activity Log will inform you of the progress.

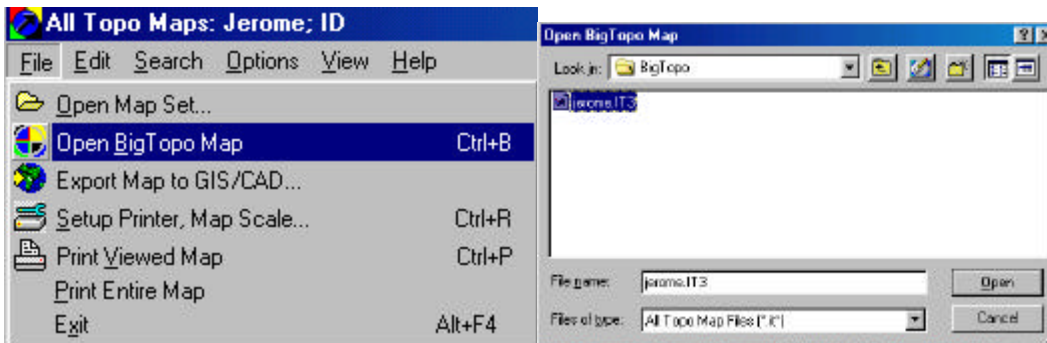


When finished, the status line will tell the resulting image and its size.

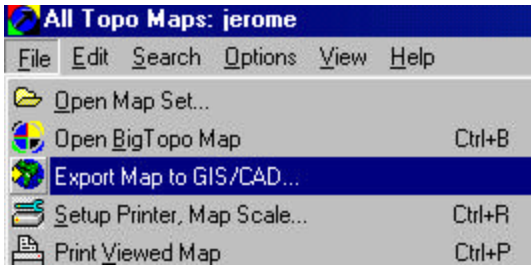


Open Big Topo Map in All Topo Map Viewer and Export to Pathfinder Office or ArcView

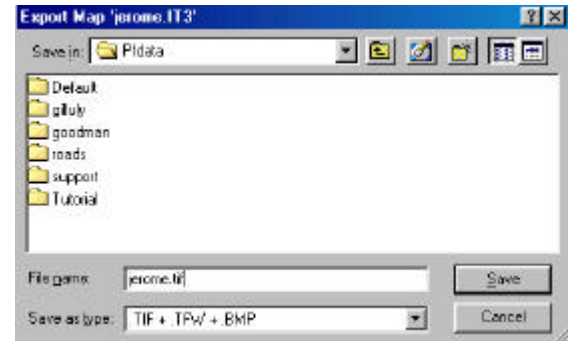
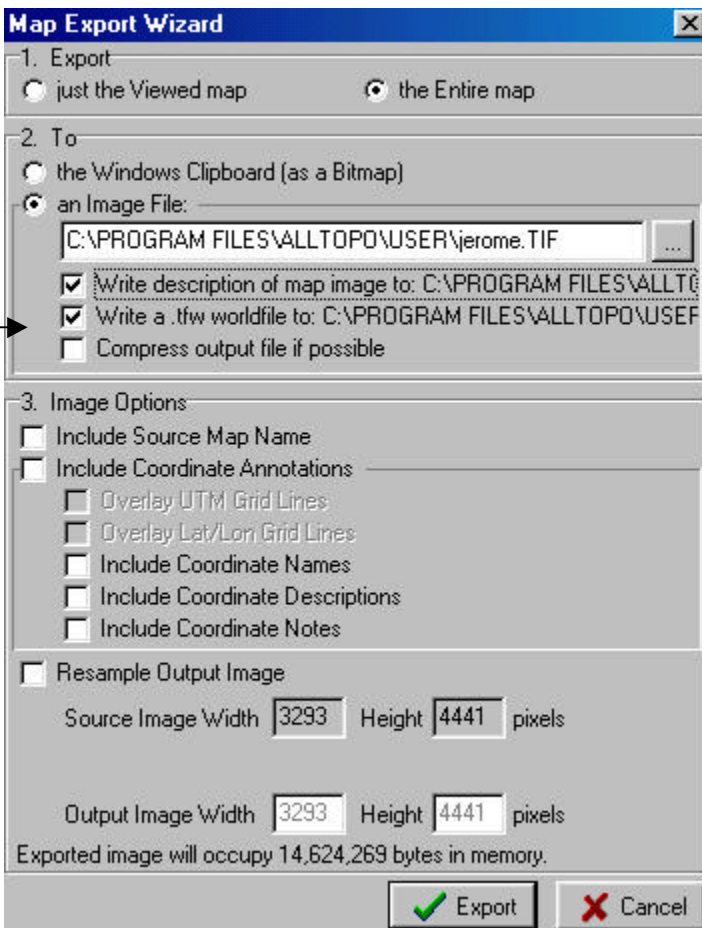
10) Now close the Big Topo Tool. Switch to the All Topo Map Viewer. From the File menu, select Open Big Topo Map.... Select the file created in step 9 and press Open.



- 11) To export the map to a georeferenced image that Pathfinder Office or ArcView can use, from the File menu, select Export Map to GIS/CAD....



- 12) The Map Export Wizard appears. Export the Entire map to an Image File. Name the output TIF file whatever you would like. Make sure to check the box to Write a .tfw worldfile. (World files contain the georeferencing information necessary for Pathfinder Office or ArcView to load the image correctly.) You may also choose to include Coordinate Annotations and Compress or Resample the output image. Compression could make the TIF file unreadable by Pathfinder Office. *All output images will be in UTM, NAD1927, since this is the coordinate system of the original quad maps.*



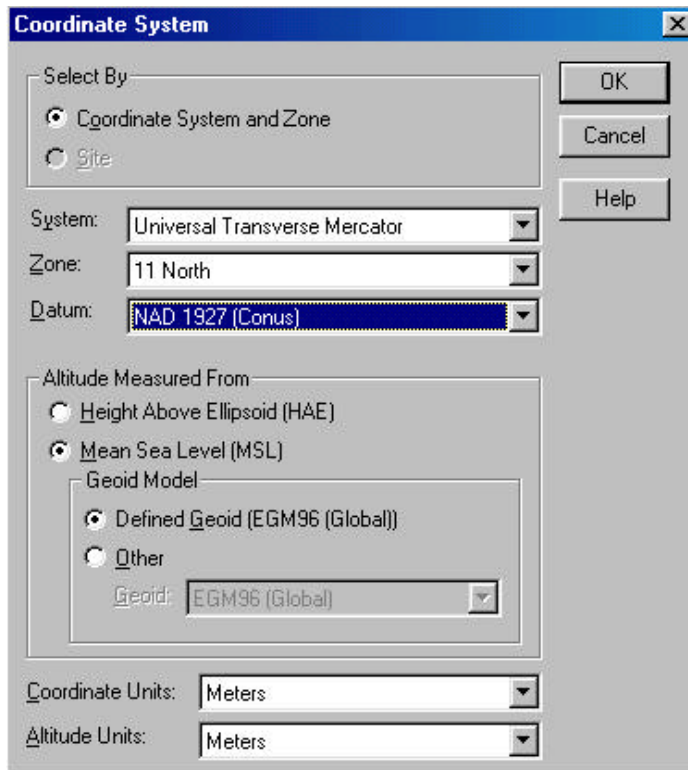
The Export Wizard does not appear in the old version, which appears as above. Download the new All Topo viewer for free from <http://www.alltopo.com/alpha/>.

Loading the Background File in Pathfinder Office

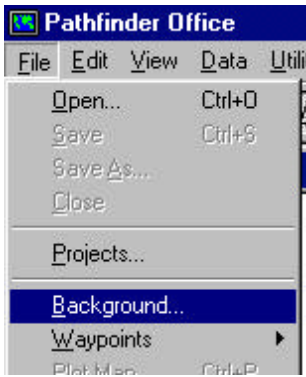
13) Open Pathfinder Office. From the Options menu, select Coordinate System.



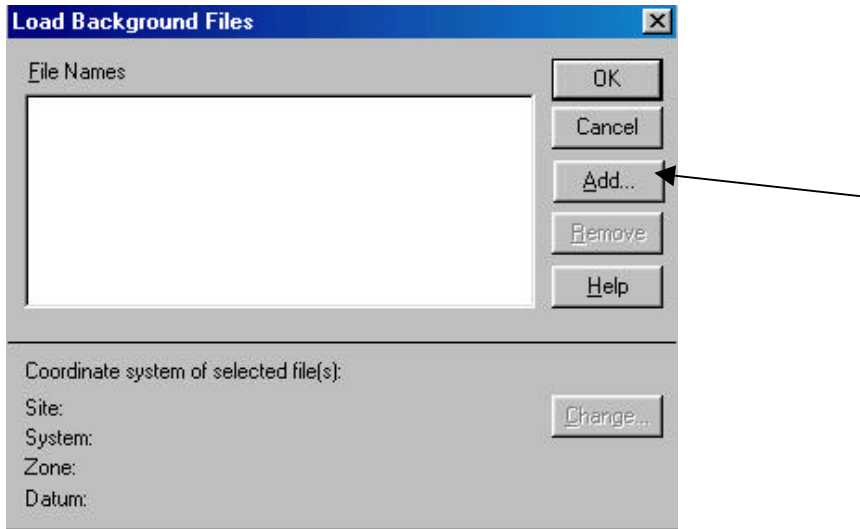
14) Set the display Coordinate System to UTM with the appropriate zone for your area. Datum is NAD 1927 (Conus), and the coordinate units are meters. Press OK when finished.



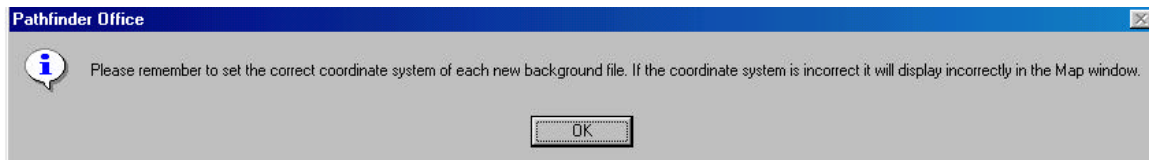
15) From the File menu, select Background....



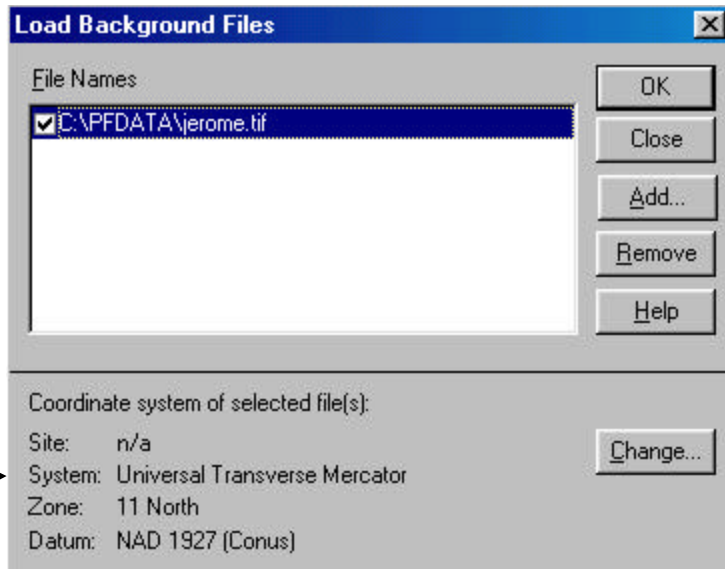
16) Now click the Add button and select your TIF image created in step 12.



17) Pathfinder Office will warn you to specify the coordinate system of the background file. In the case of image files, the coordinate system of the background file must match the display coordinate system, which is why we performed steps 13 and 14. Press OK to dismiss the message.



18) Pathfinder Office will now show your file in the Background File list with a checkbox next to it. Verify that the Coordinate System of the selected file at the bottom of the dialog box is correct. Press OK to draw the map.

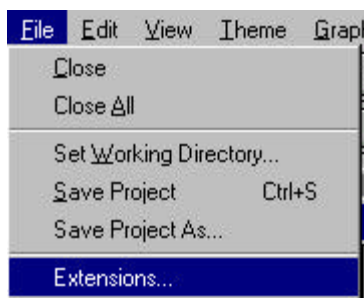


Now you can open and print regular data files on top of your background image. If at any time you would like to turn off background map display, simply go back to File, Background... and uncheck the check box next to the filename to turn it off. Press the Add... button to add other background maps.

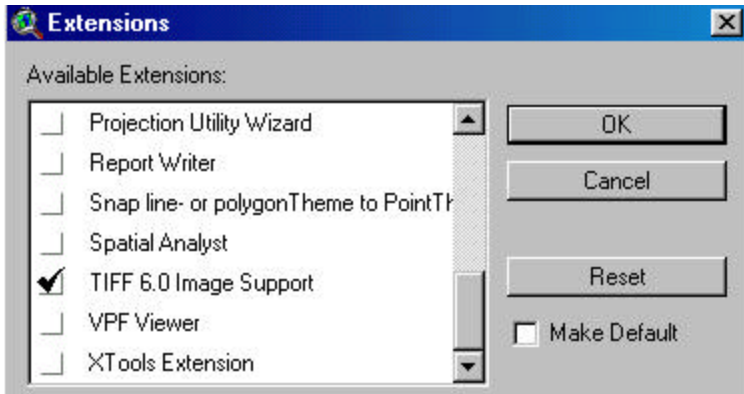
OR

Adding TIF Image as a Theme in ArcView

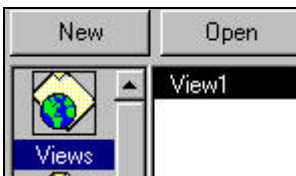
13) Start ArcView. From the File menu, select Extensions...



14) Turn on the TIFF 6.0 Image Support extension and press OK. This will allow you to add the quad map as a theme in ArcView



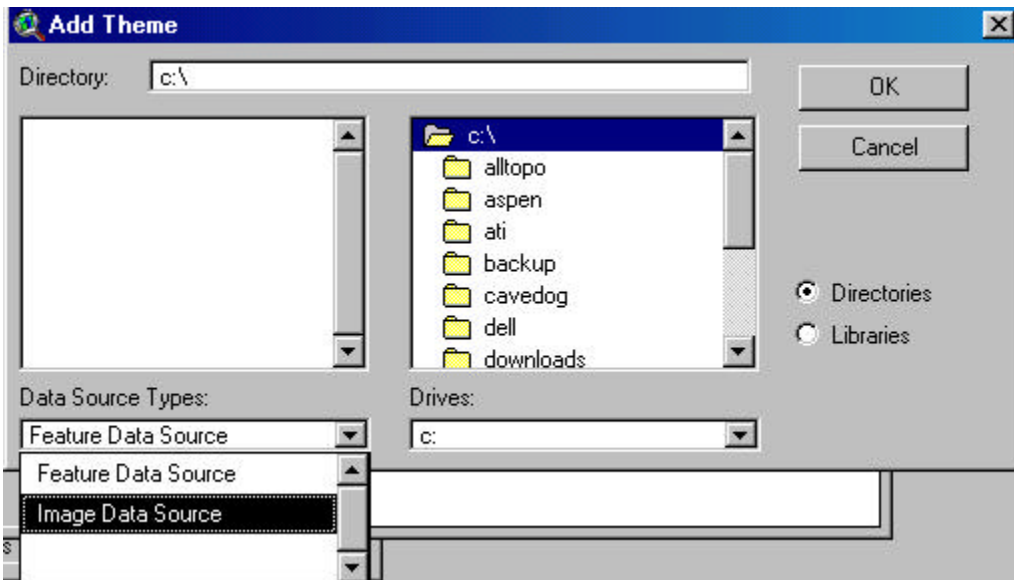
15) Open an existing View or create a New View.



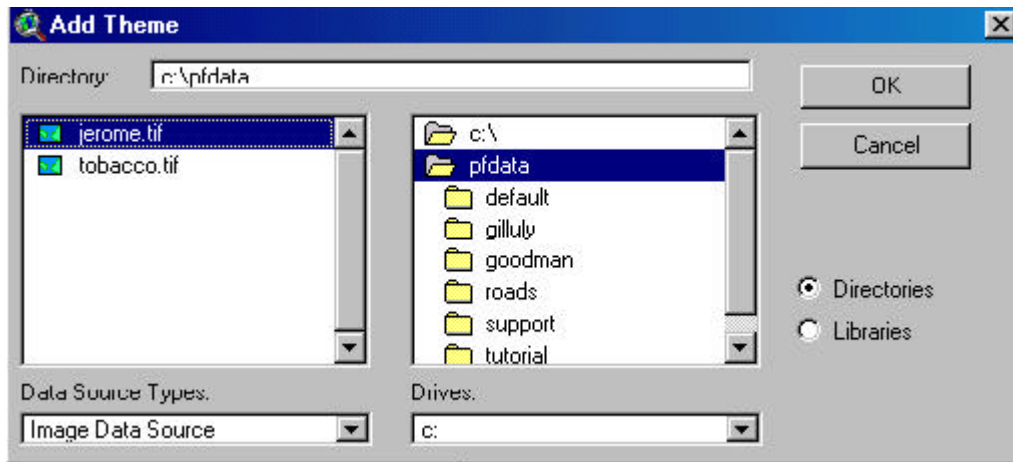
16) Press the Add Theme button.



17) In the Add Theme dialog box, change the Data Source Type in the lower left-hand corner from Feature Data Source to Image Data Source.



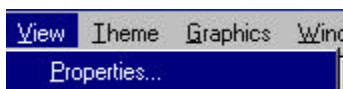
- 19) Browse to the directory containing your TIF image created earlier by double-clicking on the folders in the right-hand column. Select your TIF image in the left-hand column and press OK.



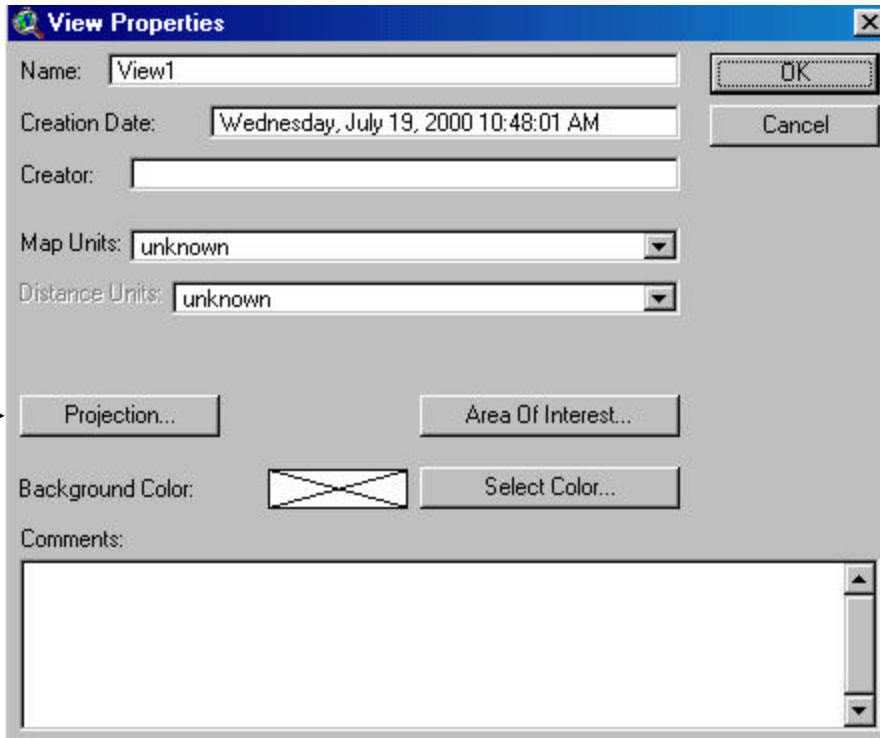
- 20) ArcView will add the image as a theme. Click the raised check-box in the table of contents to turn the display of this theme on.



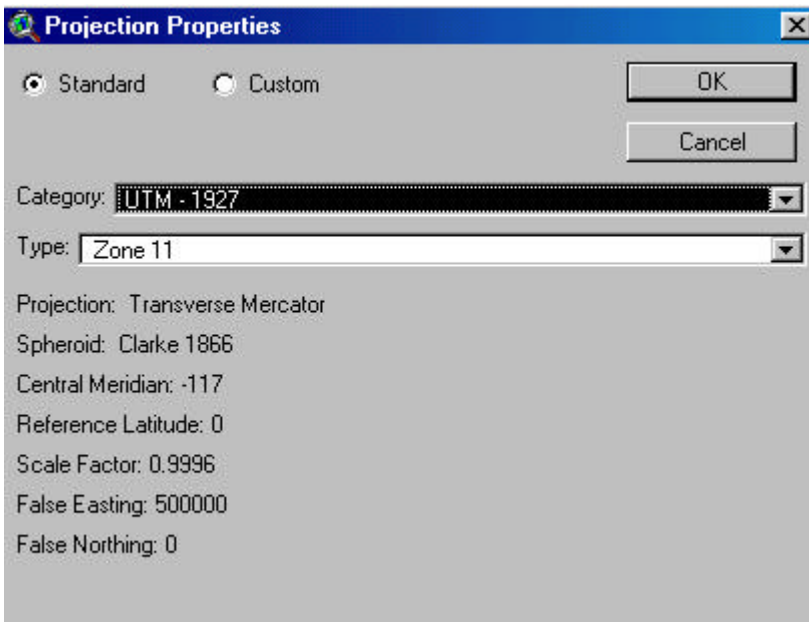
- 21) You can now add other themes to the view in the same manner. If they are in the same coordinate system (UTM, NAD1927, Zone 11 in this case), they will display over the top of your image. You will not have to set a projection for the view. *If the other vector themes you will be adding are unprojected (latitude/longitude), then you will have to set the Projection of the View to match your image.* To do this, select View, then Properties....



- 22) In the View Properties Dialog Box, click the Projection... button.



23) In the Projection Properties Dialog Box, select UTM – 1927 as the Category and Zone 11 as the Type. Press the OK button. Now your unprojected (lat/long) vector data (shapefiles, etc.) will be projected to the same coordinate system as your image and they will overlay correctly.



Although the process of getting a seamless tiled output map does take several steps to perform, the good news is that you can now get all the topo maps for an entire state for around \$120 - 150, and they will work with Pathfinder Office and ArcView. This process may only have to be performed once to create a large background file for your entire area of concern.

****All Topo Maps are available for the following states:**

Arizona, Colorado, Idaho, Utah, Nevada, and New Mexico:	\$118.50
Montana:	128.50
Wyoming:	132.50
Texas:	148.50

Please call Electronic Data Solutions at (208) 324-8006 to order, or see our Web store at <http://www.geoposition.com>.