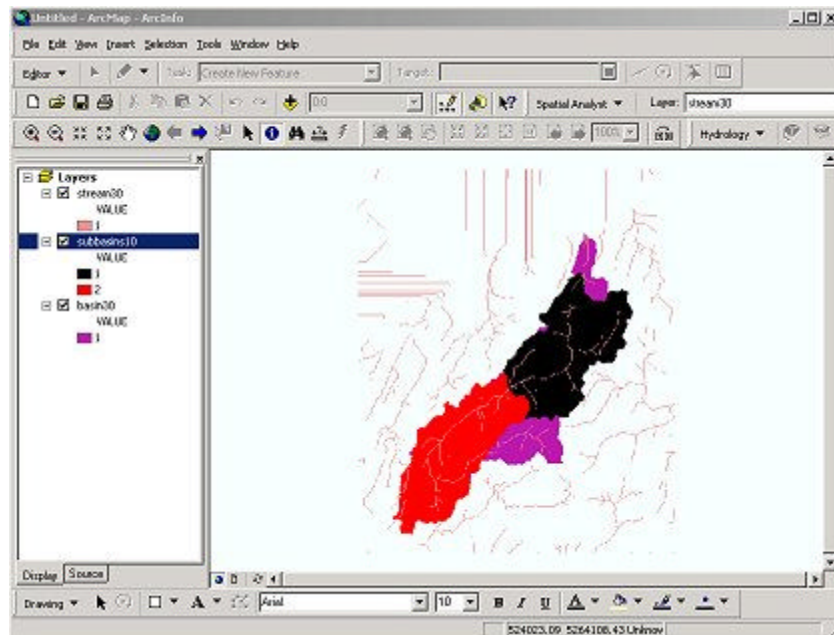


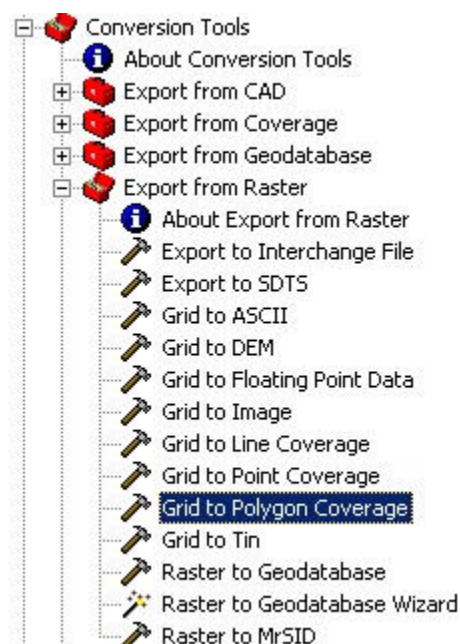
1. Let's begin with a common task not covered in the other exercises, but one that prepares data we are interested in using in this exercise. Load the following three raster grids from ArcCatalog into an ArcMap document and fix the symbology to make an interesting data view. stream30, subbasin10, and basins30



2 Return to ArcCatalog and start ArcTOOLBOX. In this exercise we're interested in converting raster grids into polygon and line coverages. Note that you can export almost all of the various data models found in ArcGIS.

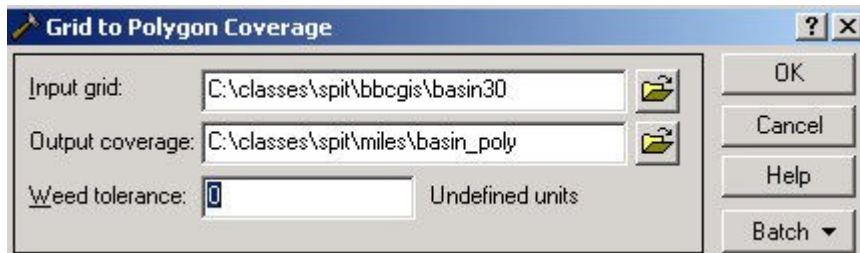


3. In this case we will export from RASTER, and the option for the raster export is a raster GRID to Polygon Coverage.



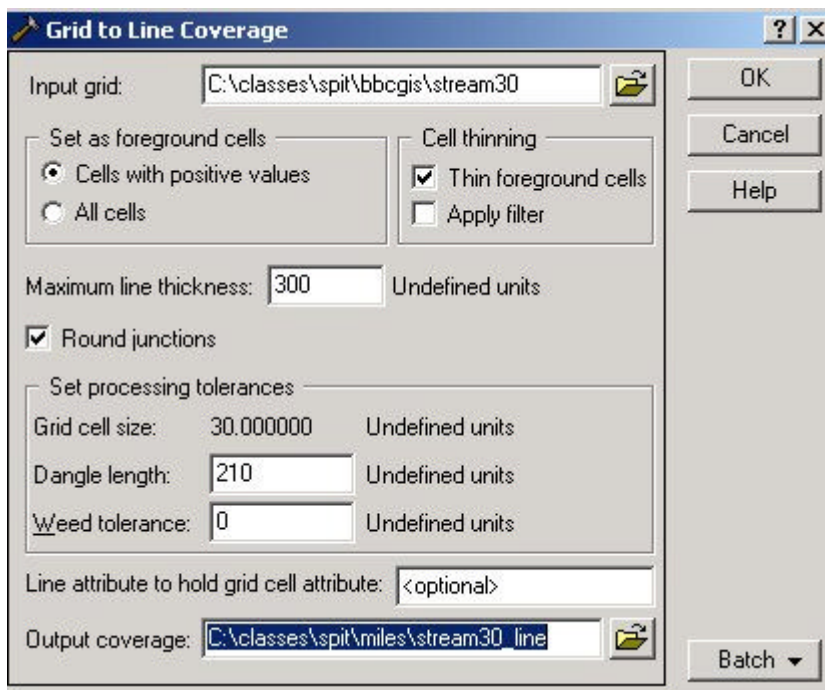
4. When you pick this option (click on it) the Grid to Polygon dialog is displayed. Fill out the dialog. Make sure you pick the output location that you want for the new coverage. I like to

add something to the name of coverages if I have the same theme represented by different data models. I'll call mine basin_poly.

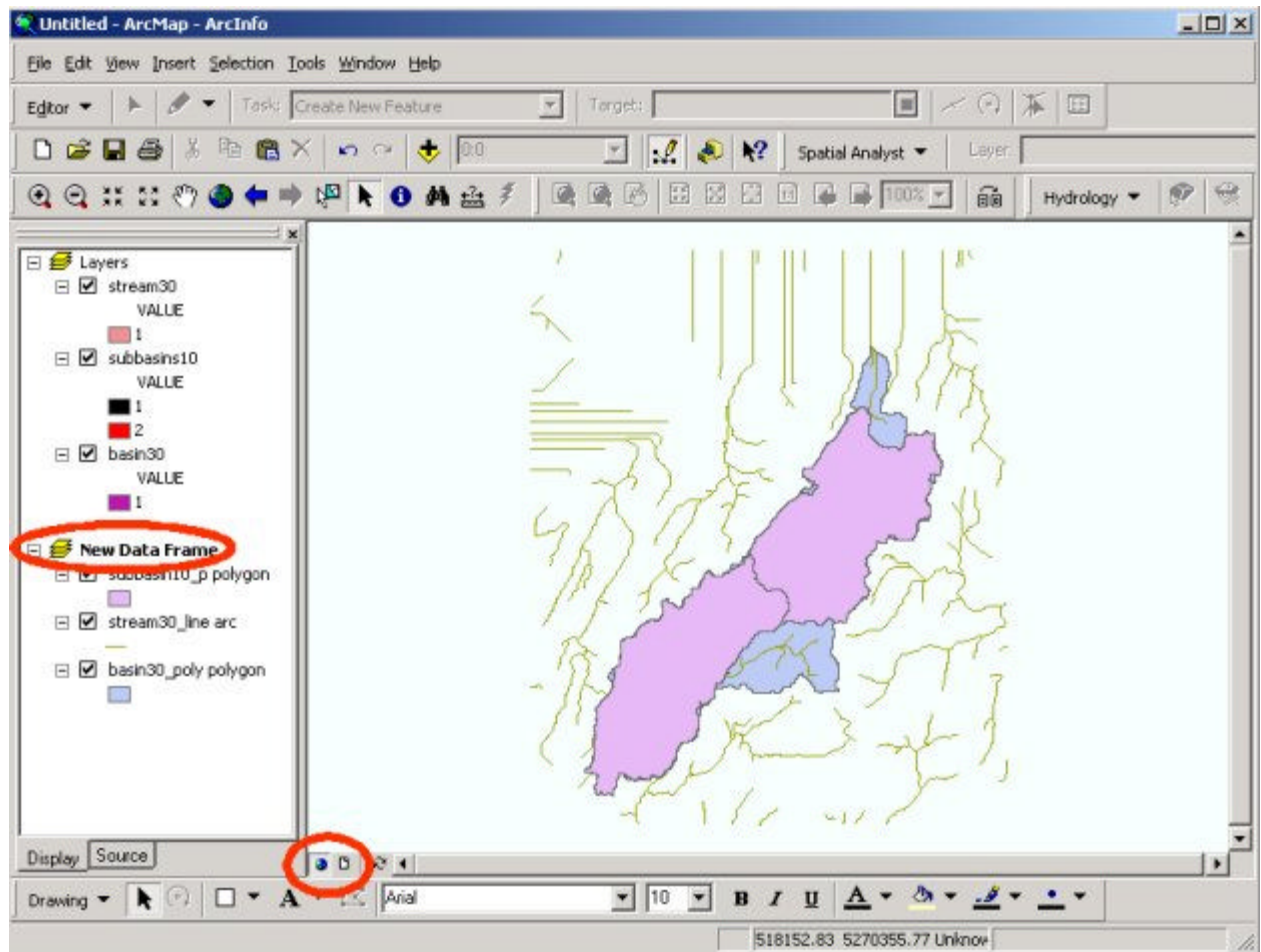


5. Do the same for the subbasin10 grid.

6. Now let's cover the stream30 grid to a LINE coverage. Pick the correct tool from ArcTOOLBOX and open the dialog box. Note all the various options. Input the stream30 grid, accept the defaults, provide an output name and click on OK.

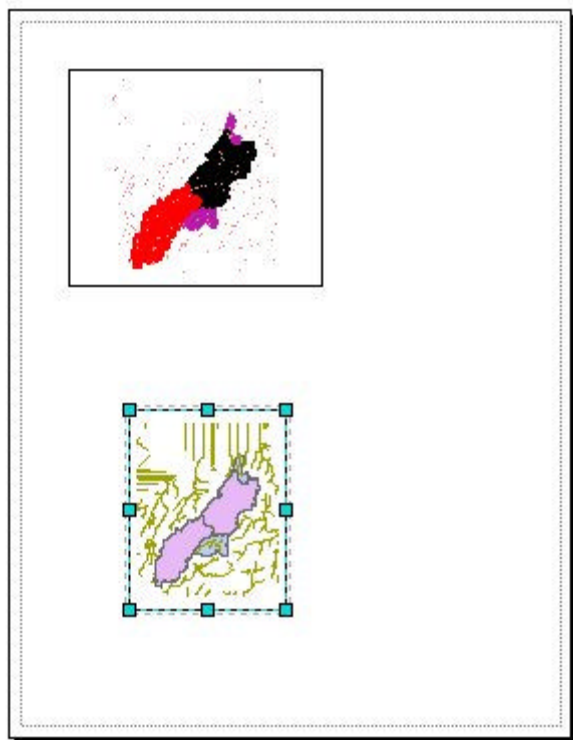


7. Now let's add these new coverages to our ArcMAP document as a new DATA FRAME. Go to the INSERT > DATA FRAME option from the main ArcMAP Menu bar. Your ArcMap window display will change to the Data View of that Data Frame (which is empty right now). You will note on the left hand side a new icon. Each Data Frame is linked to a view of data which is a unique element of a map. First add the three new vector coverage to the new Data Frame.



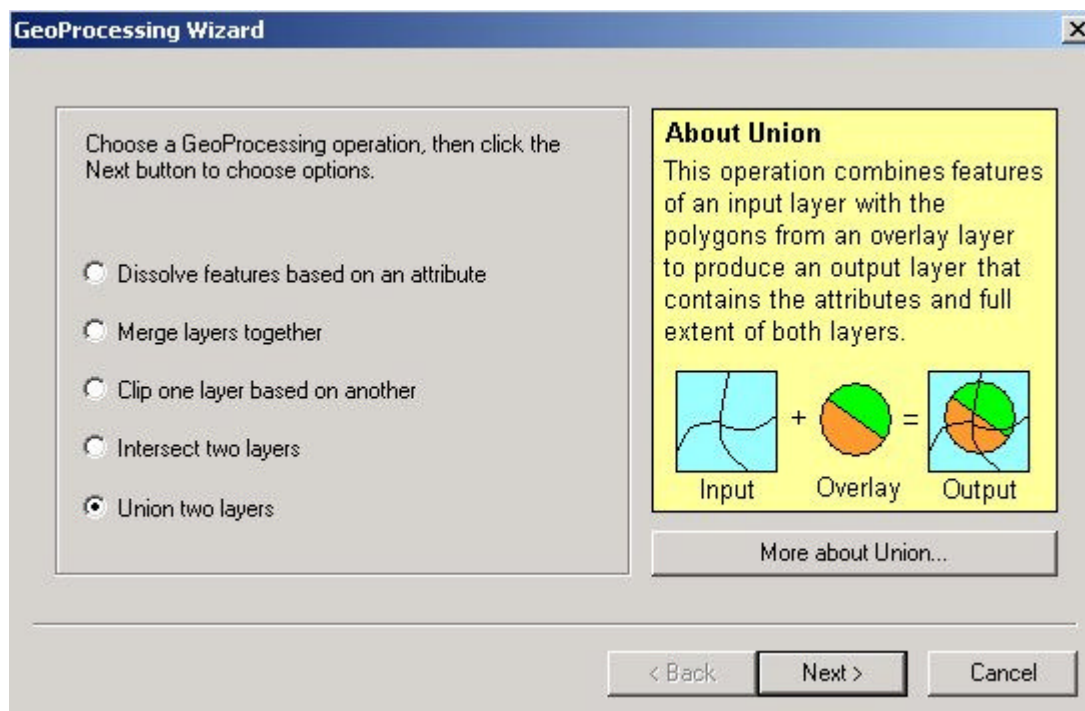
8. Now switch to the LAYOUT view of ArcMap by using the two small ICONS along the bottom of the View.  

9. When in the LAYOUT view you'll see that both views are display. This is the layout for a MAP. You may click on a DATA VIEW to make it active and the resize it and move it. REMEMBER that the active DATA VIEW in the LAYOUT will be the data view you return to when you click on the DATA VIEW ICON.

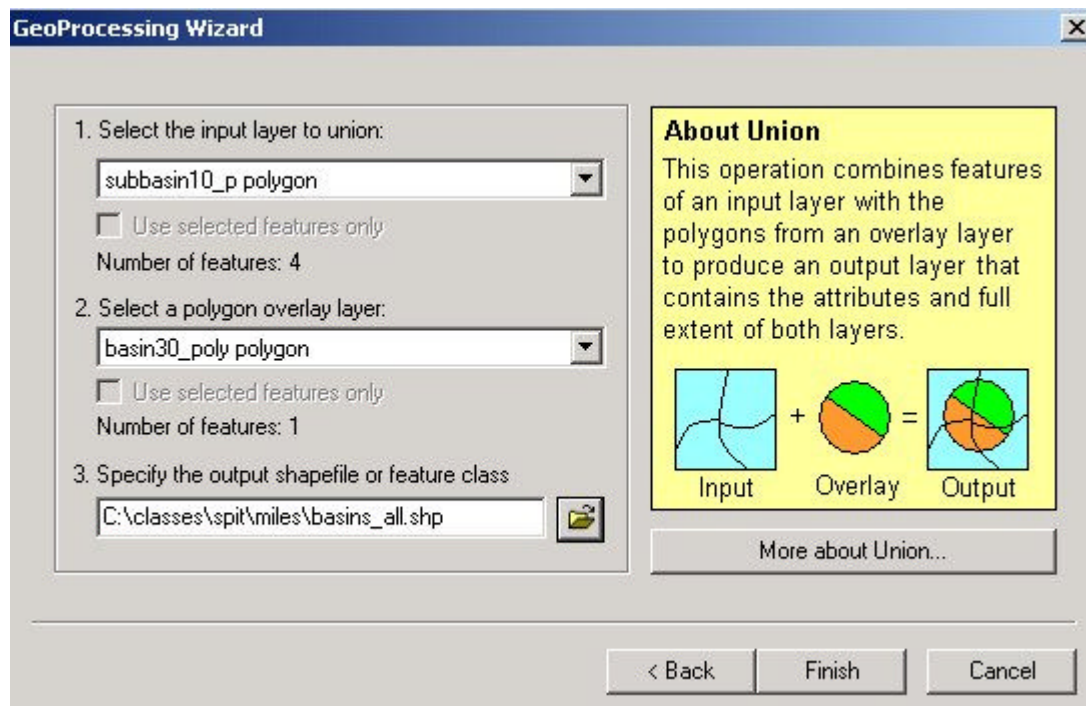



10. Return to the Data View for the new vector coverages. Turn off the stream30_line coverage.

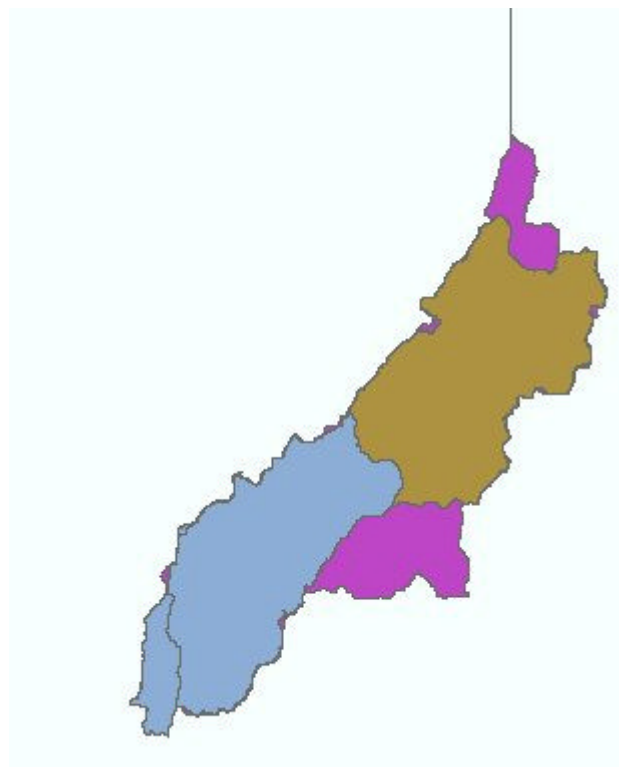
11. What we want to do now is to perform a Spatial Overlay using the UNION function between the single polygon of the basin30_poly and the "numerous" subbasins of the subbasin10_poly coverages. Select the TOOLS > GeoProcessing Wizard from the main menu of ArcMap. The wizard dialog is displayed. Select the "UNION TWO LAYERS" options. Then click on next



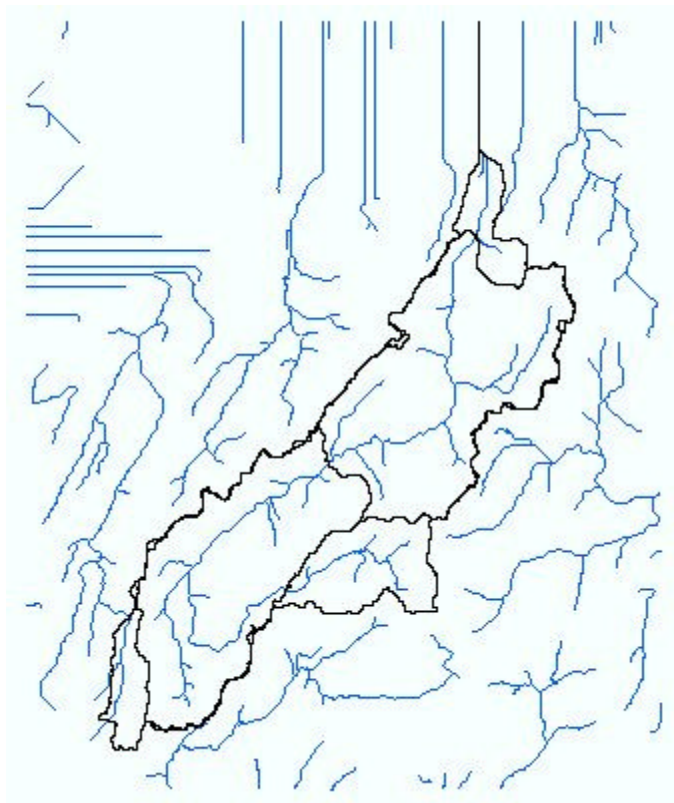
12. Select the inputs and provide an output name and location. I'm going to call mine "basins_all". Note the output is going to be a ShapeFile. When completed the new shapefile is added to your existing data frame.



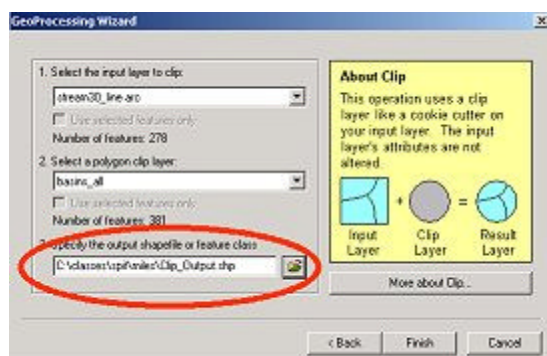
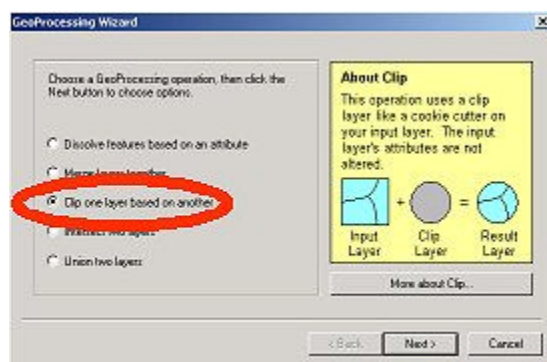
13. Take time to refresh your ArcCatalog (make it the active window and hit F5). Plus, go ahead and assign it some nice colors, and use the IDENTIFY  to explore what you know about this new UNION between coverages



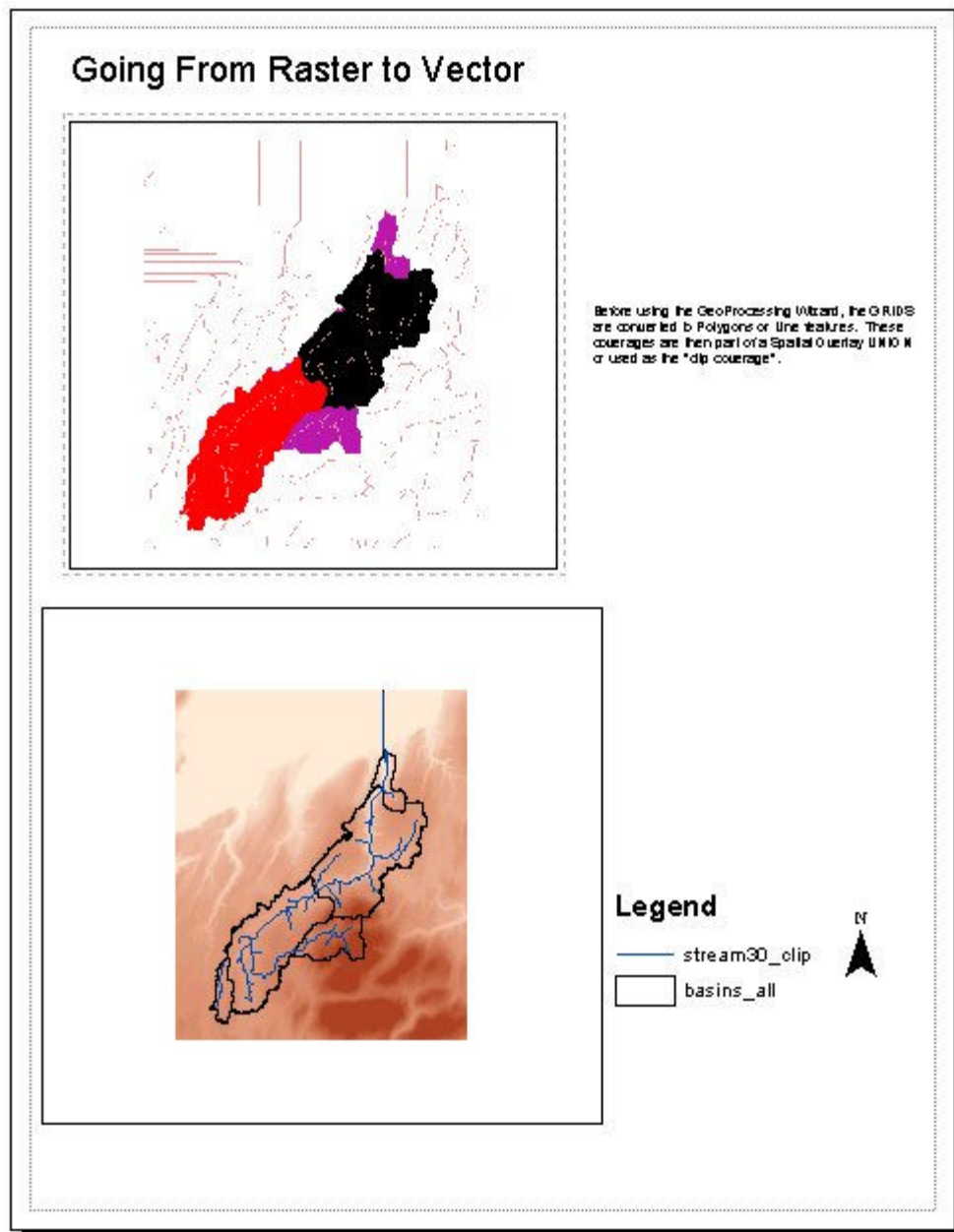
14. Now make the new union coverage (mine is called basin_all) have "hallow" symbology. and display the stream30_line coverage.



14. Use the GeoProcessing Wizard again but this time let's CLIP the stream30_lines by the extent of the basin_all polygons (the union of the two different basin definitions). Don't forget to direct your output.



15. Display just the "clipped" streams and the "hollow" basins. I'm putting mine on the back drop of the DEM30 grid, switching back to the LAYOUT and adding MAP ELEMENTS from the INSERT options of the main menu.



Enough! - Go home.