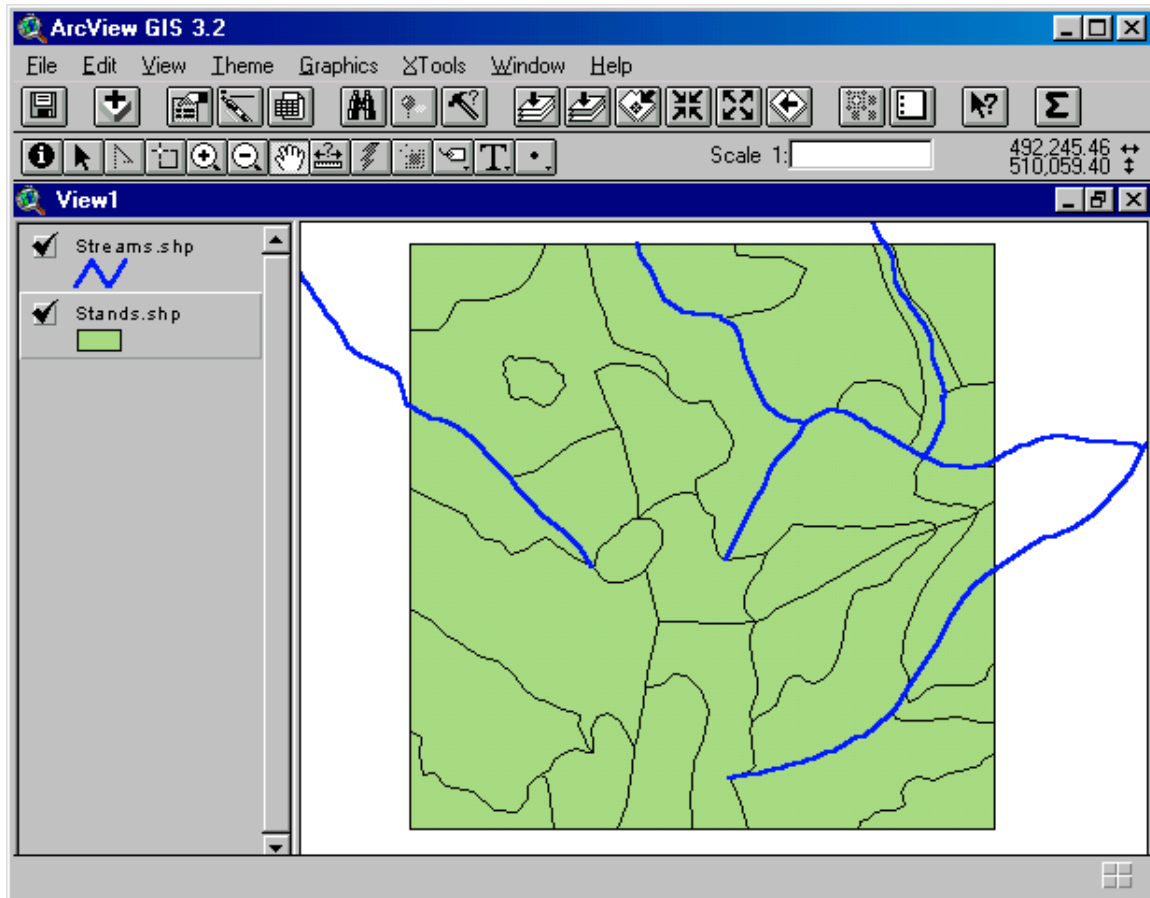


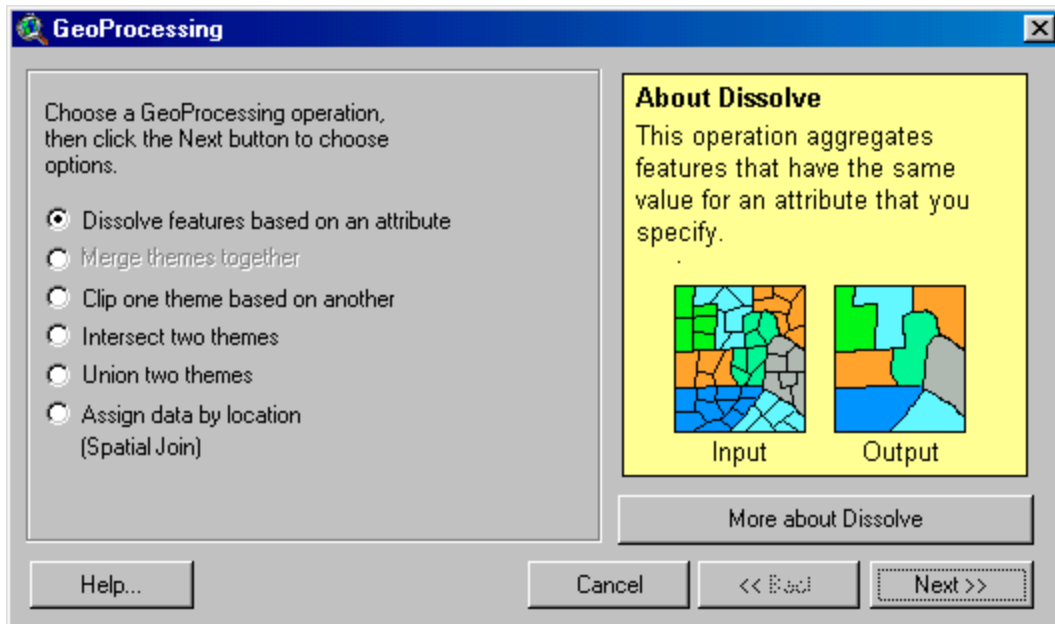
**11.6. Integrating streams and vegetation data.** Develop a streams GIS database for the Daniel Pickett Forest in which each stream contains the data related to the vegetation polygon within which it is located. Using this data, develop a thematic map that illustrates one of the vegetation characteristics of the forest around each stream. In this exercise, change the appearance of the streams to illustrate the condition of the forest.

The intersect process will be used to demonstrate how to assign the attributes of polygons of one GIS database to lines contained in another GIS database. The spatial position of the lines will be used to determine which polygons contain them (or portions of them). A single line may overlap several polygons. In this case the line will be split at the boundary of each polygon. See page 163 for a discussion of this process.

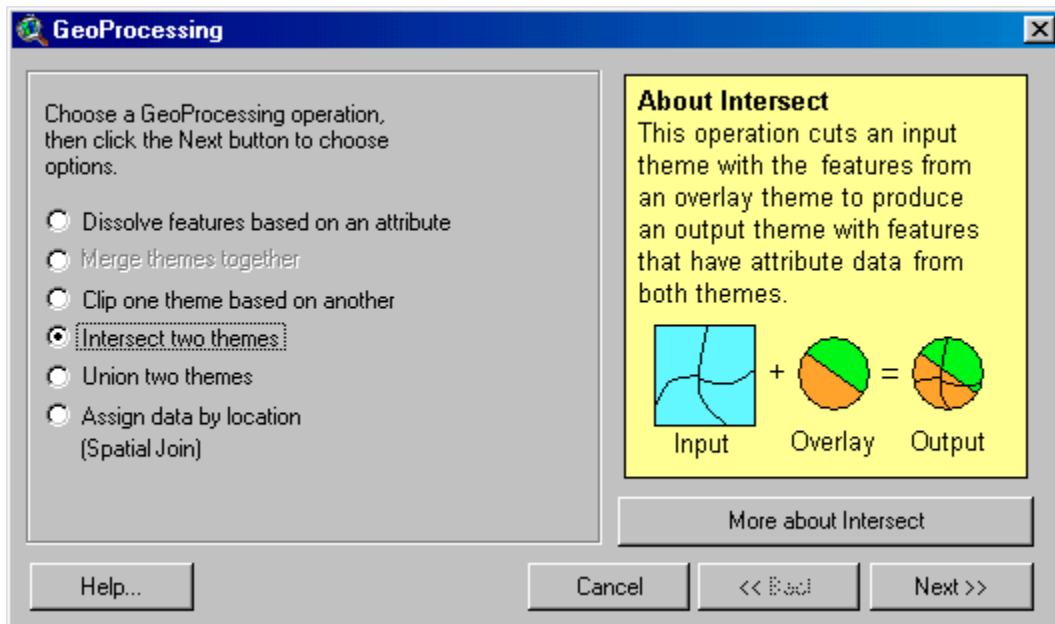
1. Open the stands GIS database and the streams GIS database of the Daniel Pickett Forest in an ArcView View Window.



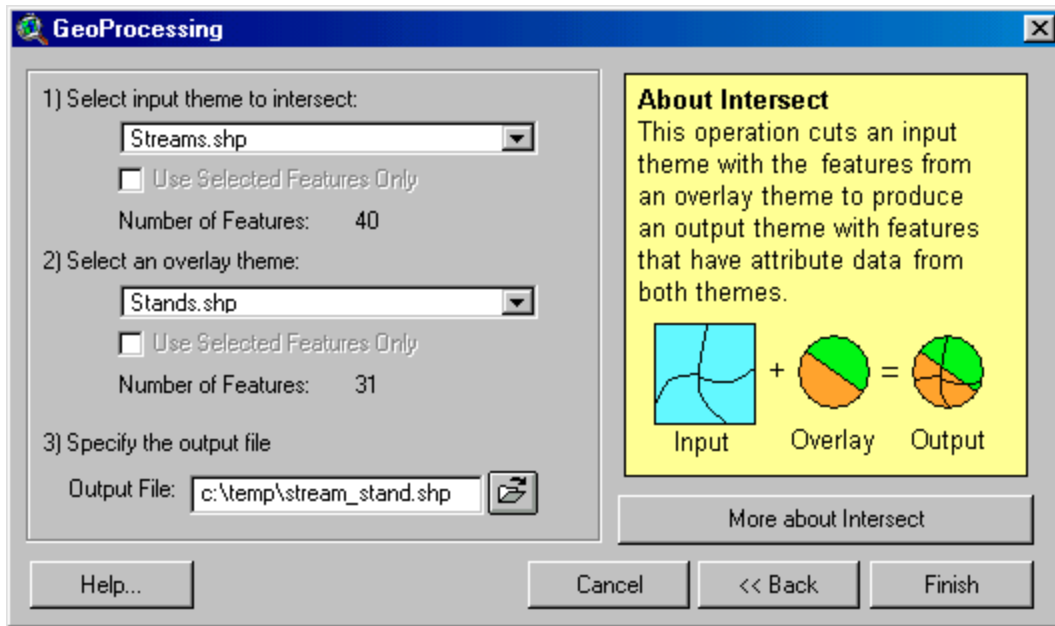
2. Obtain the Geoprocessing Wizard by selecting File, then Extensions from the ArcView Main Menu system. Select the Geoprocessing Wizard and Press Okay. Open the Geoprocessing Wizard by selecting View, then Geoprocessing Wizard from the ArcView Main Menu system.



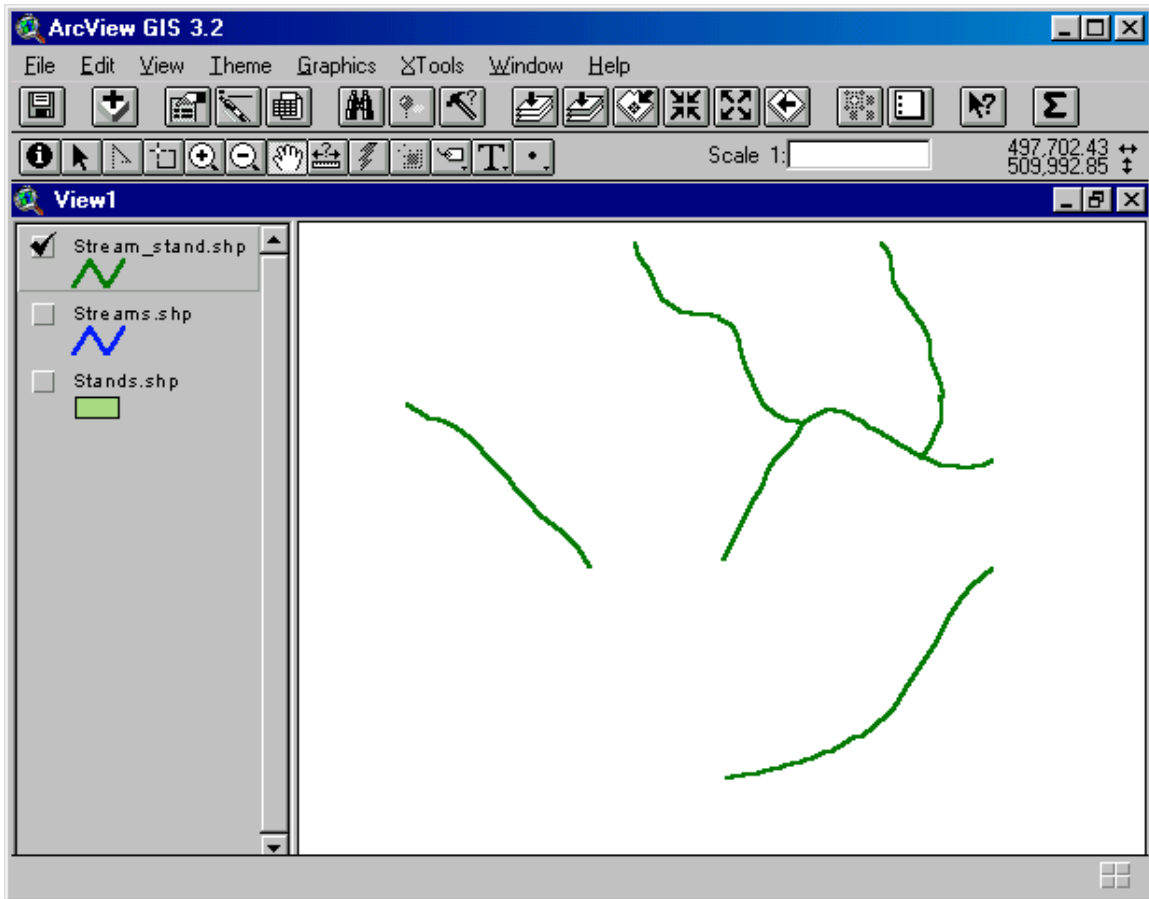
3. Choose the Intersect Two Themes option.



4. Press the Next button.



5. Select as the theme to intersect the streams GIS database. Select as the overlay theme the stands GIS database. Define the new GIS database file name and location. Press the Finish button. The new GIS database should be visible in the ArcView Table of Contents.



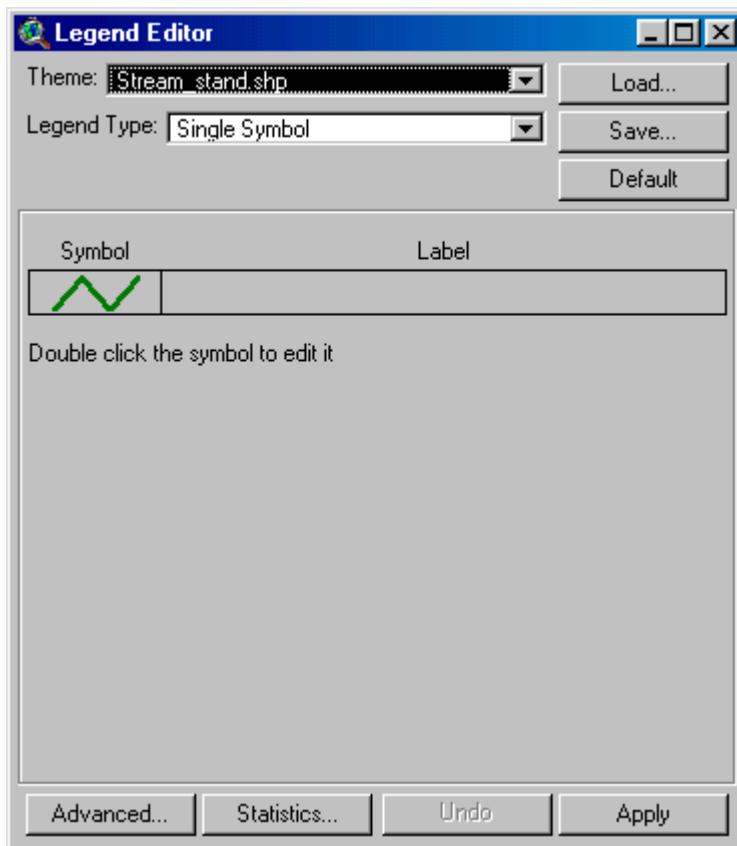
6. Open the attribute table associated with this new GIS database.

Shape	Length	Class	Flow	Order	Stream	Area	Perimeter	Area	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
PolyLine	2176.263	2	20.0	150	3	3421375.000	9894.098	78.545	A			290	90	52.0		12
PolyLine	2176.263	2	20.0	150	3	2957984.250	7227.796	67.905	A			230	60	29.6		14
PolyLine	1628.054	2	17.0	150	4	9389994.000	18714.068	215.966	C			175	40	12.9		2
PolyLine	1628.054	2	17.0	150	4	3421375.000	9894.098	78.545	A			290	90	52.0		12
PolyLine	668.638	2	19.0	150	5	9389994.000	18714.068	215.966	C			175	40	12.9		2
PolyLine	1275.397	4	2.0	75	6	6761519.000	16103.322	155.223	A			210	95	25.8		3
PolyLine	1275.397	4	2.0	75	6	2803427.500	7314.187	64.359	A			250	65	34.2		4
PolyLine	136.638	4	3.0	75	7	2803427.500	7314.187	64.359	A			250	65	34.2		4
PolyLine	290.754	4	1.0	75	8	6761519.000	16103.322	155.223	A			210	95	25.8		3
PolyLine	290.754	4	1.0	75	8	2803427.500	7314.187	64.359	A			250	65	34.2		4
PolyLine	506.324	4	2.0	75	9	6761519.000	16103.322	155.223	A			210	95	25.8		3
PolyLine	506.324	4	2.0	75	9	2803427.500	7314.187	64.359	A			250	65	34.2		4
PolyLine	321.872	4	1.0	75	10	6761519.000	16103.322	155.223	A			210	95	25.8		3
PolyLine	321.872	4	1.0	75	10	7130442.000	14321.127	163.692	C			90	30	3.1		5
PolyLine	274.893	4	3.0	75	11	7130442.000	14321.127	163.692	C			90	30	3.1		5
PolyLine	425.336	4	2.0	75	12	6761519.000	16103.322	155.223	A			210	95	25.8		3
PolyLine	425.336	4	2.0	75	12	7130442.000	14321.127	163.692	C			90	30	3.1		5
PolyLine	804.857	4	1.0	75	13	6761519.000	16103.322	155.223	A			210	95	25.8		3
PolyLine	804.857	4	1.0	75	13	7130442.000	14321.127	163.692	C			90	30	3.1		5
PolyLine	66.710	4	3.0	75	14	7130442.000	14321.127	163.692	C			90	30	3.1		5

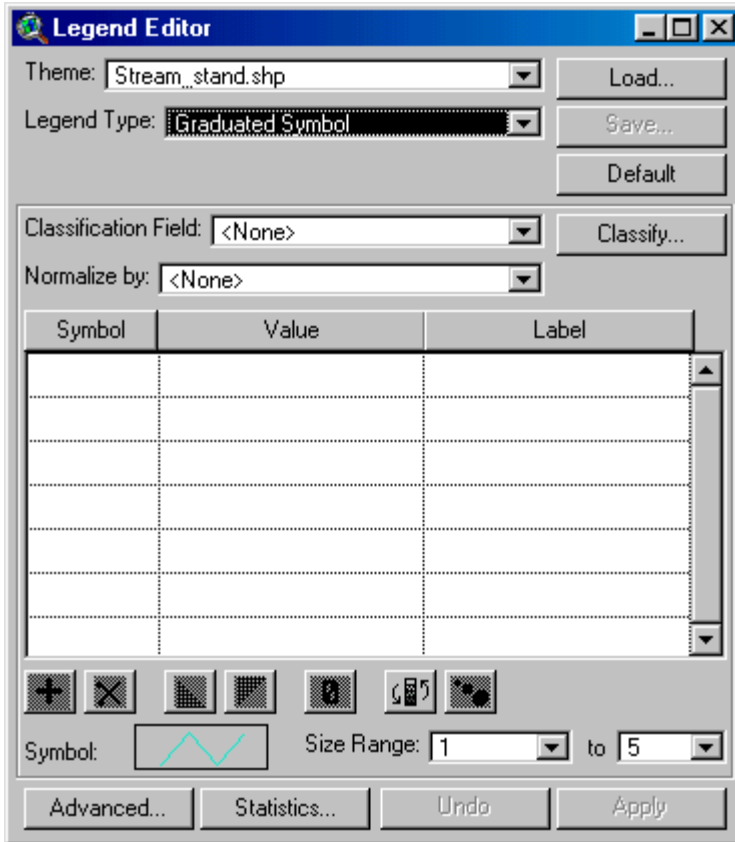
As you can see, each line in the new streams GIS database has associated with it the characteristics of the polygons within which they were contained. Stream 3, for example, is now represented by two arcs, one portion was contained within stand 12, the other within stand 14. The original streams GIS database attributes are also present in this table.

7. Decide which of the stands GIS database attributes (vegetation type, basal area, age, MBF) will be used in creating a thematic map. Return to the View Window.

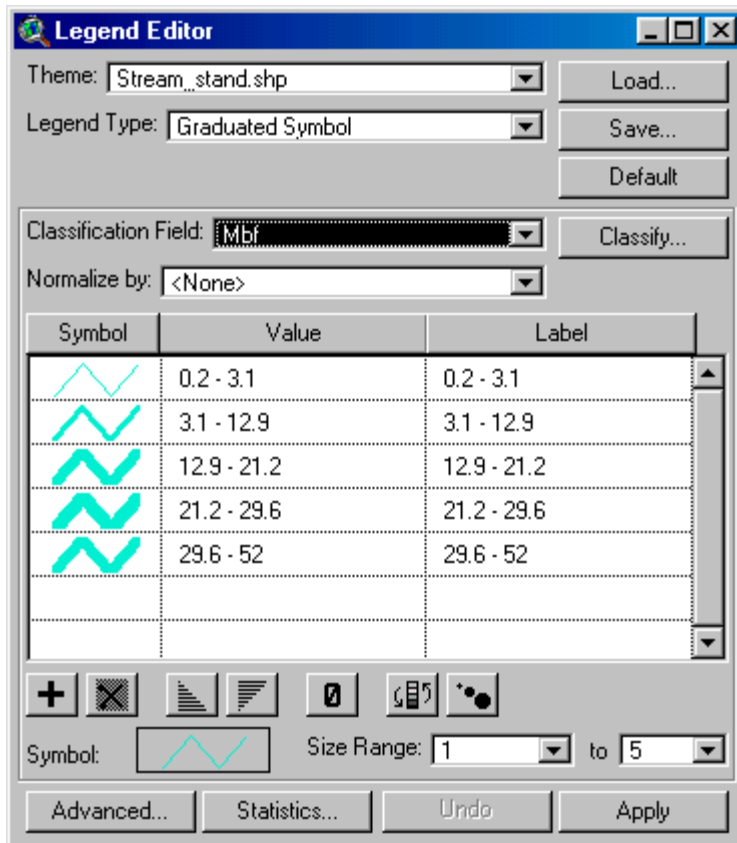
8. Double-click the new streams GIS database name in the ArcView Table of Contents. A Legend Editor dialog box should appear.



9. If you selected the vegetation type to be displayed in the thematic map, change the Legend Type to Unique Value. If you selected one of the other stand attributes, you may want to change the Legend Type to Graduated Symbol (since there are more unique values of these numeric attributes than there are vegetation types).

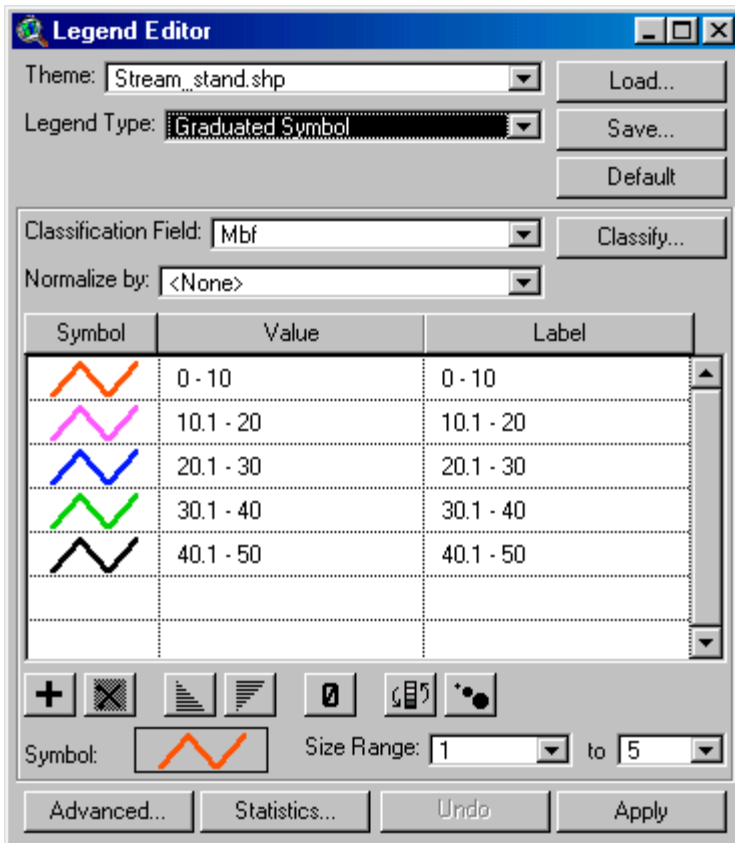


10. Change the Classification Field to the attribute you have selected to display in the thematic map.

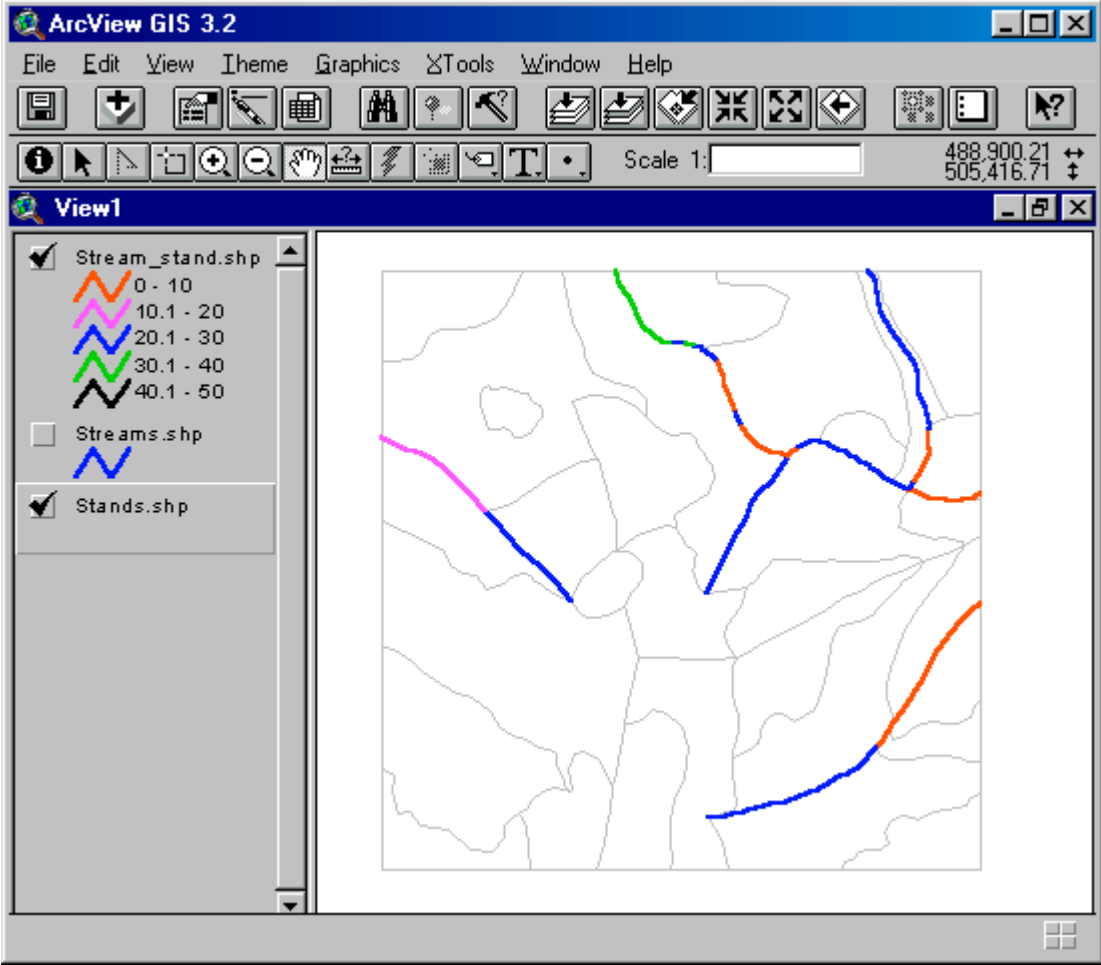


11. Change each of the Symbols to suit your preference, by simply double-clicking each and changing their appearance using the Pen Palette.

12. If you are using a Graduated Symbol Legend Type, the Value range associated with each class can also be changed.

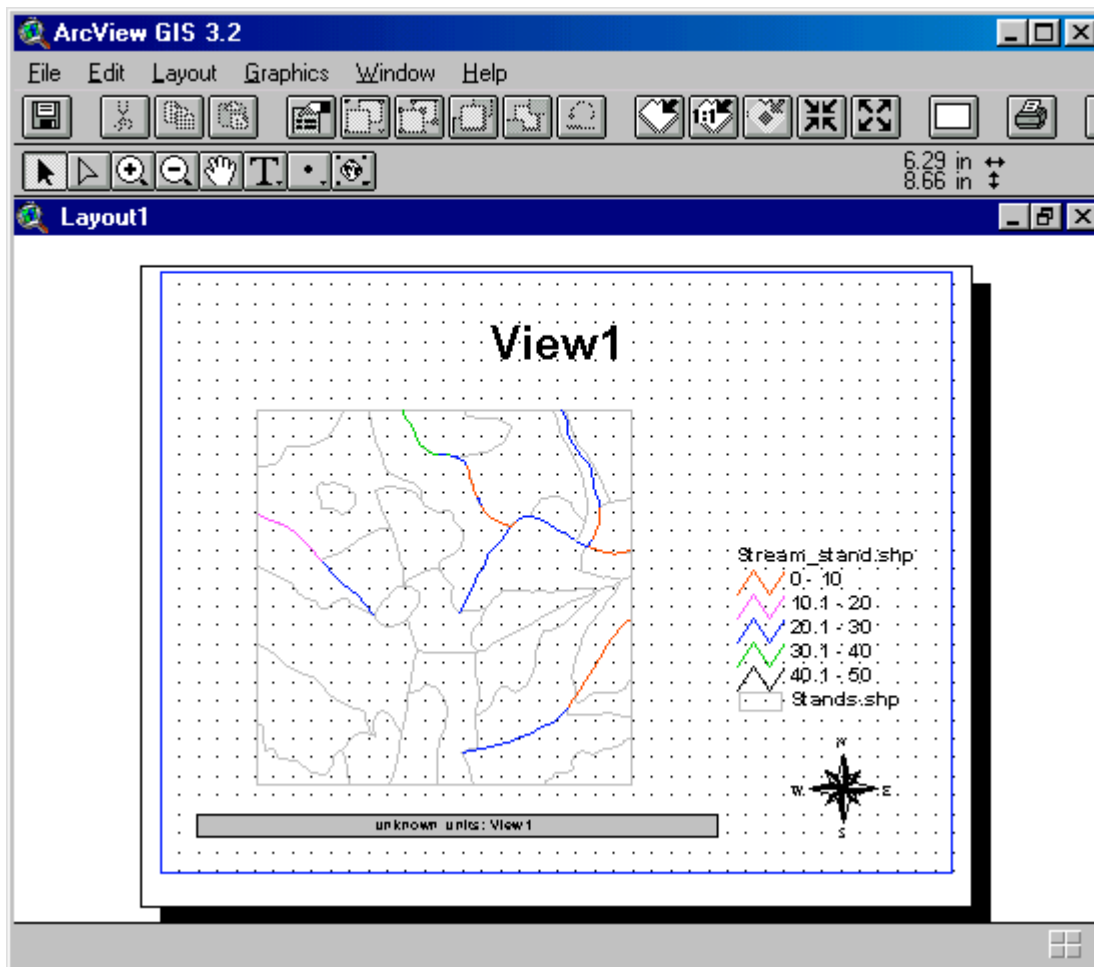


13. When you are satisfied with your choices, press the Apply button.



14. Now create a thematic map by selecting View, then Layout from the ArcView Main Menu system. You may want to change the appearance of the stands GIS database to give the new streams some spatial reference for your audience.

15. If the scale bar does not appear in the Layout, return to the View Window and select View, then Properties from the ArcView Main Menu system. Change the Map Units and Distance Units to "feet." Return to the Layout Window and complete the development of the thematic map.



Final product:

Of course, the final map will depend on your creativity. There is no one correct final thematic map. The map should include, however, a legend, a scale bar, a North arrow, a title, and source information (see Chapter 4 for a review of these items). In addition, you may choose to utilize a neatline and other annotation in the thematic map.

If you feel you have a particularly good thematic map, send a .JPG file of it to Dr. Pete Bettinger (pbettinger@smokey.forestry.uga.edu). He will be the final arbiter of the

perhaps numerous submissions, and post one or two of the better maps on the book's web site.