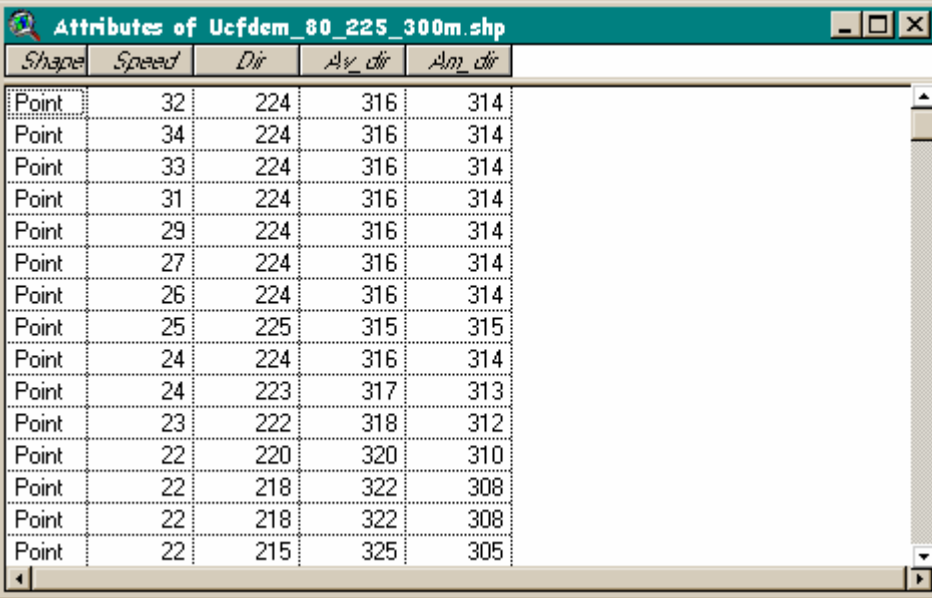**Displaying and Rotating Wind Wizard Derived Vectors**
In ArcView 3.2x

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A. Displaying Wind Wizard generated gridded Wind Direction – Speed vectors in ArcView.

1. Data requirements are an ArcView shapefile format. The shapefile generated during the Wind Wizard process will contain five data fields in the associated .DBF file (Figure 1).

Shape	Speed	Dir	Av_dir	Am_dir
Point	32	224	316	314
Point	34	224	316	314
Point	33	224	316	314
Point	31	224	316	314
Point	29	224	316	314
Point	27	224	316	314
Point	26	224	316	314
Point	25	225	315	315
Point	24	224	316	314
Point	24	223	317	313
Point	23	222	318	312
Point	22	220	320	310
Point	22	218	322	308
Point	22	218	322	308
Point	22	215	325	305

Figure 1. Attribute table for Wind Wizard generated shapefile as displayed in ArcView.

   a. *Shape*: Point indicates that the feature type for the shapefile is a point.

   b. *Speed*: Is the Wind Wizard generated windspeed at the 20-foot level in miles per hour (mph).

   c. *Dir*: Is the Wind Wizard generated azimuth direction the wind is coming from in degrees.

   d. *Av_dir*: Is the Wind Wizard manipulated value required for use in ArcView for display purposes.

   e. *Am_dir*: Is the Wind Wizard manipulated value required for use in ArcMap for display purposes.

2. After loading the file into the ArcView project open up the **Legend Editor** (Figure 2) by double clicking on the shapefile in the view. The first step is to select the **Legend Type** by selecting the drop down arrow and selecting **Graduated Symbol**.
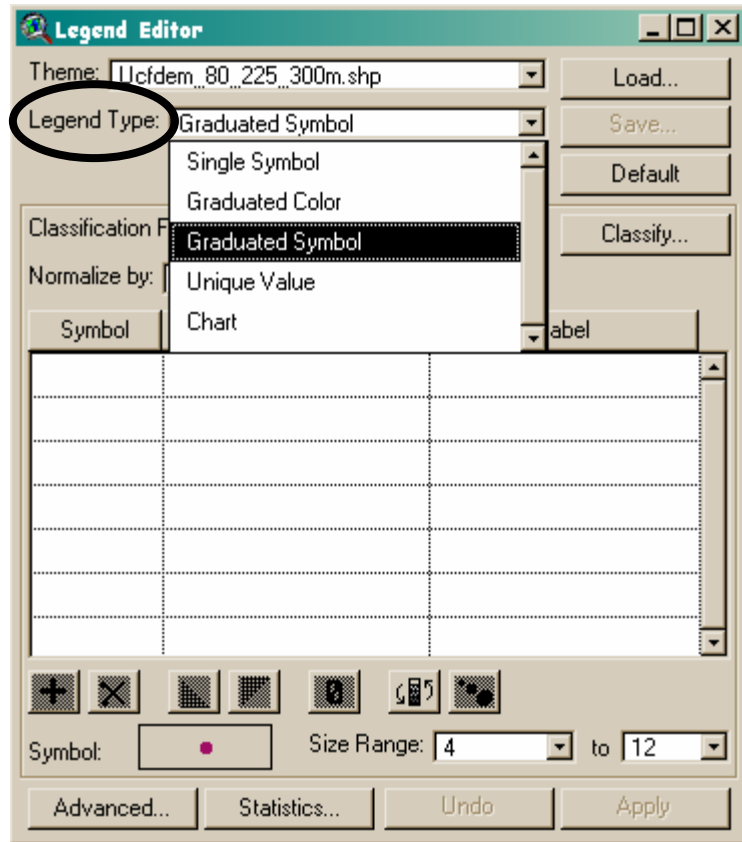
Figure 2. Legend Editor dialog box showing Legend Type selection for display in ArcView.

3. In the **Classification Field** select Speed. This will scale all the arrows for the shapefile by the respective windspeed value in mph (Figure 3).
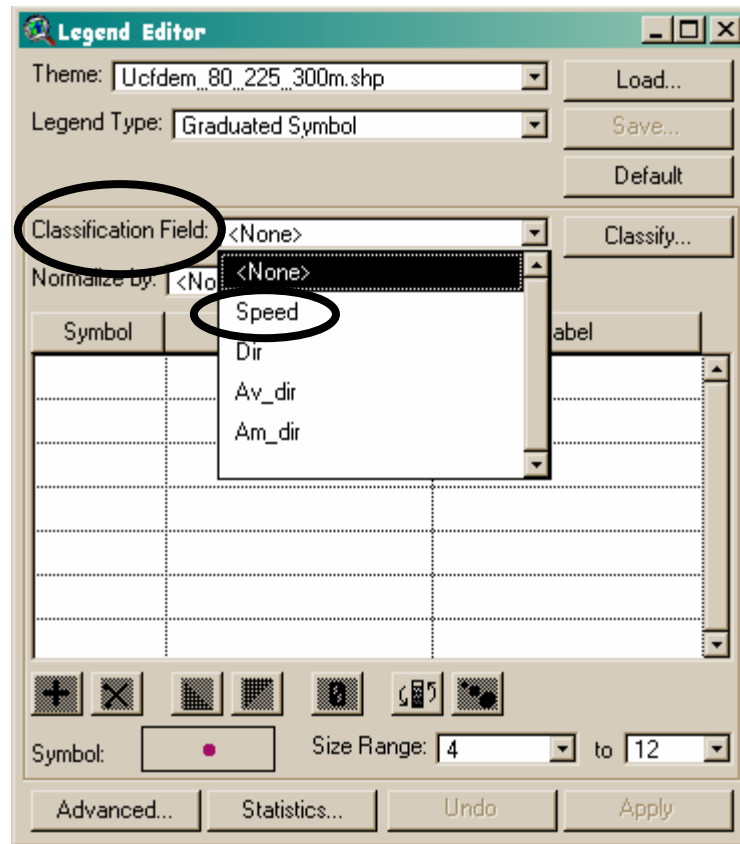
Figure 3. Legend Editor dialog box showing Classification Field selection for display in ArcView.

4. Select **Advanced Tab** and in **Rotation Field** select Av_dir from the available options and **OK** (Figure4).
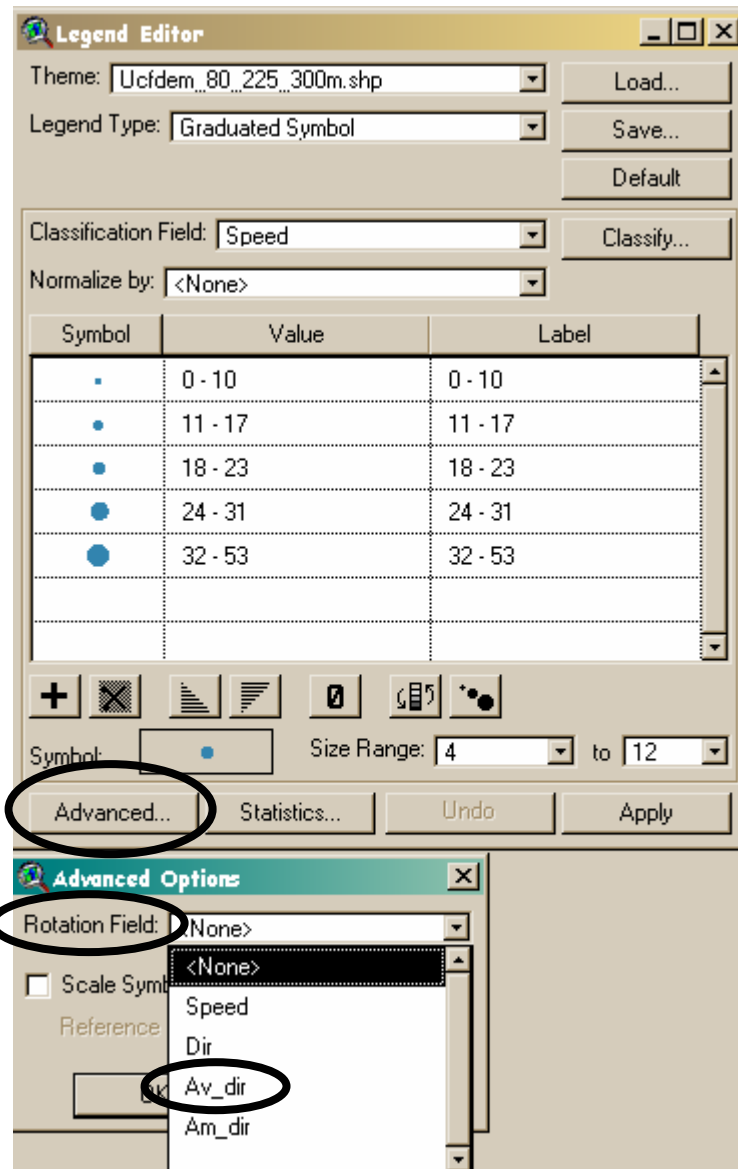
Figure 4. Legend Editor dialog box showing Classification Field selection for display in ArcView.

5. To get an arrow you may need to load the ESRI arrow palate. Double-click on the shapefile in the view to open the **Legend Editor** (Figure 5), then double-click on the **Symbol** type button which will open the Palette Maker (Figure 5). Select the palette button (blue circle) then the **Load** button. This will open up the **Load Palette** dialog box in Figure 6.
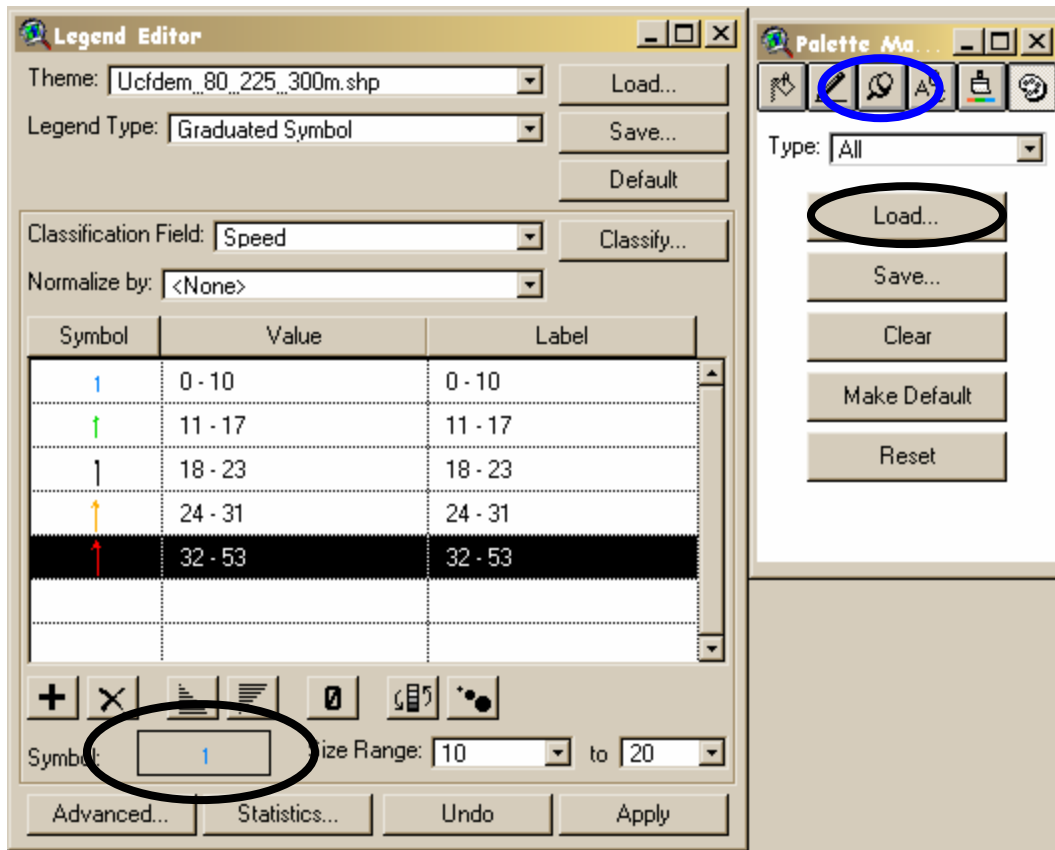
Figure 5.

In Figure 6 you need to navigate to the location that the ESRI arrow palette is stored. On Forest Service imaged machines the path will likely be:

C:\fsapps\esri\av_gis30\arcview\symbols

Double-click on the arrows.avp filename which will make these symbols available in your symbol set.
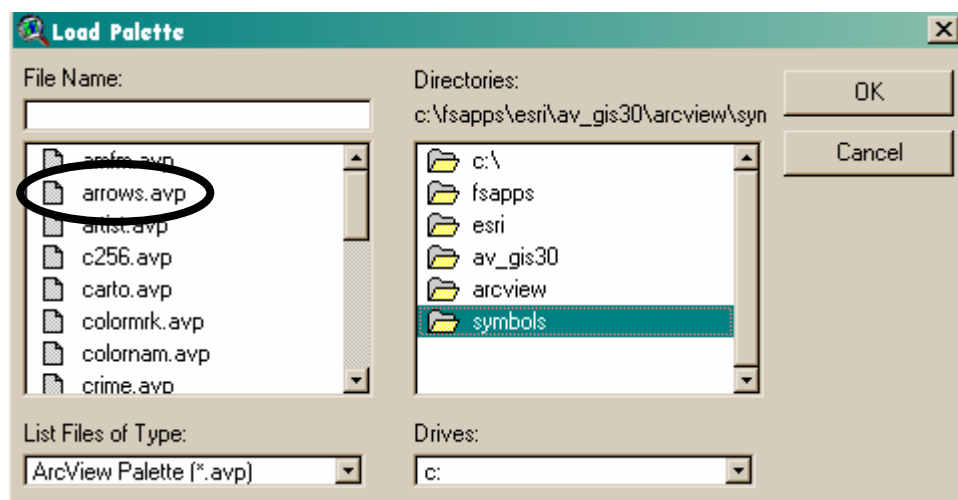

Figure 6.

After loading the arrow palette then click on the Pushpin icon which will make the symbols available for use visible (Figure 7). Using the scroll bar, scroll down to the bottom where the various arrow styles can be selected.
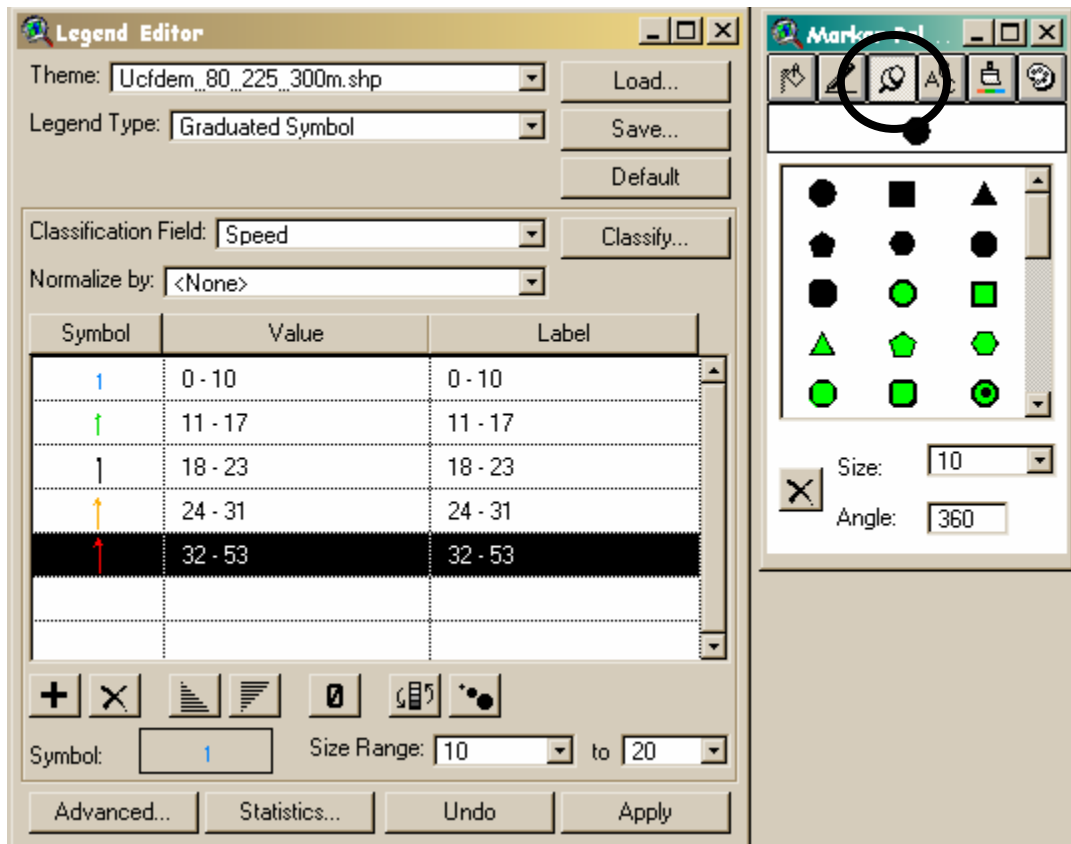
Figure 7.

Also at this stage you can scale the symbol by changing the **Size Range** (Figure 7). It is recommended changing the **size range** to start from 10 and ending at 20 and that you do this prior to changing the colors of individual arrows or they will revert back to a single color scheme. At this point you should also change the colors of your arrow. Don't forget to select the **Apply** button to ensure that all changes have taken effect.

B. Query the Gridded Wind Output in ArcView

To correctly rotate the arrows in ArcView as described above requires manipulation of the data generated by the Wind Wizard software for display purposes. In Figure 8 the query information for the circled arrow shows the wind speed as 32 mph, Dir is 222 degrees with an Av_dir of 318. The Av_dir value for wind direction in the shapefile **IS NOT** the same value as generated by the Wind Wizard software. Values for Speed (32 mph) and Dir (222 deg.) are the Wind Wizard derived values that should be used in any analysis using this shapefile.
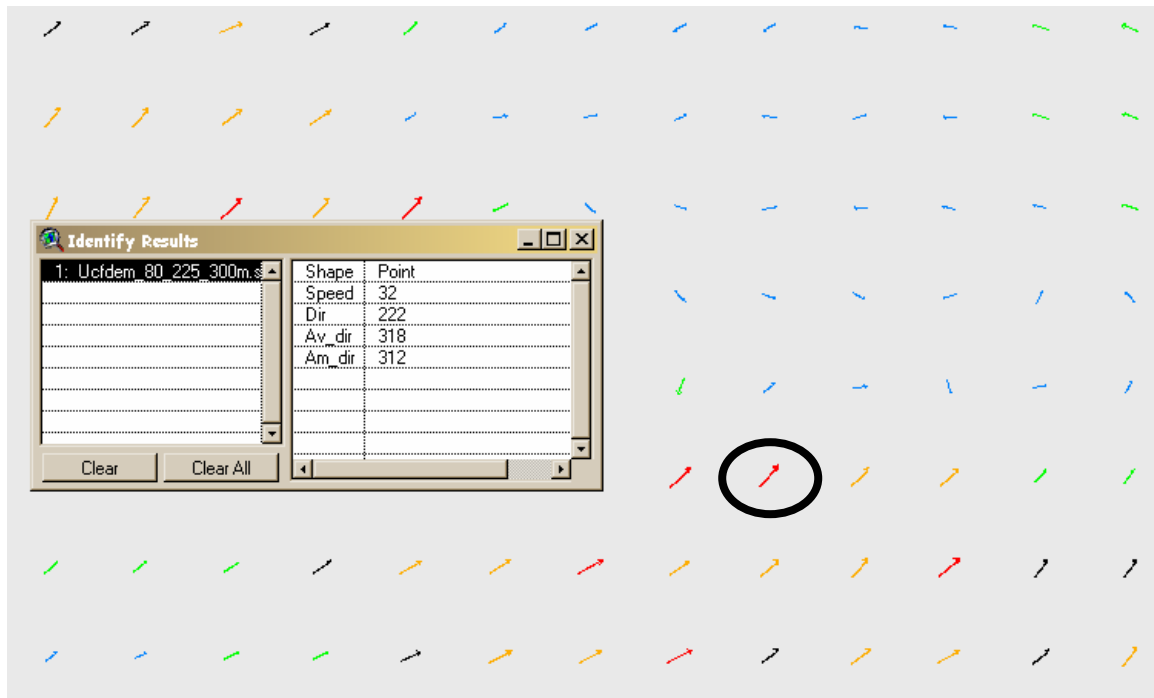
Figure 8. Query results of gridded wind shapefile in Arcview showing the difference in the wind direction in the shapefile and the rotation angle of the arrow.

Figure 9 focuses on the same point on the landscape. However, in this case the ArcView shapefile is overlayed on the GRID of wind direction generated by the Wind Wizard software. A query of the individual raster cell shows a Value of 222 degrees that corresponds to the rotation of the wind direction arrow. This is the same value displayed for Dir in Figure 8.
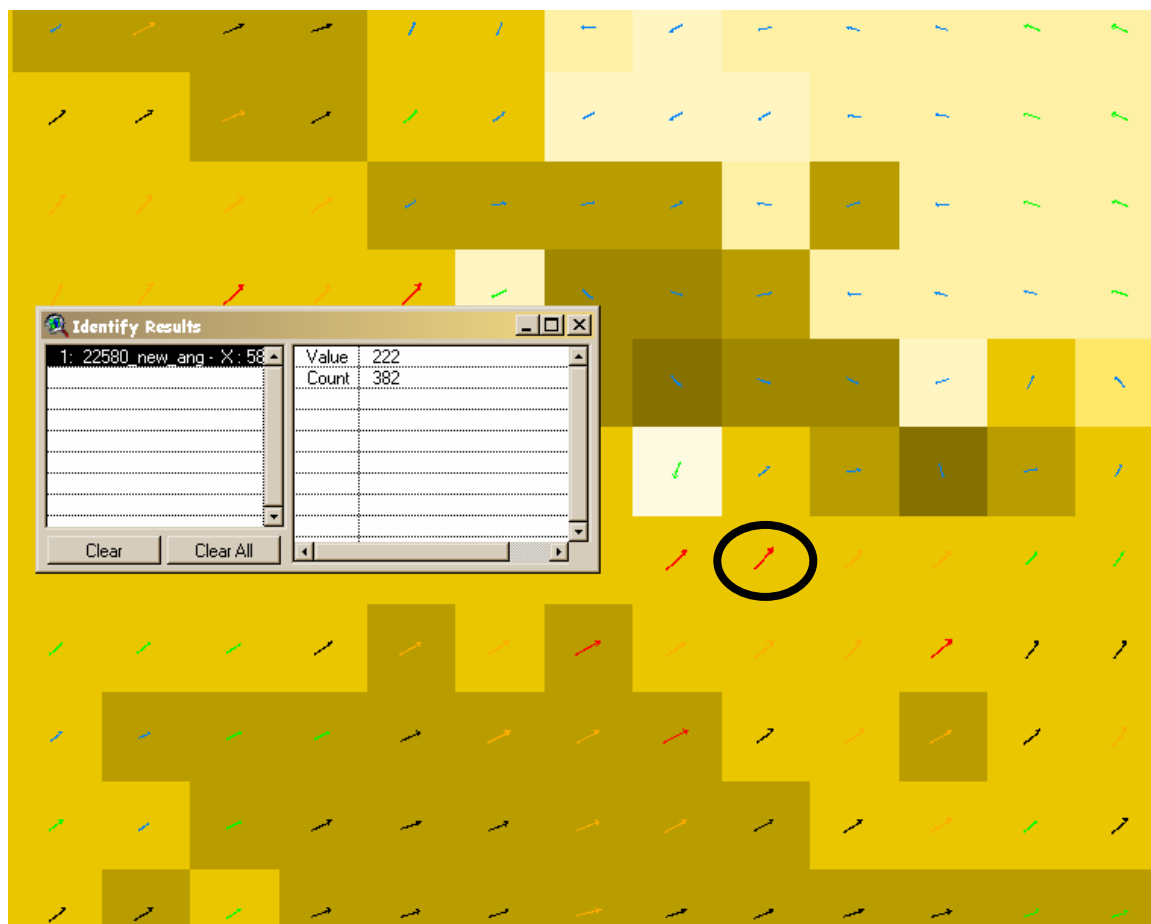

Figure 9. Query of the gridded wind generated ArcView shapefile overlayed on the GRID ASCII Raster output from the from the wind wizard process.