

Procedure for creating hillshading with sequential point symbology

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Patrick J. Kennelly
GIS Manager
Montana Bureau of Mines and Geology
Montana Tech of the University of Montana Tech of UM
Butte, MT 59701
(406) 496-2986
pkennelly@mtech.edu

ARC/INFO procedure for manipulating grids

1) Aggregate a 1 kilometer DEM (elev) to 4 kilometers (elev4)

Arc: grid

Grid: elev4 = aggregate (elev, 4)

[Aggregate request also available in ArcView]

2) Create a hillshading grid from the aggregated DEM

(In this example, the illumination is from the N45E, with an inclination from horizontal of 45°)

Grid: hshd = hillshade (elev4, 45, 45, shade)

["Compute hillshade" item also available on "Surface" dropdown menu in ArcView with Spatial Analyst extension]

3) Sequentially renumber each grid cell in the aggregated DEM

(In this example, only grid cells with positive elevations will receive values. This example results in 5 sequentially numbered grid cells.)

Grid: count = scalar(1)

Grid: DOCELL

:: if (elev > 0) outgrid = count

:: count += 1

:: if (count == 6) count = 1

:: END

[DOCELL request is no available in ArcView.]

4) Convert hillshading and numbered grids to point themes

Grid: hshd_pt = gridpoint (hshd, value)

Grid: seq_pt = gridpoint (outgrid, value1)

["Raster to Vector Conversion" script authored by Kenneth McVay available on ESRI ArcScripts website <http://gis.esri.com/arcscrippts/scripts.cfm>]

ArcView procedure for displaying map

5) Perform spatial join on hillshading and numbered point themes

File: Extensions

“Geoprocessing”

View: Geoprocessing Wizard

“Assign data by location (Spatial Join)” radio button

Select a theme to assign data to:

Seq_pt

Select a theme to assign data from:

Hshd_pt

Finish

6) Separate joined theme into 5 point themes based on number values

Make joined shapefile active theme

Theme: Table

Table: Query

Value1 = 1 (New Set)

Close Table

Theme: Convert to shapefile (e.g. seq1)

Repeat for each value of Value1 in table (in this example, 4 more times) and add all themes to the view

7) Create marker symbols from a font palette

Window: Show Symbol Window

Font Palette

Select desired font

Click “Create Markers” button

All characters of that font will now appear in the Marker Palette

8) Assign appropriate characters or marker symbol to each point theme

Double click one of the new point themes (seq1.shp)

Double click the symbol and assign the desired letter or point symbol (M)

9) Apply graduated gray color based on hillshading value for each theme

Legend Editor:

Theme: Seq1.shp

Legend Type: Graduated Color

Classification Field: Value

Normalized by: <None>

Color Ramps: Gray monochromatic

Use button to reverse symbols so that the least bright symbols are the largest values

Use the classify button to set the classification type and number of classes

(Quantile and 9 used in this example)

Repeat for all other new point themes (seq2.shp, seq3.shp, seq4.shp, seq5.shp)

10) To add layer tinting, display the elevation grid (elev4) with appropriate colors beneath the 5 point themes