Cartographic Realism:
The application of various hillshading techniques

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Inspiration

Forest Service Cartographic Meetings
- More Modern
- Simplify
- Tom Patterson Presentation

Tom Patterson
- ShadeRelief.com
- “Getting Real: Reflecting on the New Look of National Park Service Maps.”
Carto. Realism

Depicting landscape with real world qualities

**Benefits**

- More attractive/beautiful
- Fewer abstractions
- Allows the user to comprehend realistically portrayed information effortlessly without explanation
- Allows time for examining spatial relationships
- Can be used by non-map readers and experts alike.
Characteristics

Critical Elements

- Hillshading
- Natural Features – Vegetation cover, glaciers, waterbodies
- Texture
- Color – Vegetation color, ground color, geology
- Shading
- Shadowing
- Light source
Bump Mapping is a technique that is used to apply texture to a hill shade surface.

This technique was first introduced to Arc Info users at the 2003 ESRI User Conference by Jeffery Nighbert of the Bureau of Land Management, in where he gave a presentation entitled “Characterizing Landscapes for Visualization Through ‘Bump Mapping’ and Spatial Analyst.”
MDOW

Multidirectional Oblique weighting hillshade.

The technique works by emphasizing oblique illumination on all surfaces. Those are generated by combining computer-generated shaded-relief images illuminated from at least 225°, 270°, 315° and 360° azimuth; each about 30° above the horizon. Each degree of illumination is then weighted and combined to provide more detail on all sides of the hill shade.
Texture Shading

Texture shading was developed by Leland Brown in April of 2014. Texture shading was developed to help show the three-dimensional structure of mountainous terrain. Texture shading emphasizes the drainage network, canyons and ridges of the landscape and exhibits a visual hierarchy that reflects this structure. This can also be used to bring out fine details that are present in high-quality elevation data. This can be used as an alternative shading method or as an enhancement to hillshading by combining multiple methods of hillshading.
Questions

Reference

Brown, Leland. “Texture Shading” 16 April 2015
http://www.textureshading.com/Home.html

Bump Map Tools. ESRI Mapping Center. 16 April 2015
http://mappingcenter.esri.com/index.cfm?fa=arcgisResources.modelsScripts

Hillshade Tools. ESRI Mapping Center. 16 April 2015
http://mappingcenter.esri.com/index.cfm?fa=arcgisResources.modelsScripts


http://www.shadedrelief.com/realism/

Patterson, Tom “Terrain Texture Shader: Software for Enhancing Shaded Relief on Maps” ShadedRelief.com. 16 April 2015
http://www.shadedrelief.com/texture_shading/

Texture Shading. 33 Nov 2013. Leland Brown. 16 April 2015