

# EVALUATION OF DESKTOP RELIEF SHADING SOFTWARE

	DATA IMPORT FORMATS *	DATA EXPORT FORMATS	ILLUMINATION & SHADING	HYPSOMETRIC COLORING (TINTING)	GEOREFERENCING & IMAGE DRAPING	PERSPECTIVE VIEWS & 16-BIT	INTERESTING FEATURES	DOCUMENTATION & WEB SITE	EASE-OF-USE & REVIEWED VERSION **	AVAILABLE PLATFORMS & COST (U.S.\$)
MacDEM	elevation data: USGS ASCII DEM, SDTS DEM, DTED (Level 0, 1, and 2), Arc-ASCII-GRID, GTOPO30, GLOBE, TerrainBase, SRTM, PGM, Raw ASCII, Raw Binary image: no support	·image: PICT, TGA, TIFF ·elevation data: binary, PGM (for Bryce), Photoshop 16-bit, POV-Ray, USGS ASCII, World (TFW)	·azimuth & altitude ·ambience (overhead or uniform) illumination ·color of brightness & contrast color option ·contour lines	·full control of colored elevation classes ·smooth (continuous) transition among classes ·unlimited number of classes	·adjacent image merge ·good metadata information ·no reprojection capabilities ·no support for image draping ·NONE OF THE APPLICATIONS CAN CROP IMAGE TO SPECIFIED COORDINATES	·small window for perspective viewing ·no animation ·imports and exports 16-bit images	·filters to fill gaps and smooth data ·can edit DEM elevations	·only in HTML & limited but clear and informative ·www.treeswallow.com/macdem/index.htm ·downloadable, fully operational version	• ·0.97	·MAC ·free
MapRender 3D Pro	·elevation data: USGS DEM, SDTS DEM, Landform Panorama NTF, RAW, ASCII, GHz PSB ·image: BMP, PCX, TIFF, PNG, PSB	·image: BMP, TGA, PPM, PNG, TIFF, GEOTIFF ·elevation data: USGS DEM	·azimuth, altitude & vertical exaggeration ·individual colors for emission, ambient, diffuse, & specular illumination ·no contour lines	·full control of colored elevation classes ·options for different coloring methods, i.e. slope ·options for 3 types of transition among classes ·limited number of classes ·can't turn off hypso. tinting	·includes MapRender Convert for reprojection (not included in demo) ·good metadata information ·fully georeferenced but no adjacent image merge ·full support for image draping	·perspective viewing support ·no animation ·no information on 16-bit	·solid (discrete), linear (continuous), & exponential (emphasis on colors at top of each range) gradient options for hypsometric colors ·reprojection options	·contained within application & complete ·www.maprender3d.com ·downloadable demo with most functions operational but limited data	•• ·1.0.1	·WIN ·\$295
MapRender 3D Lite	·elevation data: USGS DEM, SDTS DEM, Landform Panorama NTF, RAW, ASCII, GHz PSB ·image: no support	·image: BMP, TGA, PPM, PNG, TIFF, GEOTIFF ·elevation data: no support	·azimuth, altitude, & vertical exaggeration; only v.e. can be entered as a value ·individual colors for emission, ambient, diffuse, & specular illumination ·no contour lines	·full control of colored elevation classes ·can only color elevation ·options for 2 types of transition among classes ·can't turn off hypso. tinting ·limited number of classes	·does not include MapRender Convert ·good metadata information ·fully georeferenced but no adjacent image merge ·no support for image draping	·perspective viewing support ·no animation ·no information on 16-bit	·solid (discrete) & linear (continuous) gradient options for hypsometric colors	·contained within application & complete ·www.maprender3d.com ·downloadable demo with most functions operational but limited data	• ·1.0.1	·WIN ·\$95
MicroDEM	·elevation data: DEM, DTED, SDTS, GEOTIFF, NGDC GRD 98, NOS EEZ, USGS ASCII CDO, OS 5 or 20 km tile, BC Grid, SRTM, BT ·image: IDX, USGS DOQ, CIB, NITF, ERDAS IMG, BIP, GEOTIFF, BMP/JPEG with World file, DRG, CADRG various, ADRG ·vector: TIGER, SHP, VPF, SIN, DXF, SDTS DLG ·elevation data: ASCII XYZ, DTED	·IMPORT ·elevation data: DEM, DTED, SDTS, GEOTIFF, NGDC GRD 98, NOS EEZ, USGS ASCII CDO, OS 5 or 20 km tile, BC Grid, SRTM, BT ·image: IDX, USGS DOQ, CIB, NITF, ERDAS IMG, BIP, GEOTIFF, BMP/JPEG with World file, DRG, CADRG various, ADRG ·vector: TIGER, SHP, VPF, SIN, DXF, SDTS DLG ·EXPORT ·image: BMP, BMP with World file, GEOTIFF, JPEG (screen only), GIF (screen only) ·elevation data: ASCII XYZ, DTED ·vector: see import	·azimuth, altitude, & vertical exaggeration ·contour lines	·several options for pre-set palettes ·emphasis is on screen analysis: slope, aspect, stereo anaglyph (need glasses), etc. ·limited number of classes	·adjacent image merge ·mini-GIS: one of its many functions is relief shading ·well supported for image draping/manipulation ·no support for reprojection, except datum conversion	·perspective viewing and animation support ·imports and exports 16-bit images	·more GIS functionality than any others ·can import GPS data	·contained within appl. or a separate PDF document—very extensive ·www.nadn.navy.mil/Users/oceano/pguth/website/microdem.htm ·downloadable, fully operational version	•••• ·6.0	·WIN ·free
Natural Scene Designer	·elevation data: DEM, SDTS, GTOPO30, SRTM ·image: DRG, DOQ, PICT, TIFF, JPEG, BMP	·image: TIFF, JPEG, PICT, BMP ·elevation data: DEM, DXF, World	·azimuth & altitude, & vertical exaggeration ·illumination ambience with “shadows” option ·no contour lines	·full control of colored elevation classes ·smooth (continuous) transition ·limited number of classes	·adjacent image merge ·limited metadata information ·no support for reprojection ·image draping support	·one of its main functions is perspective views and animation ·imports and exports 16-bit images	·better than any others for perspective view quality and interface	·only in print and complete ·www.naturalgfx.com/index.htm ·no demo available	•• ·3.0.8X	·MAC, WIN ·\$89
Photoshop	·elevation data: Raw ·image: PSD, BMP, GIF, EPS, Filmstrip, JPEG, PCX, PDF, Photo CD, PICT, Pixar, PNG, Raw, Scitex CT, Targa, TIFF, DCS 1.0/2.0, vector linework & type	·image: PSD, BMP, GIF, EPS, JPEG, PCX, PDF, PICT, Pixar, PNG, Raw, Scitex CT, TGA, TIFF, DCS 1.0/2.0, vector linework & type ·elevation data: no support	·excellent results that can be saved, but non-numeric ·must be familiar with basic functions of Photoshop to achieve results ·can create contour lines using selection/path tools	·full control of colored elevation classes ·must be familiar with intermediate functions of Photoshop to achieve results ·unlimited number of classes	·no georeferencing support ·no metadata information apart from graphic image ·no reprojection capabilities ·layering and transparency facilitate graphic image draping	·no support for perspective views or animation ·supports 16-bit, but not all tools available in this mode	·raster manipulation (visual effects) is excellent, if not the best tool available	·in print but Online Help is more extensive ·www.adobe.com ·Tom Patterson's site with many Photoshop tutorials: www.nacis.org/cp/cp28/resources.html ·downloadable demo	•••• ·6.0.1	·MAC, WIN ·\$600
Cartagena (formerly Shadow)	·elevation data: “it will be able to import and export around 30 different DEM file formats” ·image: BMP	·image: TGA, BMP ·elevation data: DXF 3D, 3DMF QuickDraw 3D Binary and ASCII, ESRI ASCII and Surfer ASCII, Matlab, PGM, Raw	·azimuth, altitude, vertical exaggeration, aerial perspective, etc. ·ambient, diffuse, specular, shininess illumination options ·no contour lines	·full control of colored elevation classes ·option for hypsometric or exposition coloring ·unlimited number of classes ·discrete, continuous, or both	·adjacent image merge ·no reprojection capabilities ·image draping support ·limited metadata information ·“adding reprojecting, joining, cutting, vertical & horizontal offset, filtering, etc.”	·small window for perspective viewing ·no animation ·imports and exports 16-bit images	·interactive, localized editing (fences) ·exposition coloring as opposed to hypsometric	·currently in PDF ·jenny@karto.baug.ethz.ch ·not yet available commercially	••• ·1.9.5	·MAC ·\$??