

Global Mapper for Surveying

MSLS Spring Seminar Amanda Lind





Global Mapper for Surveying

- Introduction to Global Mapper
- Data Compatibility and Access
- Projection and Coordinate Conversion support
- Global Mapper Mobile
- Pixels to Points
- Terrain Analysis Tools

Global Mapper

All-in-one GIS software

- Data creation, editing, advanced 2D and 3D analysis, scripting for workflow automation
- Supports over 350 different file formats

• Global Mapper Pro

- Pixels to Points[™] photogrammetry processing
- Advanced point cloud / lidar analysis tools
- Breakline creation and terrain painting
- GMS Script Builder/Editor and Python integration





Loading Data: File Format support

Global Mapper supports 350+ different file formats:

- DWG, DXF, LandXML, RoadXML, KML/KMZ, ASCII text files (TXT, CSV, XLS), SHP, and much more
- Manual coordinate entry
- File Geodatabase
 Example: <u>Maine Parcels Organized Towns</u>









- Stream Free Online Sources
- Save Favorites
- Add other sources, such as WMS or REST







Specify:

- Separate Distance and Bearing Values
- Coordinate Geometry (COGO)
- Using Quadrant/Bearing/Distance

Distance/Bearing/	COGO Input							
Distance/Bearing OSpecify Sepa	Add Point							
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Bearing:	0	Cancel						
-	Bearing is ang	le from previou	us line segment	Help				
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COGO:			meters ~					
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COGO Arc: Start with C then chord length, R then radius, C then chord bearing (same form as COGO Line), then R or L. Example: C 102,71 R 75 C S78;52:10E L								
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	Load from File							
Closure Distance:	N/A			Save to File				







Connect to a GNSS receiver in the desktop or mobile application

Connect via Bluetooth or IP (TCP, UDP, and UDP multicast)

Record points, averaged points, tracklogs, etc.

Connect to MDOT CORS for RTK support

Works well with desktop version:

- Easy to include maps from desktop
- Attribute management
- Feature templates for field data collection standardization





Projection and Coordinate Conversion Support: **Automatic Reprojection**

- Files reprojected "on the Fly" to match workspace projection.
- Easily convert lat/long coordinates to UTM, State
 Plane or custom local projection, etc
- Exported data maintains the workspace projection

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- Extensive horizontal and vertical datum transformations available
 - 14-parameter time-dependent transformations
 - HTDP converter
 - Geoid models
- Import/define custom coordinate systems and transformations



Projection and Coordinate Conversion Support **Georeferencing**:

- Align unreferenced imagery/data to reference data
- Derive transformations between points in local grid system and earth-based lat/long datum





Pixels to Points[®]



Requires: Overlapping Images

Creates:

- Orthoimage
- 3D Mesh
- Photogrammetric Point Cloud

Photogrammetry (vs. lidar)

PROs:

- Affordable
- Generates dense point clouds
- High resolution ortho images
- Can be done in house (with a drone)

CONs:

• Doesn't include Intensity or

Return Number

Can only map what it can see in the images









Manual, Automatic, and Custom Classification Tools

- Noise
- Ground
- Vegetation
- Buildings
- Poles



Segmentation



Terrain Analysis: Digital Elevation Models (DEM)



Generate Contours





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Generate Watershed





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Generate Watershed





Live Online Training Opportunities https://www.bluemarblegeo.com/gis-software-training/public-gis-training/

Lidar Processing in Global Mapper	Jul 28 – 30
Global Mapper	Jul 20 – 24
Lidar Processing in Global Mapper	Jun 16 – 18
Global Mapper	Jun 9 – 13

Applied Geodesy and Geographic Calculator

Sep 30 – Oct 2



Online Classroom – Self Guided Trainings

https://training.bluemarblegeo.com/

- Pixels to Points in Global Mapper Pro
- Intro to Geographic Calculator
- Intro to Global Mapper Mobile
- Principles of Global Mapper Scripting
- Basics of Python in Global Mapper Pro



Premium Global Mapper Pro

Pixels to Points in Global Mapper Pro

This course introduces users to the robust Pixels to Points® tool in Global Mapper Pro. Learn about processing drone imagery in Global Mapper and how to analyze the outputs you create.

Start Course >





- Global Mapper Knowledge Base
 - https://www.bluemarblegeo.com/knowledgebase/global-mapper/GlobalMapper.htm
- Maine Parcels Organized Towns Geodatabase
 - https://maine.hub.arcgis.com/datasets/54cdfff41b214264997d291b76d69886/about

Custom Online Data Source

- https://gis.maine.gov/arcgis
- https://gis.maine.gov/arcgis/rest/services/Elevation/Maine_Elevation_DEM_2022/ImageServer

More information on Global Mapper

- https://www.bluemarblegeo.com/global-mapper-pro/
- Training
 - Live training
 - https://www.bluemarblegeo.com/gis-software-training/public-gis-training/
 - Online Classroom
 - https://training.bluemarblegeo.com/



BLUE MARBLE GEOGRAPHICS

Thank You

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