Working with Elevation Services in ArcGIS Online

Cody A. Benkelman
Outline

• What is included?
  - Data and Tools
• How can I use it?
  - Modes of use
  - Client Applications
• What are the details?
  - Technical and Legal
World Elevation: Contents
World Elevation Services - Data Sources

Public domain elevation data – **1.6 TB** (LZW compressed TIF)

1 km Bathymetry
250m GMTED
90 m SRTM & EarthEnv-DEM90
60 m NED (AK)
50 m OS (UK)
30 m NED (North America)
10 m (USA & Norway)
3 m (partial USA, Denmark, Finland)
Coming: Community contributions
Services

• **Image service: elevation values**
  - Terrain
  - TopoBathy
  - Dedicated NED 30m (USA)

• **Server-side Geoprocessing (GP) services**
  - Profile
  - Summary Statistics
  - Viewshed
  - Watershed (Hydro)
  - Trace Downstream (Hydro)
Contents – “Terrain” Image Service

- Default “Terrain” (orthometric height)
- 9 Functions to create on-the-fly products
World Elevation: Modes of Use
“How can I use these services?”

• **Usage Modes**
  - Visualization
  - Data Values
  - Geoprocessing

• **Client Applications**

• **End Users vs. Developers**
Usage Modes

• Visualization
  - Hillshade (Grayscale, Elevation Tinted)
  - Slope Map & Aspect Map
Usage Modes

- **Visualization**
  - Hillshade (Grayscale, Elevation Tinted)
  - Slope Map & Aspect Map

- **Data Values**
  - Orthometric & Ellipsoidal Height - for Orthorectification, Local Analysis…
  - Slope & Aspect
Usage Modes

• Visualization
  - Hillshade (Grayscale, Elevation Tinted)
  - Slope Map & Aspect Map

• Data Values
  - Height
  - Slope & Aspect

• Server-side Geoprocessing Services
  - Viewshed, Profile, Statistics, Watershed, Trace Downstream
Client Applications

- ArcGIS Desktop 10.1 & 10.2
World Elevation: Demo
- ArcMap
Client Applications

- ArcGIS Desktop 10.1 & 10.2
- ArcGlobe

AGOL Terrain as elevation source, with Elevation Tinted Hillshade loaded via LYR file
Client Applications

- ArcGIS Desktop 10.1.1 & 10.2
- ArcGlobe

Watershed GP tool result
Client Applications

- ArcGIS Desktop 10.1.1 & 10.2
- ArcGlobe

SummarizeElevation results using watershed polygon as input feature class
Client Applications

- ArcGIS Desktop 10.1 & 10.2
- ArcGlobe
- ArcGIS Online web map
  - Image services only
  - Geoprocessing services supported in the future
World Elevation: Demo – ArcGIS Online
Client Applications

- ArcGIS Desktop 10.1 & 10.2
- ArcGlobe
- ArcGIS Online web map
- Custom web applications
  - Cartography
  - Data for elevation analysis
  - Custom geoprocessing
Terms of Use

• ArcGIS Online Subscription account
• No cost in terms of Service Credits
• Future offerings may require Credit consumption
  - Geoprocessing tools
  - Premium content
Connecting and Using

- **AGOL Group: “Elevation Layers:”**
  - Shortcut: [http://esriurl.com/6548](http://esriurl.com/6548)
  - Multiresolution service is “Terrain”
  - Select Raster Function

- **Authentication**
  - ArcGIS, ArcGlobe, AGOL map
    - ArcGIS Online Subscription Account
  - Custom REST-based apps
    - Acquire token
    - Pass token in REST request
That’s not exactly what I wanted…
For organization with other requirements

- In-house data collections
  - Proprietary data
  - Lidar with DSM
  - Bathymetric data
- Offline use/Behind your firewall

- “Best Practices for Managing Elevation Data”
  - Imagery Demo Theater Thursday 10:00 a.m.
Thank you...

- Please fill out the session survey:

  Offering ID: 887 / 1831

Online – [www.esri.com/ucsessionsurveys](http://www.esri.com/ucsessionsurveys)
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