ArcGIS Data Reviewer: Plans for Quality Assessment of Raster Datasets

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What is ArcGIS Data Reviewer?
Data quality management for ArcGIS

- Provides
  - Rule based workflows
  - Interactive tools
  - Track errors

- For individuals and enterprise
  - Saves time/money
  - Less rework

- Standard extension
  - ArcGIS for Desktop
  - ArcGIS for Server

Review

Verify

Correct

Trusted data through improved quality management
Thematic Accuracy Tools

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Geospatial Data Accuracy

- Spatial (positional, geometric)
- Spectral (band depth)
- Thematic (classification)
- Temporal (appropriate date)
- Radiometric (capture piece of electromagnetic spectrum)
- Attributional (types of attributes for intended purpose, correctness of attributes)
Thematic Accuracy

- How closely a classification conforms to a reference source ("truth")
- No classification is perfect (80 percent is excellent)
- Products may need to conform to a specification
- Usually scale-dependent to some degree
- How to quantify?
- Error table: Overall Accuracy and Kappa Value
Thematic Accuracy Tools

- Part of Spatial Analyst Multivariate Toolbox
  - Same toolbox with classification tools
- Created with requirements gathered from NGA through the Esri’s CRADA with NGA
- Quantitative accuracy value for a classified raster
Accuracy Reporting

• Error matrix
  - Standard output for classification accuracy
  - In text report
  - In table for use in GP model

• Overall accuracy value

• Kappa value
  - Overall accuracy minus random chance
Thematic Accuracy Assessment
Elevation QA tools

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Elevation QA tools

Background

• Developed for internal use
  - Community portion of World Elevation Service
• Developed as GeoProcessing tools
• Results can be written directly to Data Reviewer tables
  - Allows for centralized management and reporting
• Currently in beta version
Elevation QA tools

• **Slope tool**
  - Check for slopes in elevation raster that are greater than a user specified value

• **No Data check**
  - Find areas of NoData pixels
  - Optionally find NoData pixels around the perimeter of the imagery
Elevation QA tools

- Reference DEM
  - Compare DEM against a reference DEM

- Mosaic Dataset Overlaps
  - Compare values in all overlapping DEMs within a single mosaic dataset
Elevation QA tools

- **Water Bodies**
  - Check for flatness
  - Check for displacements at water edge

- **Rivers**
  - Check for monotonicity
  - Check for displacements at water edge
Check Slope tool
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Resources

- **Product page**
  - www.esri.com/datarereview

- **Resource Center**
  - http://resources.arcgis.com/

- **Training**
  - www.esri.com/training

- **Questions & comments**
  - datareviewer@esri.com

- **Questions?**
Thank you…

- Please fill out the session survey:

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