ArcGIS Data Reviewer: Quality Assessment for Elevation Raster Datasets

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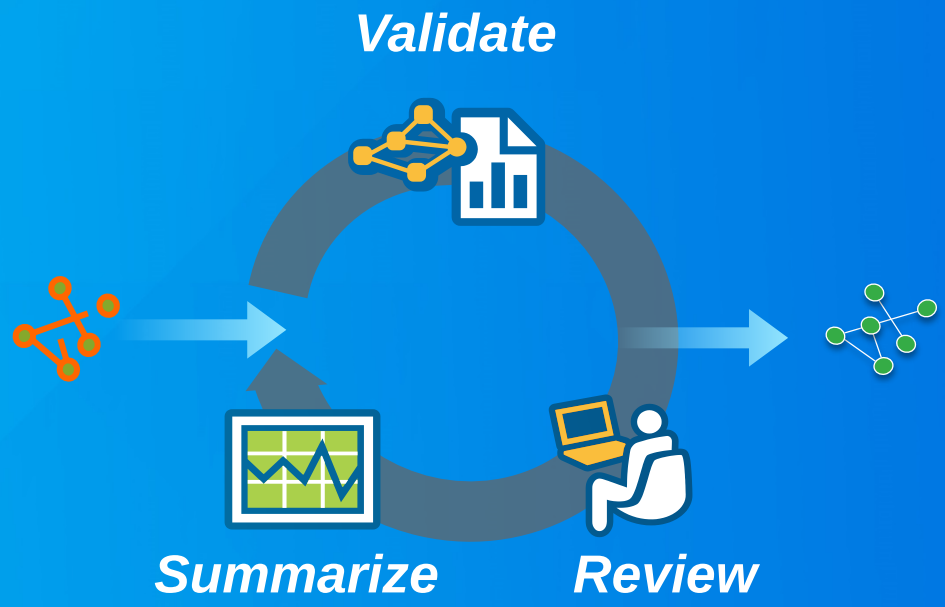
What is ArcGIS Data Reviewer?

Data Quality Management for ArcGIS

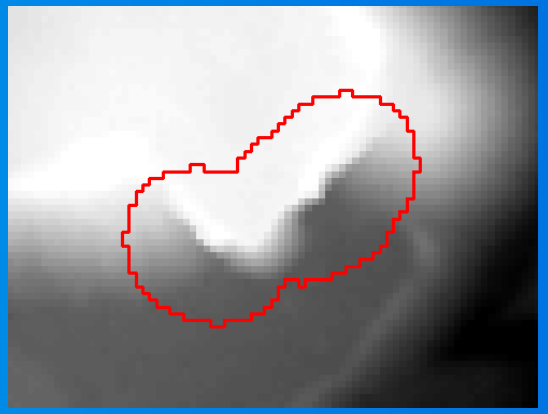
- **Provides**
  - Rule-based validation
  - Interactive tools
  - Track errors
- **For individuals and enterprise**
  - Saves time/money
  - Less rework
- **For multiple domains**
  - Configurable
  - Extendable



ArcGIS Data Reviewer: Quality Assessment for Elevation Raster Datasets

Background of Raster QC tools

- Six Raster QC tools Developed for internal use
  - Community portion of World Elevation Service
- Developed as GeoProcessing tools
  - Designed to work with 1-band data (typically elevation)
- Results can be written directly to Data Reviewer tables
  - Enables centralized management and reporting
  - Each tool generates features that spatially overlay the raster to highlight areas of concern
- If desired a subset of these features can be written to a Data Reviewer table later in the workflow



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Raster QC tools

- **The six tools fall into three categories:**

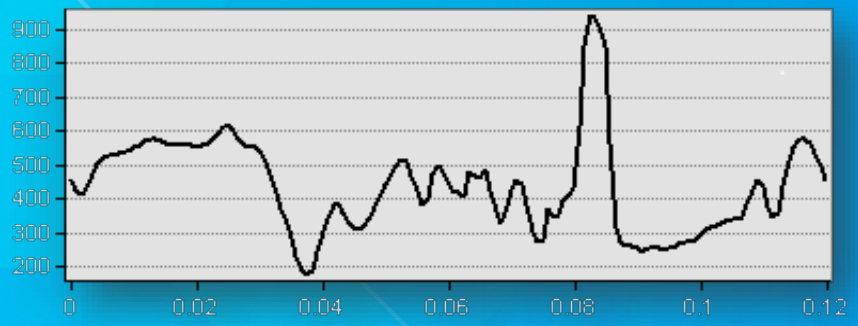
- **Check an input raster by itself for errors**
  - ***Check Slope***
  - ***Check NoData***

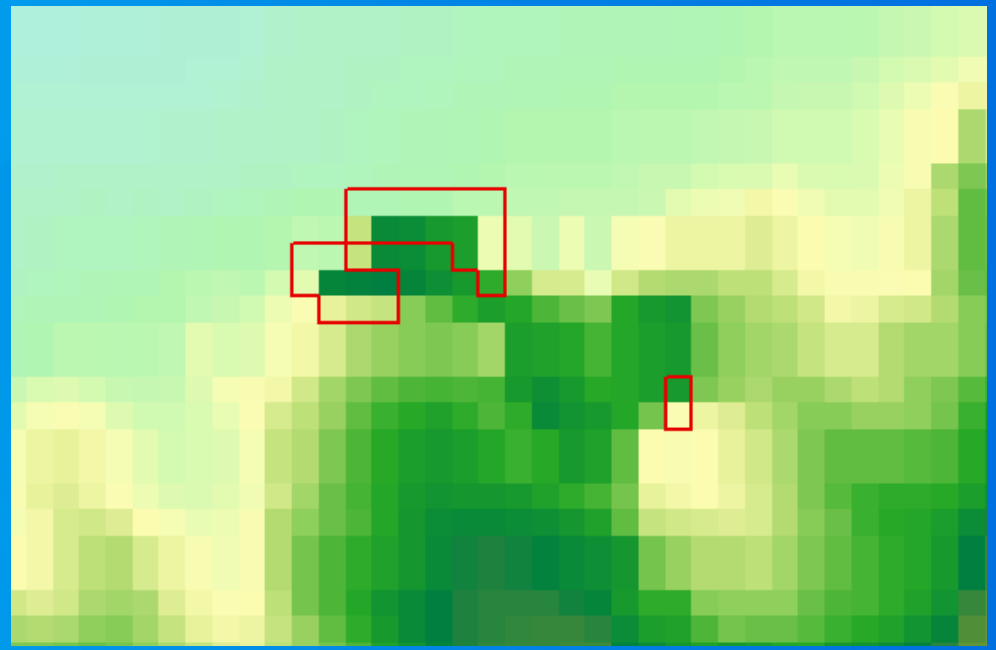
- **Compare two or more rasters where they overlap**
  - ***Check Reference***
  - ***Check Mosaic Overlaps***

- **Check consistency between a raster and vector water features**
  - ***Check Rivers***
  - ***Check Water Bodies***

Check Slope

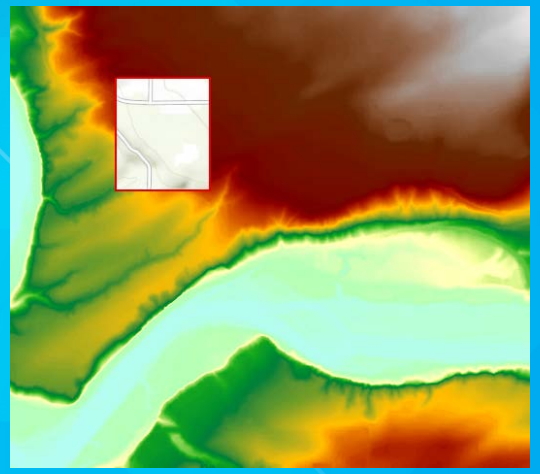
- Highlight slopes in elevation raster that are greater than a user specified value
  - Slope threshold specified in degrees or percent
- A distinct slope calculation is performed between each pair of adjacent cells
  - including between cells that are diagonally adjacent

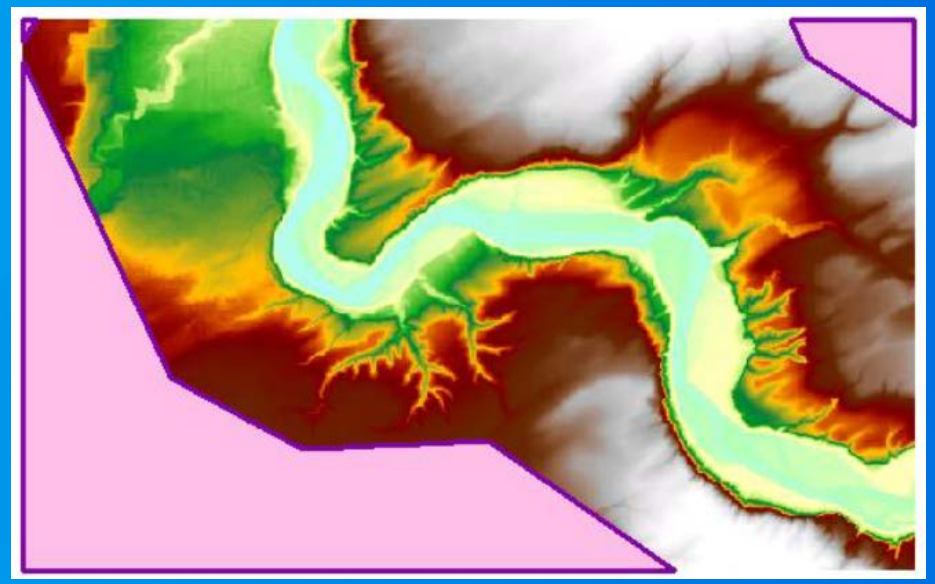




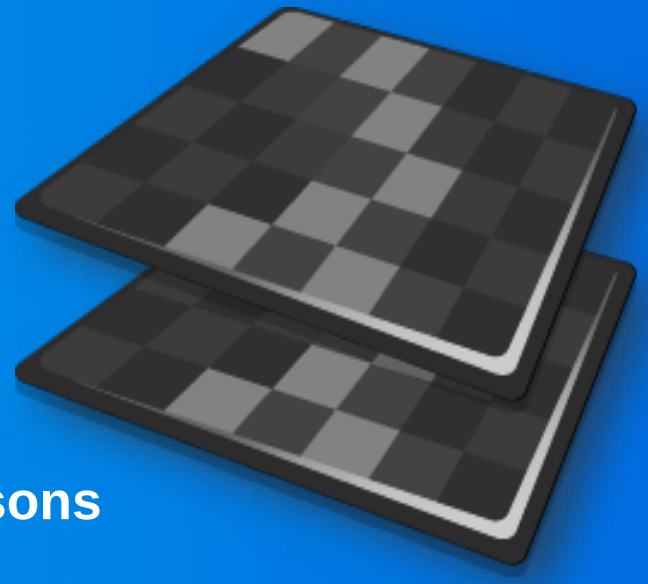
Check NoData

- **Find areas of NoData pixels**
  - **All NoData areas or only interior**
- **Can *also* do the reverse (find all areas with data)**
  - **Very useful applications**





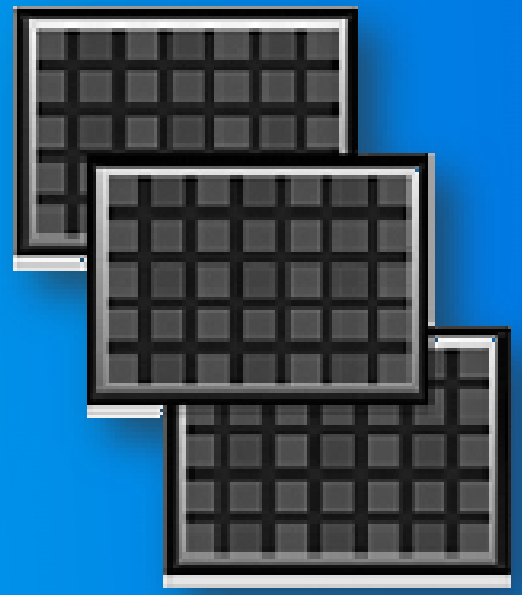
Check Reference



- Compare DEM against a reference DEM
  - Highlight those areas that differ by user-supplied threshold value
  - Only check overlapping areas
- Cells containing NoData are ignored and not included in comparisons
- Both rasters must use the same coordinate system
- Due to scale differences, there may be offsets between the cell centers in the two rasters.
  - A simple nearest neighbor approach is used for comparing cells.

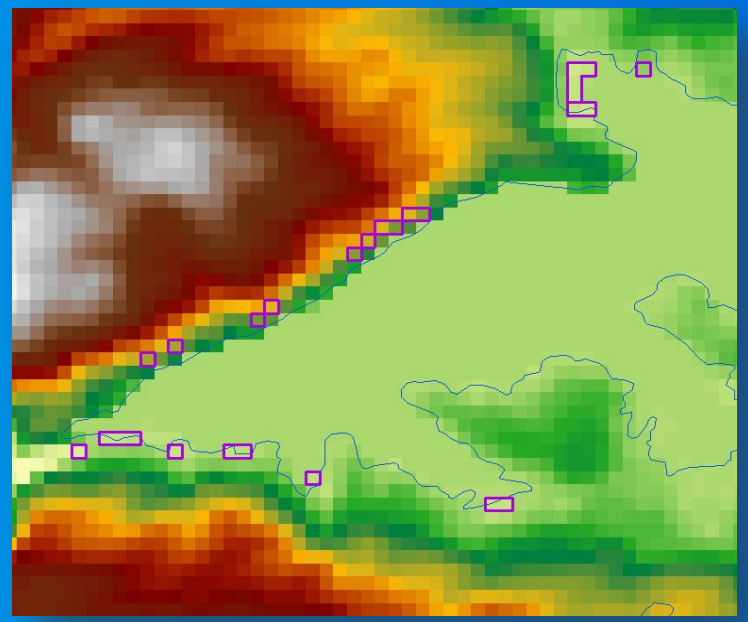
Check Mosaic Overlaps

- Compare values in all overlapping DEMs within a single mosaic dataset
- Similar to Check Reference tool
  - Can have multiple rasters overlapping at the same location



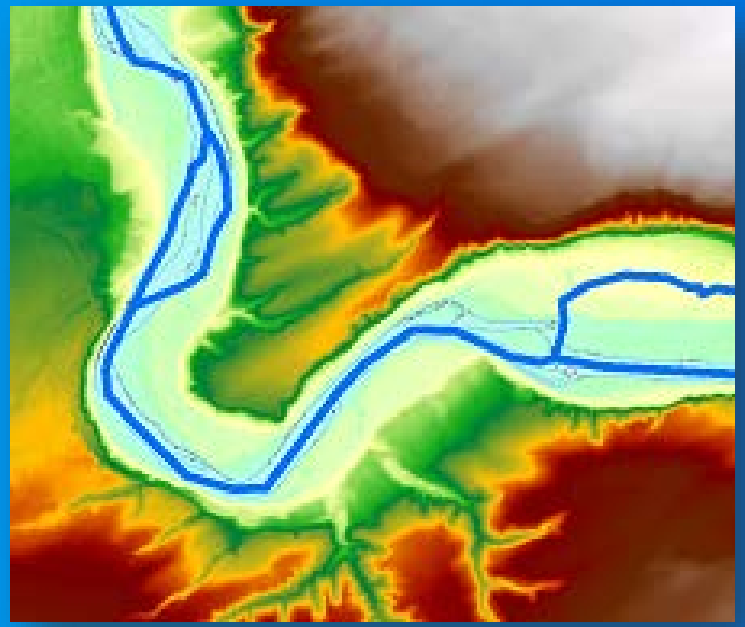
Check Water Bodies

- Ponds / lakes 2 acres or larger should be flattened
- Check for flatness
- Check for displacements at water edge
  - Areas with elevation lower than water

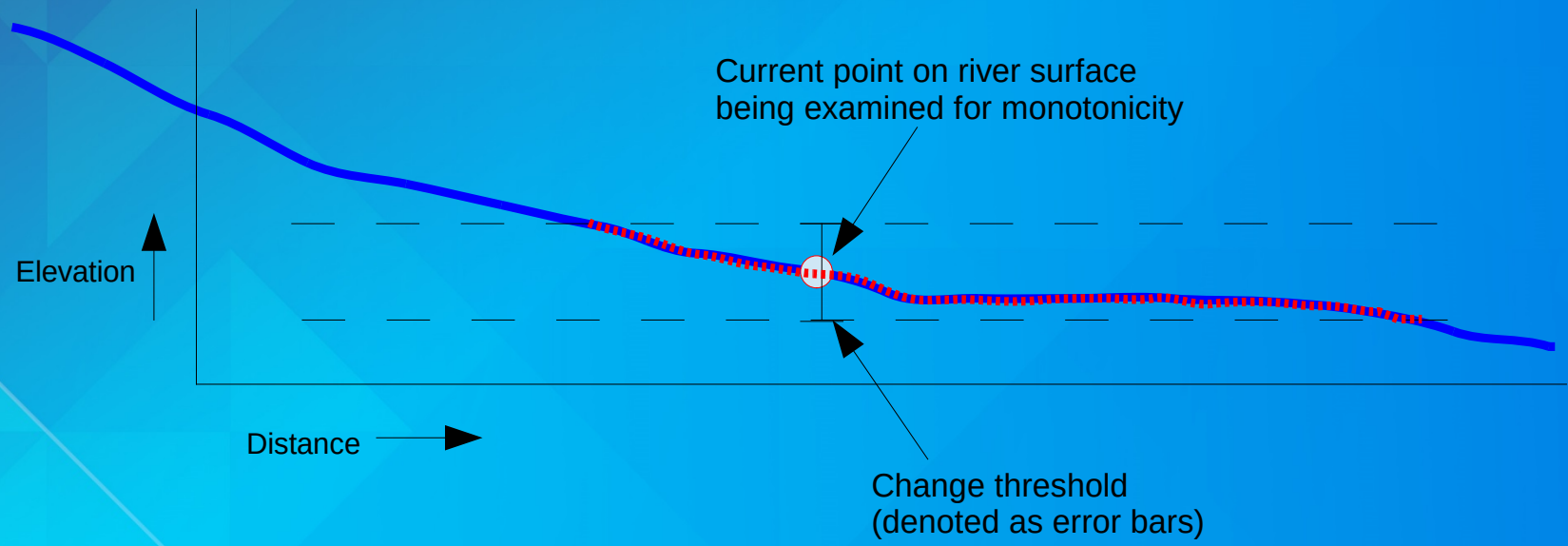


Check Rivers

- Rivers over 100 feet wide should be flattened
- Check for monotonic incline
- Check for displacements at water edge
  - Similar to Check Water Bodies



Check Rivers



- ***River elevation profile shown above, where red denotes the extent of the river that must be compared with the current surface point (shown as a circle) to establish whether it is part of a monotonic flow***

Demo

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  - *Check Rivers*

Download the Raster QC tools

- **Currently in Beta version**
  - Early Adopter Community

Want to learn more?

- **Documentation**
  - Resource Center
- **Training**
  - Assessing Data Quality using ArcGIS Data Reviewer (Seminar)
  - Data QC with ArcGIS: Automating Validation (Web Course)
  - Data QC with ArcGIS: Visual Review (Web Course)
  - Quality Control Using ArcGIS Data Reviewer for Desktop (Instructor Led)
- **GeoNet**
  - Data Reviewer place

Send questions or comments to datareviewer@esri.com

Want to learn more?

Day and Description	Type	Time	Location
Tuesday July 21			
ArcGIS Data Reviewer: An Introduction	Technical Workshop	8:30 – 9:45am	Room 14 B
ArcGIS Data Reviewer: Assessing Positional Accuracy	Demo Theater	10:30 – 11:15am	Demo Theater 6 (Geodata)
ArcGIS Data Reviewer: Integrating ArcGIS Data Reviewer and ArcGIS Workflow Manager to Automate Data Quality Control Workflows	Demo Theater	11:30 – 12:15pm	Demo Theater 6 (Geodata)
ArcGIS Data Reviewer: Leveraging Geoprocessing for Data Validation	Demo Theater	12:30 – 1:15pm	Demo Theater 6 (Geodata)
ArcGIS Data Reviewer: Quality Assessment for Elevation Raster Datasets	Demo Theater	1:30 – 2:15pm	Demo Theater 6 (Geodata)
Wednesday July 22			
ArcGIS Data Reviewer: Special Interest Group Meeting	SIG	12:00 – 1:00pm	Room 28 B
ArcGIS Data Reviewer: Planning and Deploying Data Quality Services	Technical Workshop	3:15 – 4:30pm	Room 31 C
Thursday July 23			
ArcGIS Data Reviewer: An Introduction	Technical Workshop	8:30 – 9:45am	Room 16 B
ArcGIS Data Reviewer: Integrating Data Validation Capabilities Into Web Applications	Demo Theater	10:30 – 11:15am	Demo Theater 7 (Server)
ArcGIS Data Reviewer: Implementing Data Quality Reporting in Web Clients	Demo Theater	11:30 – 12:15pm	Demo Theater 7 (Server)

Thank you…

- Please fill out the session survey in your mobile app
- Select “ArcGIS Data Reviewer: Quality Assessment for Elevation Raster Datasets” in the Mobile App
  - Use the Search Feature to quickly find this title
- Click “Technical Workshop Survey”
- Answer a few short questions and enter any comments