

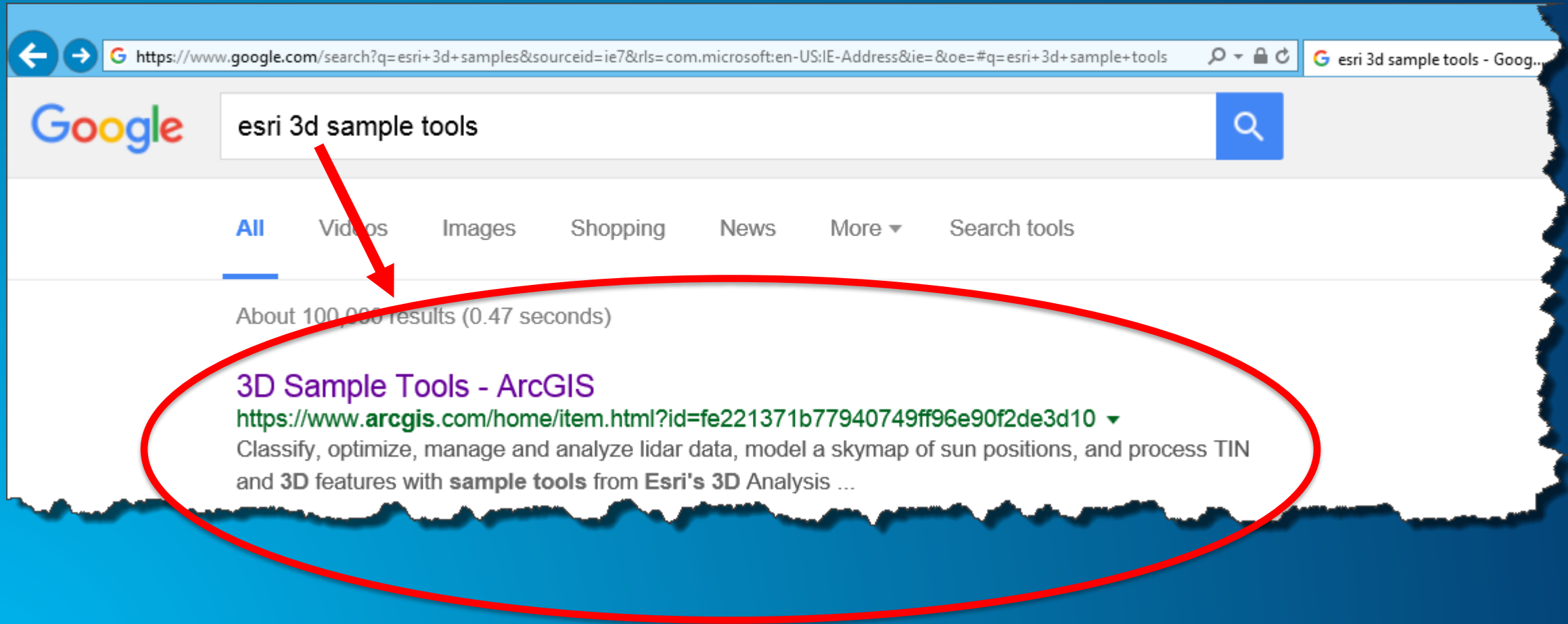
Geoprocessing Sample Tools for Lidar

Clayton Crawford

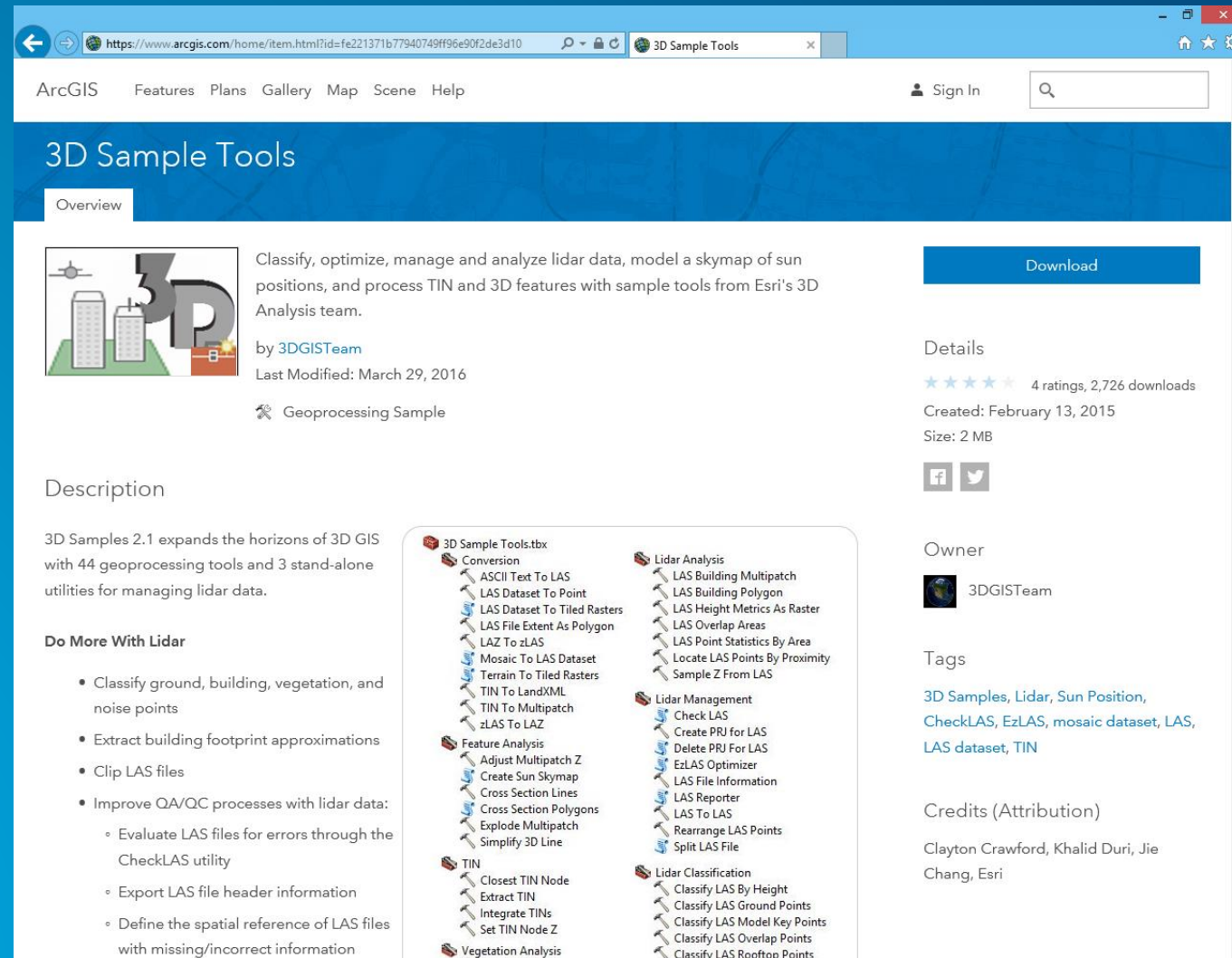
Content

- Discuss and demonstrate 3D Sample Tools for lidar
- Implemented as custom GP tools
- Prototypes and utilities
- Often make their way into shipping product
- Available for download
- Easy to install and use

Locating 3D Sample Tools

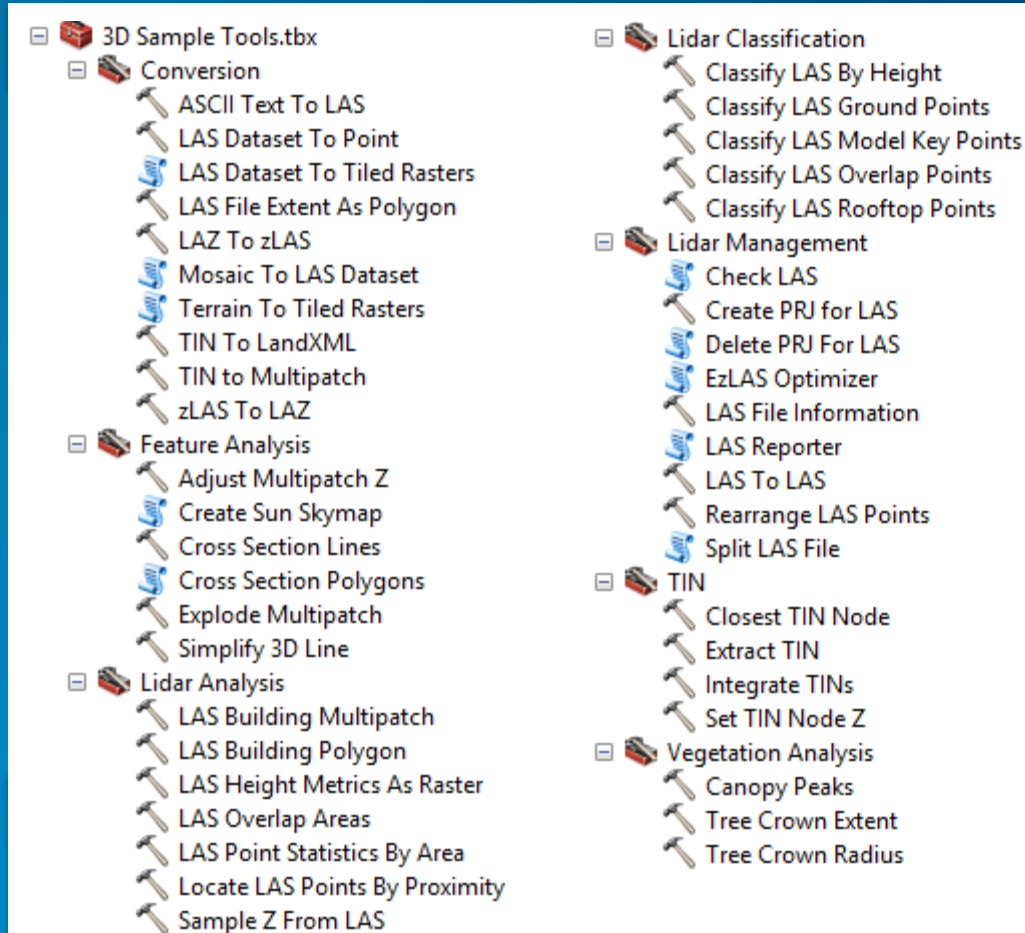


3D Sample Tools Web Page



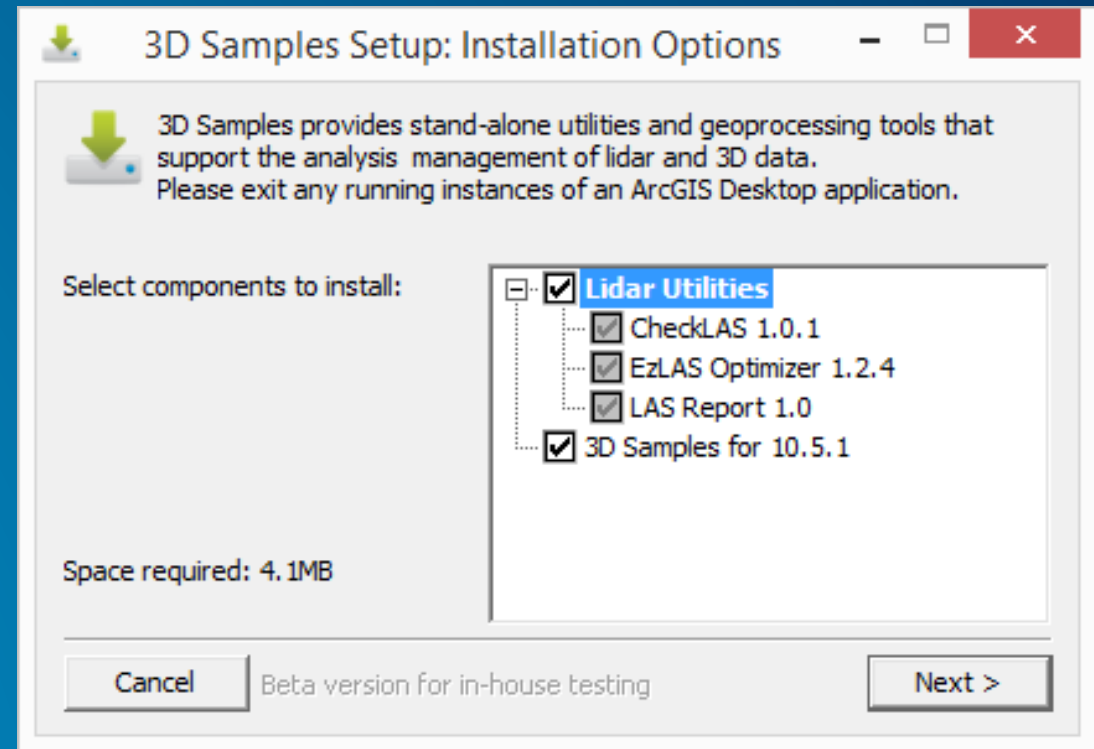
3D Sample Tools

- Conversion
- Analysis
- Classification
- Management
- Vegetation



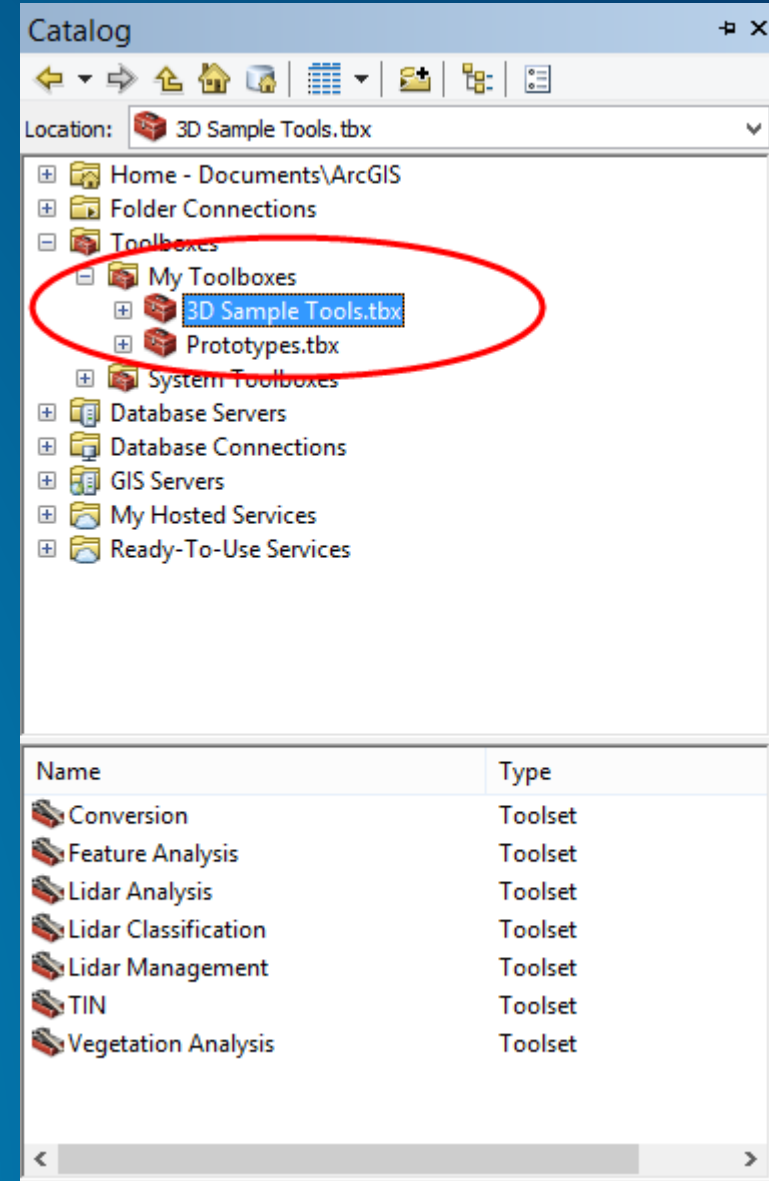
Installer

- Download contains executable to perform installation
- Works for ArcGIS Desktop versions 10.2 – 10.5.1



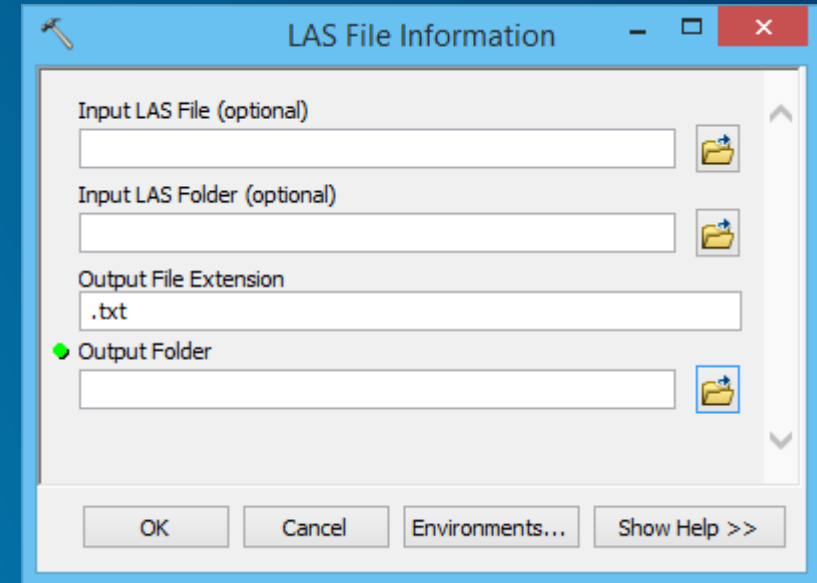
Toolbox location

- Placed under Toolboxes in ArcCatalog



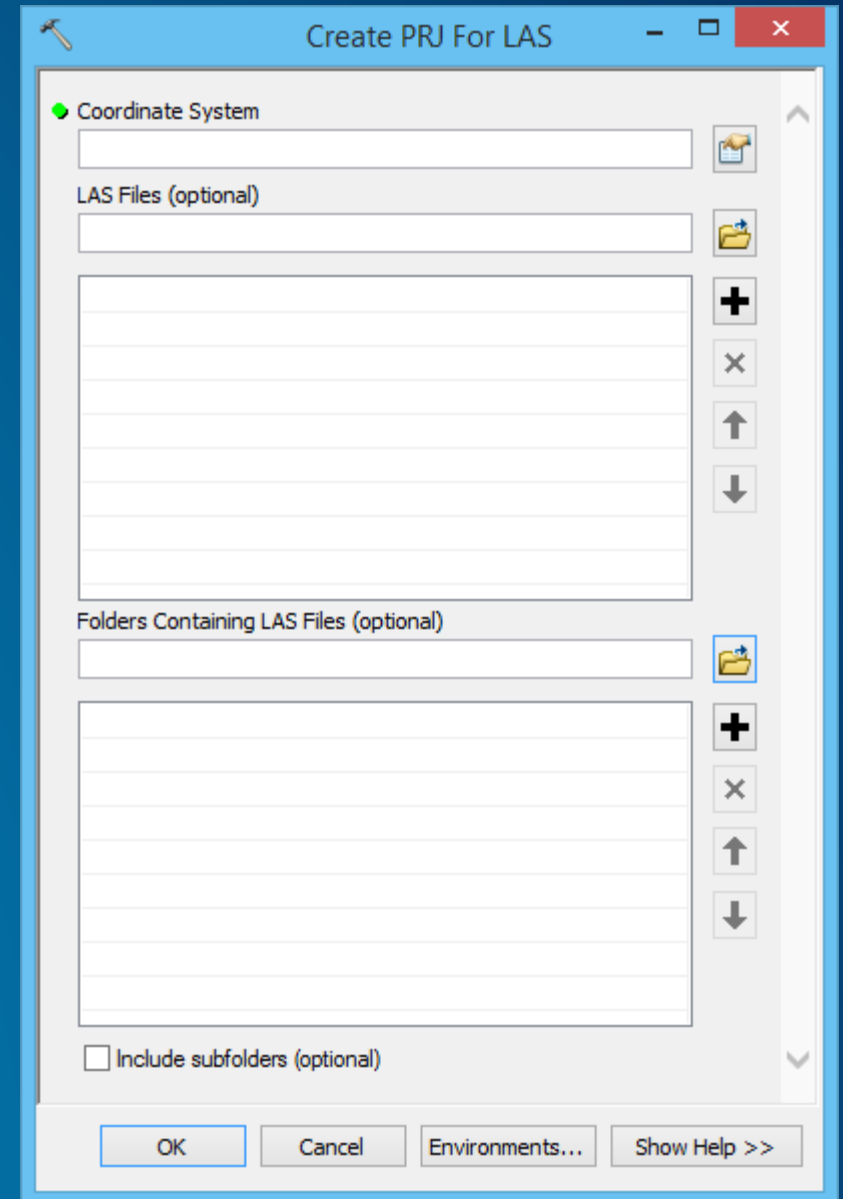
LAS File Information

- LAS file version, point format
- Num points
- XYZ extent
- Spatial reference
- Returns
- Class codes
- Etc.
- Written to text file next to LAS



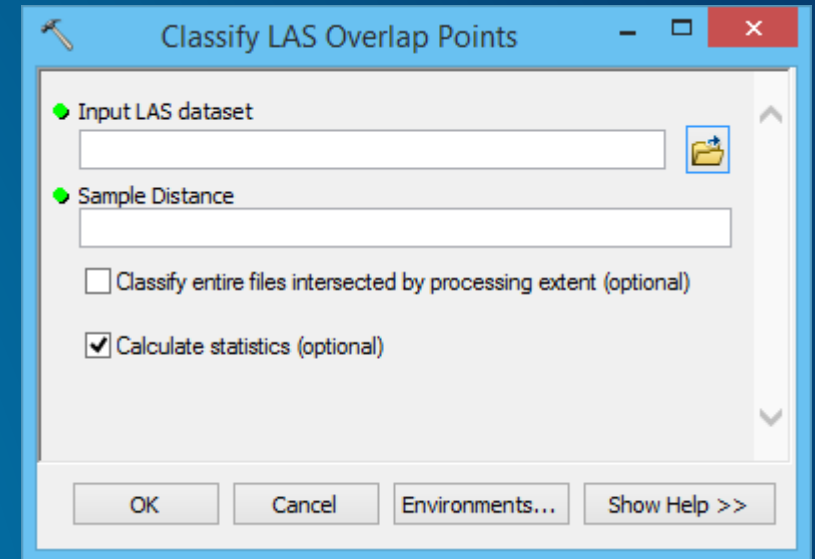
Create PRJ For LAS

- Add or override spatial reference for LAS files
- Creates sidecar PRJ
- Similar to shapefile or image
- Easily create multiple PRJ for folder full of LAS



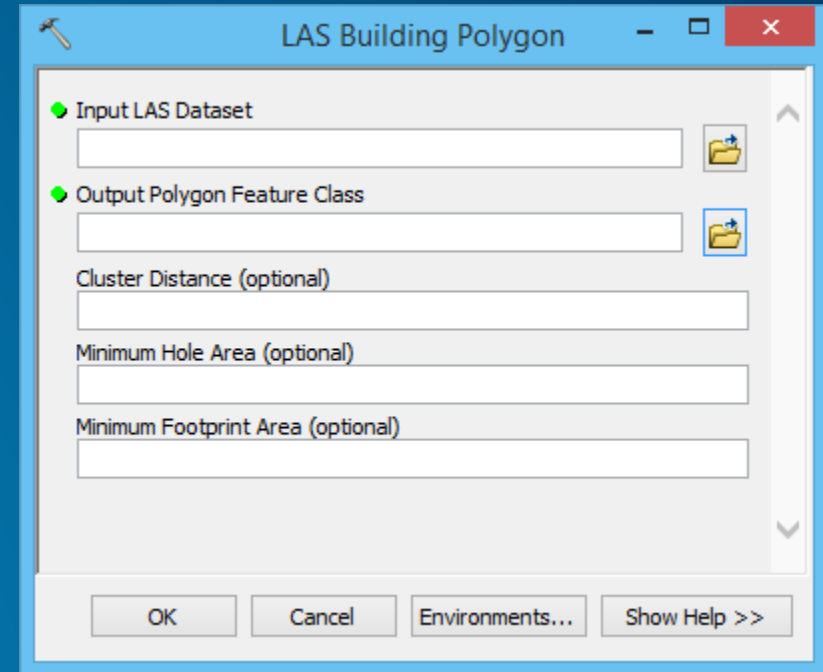
Classify LAS Overlap Points

- Finds points in overlap areas of flightline swaths in aerial lidar
- Requires Point Source ID, representing flightline number, to have been set by the data provider
- Points with larger scan angles in areas of overlap will be classified as overlap. Thus higher accuracy points are preserved.



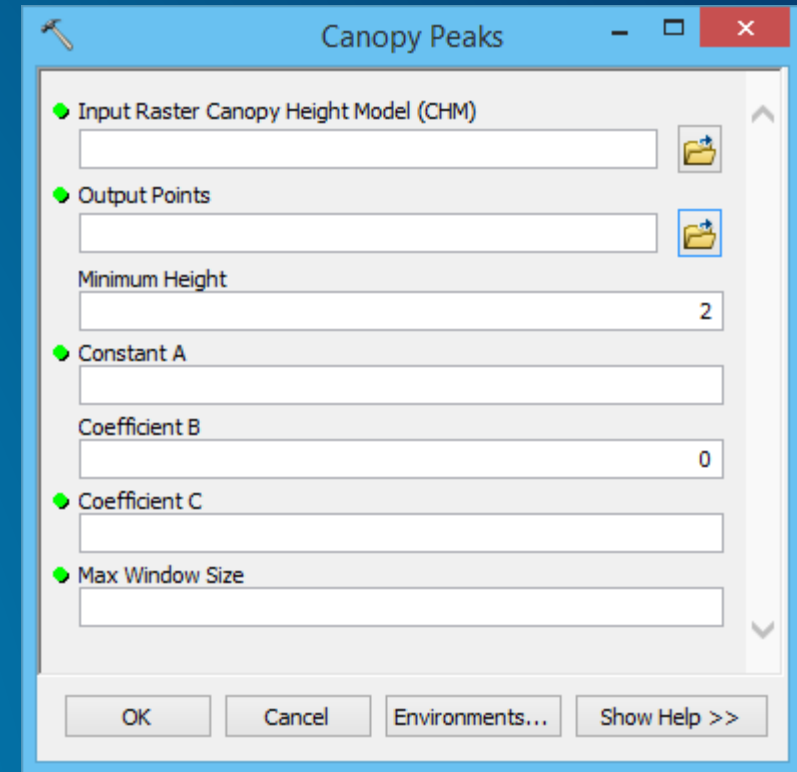
LAS Building Polygon

- Works on lidar with building/rooftop points classified
- Finds 'clusters' of building points and aggregates them into polygons



Canopy Peaks

- Uses a raster Canopy Height Model (CHM) as input. This is same as a normalized DEM (nDEM).
- Finds local highs based on areas that vary in size based on height. Assumption is the taller the tree, the wider its crown.
- Works best for coniferous forest where trees have more clearly defined peaks



Updates in Pro and other ArcGIS Apps

- **Create PRJ For LAS is option on Create LAS Dataset tool**
- **LAS To LAS is available as Extract LAS**
 - Enhanced to support irregular clip boundary polygon
- **Rearrange LAS is option on Extract LAS tool**
- **Classify LAS By Height, Locate LAS By Proximity, LAS Point Statistics By Area added to Pro 1.0 and ArcGIS 10.3.1**
- **Classify LAS Ground in Pro 1.2 and ArcGIS 10.4**
- **Classify LAS Noise and Classify LAS Overlap added to Pro 2.0**

Thank You!

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