An aerial LIDAR map showing a watershed area. The terrain is color-coded by elevation, with green representing higher elevations and brown representing lower elevations. A river system is highlighted in a bright blue color, winding through the landscape. The river flows from the top right towards the bottom left. The map also shows a grid of roads and some urban areas. The text "LIDAR" is in the top right, "A Watershed Council Tool" is in the center, and "Albany" is in the bottom right.

LIDAR

A Watershed Council Tool

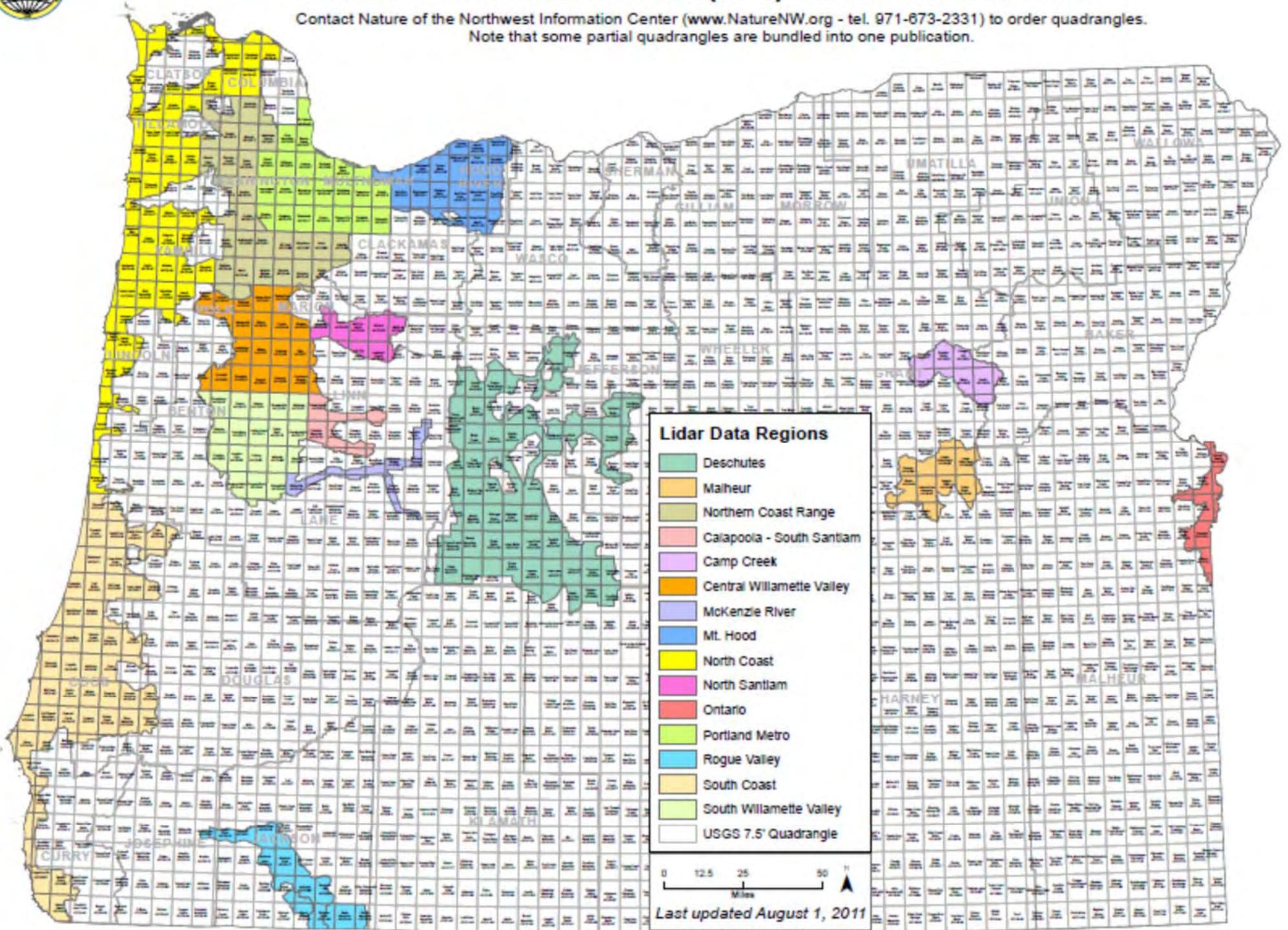
Tara Davis, Executive Director
Calapooia Watershed Council

Albany

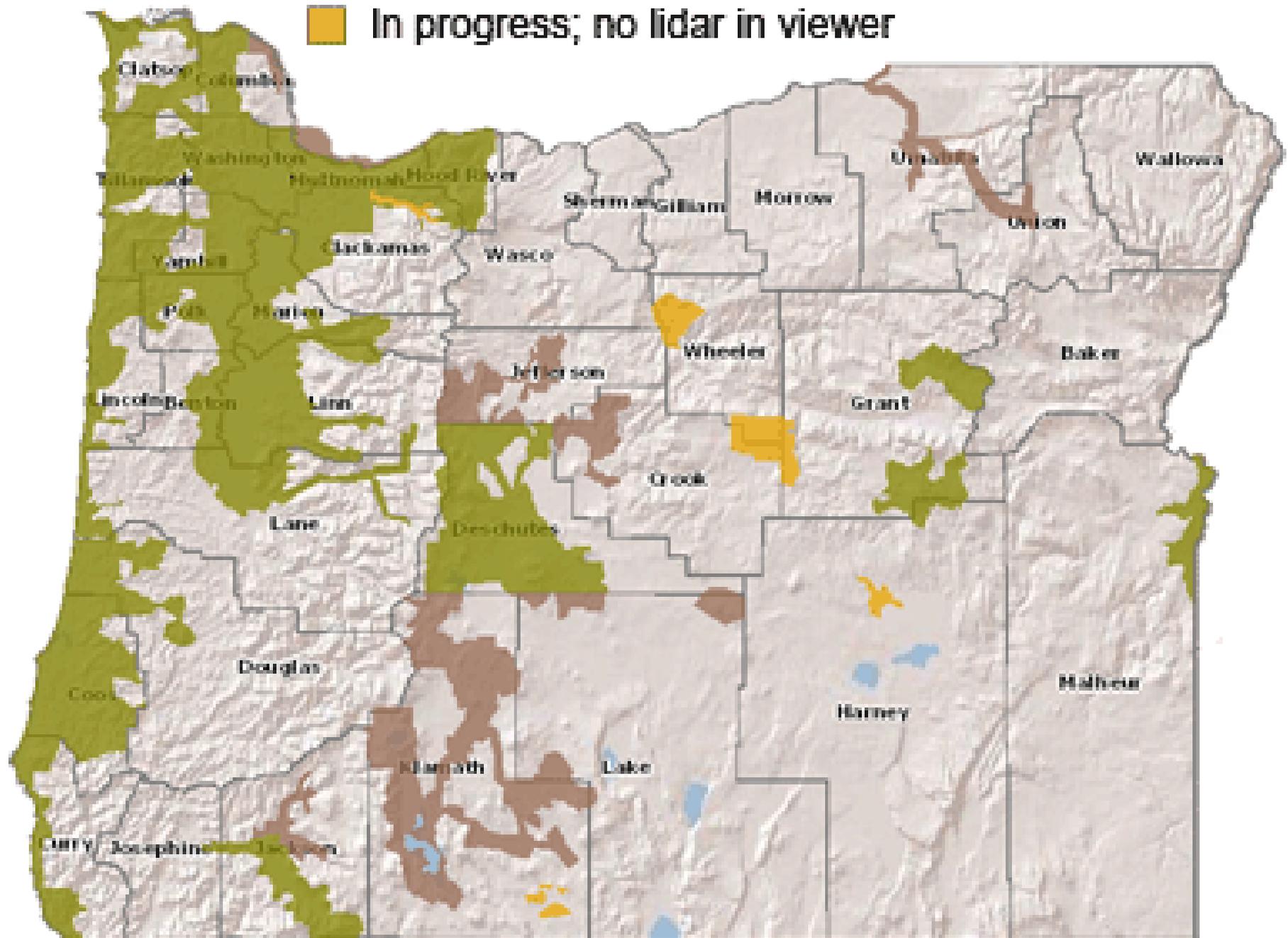


OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES LIDAR DATA QUADRANGLE (LDQ) SERIES PUBLICATIONS

Contact Nature of the Northwest Information Center (www.NatureNW.org - tel. 971-673-2331) to order quadrangles.
Note that some partial quadrangles are bundled into one publication.



- Available for purchase
- Completed but not yet available for purchase
- In progress; no lidar in viewer



What can you do with LiDAR?

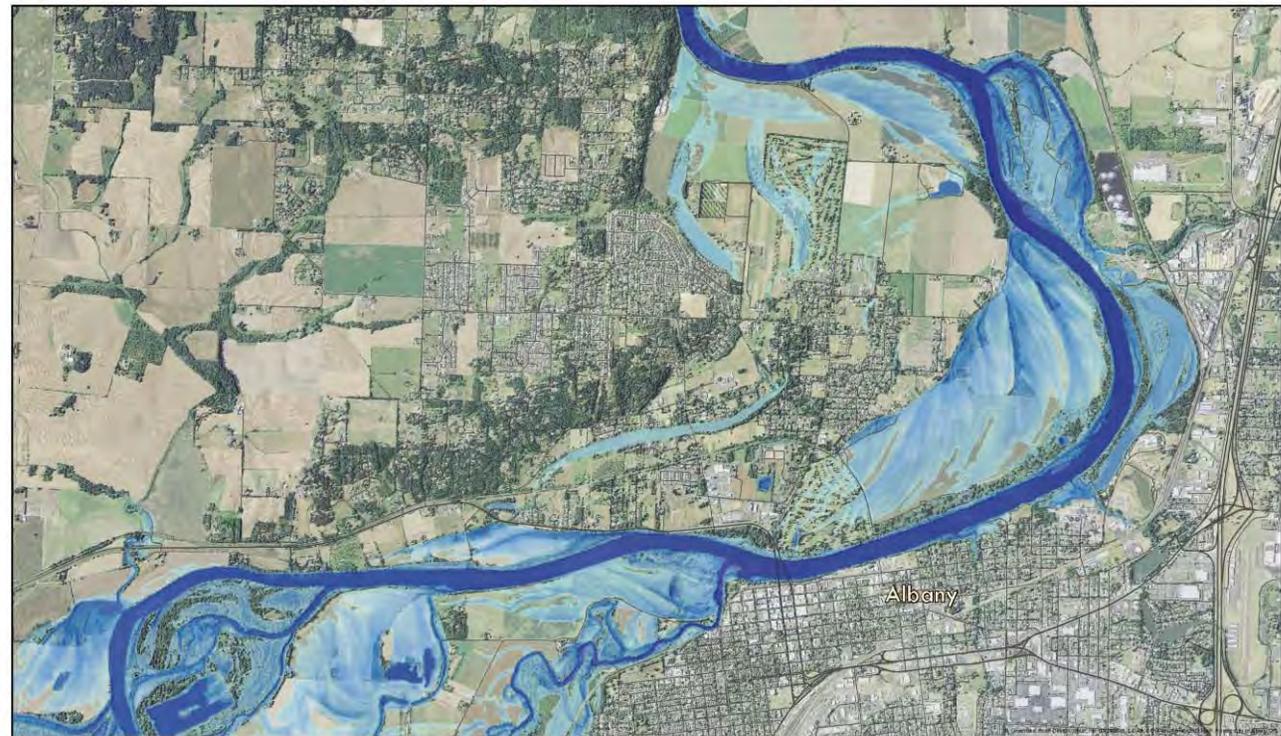
- Find landslides, old cuts and grades
- Measure and estimate fills and cuts
- Find stream channels, measure gradients
- Measure the size and height of buildings, bridges
- Locate and measure every tree in the forest
- Characterize land cover
- Model floods, fire behavior
- Locate power lines and power poles
- Support archeological investigations
- Map wetlands and impervious surfaces
- Define watersheds and viewsheds
- Model insolation and shading
- Map road center and sidelines
- Find law enforcement targets
- Map landforms and soils
- Assess property remotely
- Inventory carbon
- Monitor quarries, find abandoned mines
- Enhance any project that requires a detailed and accurate 2-D or 3-D map

What can you do with LiDAR?

- Find landslides, old cuts and grades
- Measure and estimate fills and cuts
- Find stream channels, measure gradients
- Measure the size and height of buildings, bridges
- Locate and measure every tree in the forest
- Characterize land cover
- Model floods, fire behavior
- Locate power lines and power poles
- Support archeological investigations
- Map wetlands and impervious surfaces
- Define watersheds and viewsheds
- Model insolation and shading
- Map road center and sidelines
- Find law enforcement targets
- Map landforms and soils
- Assess property remotely
- Inventory carbon
- Monitor quarries, find abandoned mines
- Enhance any project that requires a detailed and accurate 2-D or 3-D map

Watershed Council Applications

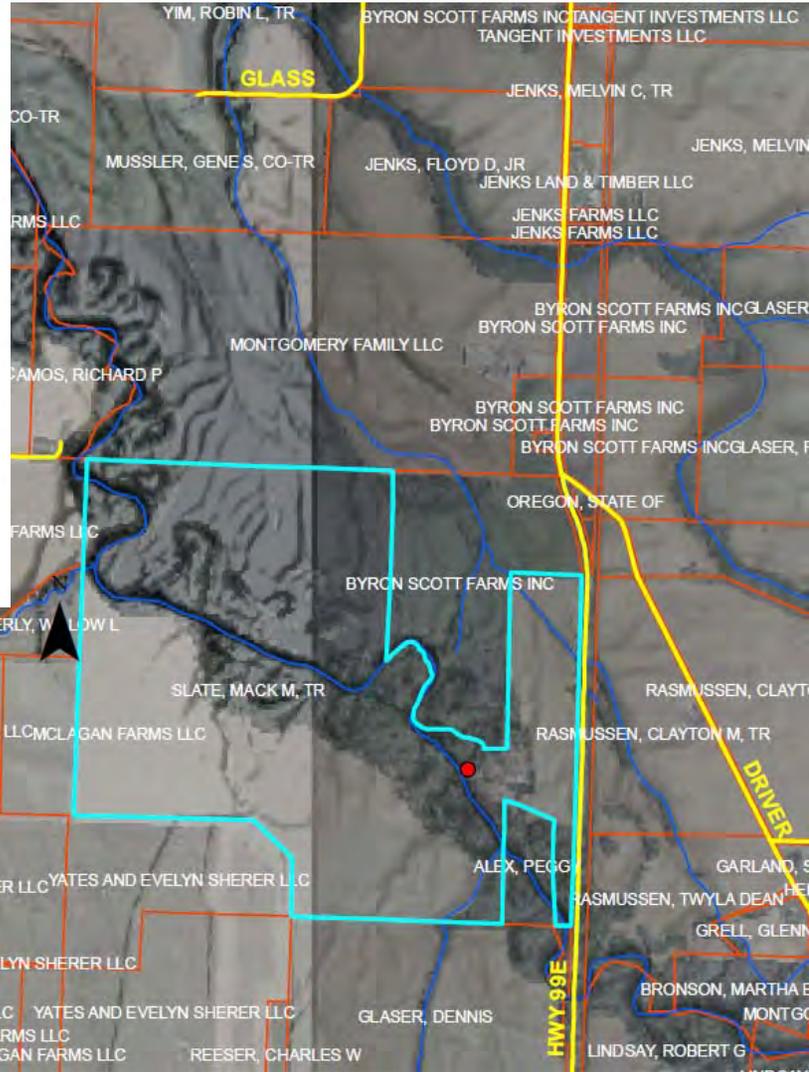
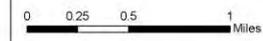
- Maps and detailed drainage visuals for landowner site visit discussions
- Large wood and habitat ID (eastside) and enhancement planning by delineating backwater and side channel opportunities
- Floodplain modeling, coupled with stream cross sectional data and discharge
- Contour, topo, aspect and hillshade perspectives for stakeholder analysis



Depth at 69,500 cfs
Willamette River near Albany, Oregon

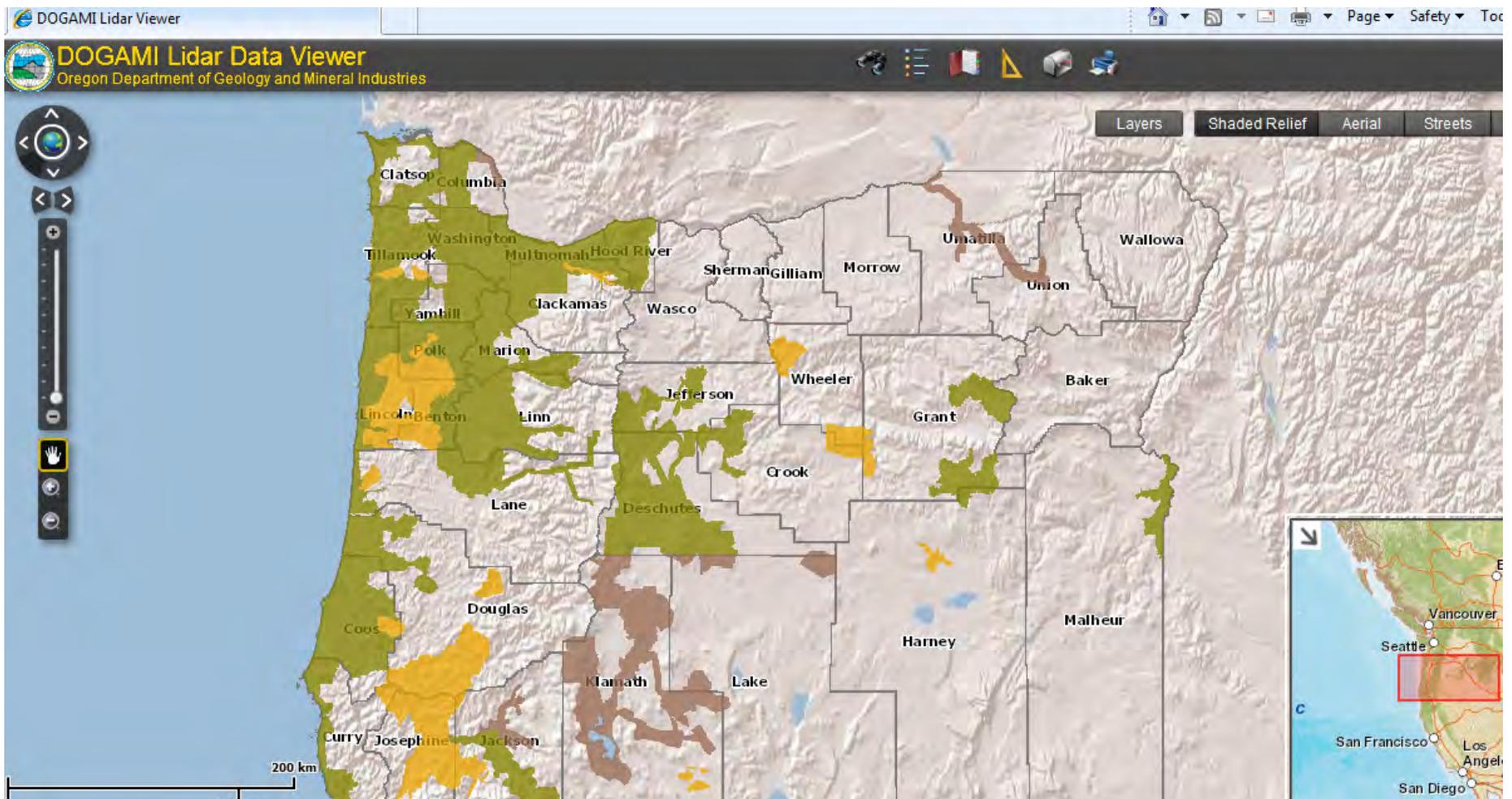
Legend

— Roads



Lidar Tools

- DOGAMI's lidar data viewer- great tool!



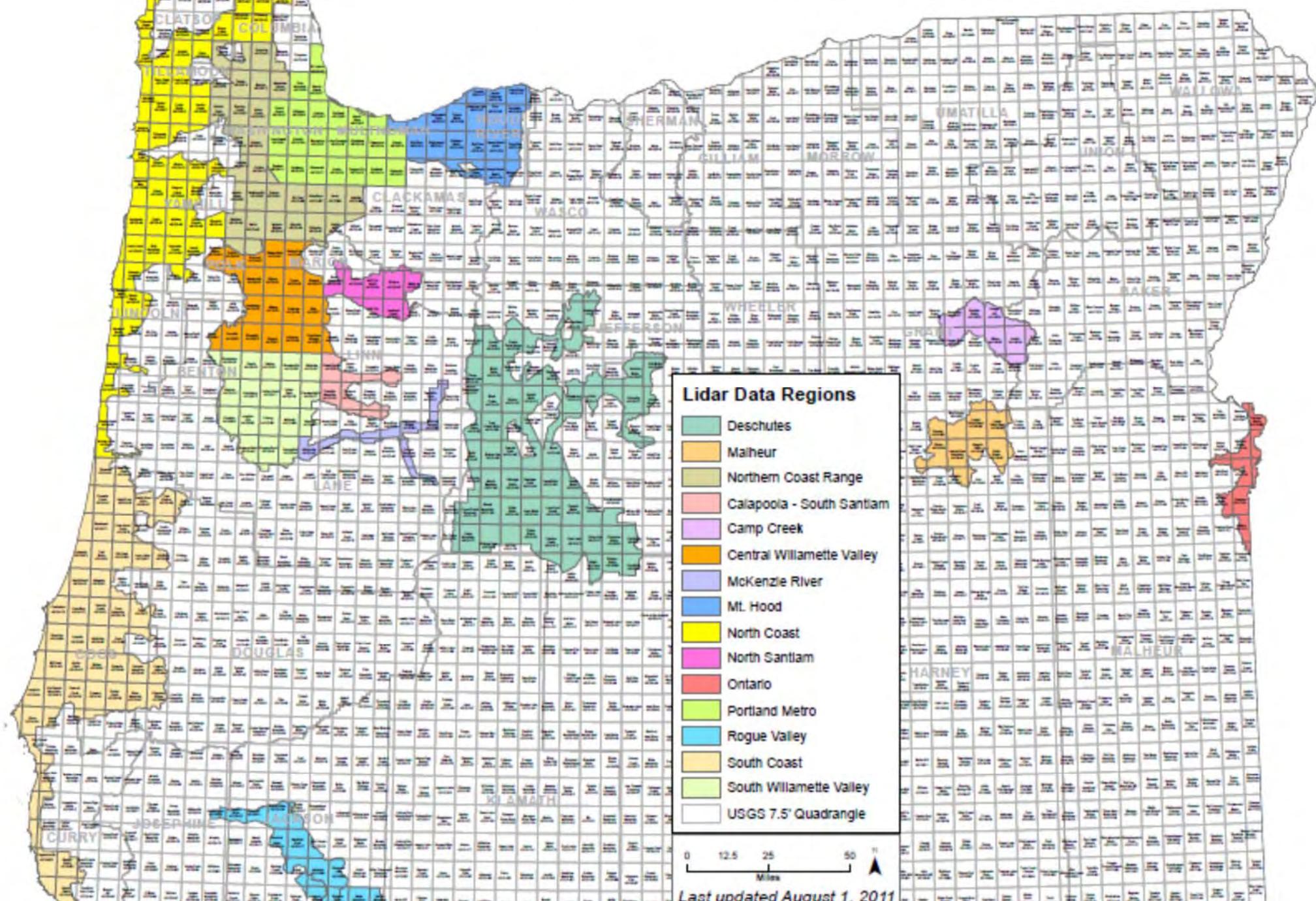
Lidar Tools

- ArcMap, ESRI
- Ask a consortium partner for the quadrangle imagery in your area, (see quad map and “delivery” numbers)
- Download rasters from Oregon’s geospatial clearinghouse, USGS, NOAA



OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES LIDAR DATA QUADRANGLE (LDQ) SERIES PUBLICATIONS

Contact Nature of the Northwest Information Center (www.NatureNW.org - tel. 971-673-2331) to order quadrangles.
Note that some partial quadrangles are bundled into one publication.

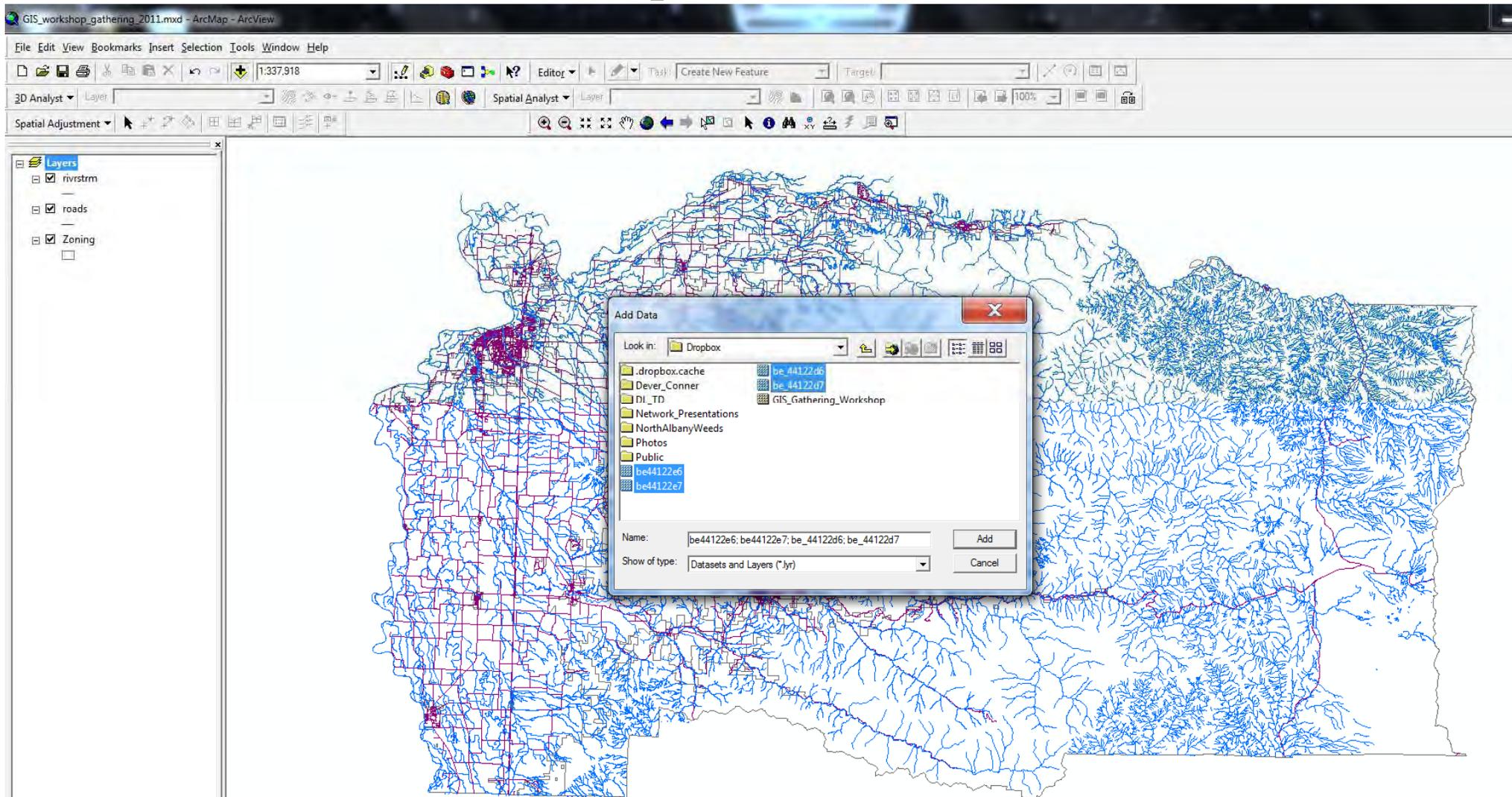


ArcMap Applications

- Processed bare earth quads
 - OR
- **Spatial Analyst** extension from ESRI to use data processing tools

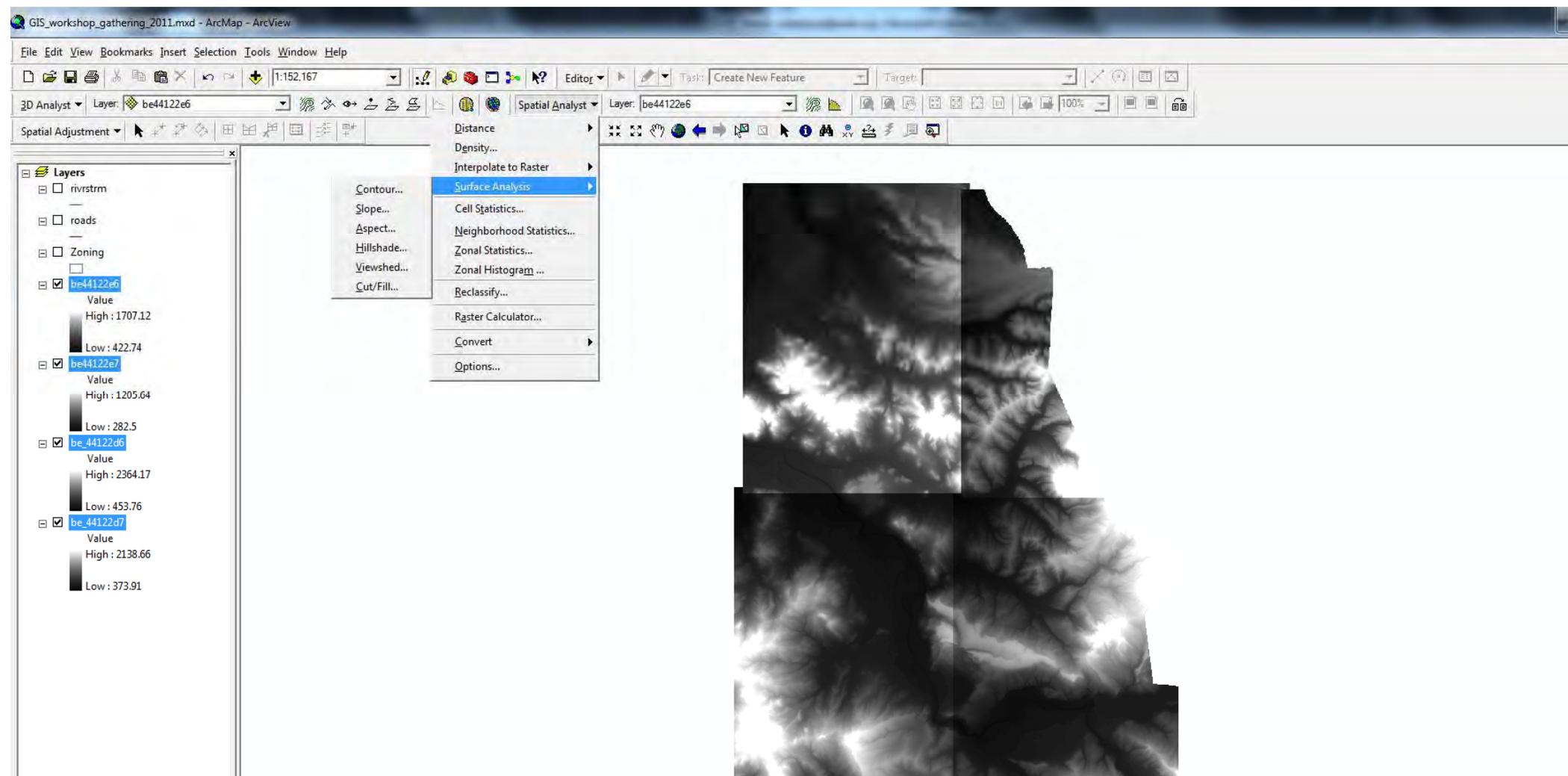
Lidar Demonstration

- Add lidar “bare earth” quads



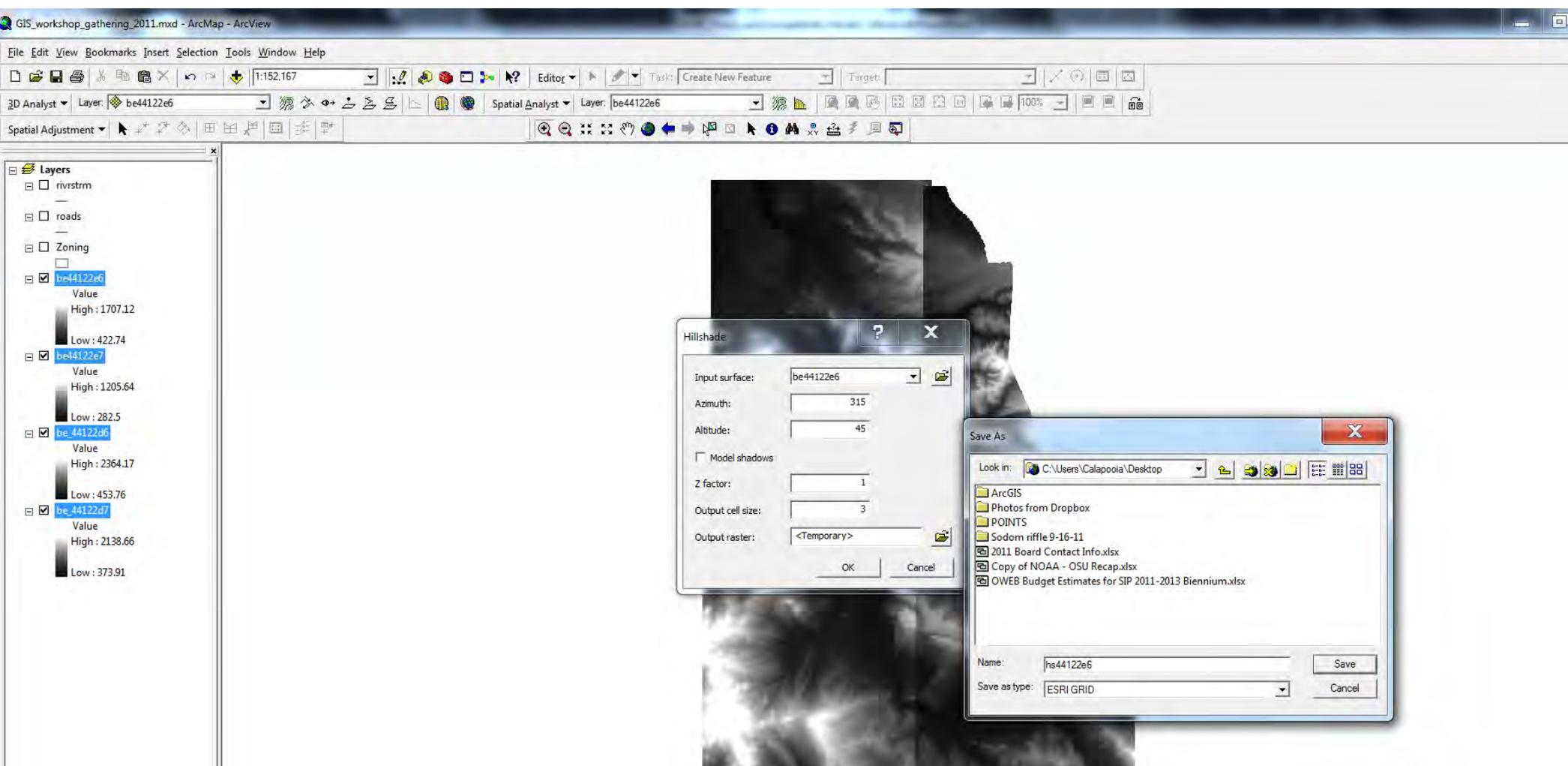
Lidar Demonstration

- Explore the Spatial Analyst Tool Bar



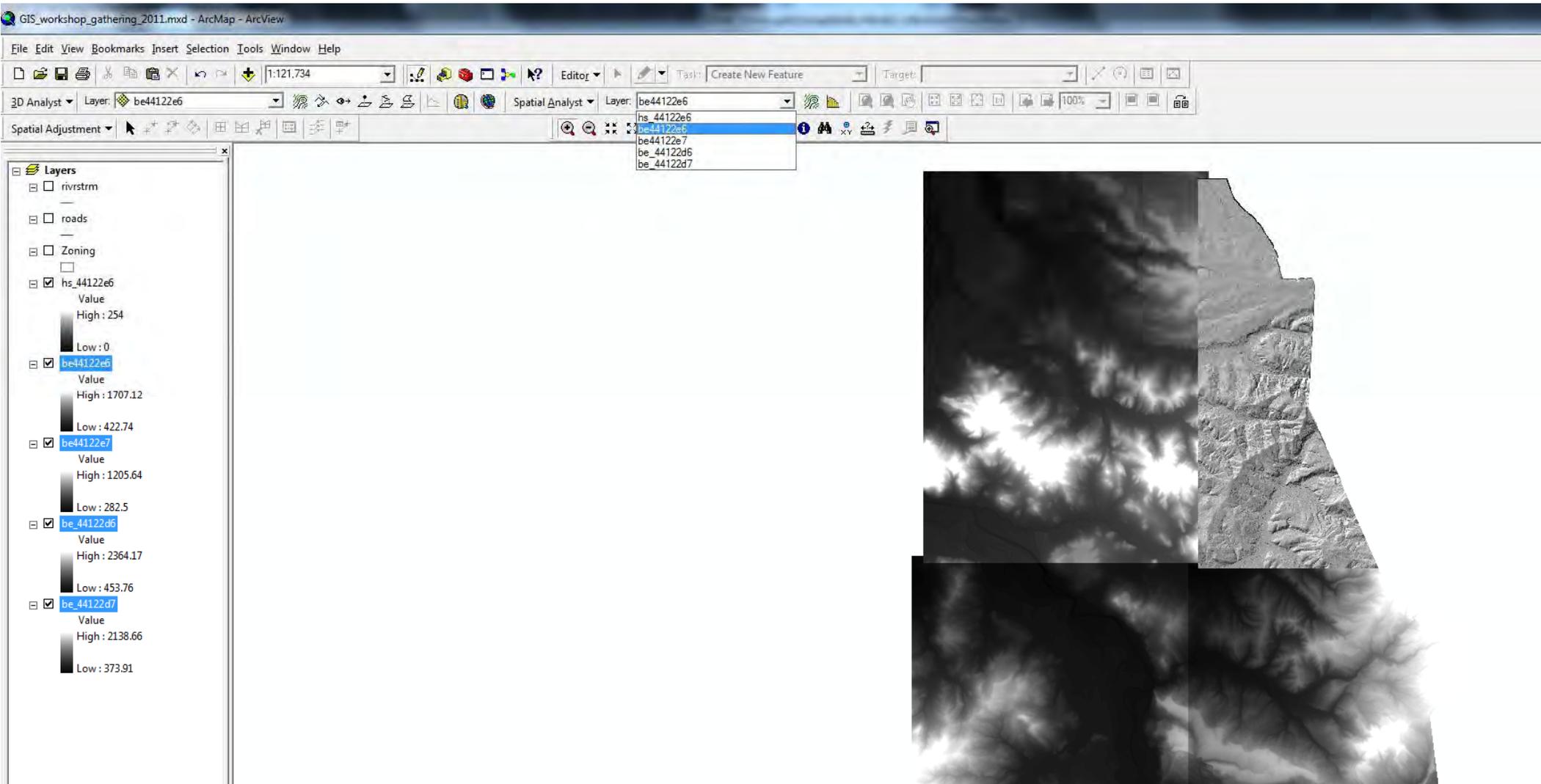
Lidar Demonstration

- Hillshade processing tool- save file on desktop



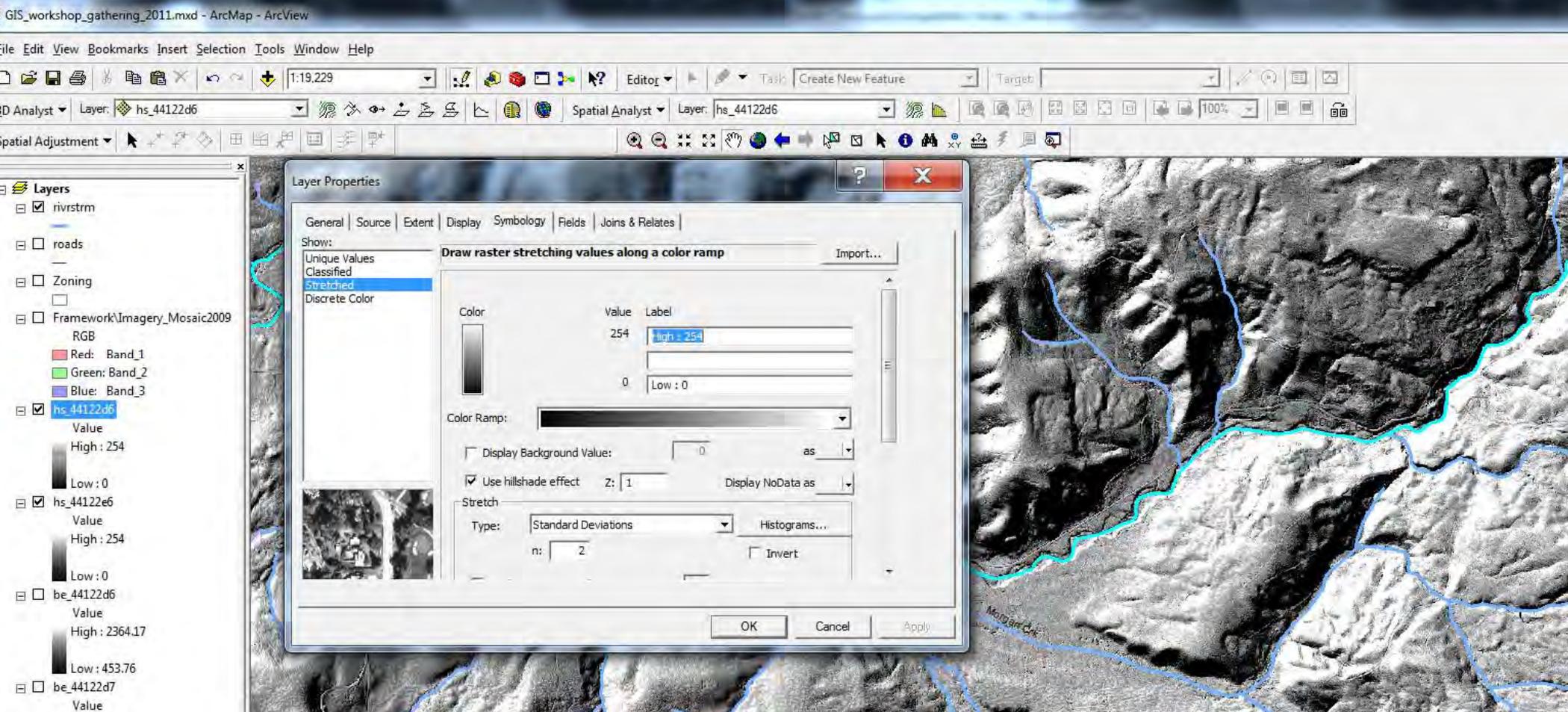
Lidar Demonstration

- Spatial Analyst- Surface Analyst Tool



Lidar Demonstration

- Review properties of the new hillshade like color ramping, elevation, transparency, etc.



Lidar Demonstration

Streaming an aerial overlay, 2009

1. Open ArcCatalog
2. In ArcCatalog, click GIS Servers>Add ArcGIS Server. It's on the left side of the navigation window.
3. When the little box opens, click next and then enter this address:
<http://oregonexplorer.info/imagery/AccessTheImagery/StreamImagery>
4. Now go to ArcMap. Click the add data button. Go to the GIS Servers and look for the link you just added and click that. Should be like this:
5. arcgis on gis.apfo.usda.gov>NIAP>Oregon_2009_1m_NC
6. You should now have aerial photos streaming into your map. It will slow things down a bit if you are zooming in and out a lot, but much better than adding tiffs.

Lidar Demonstration

- Playing with transparency

