

## LA-UR-16-22864

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Title: High-Resolution Data in a Low-Resolution Landscape

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Intended for: Project/talk for class: CE 547, GIS for Water Resource Engineering,  
UNM Spring 2016  
Web

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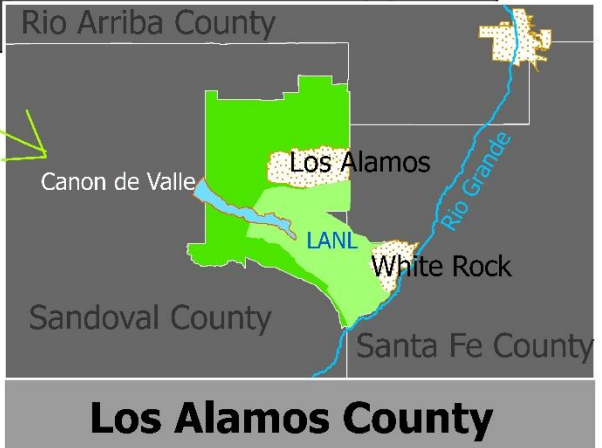
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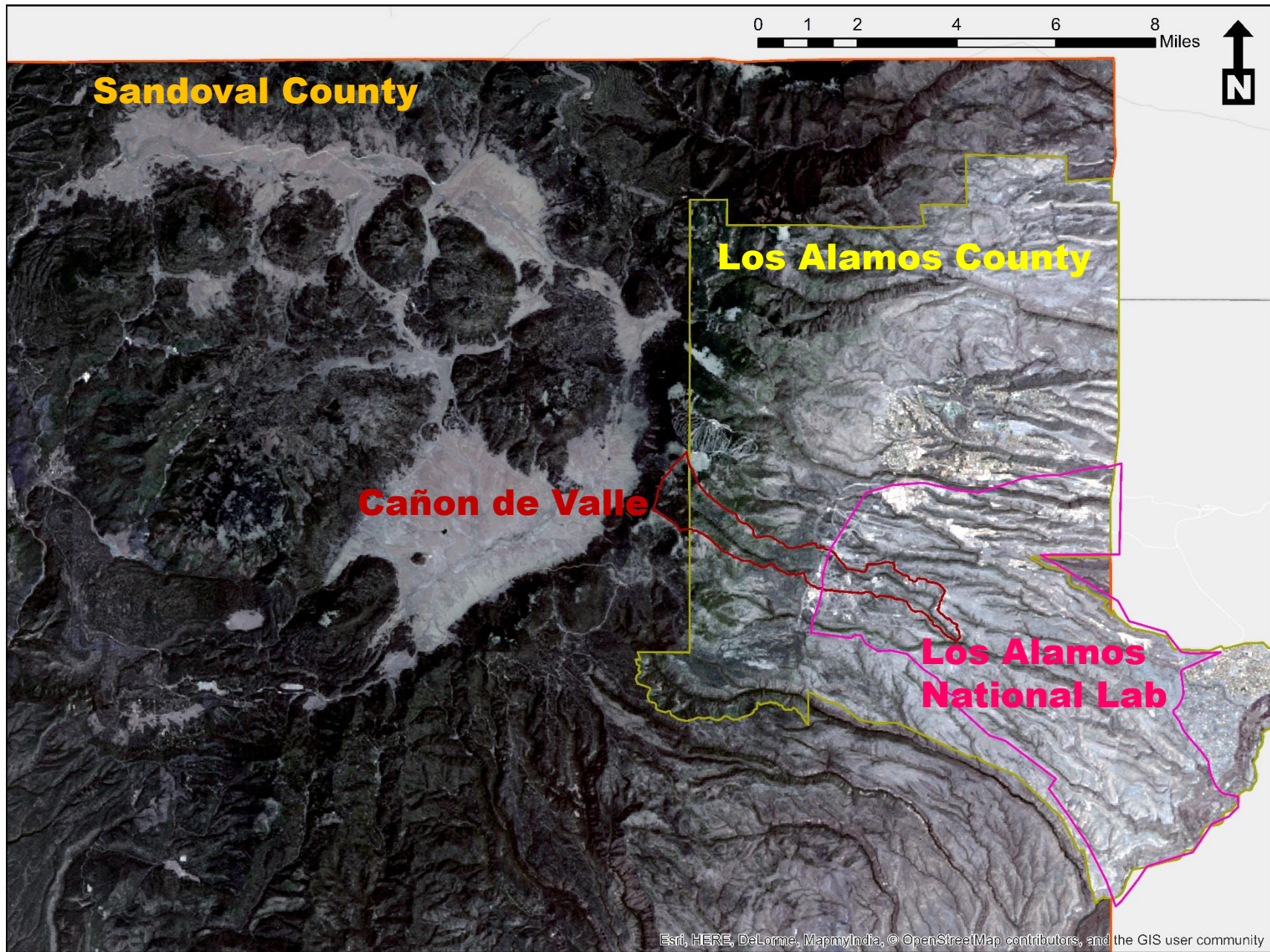
## High-Resolution Data

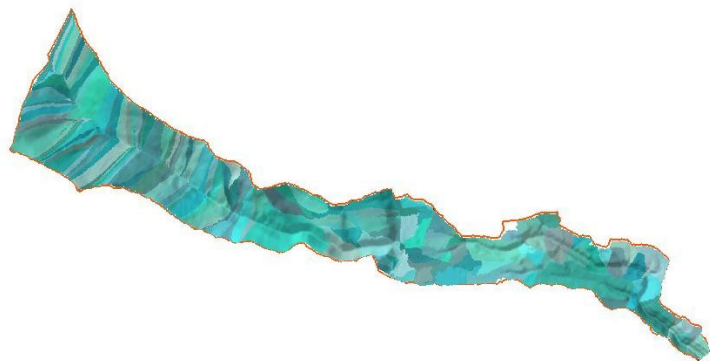


**In Low-Resolution Landscapes**

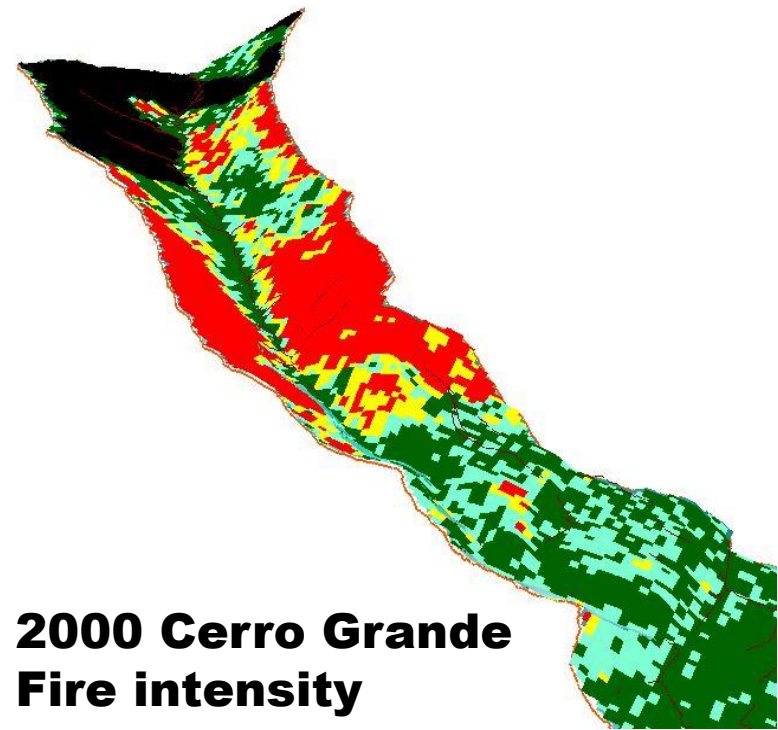
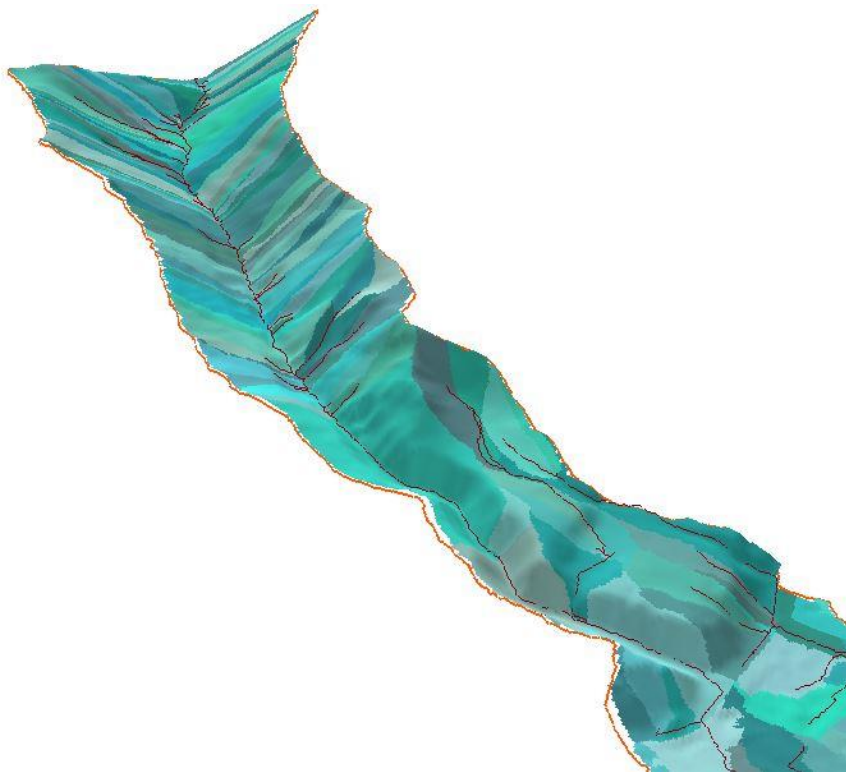
**Brendan W Brady**  
**UNM Civil Engineering – CE 547**  
**Los Alamos National Laboratory – ER-ES**  
**LA-UR-XXXX**







**Cañon de Valle 3D views**



**2000 Cerro Grande  
Fire intensity**



## **Post-Fire Changes to Watershed**

### **Sediment erosion & deposition**

**\*compare DEM layers**

### **Runoff analysis**

**\*compare flow grids**

**\*compare stream polylines**

## **Data Compared**

**(2005) 7.5 Minute Enhanced 10m DEM, GeoTIFF**

**(2014) 1-ft LiDAR (light detection and ranging)**

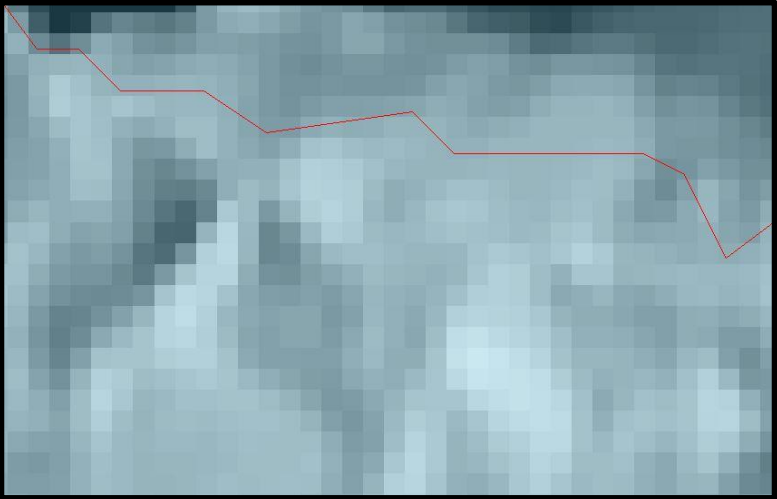
**Resampling to compare different resolutions:**

**One 10 meter pixel = ~ 1076 1-ft. pixels**

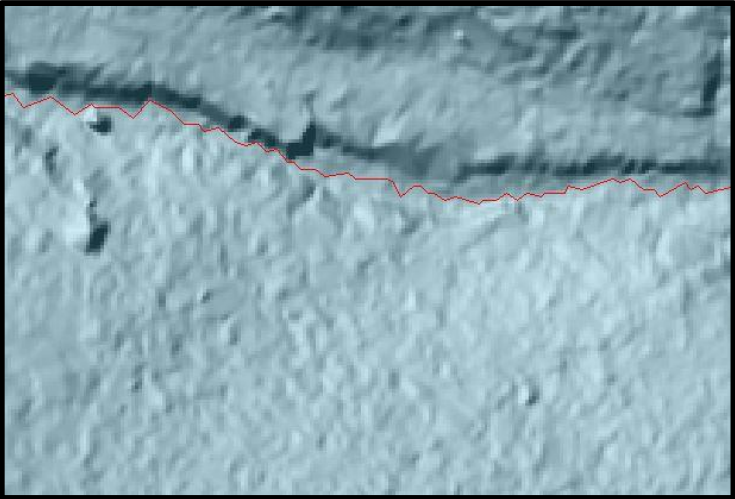
**Differential layer = resampled LiDAR - DEM**



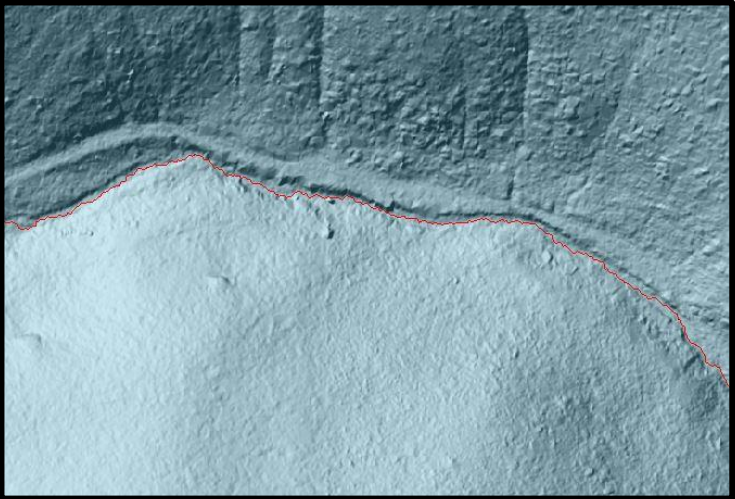
# Hillshade layer created with 1-ft LiDAR



**1:50**



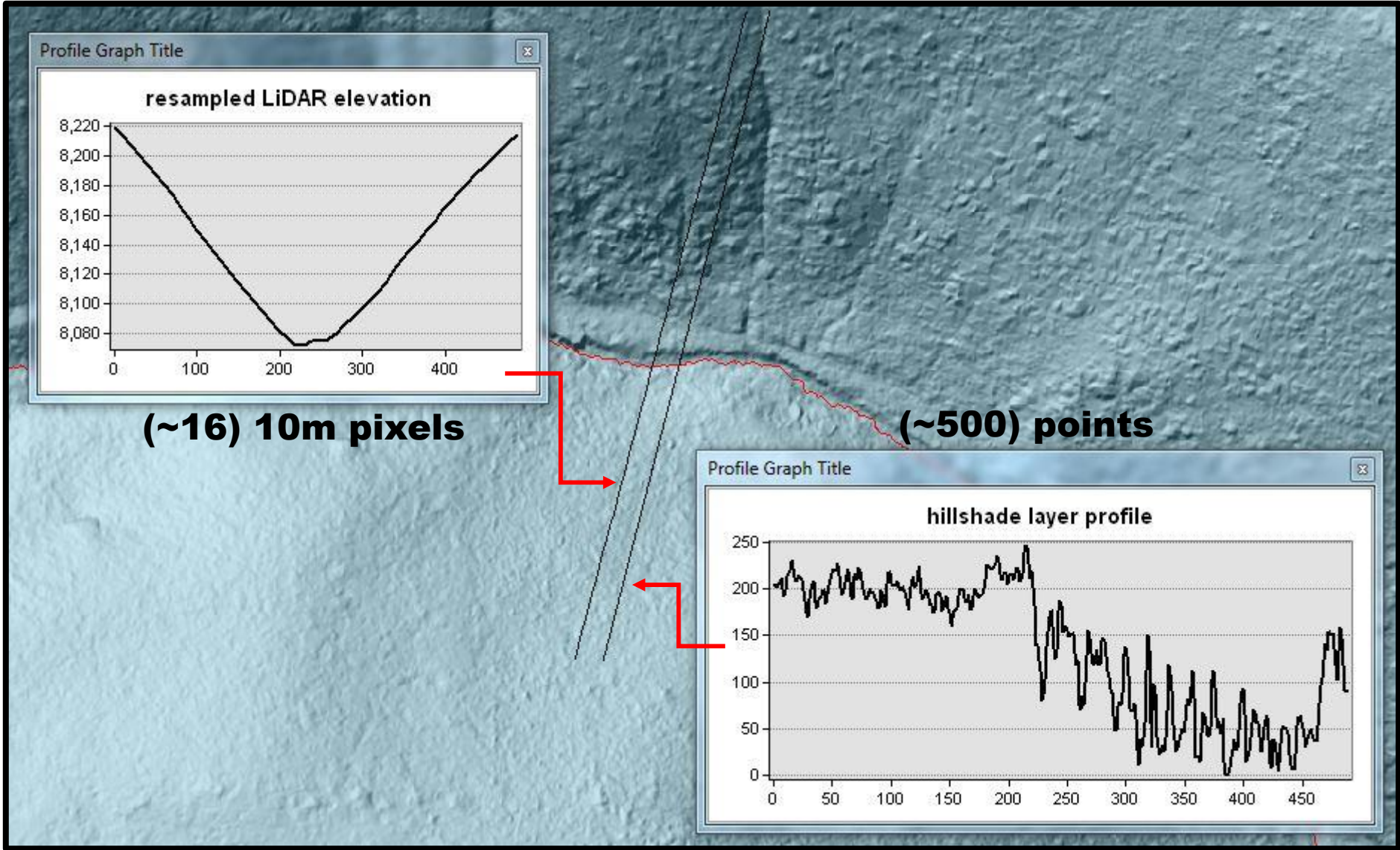
**1:400**

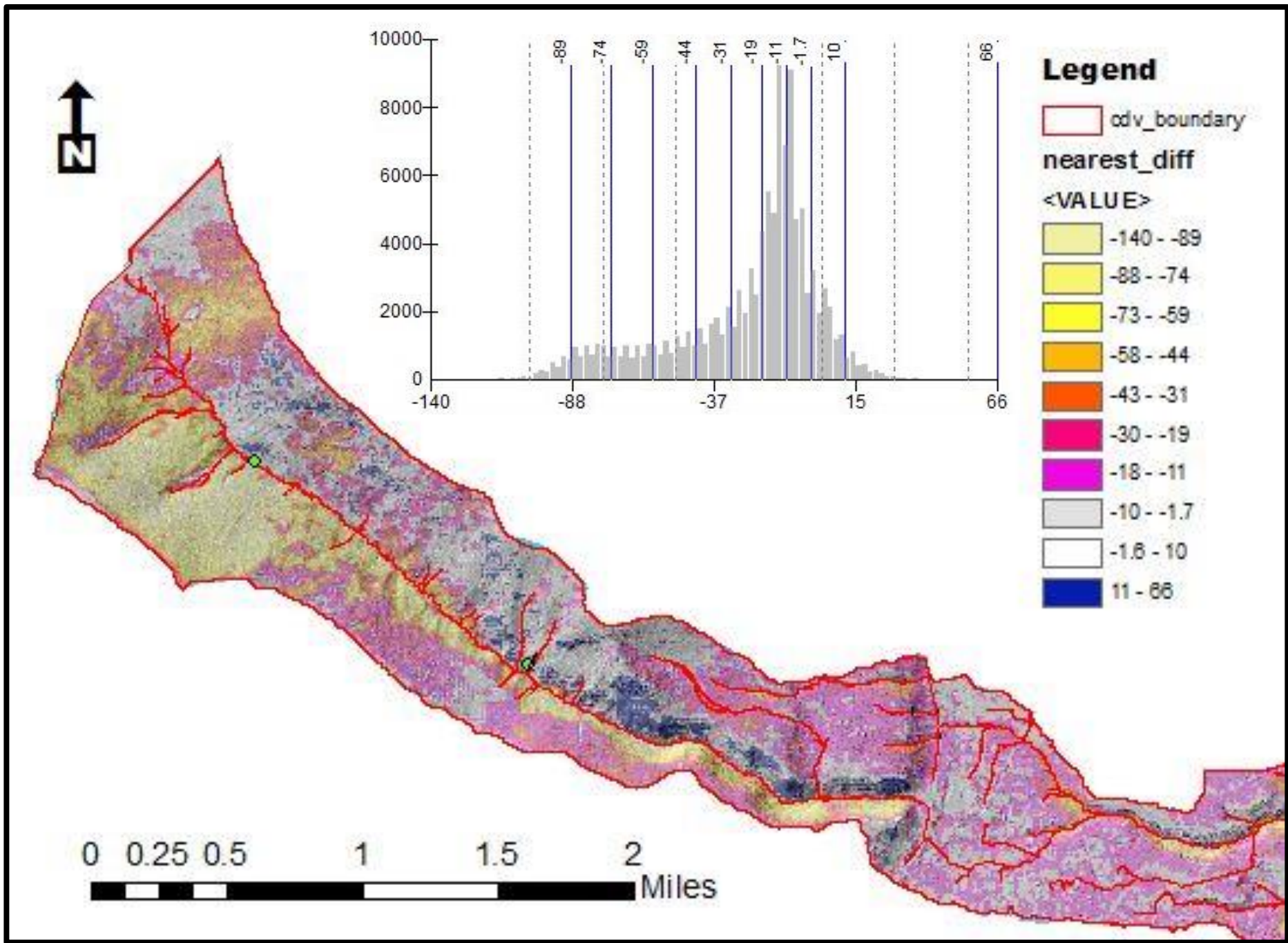


**1:1250**

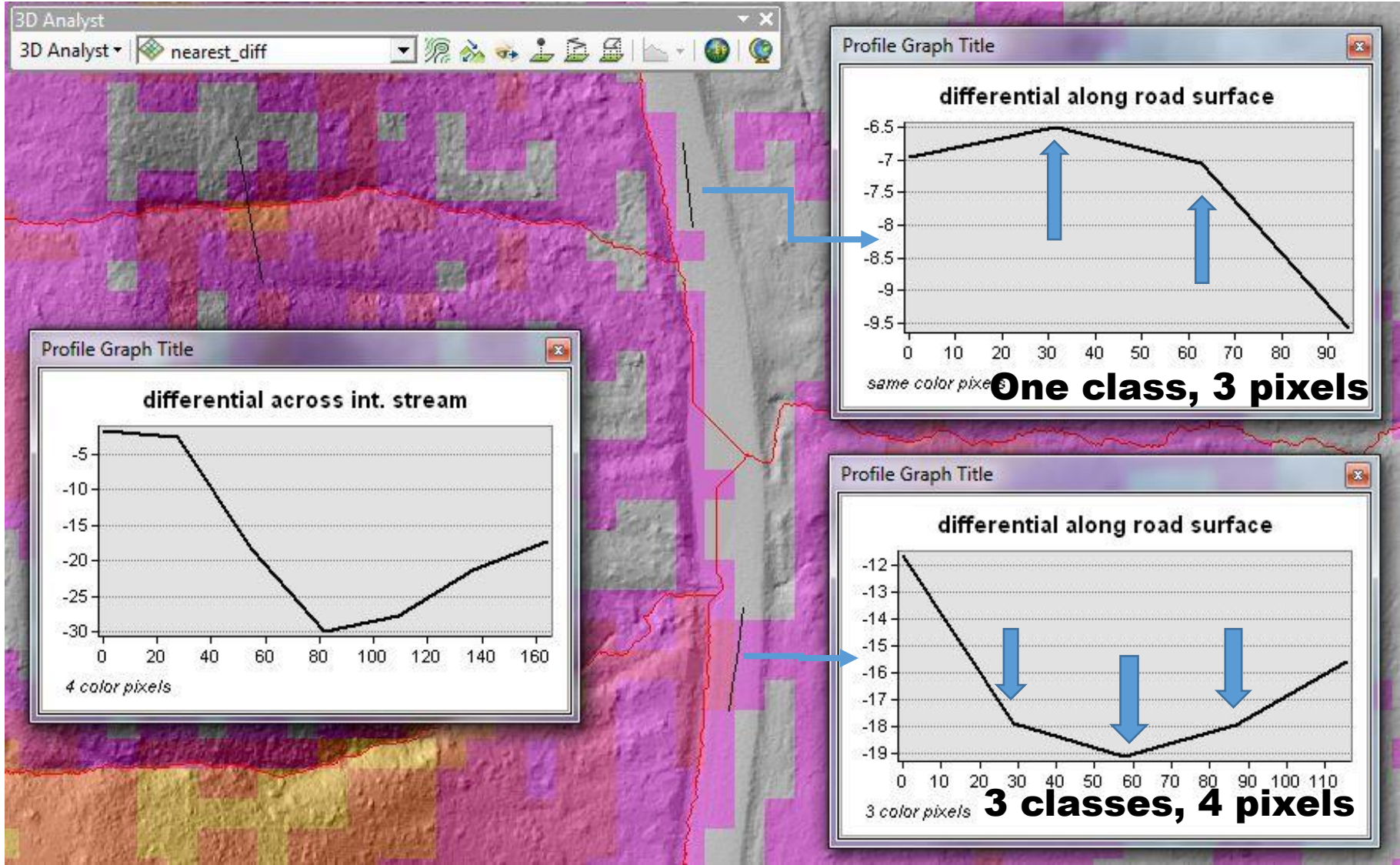




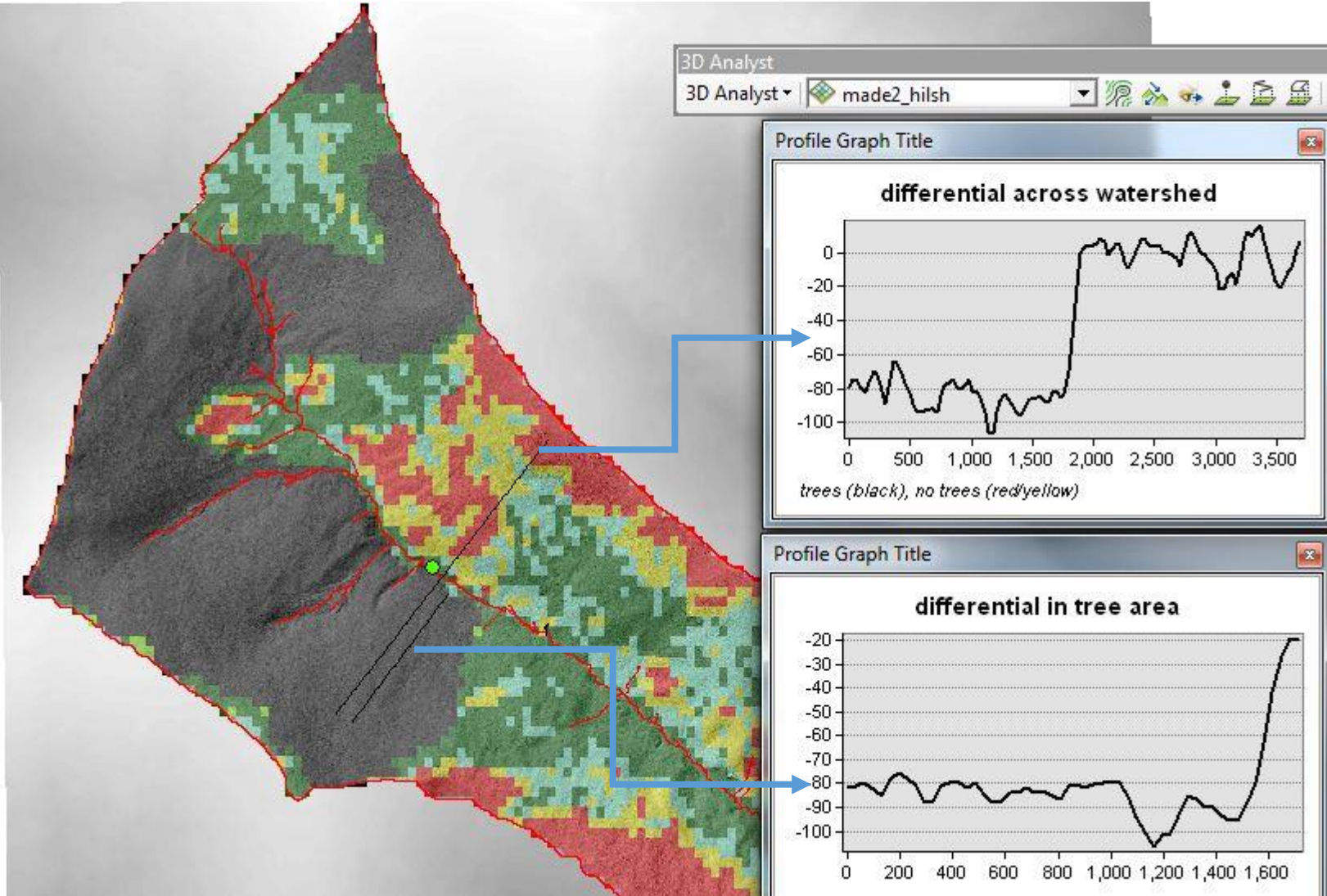




# Areas with little to no change:



# Error in LiDAR data due to tree cover

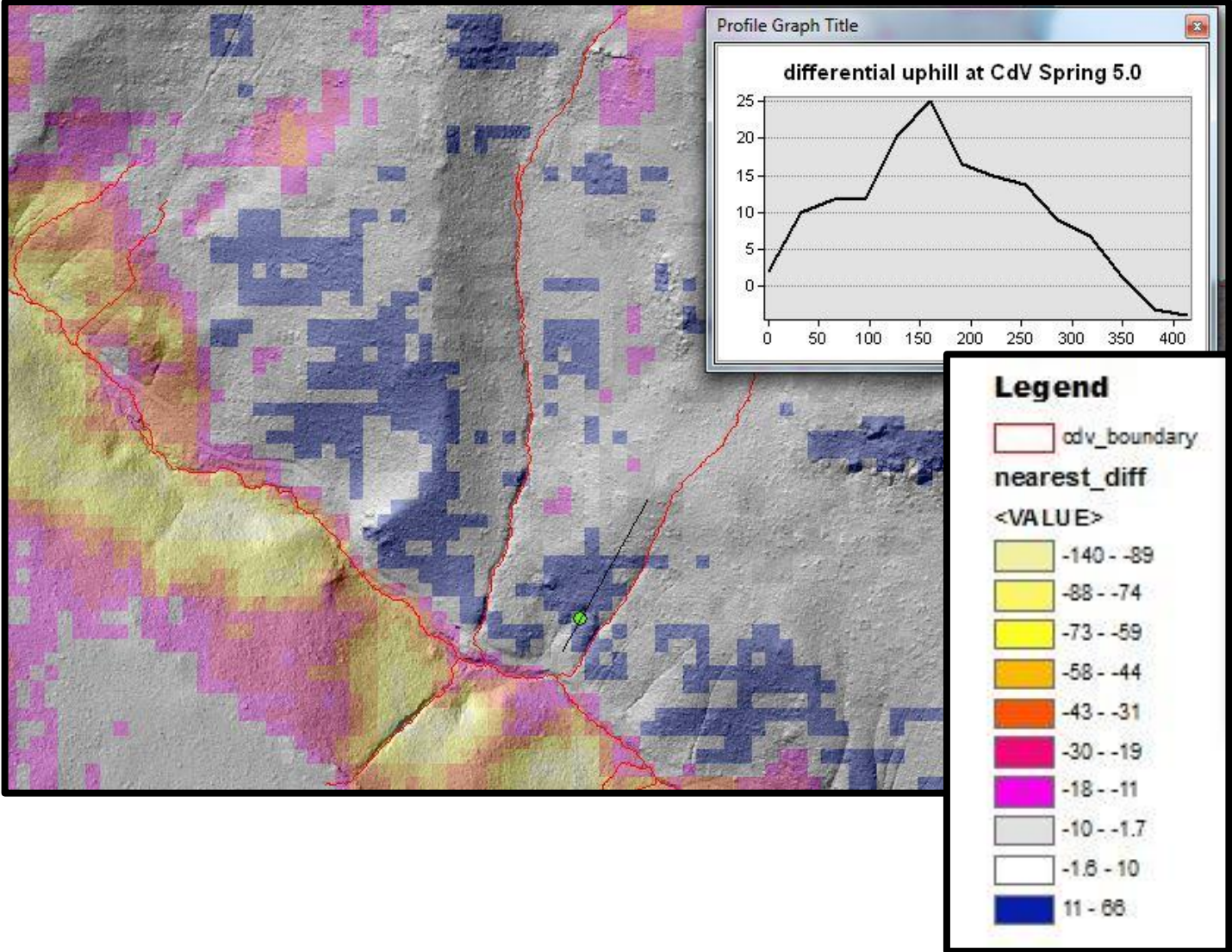


**Uphill view to approx. NE**

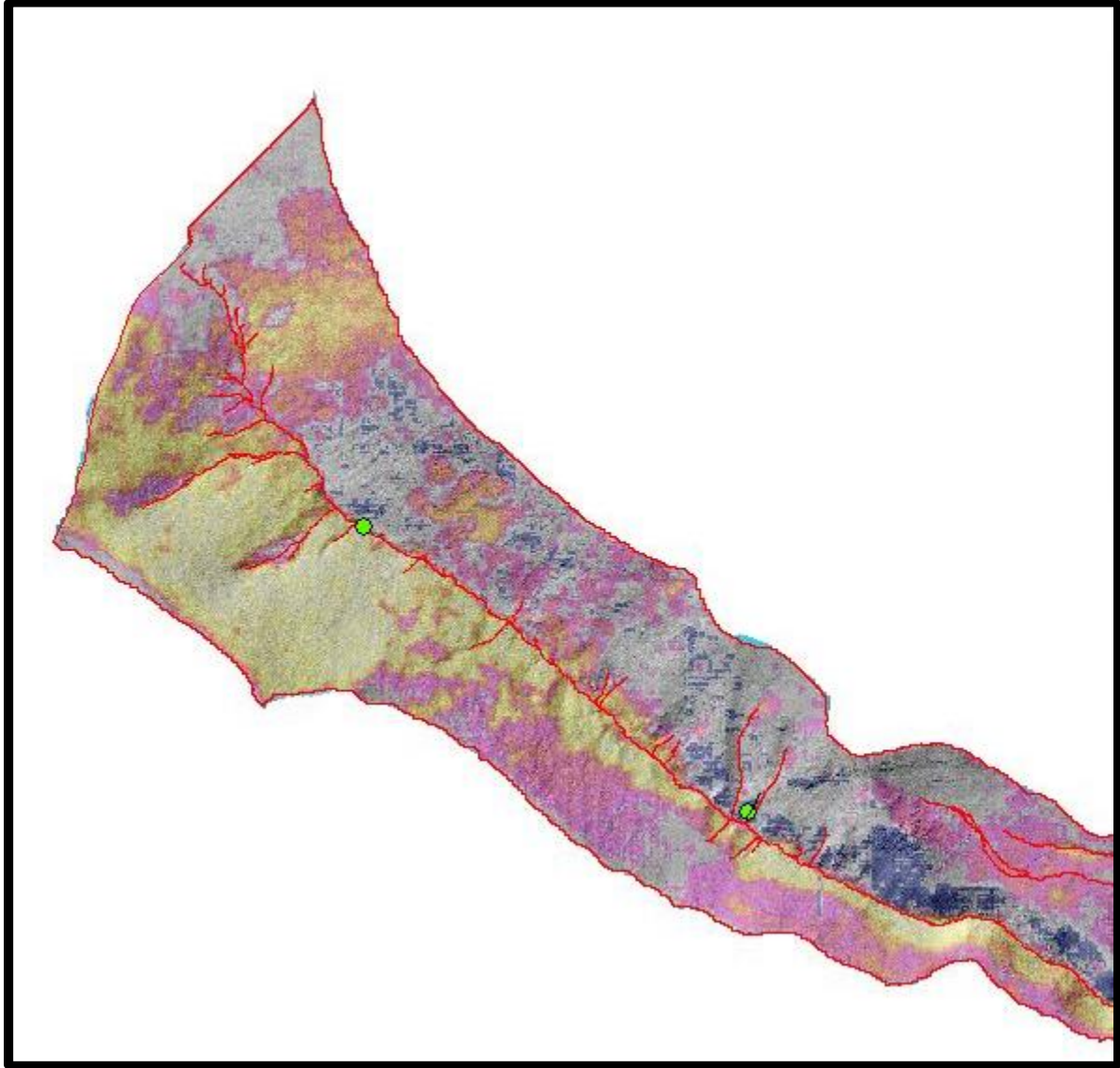


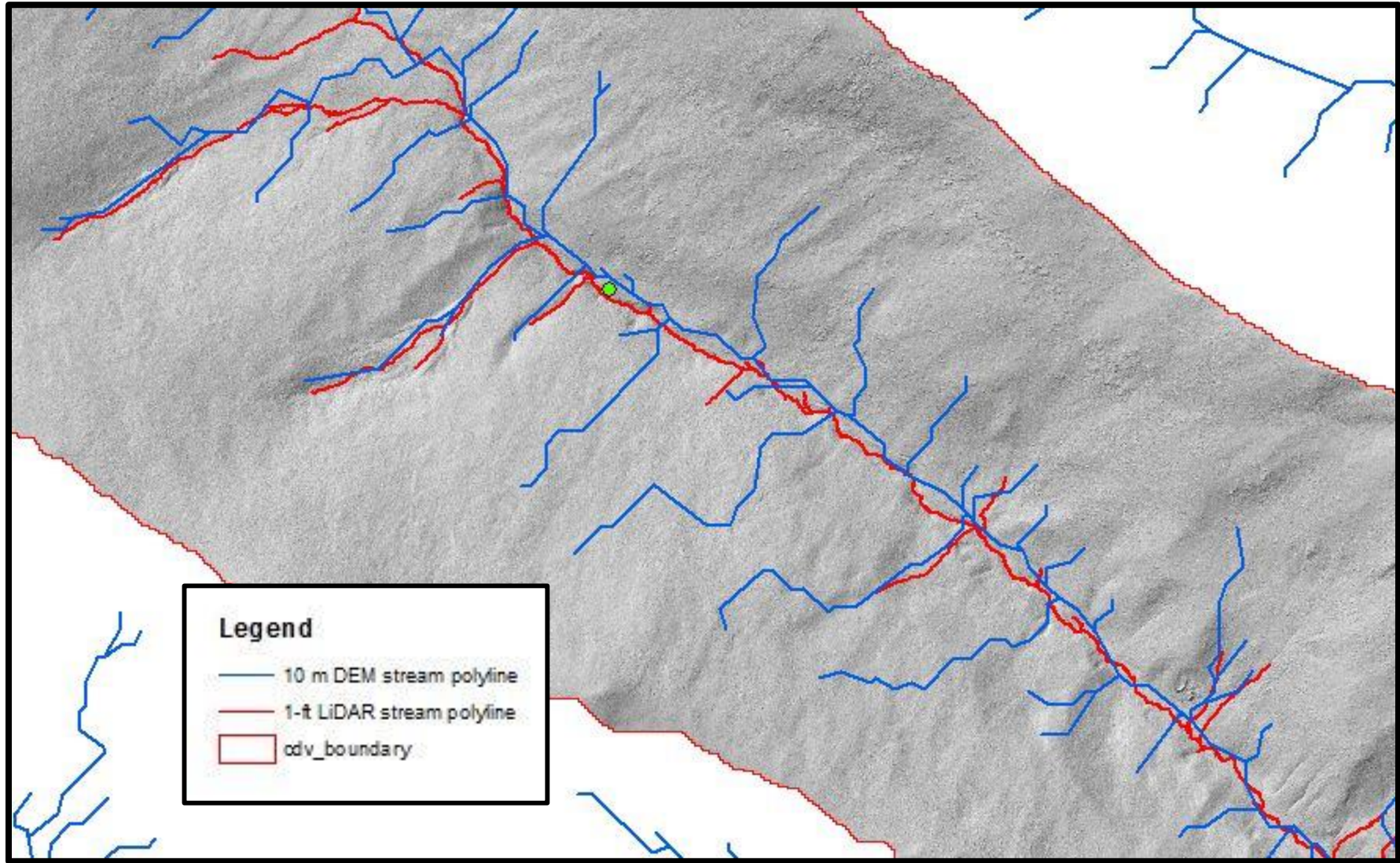
**Uphill view to approx. SW**

# New Vegetation Growth



**View to NE at CdV Spring 5.0**





**Conclusions**

**Observations**

**Future Work**



## **Many Thanks**

Amanda White

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Kevin Reid

Natalia Sanabria

David Frank

Billy Turney