Ch 10 GIS Read Me

This folder contains:

- kmzs for GoogleEarth and other virtual 3D globes of Landsat images, Thermopolis, Wyoming. Includes bands, ratios, NDV, HIS, and PC images.

- kmz of Landsat Classifications maps and Landsat imagery, Martinez, CA.

- Demonstration of input data needed for spatial analysis of remote sensing data. Least cost path vector determined from spatial analysis of DEM slope and landcover classes for Martinez, CA. Slope and landcover classes reclassified for cost/risk involved with building a pipeline. Drainage vectors included with ArcGIS .mxd project and layers.

- ArcGIS .mxd projects in version 10.2 and 10.6.

Proposed Lab Exercises

1) Thermopolis, Wyoming virtual 3D globe kmzs:
   a) Load the kmzs into Google Earth, ArcGIS Earth or other virtual 3D globe.
      - How does the spatial resolution compare with the original bands, PC's, ratios, and color composite images in the textbook's remote sensing digital database for Ch 3?
      - Vary the vertical exaggeration and develop perspective views. Save the views as jpgs. Is the spatial resolution satisfactory?
      - If using GoogleEarth, create and name a new folder in the table of contents, copy select images from the four kmzs into this new folder, and save the folder as a new kmz (right-click folder in table of contents and choose "Save Place As…") Close GoogleEarth, reopen, and add you new kmz to the table of contents.

2) Landsat imagery and classification maps, Martinez, CA as a kmz:
   a) Load the kmzs into Google Earth, ArcGIS Earth or other virtual 3D globe.
      - Vary the vertical exaggeration and fade a classification map to arrive at a perspective view that is informative. Export as a jpg.
      - Add other layers that are available with the virtual 3D globe (roads, places, labels, etc.). Export as an informative, annotated jpg.

- Demonstration of input data for Spatial Analysis, Martinez, CA:

Proposed Lab Exercises

3) Demonstration of input data for Spatial Analysis, Martinez, CA:
   a) Compare the attribute tables of the reclassified slope and reclassified land cover map to the original DEM and thematic raster map. What is the difference? What do the numbers mean for spatial analysis?

   b) What types of landcover have the least cost/risk for the proposed pipeline?
      a) Landcover maps in Ch 9 Remote Sensing Digital Database folder.

   c) What is the highest slope in the DEM? What value is this slope given in the reclassified slope grid?

   d) What other parameters derived from remote sensing could be used in this spatial analysis to further refine the cost/risk of different routes for a pipeline?

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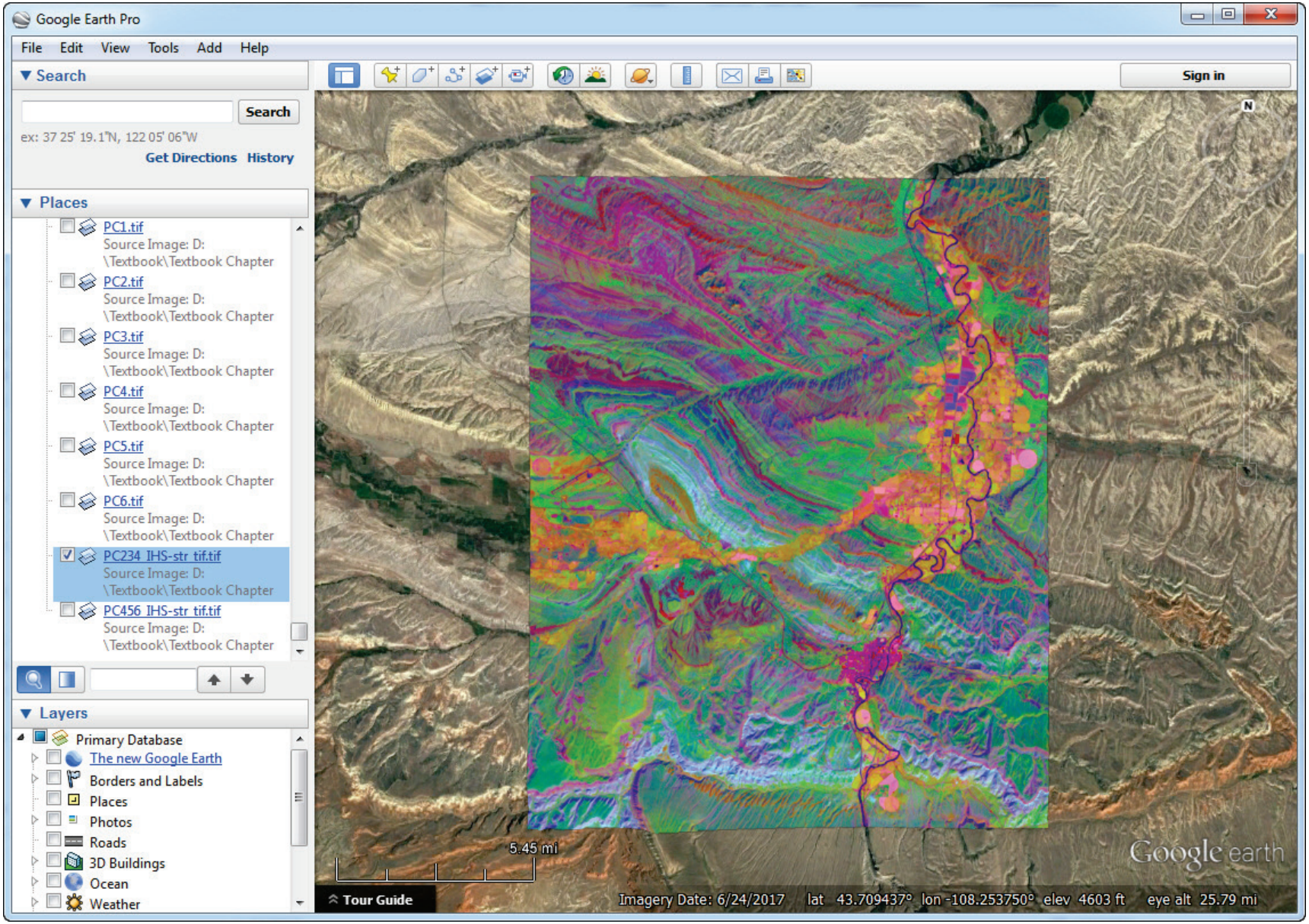
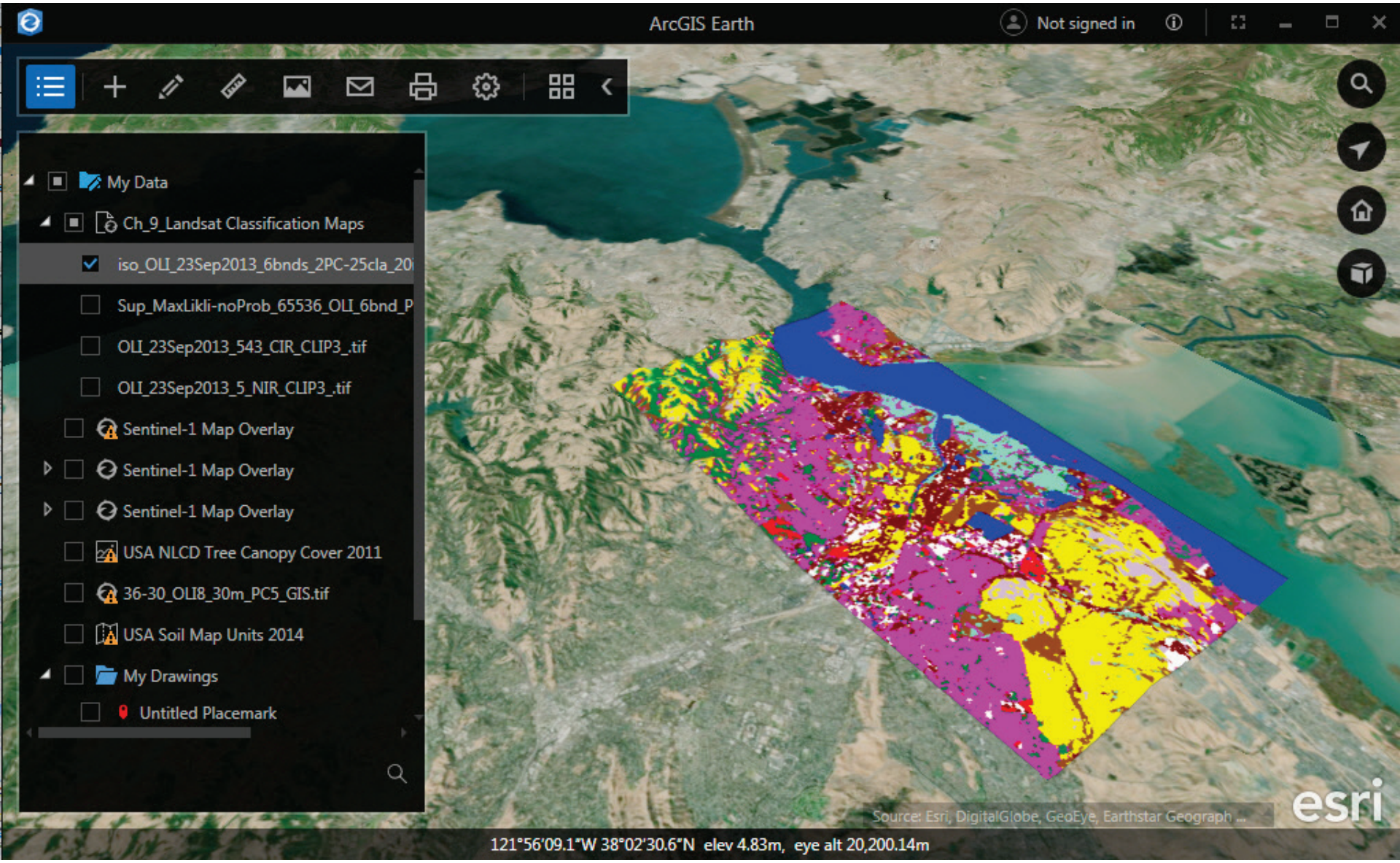


Data courtesy USGS Digital Database

Kmzs of georeferenced Landsat images, Thermopolis, Wyoming in Google Earth

Plate 7 ; Figure 3-11A-G; Plate 27, Figures 9-21, 9-23A-F, 9-25, 9-27

J. Ellis – 5Jun2019



Data Courtesy USGS

Digital Database

Kmz of Landsat images and landcover maps, Martinez, California in ArcGIS Earth

Plates 29 and 30; Figure 9-28

J. Ellis – 26 Sep 2018

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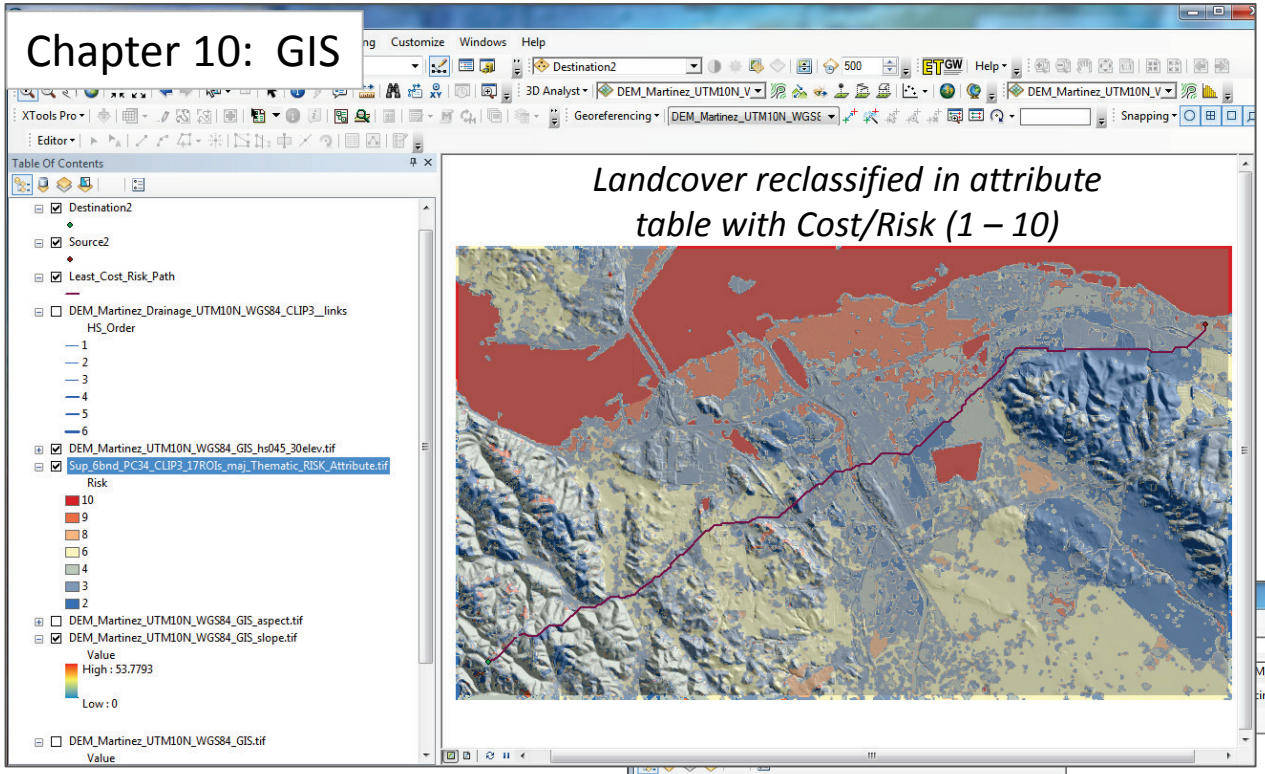

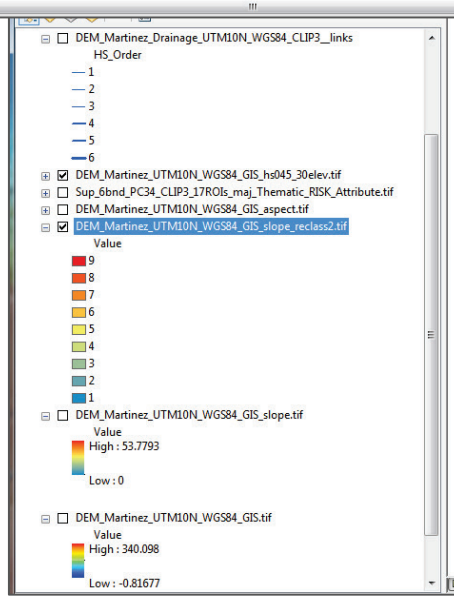

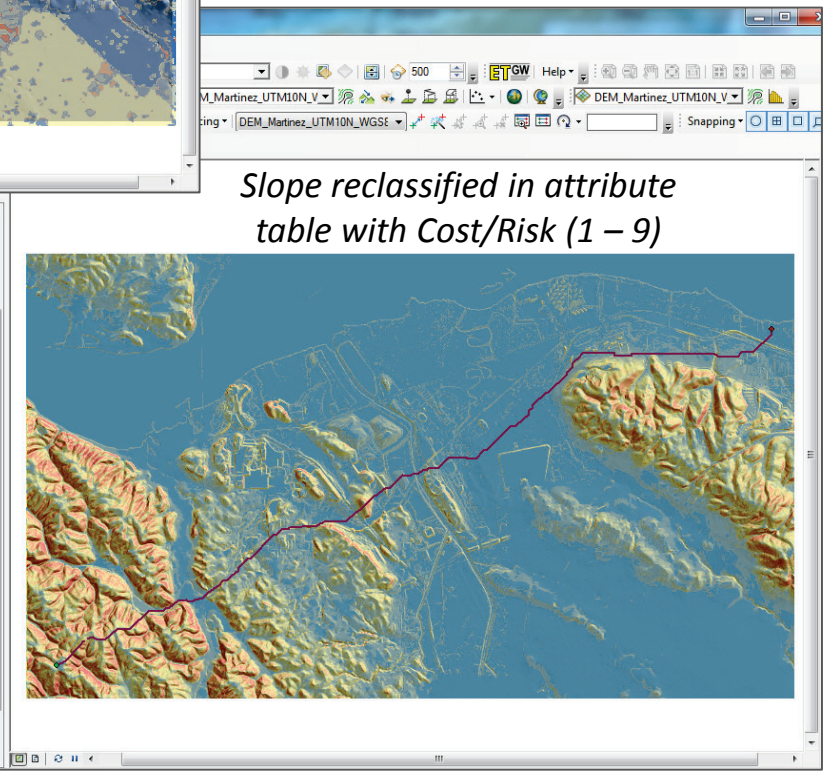

Martinez, California
Spatial Analysis of RS data

Data Courtesy USGS