Methodology

* UNSUPPORTED DATA TYPE 1500 ORTHElevation
* Prepare to take data
  + Change to projected map – Robinson???
  + Make a slope map (degree, planar) for each dem
  + Delineate watershed
    - Flow Direction tool
      * Lc\_dem\_clip as input surface raster (entire area of last chance)
      * D8 as flow direction type
    - Flow accumulation
      * Input flow direction raster-from previous step
      * Data type – float
    - Watershed (spatial analyst)
      * Input d8 use raster from first step
      * Use create new feature for point (right upstream from dem)
      * Can use snap pour point
    - Make polygon along lines and delete and/or turn off all others
    - Make transparent
  + Made transect line along the middle of the ortho
  + Make scene with elevation from dem
  + Use inset>distance and direction to make 150 m line along transect
    - Create new polyline that is 150 m from this line
    - Calculate Geometry
      * Input features – 150 m
      * Geometry property, target field – shape length, length geodesic
      * Unit meters
      * Coordinate system – back to itself
  + Make slope lines with distance and direction
* Channel Morph
  + Channel Slope
    - * Measure elevation at both points and length
      * Divide
  + Hillslope Length
    - Measure from channel to watershed ridgeline
  + Elevation of break between shallow and steep HS section
    - Turn off transect and look at slope map for last chance
    - Find breakpoint of steepest to mid to shallow
      * In between slope corresponding to <25 and <20
    - Put in a label point
  + Curvature of steep section
    - Make line feature over area – distance and direct - export
    - Make slope map
    - Use add surface information – slope of slope should be curvature
  + Curvature of shallow section
* Hillslope morph
  + Labeling
    - Use slope bullseye to place data point markers every 20 m along transect
    - Label
  + Slope
    - Summarize elevation
    - Use Slope lines
* Outcrop bedding plane distribution
  + Take elevation and bedding thickness data for the slope
  + Can go to scene and use analysis – exploratory 3d analysis – elevation profile
  + Record distance from channel
  + Do statistics for the area underneath

Open agisoft

Add photos

Step1

Align photos

Accuracy highest

Step 2

Step 3

Build DEM

Step 4

Build Ortho

From DEM

* Channel Morph
  + Hillslope length
    - I visualized the watershed using the watershed tool, which indicated the ridgeline. Then using the measure tool I found the length between the ridgeline and the channel along the transect (a line running roughly through the middle of the area).
  + Elevation of channel, Elevation of ridge
    - I used the explore tool to find the DEM data at the points along the transect on the ridgeline and the channel.
  + Elevation of break between shallow and steep HS section, length of steep, length of shallow
    - I created a 3D scene of the area using each DEM as the elevation source for that area. I created a slope map and picked a point where the color changed from dark to light, indicating a change from steep to shallow.
* Hillslope Morph
* Outcrop
* Slope
* Curvature