

# Build Yosemite BASE, Experiment with Python, 3D Fly- Through Animation

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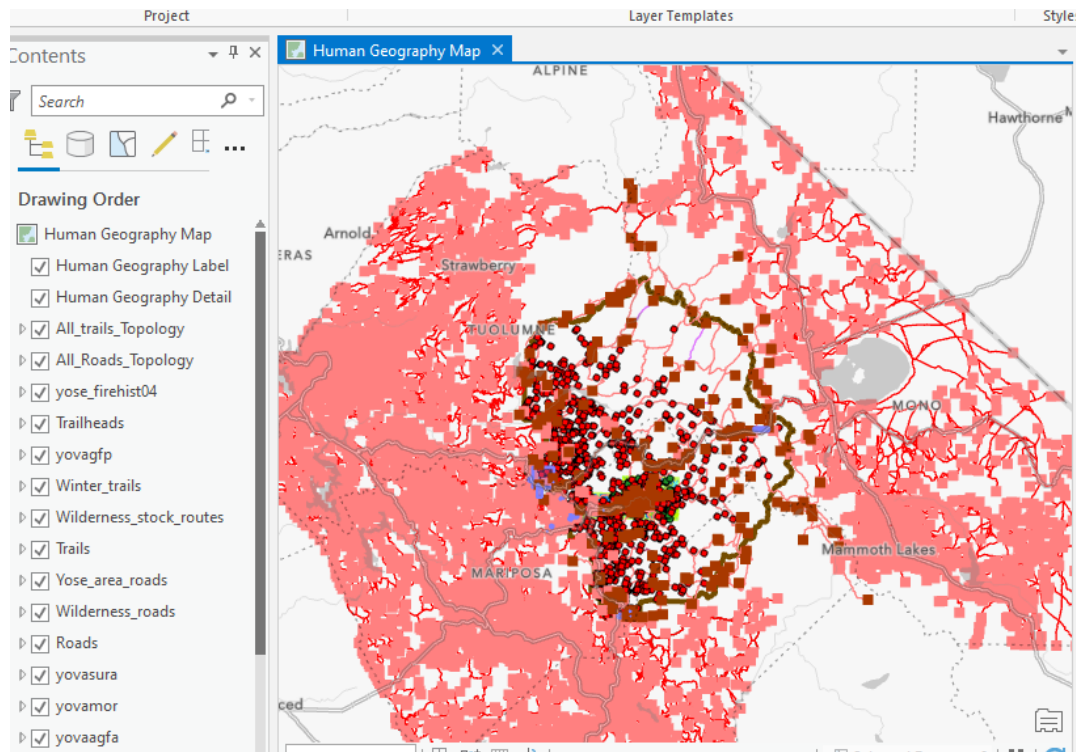
Data source:

National Parks Service-IRMA  
Forestry and Fire Protection (FRAP)

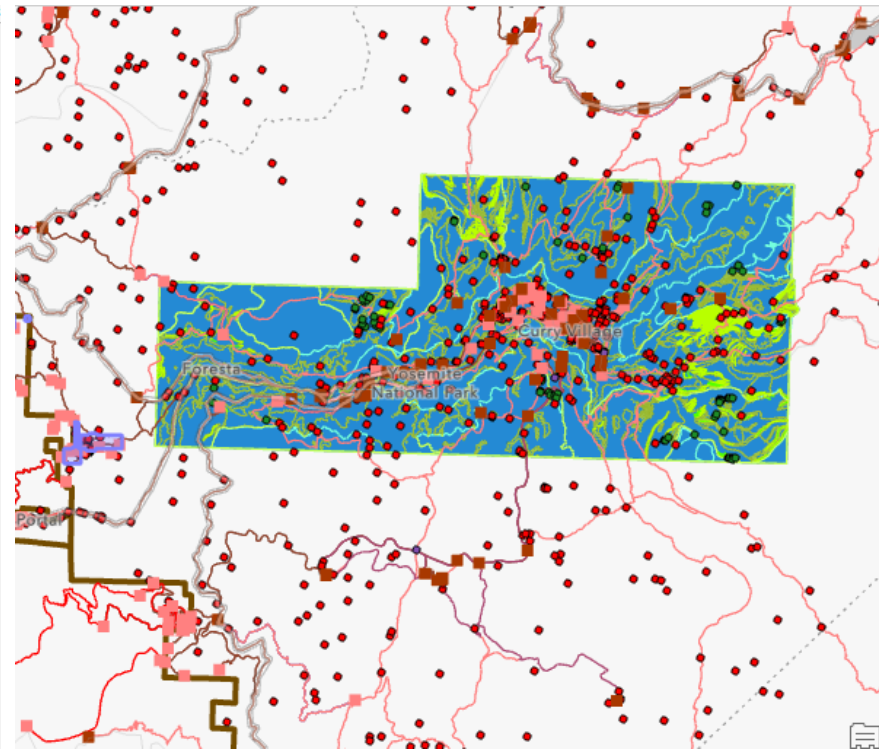
# Outlining process

- Download and unzip data from National Parks Service-IRMA:  
<https://irma.nps.gov/Datastore/Search/Advanced>
- Download and unzip data from Forestry and Fire Protection (FRAP):  
<https://frap.fire.ca.gov/mapping/gis-data>
- Transform geoJSON file to be read from ArcGIS Pro
- Transform e00 file to be read from ArcGIS Pro
- Data visualisation
- DEM and its derivatives visualisation
- 3D Fly-Through Animation on Yosemite area

# Showcasing vector data samples



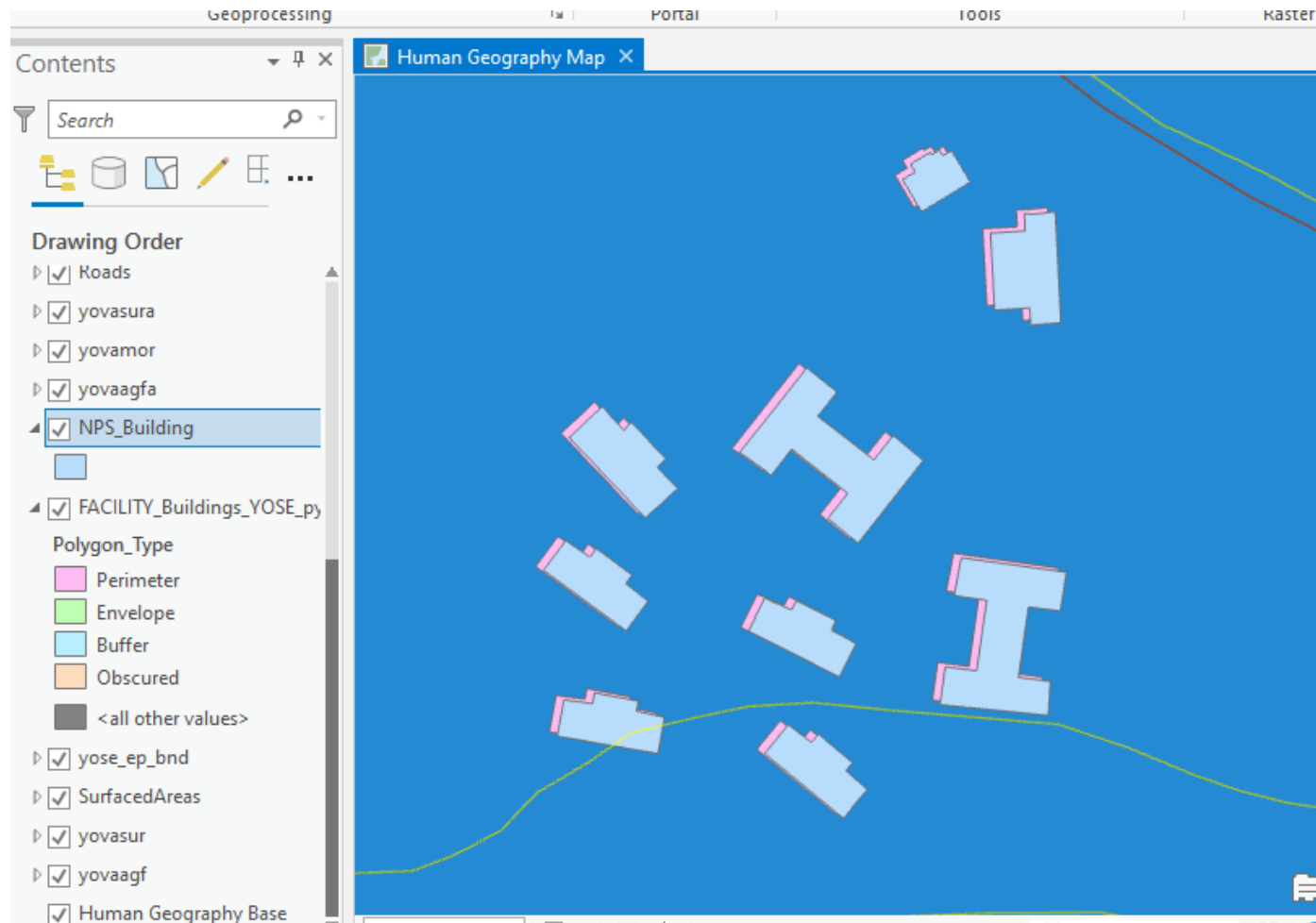
Overview of the Yosemite boundaries (brown line) and its surrounding area



Overview of Yosemite Valley (blue polygon) and its glacial and postglacial deposits features

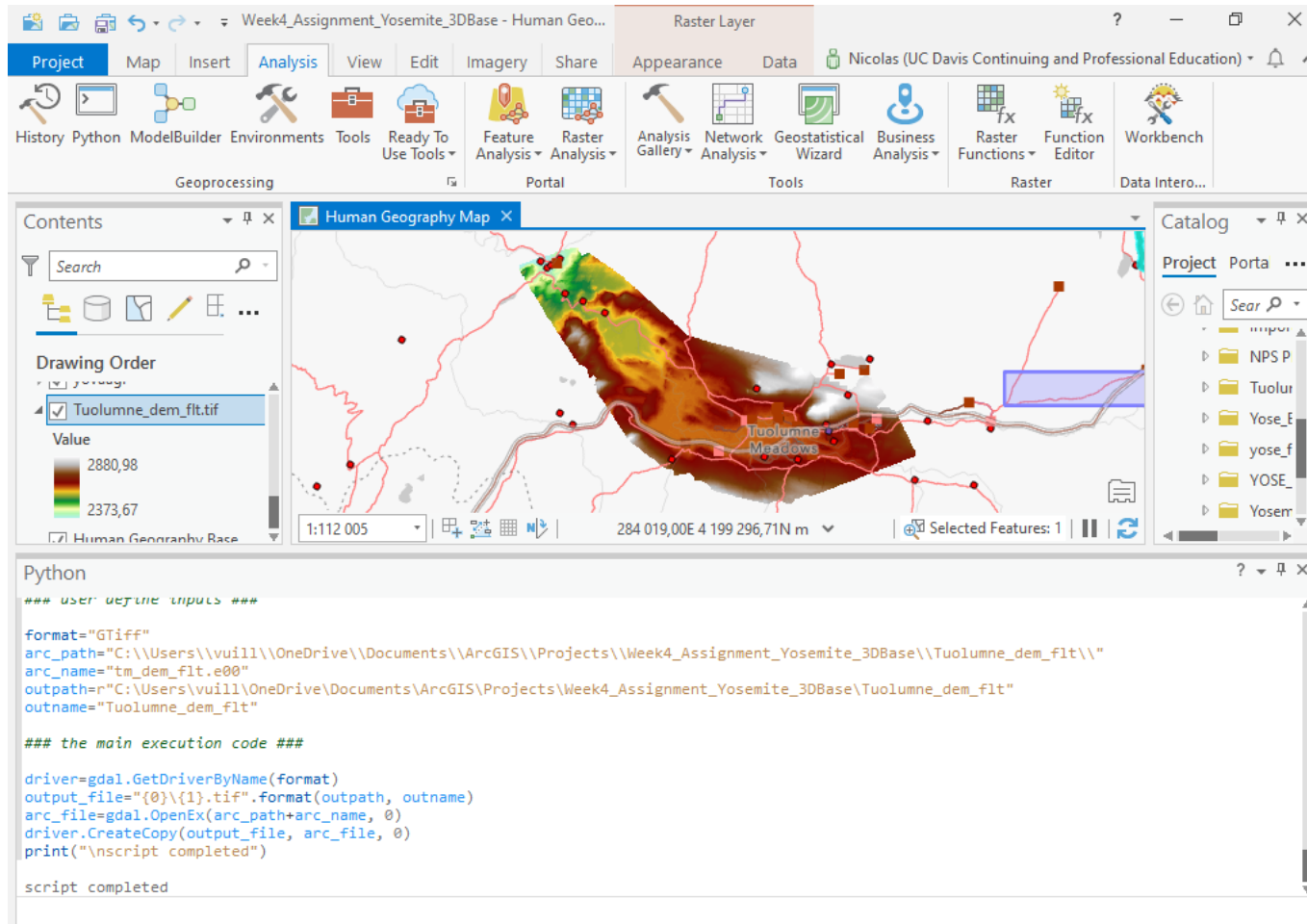
- All\_trails\_Topology
  - Dirty Areas
  - Point: Errors
    - Exception
    - Error
  - Line Errors
    - Exception
    - Error
  - Polygon Errors
    - Exception
    - Error
- All\_Roads\_Topology
  - Dirty Areas
  - Point: Errors
    - Exception
    - Error
  - Line Errors
    - Exception
    - Error
  - Polygon Errors
    - Exception
    - Error
- yose\_firehist04
- Trailheads
- yovagfp
- Winter\_trails
- Wilderness\_stock\_routes
- Trails
- Yose\_area\_roads
- Wilderness\_roads
- Roads
- yovasura
- yovamor
- yovaagfa
- yose\_cp\_bnd
- SurfacedAreas
- yovasur
- yovagf

# Offset between the NPS Places database buildings and the Yosemite Buildings feature layer



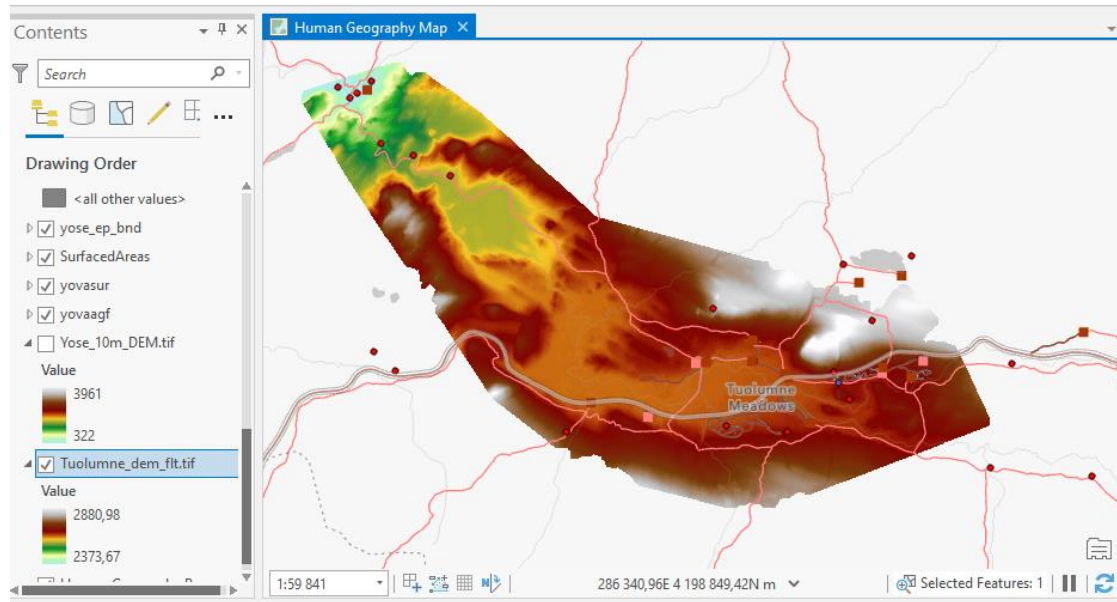
- A datum shift can be observed between the two different datasets (facility building and NPS building)
- This kind of shift can occur when we are dealing with two different sources of dataset

# Abstraction Library (gdal) to convert a relic format (\*.e00) to a usable format (\*.tif)

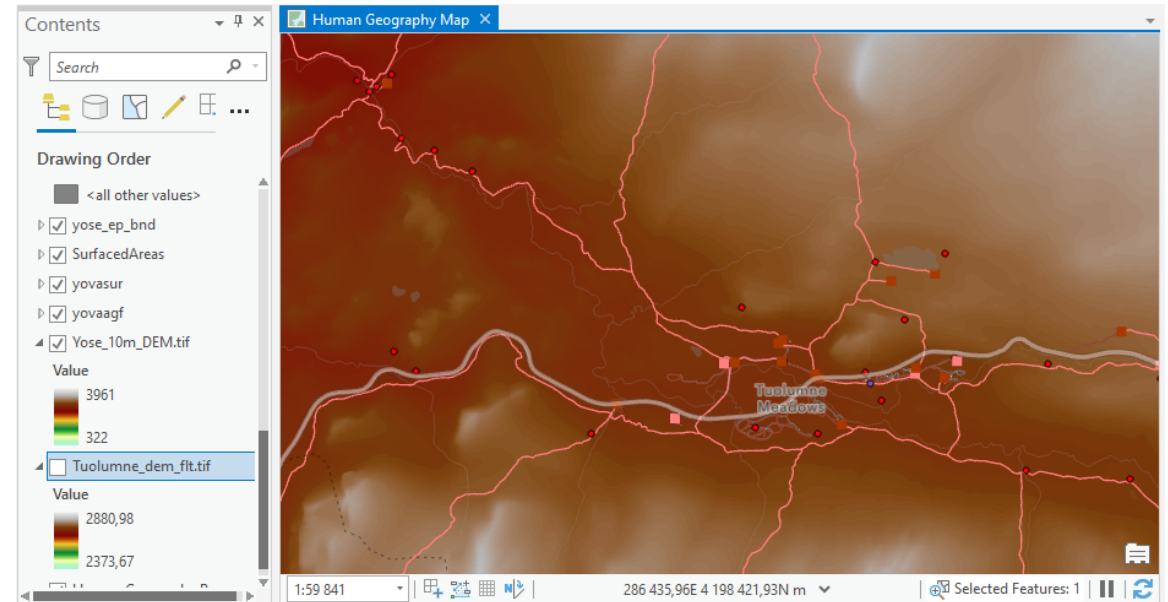


- Filtered LiDAR DEM for Tuolumne Meadows inside Yosemite boundaries

# Comparing the Filtered LiDAR DEM for Tuolumne Meadows with the 10m DEM for Yosemite



DEM for Tuolumne Meadows

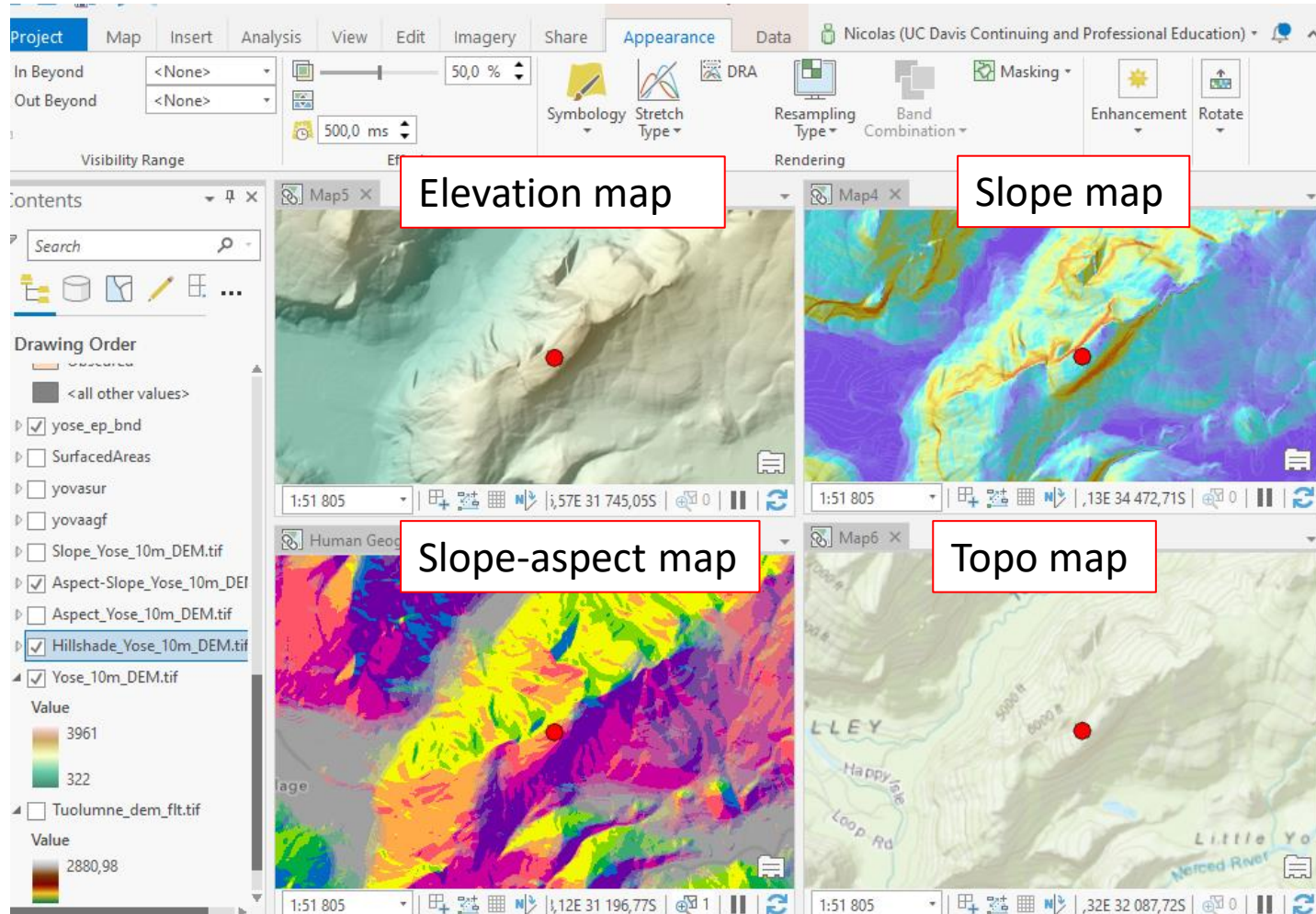


10m DEM for Yosemite

- 10m DEM Yosemite have been performed at high scale and contains less details and resolution than DEM for Tuolumne Meadows



# 4 linked maps including elevation, slope, slope-aspect, and a topo map



- Flat aspect is visible in grey in Slope-aspect map while it's in dark blue in slope map
- Slope-aspect map contains two types of information:
  - 1) Color intensity distinguishes steep slopes from mellow slopes
  - 2) Color ramp distinguishes North and West faced slopes versus South and East faced slopes

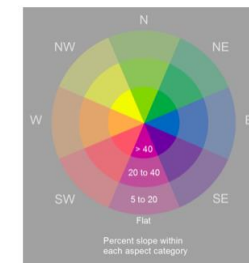


Figure 2. Aspect-slope map legend

# 3D Fly-through Animation

**Link to the video:**

[https://github.com/Nicodroneagro/Spatial-Analysis-and-Data-Handling-Using-ArcGIS-Pro-University-of-California-Week4/blob/master/Yosemite\\_3D.avi](https://github.com/Nicodroneagro/Spatial-Analysis-and-Data-Handling-Using-ArcGIS-Pro-University-of-California-Week4/blob/master/Yosemite_3D.avi)