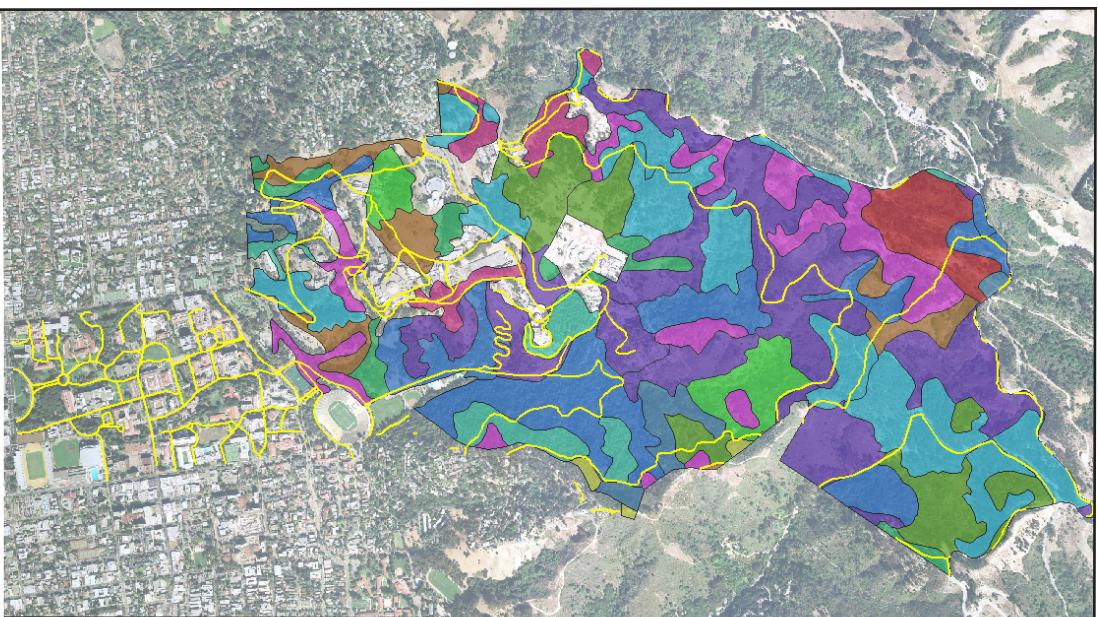
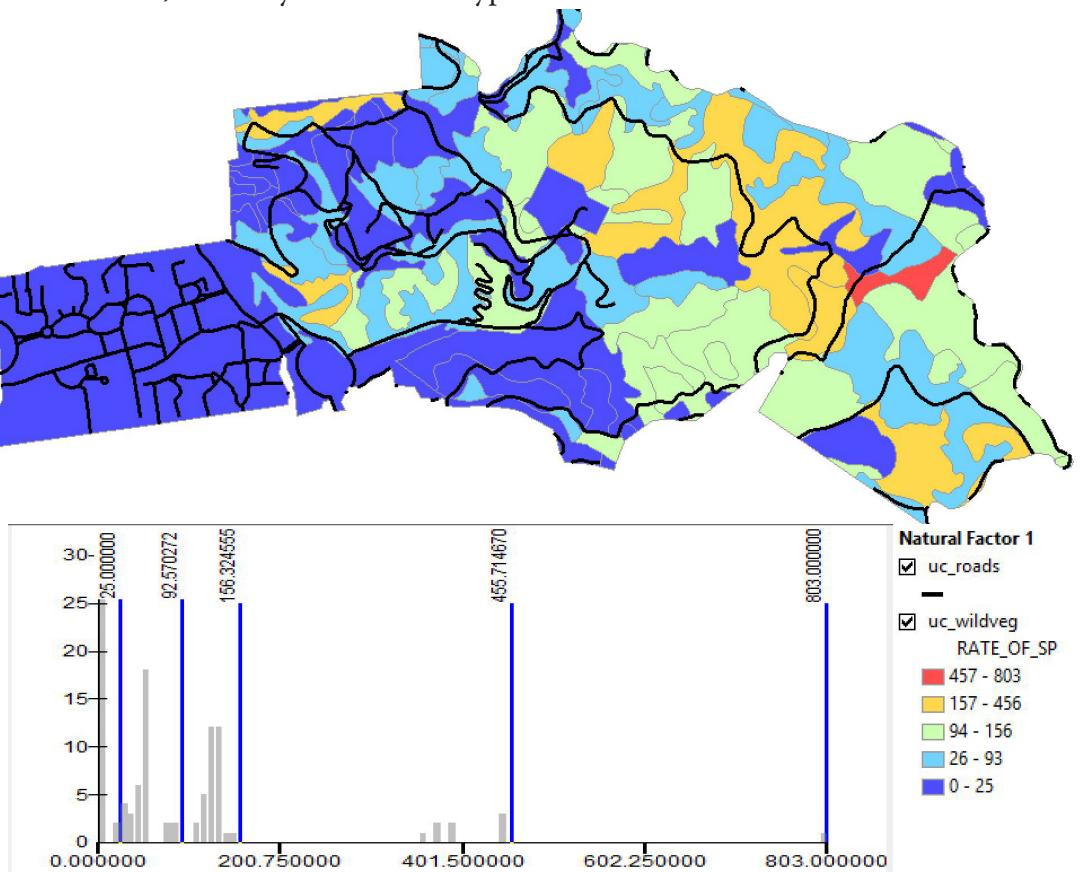


Lab 01: Getting Started - Fundamental of ArcGIS 10.7



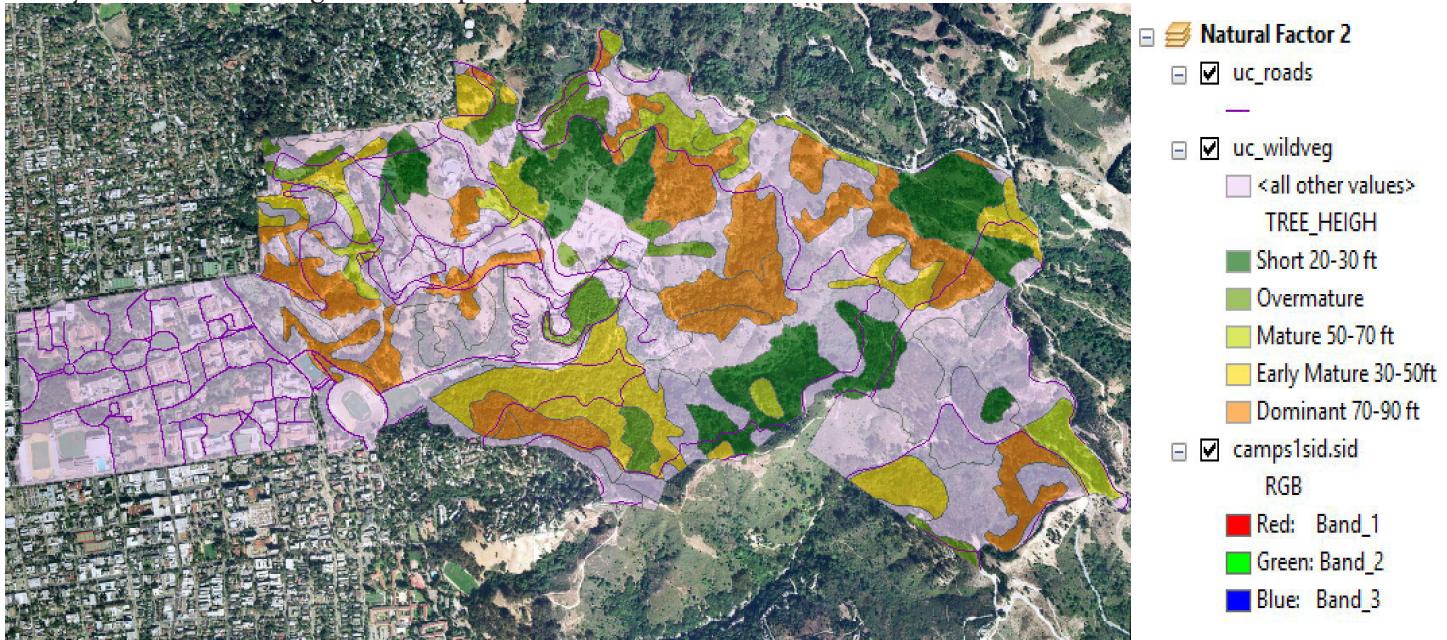
QUESTION 1: I used the Natural Factors dataframe to make this map. The dataframe contain road and wild vegetation shapefiles. The map has the campus satellite image placed beneath with a 40% transparency, the road is color coded yellow at 1.3 width size and the different types of vegetations are displayed using a darker color ramp and lower transparency than the satellite image. Looking at this map, viewers can see the types of vegetations to the east of campus, the campus is where all the roads in yellow are concentrated in and that we have a vegetation composed of majority of Dry and Coastal Scrub, over 20 years-old Eucalyptus and Mixed Hardwood Forest.

QUESTION 2: - MAP 1: I chose the Rate of Spread Fire under the wild veg shapefile and manually classified 5 different break values to view specific ranges of fire spread. I also formatted the ranges to have no decimal values for ease of interpretation. The roads are represented in thicker black lines. In relation to our map in question 1, we can see that the rate of fire spread happens the fastest in region of grassland vegetation and slowest in region of mixed hardwood forest.



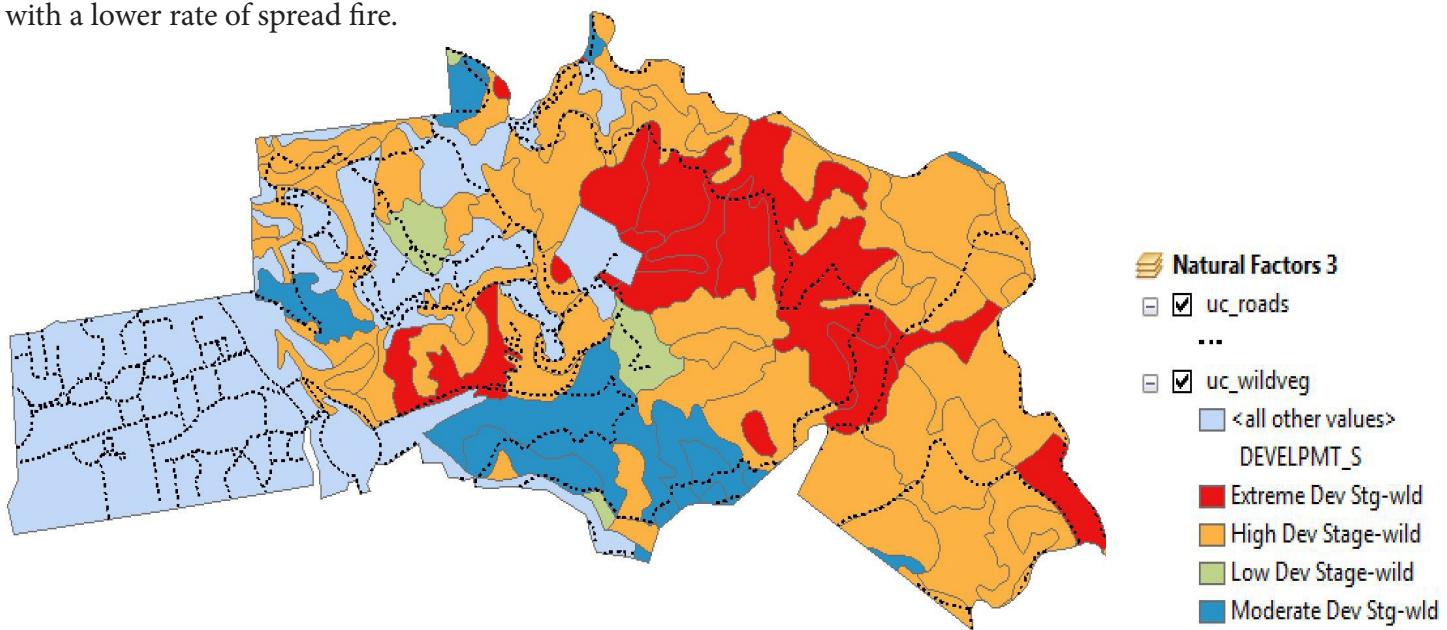
QUESTION 2 - MAP 2:

I chose to map the tree height around campus. I adjusted the transparency to 40% to show the satellite image underneath because it is useful to get a reference on where the tallest trees are. I classified the tree heights by categories using the warmer colors for taller trees. You can see that we have some of the tallest trees around the Stadium, and furthest east of the shapefile shown here. Majority of them are mature pine trees with some mature eucalyptus trees according to our map in question 1.



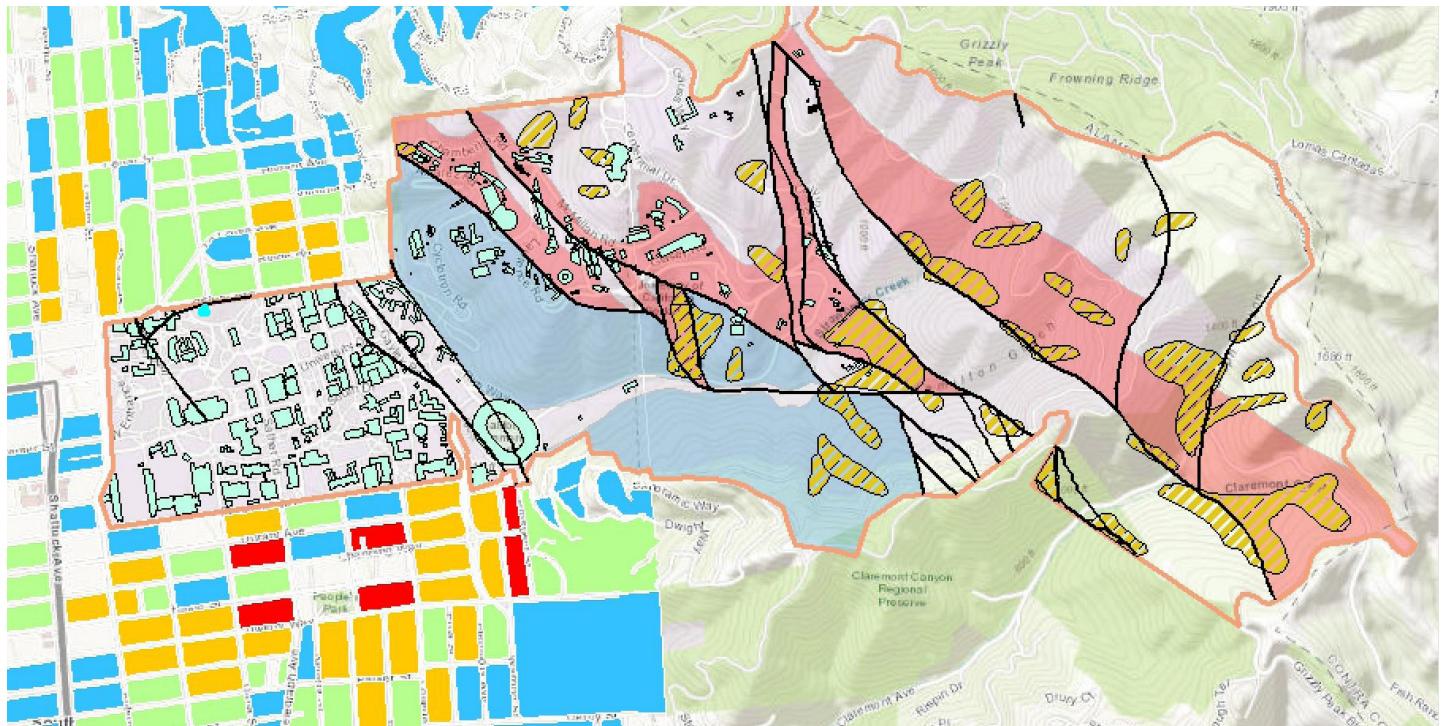
QUESTION 2 - MAP 3:

In this bottom map is the development stage . I chose the color scheme that emphasizes the stage of development and classified by categories. The roads are represented by dashed line to differentiate from the boundaries of the polygons. To correlate it to the spread fire rate map earlier, where the development stage is extreme and high, there is a higher rate of spread fire. High to extreme development also destroy some of the mature and tallest trees that are important to the surrounding ecosystem. The furthest south side of this shapefile shows moderate development rate where the tallest mature eucalyptus and hardwood trees are. These tree types are also associated with a lower rate of spread fire.



QUESTION 3:

For this Human Factors, I chose to look at population density of the census blocks around campus. There is a distinct campus boundary with all the buildings. The buildings are color coded jade green. The yellow overlay blobs are recorded landslides. The areas in peach are areas of poor slope stability and the blue is fair slope stability. I chose to display the fault lines in thicker black lines to look at potential dangerous zones. We see that majority of the population are away from poor slope stability. However, we have the Stadium and Lawrence Hall of Science on land surfaces that are susceptible to potential landslides and earthquakes. There is a higher density in census blocks in the south side of campus, noting the higher population near the Stadium and the associated fault line. I have chosen not to display population density from 0 to 6200 to pay unclutter the map and focus on blocks that have very high population concentration.



Human Factors

- uc_faults
- uc_landslides
- uc_bnd
- uc_bldgs
- uc_geology
- SLOPESTAB
 - POOR
 - FAIR
- censusblk
- POP_DENS
 - 69647.07 - 133424.66
 - 29565.23 - 69647.06
 - 14583.34 - 29565.22
 - 6200.01 - 14583.33
 - 0.00 - 6200.00
- Basemap
- World Topographic Map

QUESTION 4:

- 4.1) The greatest fire danger occurs in area of grassland vegetation followed by Dry and Coastal scrub from looking at the first 2 maps of spread fire rate and types of vegetation.
- 4.2) The most unstable landscape is associated with poor slope stability and poor foundation in area where the slope is relatively high. The landslides generally start in area of low slope stability, uphill and could continue downhill. The fault lines appears to be in proximity with landslides from looking at our last map.
- 4.3) The steepest slopes based on contour lines are located away from campus to its east side as seen in the last map with the typographic base layer, the max elevation is around 1200 - 1500 meters.
- 4.4) The greatest risk of earth damage are posed to the buildings near fault lines on the north side of campus such as the Lawrence Hall of Science, the Former Bevatron Site, the Lawrence Berkeley National Laboratory and residences near the Stadium where International House and heavily populated student housings are.