GEOG 3231/5231 Intro GIS

Raster Analysis Review

***Site selection near Fairview, CA***

For this site selection project you are looking for high elevation, wooded retreats near Fairview, CA.

Use a 3-rank approach where **100 = optimal**, **10 = suitable**, and **1 = unacceptable**.

**Data Sources**:

Land Cover & Elevation – USGS; Places – US Census

**Site selection parameters:**

1. Distance from Fairview, CA
   * Less than 10 km is optimal,
   * 10-20 km is suitable, and
   * >20 km is unacceptable.
2. Land cover must be forest
   * Deciduous or Mixed forest is optimal,
   * Evergreen forest is suitable,
   * all other cover types are unacceptable.
3. Higher elevations
   * over 125m is optimal
   * between 75m – 125m is suitable,
   * less than 75m is unacceptable.

**Data prep:**

* Set data frame properties.
* Select **Fairview** and export to its own layer (use data frame properties).
* Select and export **California** to use in reference map
* Reproject raster data by exporting. Use the reprojected data for analysis.
* Visit USGS website to determine land cover class values: <http://landcover.usgs.gov/classes.php>
* Make a watermask (reclassify landcover)
* Set Geoprocessing Environment Environments.
  + Workspace**,** Coordinates, Processing Extent, Raster Analysis, Cell Size & Mask

**Raster analysis:**

1. Create distance raster
2. Reclassify to rank distance, elevation, & land use layers
3. Create a composite raster (Map Algebra > Raster Calculator)
4. Reclassify the composite raster (values in final layer will be 100, 10, and 1)

**Deliverable:**

* The final map zoomed to suitable sites, set symbology to highlight preferred & suitable locations
* Legend with numeric ranks renamed to match table (optimal, suitable, unacceptable)
* Table of raster layer showing the area in square meters and acres for each rank
  + *Remember to expand the column width fully to display values*
  + *Should get about 30,652 for optimal, 112,466 for suitable, and 2,136,145 for unacceptable*
* An inset reference map of study area within CA, use appropriate projection, & extent indicator