

# Canopy Height Model

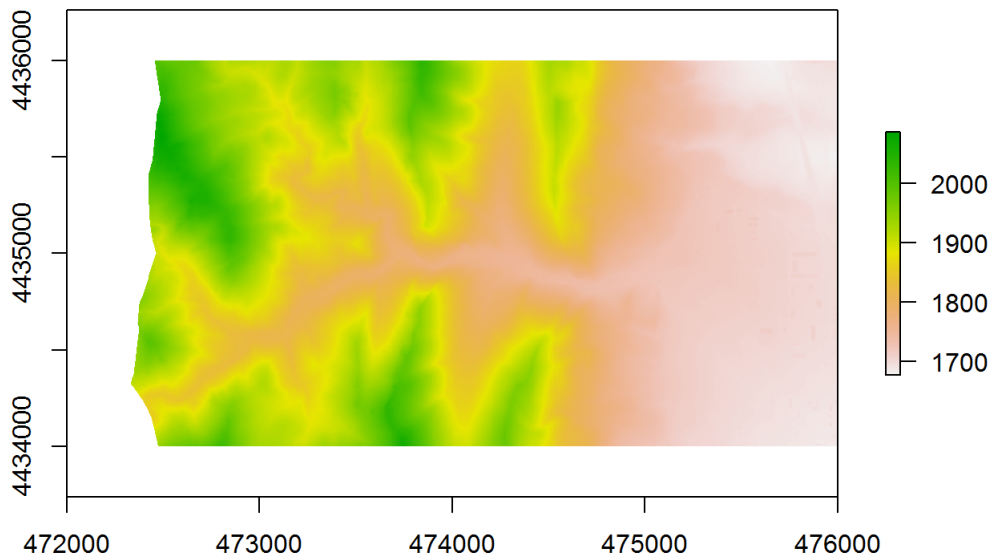
*K Perham*

*May 2017*

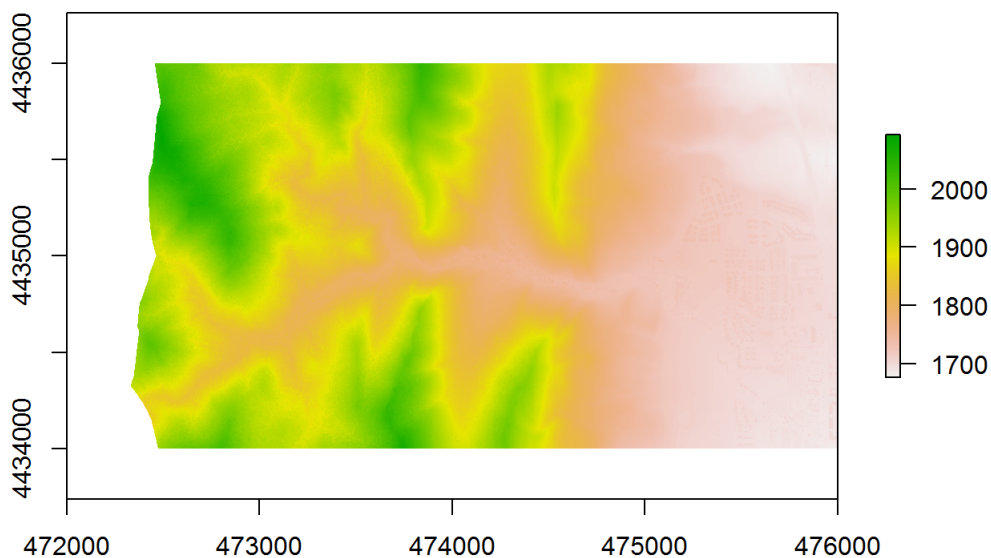
## Gathering and plotting DTM and DSM files

This exercise to create a Canopy Height Model first calls for the DTM and DSM files to be retrieved and plotted:

**Lidar Digital Elevation Model (DEM)**



**Lidar Digital Surface Model (DSM)**

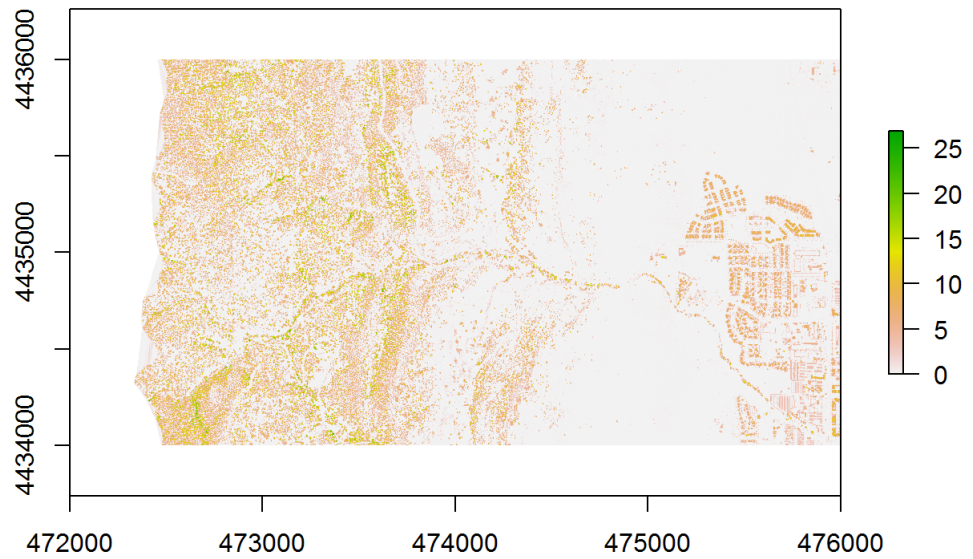


Now that we have gathered both rasters, the CHM calculation is simple in r:

```
lidar_chm <- lidar_dsm - lidar_dem
```

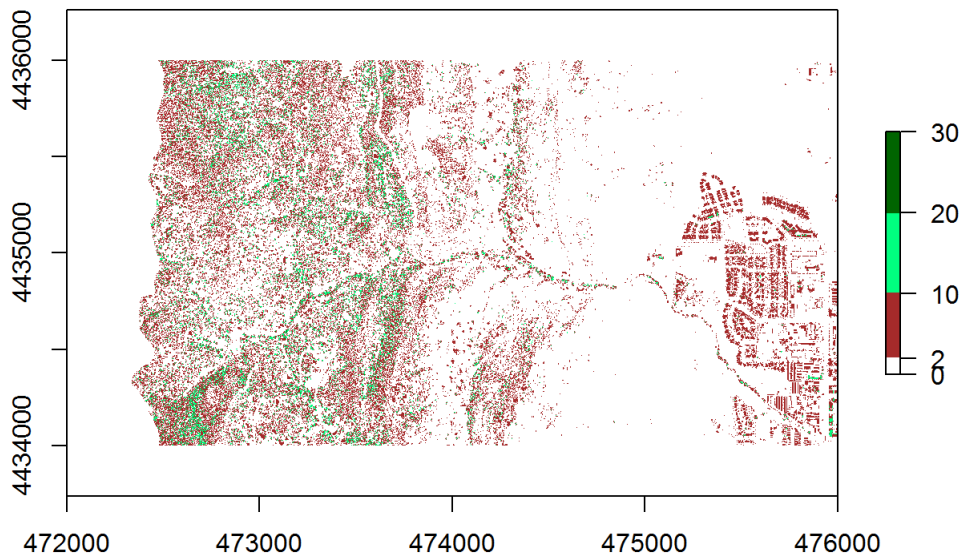
### Lidar Canopy Height Model (CHM)

The resulting plot looks like this:



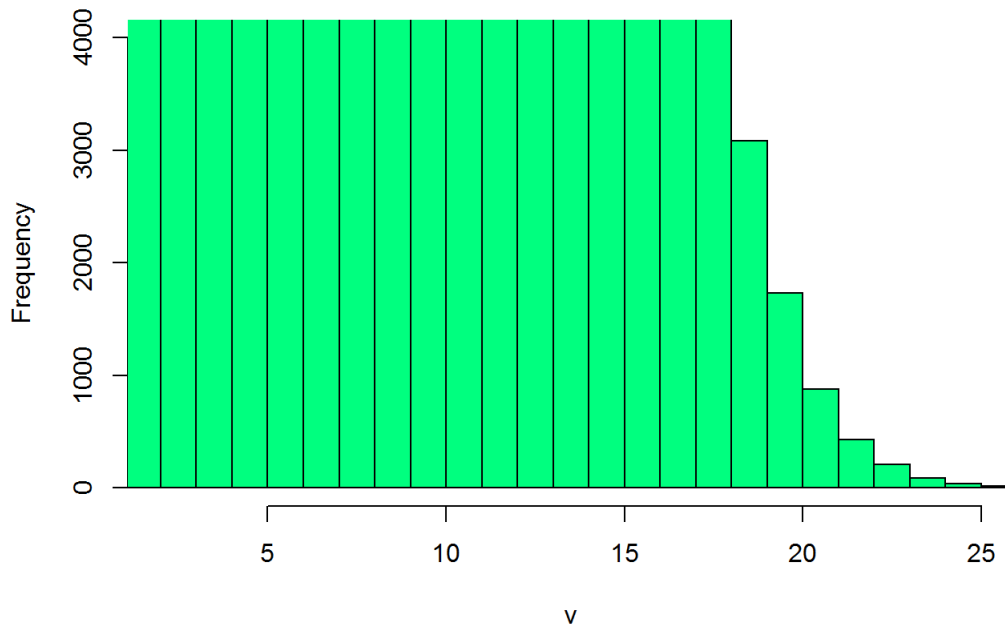
Breaks can be created to improve the visualization.

### Lidar Canopy Height Model



And finally, a histogram of the data, eliminating the outliers to get a better idea of the distribution of values.

**Histogram of canopy height model differences**  
**Zoomed in to -2 to 2 on the x axis**



We can reclassify the raster into short, medium, and tall trees. It's interesting to see how much more visible human habitation is in this plot, just based on tree height values.

**Classified Canopy Height Model**  
**short, medium, tall trees**

