

Cloud Mask

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This exercise will examine cloud masks using r.

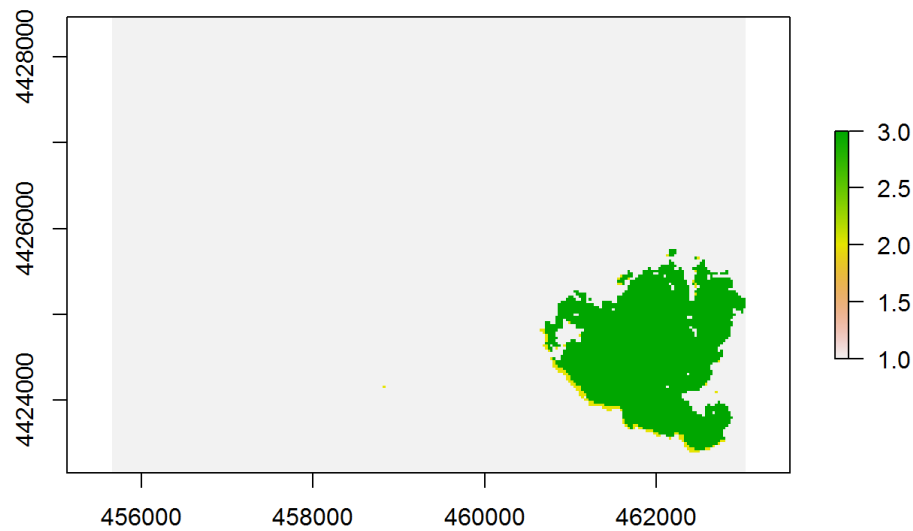
**Pre fire RGB image, with cloud
Cold Springs Fire**



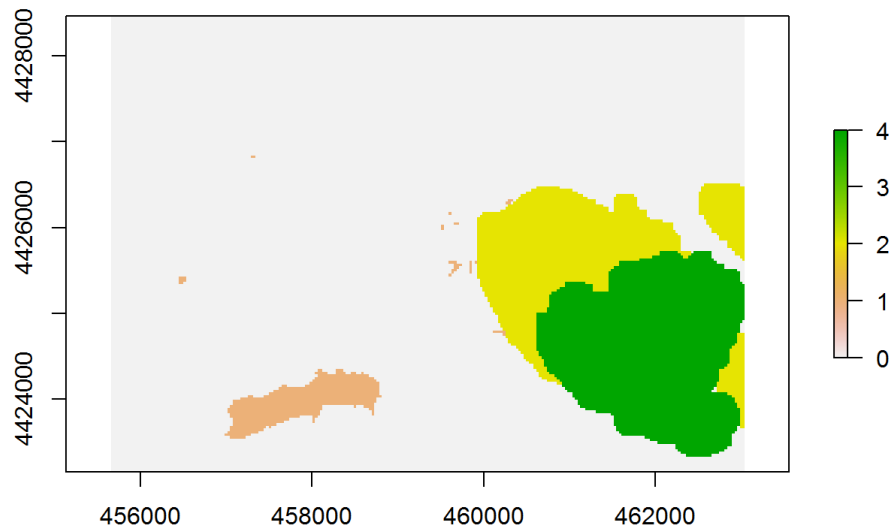
This file shows not only cloud cover,

but cloud shadow and water in the image.

Landsat Julian Day 189 - Cloud mask layer.



Landsat Julian Day 189 - Cloud mask layer with shadows.



Next, we'll evaluate our data using NA values in place of cloud and shadow values.

```
cloud_mask_189[cloud_mask_189 > 0] <- NA
plot(cloud_mask_189,
     main="New raster mask",
     col=c("green"),
     legend=F,
     axes=F,
     box=F)
par(xpd=T) # force legend to plot outside of the plot extent
legend(x = cloud_mask_189@extent@xmax, cloud_mask_189@extent@ymax,
      c("Not masked", "Masked"),
      fill=c("green", "white"),
      bty="n")
```

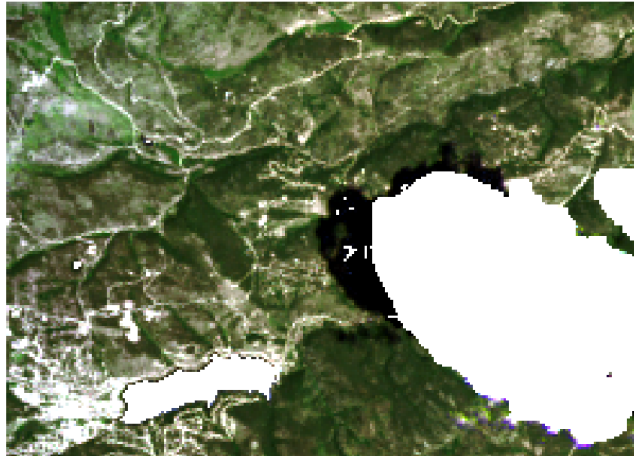
New raster mask



Next the mask is applied to all bands in the data:

```
all Landsat bands mask <- mask(all Landsat bands st, mask = cloud_mask_189)
par(col.axis="white", col.lab="white", tck=0)
plotRGB(all Landsat bands mask,
        r=4, g=3, b=2,
        stretch="lin",
        main="RGB image - clouds removed from image",
        axes=T)
box(col="white")
```

RGB image - clouds removed from image



It appears this image has a large proportion of the study area with NA values. The next step is to search for other imagery for this region with the same quality, in the timeframe needed. The affected area under study is small, limiting the options for data sources.