Plot predictions

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October 27, 2019

```
library(rgeos)
```

```
## Loading required package: sp
```

```
## rgeos version: 0.5-1, (SVN revision 614)
##  GEOS runtime version: 3.6.1-CAPI-1.10.1
##  Linking to sp version: 1.3-1
##  Polygon checking: TRUE
```

```
library(raster)
library(rgdal)
```

```
## rgdal: version: 1.4-4, (SVN revision 833)
##  Geospatial Data Abstraction Library extensions to R successfully loaded
##  Loaded GDAL runtime: GDAL 2.2.3, released 2017/11/20
##  Path to GDAL shared files: C:/Users/shrut/R/win-library/3.5/rgdal/gdal
##  GDAL binary built with GEOS: TRUE
##  Loaded PROJ.4 runtime: Rel. 4.9.3, 15 August 2016, [PJ_VERSION: 493]
##  Path to PROJ.4 shared files: C:/Users/shrut/R/win-library/3.5/rgdal/proj
##  Linking to sp version: 1.3-1
```

```
library(RColorBrewer)

setwd("D:/Google Drive/Data Incubator/Capstone")

pred <- read.csv("data/predictions.csv", header = TRUE)

stack <- raster("data/pak_stack.tif")

#pakistan boundary
boundary <- readOGR("data/boundaries/PAK_adm0.shp")
```

```
## OGR data source with driver: ESRI Shapefile
## Source: "D:\Google Drive\Data Incubator\Capstone\data\boundaries\PAK_adm0.shp", layer: "PAK_adm0"
## with 1 features
## It has 70 fields
## Integer64 fields read as strings:  ID_0 OBJECTID_1
```

```
buffer <- raster::buffer(x=boundary, width=0.2)
```

```
## Warning in rgeos::gBuffer(x, byid = !dissolve, width = width, ...): Spatial
## object is not projected; GEOS expects planar coordinates
```

```
x <- raster(extent(boundary), res = res(stack), crs="+proj=longlat
            +datum=WGS84 +no_defs +ellps=WGS84 +towgs84=0,0,0")

predicted_raster <- rasterize(pred[, c('longitude','latitude')], x, pred[, 'pred'])
predicted_raster <- mask(x=predicted_raster, mask=buffer)

actual_raster <- rasterize(pred[, c('longitude','latitude')], x, pred[, 'actual'])
actual_raster <- mask(x=actual_raster, mask=buffer)

cols <- brewer.pal(5, "Reds")

par(mfrow=c(1,3))

plot(actual_raster,axes = F,box = F,main="True", legend = F, col = cols)
plot(boundary, add=T)
plot(predicted_raster,axes = F,box = F,main="Predicted", col = cols)
plot(boundary, add=T)
```