Lab 5

Nick Simeone

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Header

Website - NickSimeone.github.io

Page - https://github.com/NickSimeone/NickSimeone.github.io

Setup

```
library(tidycensus)
library(tidyverse)
```

```
## ── Attaching packages ─────────────────────────────────────── tid
## ✓ ggplot2 3.4.1     ✓ purrr   1.0.1
## ✓ tibble  3.1.8     ✓ dplyr   1.1.0
## ✓ tidyr   1.3.0     ✓ stringr 1.5.0
## ✓ readr   2.1.4     ✓ forcats 1.0.0
## ── Conflicts ────────────────────────────────────────── tidyverse
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
```

```
library(Rcpp)
library(terra)
```

```
## terra 1.7.3
##
## Attaching package: 'terra'
```

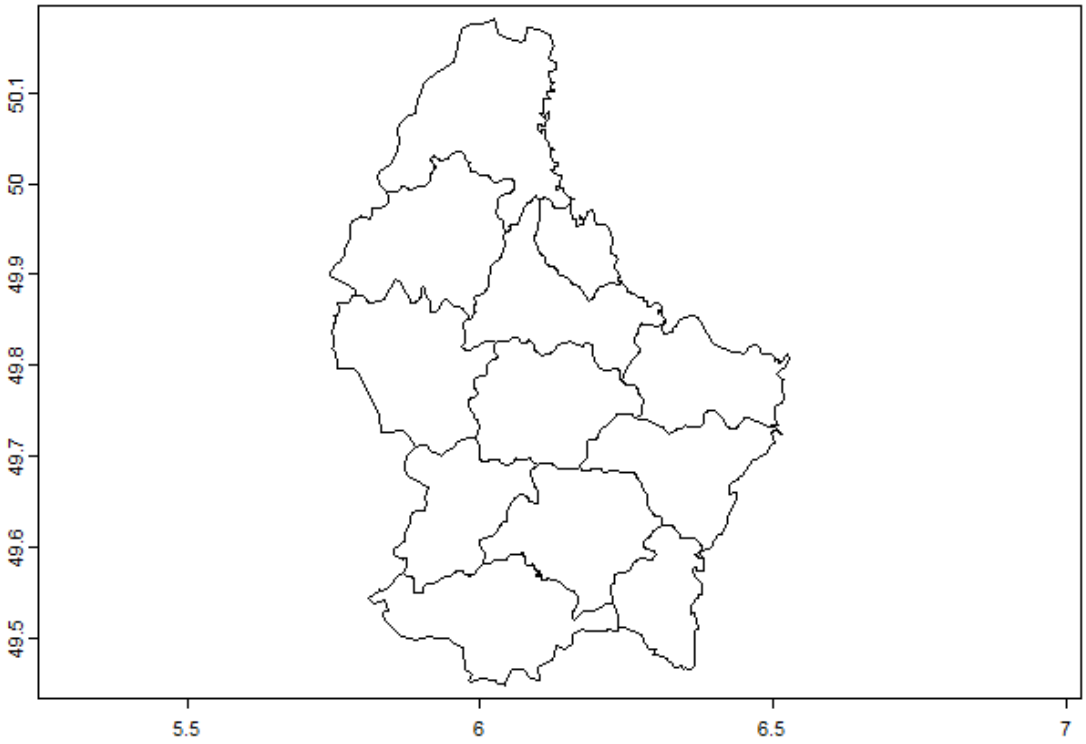
```
##
## The following object is masked from 'package:tidyr':
##
##     extract
```

```
library(maptiles)
library(leaflet)
library(remotes)
library(devtools)
```

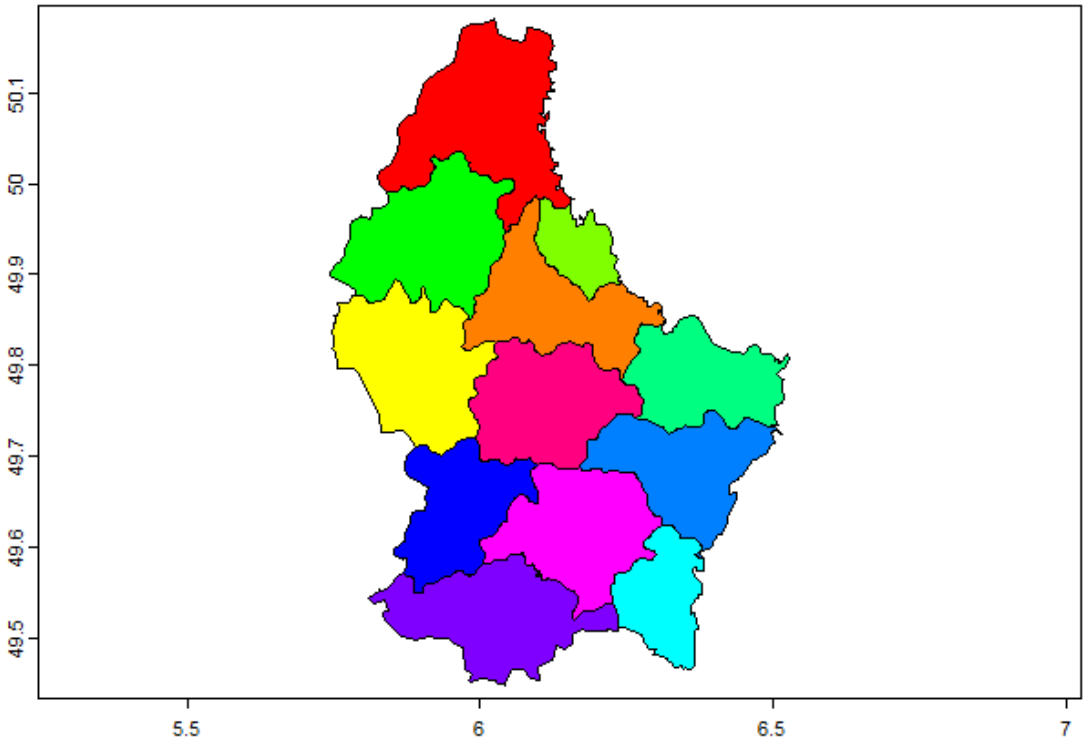
```
## Loading required package: usethis
##
## Attaching package: 'usethis'
##
## The following object is masked from 'package:remotes':
##
##     git_credentials
##
##
## Attaching package: 'devtools'
##
## The following objects are masked from 'package:remotes':
##
##     dev_package_deps, install_bioc, install_bitbucket, install_cr
##     install_deps, install_dev, install_git, install_github,
##     install_gitlab, install_local, install_svn, install_url,
##     install_version, update_packages
```

SpatVector

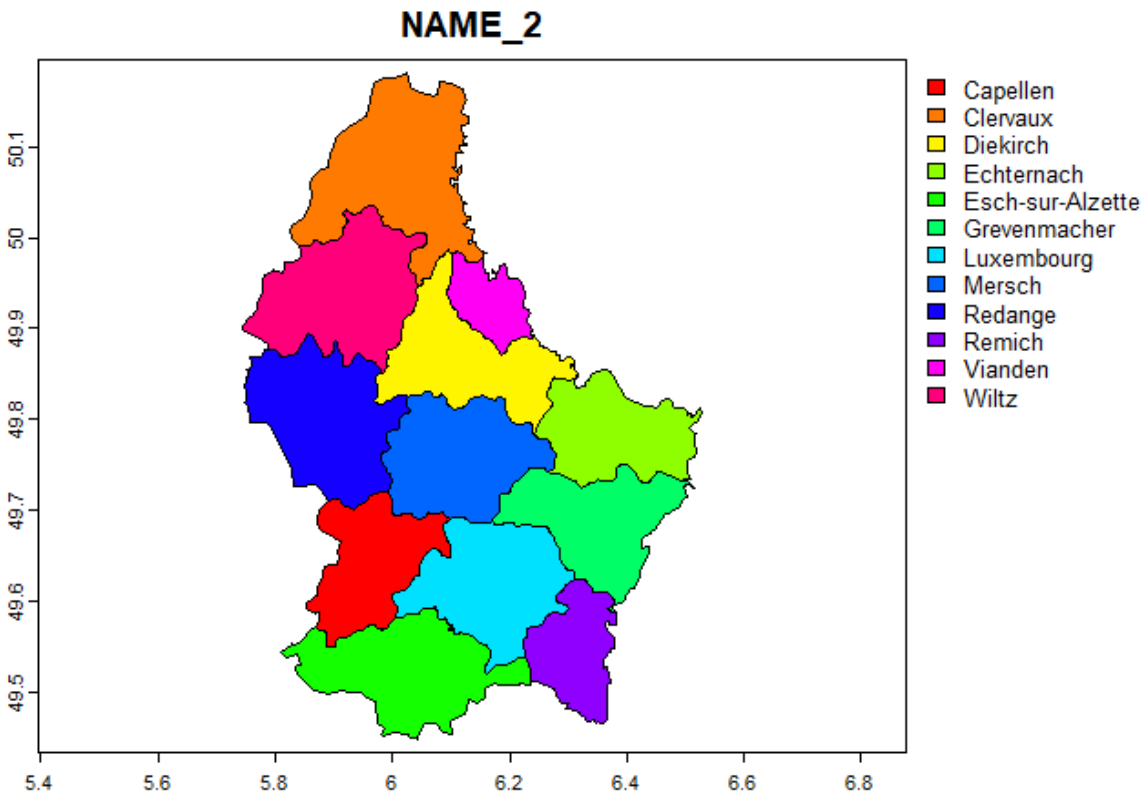
```
p <- vect(system.file("ex/lux.shp", package="terra"))
plot(p)
```



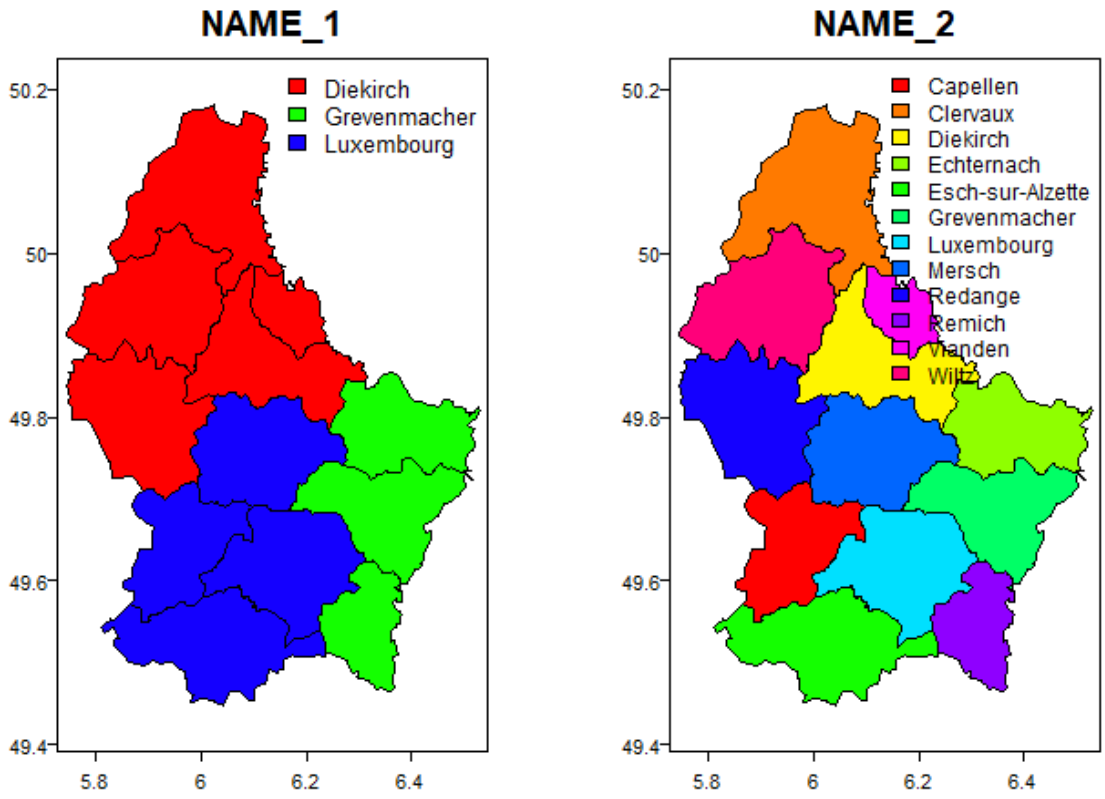

```
n <- nrow(p)
plot(p, col = rainbow(n))
```



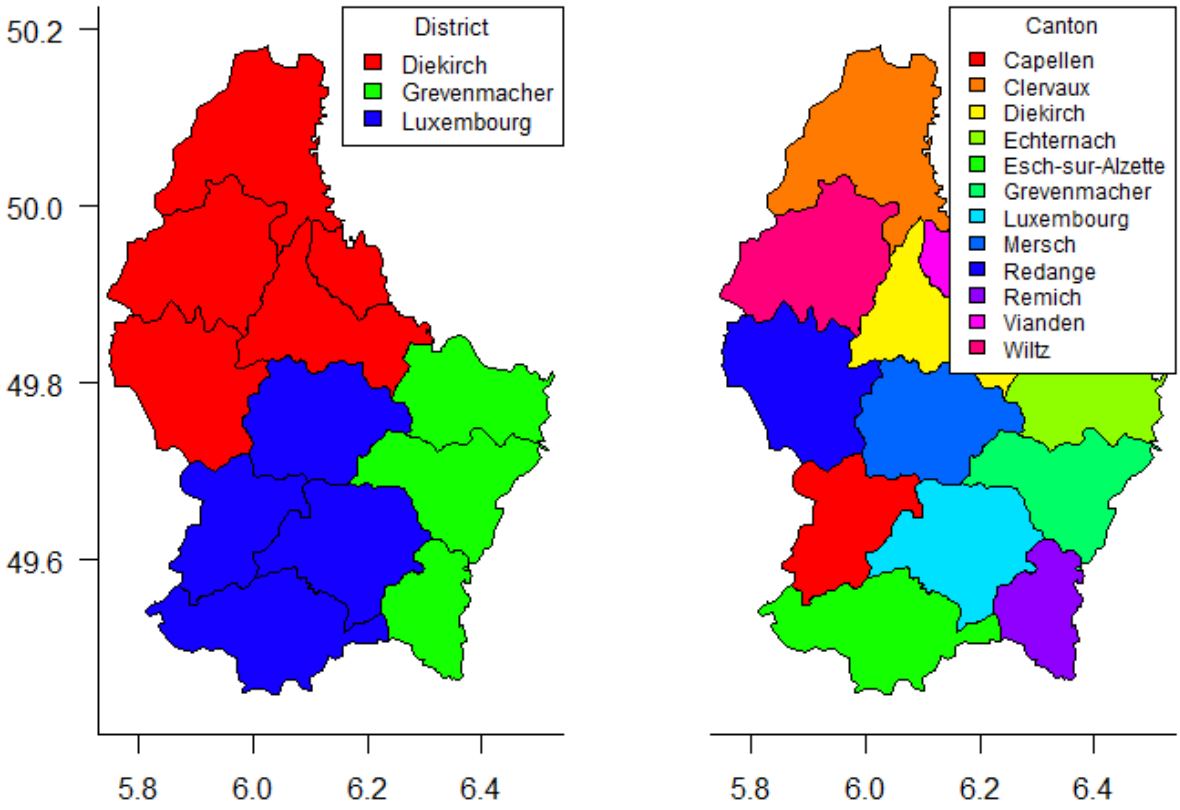

```
plot(p, "NAME_2", col = rainbow(25))
```



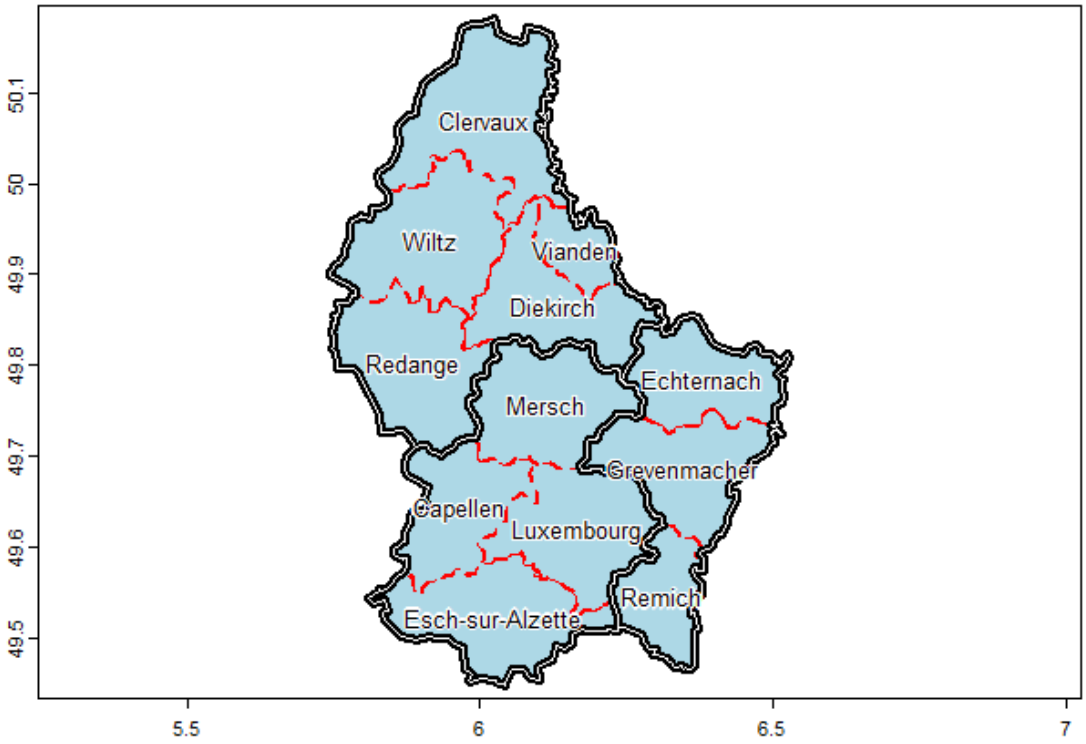
```
par(mfrow=c(1,2))
m <- c(3.1, 3.1, 2.1, 2.1)
plot(p, "NAME_1", col=rainbow(25), mar=m, plg=list(x="topright"), pa
plot(p, "NAME_2", col=rainbow(25), mar=m, plg=list(x="topright", cex
```




```
par(mfrow=c(1,2))
m <- c(3.1, 3.1, 1.1, 1.1)
plot(p, "NAME_1", col=rainbow(25), mar=m, plg=list(x="topright", tit
axis(1, at=c(5,7)); axis(1)
axis(2, at=c(49,51)); axis(2, las=1)
plot(p, "NAME_2", col=rainbow(25), mar=m, plg=list(x="topright", cex
axis(1, at=c(5, 7)); axis(1)
```

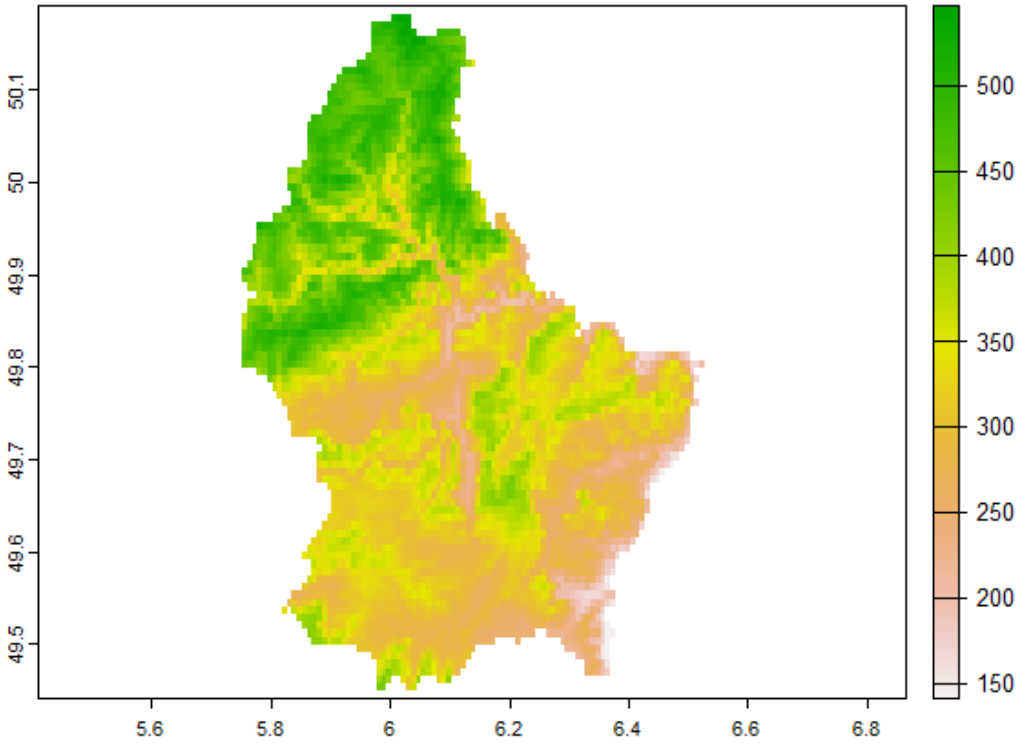



```
d <- aggregate(p, "NAME_1")
plot(p, col="light blue", lty=2, border="red", lwd=2)
lines(d, lwd=5)
lines(d, col="white", lwd=1)
text(p, "NAME_2", cex=.8, halo=TRUE)
```

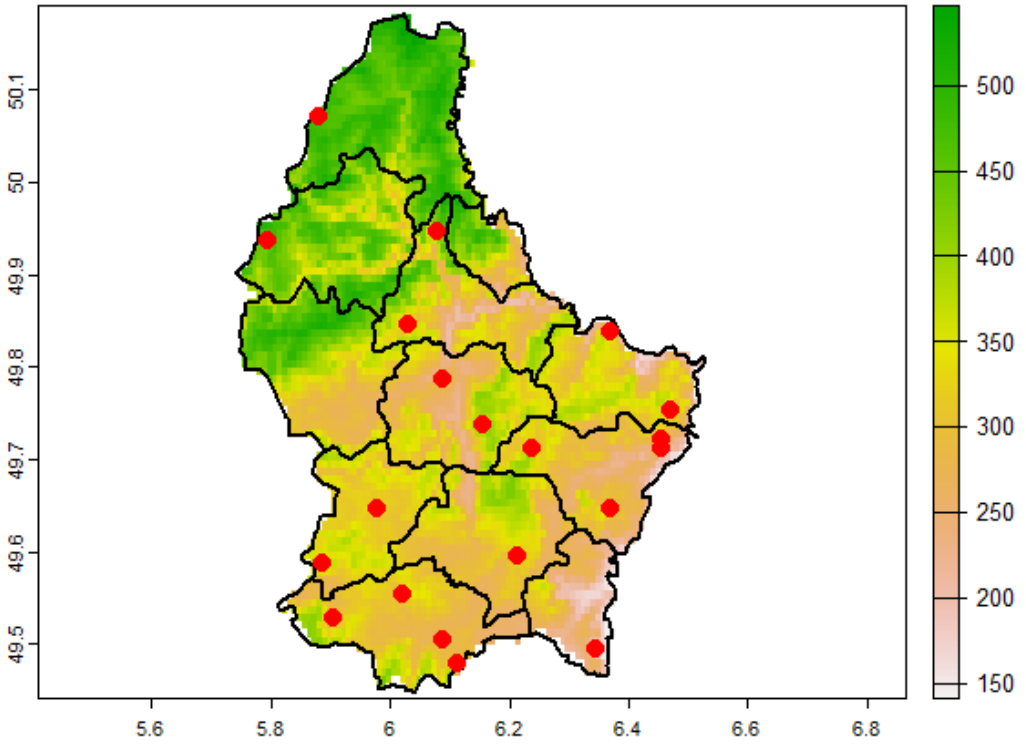


SpatRaster

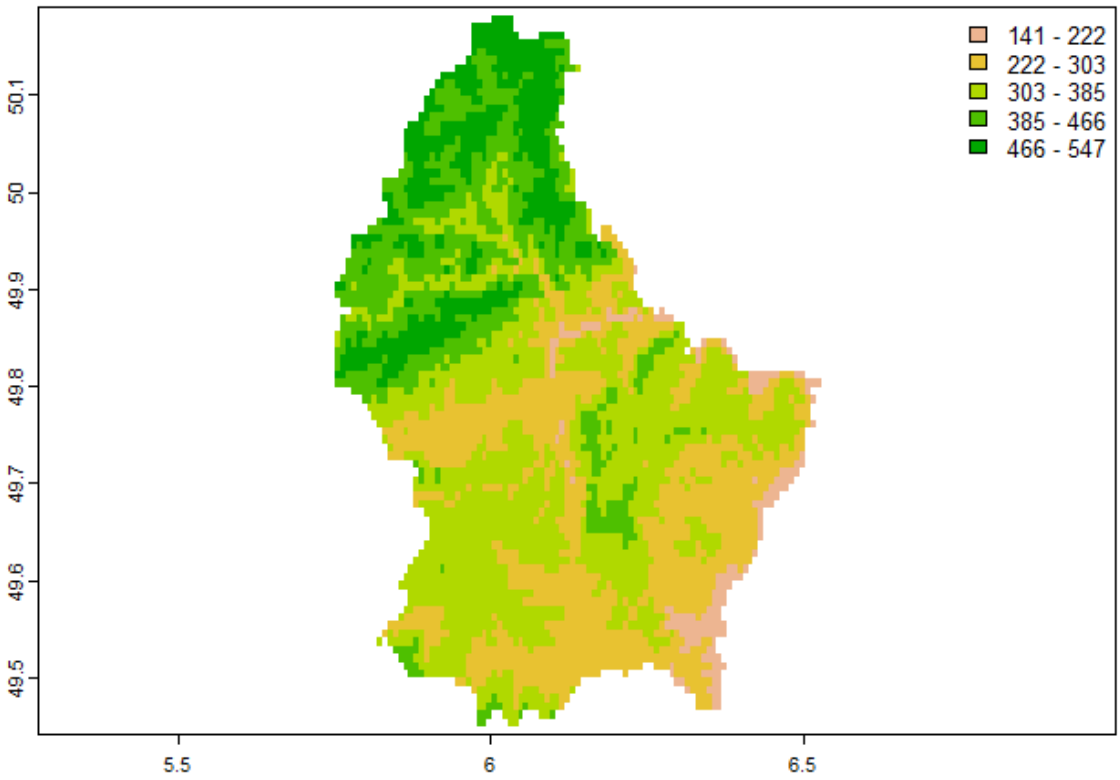
```
f <- system.file("ex/elev.tif", package="terra")
r <- rast(f)
plot(r)
```



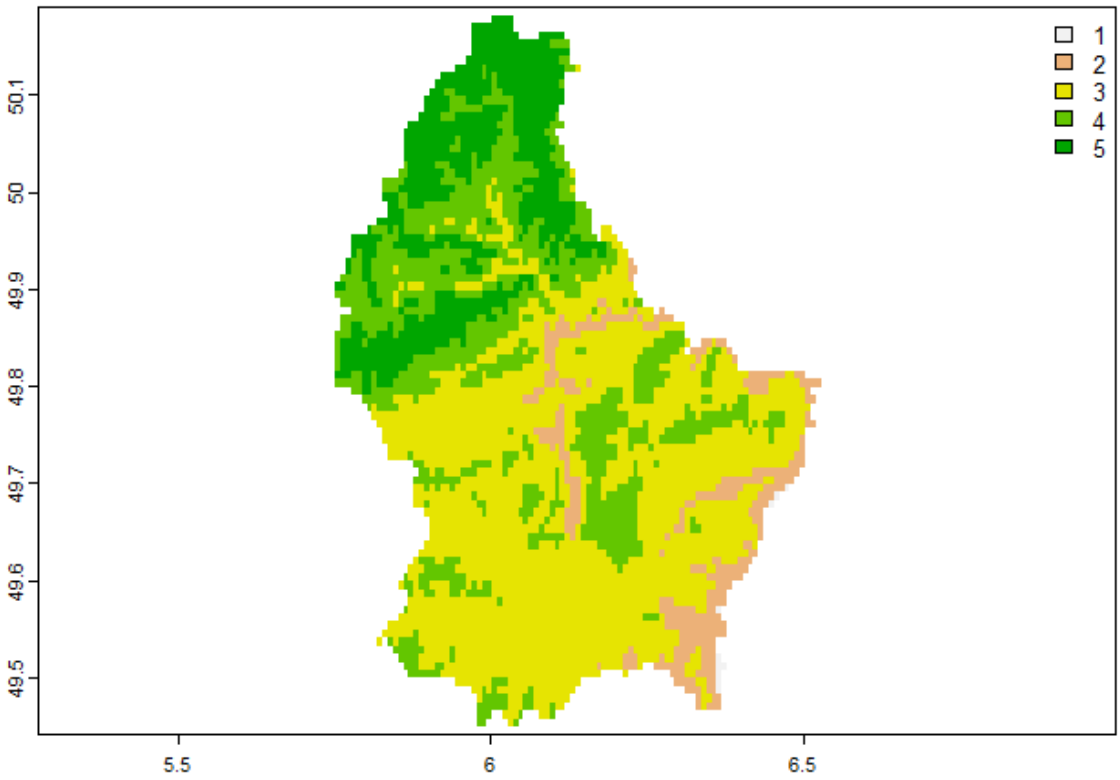

```
plot(r)
lines(p, lwd=2)
set.seed(12)
xy <- spatSample(r, 20, "random", na.rm=TRUE, xy=TRUE)
points(xy, pch=20, col="red", cex=2)
```




```
m <- c(3.1, 3.1, 1.1, 1.1)
plot(r, type="interval", plg=list(x="topright"), mar=m)
```




```
rr <- round(r/100)
plot(rr, plg=list(x="topright"), mar=m)
```




```
x <- classify(r, c(140, 300, 400, 550))
levels(x) <- data.frame(id=0:2, elevation=c("low", "intermediate", "
is.factor(x)
```

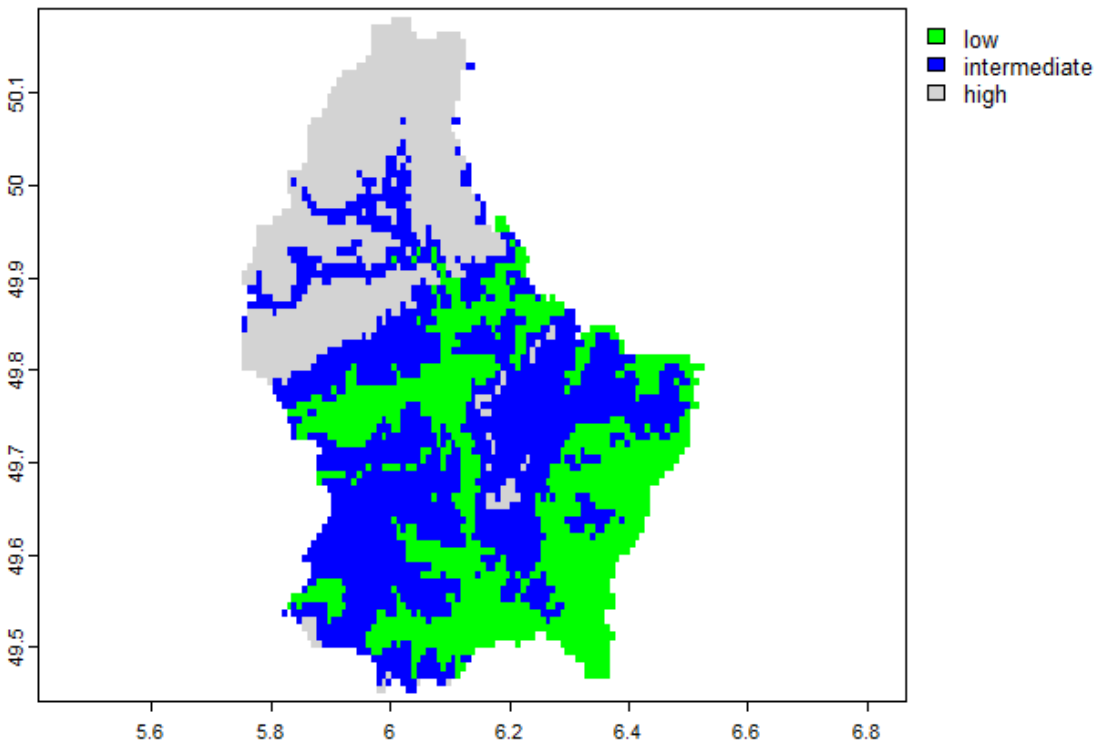
```
## [1] TRUE
```

```
## [1] TRUE
x
```

```
## class       : SpatRaster
## dimensions  : 90, 95, 1  (nrow, ncol, nlyr)
## resolution  : 0.008333333, 0.008333333  (x, y)
## extent      : 5.741667, 6.533333, 49.44167, 50.19167  (xmin, xmax
## coord. ref. : lon/lat WGS 84 (EPSG:4326)
## source(s)   : memory
## categories  : elevation
## name        : elevation
```

```
## min value   :       low
## max value   :      high
```

```
## class       : SpatRaster
## dimensions  : 90, 95, 1  (nrow, ncol, nlyr)
## resolution  : 0.008333333, 0.008333333  (x, y)
## extent      : 5.741667, 6.533333, 49.44167, 50.19167  (xmin, xmax
## coord. ref. : lon/lat WGS 84 (EPSG:4326)
## source(s)   : memory
## categories  : elevation
## name        : elevation
## min value   :       low
## max value   :      high
plot(x, col=c("green", "blue", "light gray"))
```



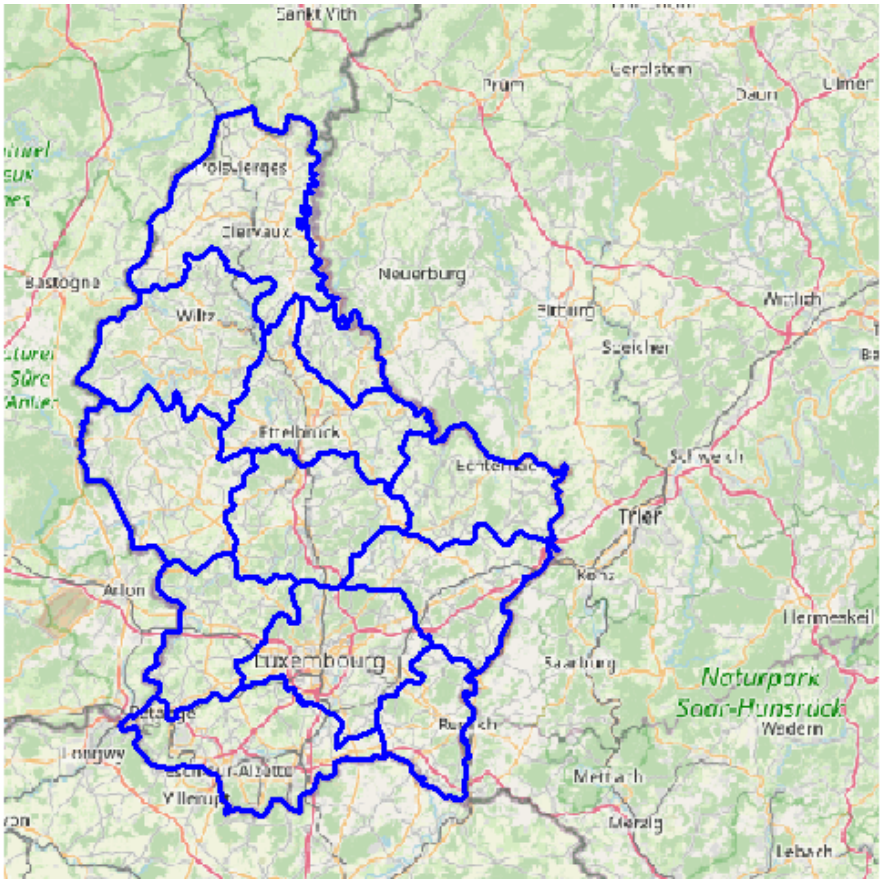

```
b <- rast(system.file("ex/logo.tif", package="terra"))
```

```
plot(b)
```

```
r <- rast(p, res=0.01 )
values(r) <- 1:ncell(r)
r <- mask(r, p)
plotRGB(b, r=1, g=2, b=3)
```

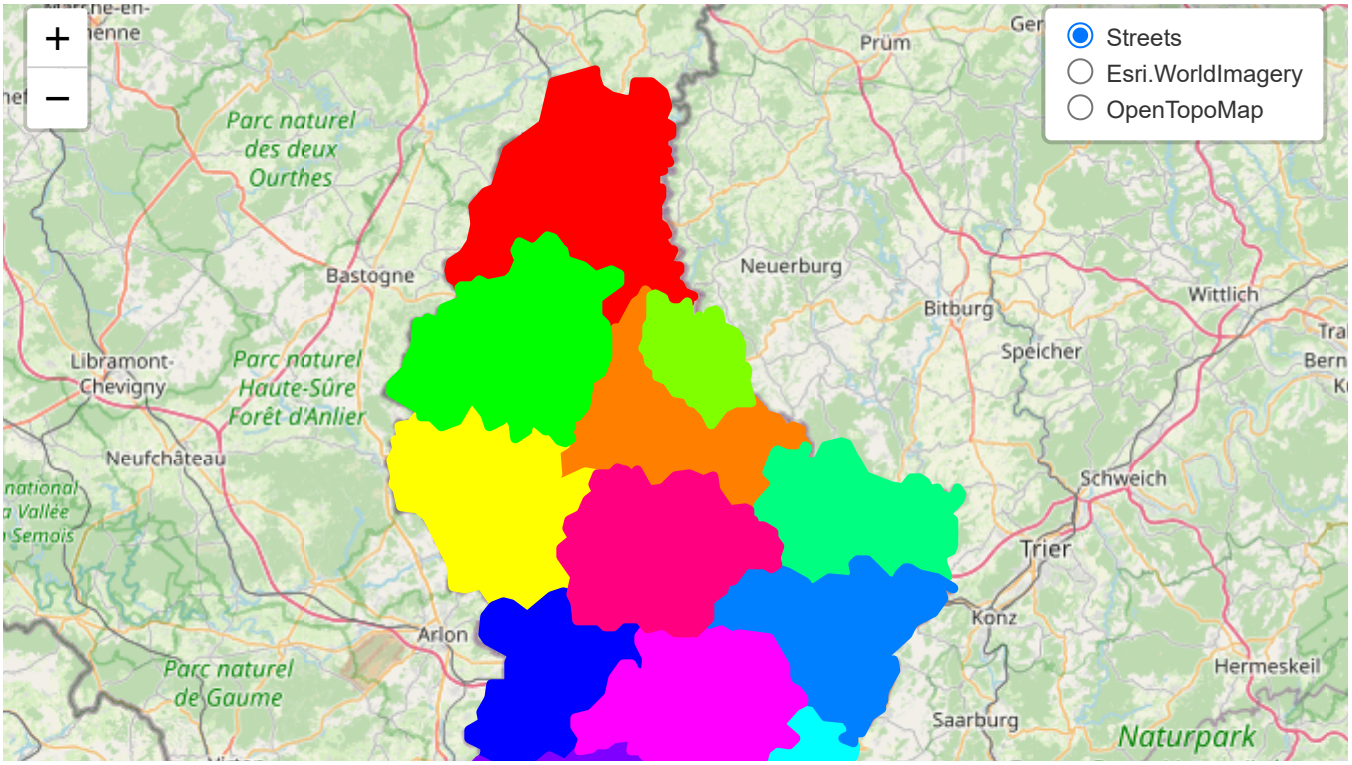
Basemaps

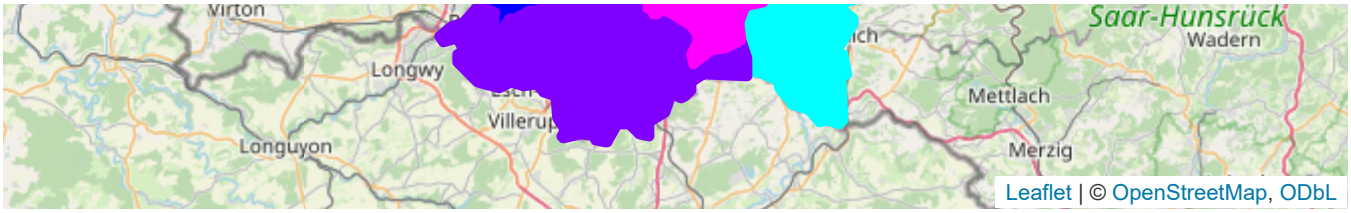
```
f <- system.file("ex/lux.shp", package="terra")
p <- vect(f)
bg <- get_tiles(ext(p))
plotRGB(bg)
lines(p, col="blue", lwd=3)
```



Interatcive Maps

```
#devtools::install_github('rstudio/leaflet')
m <- plet(p)
m
```




Virton
Longwy
Villerup
Longuyon
Saar-Hunsrück
Wadern
Mettlach
Merzig
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