



# Advice on finding international datasets



# Advice on finding international datasets



# What kind of geoboundary do you need?

Country borders



Administrative Divisions



(local authorities)

Other subunits



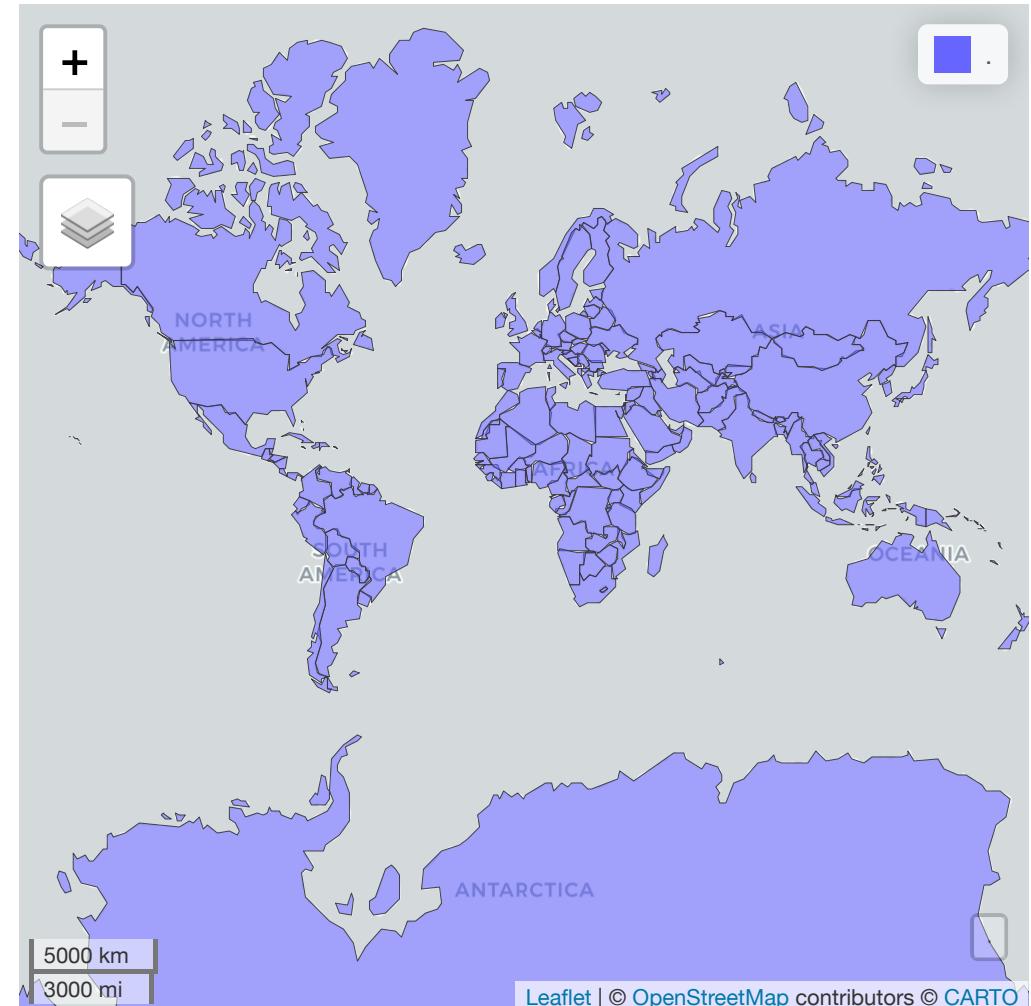
(constituencies)



# Country borders: {rnaturalearthdata}

```
library("rnaturalearthdata")
countries110 %>%
  st_as_sf() %>%
  select(name, continent) %>%
  mapview()
```

- It's available on CRAN
- It's quick and easy to use



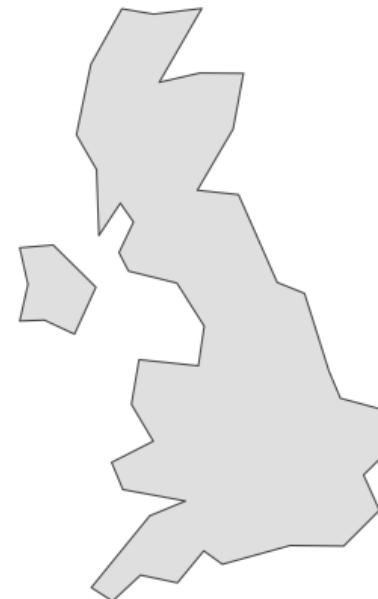


# Country borders: {rnaturalearthdata}

There are two datasets included:

- countries110: scale of 1:110m
- countries50: scale of 1:50m

countries110



countries50





# {rnaturalearthhires}

1:10m country shapefiles are too large to fit in a CRAN package.

```
remotes::install_github("ropensci/rnaturalearthhires")
```

countries50



countries10





# Administrative divisions

Administrative divisions are standardised hierarchical country subdivisions as defined in ISO 3166-2.

There are [more than 30 different national subdivision names](#).

France: Country  
(ADM0)



France: Regions  
(ADM1)



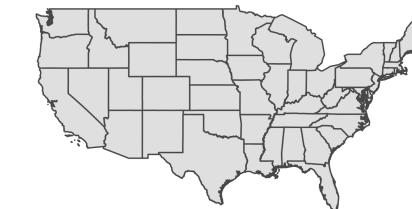
France: Departments  
(ADM2)



US: Country  
(ADM0)



US: States  
(ADM1)



US: County  
(ADM2)





# Administrative divisions: territories

Administrative divisions names are often non-uniform at multiple levels.

This is an artefact of colonialism.

This can complicate data analysis and visualisation.

Country	Administrative divisions		
	First-level	Second-level	Third-level
France (regional state or <i>de facto</i> federal state)	18 regions ( <i>régions</i> )	101 departments ( <i>départements</i> ) <sup>[33]</sup> + the Metropolis of Lyon	332 arrondissements
1 state private property, located overseas, under the direct authority of the French government: Clipperton Island			
5 overseas collectivities ( <i>collectivités d'outre-mer</i> )			
French Polynesia <sup>[35]</sup>	5 administrative subdivisions ( <i>subdivisions administratives</i> )	40+ communes	
Saint-Barthélemy			
Saint-Martin			
Saint-Pierre and Miquelon	2 communes		
Wallis and Futuna	3 traditional kingdoms ( <i>royaumes coutumiers</i> )	3 districts (Uvea only)	
1 <i>sui generis</i> collectivity ( <i>collectivité sui generis</i> )			
New Caledonia	3 provinces	30+ communes	
1 overseas territory ( <i>territoire d'outre-mer</i> )			
French Southern and Antarctic Lands	5 districts		



# Administrative divisions: what are they good for?

Administrative divisions are used for different things in different countries.

These might include:

- Local governmental authorities
- Regional collections of local authorities
- Electoral regions
- Postal regions



# Administrative divisions: `raster::getData()`

`raster::getData()` provides access to all available administrative divisions from the GADM dataset.

---

Load the `{raster}` package **before** loading the `{tidyverse}`

```
library("raster")
library("tidyverse")
```

```
> library("raster")
Loading required package: sp
> library("tidyverse")
— Attaching packages ————— tidyverse 1.3.0 —
✓ ggplot2 3.3.3    ✓ purrr  0.3.4
✓ tibble  3.1.0    ✓ dplyr   1.0.4
✓ tidyr   1.1.2    ✓ stringr 1.4.0
✓ readr   1.4.0    ✓ forcats 0.5.1
— Conflicts ————— tidyverse_conflicts() —
✖ tidyr::extract() masks raster::extract()
✖ dplyr::filter()  masks stats::filter()
✖ dplyr::lag()     masks stats::lag()
✖ dplyr::select()  masks raster::select()
```



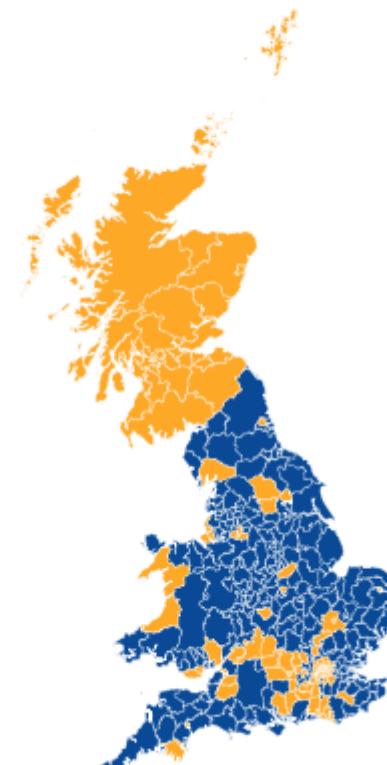
# RStudio Coding Slide:



# Other subunits

You'll often find maps you want to make require other country subunits.

Constituencies that voted **Leave** and  
**Remain** in the 2016 Brexit Referendum





# Census Offices / Statistics Offices

Often shapefiles can be found in a national Census Office or in a Statistics Office.

There are two good sources for these offices:

- Wikipedia's [list of National & International Statistical Services](#).
- The UN's Statistical Division [list of national statistics offices](#)



# Country and local authority data portals

[DataPortals.org](https://www.dataportals.org) claims to be the most comprehensive list of **Open Data** portals - with 590+ portals listed.



# Geoboundaries change over time

All of the boundaries that we've discussed are liable to change (potentially drastically) over time.

- `{rnaturalearthdata}` is expected to keep up to date with changes on the [naturalearthdata.com](https://naturalearthdata.com) service.
- `raster::getData()` connects to GADM which is actively kept up to date
- You're responsible for finding up-to-date (or historical!) data for other subunits.