Creating an Interactive Map

Getting Started with tmap

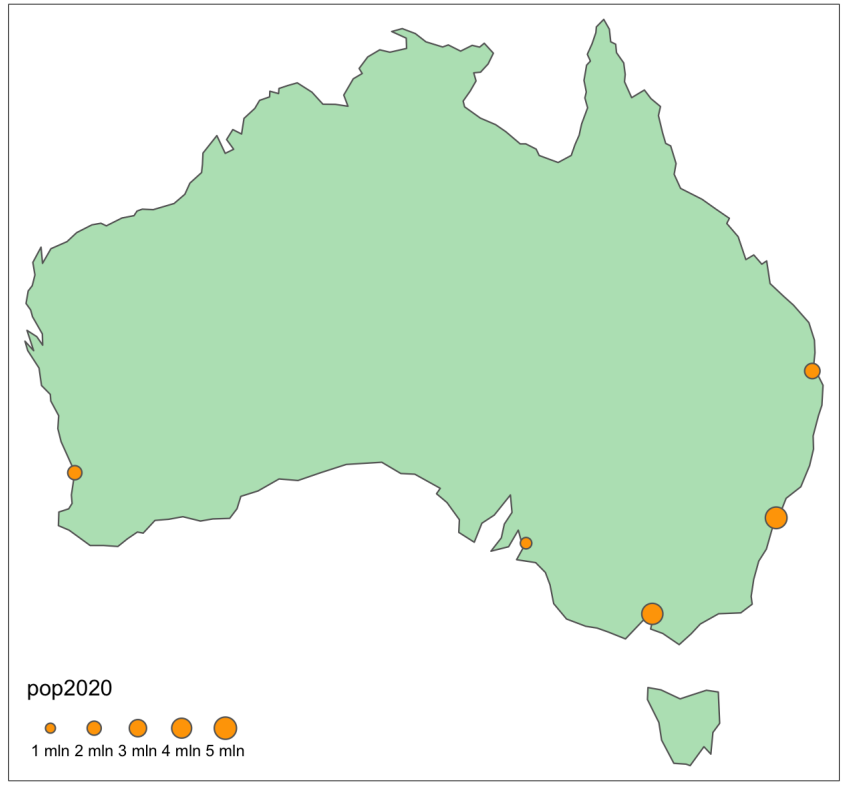
Conner Surrency, July 2020

What Are We Doing?

- We are going to walk through the process of creating a simple interactive map using tmap.
- We will start by walking through the steps of creating a simple standard map. After that, we'll transform it into an interactive one.
- In this case, we will narrow the data down to only information related to Australia, and then display each city in the nation based on its population.

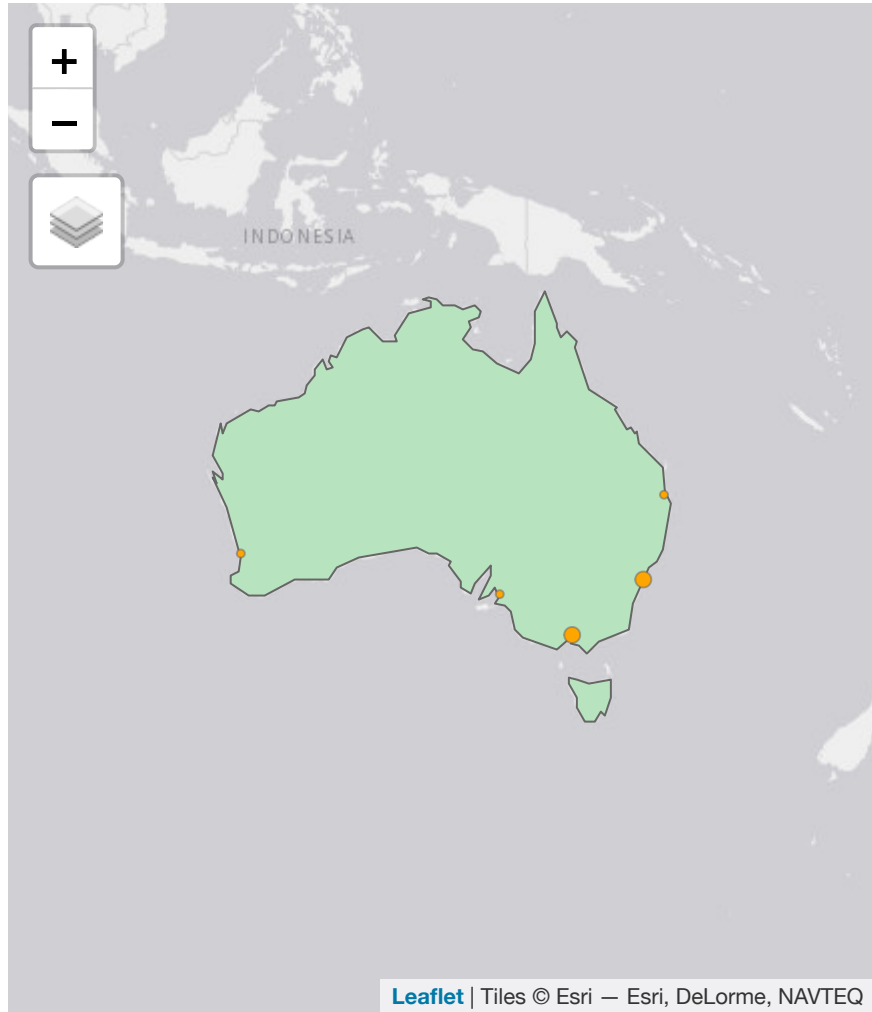
Building a Simple Map

```
library(tidyverse)
library(tmap)

## We will be using data from "world" and "Metro"
data(World, metro)

## We will filter the metro datasets down so that we only have
## incidences within Australia
metro %>%
  filter(iso_a3 == "AUS") ->
  metro_australia

## Setting the mode as "Plot" will allow us to create a static map
tmap_mode("plot")

World %>%
## Here we will filter the "World" set down to just Australia as w
  filter(name == "Australia") %>%
## Here we decide the projection type and create polygon shape to
## represent the country
  tm_shape(shp = .,
           projection = "+proj=merc") +
    tm_polygons("name",
                legend.show = F) +
## Finally we add the datapoints representing cities in Australia
  tm_shape(metro_australia) +
    tm_symbols(col = "orange",
               size = "pop2020",
               scale = 1,
               legend.size.show = T)
```



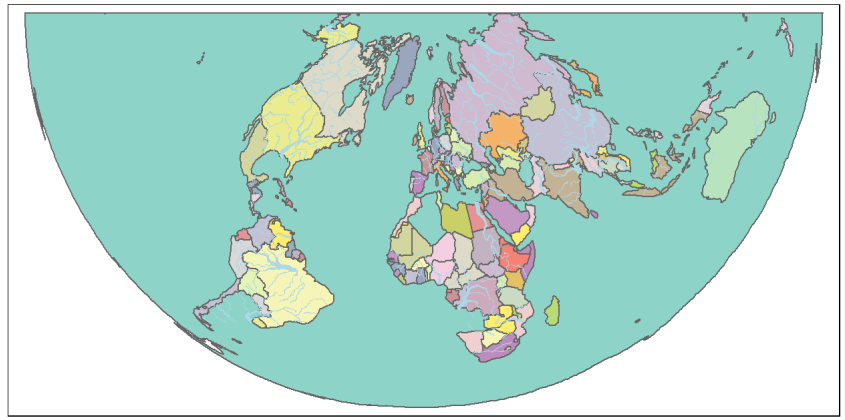
Transforming to Interactive

```
library(tidyverse)
library(tmap)

data(World, metro)

metro_australia <- metro %>% filter(iso_a3 == "AUS")

## Swapping "plot" for "view" transforms the map from static
## to interactive
tmap_mode("view")

## Simple as that. Try exploring the map now, drag, scroll, click

World %>%
  filter(name == "Australia") %>%
  tm_shape(shp = .,
           projection = "+proj=merc") +
    tm_polygons("name",
                legend.show = F) +
  tm_shape(metro_australia) +
    tm_symbols(col = "orange",
               size = "pop2020",
               scale = 1,
               legend.size.show = T)
```



Projections

```
library(tidyverse)
library(tmap)

data(World, rivers)

tmap_mode("plot")

World %>%
  tm_shape(shp = .,
## Mercator
## Robinson
## Wagner I
## Interrupted Goode Homolosine
## Nicolosi Globular
## Lagrange
## Van Der Grinten I
## Tobler-Mercator
## American Polyconic
## Orthographic
## Lambert Equal Area Conic
           projection = "+proj=leac") +      #ROTATE
    tm_polygons("name",
                legend.show = F) +
  tm_shape(rivers) +
    tm_lines("lightblue",
             lwd = "strokelwd",
             scale = 3,
             legend.lwd.show = F)
```



Additional Information & Options

- Different projections are better suited to different maps.
- For example, if producing a map of Alaska then the "Alaska Grid" or "Alaska Series E" projection type would be typical.
- When presenting a large region or the world at large, however, "Mercator" or "Robinson" are more reliable.
- Find more projection types at: https://proj.org/operations/projections/index.html