



WorldClim Database

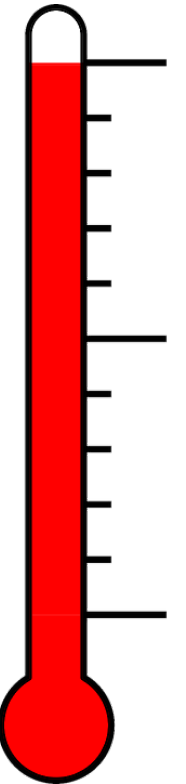
Madison Brook

What is it?

- Database of worldwide **weather/climate data**
- Data summarized from years 1970-2000
- Smooths data from weather stations

Website: <https://www.worldclim.org/data/index.html>

Fick, S.E. and R.J. Hijmans, 2017. WorldClim 2: new 1km spatial resolution climate surfaces for global land areas. International Journal of Climatology 37 (12): 4302-4315.



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WorldClim 2: new 1-km spatial resolution climate surfaces for global land areas

[SE Fick](#), [RJ Hijmans](#) - International journal of climatology, 2017 - Wiley Online Library

We created a new dataset of spatially interpolated monthly climate data for global land areas at a very high spatial resolution (approximately 1 km²). We included monthly temperature (minimum, maximum and average), precipitation, solar radiation, vapour pressure and wind ...

☆ [Cited by 2164](#) [Related articles](#) [All 3 versions](#)

[\[PDF\] wiley.com](#)

[\[HTML\] Towards estimates of future rainfall erosivity in Europe based on REDES and WorldClim datasets](#)

[P Panagos](#), [C Ballabio](#), [K Meusburger](#), [J Spinoni](#)... - Journal of ..., 2017 - Elsevier

The policy requests to develop trends in soil erosion changes can be responded developing modelling scenarios of the two most dynamic factors in soil erosion, ie rainfall erosivity and land cover change. The recently developed Rainfall Erosivity Database at European Scale ...

☆ [Cited by 51](#) [Related articles](#) [All 13 versions](#)

[\[HTML\] sciencedirect.com](#)

ecoClimate vs. Worldclim: variables climáticas SIG para trabajar en biogeografía

[S Varela](#), [LC Terribile](#), [G de Oliveira](#)... - Revista ..., 2015 - revistaecosistemas.net

Abstract Varela, S., Terribile, LC, de Oliveira, G., Diniz-Filho, JAF, González-Hernández, J., Lima-Ribeiro, MS 2015. ecoClimate, a new open-access repository with variables for the past, present and future climatic scenarios. Ecosistemas 24 (3): 88-92. Doi.: 10.7818/ECOS ...

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[\[PDF\] revistaecosistemas.net](#)

[\[HTML\] Enhancing the WorldClim data set for national and regional applications](#)

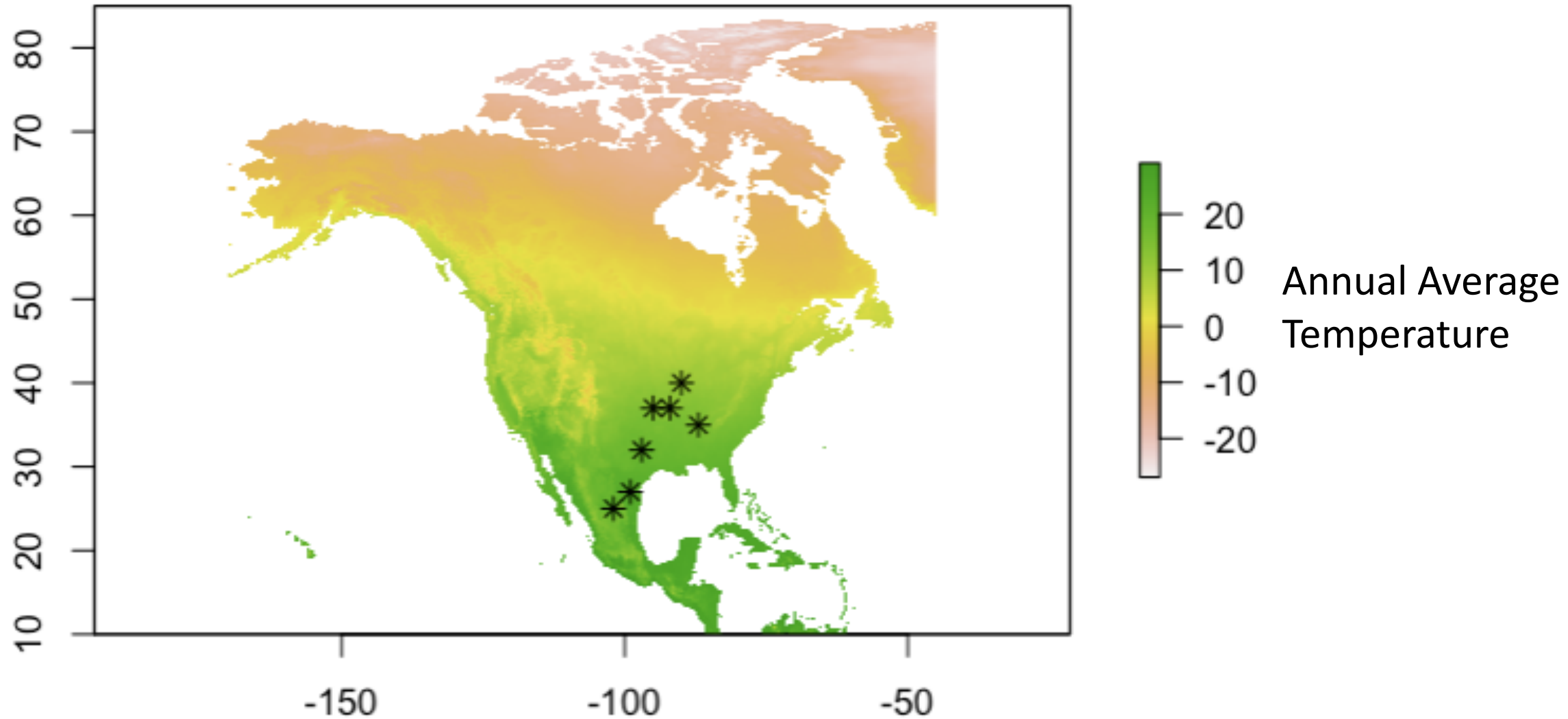
[L Poggio](#), [E Simonetti](#), [A Gimona](#) - Science of the Total Environment, 2018 - Elsevier

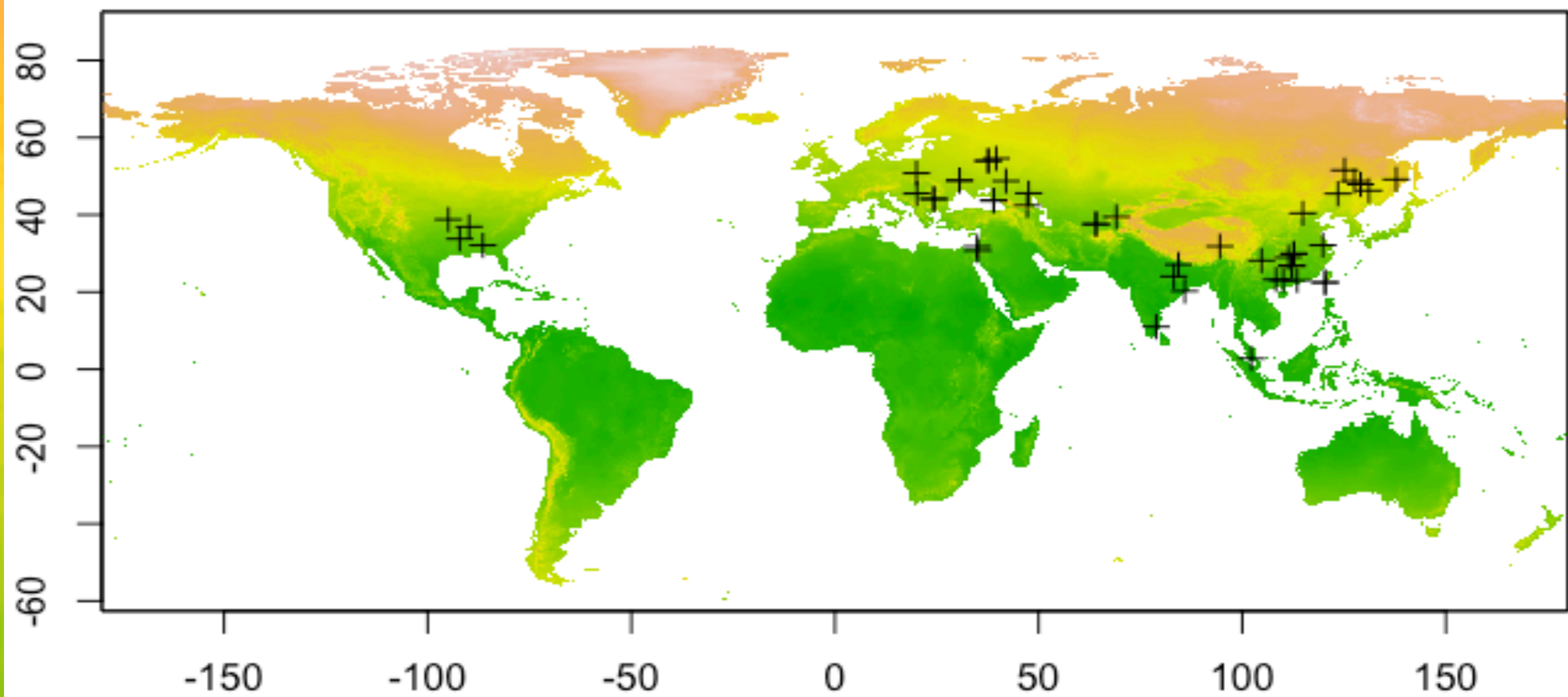
Climatic change in the last few decades has had a widespread impact on both natural and human systems, observable on all continents. Ecological and environmental models using climatic data often rely on gridded data, such as WorldClim. The main aim of this study was ...

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[\[HTML\] sciencedirect.com](#)

Species occurrence



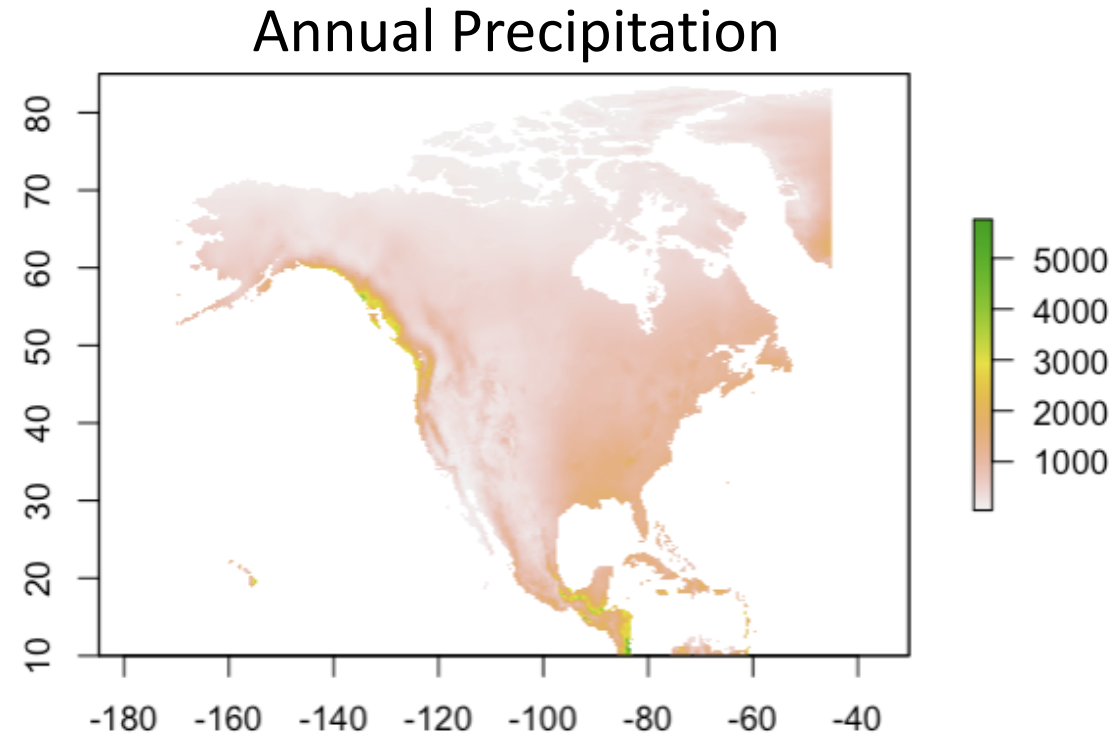


WorldClim variables - WorldClim

- Monthly averages
- Variables:
 - Temp_{min}
 - Temp_{max}
 - Temp_{avg}
 - Precip
 - Etc.

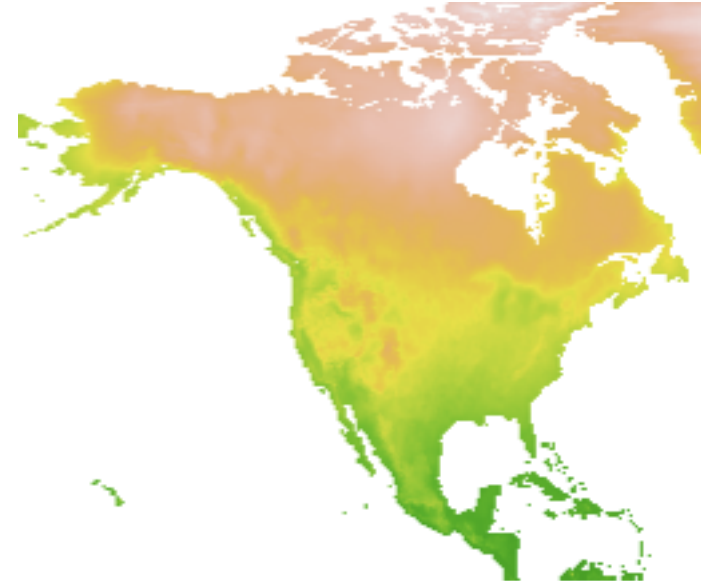
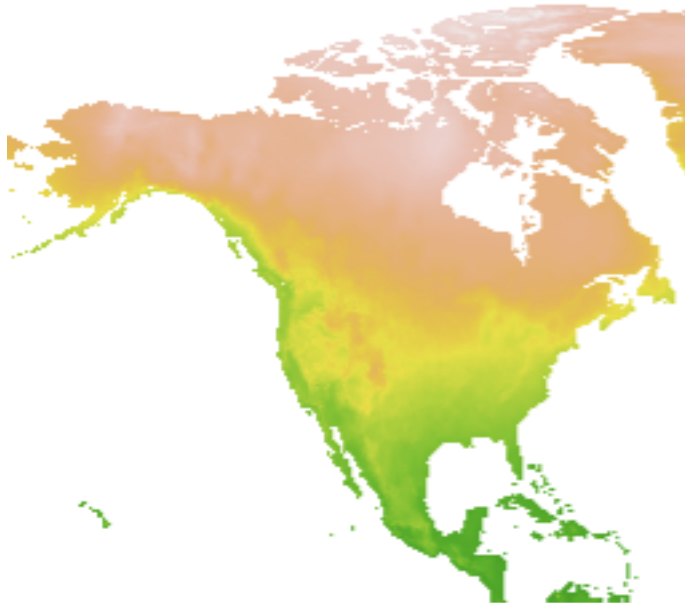
WorldClim variables - BioClim

- Annual averages
- Variables
 - Lots available (19!)
 - Metrics of temp and precip
 - Eg. Max Temperature of Warmest Month
Precipitation of Driest Quarter



WorldClim variables – future climate data

- Coupled Model Intercomparison Project Phase 6
- Has multiple global climate models and economic pathway options
- Can get Temp_{min}, Temp_{max}, Precip, etc.



Resolution

- 4 possibilities

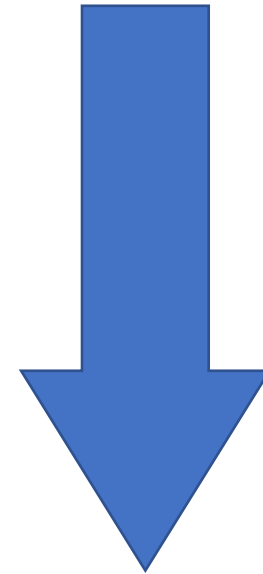
10 minutes ($\sim 340 \text{ km}^2$)

5 minutes ($\sim 81 \text{ km}^2$)

2 minutes ($\sim 20 \text{ km}^2$)

30 seconds ($\sim 1 \text{ km}^2$)

BROAD



FINE

Pros

- Easy to work with
- Worldwide data
- Not station-specific

Cons

- Aggregates data
 - Can't get yearly data
- Not station-specific

How to work with it

- **getData()** function in “raster” package
 - Elevation
 - Country boundaries
 - Worldclim data
- Downloads file from internet to be used in R



Questions?