

Islands of biodiversity digital knowledge on the Atlantic Rainforest and the factors behind them

MSc. Gracielle Higino

  @graciellehigino

**THE INTERNET IS
GREAT!**

THE INTERNET IS GREAT!



- what's a boyfriend a
- what's a boyfriend and where can i download one
- what's a boyfriend and where do i download one
- what to get a boyfriend for anniversary
- what to gift a boyfriend on 1st anniversary
- what to get a boyfriend for a birthday
- what to talk about with a your boyfriend
- what to gift a boyfriend on anniversary
- what is a cute name for a boyfriend
- what are cute gift ideas for a boyfriend

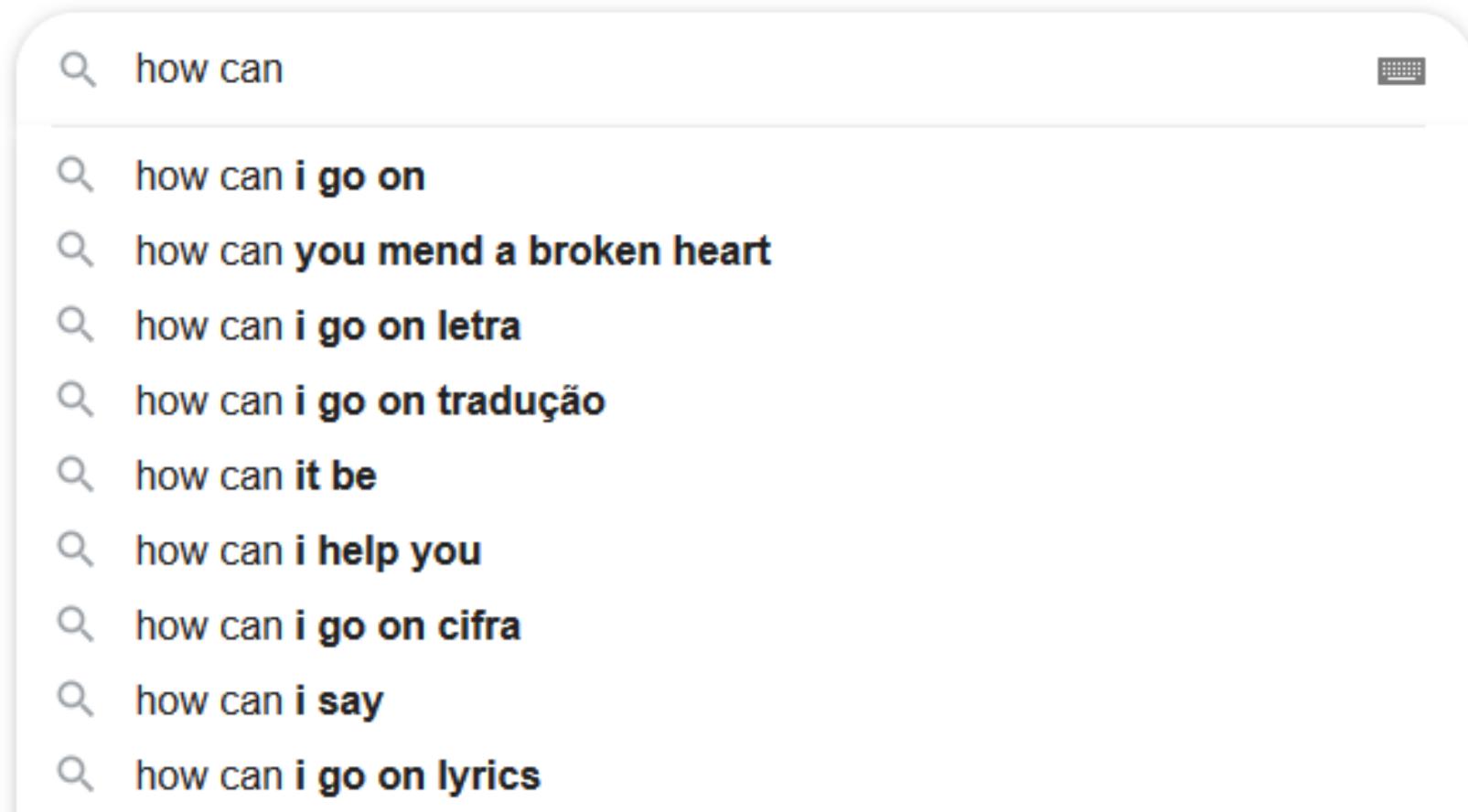
THE INTERNET IS GREAT!



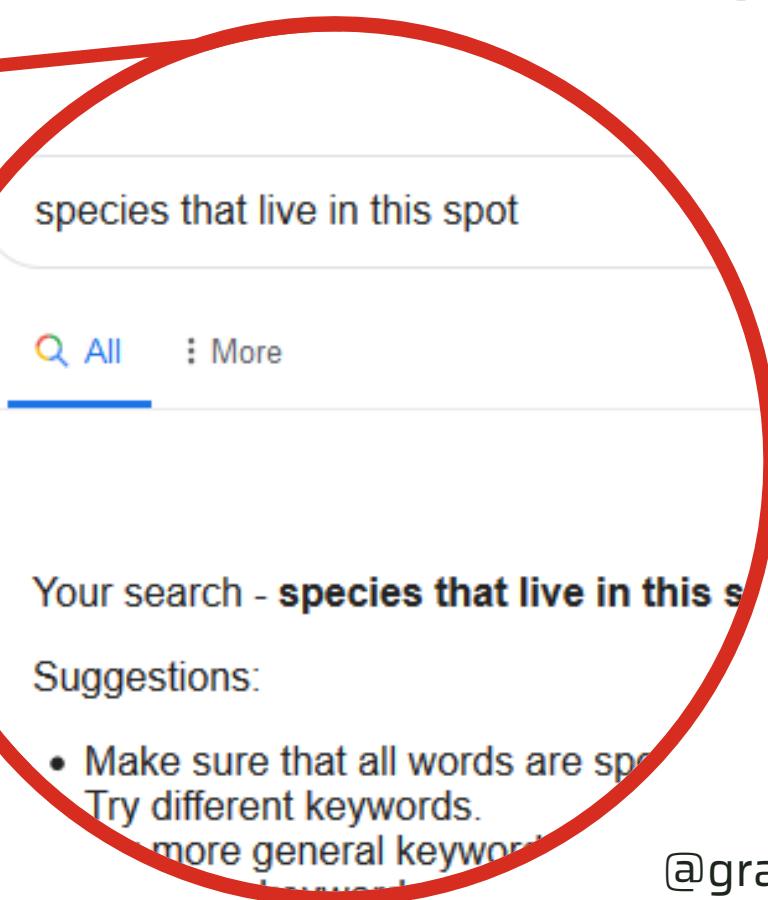
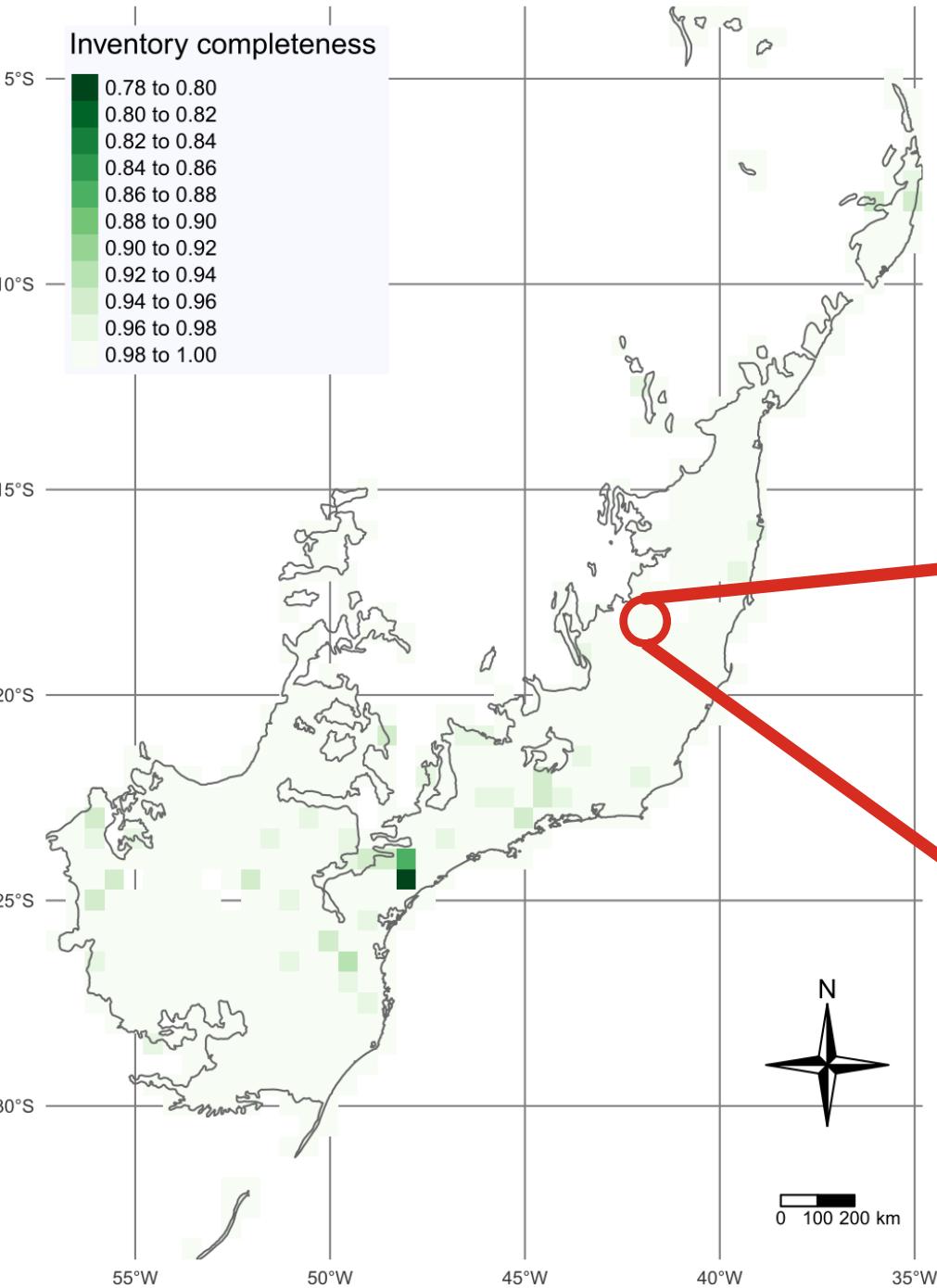
- Don't You Hate It When a ~~~~~ [Keyboard]
- don't you hate it when a sentence doesn't end the way you think it o ctopus
- don't you hate it when a llama named carl
- don't you hate it when a velociraptor throws
- don't you hate it when a sentence doesn't end the way it octopus
- don't you hate it when a chinchilla eats the universe
- don you hate it when a velociraptor throws bananas at you
- don't you hate it when a seal slaps you in the face with an octopus
- don t you hate it when you lose your white friend in a snowstorm

THE INTERNET IS GREAT!

Google



We can't find
the species that
live here
in this spot!



@graciellehigino



Ceci n'est pas une pipe.

ecological phenomenon

**BLAME THE
ALGORITHM!**

BLAME THE ALGORITHM!

**WAIT!
WHAT'S BIAS?
can I haz one?**

Taxonomic

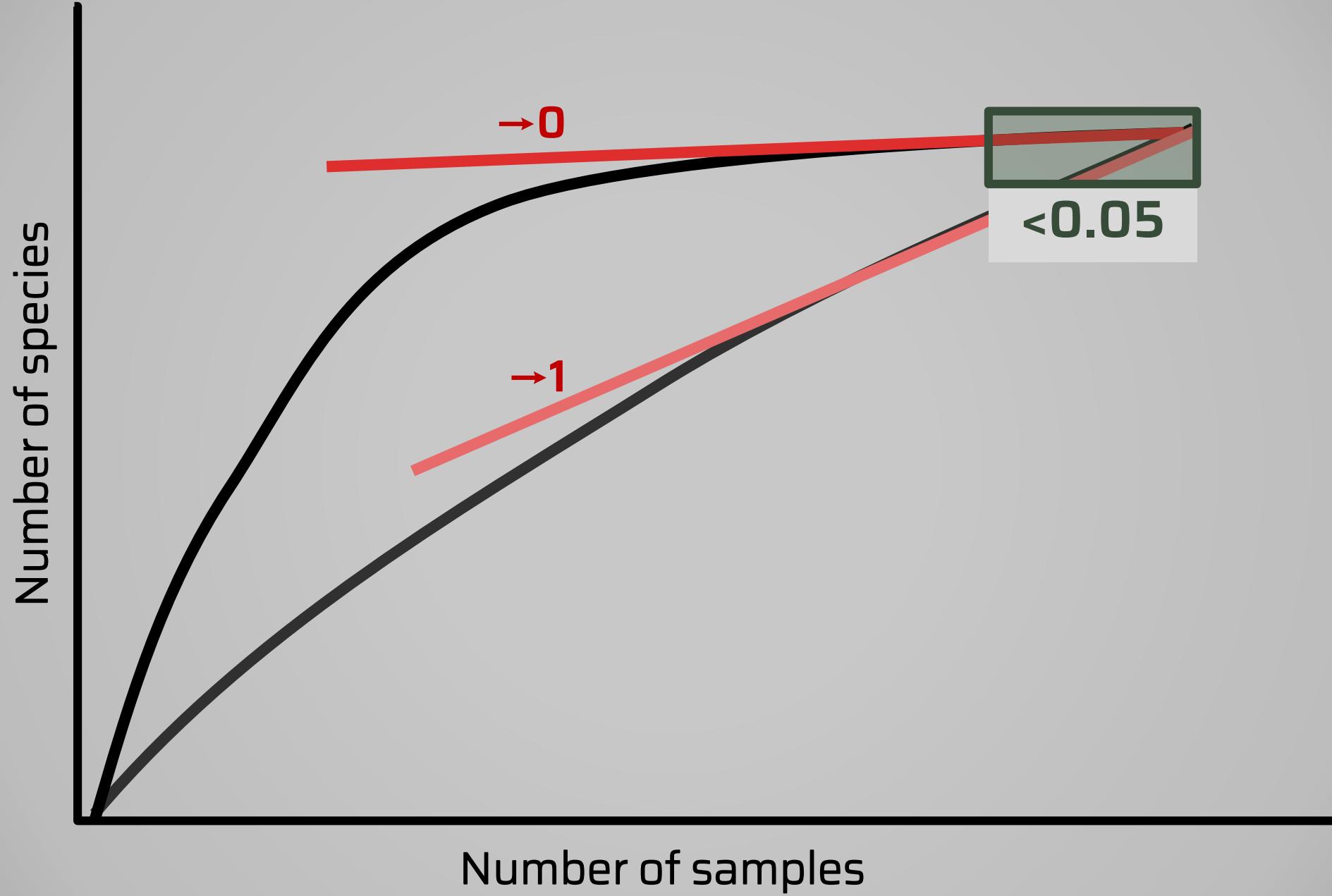
Geographic

Environmental

HACK
~~BLAME THE~~
ALGORITHM!



MAPS OF IGNORANCE





ATS
Biodiversity
Open Data

 **iDigBio**
Integrated Digitized Biocollections

 **GBIF**
Global Biodiversity
Information Facility

Final slope of the rarefaction curve:

0.05

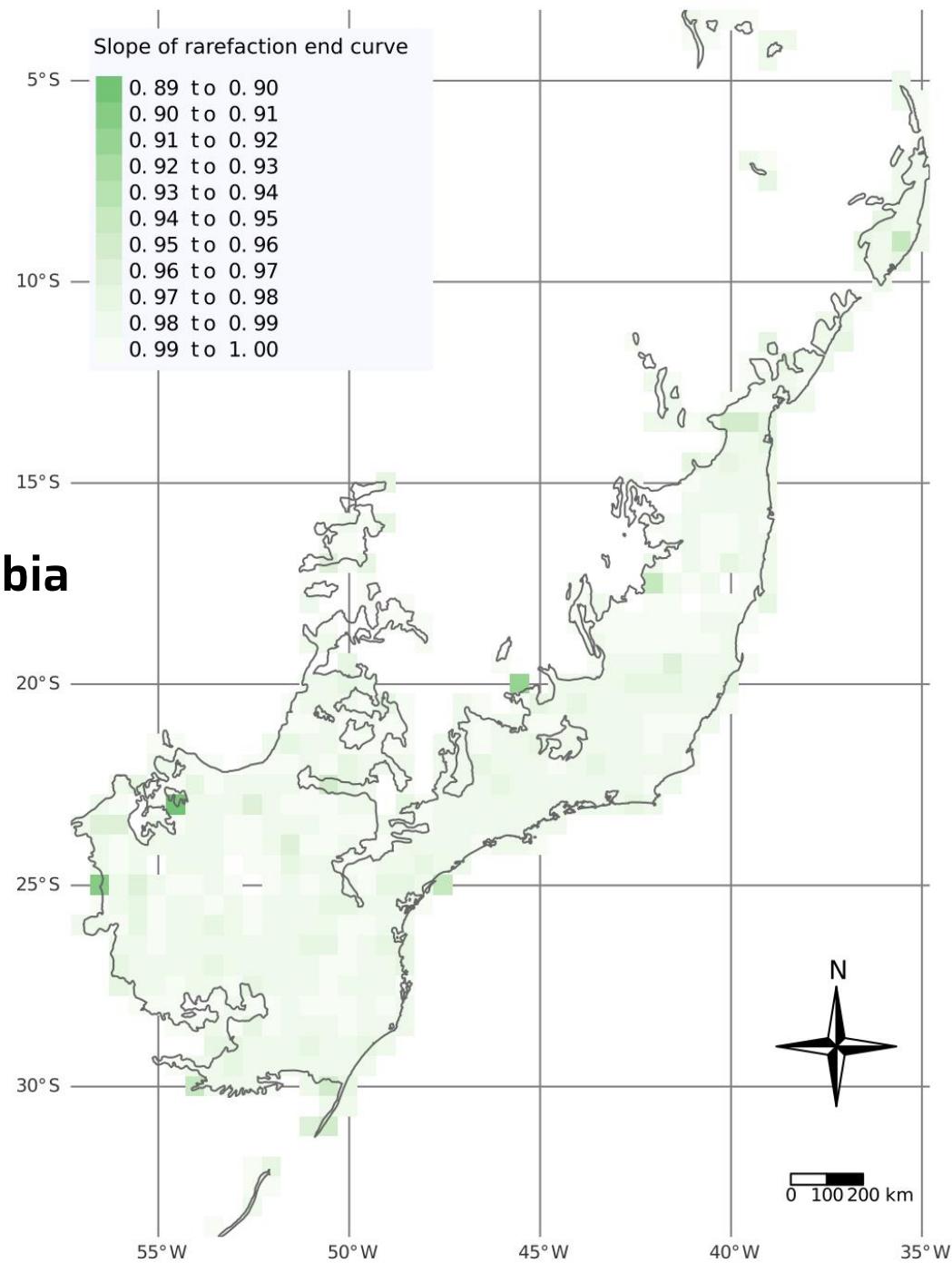
0.11

0.06

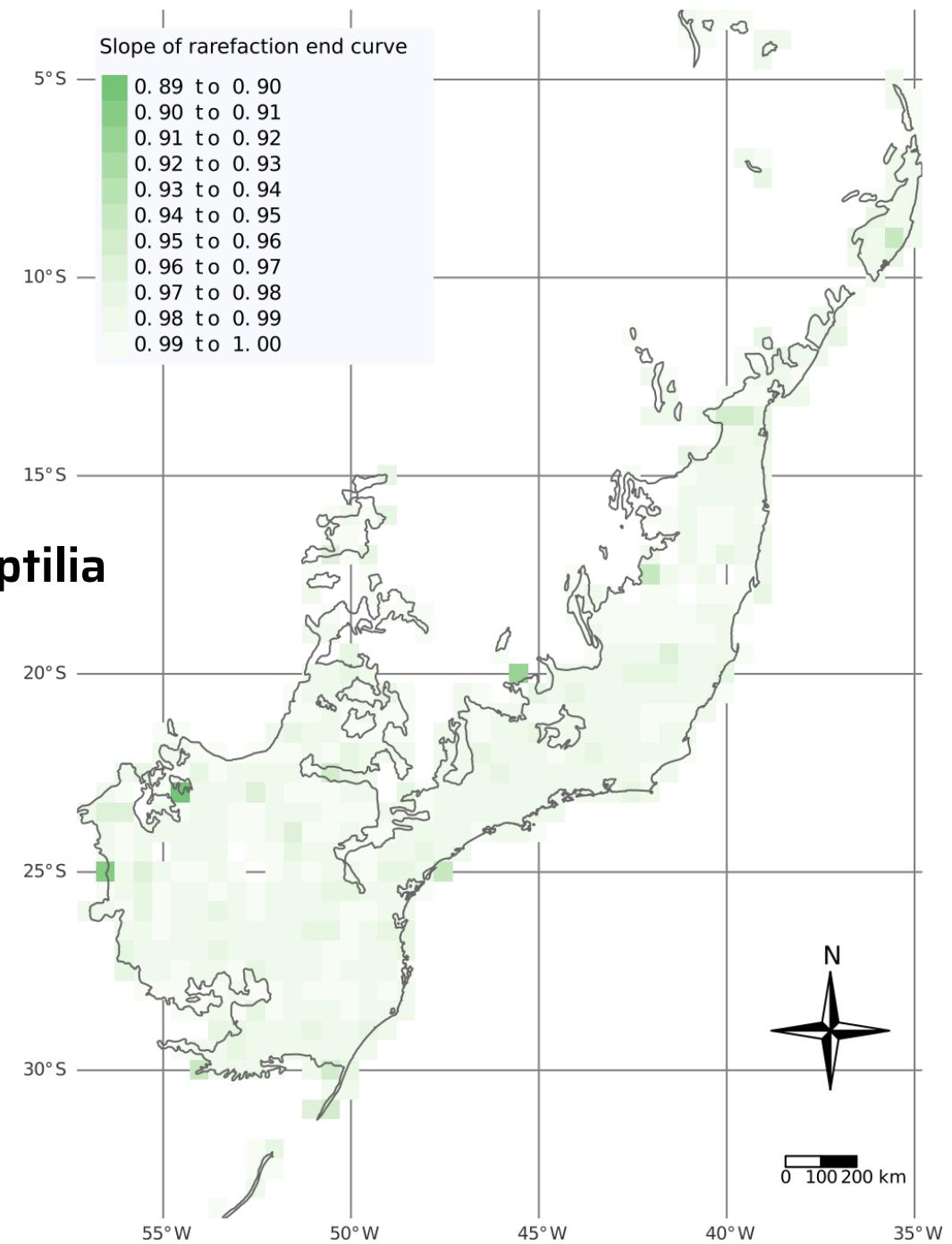
0.14



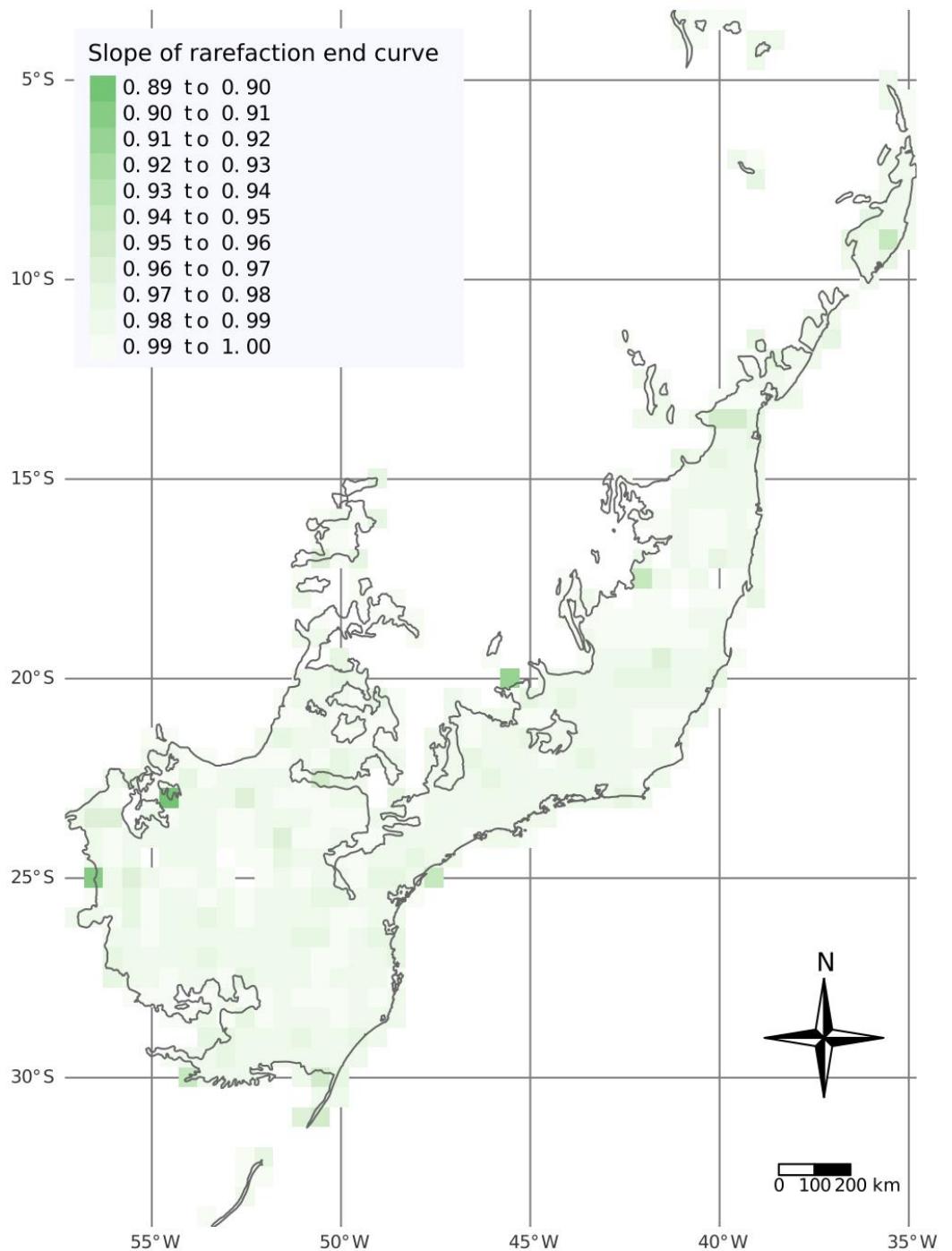
Amphibia



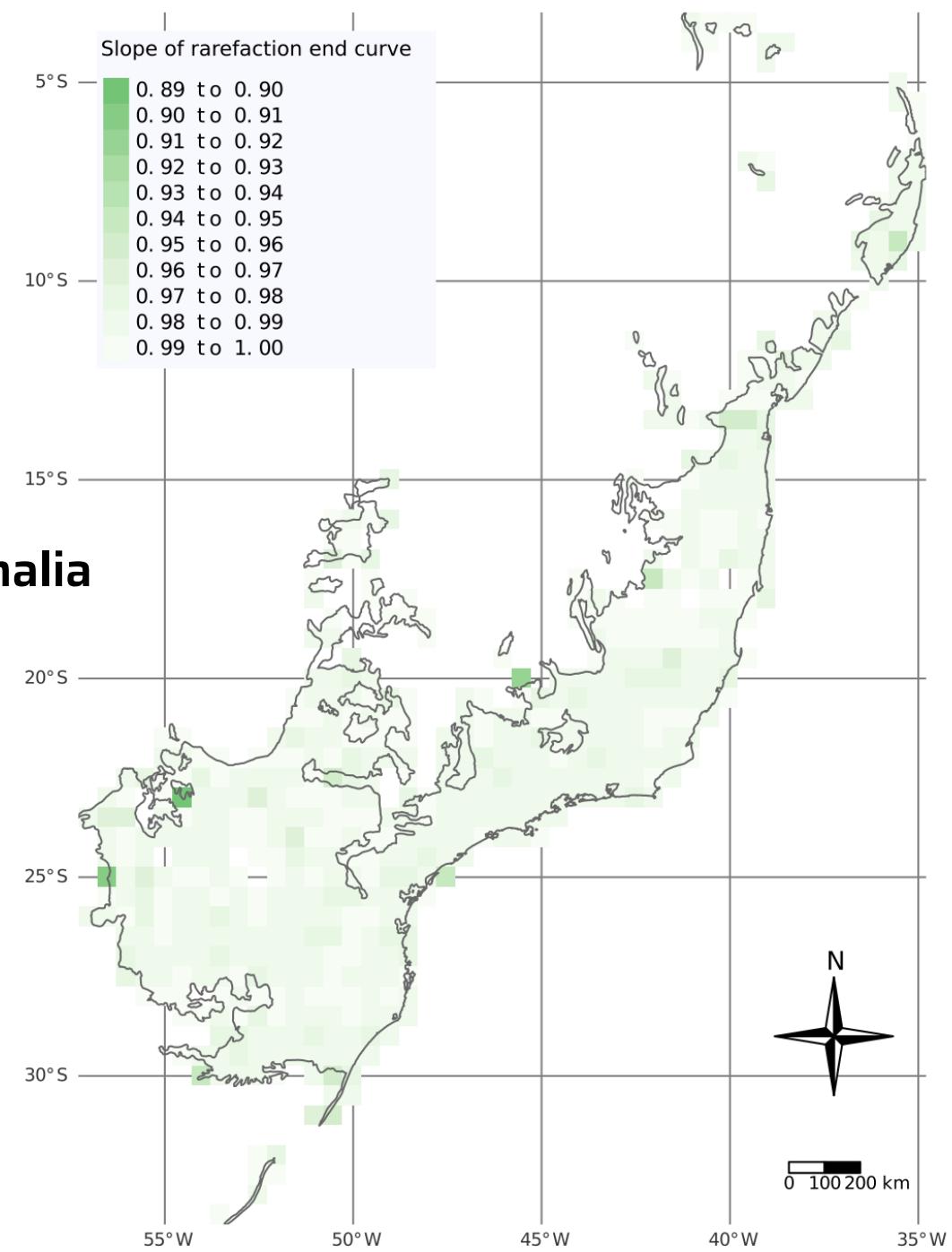
Reptilia



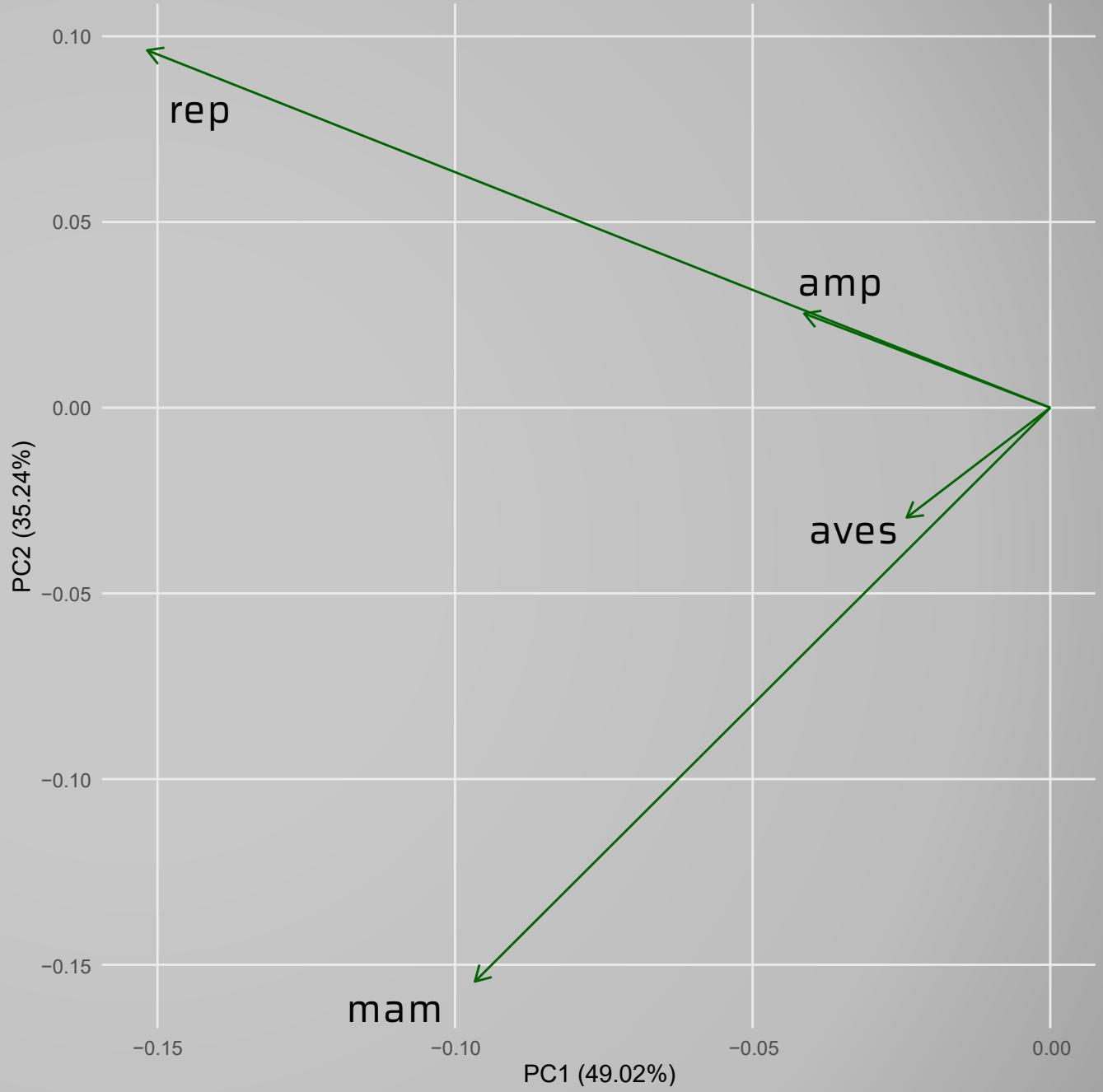
Aves



Mammalia



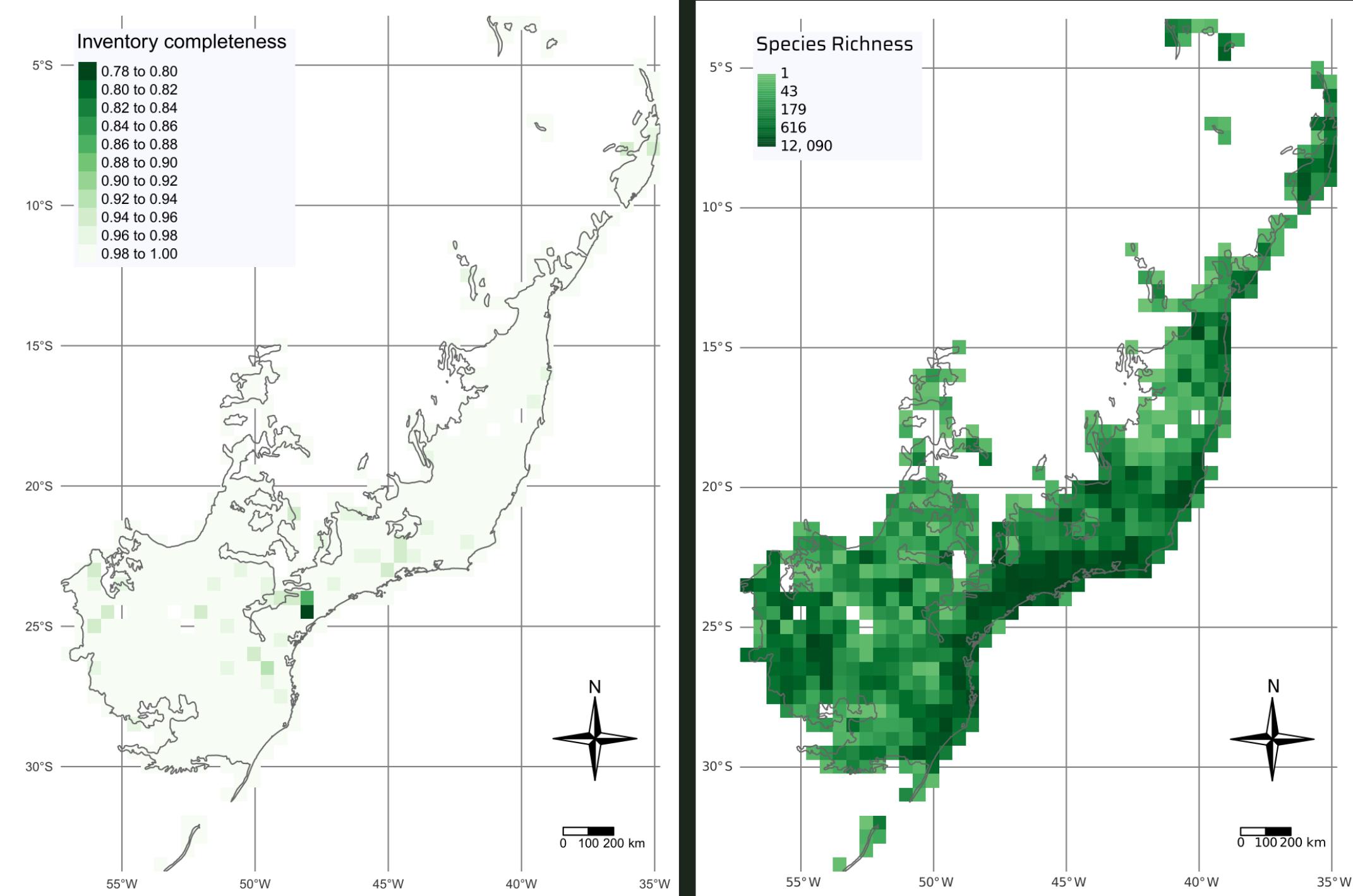
similarity of inventory completeness between Tetrapod classes



BLAME THE ALGORITHM!

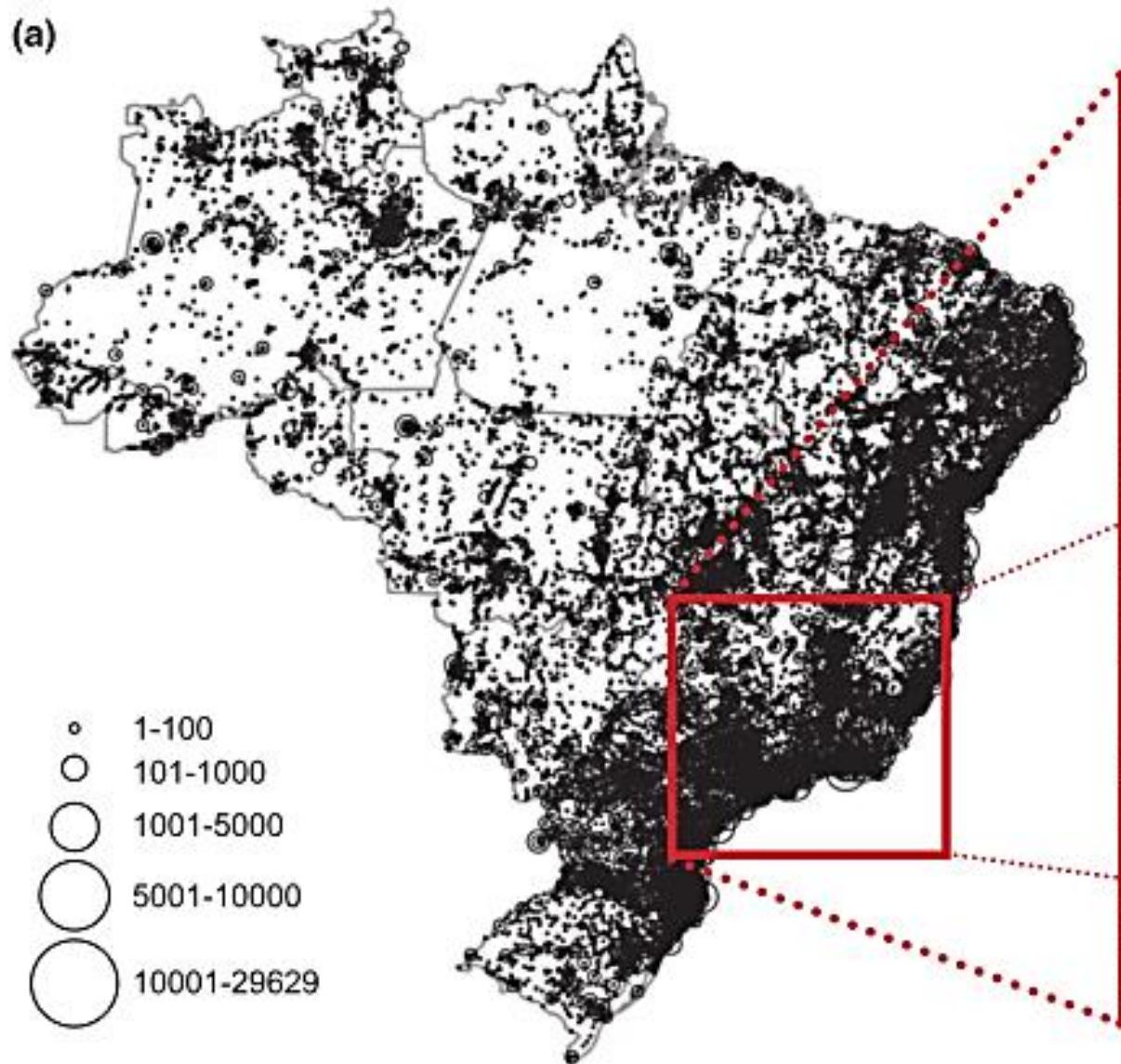
WAIT!
WHAT'S BIAS?
can I haz one?

- ✓ Taxonomic
- Geographic
- Environmental



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(a)



(b)

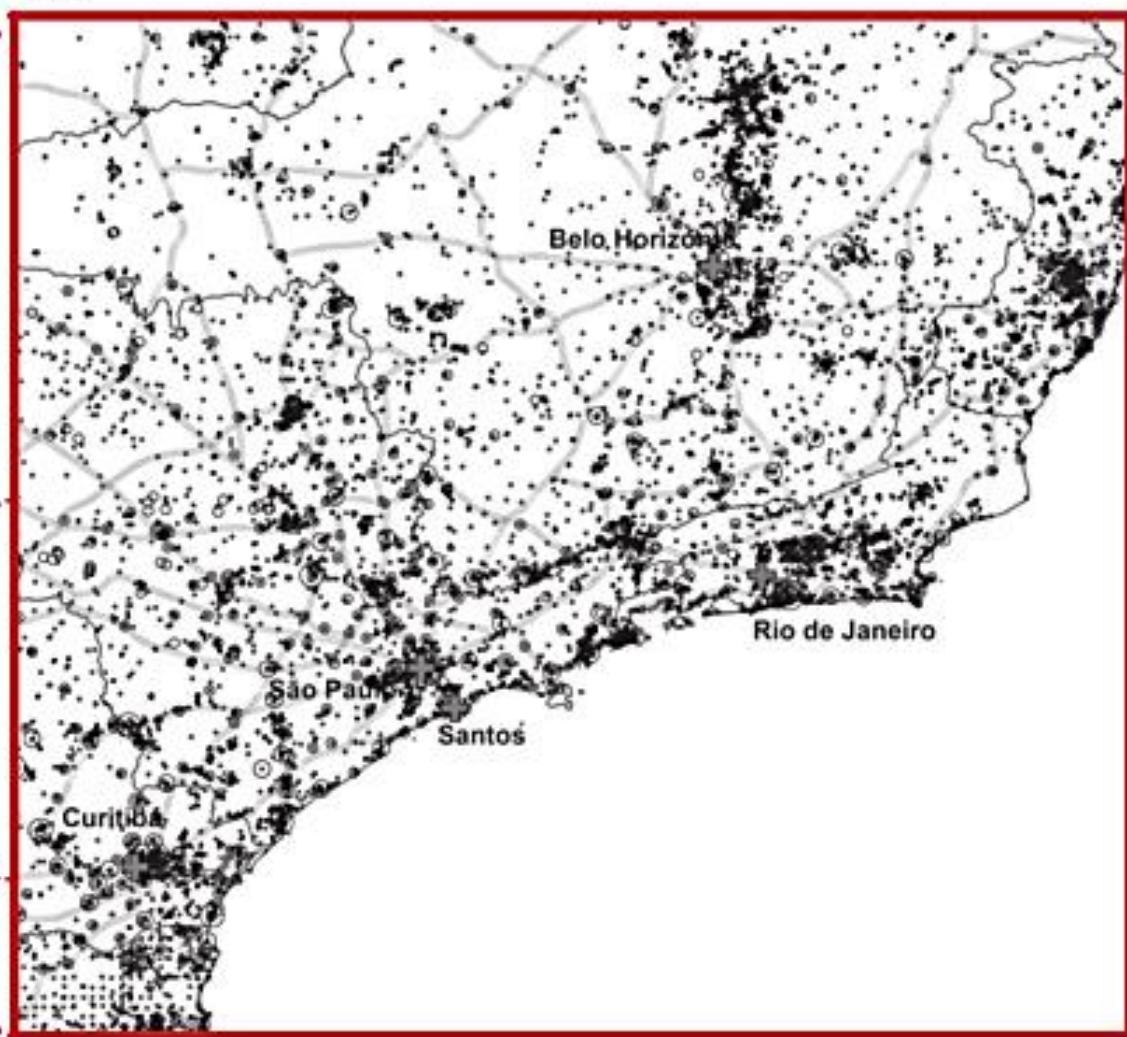


Figure 2 (a) Spatial distribution of angiosperm collecting density across all georeferenced data from the *speciesLink* plant data network. (b) Inset shows close up of south-eastern Brazil, including cities (grey crosses) and roads to illustrate 'road bias' effects. Larger circles indicate higher density of records.

BLAME THE ALGORITHM!

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✓ Taxonomic

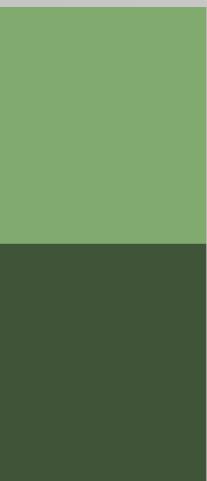
✓ Geographic

Environmental

**Do environmental
variables drive
these biases?**

**Temperature
Topography
NDVI
PET**

Temperature



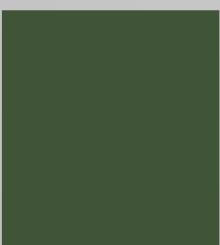
Topography

Aves

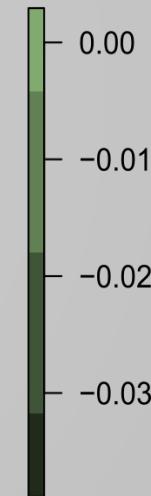
Mammalia

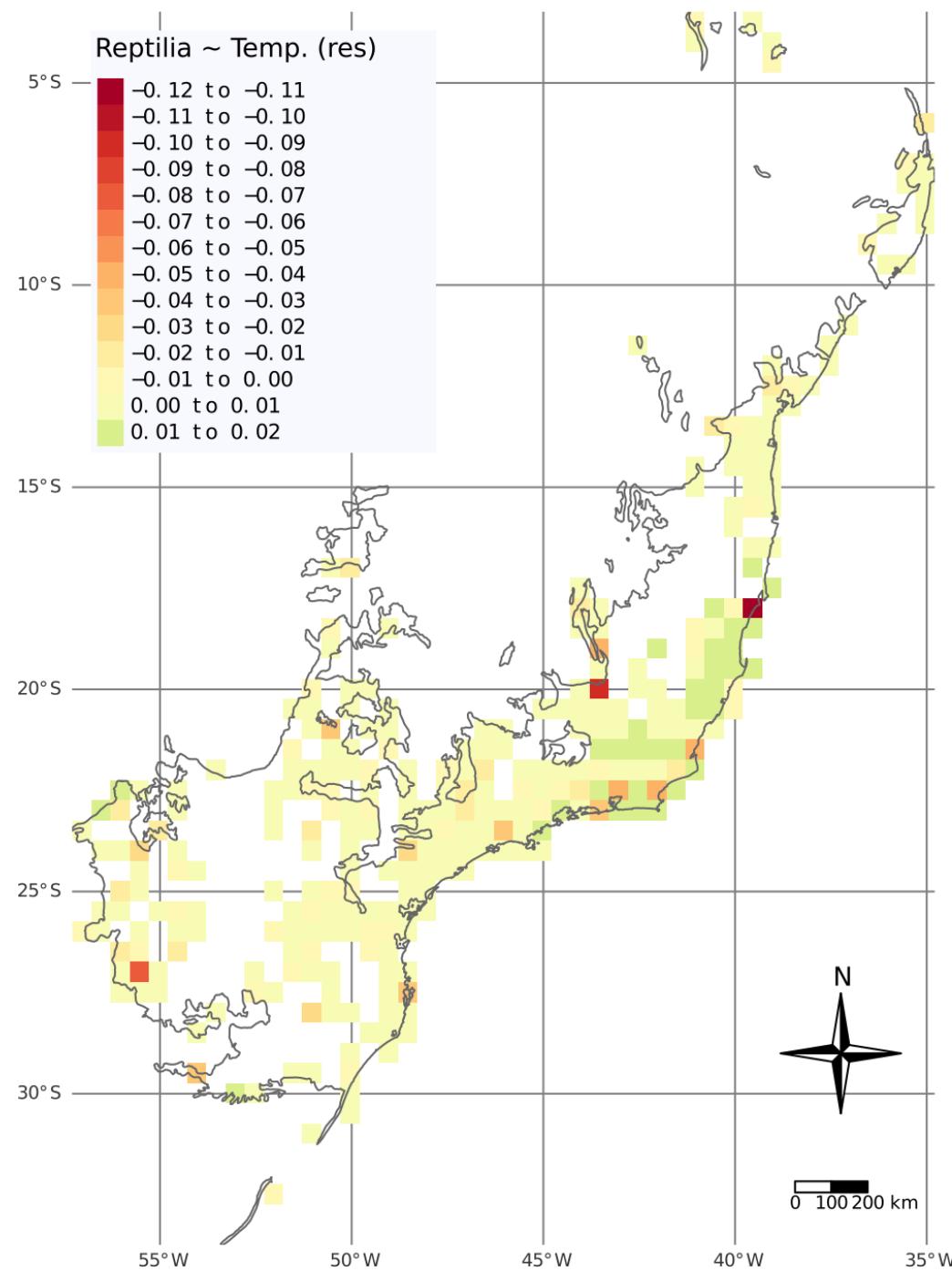
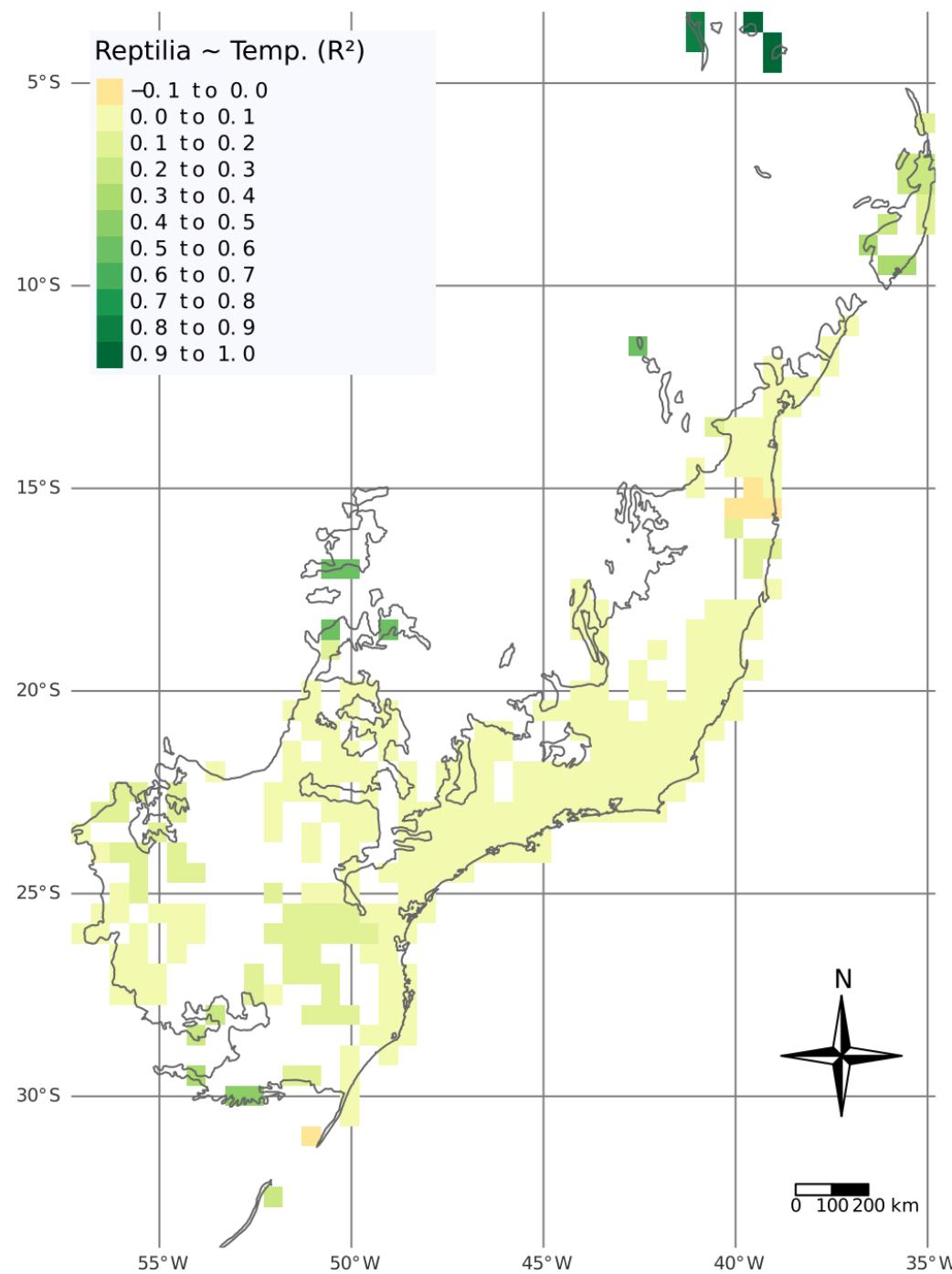
Reptilia

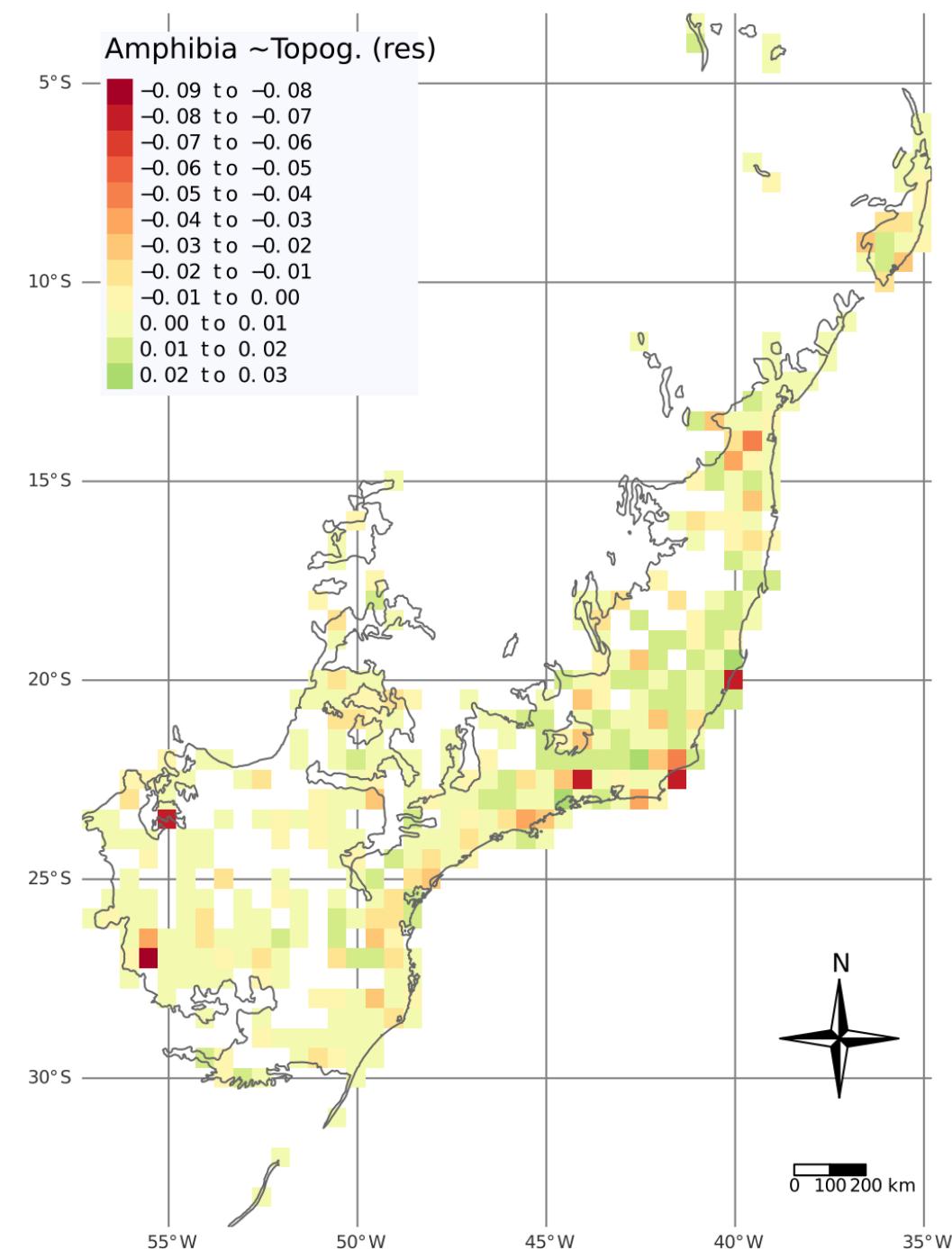
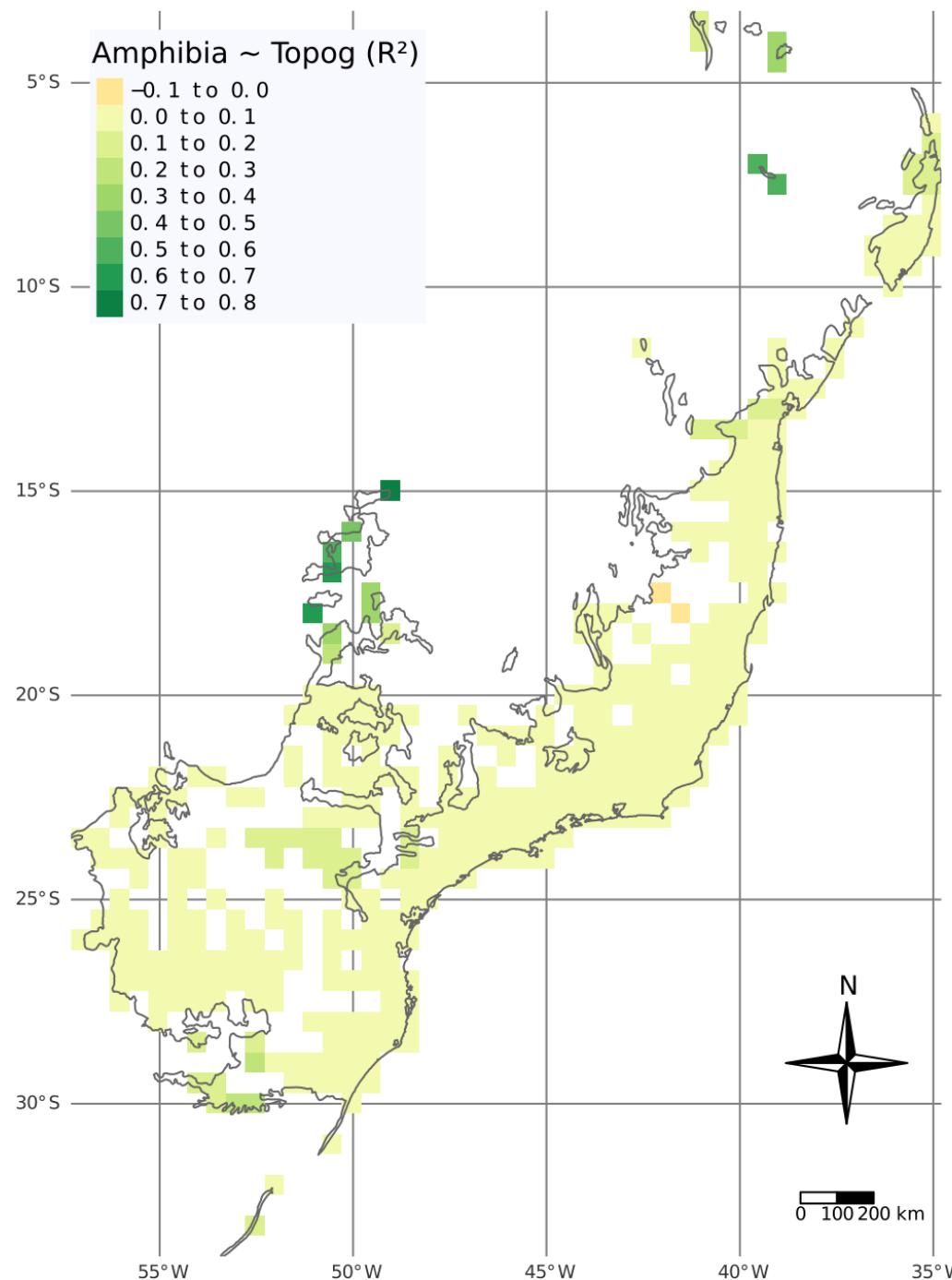
NDVI

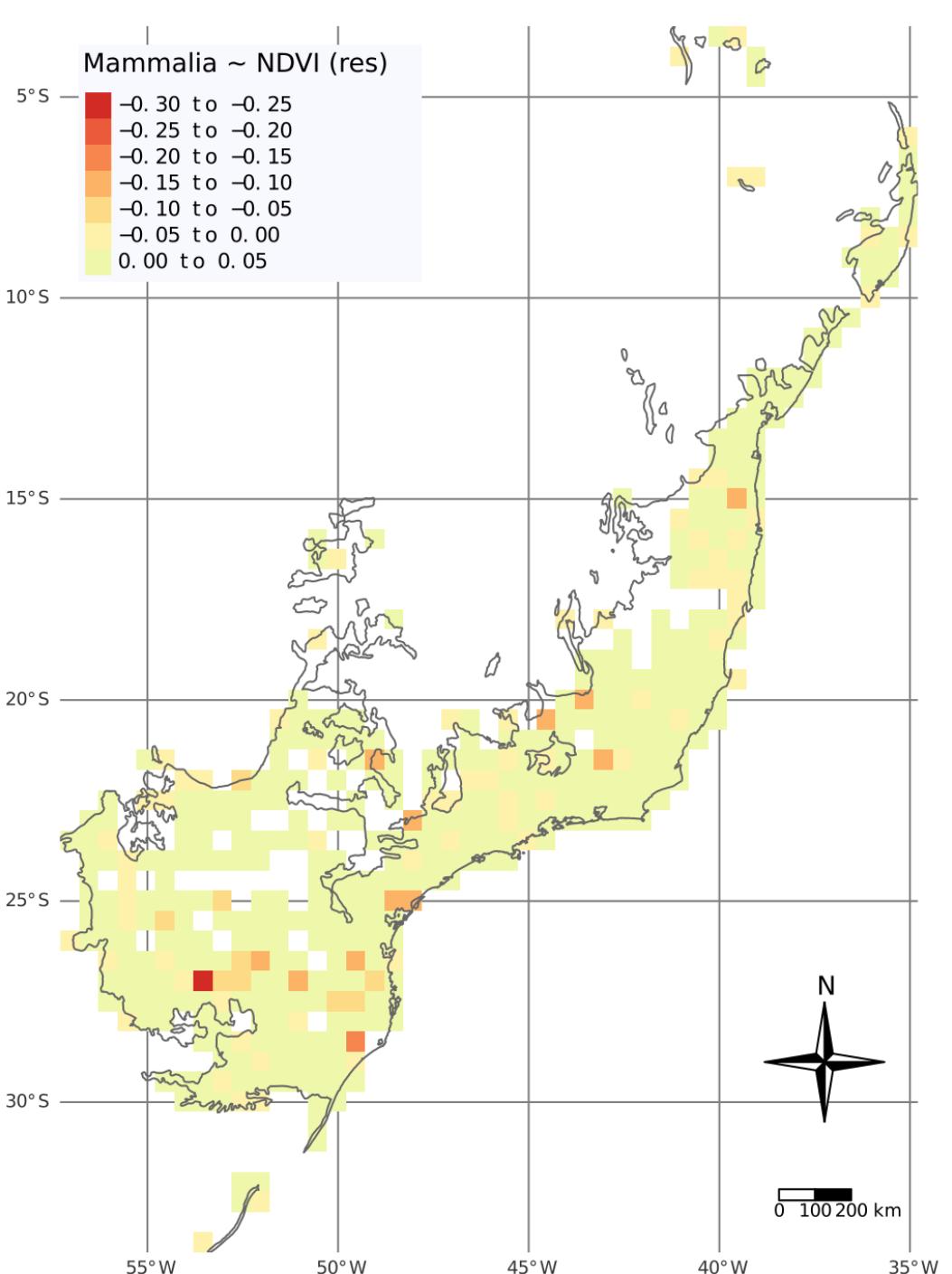
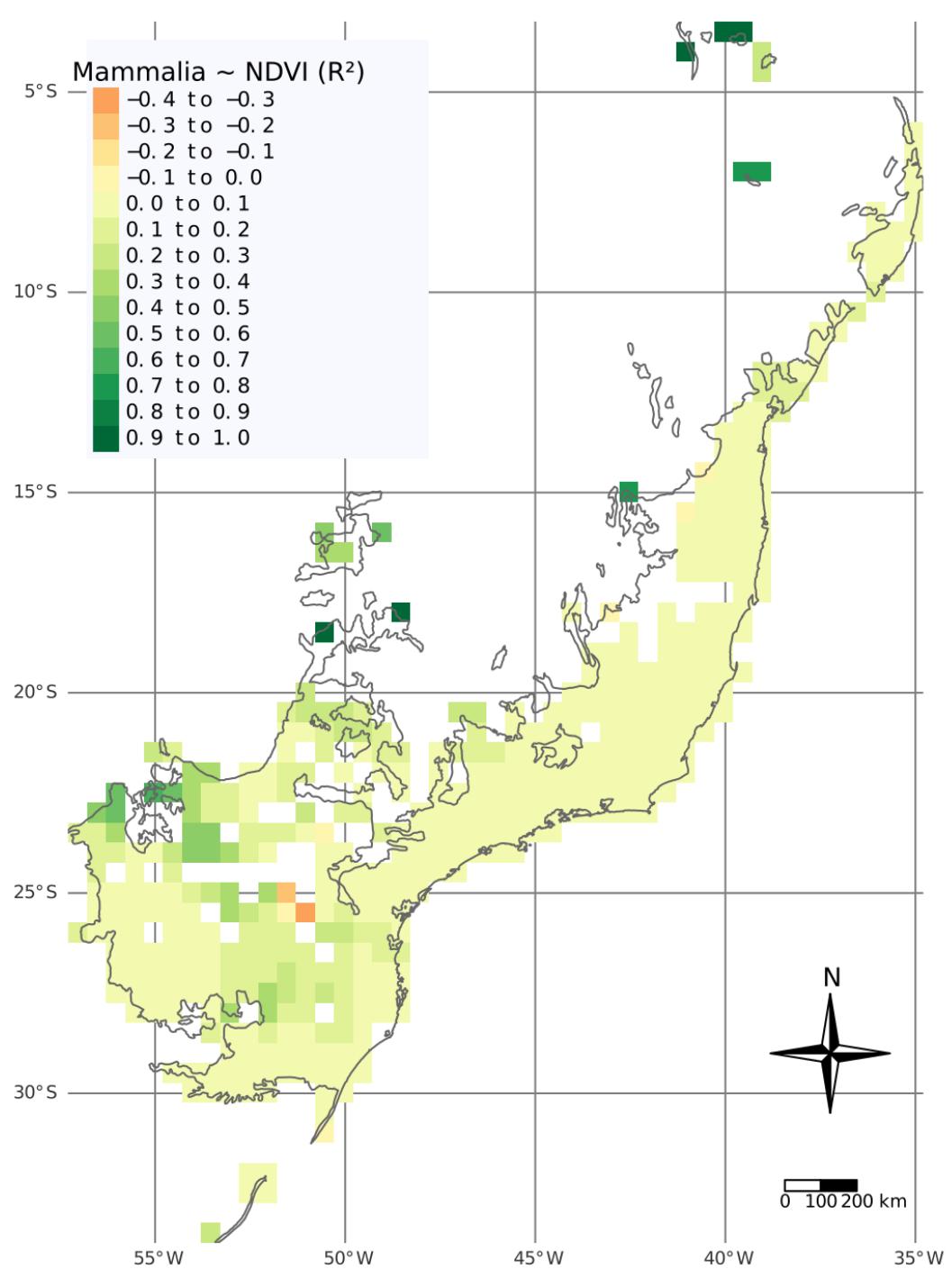


PET





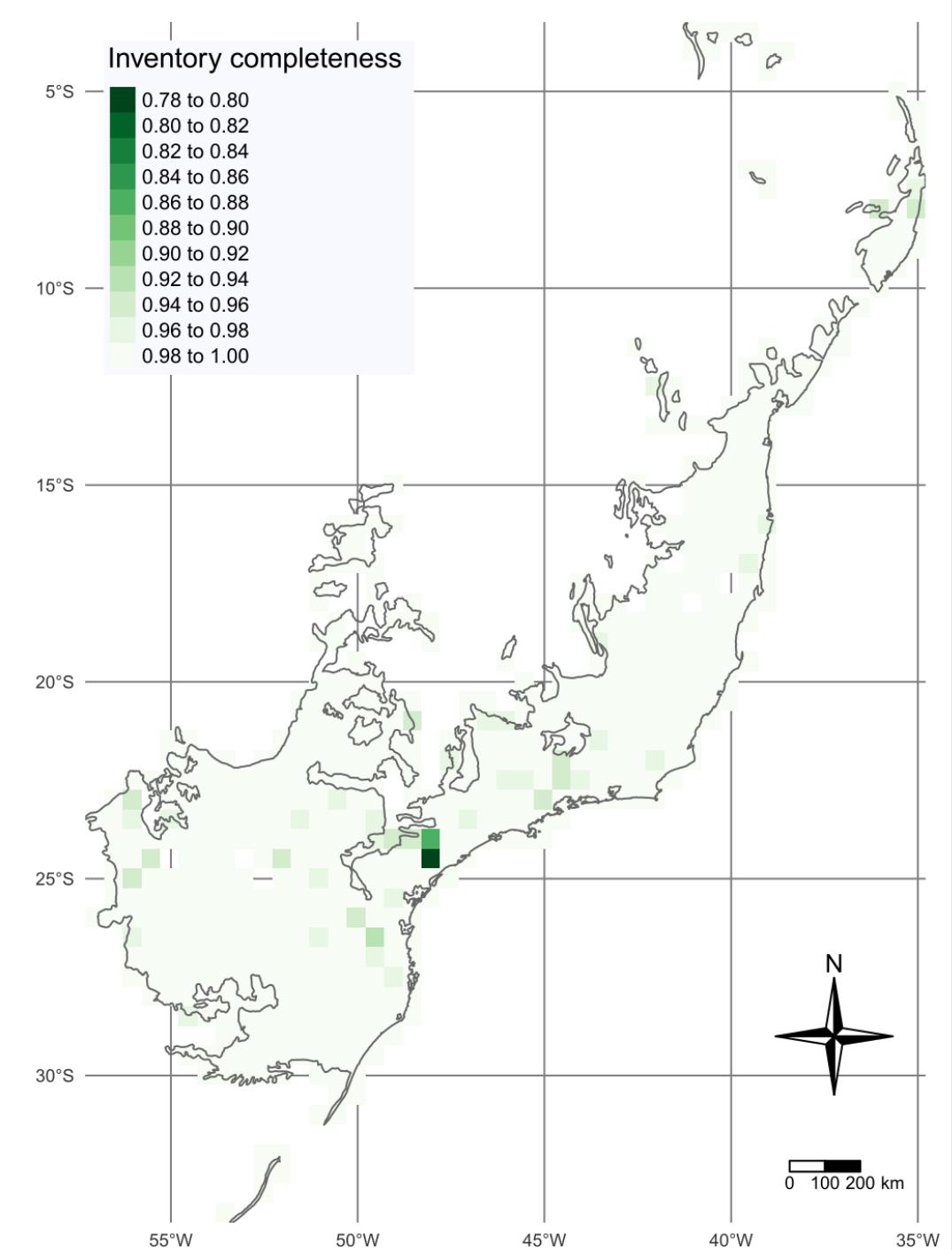




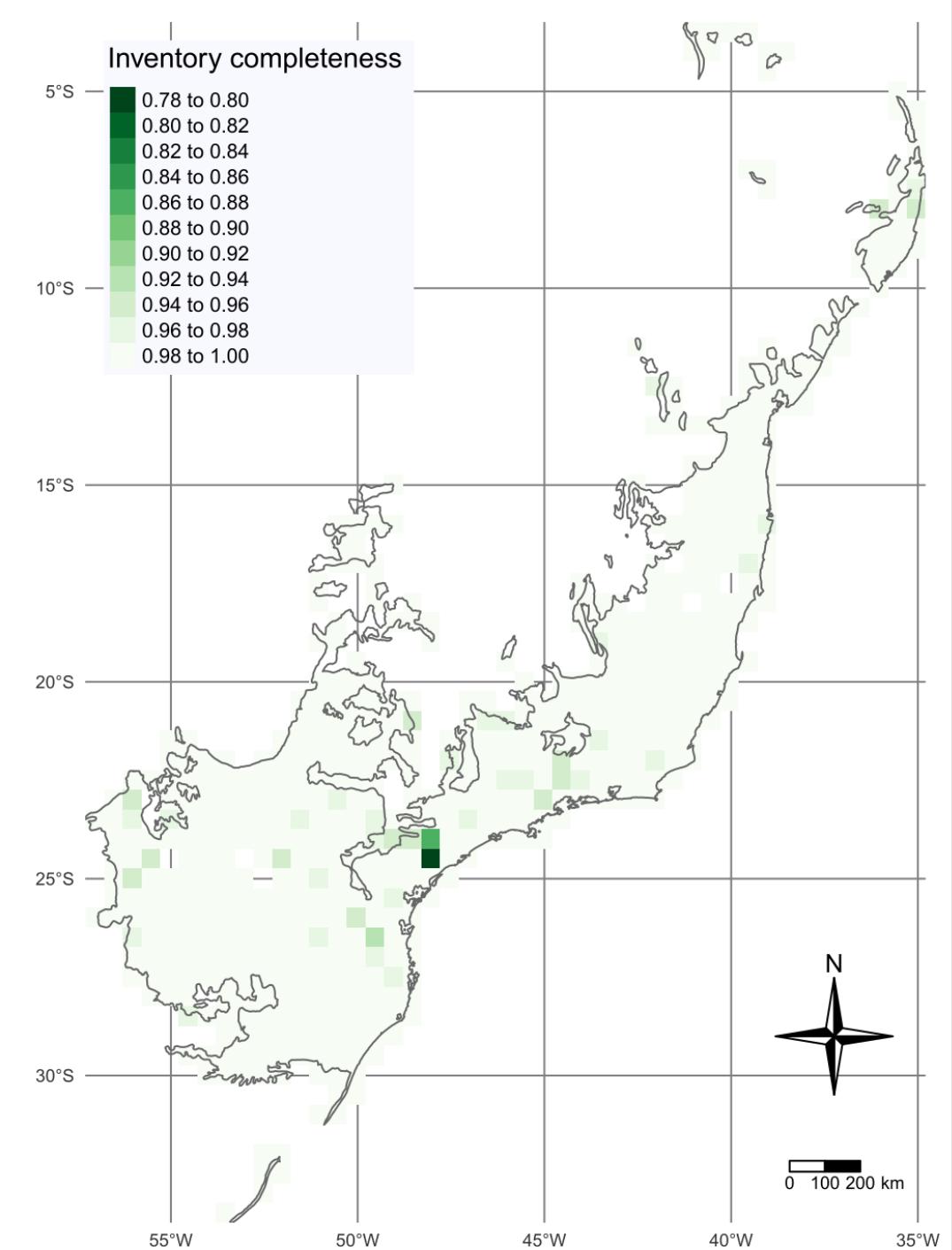
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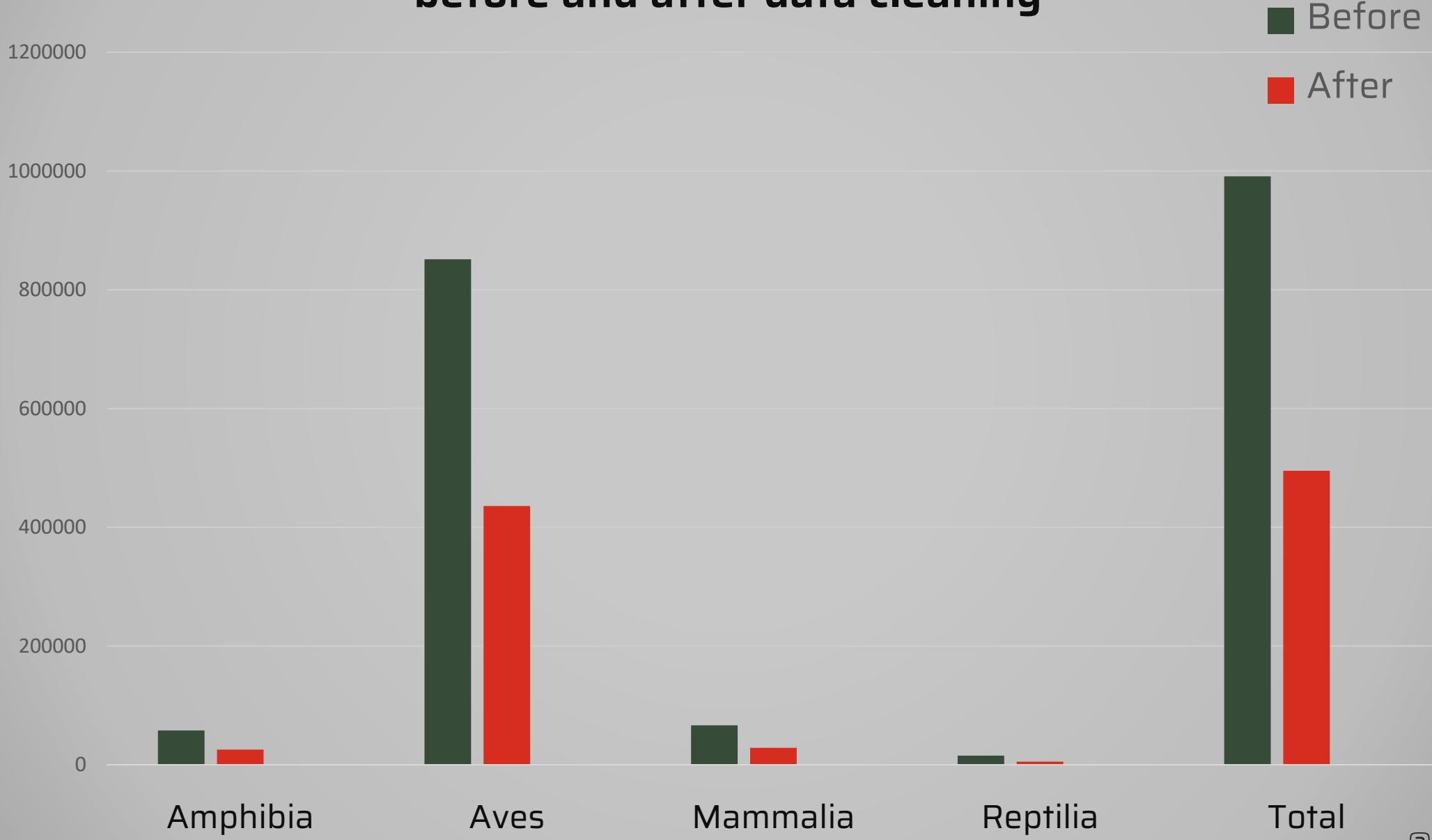


We don't know
the biodiversity
of Tetrapods
from the Atlantic
Rainforest.



We don't know
the biodiversity
of Tetrapods
from the Atlantic
Rainforest.
Or do we?

Number of occurrences on the dataset before and after data cleaning



**What about
“offline” collections?**

**Be counscious about the bias(es)
of your data before you start
your investigations.**

**Be aware of the good practices
for sharing data online.
(double check your coordinates!)**

Share your knowledge!
feed the algorithm right

**My research is open...
So is the end of this story!
Do you want to contribute?**

Islands of **biodiversity** digital **knowledge** on the Atlantic Rainforest and the factors behind them

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the poisot lab

BIOS²



CENTRE DE LA SCIENCE
DE LA BIODIVERSITÉ
DU QUÉBEC

QUEBEC CENTRE
FOR BIODIVERSITY
SCIENCE



Photo: VJ pixel