How spatio-temporal climate change shapes global biodiversity patterns

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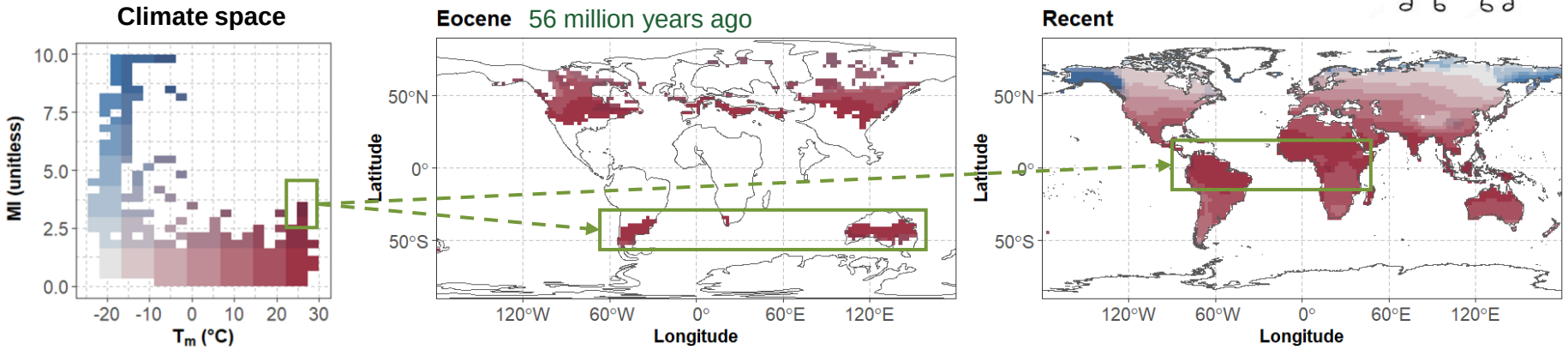
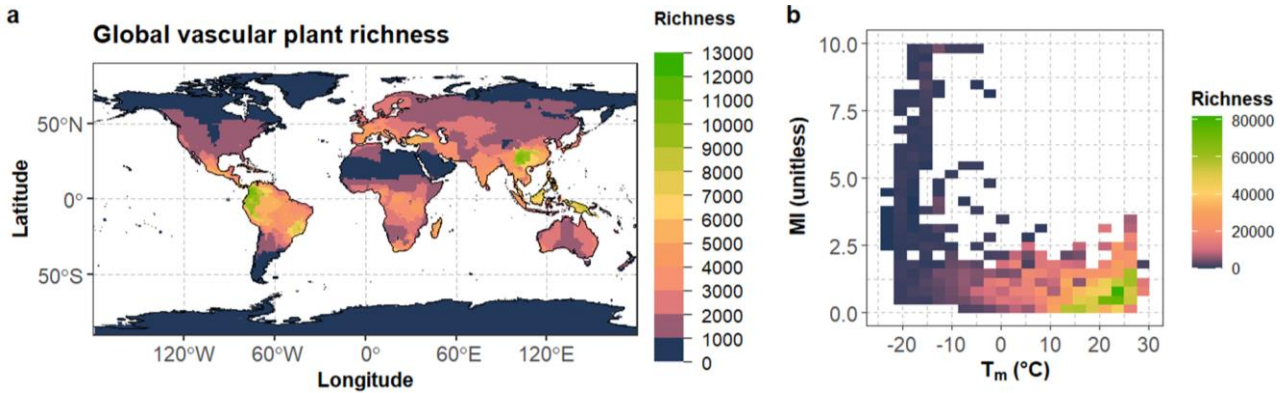
Climate analogues – “twins” across space and time



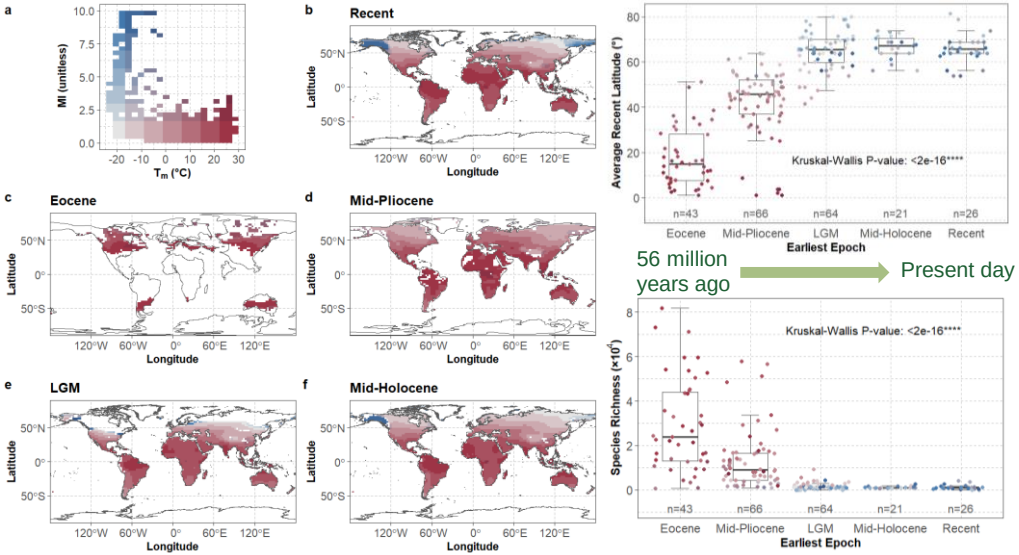


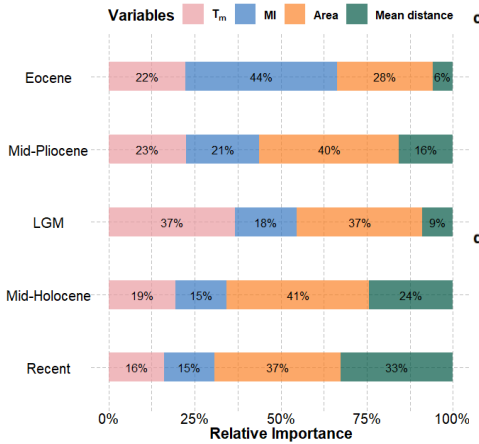
- 350,864 species (**cover > 98%** vascular plant species)
- **Most species-rich and most precise** plant diversity map to date

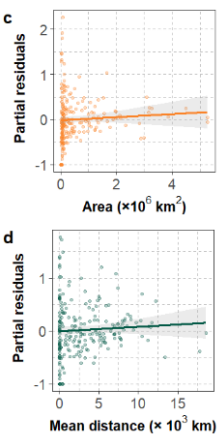
Why the tropics have more species

- Recent tropical climates **appeared earlier** than higher-latitude climates and have **more** species

Analogues of recent tropical climate emerged earlier and are more prevalent across space and time



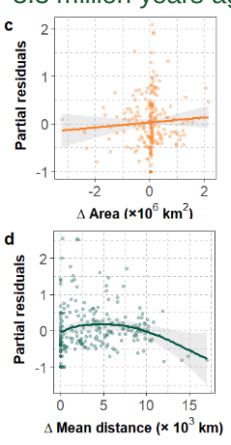


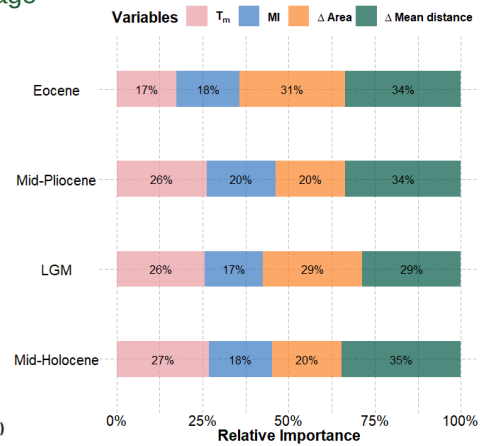


Species richness

- Larger area
- More isolated
- Expanding over time
- Move farther

$R_{adj}^2 > 90\%$





Contribution to CBD and Kunming-Montreal GBF Targets

Applications of climate analogue: identify future threaten regions

Targets 1 – 3

Conserve and restore threatened ecosystems

Quantifying the impacts of spatio-temporal climate change

Target 8

Minimize the impacts of climate change on biodiversity

Best plant diversity data to date

Target 21

Available knowledge to guide biodiversity action

Thank you!

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