potential biases when assessing climate change projections
THE CENTER OF BIOLOGICAL RISK
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Policy

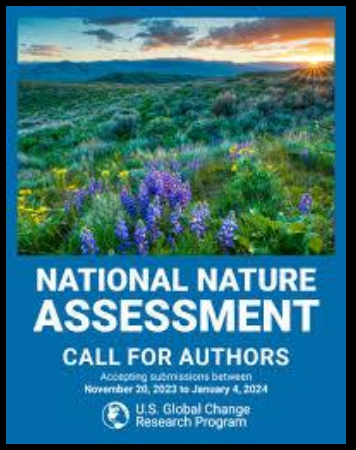
Convention on Biological Diversity

ENDANGERED SPECIES ACT 50TH ANNIVERSARY

Assessments

ipcc INTERGOVERNMENTAL PANEL ON climate change WMO UNEP

ipbes Science and Policy for People and Nature



Research and synthesis

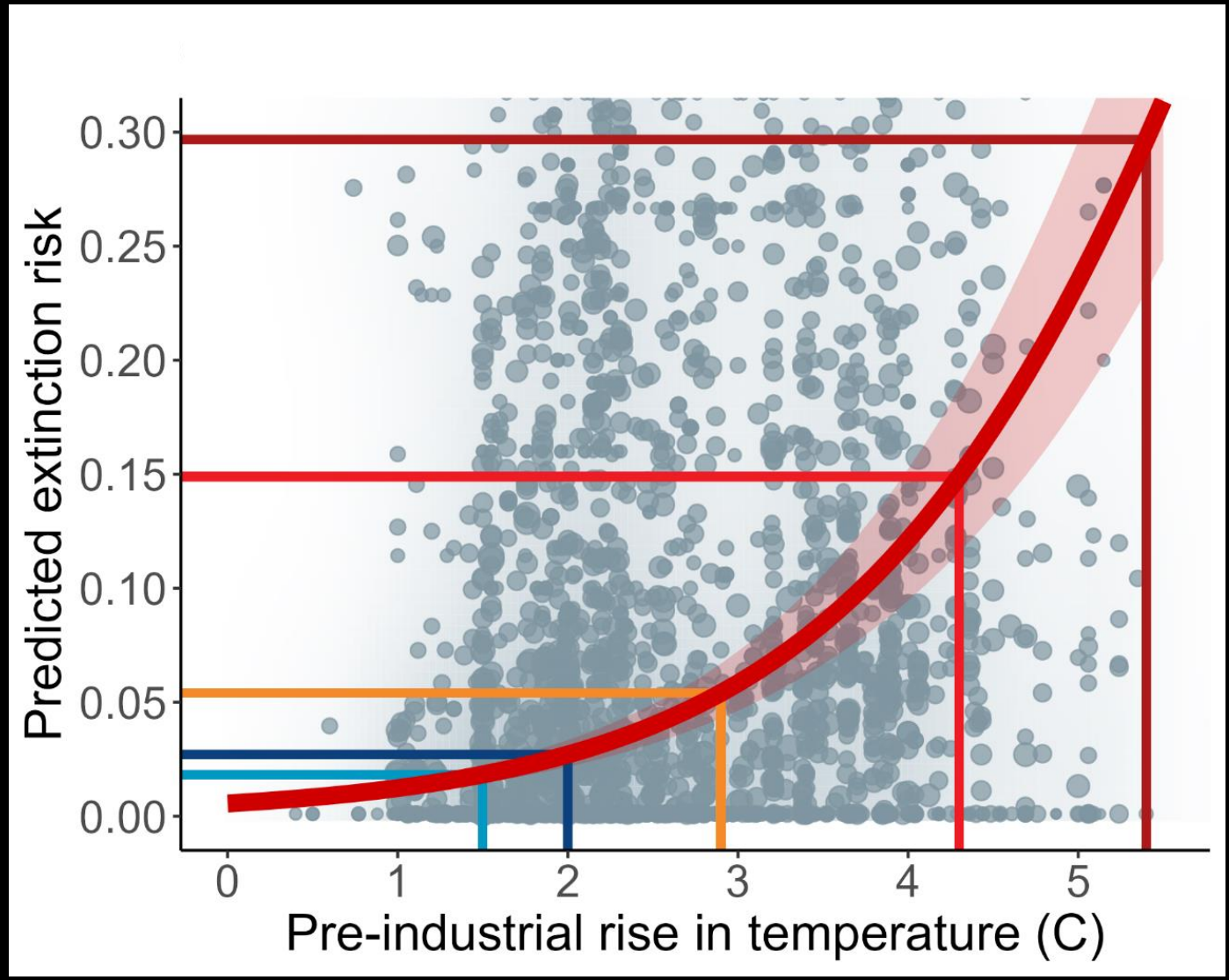
2024 Meta-analysis v 2.0

458 multi-species studies

5.5M+ predictions

More global representation

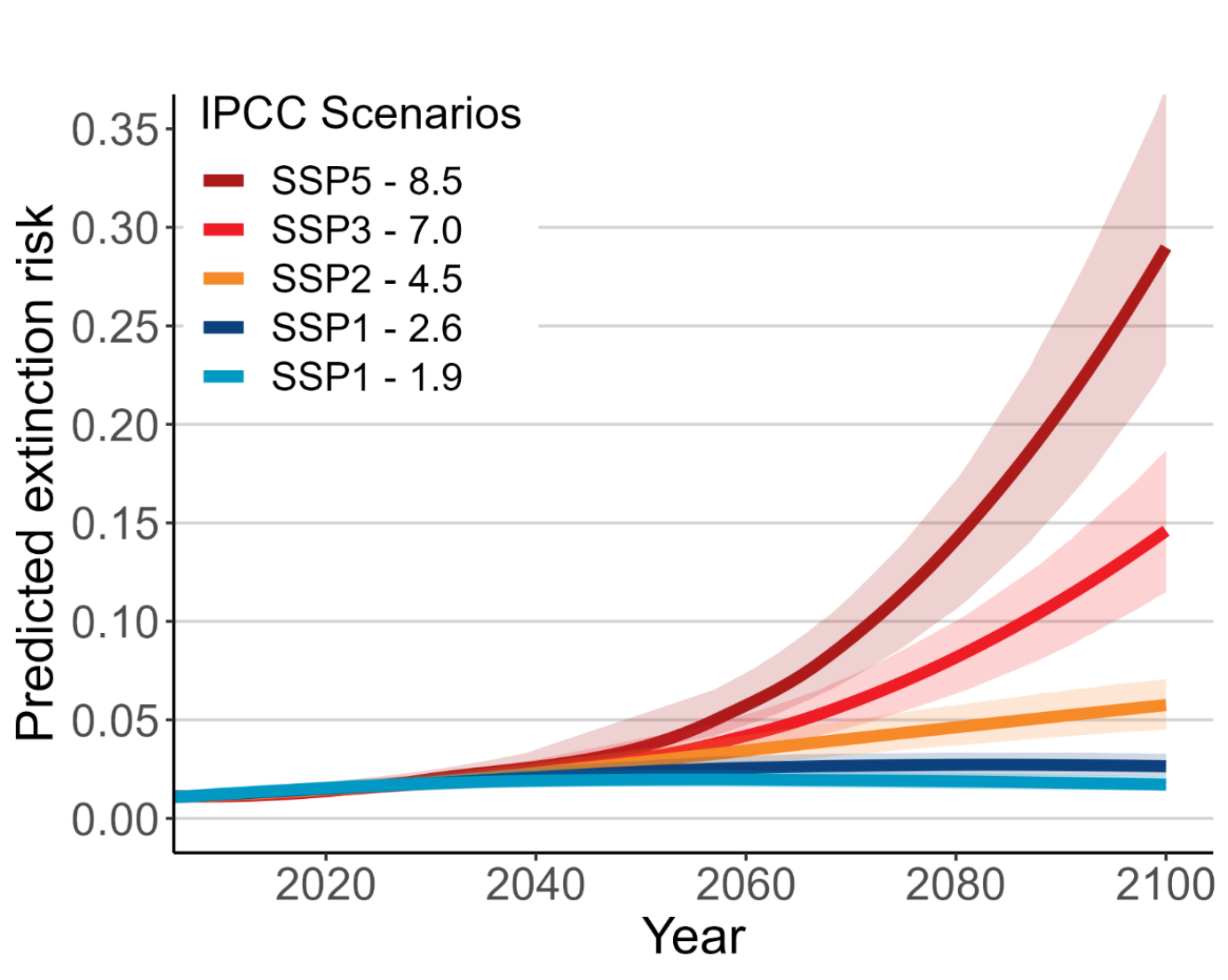
Meta-analysis



Consistent pattern, decrease in uncertainty

Urban 2024 *Science*

Meta-analysis



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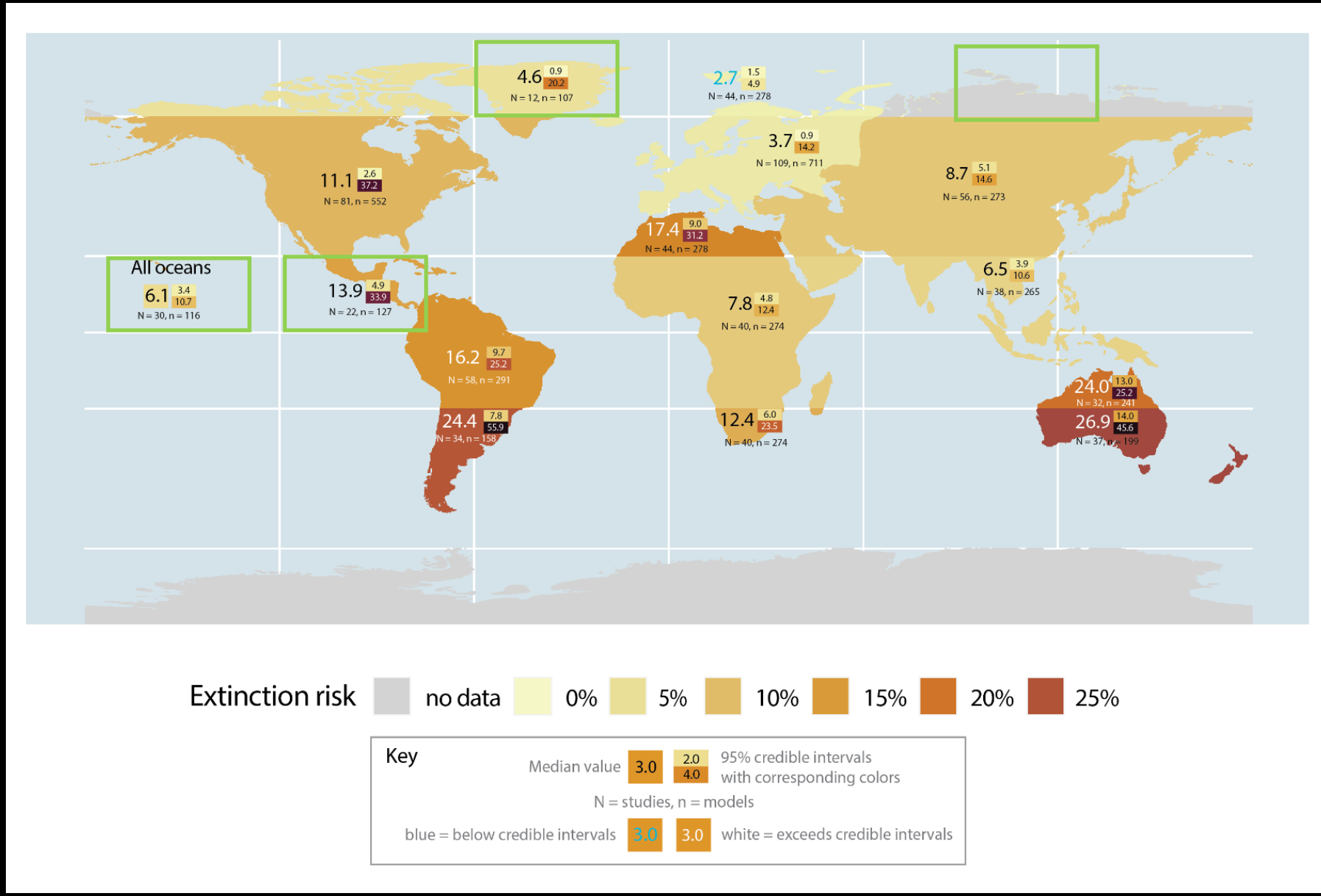
Geographic bias



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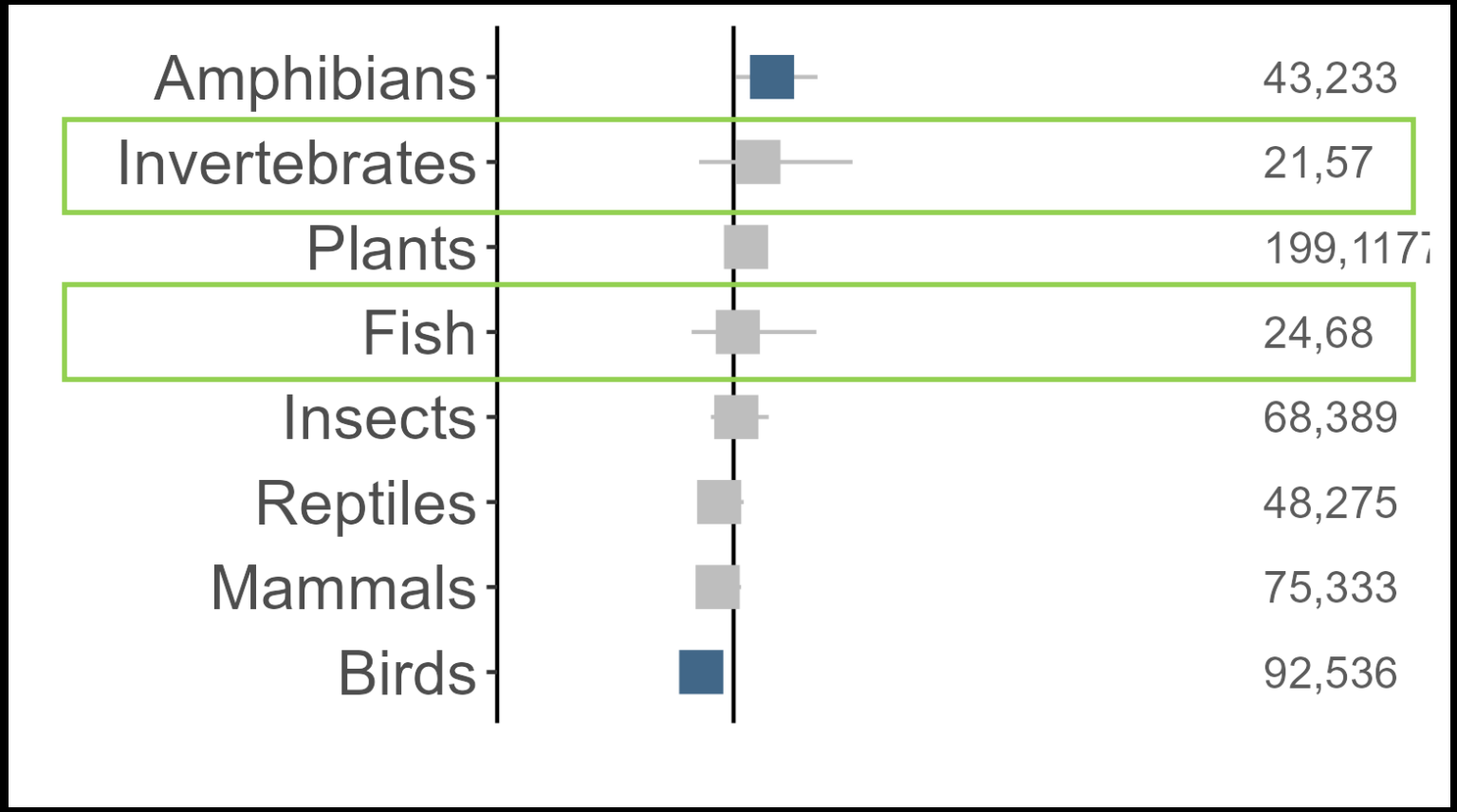
Which species?



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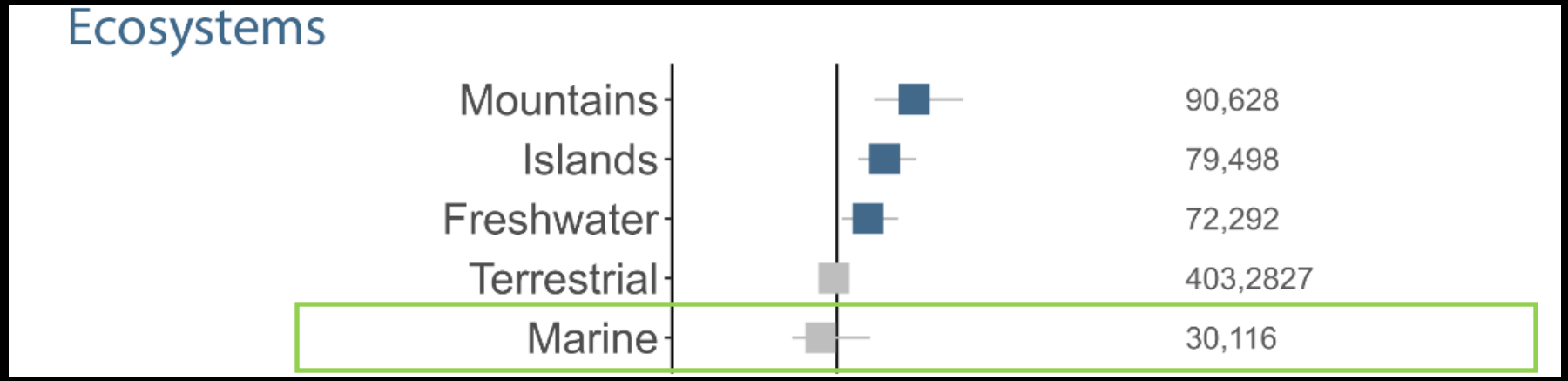
Which ecosystems?



Dark biodiversity

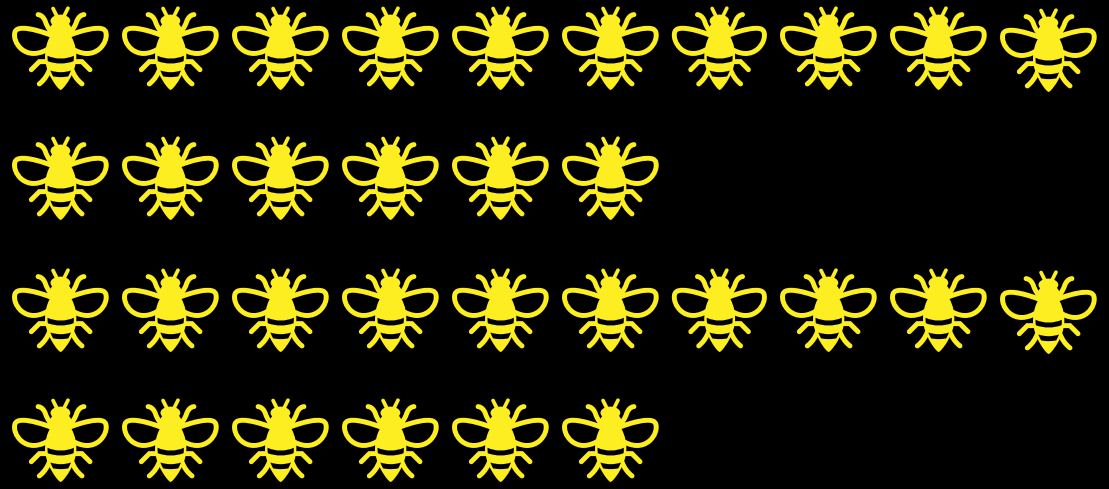
= 10,000 species

~ 400k plant species

~ 300k with any data

~ 100k with > 15 occurrences

Dark biodiversity



= 10,000 species

~ 400k plant species

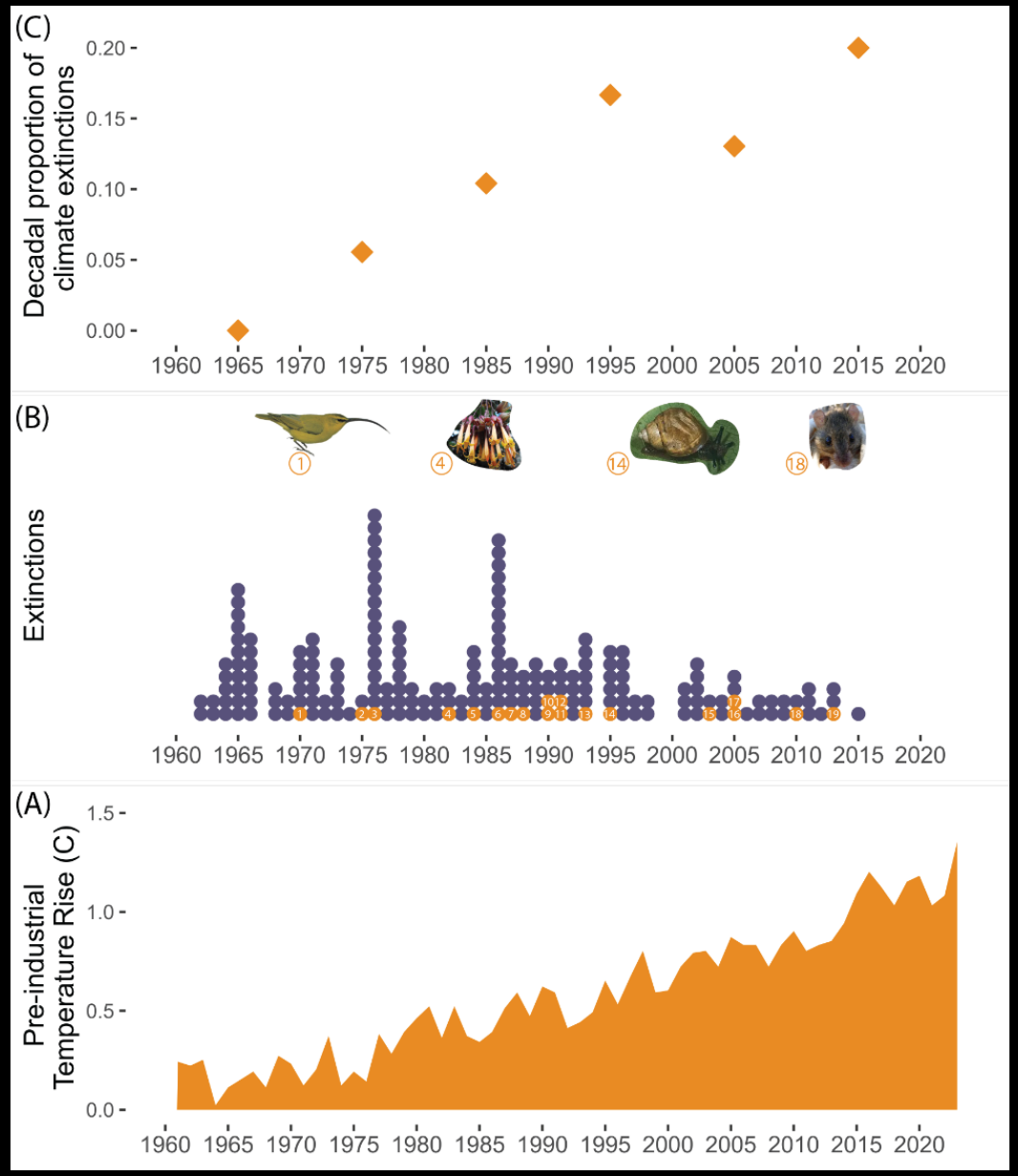
~ 300k with any data

~ 100k with > 15 occurrences

160,000 Dipteran species

DNA suggests 2x more

Observed extinctions



19 climate change extinctions

50% recorded from US

Validating predictions

Best datasets of spatial and temporal population abundances

1. *US birds*
2. *European stream invertebrates*
3. *Finnish plants*
4. *Australian animals*

Research – Assessment - Policy

Assessments depend on research

Research is biased by available data

Biases have many reasons – geographic, taxonomic, etc

Biases are especially strong for rare = vulnerable species

Modeling can only do so much

We need better data . . . always