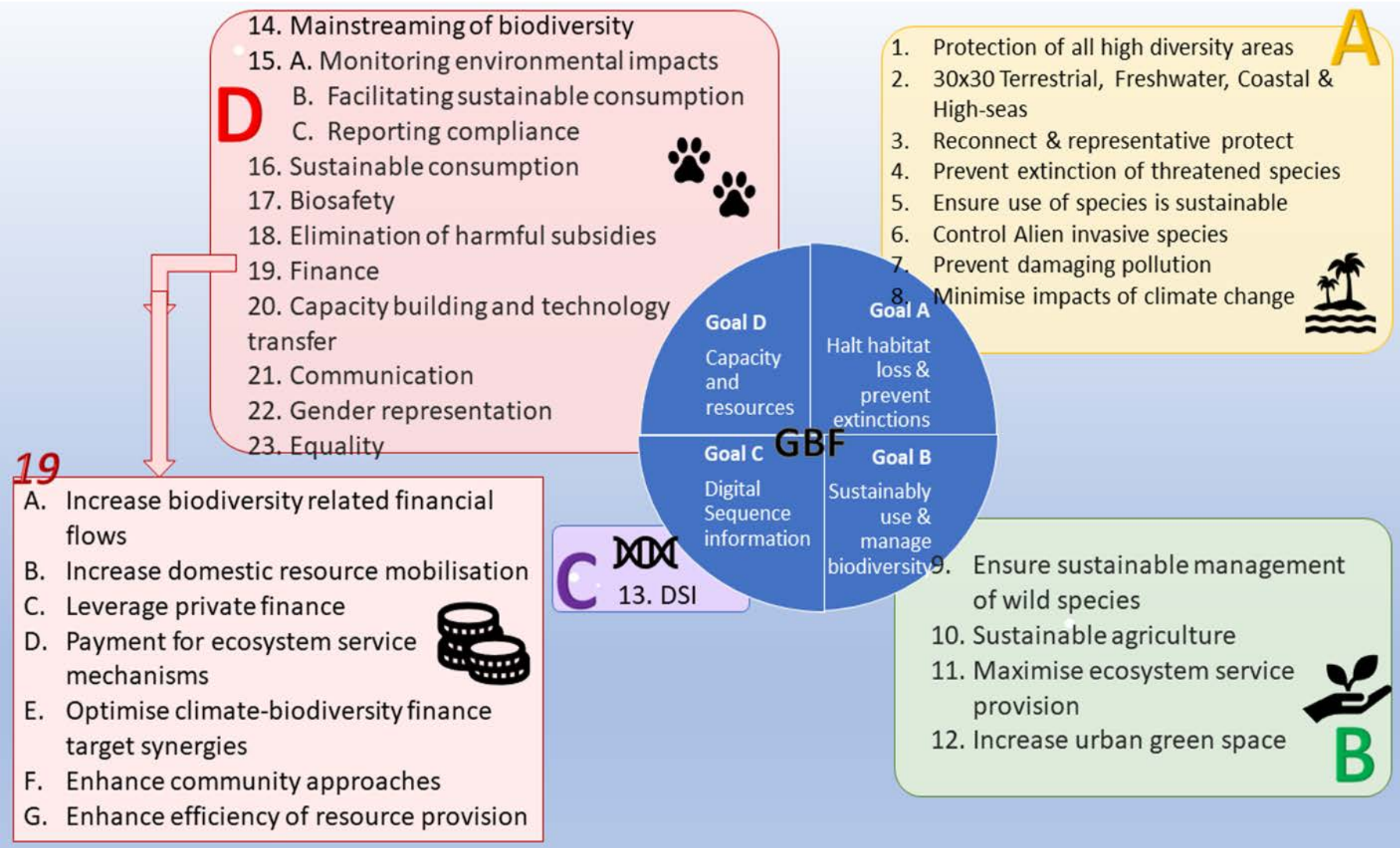
Science-based approaches for conservation prioritisation and target setting

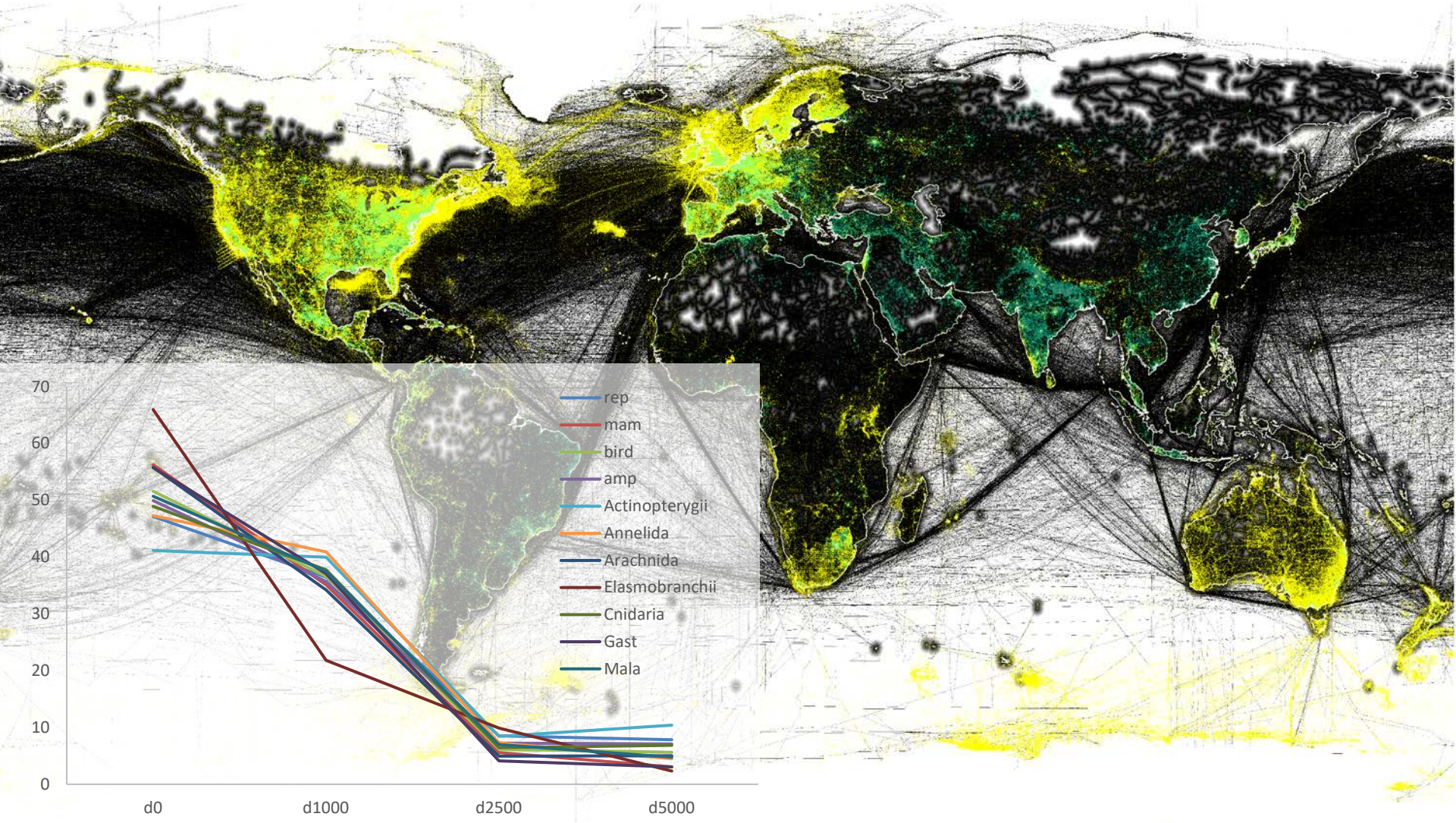
Alice. C. Hughes

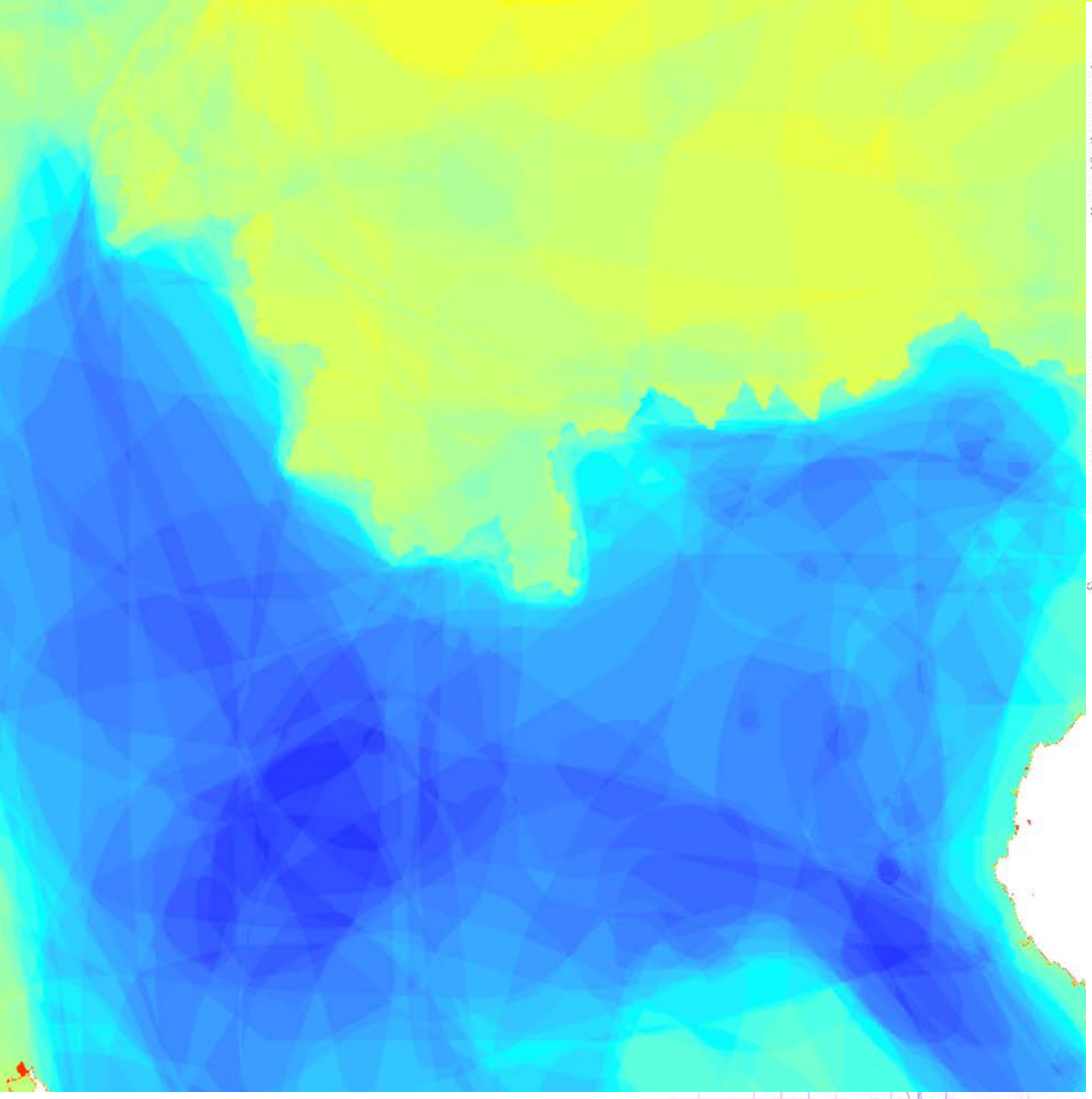
University of Hong Kong

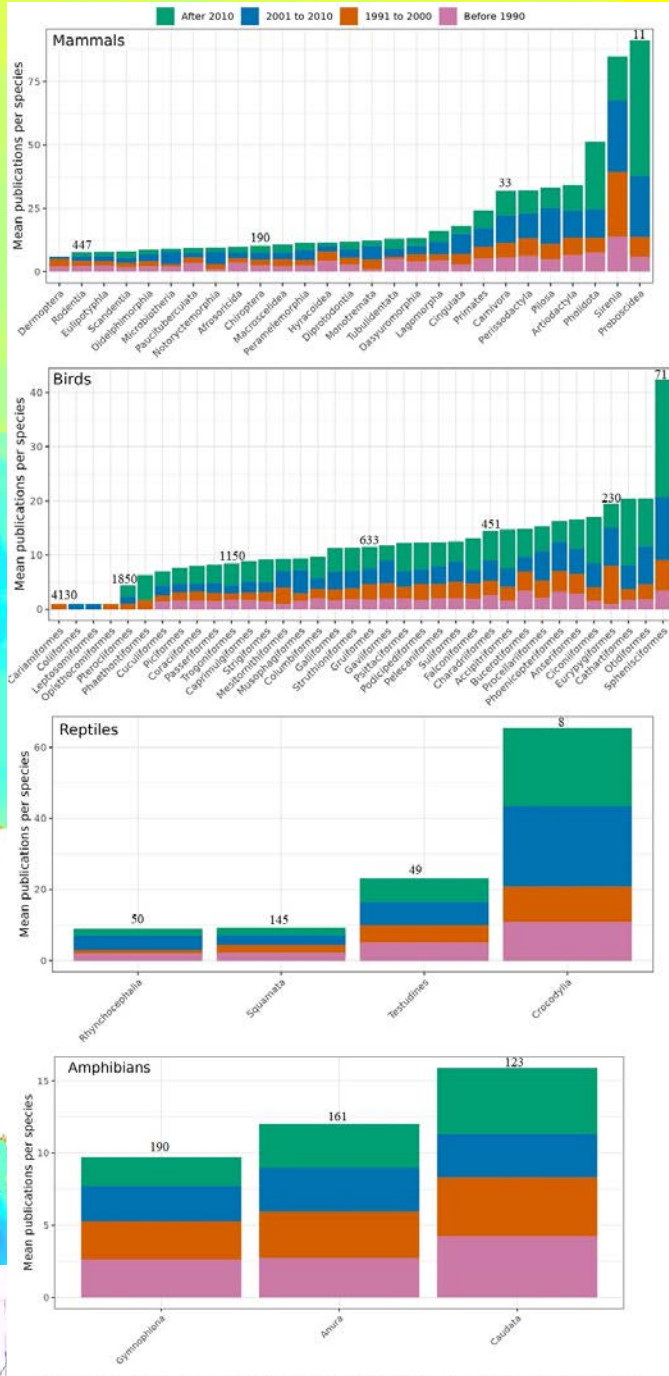
Success will depend on data



Setting targets-do we have the data?

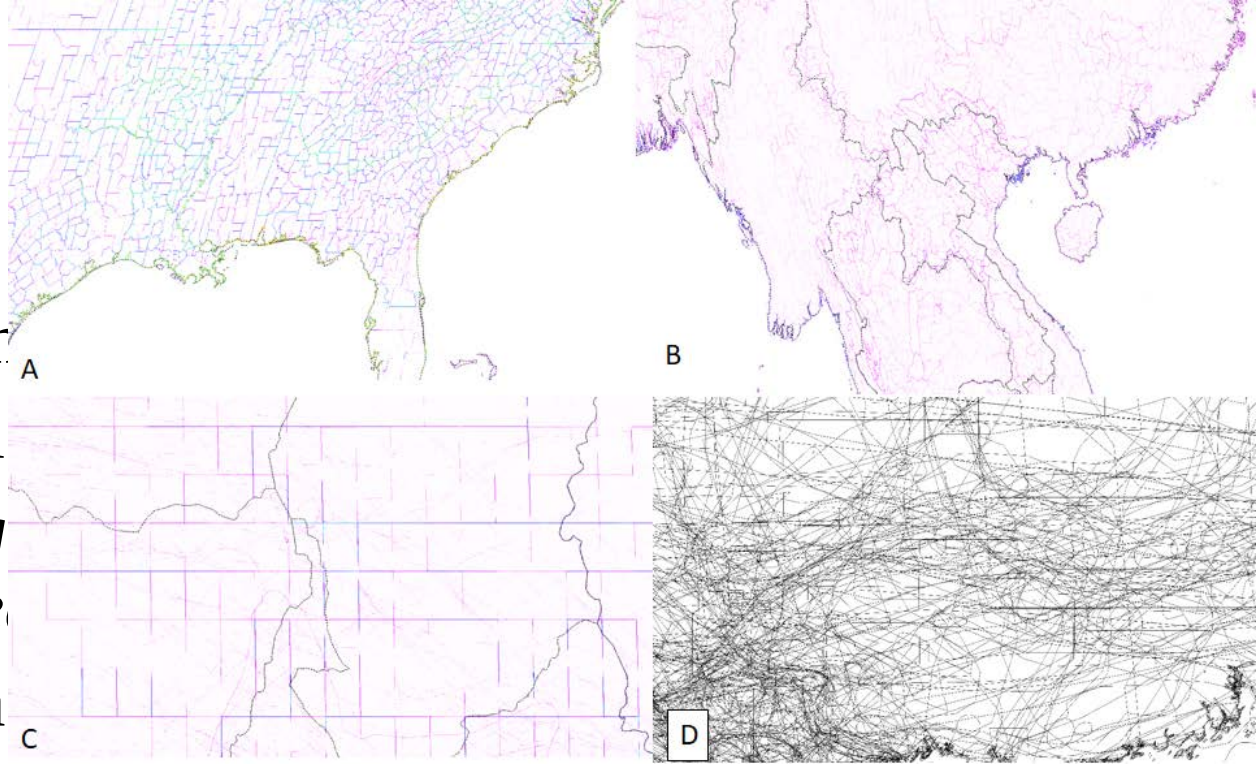






Mean number of publications per species per time period for each order, with the mean number of assessments each cited publication appears in per group shown for select orders

Hughes, A.C., Orr, M.C., Qinmin, Y., Qiao,
biodiversity patterns for different regions an c



- Understanding th
- Does the data all

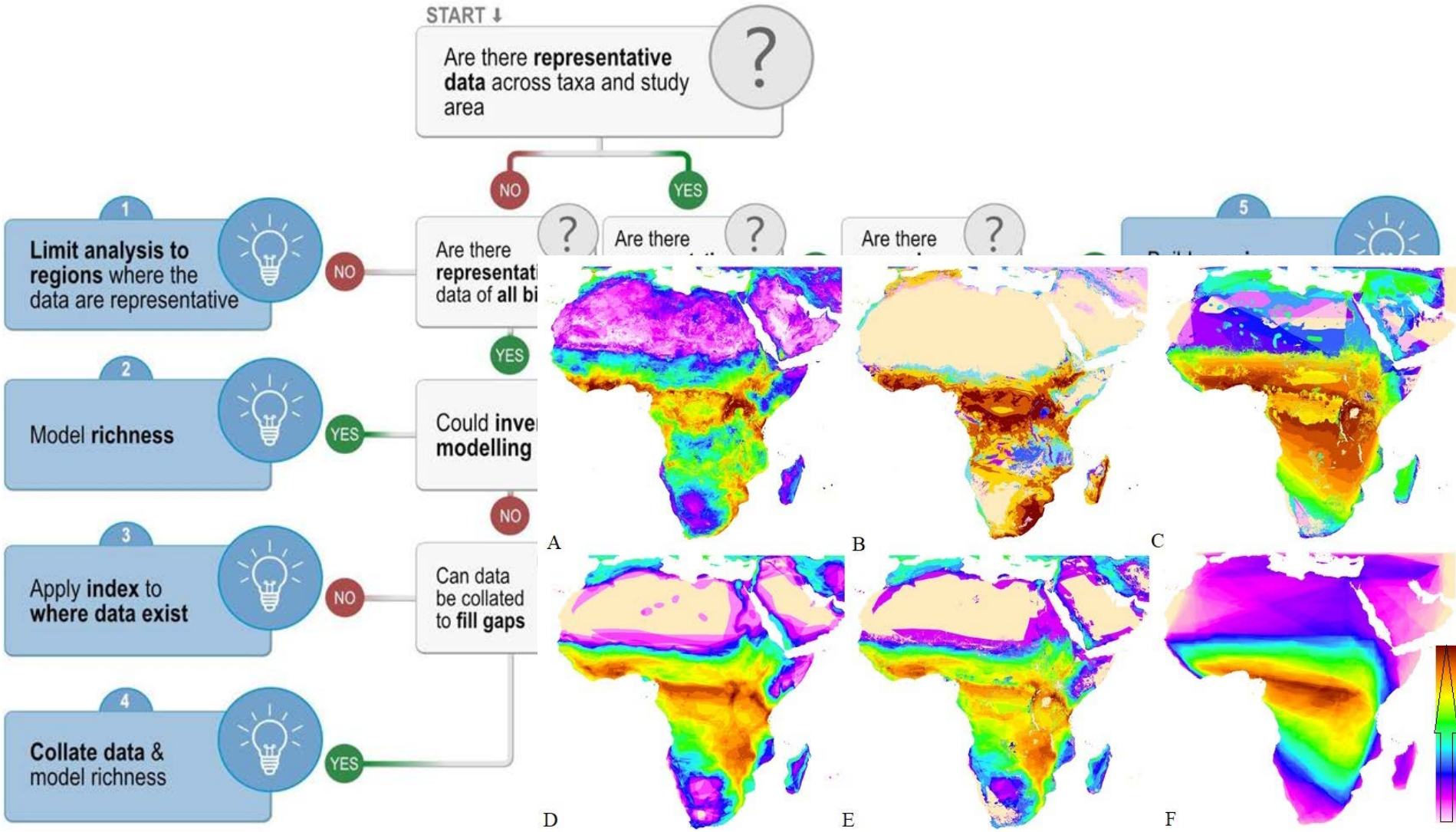
No, data is full of g
does exist it's biase

- Is there an altern

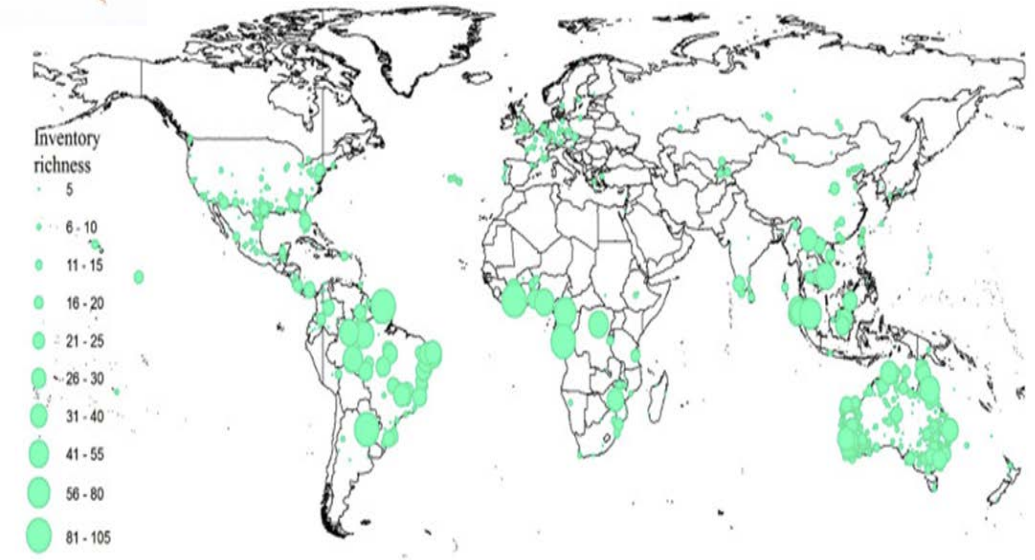
Not really, range maps are not always representative, and have demonstrable biases

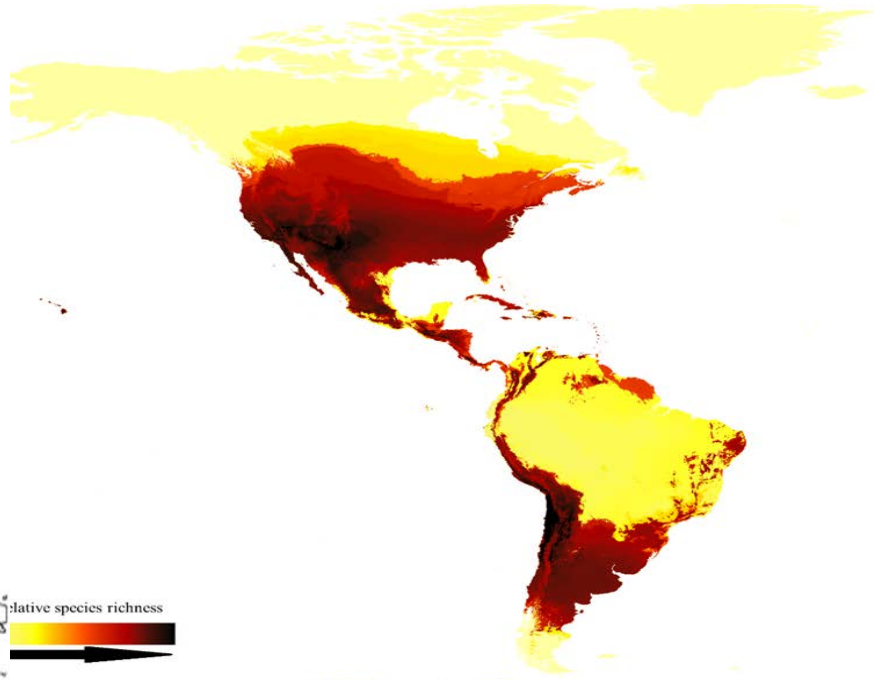
- How about those impressive numbers in global reports
- *Unfortunately these are based on non-standardized inconsistent data due to a lack of monitoring*
- We need to collate better and more representative data to understand where species are

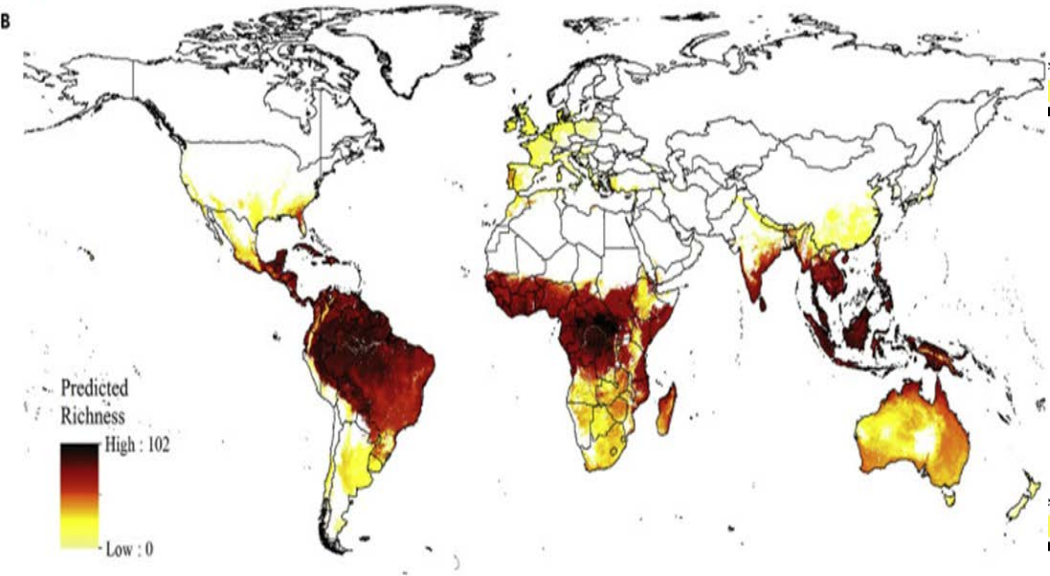
Measuring diversity across scales

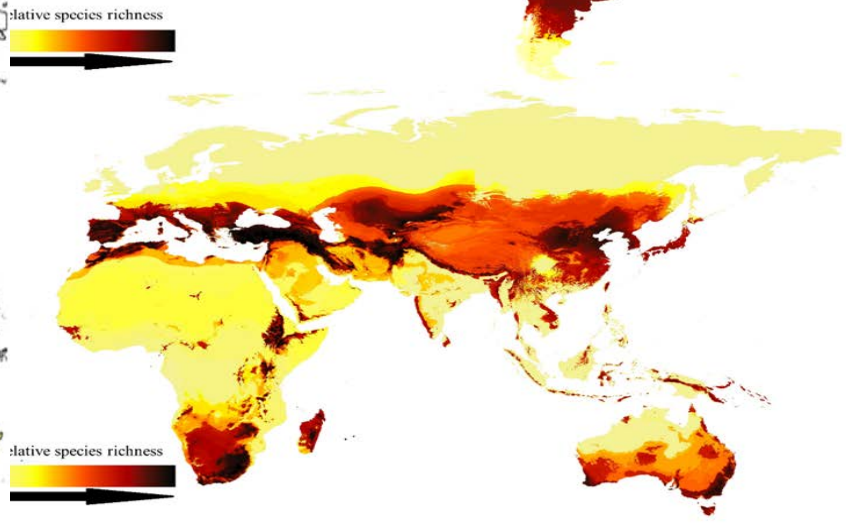


Using data to enable change

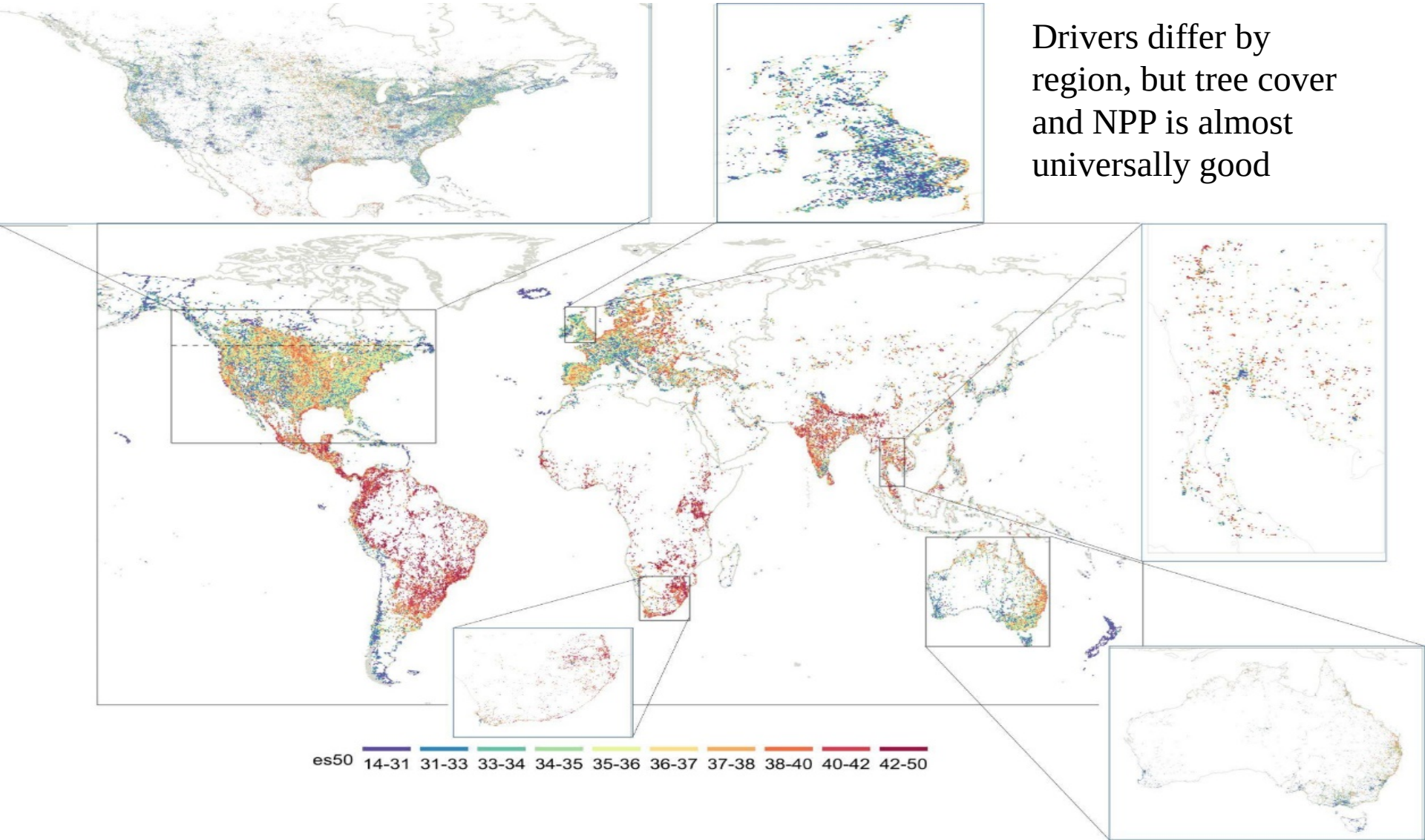






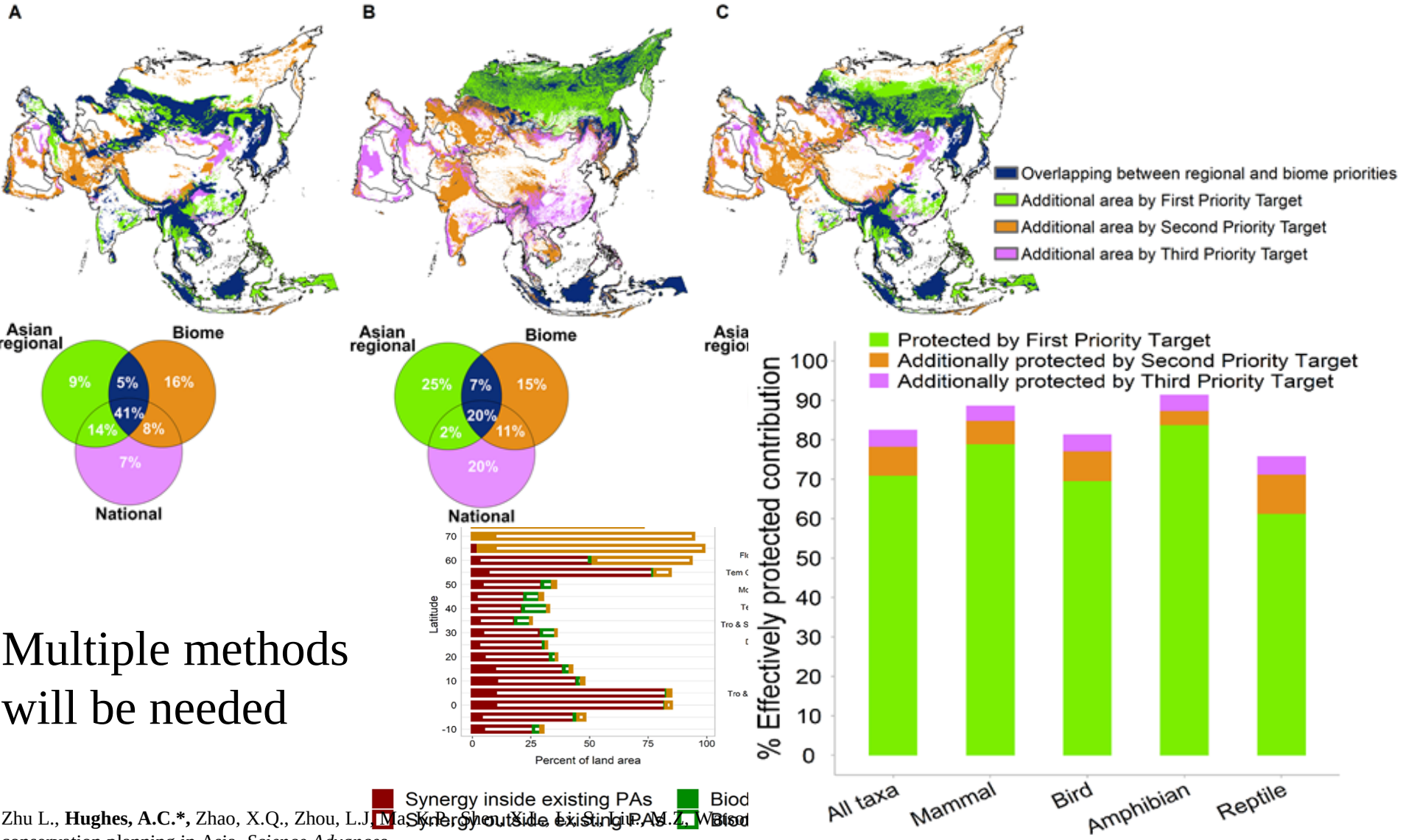


Converting data into policy



Drivers differ by region, but tree cover and NPP is almost universally good

Target setting



Multiple methods will be needed

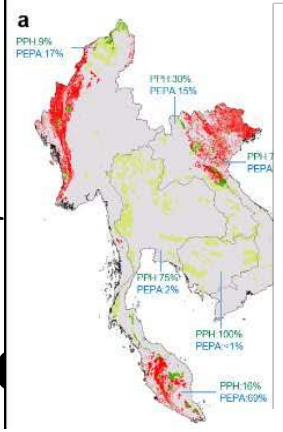
Zhu L., **Hughes, A.C.***, Zhao, X.Q., Zhou, L.J., Ma, K.P., Shen, X.L., Li, S., Liu, P.M.Z., Wang conservation planning in Asia. *Science Advances*

Ecologica

- Redlines an

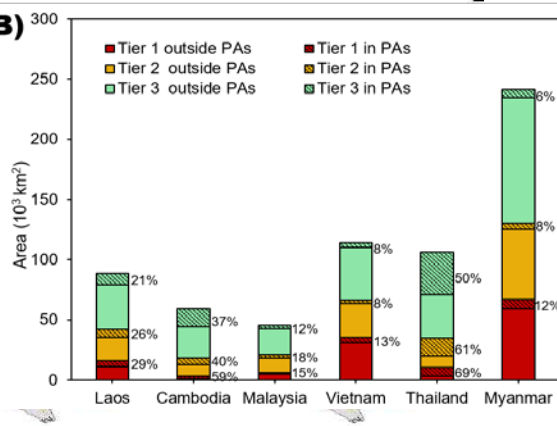
Based on hig
development
provision wit

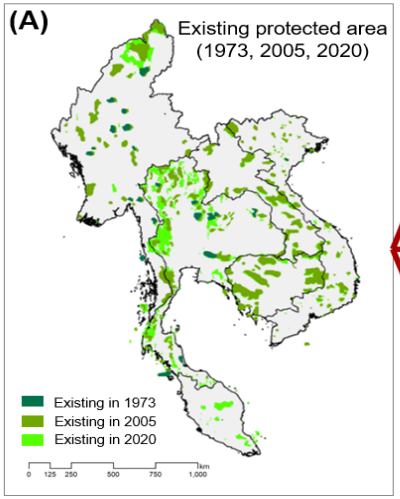
- Greening d
- *Identifying*

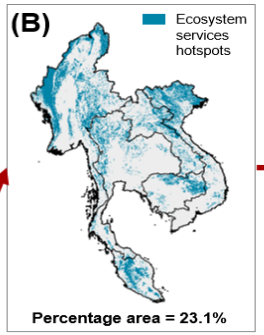


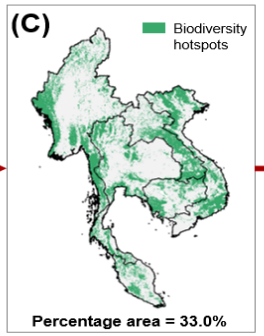
(A)

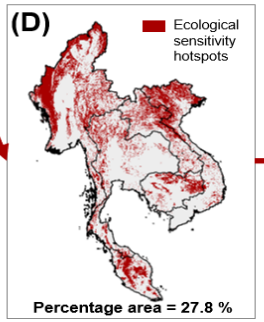
	Tier 1	Tier 2	Tier 3
Water retention	17.53%	27.76%	39.19%
Carbon storage	20.54%	31.00%	40.49%
Soil retention	21.97%	41.16%	63.80%
Acid rain sensitivity	18.64%	29.27%	42.96%
Habitat sensitivity	23.99%	36.09%	47.53%
Soil erosion sensitivity	23.32%	42.67%	56.15%
Mammals richness	21.46%	35.11%	45.05%
Birds richness	19.24%	29.77%	38.97%
Amphibians richness	21.31%	35.32%	47.52%
Reptiles richness	21.23%	36.17%	48.46%
Plants richness	21.14%	33.18%	43.89%
Timeline	2025	2030	2050

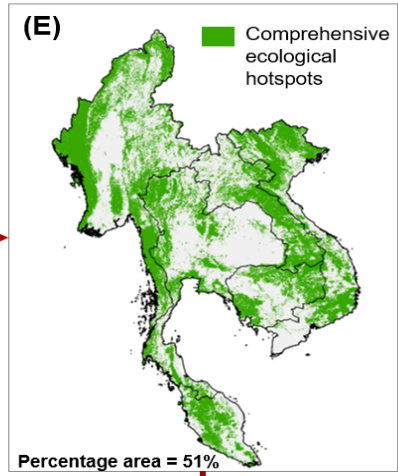


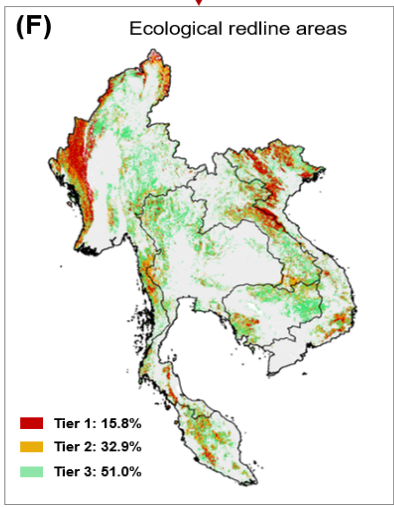


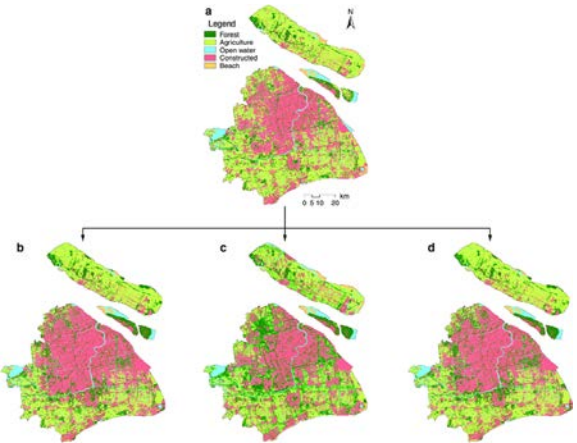




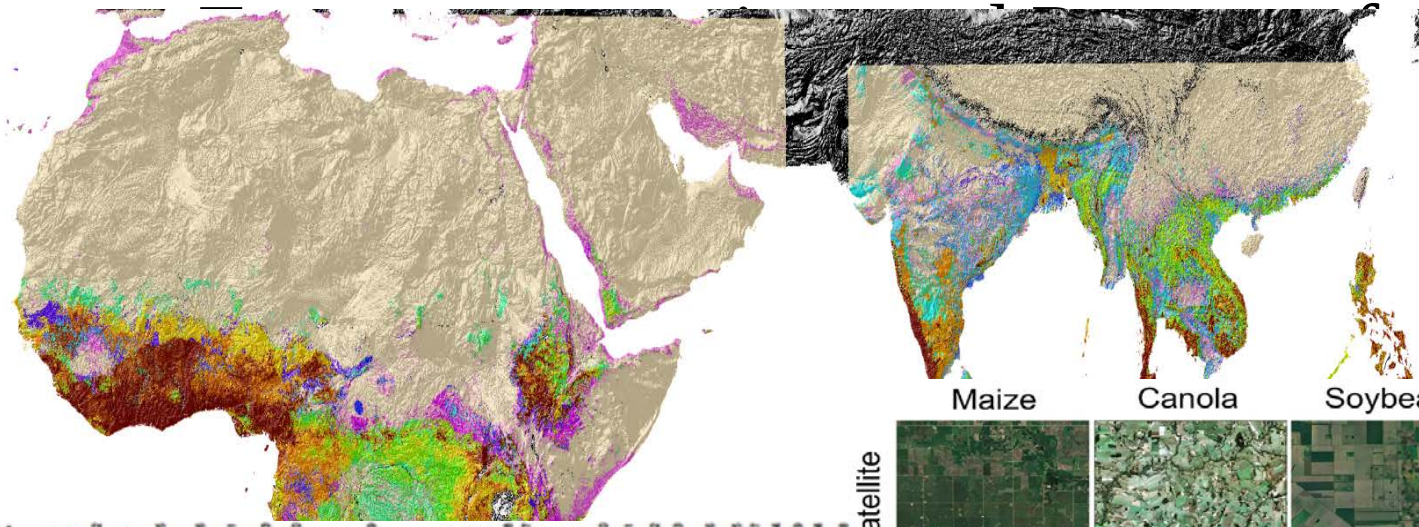


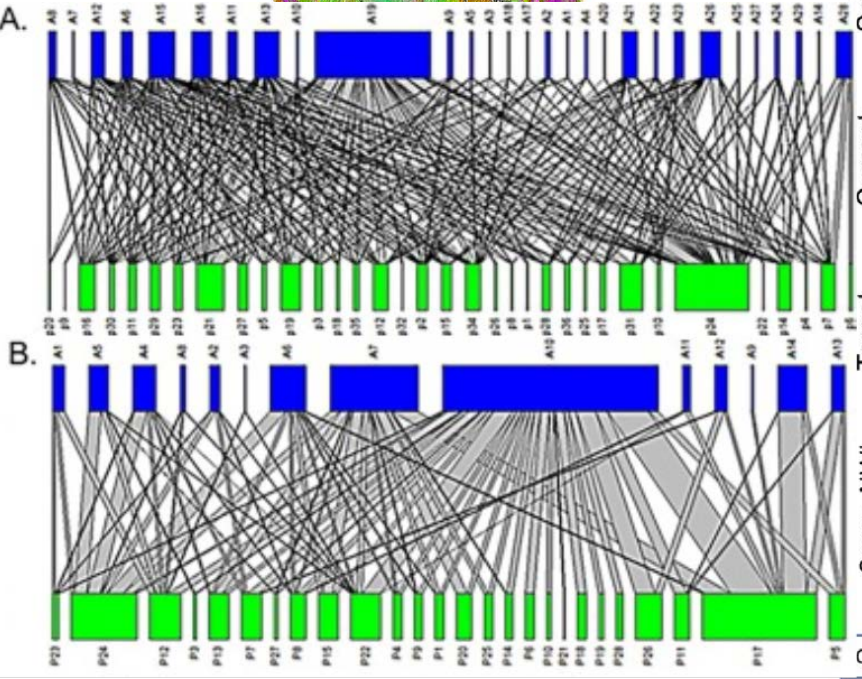


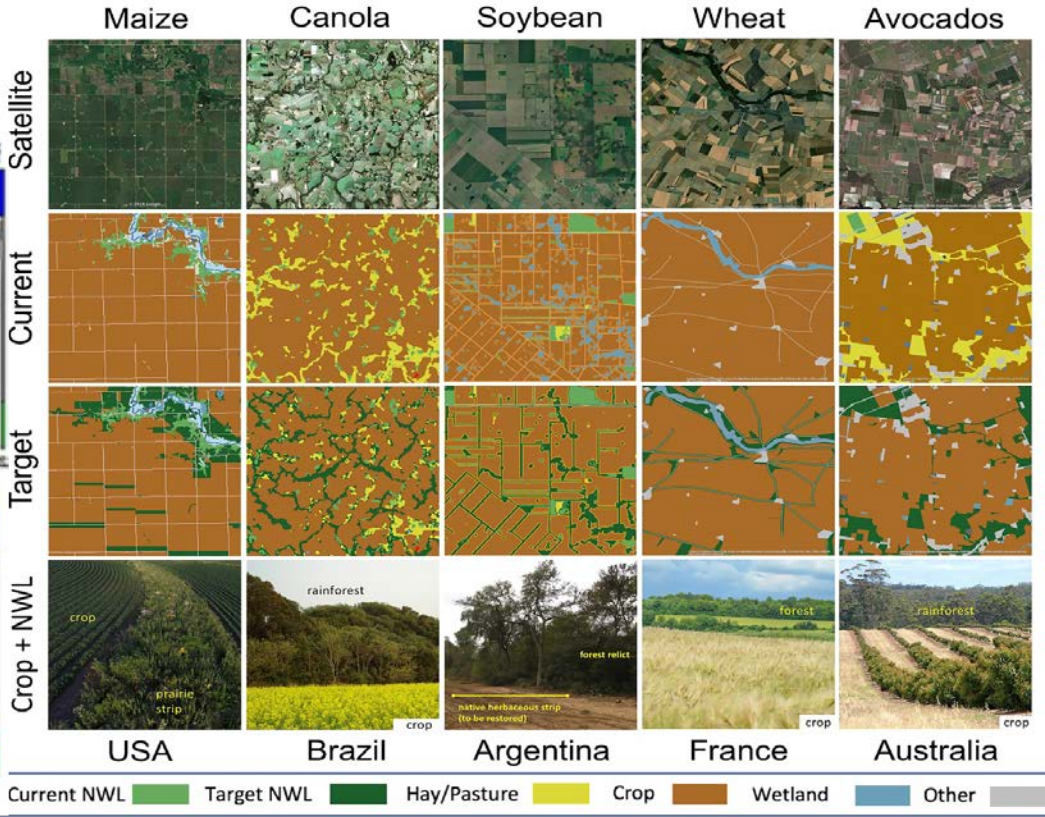




Services and value





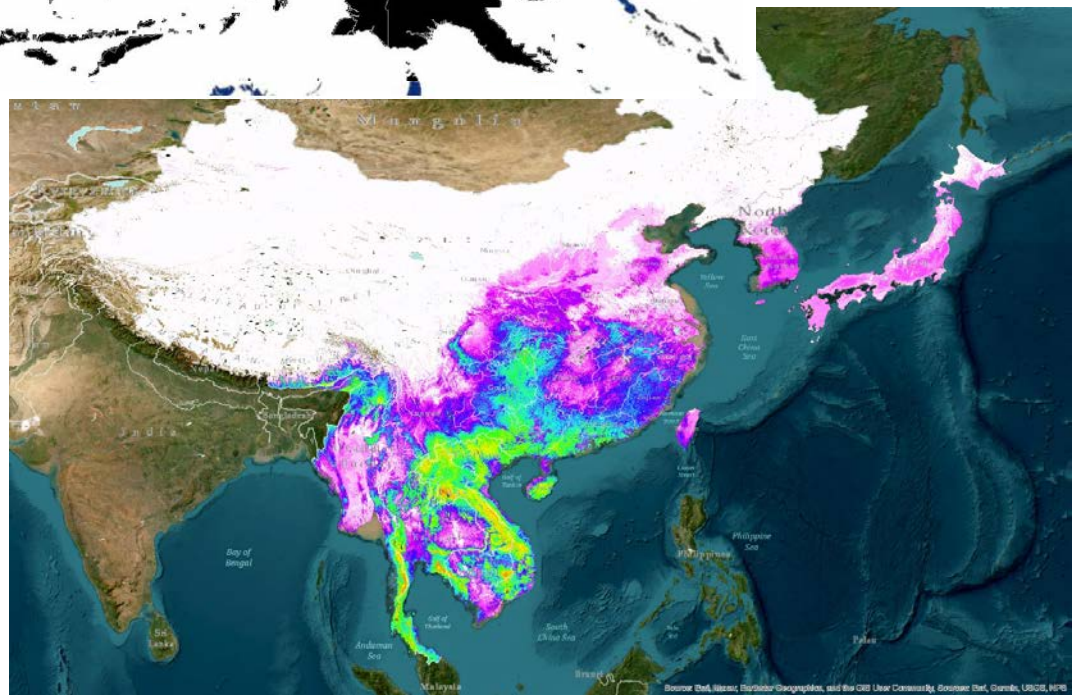


)pulations at risk

Pandemic spread with roads

Rhinolophids (and some other genera) carry Beta-CoVs and likely do across the old-world

So far South China-GMS has seen the most SARS-Like CoVs



Implementing change

- Conservation policy can only be implemented if it is translated into an appropriate context
- Social cultural components are needed in any suggested solution to conservation and management
- Providing solutions within appropriate for a and accessible language is also needed
- Priorities need a firm foundation of data, and include risk assessment
- We also need caution to not use data beyond its limits

Building on Synergies

- Biodiversity must be part of the solution, and rather than Billion-tree tsunamis, and great-green walls we must prioritize protecting, then restoring native systems
- Conventions must work in synergy to maximise benefits
- Better data is needed for targets, but targets must also reflect human needs and pathways to implementation
- Impact assessment, and monitoring also need to be more rigorous and use data better

Moving forwards

- We have seven years until the end of the time period to achieve the 2030 targets, and to prepare ourselves for the 2050 vision
- To be ready for this point we need a clearer understanding of the impact of threats as a baseline for management
- Furthermore we need better data to clearly understand patterns of diversity as a basis for targets
- Additionally we need better integration between targets and conventions to reduce tradeoffs and increase synergies


Thank you