

Preserving Evolutionary Process: A Key to Conservation Under Climate Change

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The + in REDD+



- Moderate emissions assessment for Central Africa predicted to result in increase of 3.0° C (IPCC 5th Assessment)
- 30% of plant and animal species are at risk of extinction if the average rise in global temperatures exceeds 1.5° C
- To protect biodiversity (part of the “+” in REDD+), we need to account for ability to adapt to the changing climate.

How do We Preserve Biodiveristy in the Face of Climate Change?



Adaptive Variation

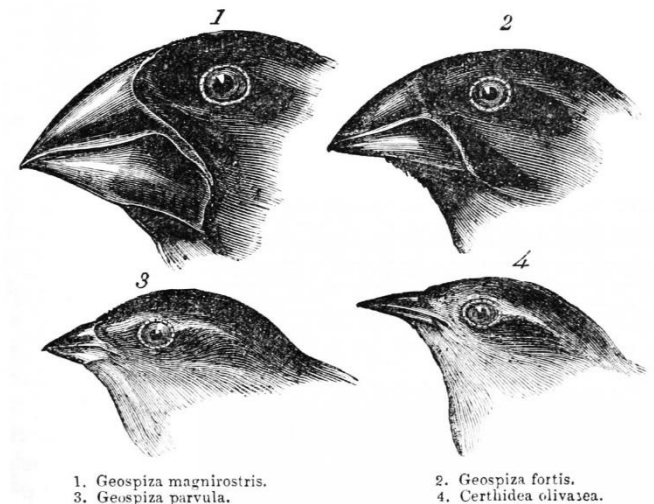
There are two traditional measures of biodiversity:

1. Endemism
2. Species Richness

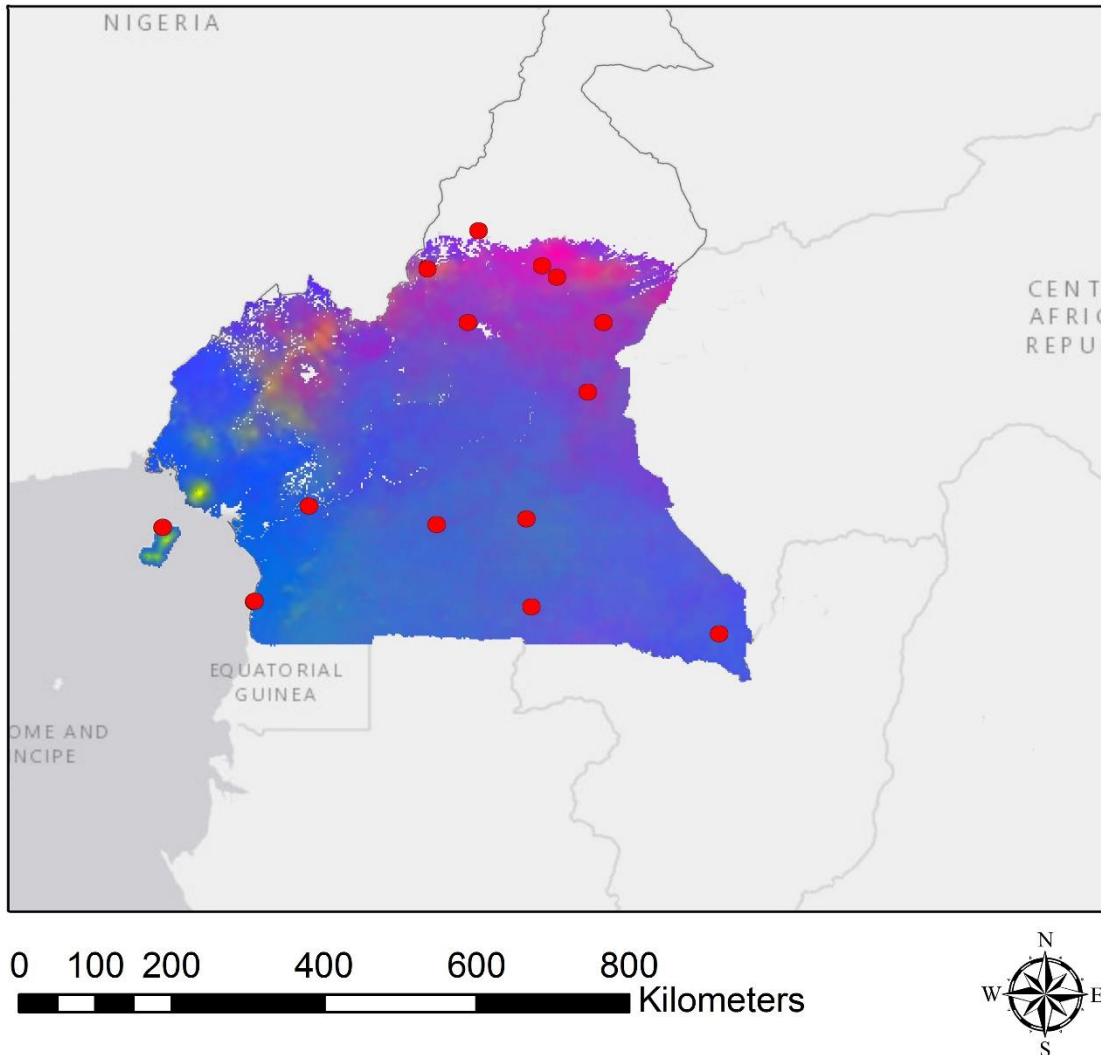
But those don't capture the genetic variation that may help species adapt to changes like climate change

Because of climate change, species in Central Africa will need to evolve as much in the next 50 years as they did in the past 15,000 years.

Adaptive Variation



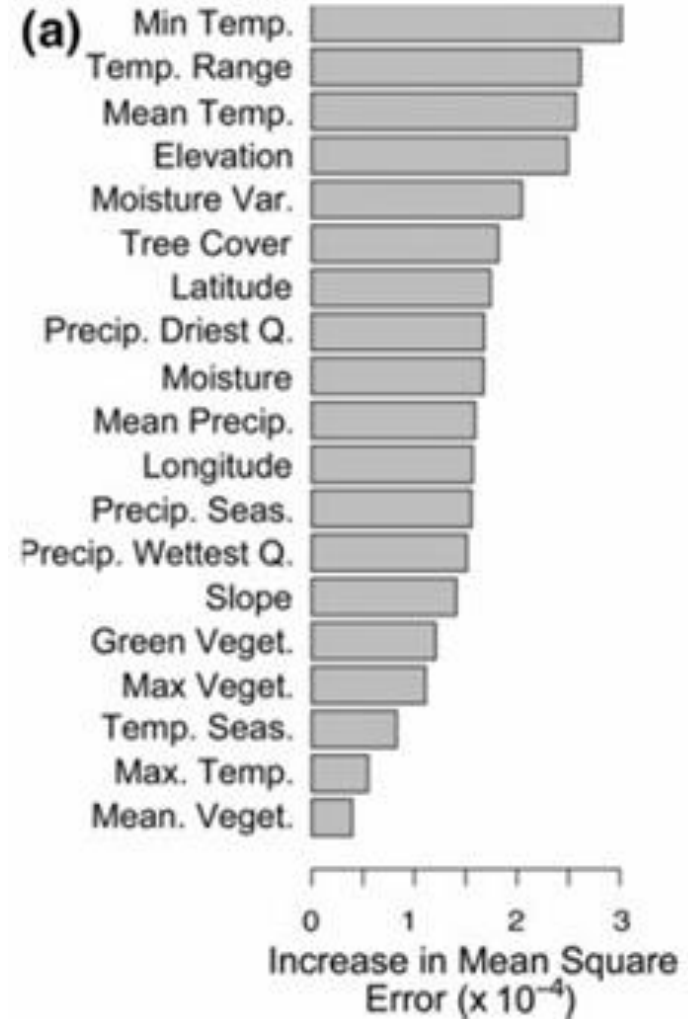
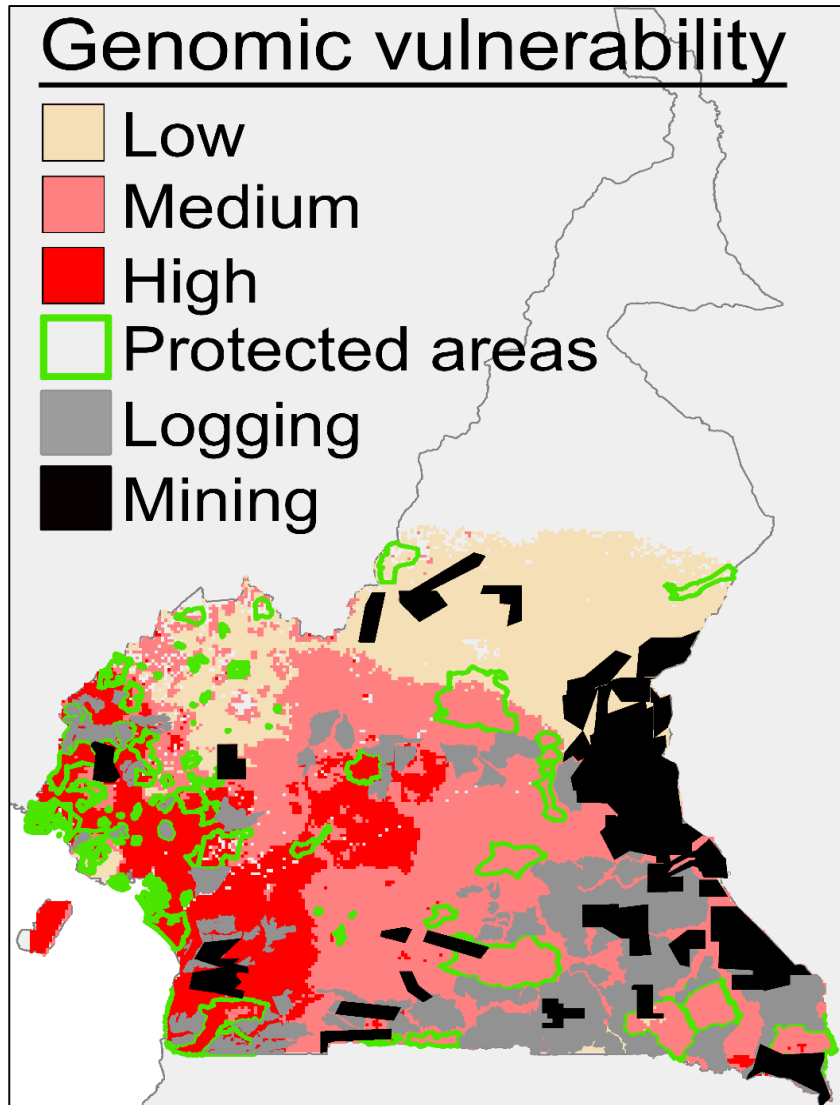
Different Places Have Different Levels of Adaptive Variation



- Similar colors = similar genetic composition



Adapting to Climate Change



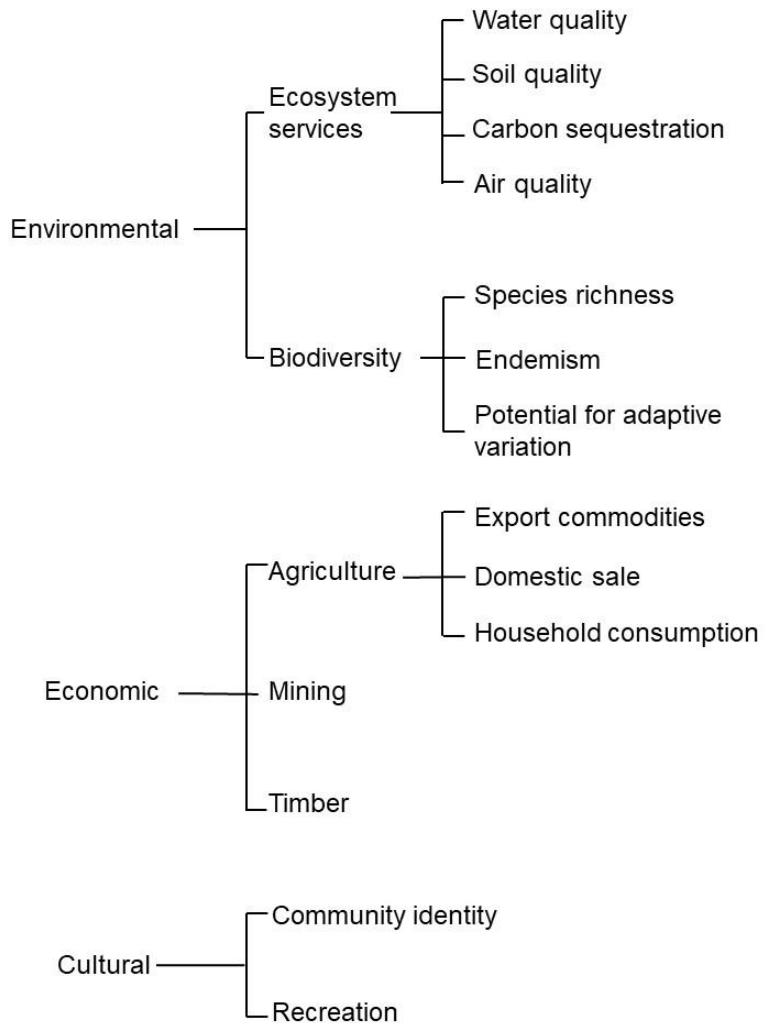
What Next?

- Expand to eight other species
- Map priority conservation areas under climate change
 - Requires value judgements: how do the stakeholders balance environmental and socio-economic considerations?
 - Will be soliciting input from stakeholders about how to balance these values



How to get involved

Land Use Value Tree for the Congo Basin



- Consider adaptive variation in management and protection decisions
- Adaptive variation and REDD+
- Participate in 2018 workshop

