

Escalator to Extinction: Predicted Local Communities Response to an Uphill Elevational Shift in the Wet Tropics

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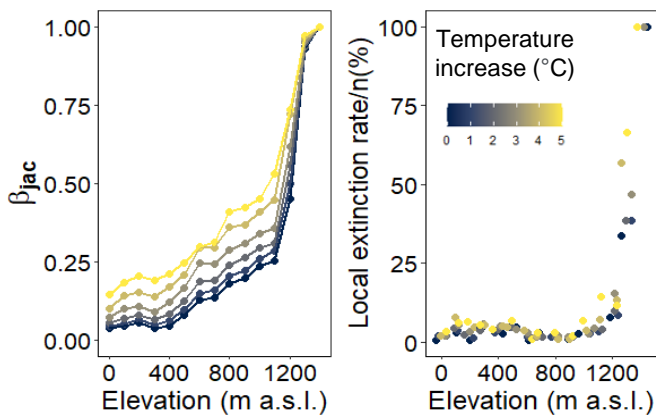
KEY QUESTIONS

What impacts will climate-induced elevational shifts have on tropical montane communities and ecosystems?

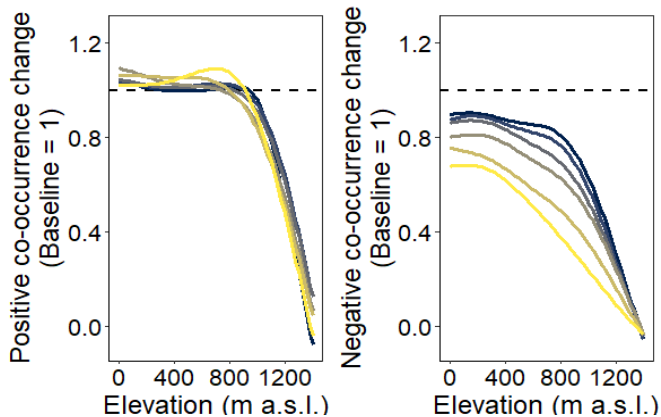
- ❖ What will the pattern in local population extinction be across elevation?
- ❖ What impacts will climate change have on community structure and species interactions?

RESULTS

- The marked increasing pattern in local population extinction with elevation will dramatically change communities structures.

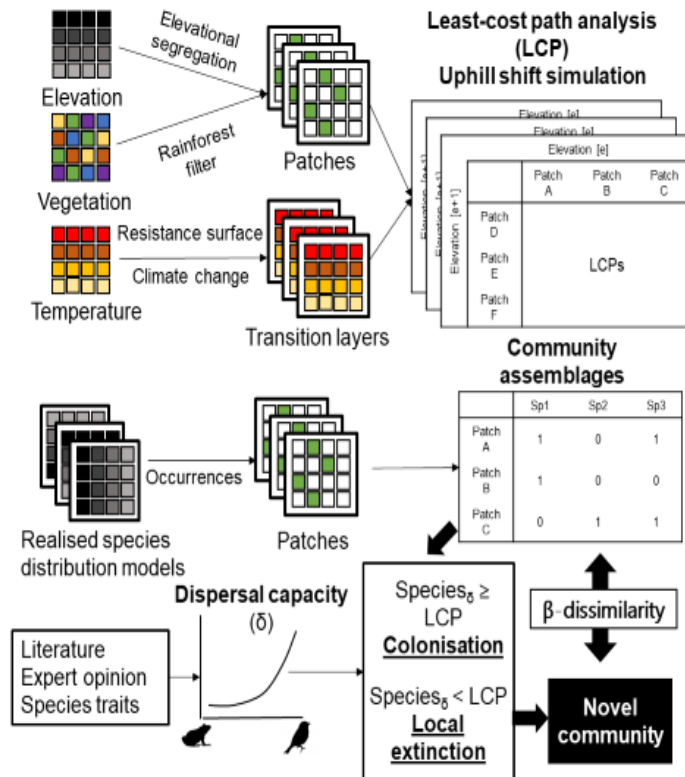


- Changes in community composition will disrupt species interactions, threatening ecosystem processes.



METHODS

Spatial explicit simulation of tropical communities elevational shift in the Australian Wet Tropics.



KEY FINDINGS

- ❖ We predict the collapse of upland communities in the Wet Tropics due to species inability to shift to higher elevations.
- ❖ The alteration of abundances, distributions, and probability of extinction will escalate with elevation due to the natural reduction of habitat available towards mountaintops.
- ❖ Landscape connectivity needs to be improved at higher elevations to facilitate species shift to climate refugia.

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