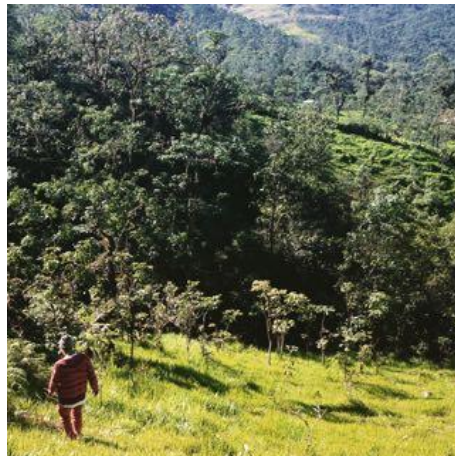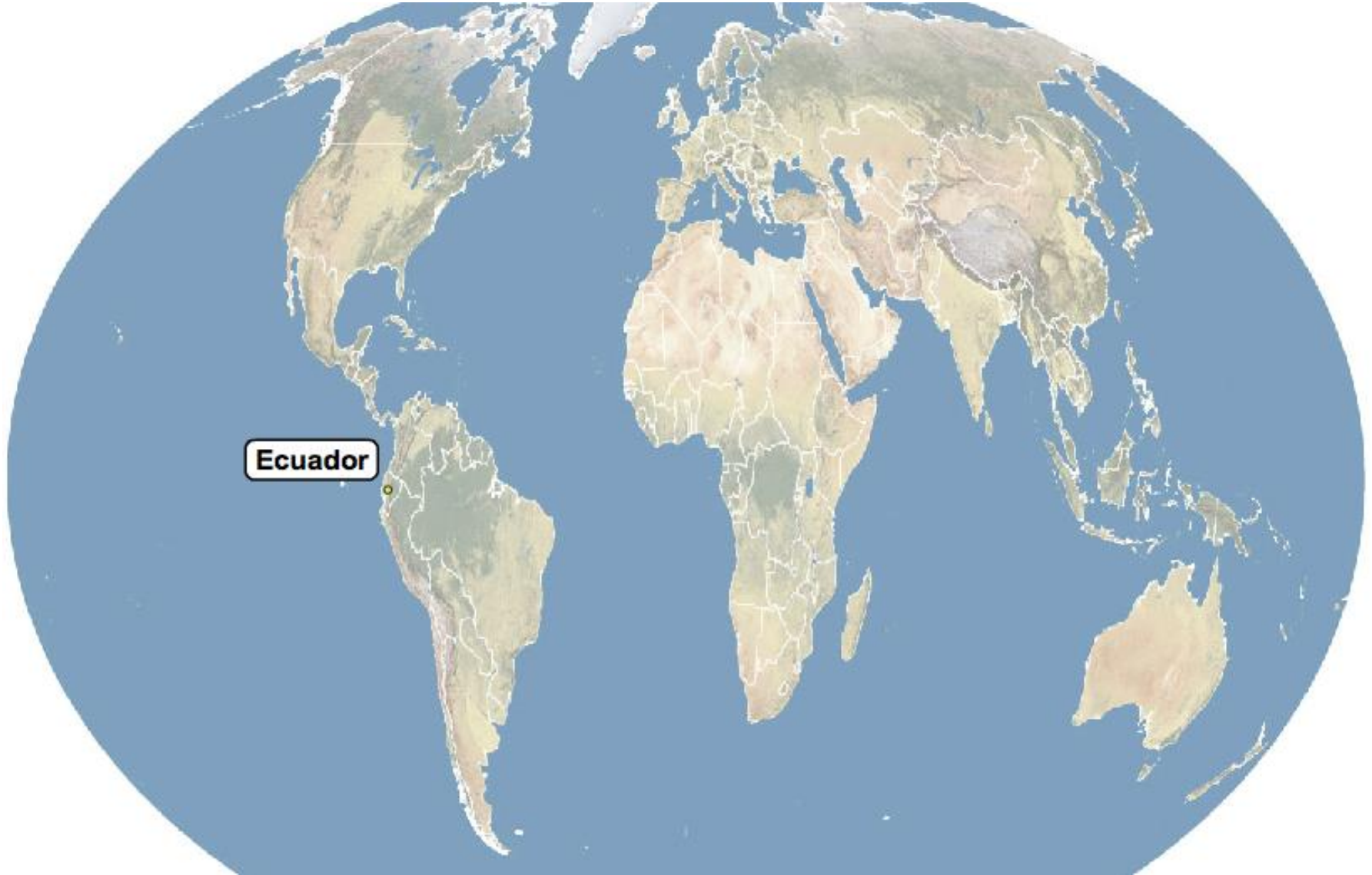# Potential implications of climate change on the distribution of native timber species in Ecuador

Carlos E. Manchego
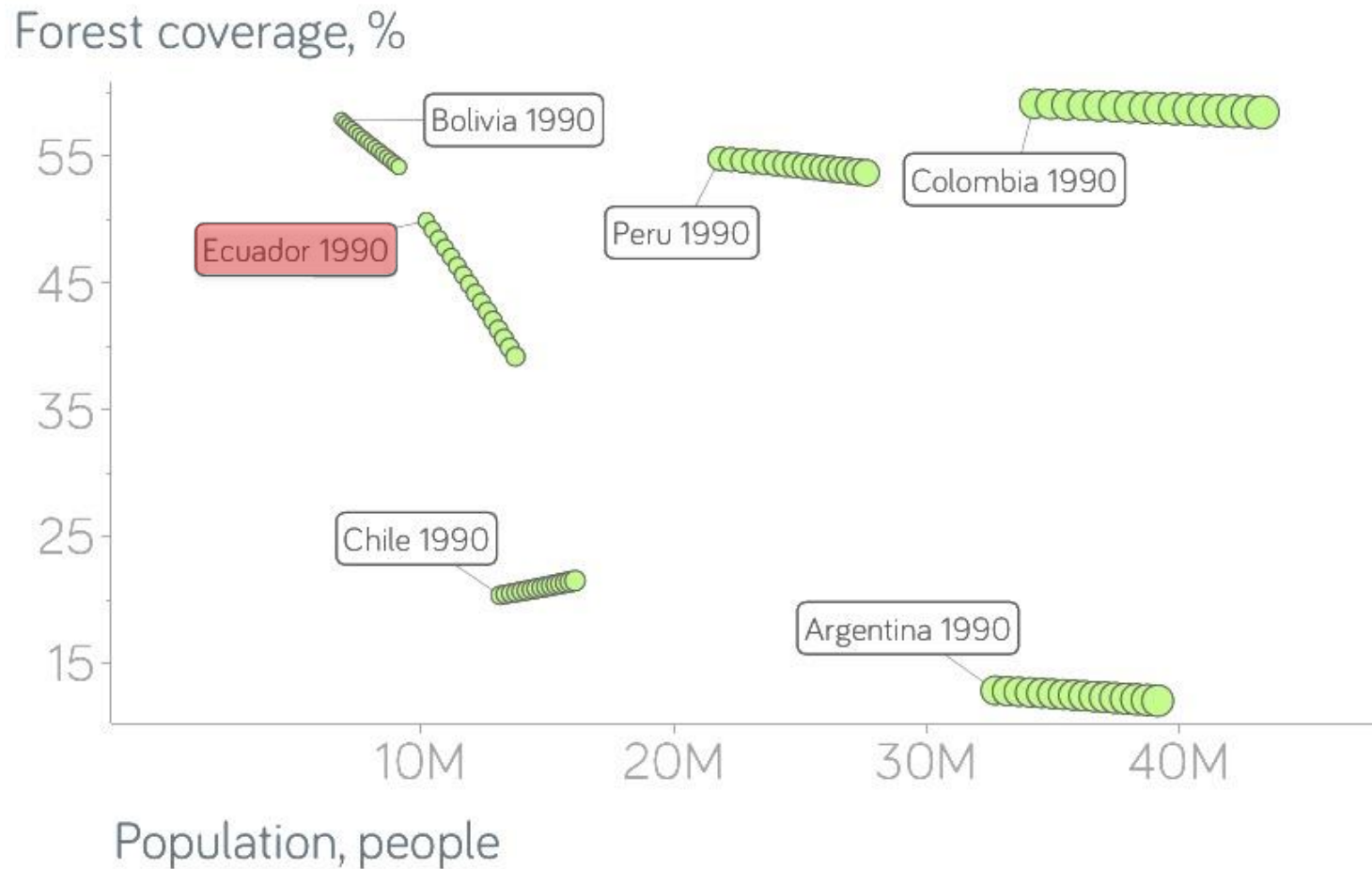
In cooperation with J. Cueva, Z. Aguirre, S. Günter, B. Stimm, P. Hildebrandt

Context

Context

Forest coverage, %

Bolivia 1990

Ecuador 1990

Peru 1990

Colombia 1990

Chile 1990

Argentina 1990

55

45

35

25

15

10M   20M   30M   40M

Population, people

gapminder.org

Research problem

Tropical Forests are converted to other land uses

Threat 1 = deforestation

Temperature and Precipitation changes have been detected

Threat 2 = climate change

Research questions

What is the potential effect of climate change on important timber species in the future?

Which is the biggest threat?
Deforestation or climate change

Methods

Species distribution modeling tool: Maxent

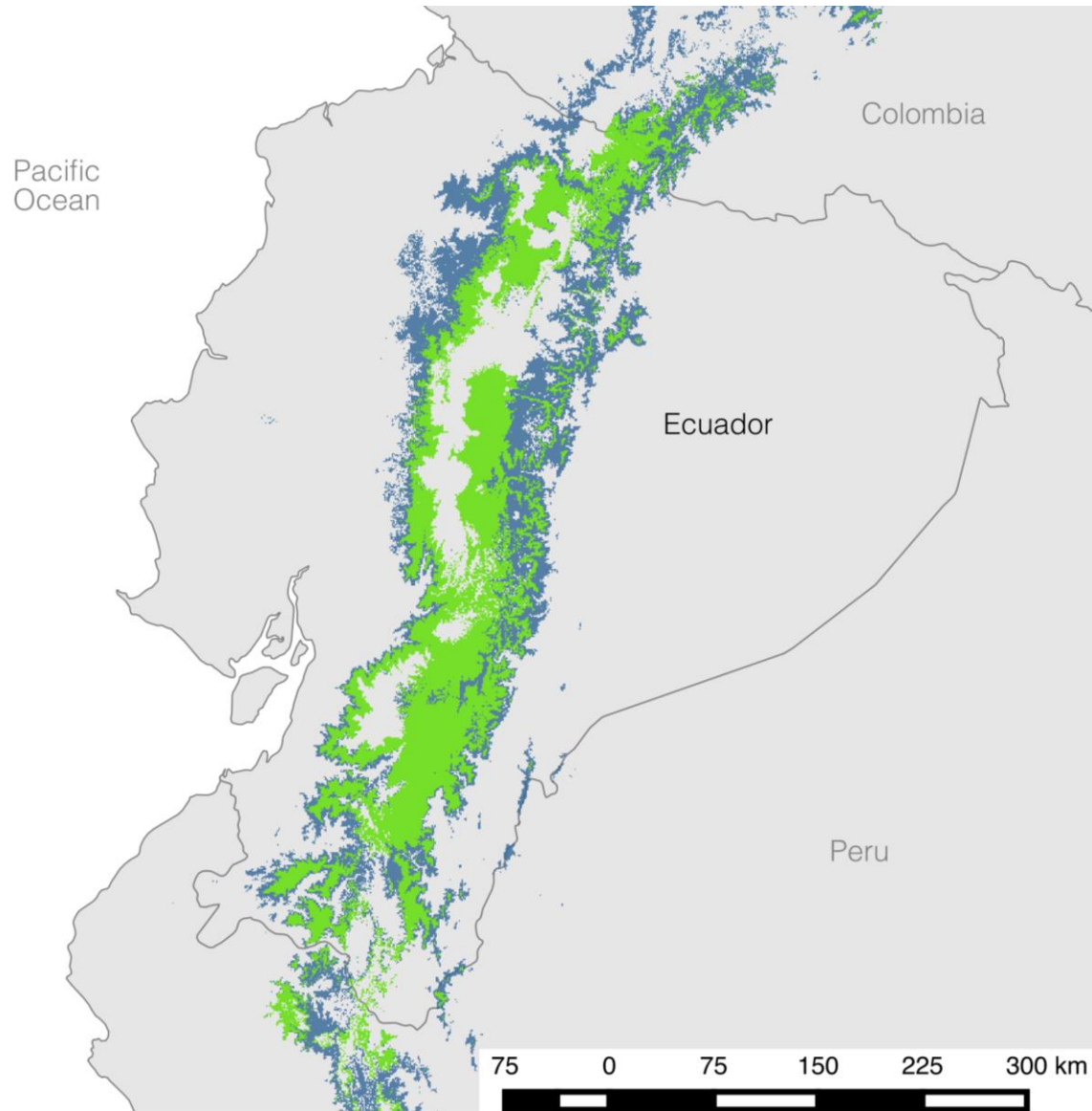   Needs: Presence records

    +   Environmental variables

Future climate scenarios (IPCC) year 2050

    source worldclim.org

Output models and processing

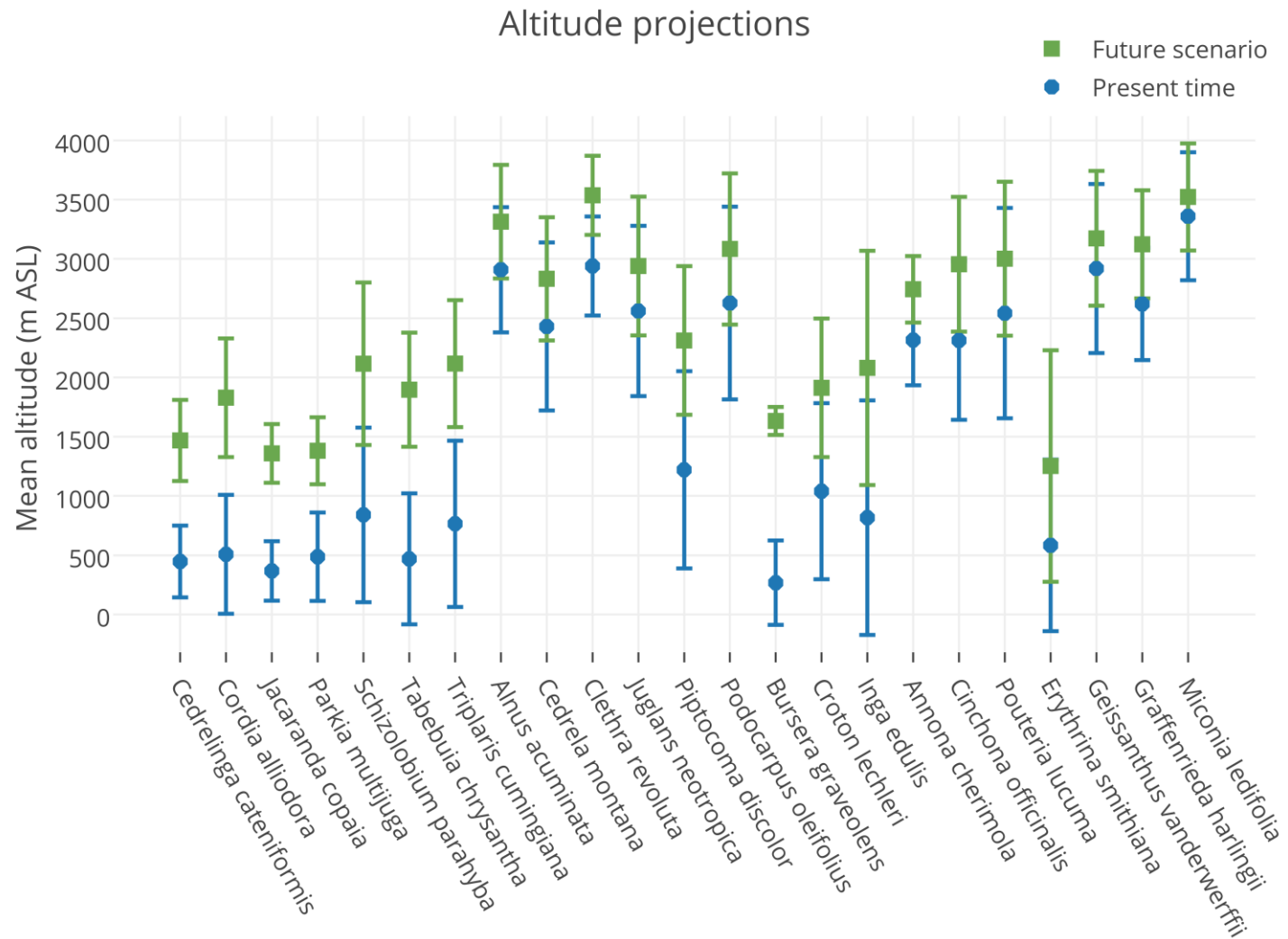Official deforestation layers from Ecuadorian Ministry (period 2008-2014)

Key results

Key results

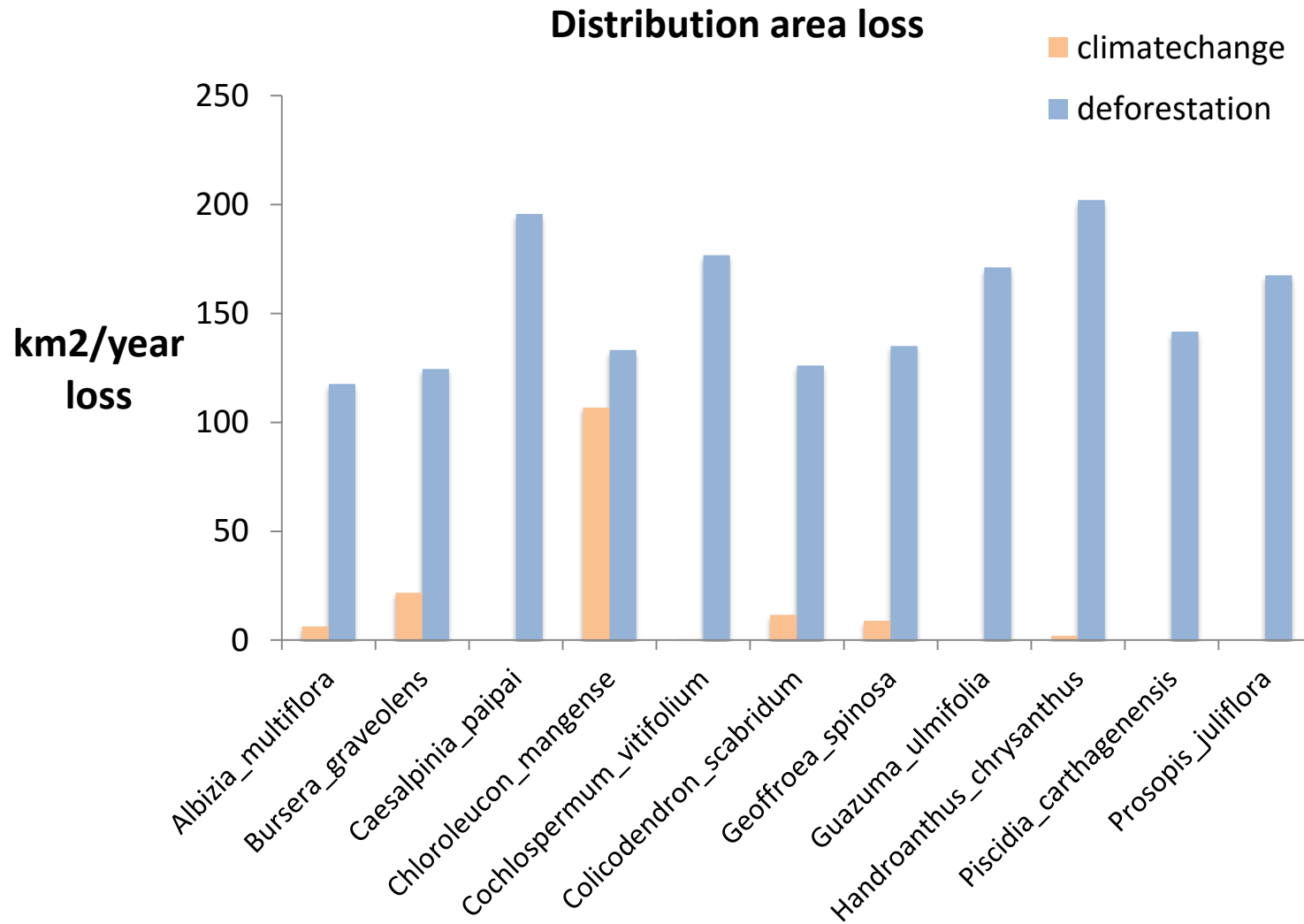

Altitude projections

Key results

Distribution area loss

Implications

Restoration and reforestation activities should consider future distribution of target species.

National policies considering implications of climate change over species habitats should not underestimate the threat of deforestation

Acknowledgments

Summary

- Timber species are expected to shift habitat towards higher altitudes

- Distribution loss from deforestation is more severe than any projection of area loss as result of climate change

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