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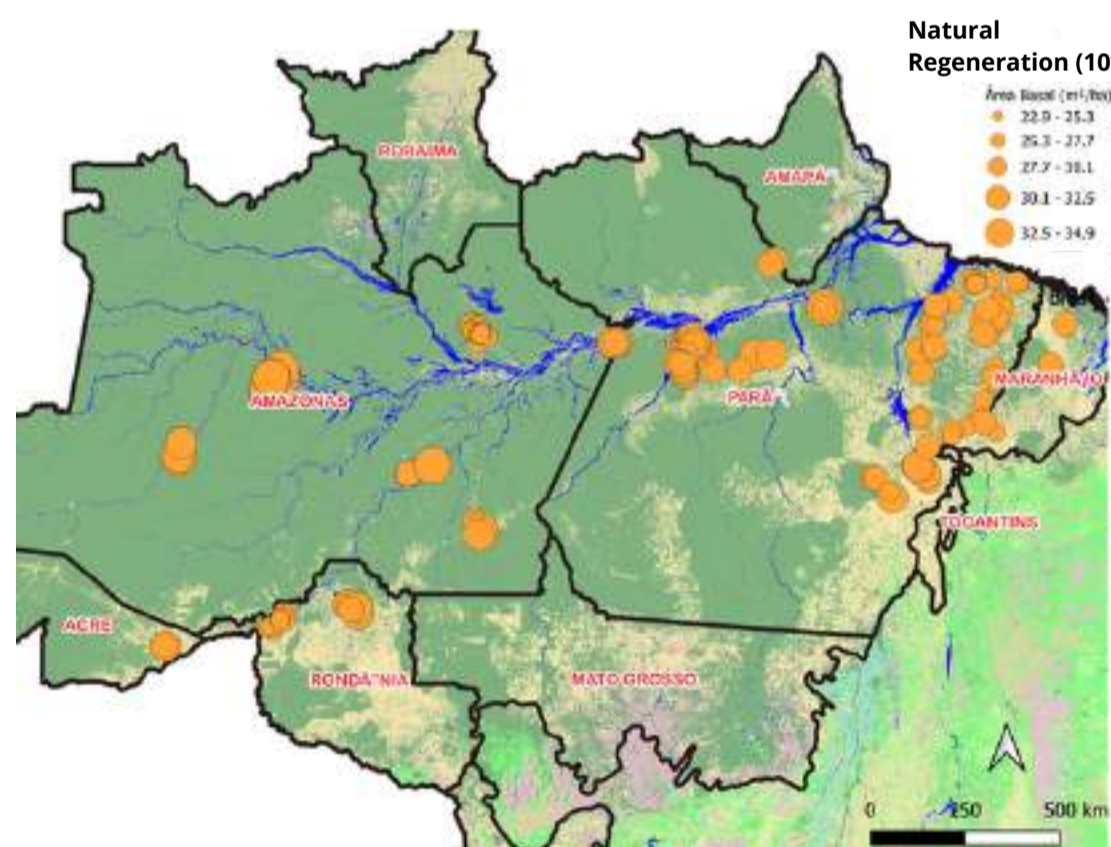
Key-Research Topics

APPLIED ECOLOGY, NATURAL REGENERATION, BIOCULTURAL RESTORATION & FUNCTIONAL ECOLOGY.

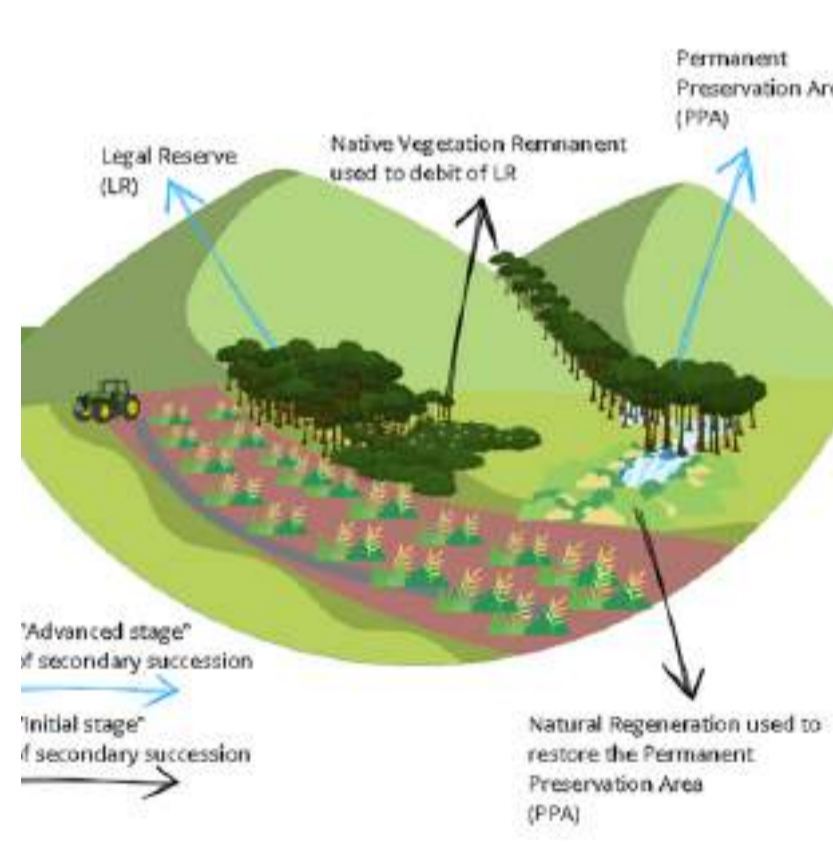
Current works and projects

UNCOVERING AND CLASSIFYING THE ECOLOGICAL INTEGRITY OF REGENERATING FORESTS

1 Ecological indicators for Natural regeneration and policy involvement

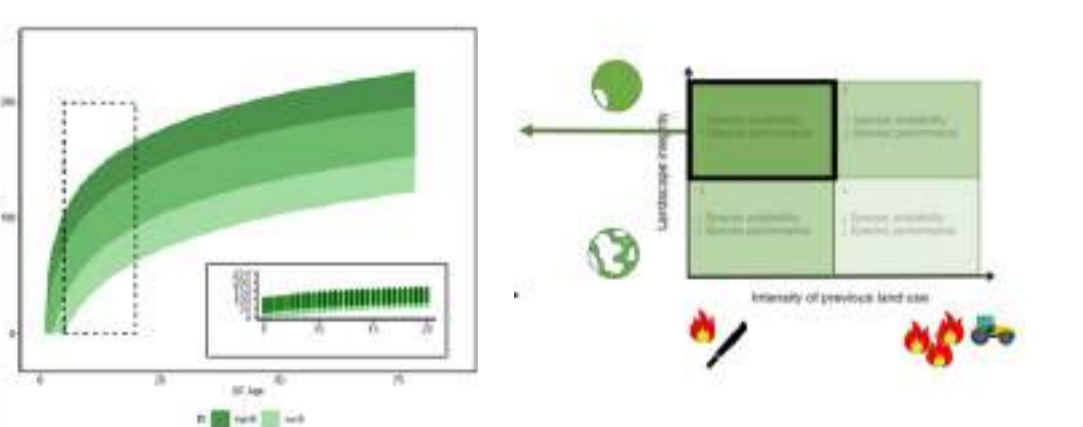


Estimated basal area of secondary forests with 10 years of natural regeneration



The conceptual landscape for understanding Environmental Regularization using natural regeneration

2 Indicators and reference values for monitoring the ecological integrity of natural regeneration



Estimated Aboveground biomass for high ecological integrity and low ecological integrity of Amazon natural regeneration

Reference values to monitoring Amazon Restoration Projects through Natural Regeneration

Indicator	Year 3	Year 10	Year 15	Year 20
Aboveground biomass (Mg/ha)	>50	>80	>98	>111
Basal area (m ² /ha)	>1.65	>7	>10.2	>2.3
Mean tree size (cm)	>15.63	>20.52	>23.37	>25
Gini Index	>0.16	>0.20	>22	>23
Richness (sp/100ind.)	>13	>20	>24	>26
Diversity (left. Sp)	>7	>15	>19	>23
Stems density (ind./ha)	>811	>1178	>1772	>2242

We identify the ecological indicators for successional trajectories and reference values for restoration monitoring, using 524 plots across the Amazon secondary forest. Our finds might be used by the environmental agencies for Amazon's environmental regularization programs.

Challenges

1 **CLASSIFYING THE ECOLOGICAL INTEGRITY OF REGENERATING FORESTS CONSIDERING REGIONAL VARIATION**

- A. Climatic factors;
- B. Soil properties;
- C. Biocultural range.

2 **MEASURE ECOLOGICAL INTEGRITY FROM A LOCAL KNOWLEDGE PERSPECTIVE**

- A. Ecology of Knowledge;
- B. Useful species;
- C. Contribution of Forest Regeneration to humanity, beyond colonial thinking.

Future perspectives

1 **INTEGRATE BASIC ECOLOGY WITH APPLIED QUESTIONS, AND ANCESTRAL KNOWLEDGE FOR FOREST CONSERVATION, BIOCULTURAL RESTORATION, AND FOREST MANAGEMENT**

2 **RESEARCH IDEAS:**



A. Effects of the intensity of land use on the shift of the Amazon ecosystem and their impacts on the provision of atmospheric water.

B. Importance of secondary forests in local useful species conservation and consequences of land use impacts.

