

Supplementary Materials for

Ecological restoration success is higher for natural regeneration than for active restoration in tropical forests

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- table S2. Median values of response ratios for active restoration and natural regeneration systems compared with reference systems without controlling for the four biotic and abiotic factors (forest cover at the landscape scale, total annual precipitation, past disturbance, and the time elapsed since restoration started) and percentage of enhancement of biodiversity and vegetation structure in natural regeneration with respect to active restoration systems.
- table S3. Selected papers with data available for the meta-analysis.

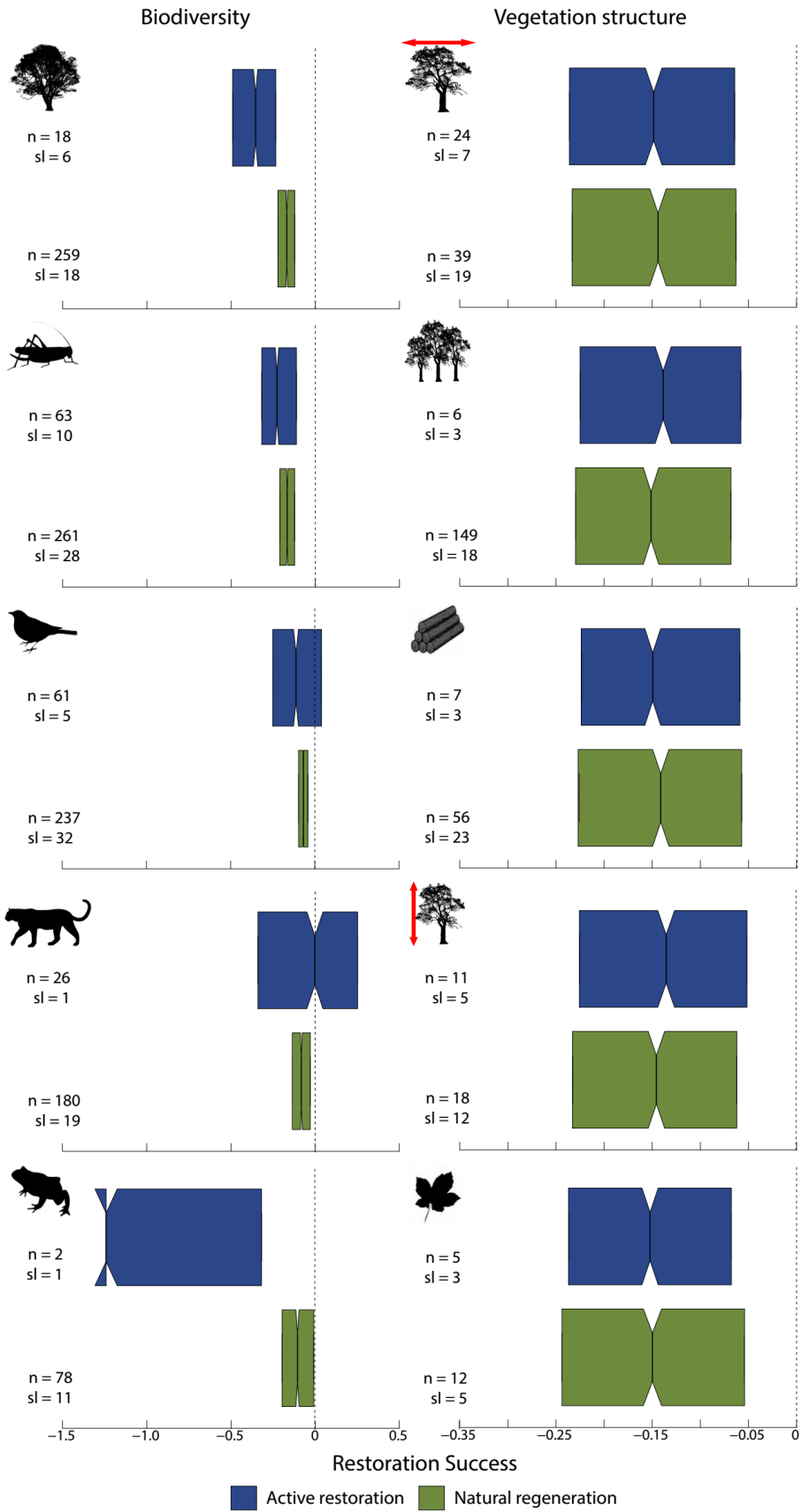


fig. S1. Meta-analysis without controlling for the biotic and abiotic factors. Bootstrapped mean response ratio for biodiversity (plants, invertebrates, birds, mammals, and herpetofauna) and vegetation structure (cover, density, biomass, height, and litter) in natural regeneration or active restoration systems compared with reference systems without controlling for the four biotic and abiotic factors (forest cover at the landscape scale, total annual precipitation, past disturbance, and the time elapsed since restoration started). n = total sample size, sl = number of study landscapes (sample size used in each resampling to avoid spatial pseudo-replication). Each box plot shows the median value (central solid line), first and third quartile ranges (left and right outer borders of the box) of 1,000 resampled (with replacement) mean effect sizes. Dashed lines indicate an effect size of zero, i.e. no difference to reference systems. Notches in boxes represent 95% confidence intervals, and thus non-overlapping notches between boxes imply a significant difference (68).

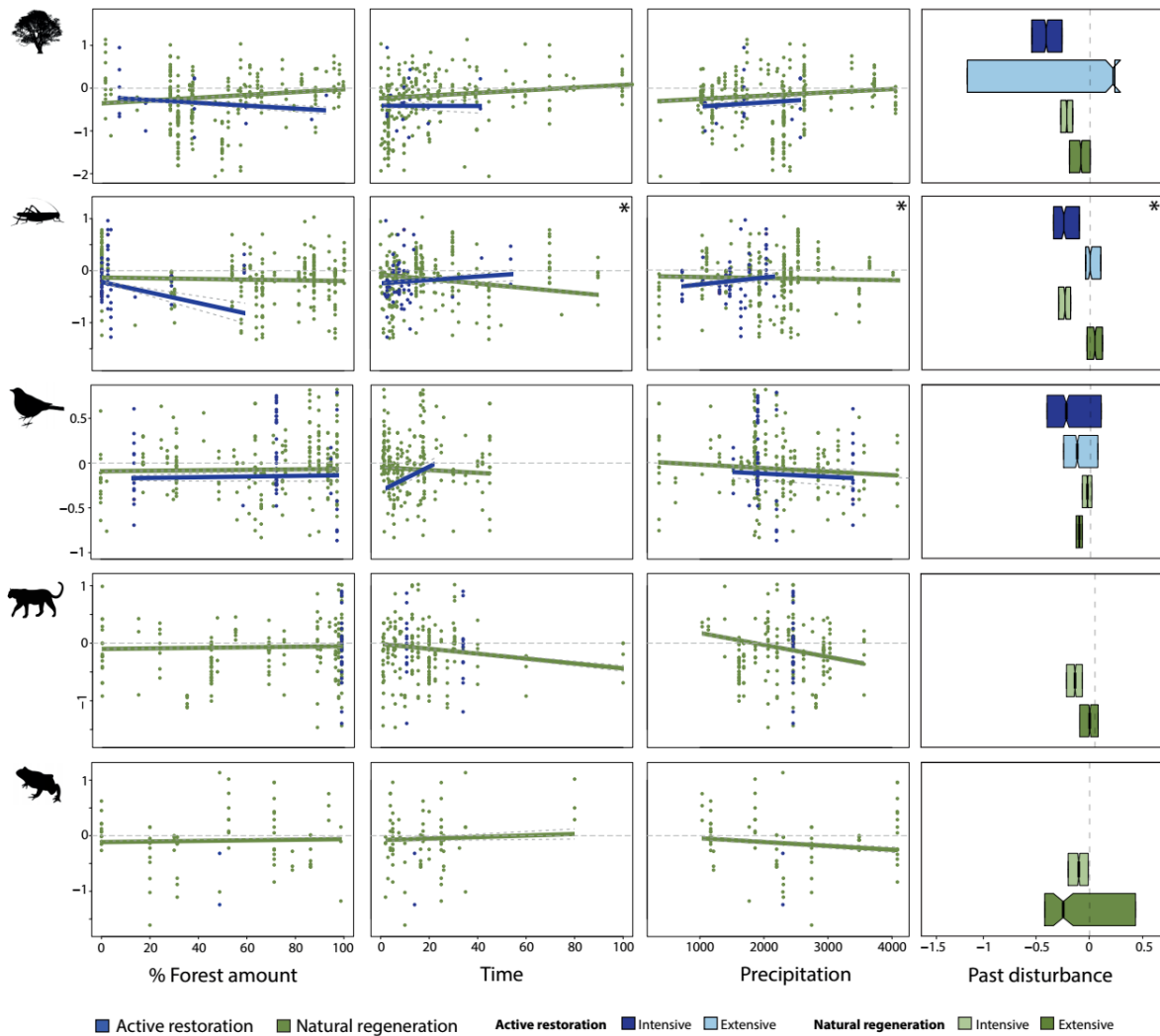


fig. S2. Regression and box plot analyses for biodiversity. Bootstrapped mean response ratio for biodiversity (plants, invertebrates, birds, mammals and herpetofauna) in natural regeneration or active regeneration systems compared with reference systems controlled for three of the four biotic and abiotic factors (forest cover at the landscape scale, total annual precipitation, past disturbance, and the time elapsed since restoration started). The total sample size and the number of study landscapes are found in the Fig. 1. Each plot shows all standardized mean effect sizes for natural regeneration and active restoration systems, the median value (green or blue solid line), and the 95% confidence intervals (gray dashed lines) of 10,000 resampled (with replacement) mean response ratios. Horizontal dashed line indicates a response ratio of zero, i.e. no difference to reference systems. * = not controlled for amount of forest cover (always significantly different between natural regeneration and active restoration systems). For mammals and herpetofauna, restoration success was not estimated in active restoration systems due to the small number of study landscapes.

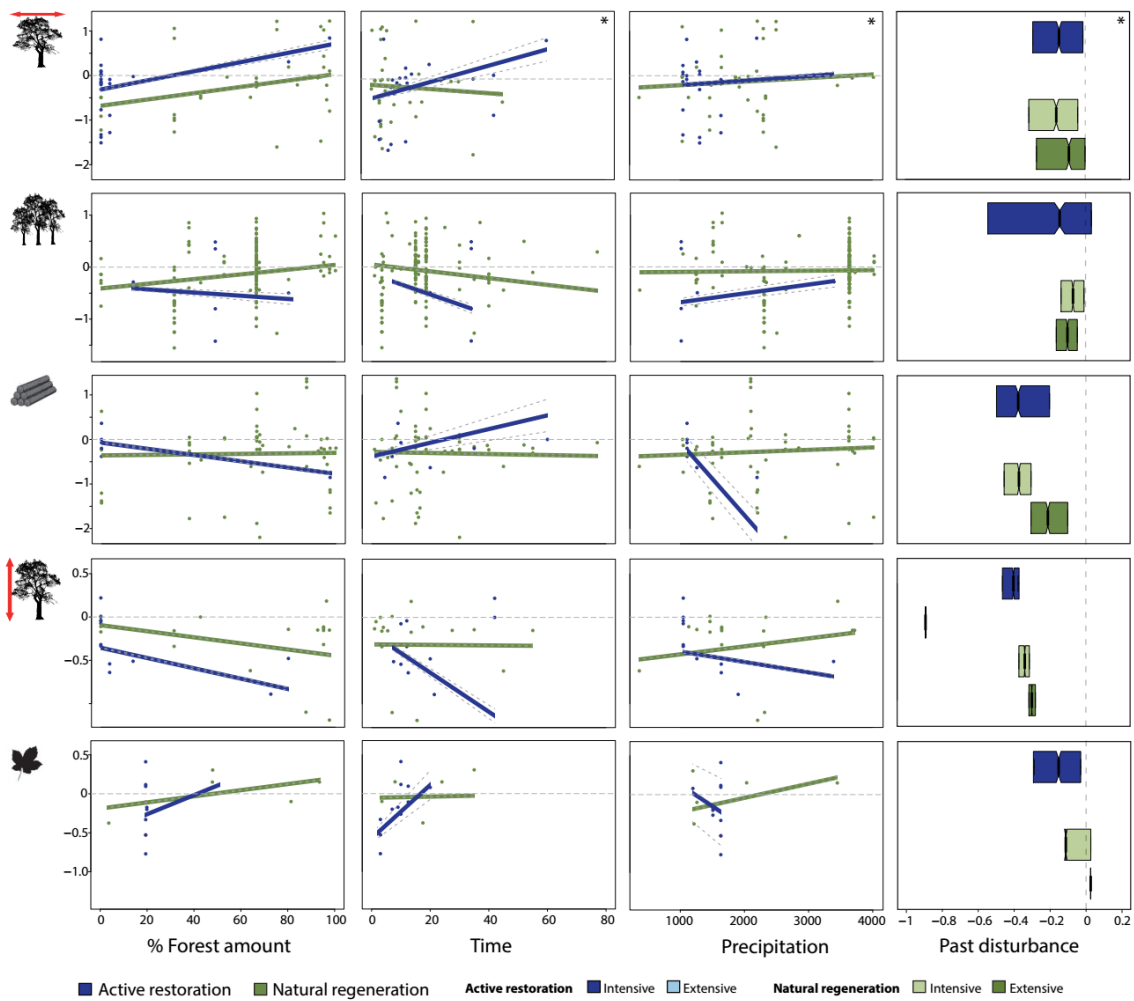


fig. S3. Regression and box plot analyses for vegetation structure. Bootstrapped mean response ratio for vegetation structure (cover, density, biomass, height and litter) in natural regeneration or active regeneration systems compared with reference systems controlled for three of the four biotic and abiotic factors (forest cover at the landscape scale, total annual precipitation, past disturbance, and the time elapsed since restoration started). The total sample size and the number of study landscapes are found in the Fig. 1. Each plot shows all standardized mean effect sizes for natural regeneration and active restoration systems, the median value (green or blue solid line), and the 95% confidence intervals (gray dashed lines) of 10,000 resampled (with replacement) mean response ratios. Horizontal dashed line indicates a response ratio of zero, i.e. no difference to reference systems. * = not controlled for amount of forest cover (always significantly different between natural regeneration and active restoration systems).

table S1. Median values of response ratios for active restoration and natural regeneration systems compared with reference systems controlled for the four biotic and abiotic factors (forest cover at the landscape scale, total annual precipitation, past disturbance, and the time elapsed since restoration started) and percentage of enhancement of biodiversity and vegetation structure in natural regeneration with respect to active restoration systems. * = not controlled for amount of forest cover (always significantly different between natural regeneration and active restoration systems).

	Active restoration	Natural regeneration	Enhancement (%)
BIODIVERSITY			
Plants	-0.39	-0.17	55.7
Invertebrates*	-0.24	-0.15	36.7
Birds	-0.1	-0.07	34.2
Mammals		-0.1	
Herpeto		-0.09	
VEGETATION STRUCTURE			
Cover*	-0.19	-0.13	27.5
Density	-0.51	-0.32	37.6
Biomass	-0.37	-0.3	18.8
Height	-0.39	-0.17	55.7
Litter	-0.12	-0.07	43.6

table S2. Median values of response ratios for active restoration and natural regeneration systems compared with reference systems without controlling for the four biotic and abiotic factors (forest cover at the landscape scale, total annual precipitation, past disturbance, and the time elapsed since restoration started) and percentage of enhancement of biodiversity and vegetation structure in natural regeneration with respect to active restoration systems.

	Active restoration	Natural regeneration	Enhancement (%)
BIODIVERSITY			
Plants	-0.35	-0.17	51.43
Invertebrates	-0.23	-0.17	26.09
Birds	-0.11	-0.07	36.36
Mammals	0	-0.08	*
Herpeto	-1.24	-0.1	91.94
VEGETATION STRUCTURE			
Cover	-0.15	-0.14	6.67
Density	-0.14	-0.15	*
Biomass	-0.15	-0.14	6.67
Height	-0.14	-0.15	*
Litter	-0.15	-0.15	0

table S3. Selected papers with data available for the meta-analysis.

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