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2017  
Iguassu **Brazil**

Linking Science and  
Practice for a Better World

VII World Conference on  
Ecological Restoration

V Congreso Iberoamericano y del  
Caribe de Restauración Ecológica

I Conferência Brasileira de  
Restauração Ecológica

August 27 to  
September 1, 2017  
Recanto Cataratas  
Thermas Resort &  
Convention  
Foz do Iguassu  
Brazil

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**BOOK OF  
ABSTRACTS**



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**Organizer:**

Giselda Durigan

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juvenile or adult) lianas become more abundant than trees in disturbed forest remnants and, thus, develop management recommendations for practitioners. We allocated 30 plots of 314 m<sup>2</sup> each in forest sectors dominated by ruderal liana species and sampled abundance and species richness of lianas and trees. Although trees are more abundant at the seed life stage, lianas seem to have less mortality when advancing through life stages. We also identified that lianas dominate forest community in degraded remnants from the juvenile stage onward. Seed rain and seed bank may not be determinant for the propagation of ruderal lianas in degraded remnants, while trees seem to rely more on germination for establishment. The high abundance of liana seedlings and juveniles in the remnant may be related to its vegetative reproduction. Interventions for the restoration of liana-dominated forest remnants must aim at the juvenile and adult stage of this life form, such as liana cutting.

### **T07-P16 - Photosynthetically active radiation under forest fragment and forest restoration systems in the Cerrado-Amazon ecotone, Mato Grosso State, Brazil**

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In this study we monitored the Photosynthetically Active Radiation (PAR) in four treatments of a Forest Restoration (FR) project, as well as inside a Native Forest (NF) and under Full Sun (FS) condition during 651 days, in Cerrado-Amazon ecotone, Brazil. The FR systems were established in December 2012 and consisted of a consortium of 16 native species with eucalyptus (T1) and with rubber trees (T2), both with artificial pruning (AP), and only native species with (T3) and without AP (T7), all with a density of ~800 ind.ha<sup>-1</sup>. The PAR data was acquired continuously with specific sensors coupled to automatic weather stations and data loggers, while tree height and shading were measured inside circular plots around the stations after four years of planting. According to the paired T test, in all treatments, the available PAR (MJ m<sup>-2</sup> day<sup>-1</sup>) during the studied period presented significant differences ( $P < 0.01$ ), with mean values of 5.08 (T1), 5.28 (T2), 5.65 (T3), 4.94 (T7), 7.17 (FS) and 0.19 (NF). As expected, NF had the lowest level of PAR, while the FR treatments are already showing some level of shading that will allow the gradative suppression of exotic grasses and the establishment of natural regeneration. The lowest level of PAR at T7, even with T1 having high individuals of eucalyptus, may be due to the lack of AP. However, as we expect to provide wood as a major product of the forest management, the challenge will be to balance this management with the return of natural processes.

### **T07-P17 - Low predictability in aboveground biomass accumulation in Atlantic Forest restoration sites**

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Forest restoration has been in charge of a huge part of greenhouse gas emission mitigation, but the certification of carbon capture should incorporate uncertainties in above-ground biomass (AGB) estimations, and forecasts for longer periods (>10 years) may include unknown errors. We analyzed AGB accumulation in reforestations of different ages in order to measure uncertainty in different time intervals. Data came from 24 Atlantic Forest restoration sites around Capivara reservoir (Paraná and São Paulo states boundary, Brazil). AGB was estimated for trees using allometric models in stands ranging from 1 to 14 years. We used linear regression to verify the rate of AGB accumulation in age intervals (0-50, 51-100 and over 100 months). Only in the first interval (0 to 50 months) we found a clear increase (9.95 Mg.ha.year<sup>-1</sup>) in AGB with time ( $p=0.006$ ,  $r^2=0.74$ ). In this period pioneer tree species are growing and management is intense. However, a much lower rate of AGB increase can be observed in the 51-100 months interval, and even a decrease when analyzing sites over 100 months. We concluded that after the first years the accumulation of biomass did not follow a predictable pattern. Mortality of planted trees, lack of recruitment of regenerating individuals and even re-invasion of non native species can be important factors influencing AGB in reforestations after two years. We suggest that there is a need for monitoring and adaptative management for longer periods in order to warrant carbon capture in reforestations.