



Quão previsível é a sucessão ecológica de florestas em restauração?

Natalia Guerin – Doutoranda do Programa de Ecologia Aplicada – ESALQ
Como as espécies introduzidas afetam a sucessão de florestas em longo prazo?

Ricardo Gomes Cesar – Representante da WeForest
Fatores locais e de paisagem na biomassa, riqueza e diversidade filogenética de florestas estabelecidas pela regeneração natural em paisagens agrícolas

Letícia Couto Garcia – Professora Adjunta - UFMS – Campo Grande
Sustentabilidade ecológica em plantios de espécies arbóreas em alta diversidade

THE FUNDAMENTALS OF VEGETATION CHANGE

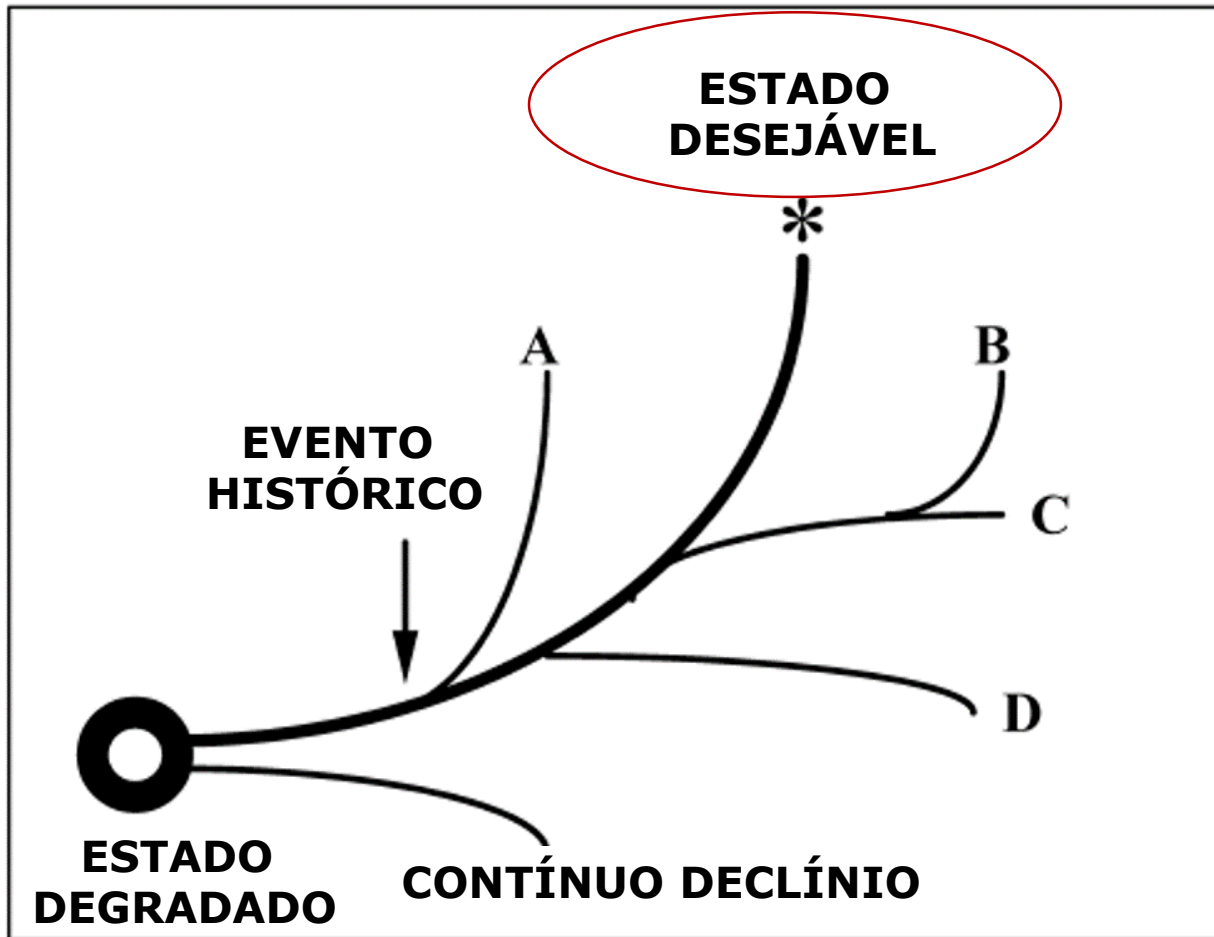
WILLIAN COOPER, ECOLOGY 7(4): 391-413, 1926

A sound conception of the fundamentals of dynamic ecology must be based upon the premise of the universality of change. The field necessarily includes all vegetation of all time, and all types of vegetational change.

The vegetation of the earth is presented as a flowing braided stream. Its constituent elements branch and interweave, disappear and reappear. Vegetation as we see it today is the advancing front of this stream, in which we discern more or less definite groupings that tend to repeat themselves in space, the advancing termini of the streamlet-elements. There is a constant tendency toward merging of related elements and thus toward simplification into fewer and larger currents, which is balanced by a trend toward multiplication of the streamlet-elements through forking.

The vegetational stream is governed and directed by the interaction of factors residing in the constituent organisms and their environment. These differ greatly in the scale on which they work and in the speed of the changes they induce. Every one is forever operating upon all portions of the stream. The net change in any given portion is determined by the resultant of their activities.

NÍVEL DE COMPLEXIDADE

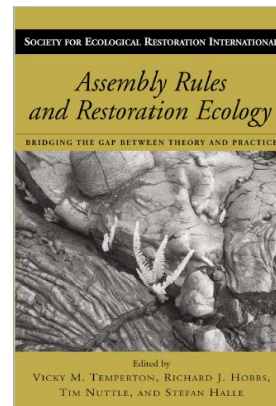


TEMPO

Chapter 4

*Assembly Models and the
Practice of Restoration*

JULIE L. LOCKWOOD AND COREY L. SAMUELS







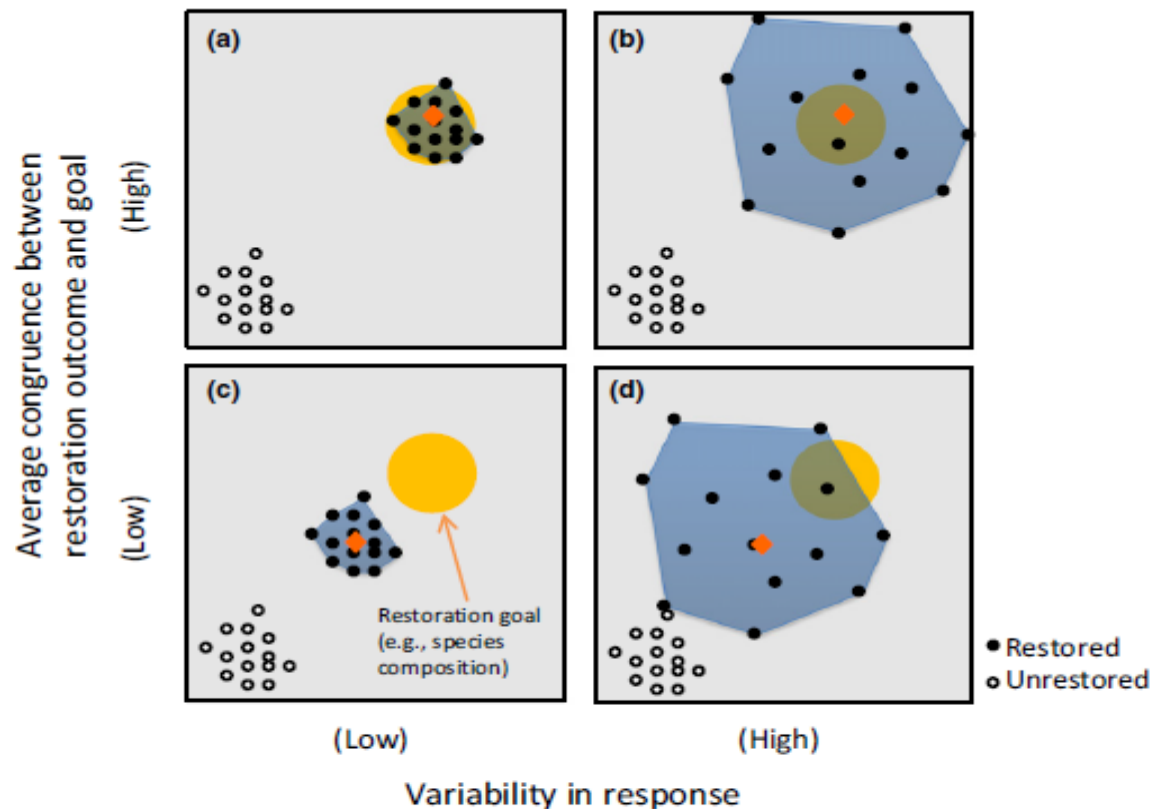


Fig. 1. The outcomes of restoration may differ in mean responses (orange diamond) as well as the degree of variability around a mean response (blue shaded region). To date, the field of restoration ecology has focused on mean responses—how restoration outcomes compare to unrestored and goal conditions, indicated by gold circles (i.e. the comparison of panels a and b to c and d). Very little attention has been given to variability in responses among restoration projects (indicated by the dispersion of points in blue polygons), or situations leading to more vs. less variation in outcomes (i.e. the comparisons of panels a and b or c and d).

REVIEW: TOWARD PREDICTION IN THE RESTORATION OF BIODIVERSITY

Interpreting variation to advance predictive restoration science

Lars A. Brudvig¹, Rebecca S. Barak^{2,3}, Jonathan T. Bauer⁴, T. Trevor Caughlin⁵, Daniel C. Laughlin⁶ , Lorelee Larios⁷ , Jeffrey W. Matthews⁸ , Katharine L. Stuble⁹, Nash E. Turley¹ and Chad R. Zirbel¹

HIERARQUIA DA PREVISIBILIDADE PARA RESULTADOS DA RESTAURAÇÃO




Journal of Applied Ecology 2017, **54**, 1058–1069

doi: 10.1111/1365-2664.12935

TOWARD PREDICTION IN THE RESTORATION OF BIODIVERSITY

The hierarchy of predictability in ecological restoration: are vegetation structure and functional diversity more predictable than community composition?

Daniel C. Laughlin^{*1,2} , Robert T. Strahan³, Margaret M. Moore⁴, Peter Z. Fulé⁴, David W. Huffman⁵ and W. Wallace Covington^{4,5}

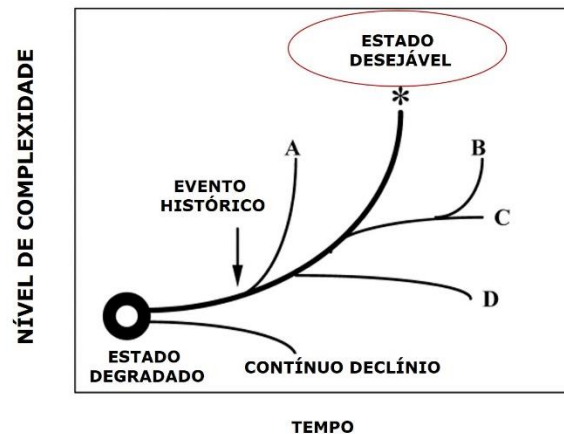
Quais atributos de florestas em restauração são previsíveis e que, portanto, são bons indicadores do sucesso de restauração ao longo do tempo?

Quais atributos não são previsíveis (ou são pouco previsíveis), e quais as lacunas de conhecimento?

Em longo prazo, a técnica e/ou as espécies utilizadas na restauração interferem na sucessão? Quais são os fatores que condicionam a sucessão em longo prazo ?

Como o manejo adaptativo pode acelerar a sucessão de florestas em restauração?

Como as espécies introduzidas afetam a sucessão de florestas em longo prazo?





Dr. Márcio Seiji Suganuma
UENP – campus Cornélio Procópio



Restoration Ecology
THE JOURNAL OF THE SOCIETY FOR ECOLOGICAL RESTORATION

RESEARCH ARTICLE

Indicators of restoration success in riparian tropical forests using multiple reference ecosystems

Marcio S. Suganuma^{1,2,3}, Giselda Durigan¹

Restoration Ecology Vol. 23, No. 3, pp. 238–251 MAY 2015

SCIENTIA
FORESTALIS

Sci. For., Piracicaba, v. 44, n. 110, p. 463-474, jun. 2016

Valores esperados para atributos de florestas
ripárias em restauração em diferentes idades

Expected values for attributes of riparian forests
undergoing restoration at different ages

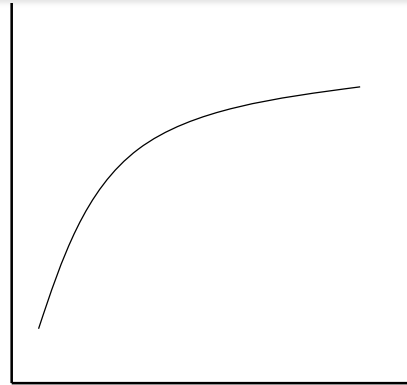
Giselda Durigan¹, Marcio Seiji Suganuma² e Antônio Carlos Galvão de Melo¹



Carlos Delano Cardoso de Oliveira
Ciência Florestal –
UNESP de Botucatu

HIPÓTESES

ESTRUTURA
(DENSIDADE;
ÁREA BASAL;
BIOMASSA)



TEMPO

PLANTIOS HOMOGÊNEOS

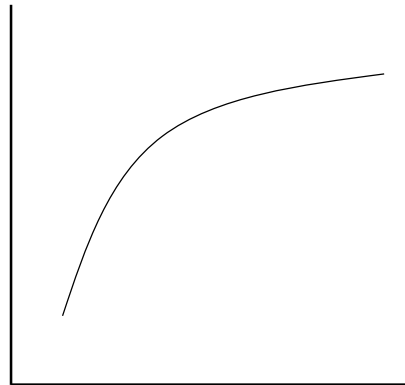
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PLANTIOS HETEROGÊNEOS

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FLORESTAS DE REFERÊNCIA

RIQUEZA
E DIVERSIDADE



TEMPO

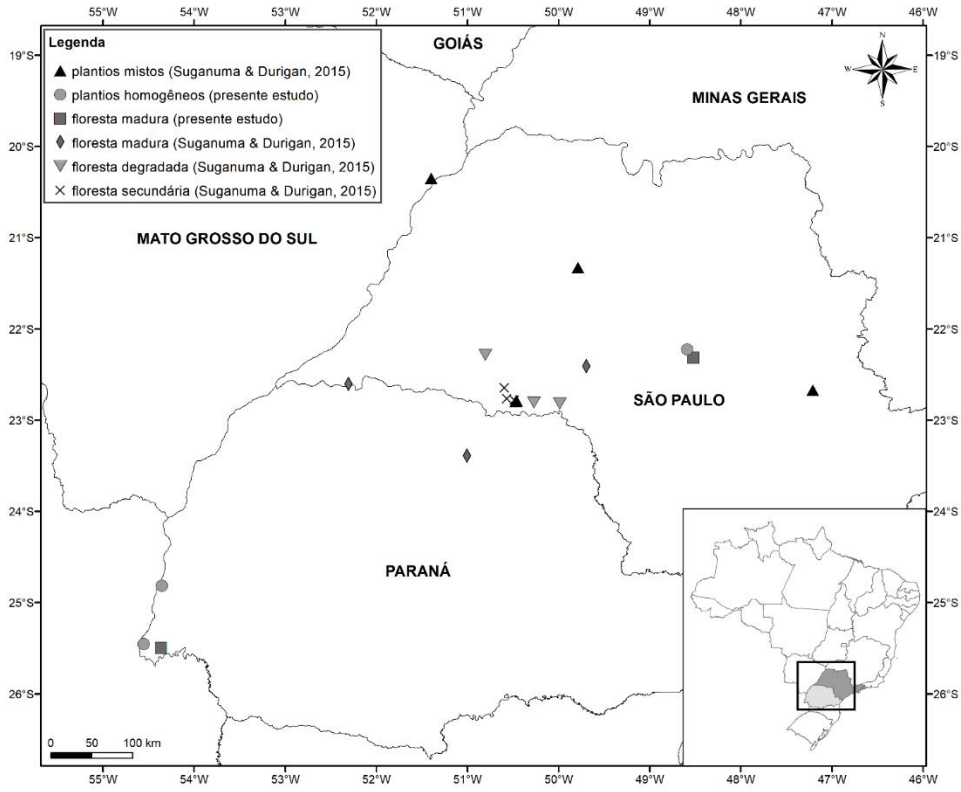
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PLANTIOS HETEROGÊNEOS

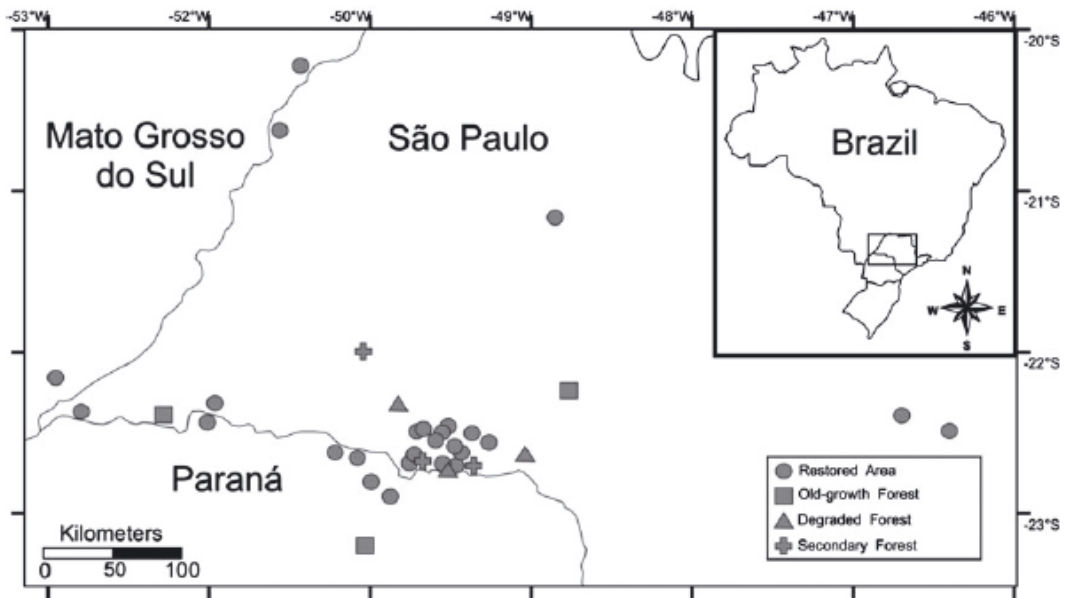
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FLORESTAS DE REFERÊNCIA



**28 PLANTIOS HOMOGÊNEOS
(24 A 49 ANOS)
5 PLANTIOS MISTOS
(24 A 53 ANOS)
11 FLORESTAS DE REFERÊNCIA**

**26 PLANTIOS MISTOS
(4 A 53 ANOS)
9 FLORESTAS DE REFERÊNCIA**





ARAÇÁ

Psidium cattleianum



IPÊ ROXO

Handroanthus heptaphyllus



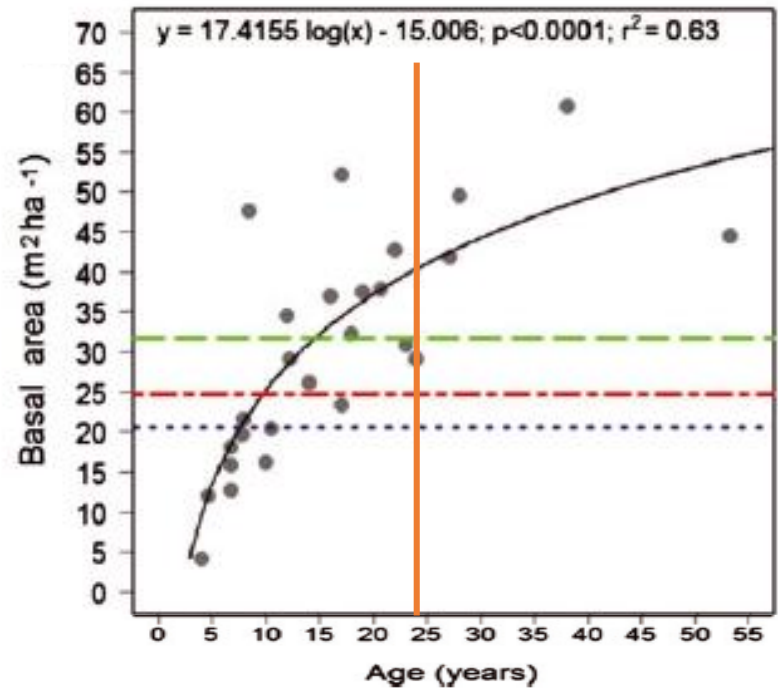
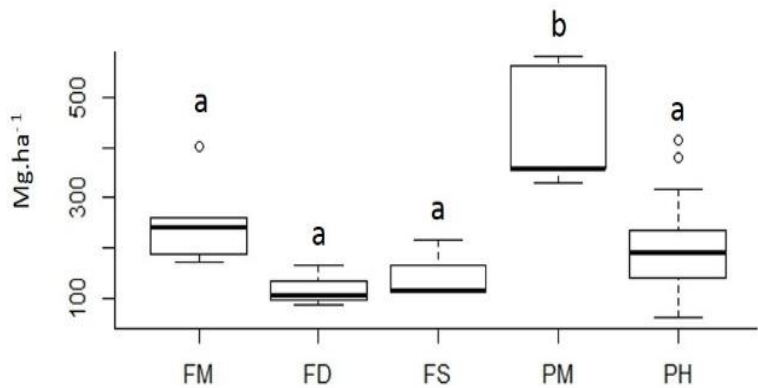
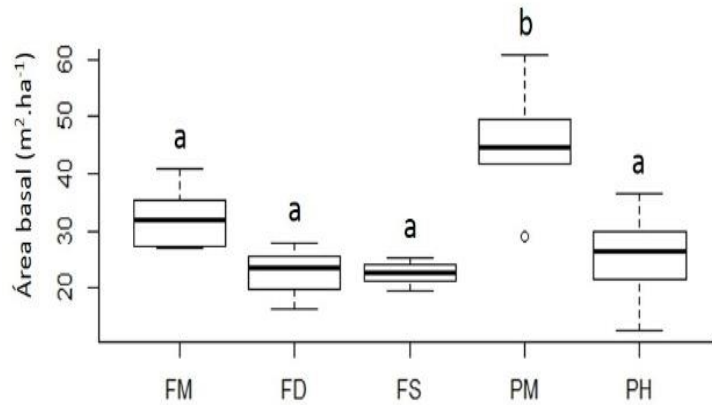
AROEIRA

Myracrodruon urundeuva

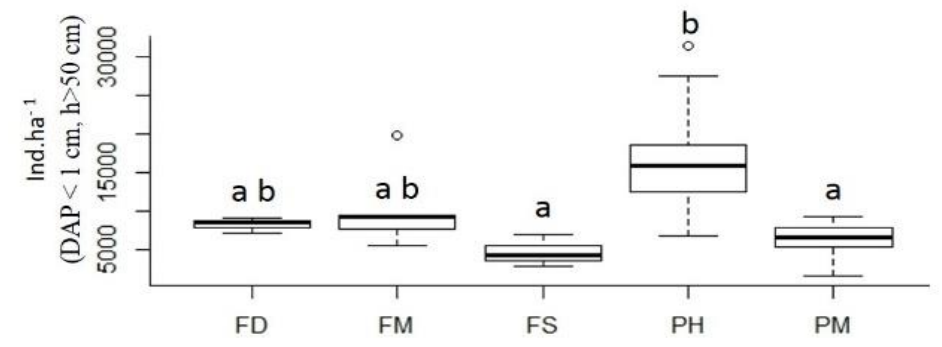
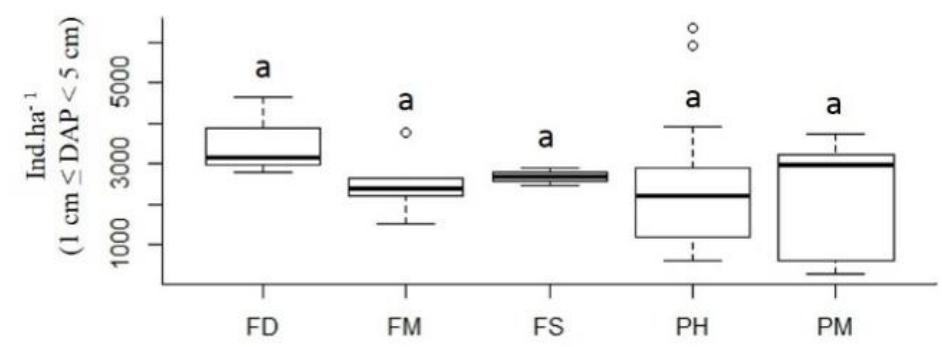
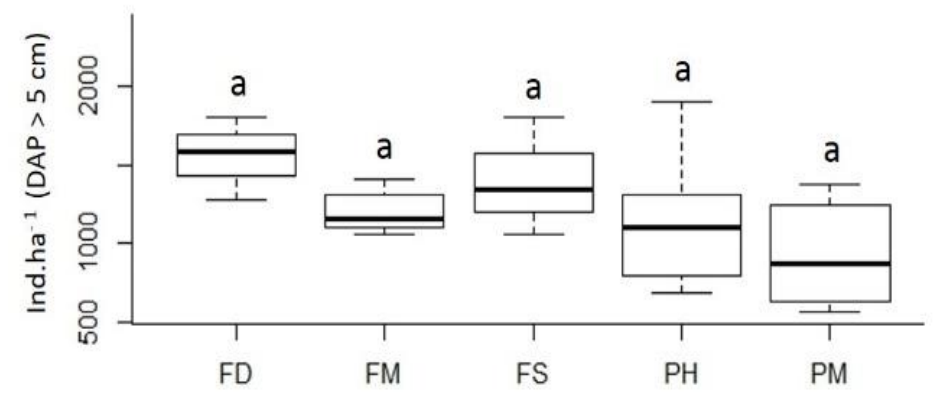
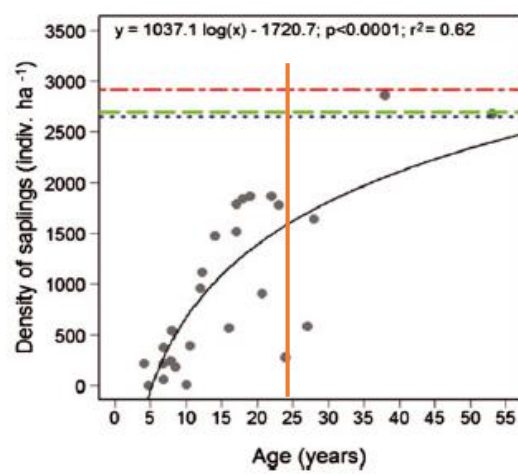
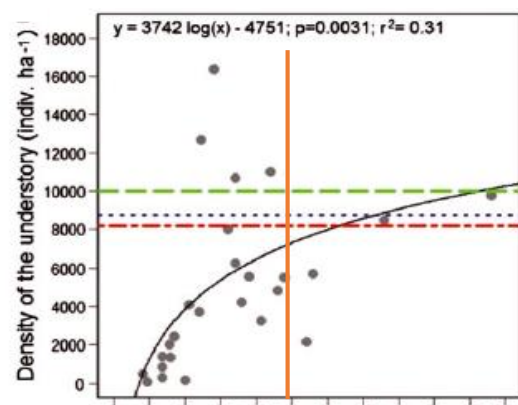
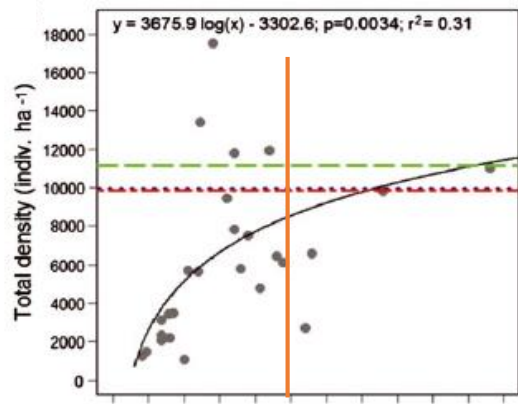


GABIROBA

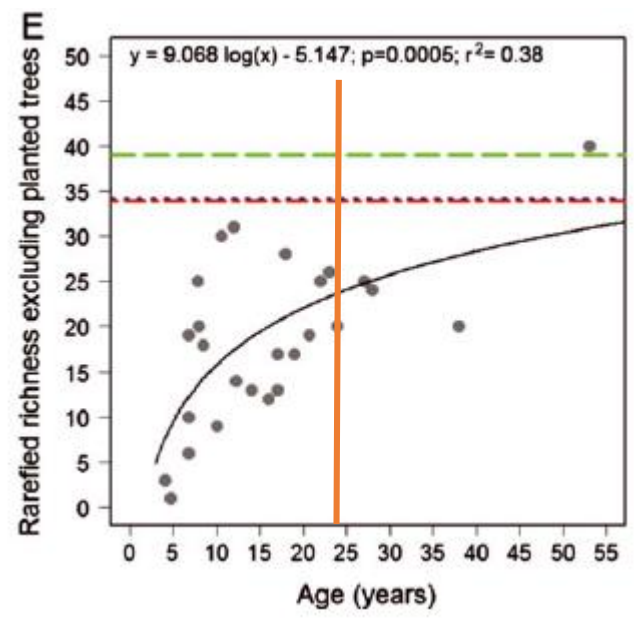
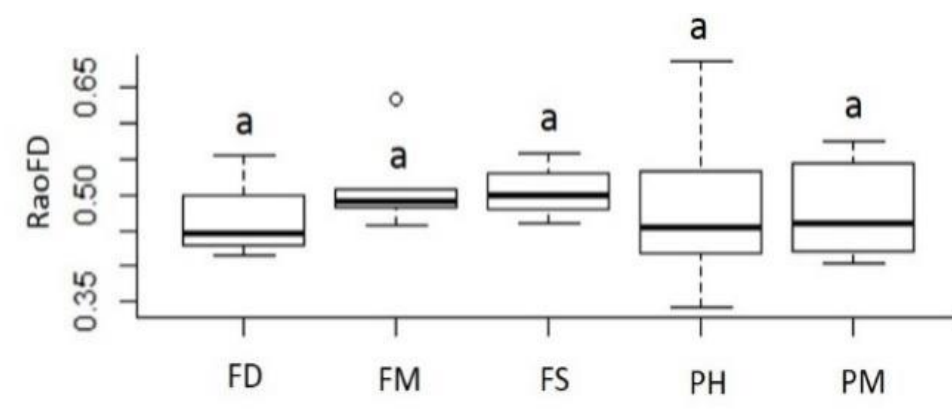
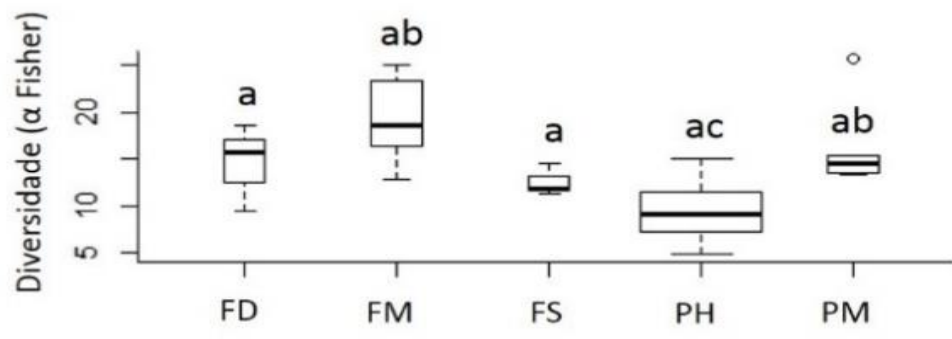
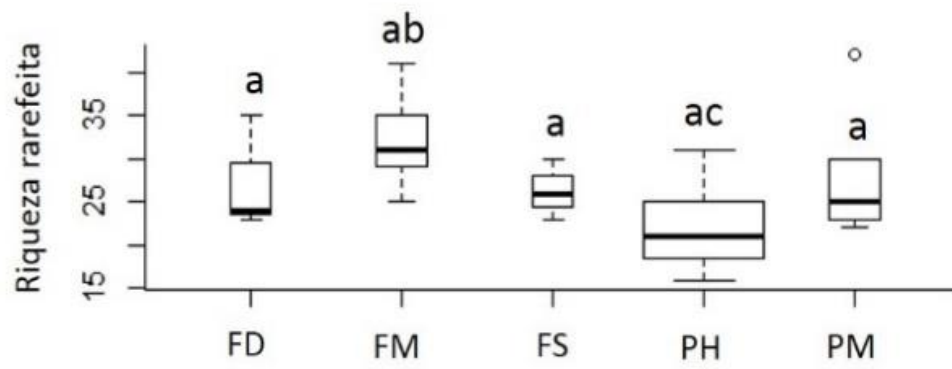
Camponasia xanthocarpa



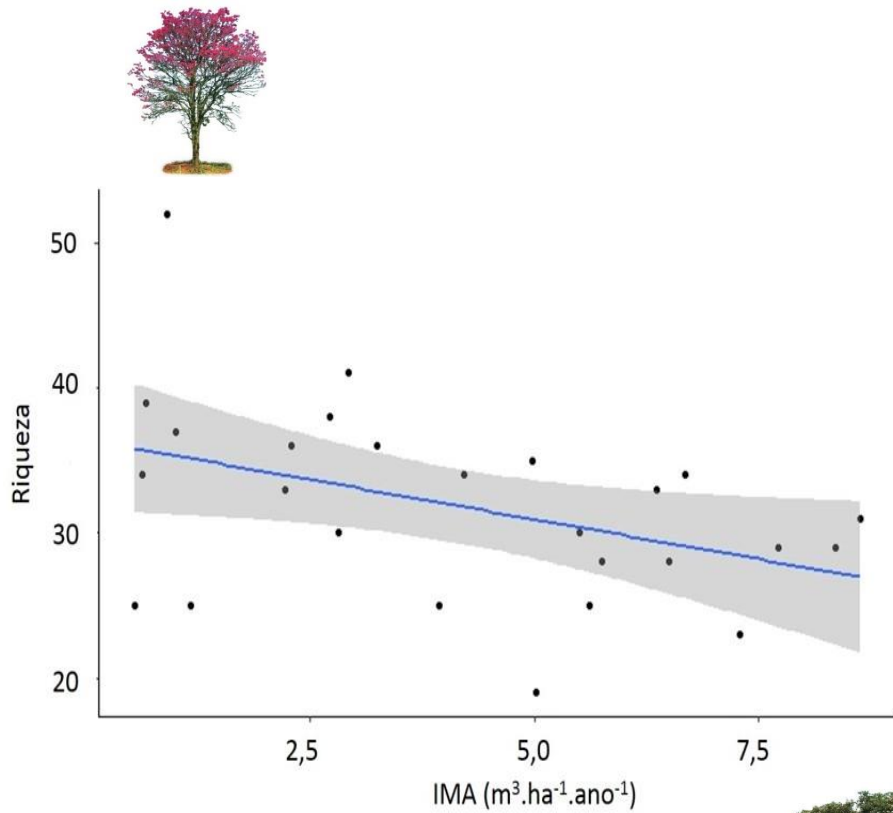
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 FLORESTA DEGRADADA: · · ·
 FLORESTA SECUNDÁRIA: - - -



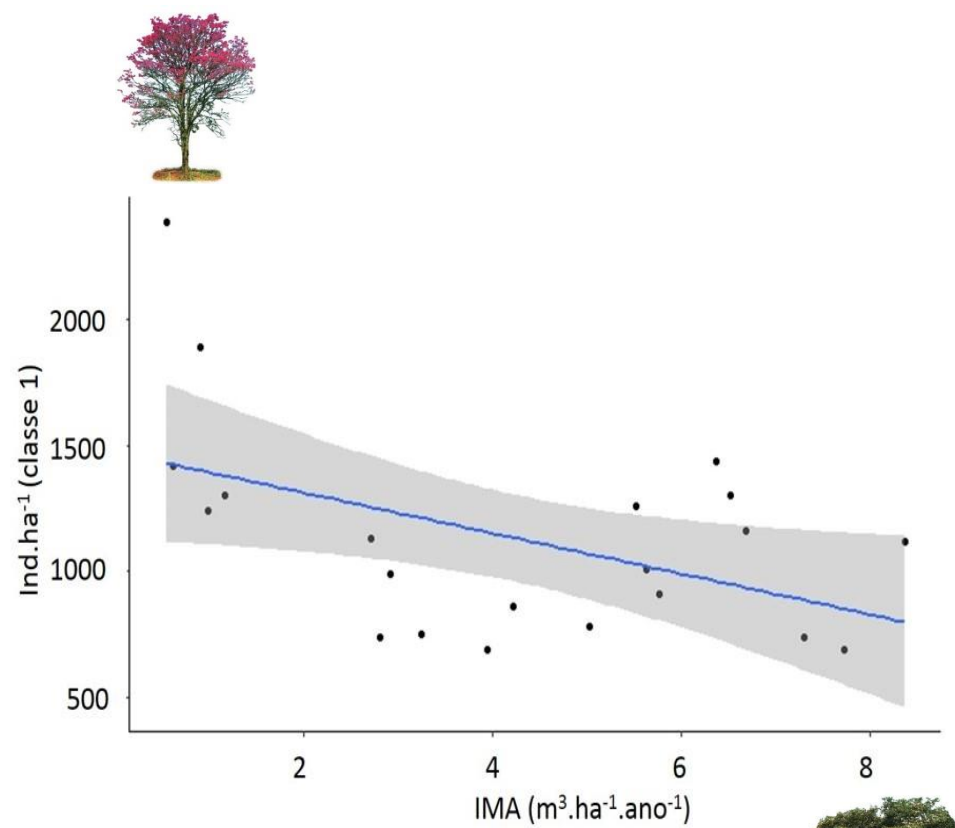
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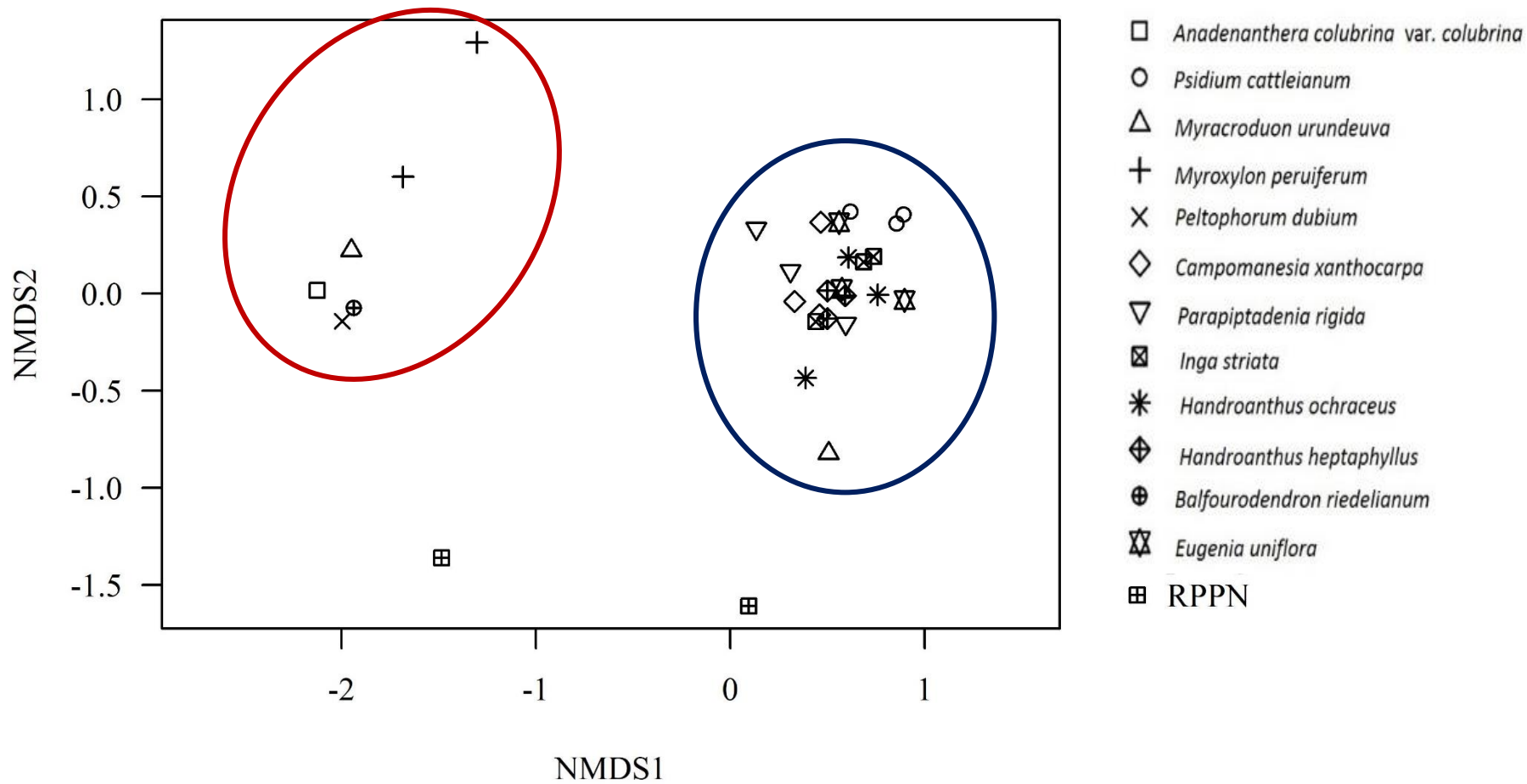


$(r^2=0,171; p=0,035)$



$(r^2 = 0,199; p = 0,0422)$





MENSAGENS FINAIS

ATRIBUTOS ESTRUTURAIS (DENSIDADE DE INDIVÍDUOS LENHOSOS; ÁREA BASAL E BIOMASSA) TÊM TRAJETÓRIAS PREVISÍVEIS E INDEPENDEM DO QUE FOI PLANTADO

RIQUEZA E DIVERSIDADE DE PLANTIOS HOMOGÊNEOS É MENOR DO QUE PLANTIOS MISTOS E FLORESTAS MADURAS; MAS SEMELHANTE A FLORESTAS SECUNDÁRIAS E DEGRADADAS

MENSAGENS FINAIS

PLANTIOS COM ESPÉCIES DE CRESCIMENTO LENTO PROPICIAM CONDIÇÕES MAIS FAVORÁVEIS PARA O ESTABELECIMENTO DE REGENERANTES

EM LONGO PRAZO, A COMPOSIÇÃO DE ESPÉCIES DA FLORESTA DEPENDE DO POOL DE ESPÉCIES REGIONAL E NÃO DA ESPÉCIE PLANTADA

A DIVERSIDADE FUNCIONAL INDEPENDE DO QUE FOI PLANTADO

GRATA!!!

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E AGROECOLOGIA - ESALQ - USP

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