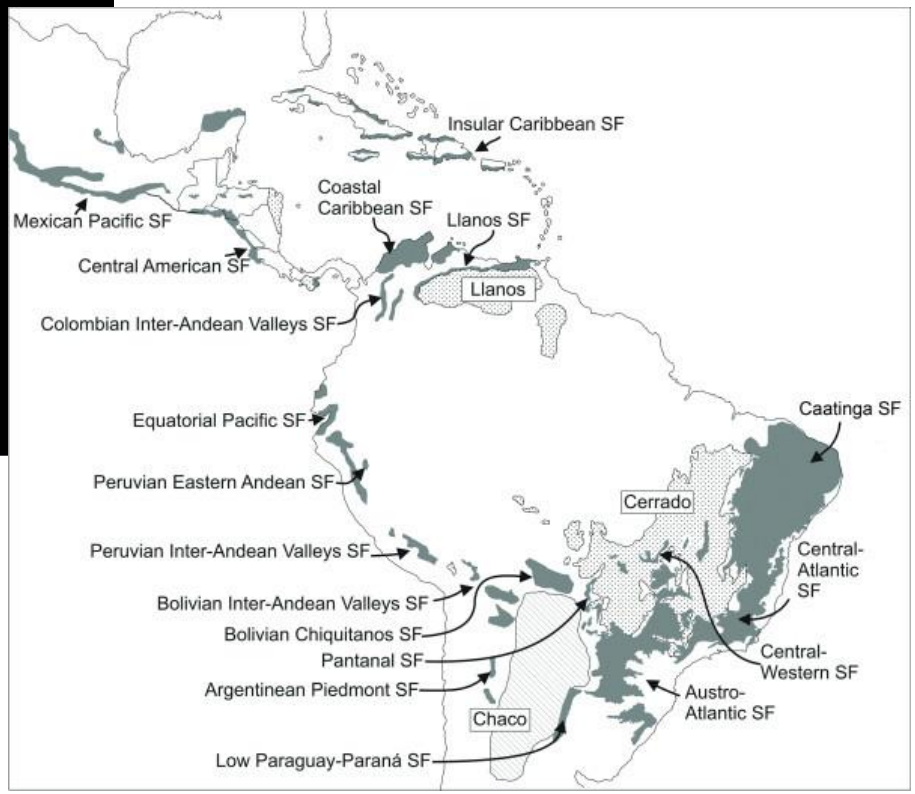
Aula 5
Funcionamento de Ecossistemas: Caatinga
+ adaptações

14 de Setembro de 2023

Prof. Tomas Domingues

Florestas Tropicais Sazonalmente Secas (STDF)



CAATINGA

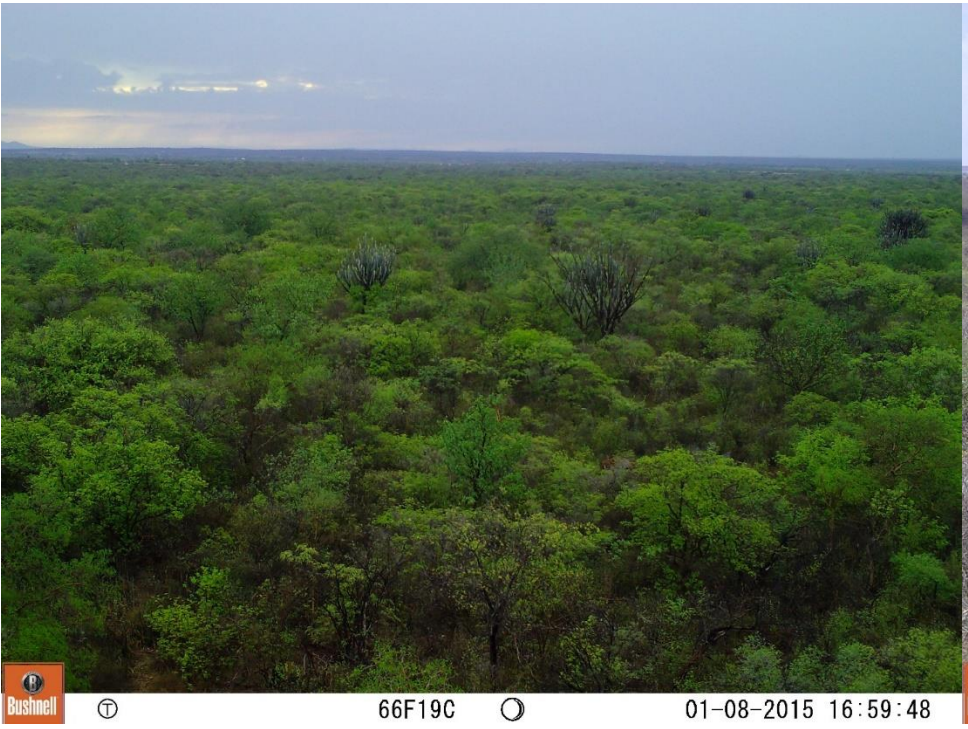
ka'a + ting + a

mata branco(a) –

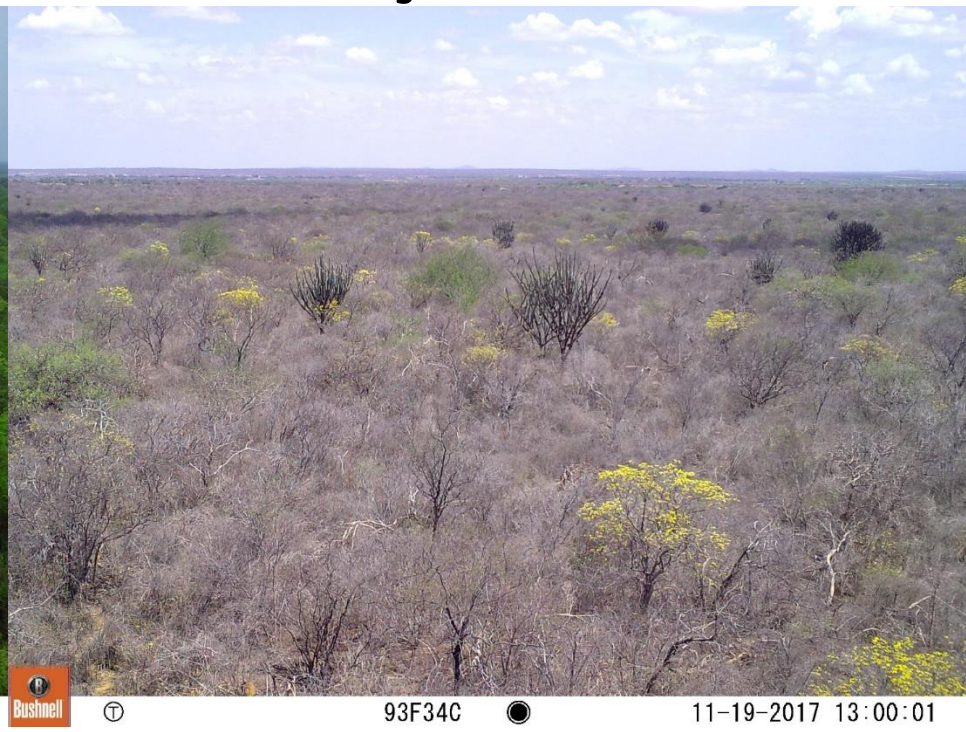
(sufixo substantivador)

Caducifólia

Estação chuvosa



Estação seca



Caatinga

- Clima quente e semi-árido
- Precipitação < 1000 mm ano^{-1}
  - Concentrada em 3 a 6 meses
  - Alta variabilidade interanual
  - Comum chuva anual abaixo da média por 3-5 anos consecutivos
- Evapo-transpiração é sempre alta (1500-2000 mm ano^{-1})

Caatinga

Biodiversidade

3347 espécies de plantas
276 espécies de formigas
386 espécies de peixes (52,9% endêmicos)
98 espécies de anfíbios
79 espécies de répteis
548 espécies de aves
183 espécies de mamíferos

Antilophia bokermanni

Kerodon rupestris

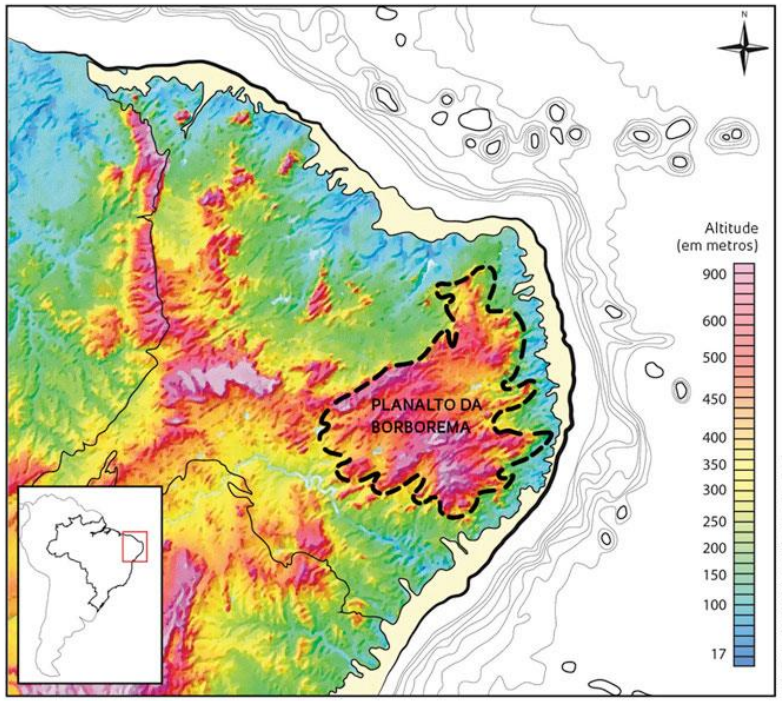
Megaleporinus obtusidens

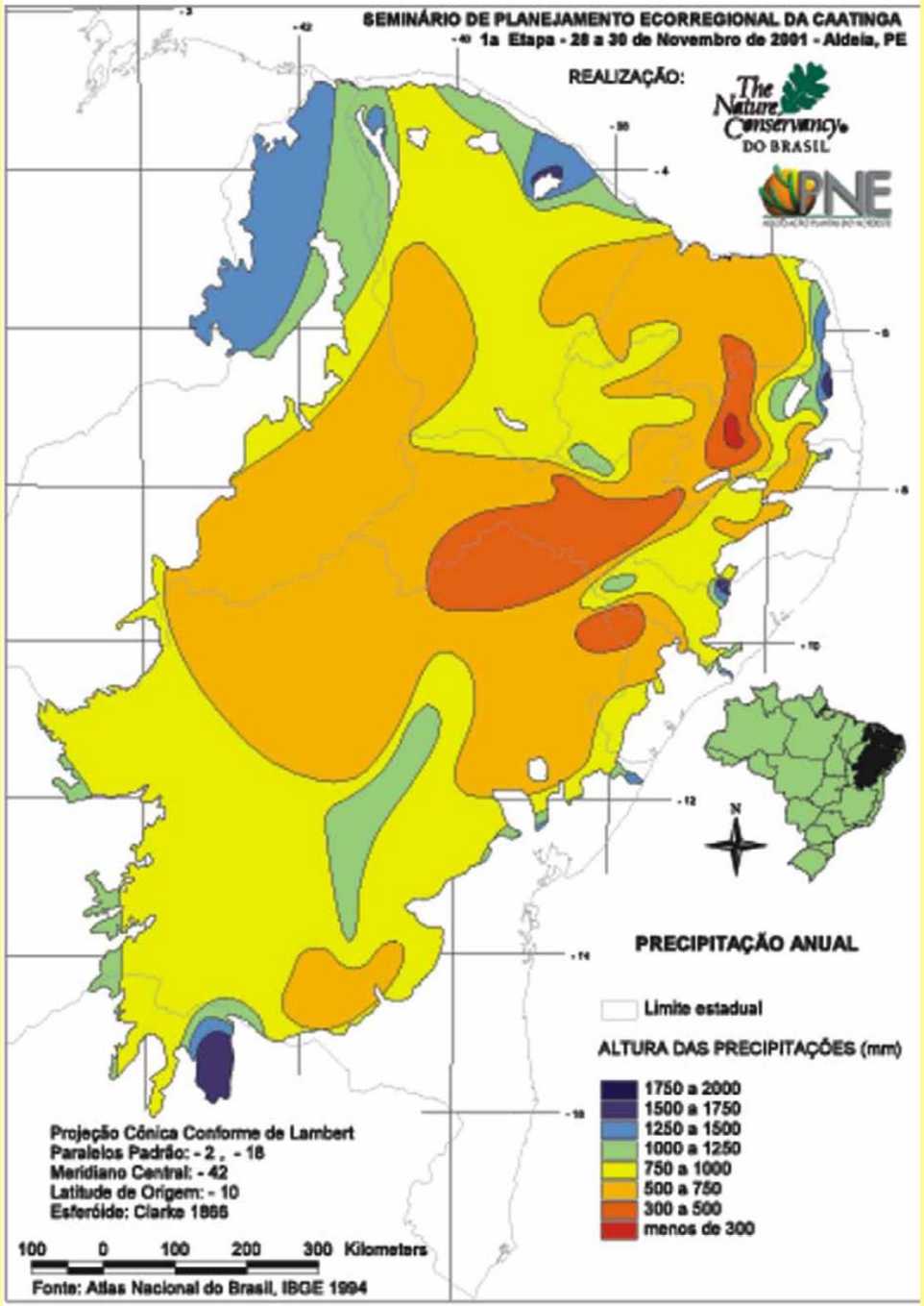
Copernicia prunifera

Precipitação na Caatinga

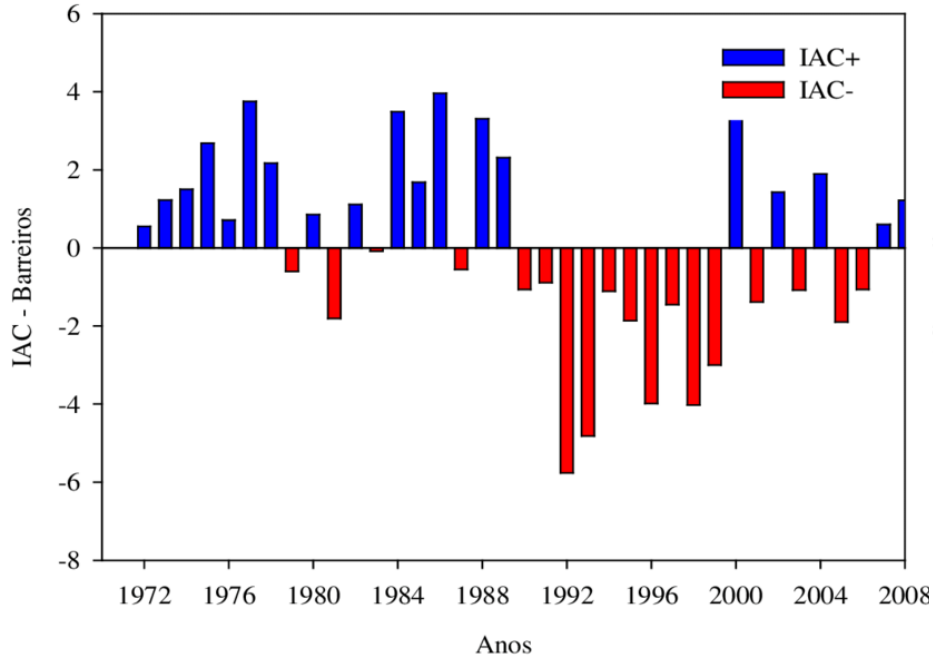
Uma serra no Nordeste oriental

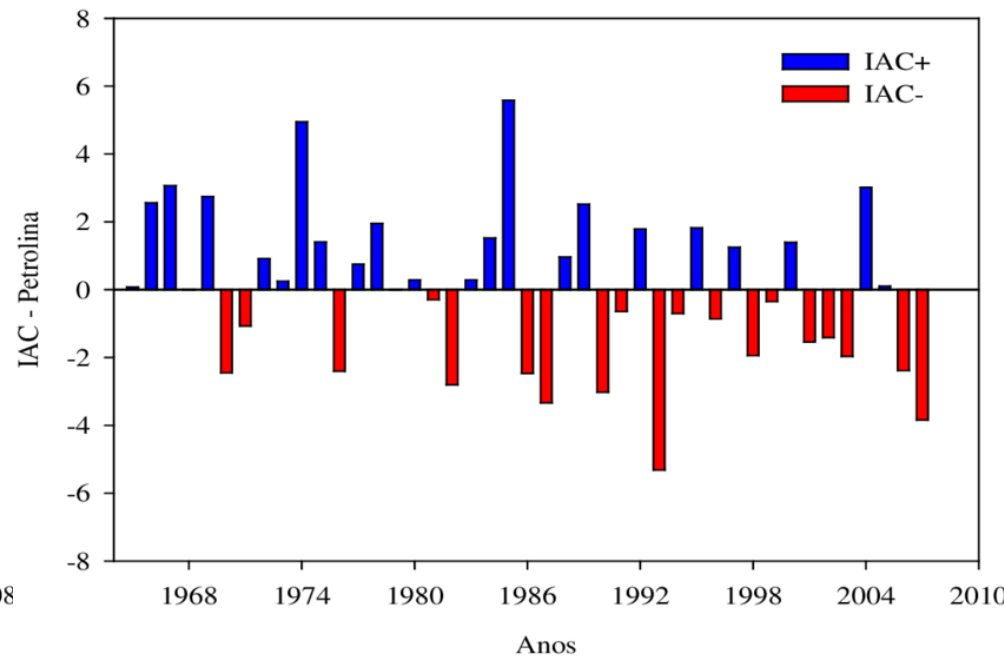
O planalto da Borborema tem altitude média de 500 metros e seus pontos mais elevados passam dos mil metros





Variabilidade em precipitação annual
IAC – índice de anomalia de chuvas





Considera a precipitação de um ano, a média histórica, a média dos 10 anos mais secos, e dos 10 anos mais úmidos

A Grande Seca: https://www.youtube.com/watch?v=6GtmjfFWNbM

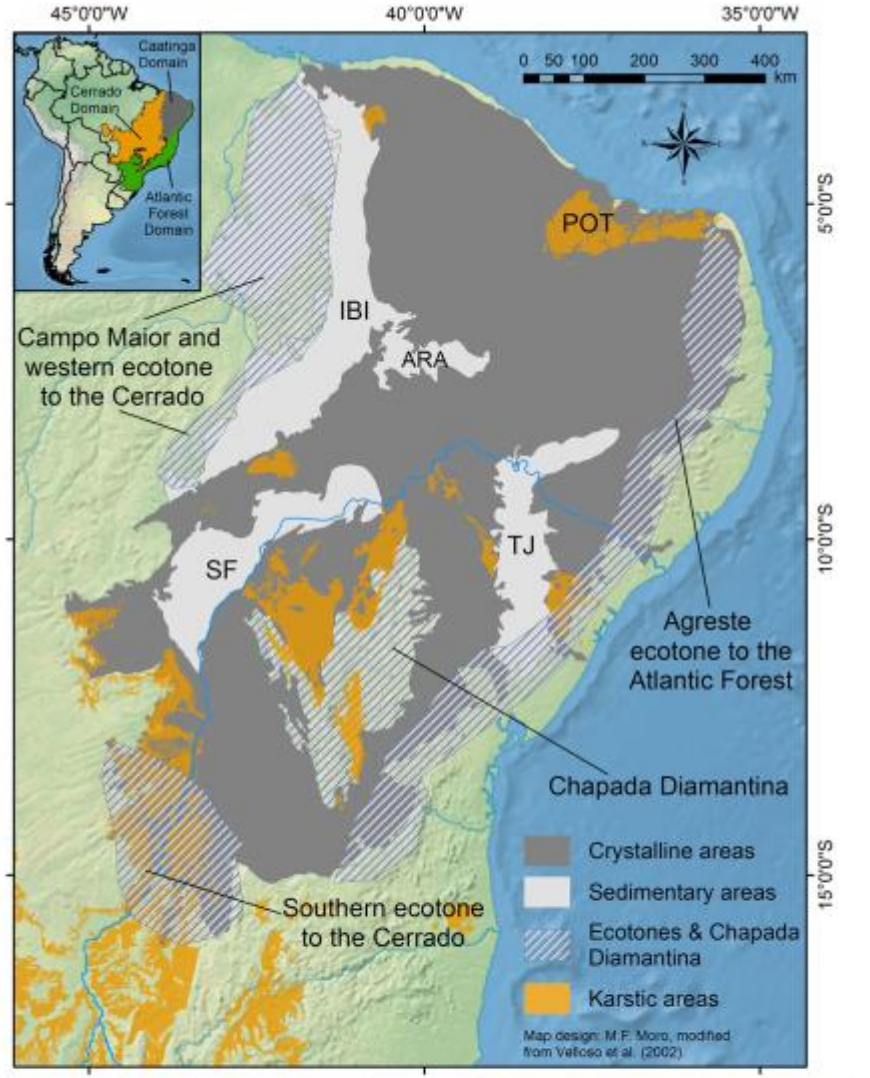
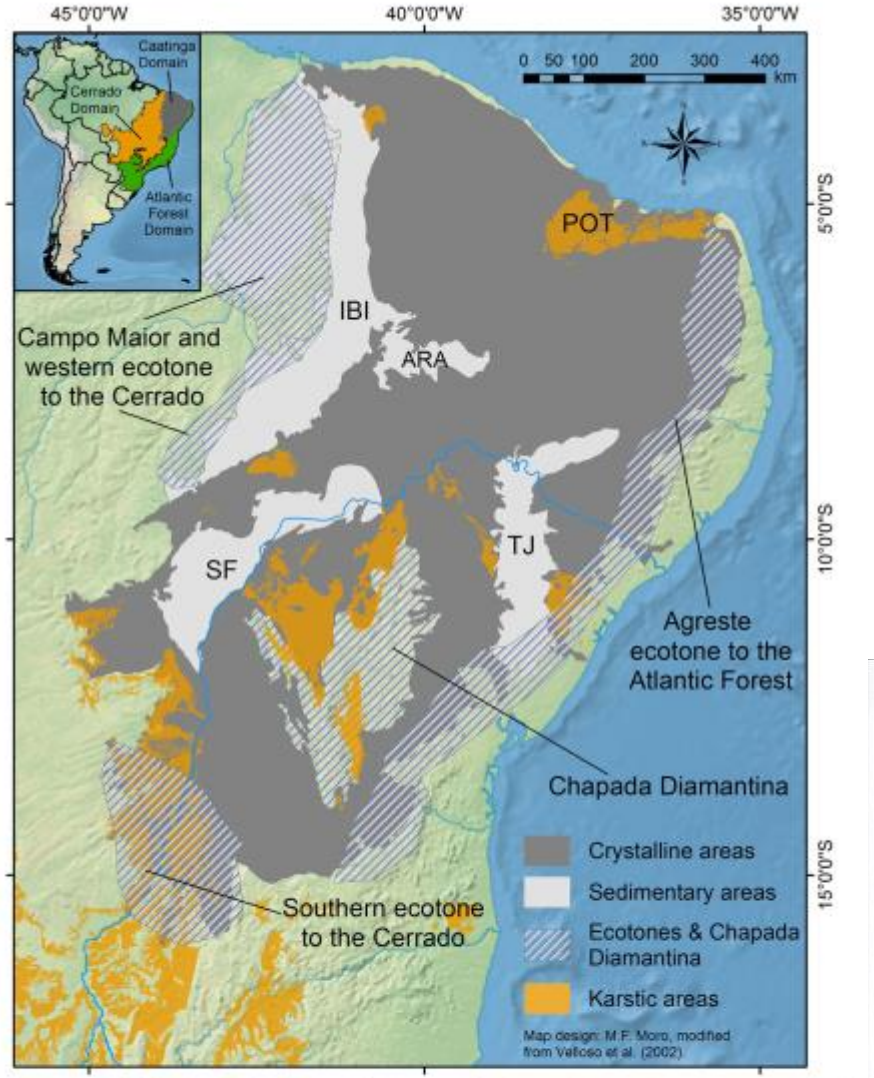


Fig. 2 Geographical location of the Caatinga Phytogeographical Domain (CPD) in northeastern Brazil. The CPD is surrounded by the Atlantic Forest Domain to the east and the Cerrado Domain to the west. The areas within the CPD with predominantly crystalline geology are represented in dark gray, whereas areas where the predominant geology is sedimentary are represented in light gray. The enclaves of karstic terrains (brown areas) within and around the CPD are also shown. The main ecotonal areas of the CPD are hatched, as is the Chapada Diamantina highland in the middle of the CPD, where caatinga, cerrado and campos rupestre (rocky grasslands) vegetation mix. The main sedimentary areas within the CPD are: *TJ* Tucano-Jatobá sedimentary basin; *IBI* Ibiapaba sedimentary basin; *ARA* Araripe sedimentary basin; *SF* São Francisco Continental Dunes; *POT* Potiguar sedimentary basin, a basin with abundance of karstic deposits. The CPD map is modified from Velloso et al. (2002). Map design: M.F. Moro



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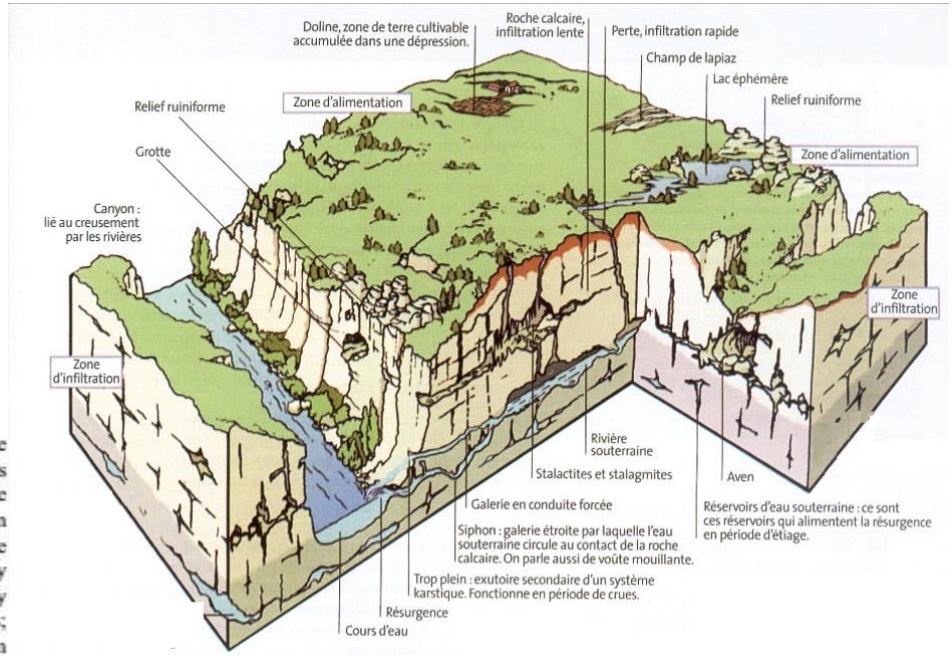
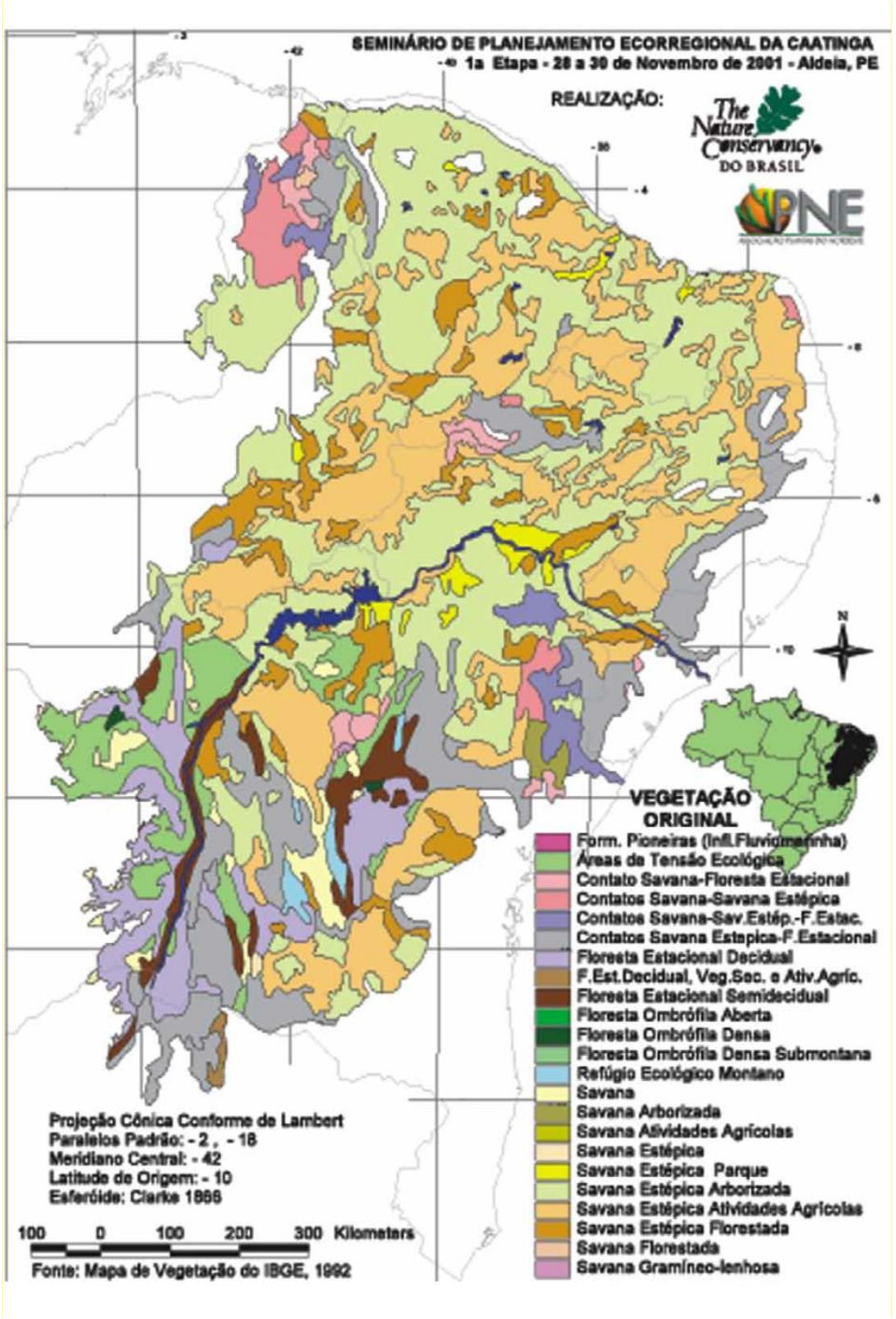
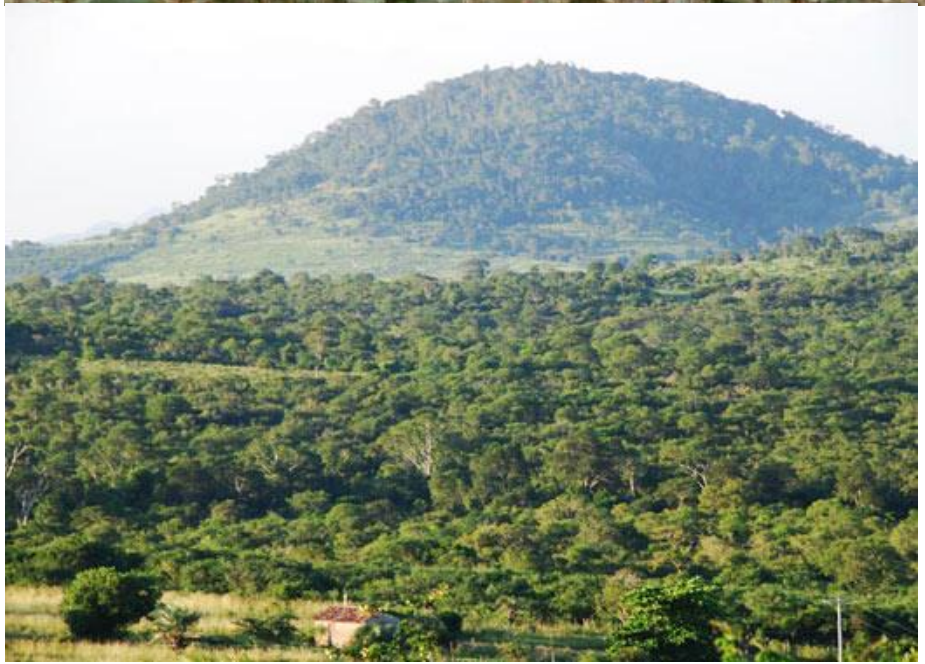
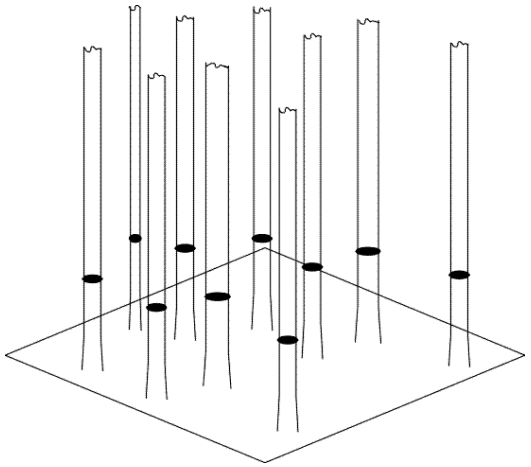


Mosaico de formações de vegetação da Caatinga





Área Basal fora do esperado!



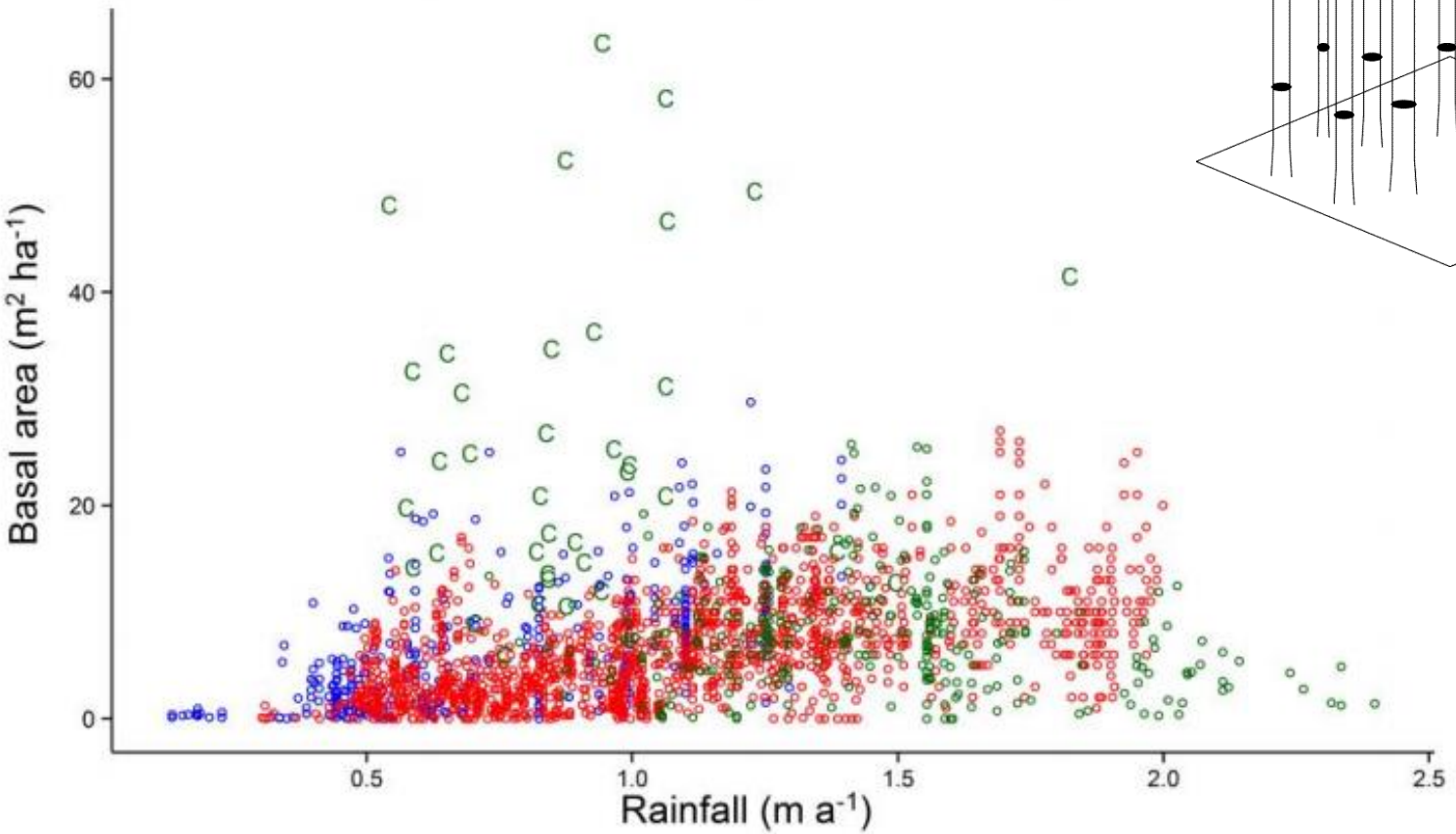


Fig. 2. Relationship between rainfall and basal area for savanna in Africa (blue),Australia (red) and South America (green) compared with Caatinga (data from varuous sources)

Adaptações estruturais

Caatinga





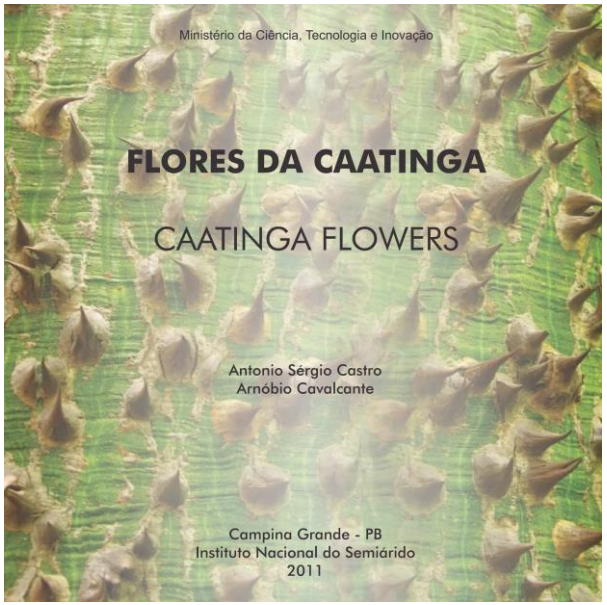



Adaptações estruturais

Umbu, cajá, cajá-manga, seriguela

Spondias tuberosa L

Adaptações fisiológicas



Facilitação ecológica

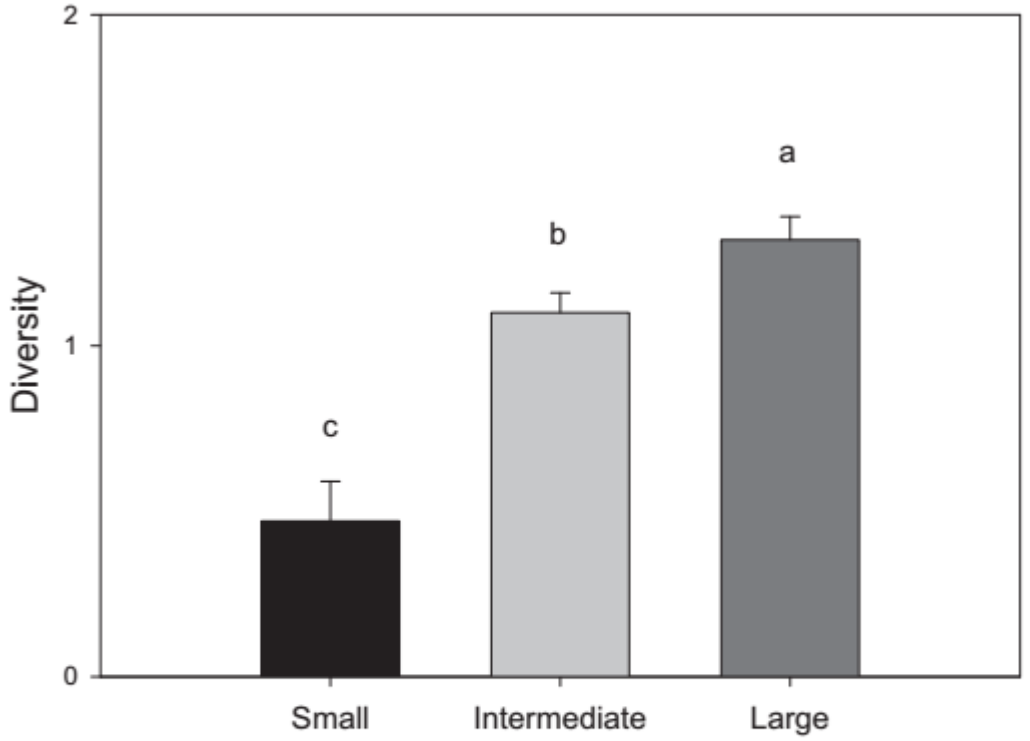
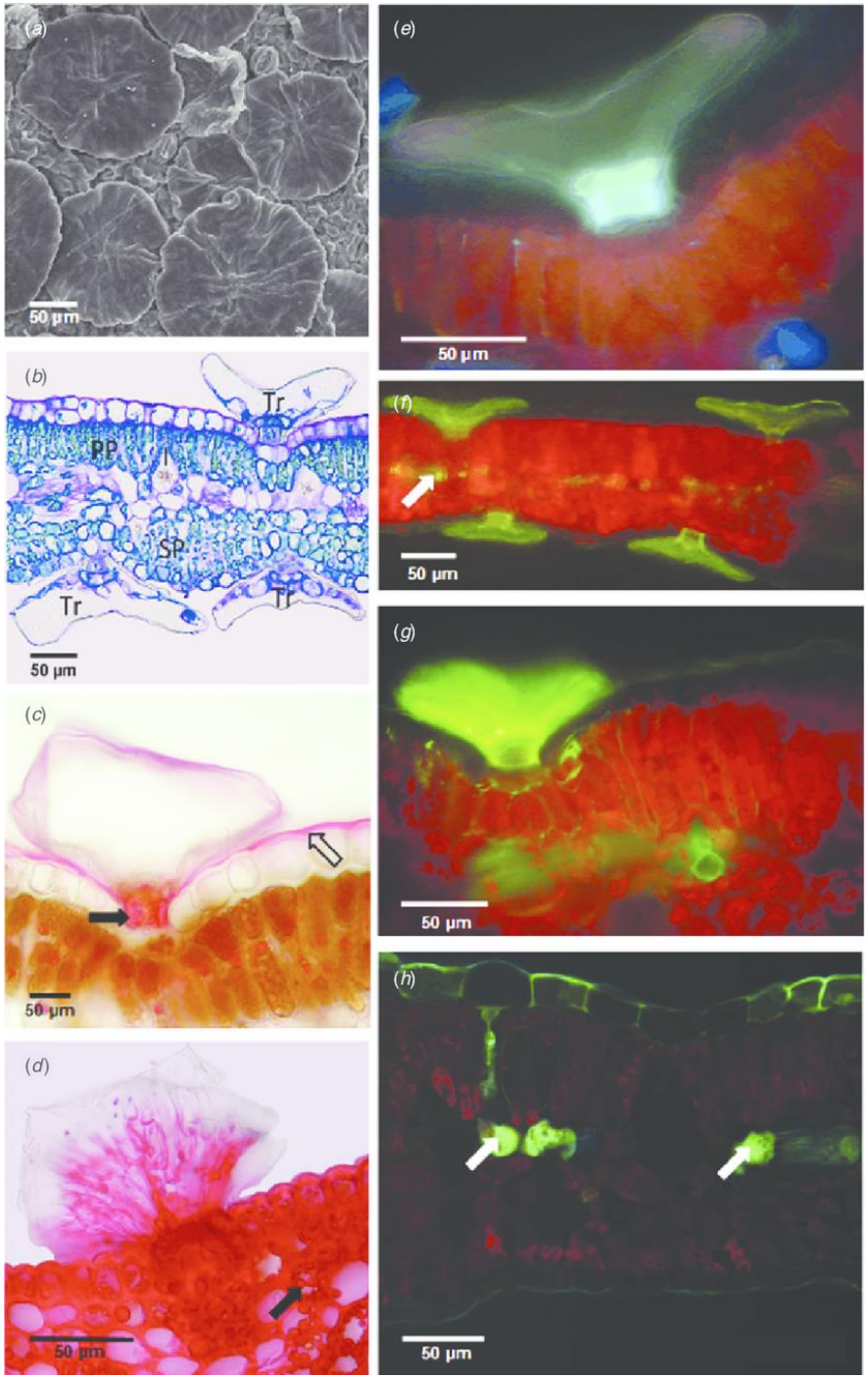


Fig. 1. Diversity (Shannon–Wiener diversity index) under the canopy of *C. leprosum* shrubs of different sizes. Data are mean values ± 1 SE; $n = 15$. Bars with different letters are significantly different (ANOVA by randomization tests, orthogonal contrasts for analysis of variance, $P <= 0.05$).



Dew absorption by the leaf trichomes of *Combretum leprosum* in the Brazilian semiarid region
Plant Functional Biology 2016

Fig. 1. Leaves of *Combretum leprosum*. (*a*) Scanning electron micrograph of peltate trichomes and stomata. (*b*) Cross-section of the leaf blade with trichomes (Tr) on both surfaces, palisade parenchyma (PP), spongy parenchyma (SP), and idioblast containing druse (I). (*c*) Peltate trichome, in which the arrow point to a basal cell impregnated with lipidic substances (Sudan IV test). (*d*) Polysaccharide (arrow) in the parenchyma cells and pectic substances in the peltate trichome cell (ruthenium red test). (*e*) Autofluorescence of the peltate trichome. (*f*) Leaf blade showing the tracer Lucifer Yellow CH in the trichomes of both surfaces and paraveinal mesophyll (arrow). (*g*) Detail, of trichome, palisade parenchyma, and paraveinal mesophyll with apoplastic tracer. (*h*) Lucifer yellow CH in paraveinal mesophyll (arrow).

Mandacaru

quando flora na seca...

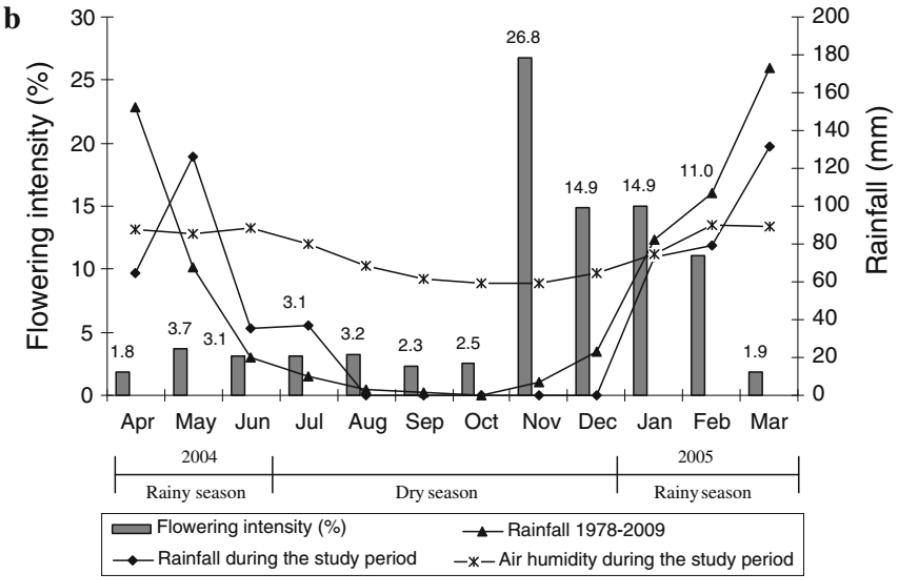


Fig. 4 Number of flowering species and individuals/month (**a**) and flowering intensity of the individuals/month (**b**) during the period of April/2004–March/2005. Note also in (**a**) and (**b**) mean rainfall during 1978–2008 and during the study period in the Carrasco vegetation of the Ibiapaba plateau, Crateús municipality, Ceará State, Brazil. Air humidity during the study period is also represented in (**b**)

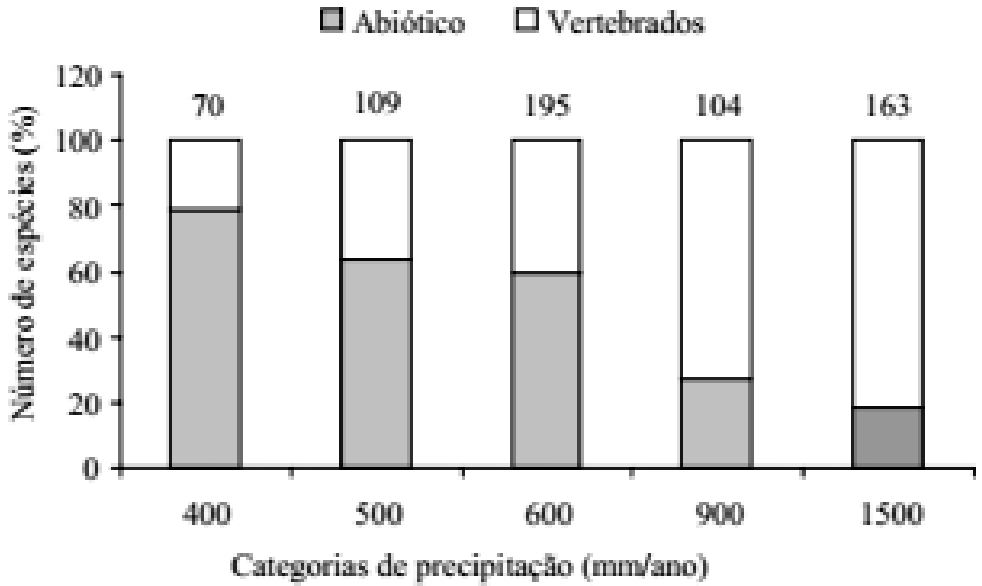


Figura 3. Porcentagem de espécies dispersas por vertebrados dentro das categorias de precipitação média anual na Caatinga e Floresta Atlântica no nordeste do Brasil. Os números acima de cada barra vertical representam o número de espécies examinadas em cada categoria.

ECORREGIÕES Propostas para o Bioma Caatinga / Editado por Agnes L. Velloso, Everardo V. S. B. Sampaio, Frans G. C. Pareyn
____ Recife: Associação Plantas do Nordeste; Instituto de Conservação Ambiental The Nature Conservancy do Brasil, 2002.
76 folhas; il., Fig. Mapas.

Inclui Bibliografia

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1. Caatinga. 2. Bioma da Caatinga. I. Seminário de Planejamento Ecorregional da Caatinga - Recife. II. VELLOSO, A. L.

581.5 (81) CDU (2. Ed.) 581.9813 CDD (21. Ed.)
Catalogação na Fonte: UFPE-CCB-Biblioteca Setentrional

1ª edição 2002

B615 Biodiversidade da caatinga: áreas e ações prioritárias para a conservação/organizadores: José Maria Cardoso da Silva, Marcelo Tabarelli, Mônica Tavares da Fonseca, Lívia Vanucci Lins – Brasília, DF: Ministério do Meio Ambiente: Universidade Federal de Pernambuco, 2003.
382 p.: il., fots., maps., grafs., tabs.

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1. Caatinga. 2. Diversidade biológica. 3. Conservação da natureza. 4. Meio ambiente. I. Silva, José Maria Cardoso da. II. Tabarelli, Marcelo. III. Fonseca, Mônica Tavares da. IV. Lins, Lívia Vanucci.

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