

The Botanical Garden of Salvador and its plant diversity

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Abstract

The Brazilian tropical rainforests of Bahia have been recognized as one of the world's greatest biodiversity hotspots. Located in a city with accelerating urban development, the Botanical Garden of Salvador has a special forest fragment with a good level of conservation, sheltering a great number of plant species diversity, some endemic or endangered with a critical conservation status such as *Hirtella insignis*, *Dalbergia nigra* and *Cattylea* spp. In this forest, there are also found new species in the stage of taxonomical determination. Through lectures and publicizing materials we was demonstrated the importance of conserving these species, emphasizing their reproductive features and their cultural value.

Keywords

Biodiversity, botanic garden, conservation, education, native plants

Introduction

The Brazilian tropical rainforests of Bahia has been recognized as one of the world's greatest biodiversity hotspot. With more than 56,000 species (excluding fungi), Brazil has one of the richest floras in the world – nearly 19% of the world flora (Giulietti et al, 2005). Atlantic forests harbour a unique biota that is very rich in endemic species, and because of the high level of habitat destruction the region has been suffering – only approximately 7.5% of the original vegetation remains. (Myers et al., 2000 apud Fiaschi, & Pirani, 2009).

Botanic gardens function as research centres and environments for environmental education and conservation. They are also used by society as an important space for leisure and entertainment, adding more knowledge and quality of life for citizens. Established in 2002, the Botanical Garden of Salvador (BGS) is located in the municipality of Salvador (Bahia State, Brazil), known locally as the Mata dos Oitis, due to the occurrence of an edible and endemic arboreal species *Licania salzmannii* (Hook.f.) Fritsch, popularly known as oiti-da-baía.

With an area of about 18ha and located in an important urban remnant of Atlantic rainforest, the BGS operates in three lines of action: Conservation, Research and Environmental Education. The main mission of the BGS is to harbour, produce and study representative species of native flora, as well as providing environmental education for conservation of the biodiversity in the Bahia Atlantic Forest.

The aim of this study is to show the biodiversity found in a small, isolated forest fragment of the Atlantic Forest and to emphasize the importance of education for plant conservation.

Programme for Plant Diversity Conservation

Scientific studies, carried out in the Program for Plant Diversity Conservation (PPDC) through the "Floristic Survey of the Botanical Garden of Salvador" project, aimed to conduct botanical research for the conservation and preservation of native species from the flora of Bahia State, by promoting regional knowledge of flora resources and protecting endangered species for the maintenance and recovery of ecosystems.

Through the PPDC, the BGS has worked in order to ensure the maintenance of biological diversity resources in the area of the BGS Forest. The main actions developed were the surveying and georeferencing of plant species; collecting plant material for inclusion as herbarium specimens in the RADAMBRASIL Herbarium; floristic enrichment of this forest fragment and publishing papers in scientific conferences (Figure 1).

Plant Diversity of the Botanical Garden of Salvador

Even only having a small area, the BGS forest has the highest phytosociological parameters in the metropolitan region of Salvador. The "Mata dos Oitis" forest is considered one of the best preserved remnants of Atlantic forest in Salvador with diversity and dominance comparable to the Brazilian forests in southern Bahia and Espírito Santo provinces, regions with the highest plant diversity on the planet (Andrade Matos *et al.*, 2013).

This special forest fragment harbours rare, endemic and threatened species, like *Dalbergia nigra* (Vell.) Allemão ex Benth. and *Hirtella insignis* Briq. ex Prance. In this environment, about 326 species belonging to 231 genera in 90 families were catalogued, mainly Fabaceae, Rubiaceae, Myrtaceae, Sapotaceae and Lauraceae (Queiroz, 2008). Among many species, two newly-found unpublished new species in the stage of taxonomical determination stood out: *Annona soteropolitana* H. Rainer sp. nv. ined (Figure 2) and *Bauhinia* sp. Endemic species such as *Attalea burretiana* Bondar, *Heteropterys imperata* Amorimand and *Licaria bahiana* Kurz. were also present.

Practicing Environmental Education for Biodiversity Conservation (PEEBC)

Following one of the goals of the Global Strategy for Plant Conservation, the BGS promotes education and awareness about plant diversity, articulating and emphasizing its importance, the goods and services it provides, and the need for its conservation and sustainable use.

As part of the environmental education program of the BGS, the PEEBC project has as its purpose the raising of awareness of the visiting public and interested communities about the importance of education for biodiversity conservation in botanical gardens. In this way, knowledge of the botanical collection of plants from the BGS is disseminated to the public by promoting their awareness of current environmental issues.

Thus, the promotion and dissemination of conservation actions related to tropical flora are essential. For this purpose, educational materials were produced (banners and leaflets) and talks and lectures conducted by the education sector of the Garden, emphasizing the conservation of the native species of flora of Bahia and the importance of their preservation, through careful selection, planting, maintenance of these species (Figures 3 and 4).

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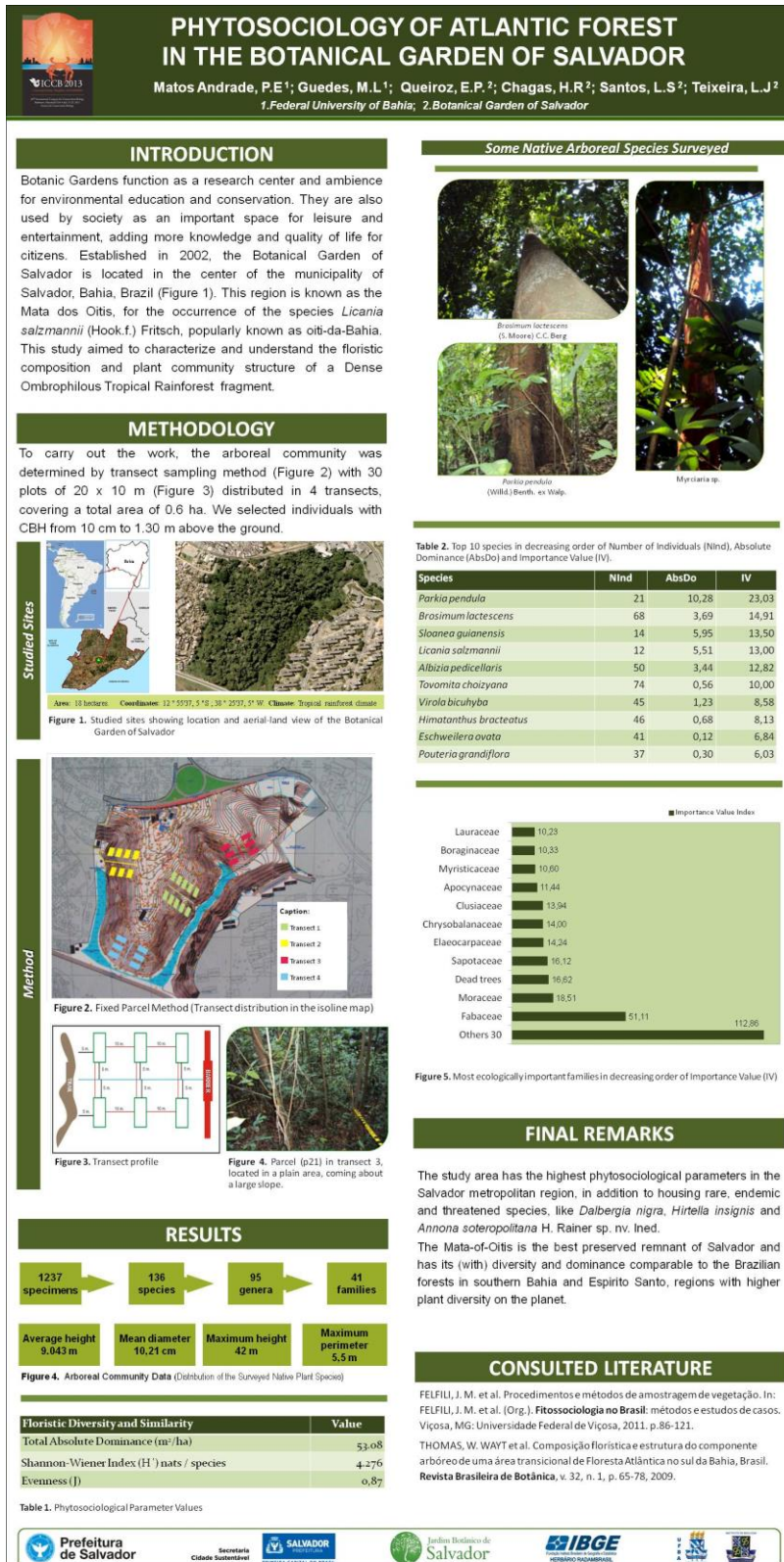


Figure 1. Scientific dissemination of the Botanic Garden of Salvador - Phytosociology of Atlantic Forest in Botanical Garden of Salvador, Brazil. Presented at the International Congress for Conservation Biology, 2013.

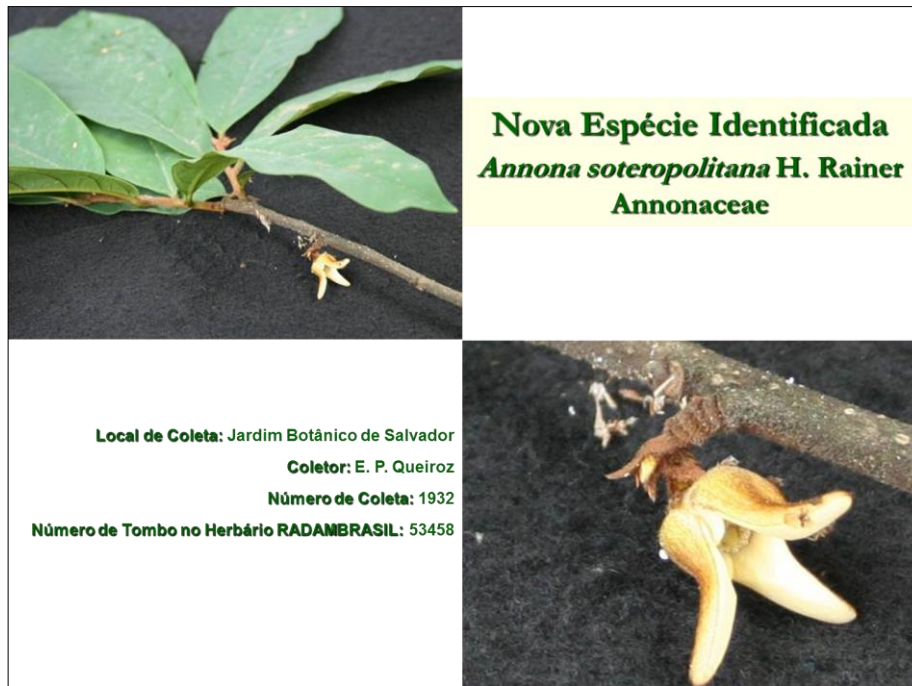


Figure 2. New plant species found in the BGS forest, in stage of taxonomical determination, named preliminarily as *Annona soteropolitana* H. Rainer sp. nv. ined

PRESERVANDO ÀS ÁRVORES NATIVAS DA BAHIA

Porque plantar árvores nativas?

- ✓ São melhores adaptadas às condições climáticas e de solo locais.
- ✓ Desenvolvem bem sem aplicações de produtos químicos.
- ✓ Fornecem alimento e abrigo a vida selvagem local.
- ✓ E representam parte de nossa biodiversidade e patrimônio natural.

 <i>Tibouchina elegans</i> Cogn. quaresmeira	 <i>Guarea guidonia</i> (L.) Sleumer bilreiro	 <i>Simarouba amara</i> Aubl. pau-paraíba	 <i>Licantia saltzmanii</i> (Hook. f.) Fritsch oti-da-baía
 <i>Parkia pendula</i> Benth. visgueiro	ESPÉCIES VEGETAIS NATIVAS COM POTENCIAL PAISAGÍSTICO		 <i>Protium warmingianum</i> Marchal amescla
 <i>Caesalpinia echinata</i> Lam. pau-brasil	 <i>Sclerolobium densiflorum</i> Benth. ingauçu	 <i>Brosimum rubescens</i> Taub. conduru	 <i>Eschweilera ovata</i> (Cambess.) Miers biriba

 **Jardim Botânico de Salvador**

Dicas Importantes.

- Mantenha e Conserve a biodiversidade.
- Evite o plantio em grandes áreas de um só tipo de espécie vegetal.
- Desse modo, minimizaremos problemas futuros como ocorrência de pragas e doenças.

DÊ UMA CHANCE ÀS ÁRVORES NATIVAS

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Figure 3. Leaflet showing the importance of conservation by planting native species, distributed to visitors in the Garden and exhibitions

Diversidade Vegetal do Jardim Botânico de Salvador



Figure 2 Banner entitled *Plant Diversity of Botanic Garden of Salvador*, illustrating the main arboreal species found in the BGS Forest with their reproductive structures