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Book Review

Plant conservation in Brazil: One hundred years in five

Martinelli G & Moraes MA (eds.). Livro Vermelho da Flora do Brasil. Andrea Jakobsson, Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rio de Janeiro, 2013, 1100 p.



There is no doubt that this book, co-edited by Martinelli and Moraes (2013) on behalf of the National Center for Plant Conservation (CNCFlora; cncflora.jbrj.gov.br) ± a unit of the Botanical Gardens of Rio de Janeiro - is one of the most important books in the science/policy interface to be published in Brazil in 2013. It is unusual to find books that are simultaneously scientifically dense, informative to policy, and elegantly illustrated, which this Red List has definitely achieved. I am sure that the book will be as appealing for experts as it will be for students and policy makers. This book review will briefly explain the simple structure of the book and its contents, but mostly, it will provide historical background in order to explain why the sub-title of this review is 100 years in five°.

The book is divided in three parts. Part I sets the stage for the Brazilian Red List of flora and comprises five chapters that

range from global threats to biodiversity and the importance of redlisting for species conservation to challenges in Brazil, such as the implementation of the Convention of Biological Diversity (CBD) Global Strategy for Plant Conservation (GSPC). Also in Part I, there is an inspiring description of South-South exchange between Brazil and South Africa on extinction risk assessment, and a detailed account on how this process currently occurs in Brazil. Part II is the Red List itself, which is based on the best available science and is colorfully illustrated with photographs and maps masterfully edited by Andrea Jakobsson. The Red List indicates that a total of 2,118 Brazilian plant species are under threat, a number that is five times higher than the current Official List of Brazilian Threatened Plant Species published in 2009, which reported 417 plant species threatened with extinction. Finally, Part III is a rich appendix, with information about the IUCN criteria used in this effort and about the Brazilian biomes. However, behind the sophisticated simplicity of the book, there is a history of complexity and difficulty in the communication between science and policy.

The story begins over a hundred years ago with Carl Friedrich Philipp von Martius (1794-1868). Between 1840 and 1906, Martius and co-workers edited the masterpiece *Flora Brasiliensis*. This series was the first registry of the Brazilian flora to be produced; it was also the only one, until we created CNCFlora as a department of the research institute of the Botanical Gardens of Rio de Janeiro, in 2008. The Center was created under the umbrella of the PROBIO II, a National Biodiversity Initiative, sponsored by the Global Environmental Facility. Its main goal is to synthesize science to inform policies related to the conservation of the Brazilian flora. Therefore, the production of an accurate and reliable Red List is one of its main goals. In order to have such a Red List, a full registry is necessary, which the country did not have at the time.

It is curious, however, that Brazil has produced four official lists of threatened species of flora (the first one in 1968 and the latest in 2009) without having an updated registry of the entire flora as a benchmark. It is less for this reason than for political reasons, but such official lists were always controversial. The currently valid Official List of

Brazilian Threatened Plant Species, published in 2009 by the Brazilian Ministry of Environment, has probably been the most controversial of all; the reasons for such dissention were discussed here in *Natureza & Conservação* (Scarano & Martinelli 2010). The creation of CNCFlora was in part driven to reduce such controversies by hosting the coordination of analysis on the conservation status of Brazilian plants in a world-class governmental research institute. In five years since its creation, the center launched the list of the species of the Brazilian flora (<http://floradobrasil.jbrj.gov.br>) in 2010 and the Red Book in 2013. In five years, botanical science in Brazil has consolidated more relevant information to conservation policy than it had in the previous 100 years.

However, the full mission of this Red Book will only be accomplished when and if this work lends itself directly to conservation policy. This will occur when the 2009 Official List of Brazilian Threatened Plant Species is revisited and updated based on the findings depicted in this book. There is now no excuse to not do so, since this study has been led and coordinated by the research institute for plant conservation of the Ministry of Environment itself: the Botanical Gardens of Rio de Janeiro in the capacity of its National Center for Plant Conservation. The number of threatened species listed in this book (2,118) is strikingly similar to the number of rare plant species found in another important publication (2,291; Giuliatti et al. 2009) and five times higher than the current official list.

CNCFlora is now producing the first map of spatial conservation priorities for the Brazilian threatened flora. The map is intended to support environmental decisions concerning plant species and to help institutions and governmental facilities to guide the private sector, the government itself, and society on where to implement distinct projects that impact ecosystems (e.g., dams, hydropower plants, factories) via environmental laws. Since

Brazilian legislation strictly limits or forbids human activities in areas where threatened species occur, it remains to be seen how conservative policy-makers will be when they revisit the official list. Given the current pace of change in natural habitats in Brazil (Scarano et al. 2012), it is imperative that scientists and society together demand a thorough and immediate revision of the official list of threatened species of the Brazilian flora, based on the findings described in this Red Book.

R E F E R E N C E S

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Fabio Rubio Scarano^{a,b}

^a Conservation International, Rio de Janeiro, RJ, Brazil

^b Departamento de Ecologia, Centro de Ciência e Saúde, Instituto de Biologia, Universidade Federal do Rio de Janeiro – UFRJ, Rio de Janeiro, RJ, Brazil

E-mail address: fscarano@conservation.org

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