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Comparative analysis of red lists of the Brazilian flora: Asteraceae

Análise comparativa das listas vermelhas da flora do Brasil: Asteraceae

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Abstract

Asteraceae is one of the most abundant families of the Brazilian flora, and it stands out on Brazilian red lists due to the large number of endangered and data-deficient species, since it is difficult to define a conservation status for the latter. A comparative analysis of red lists of the Brazilian flora focused on the Asteraceae is important, so we can assess the true degree of threat to which these plants are subjected faced with increasing environmental degradation. Our analysis compared red lists, and pointed out the most threatened species or data-deficient areas, species and genera. The study was based on the first and the current Official List of Endangered Species of the Brazilian Flora, and the Brazilian Flora Red List of Fundação Biodiversitas. Species were organized according to the endangered and data-deficient IUCN categories. Endangered species were also classified according to threat category. The highest numbers of threatened species were observed in the Cerrado, in the southeastern region, and in the state of Minas Gerais, as well as in the genera *Lychnophora* Mart., *Vernonia* Schreb., and *Richterago* Kuntze. The genera *Aspilia* Thouars, *Baccharis* L., Calea L., *Eupatorium* L., *Mikania* Willd., *Piptocarpha* R.Br., and *Senecio* L. have the greatest number of data-deficient species. Since the current Official List does not make clear its threat criteria, the Red List of Fundação Biodiversitas best portrays the situation of endangered Asteraceae species; thus, this analysis provides important information for projects aimed at the conservation of threatened and data-deficient species.

Key words: Asteraceae, threatened brazilian flora, plant red list.

Resumo

A família Asteraceae é de grande representatividade na composição florística do Brasil, e se destaca nas listas da flora ameaçada brasileira devido ao grande número de espécies ameaçadas e com ausência de dados que permita uma definição do *status* de conservação. A análise comparativa das Listas Vermelhas da Flora do Brasil para Asteraceae é de importância para caracterizar o verdadeiro grau de ameaça das suas espécies diante do crescente processo de degradação ambiental. O estudo estabelece as diferenças dessas listas e diagnostica as áreas e os gêneros mais ameaçados e/ou deficientes em dados. A análise foi baseada na Primeira Lista Oficial da Flora Brasileira, na Revisão da Lista realizada pela Fundação Biodiversitas e na Lista Oficial Atual. Os dados foram organizados em espécies ameaçadas e deficientes em dados, e foram quantificados por gênero e número de espécies. As espécies ameaçadas foram quantificadas também por categoria de ameaça. O Cerrado, a Região Sudeste, o estado de Minas Gerais e os gêneros *Lychnophora* Mart., *Richterago* Kuntze e *Vernonia* Schreb. possuem os maiores números de espécies ameaçadas, e *Aspilia* Thouars, *Baccharis* L., *Calea* L., *Eupatorium* L., *Mikania* Willd., *Piptocarpha* R.Br. e *Senecio* L. possuem os maiores números de espécies deficientes em dados. Pela não divulgação dos critérios da Lista Oficial atual, a Lista Vermelha da Fundação Biodiversitas reflete melhor a situação de ameaça das espécies de Asteraceae no Brasil. Portanto, é um importante instrumento de subsídio aos projetos para a preservação de espécies ameaçadas e deficientes em dados.

Palavras-chave: Asteraceae, flora brasileira ameaçada, lista vermelha da flora.

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Introduction

While exploiting nature for its own subsistence, mankind has caused intense environmental degradation, converting continuous forests into fragments (Scariot *et al*. 2003). Estimates point out between 13 and 14 millions of animal and plant species on Earth, out of which only 13 % have been identified so far. Hence, the risk of losing a large number of still unknown species is high, and warns us against increasing ecosystem alteration (Fundação Biodiversitas 2007a). In addition, estimates indicate that between 5 and 20% of the already identified plant and animal species will be endangered in the near future if protective measures are not urgently taken (Fundação Biodiversitas 2007a).

One of the greatest challenge for governments is the definition of strategic plans for biodiversity conservation, considering the scarcity of biological information for most species (Fundação Biodiversitas 2010), since human activity may imply environmental degradation and compromise species survival (Fundação Biodiversitas & Fundação Zoobotânica de Belo Horizonte 2000). However, strategies to reverse threats to species begin by assessing their conservation status throughout scientific criteria (Fundação Biodiversitas 2007a). The elaboration of red lists of fauna and flora is the basic tool for defining conservation status (Fundação Biodiversitas 2007a).

Red lists are a legal tool for the protection of endangered species, informing and warning governments, conservationists, and the general public about the increasing degradation of the genetic patrimony worldwide (Fundação Biodiversitas 2010). Red lists are the backgrounds for public and private land use policies, conservation strategies (Fundação Biodiversitas 2010). Red lists are also used worldwide against illegal wildlife trade, according to the appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), of which Brazil is a signatory since 1975 (Brasil 2000).

Therefore, red lists are important tools for species conservation, since any biodiversity conservation strategy requires quantification of species and how they are distributed (Primack & Rodrigues 2001). Knowledge of species distribution and conservation status provides the basis for decisions on local and global biodiversity conservation (Marchioretto *et al*. 2005).

Brazil is considered as the most megadiverse country, with over 56,000 plant species, which correspond to 19% of the world's flora, with high endemism rates (Giulietti *et al*. 2005; MRE & MMA 2006).

In terms of species diversity in Brazil, Asteraceae is the third richest family in number of species among angiosperms (Nakajima *et al.* 2010). Despite its recognized importance in the floristic composition of the country, the family has little prominence in the Official Lists of Endangered Species of the Brazilian Flora (IBAMA 1992; MMA 2008), due to the reduced number of species listed as endangered and to the high number of species listed as data deficient, i.e., with insufficient data for defining their conservation status.

The main objective of the present study is to make a comparative analysis of the conservation status of Asteraceae species included in red lists of the Brazilian flora, to define: a) the percentage of genera and species of this family in different degrees of threat; b) the differences between lists in the number and degree of threatened species, as well as in the criteria and categories used; c) the distribution of threat categories in Brazilian biomes, regions and states; d) the most threatened genera; e) the most data deficient genera.

Materials and Methods

The comparative analysis of threatened Asteraceae species in Brazil was based on data of the first Official List of Endangered Species of the Brazilian Flora (IBAMA 1992), the Brazilian Angiosperm Red List of Fundação Biodiversitas (Fundação Biodiversitas 2007b), and the current Official List of Endangered Species of the Brazilian Flora (MMA 2008). These lists are referred to as First Official List, Red List, and Current Official List, respectively.

The First Official List was published using the categories rare (R), vulnerable (V) and undetermined (U). This categorization was indicated by specialists, based mainly on the commercial exploitation, because at the time of its elaboration there were no standard objective criteria to judge the conservation status of a species.

The Red List was elaborated by specialists on several angiosperm families, based on the criteria and categories proposed by the International Union for Conservation of Nature (IUCN 2001, Version 3.1). The categories used were critically endangered (CR), endangered (EN), vulnerable (VU), data deficient (DD), and least concern (LC). The methodology for species assessment and details about criteria and categories can be found at the website of Fundação Biodiversitas (<www.biodiversitas.org.br>).

IUCN's criteria and categories (IUCN 2001) are organized in a widely used classification system for globally endangered species, focused on conservation measures aimed at protecting those species (IUCN 2001). These criteria and categories were submitted to a wide review in the past few years, as a result of an international effort, and are currently in the version 8.1 (IUCN 2010).

The Current Official List should be based on results of the Red List of Fundação Biodiversitas, since this foundation was responsible by the Brazilian Ministry of the Environment (MMA) for this task. However, there was no agreement between the parties; consequently, the criteria used in the Current Official List were not the same used in the Red List of Fundação Biodiversitas (Fundação Biodiversitas 2007b). Species in the Current Official List were classified as endangered (EN) or data deficient (DD).

Due to the large amount of information present in all red lists, data were organized by threatened species; quantification by genera, threatened categories and geographic distribution; quantification of data deficient species only by genera.

The results were organized in tables for better visualization, interpretation, and analysis, These analysis aimed basically at obtaining information such as the genera with the highest number of threatened species, and the genera that have the highest number of species classified as critically endangered (CR). The comparation among the three lists was aimed to diagnosing the threatened common or divergent species, as well as at comparing informations with the literature.

The genera *Eupatorium* L. and *Vernonia* Schreb. were considered in the tradicional sense, despite several genera currently considered as valid in the literature (Funk *et al*. 2009). The genus *Argyrovernonia* MacLeish, with two species, has been synonymized with *Chresta* Vell. ex DC. In this case it also followed the traditional classification, since all lists have already been published and are available online.

Results and Discussion

Lists of endangered Asteraceae of the Brazilian flora

In the First Official List, the Red List and the Current Official List, a total of 427 Asteraceae species are listed (Appendix 1). According to IUCN's criteria (IUCN 2001), out of these 427 species, 50 were categorized as least concern (11% of all species), and 212 as data deficient (49.6%), resulting in a total of 165 threatened species (Tab. 2; Appendix 1). Since in Brazil the family Asteraceae is represented by 1,965 species of 271 genera (Nakajima *et al*. 2010), approximately 8% of the Asteraceae species are included in some category of threat in the country.

This percentage of endangered Asteraceae is high above the estimate of 3% made for all angiosperms in Brazil (Fundação Biodiversitas 2007b), showing that this family in particular can lose more species in the next few years. The same situation may be proven for other families which have a higher number of endangered species in different Brazilian biomes.

First Official List

The First Official List (IBAMA 1992) included only six Asteraceae species (Appendix 1) belonging to three genera: *Aspilia* Thouars (4 spp.), *Lomatozona* Baker (1 sp.) and *Lychnophora* Mart. (1 sp.). Among these species, two (33%) were considered as undetermined due to the lack of information on distribution and threats, thus hindering a reliable assessment of their conservation status.

Out of the four species (67%) classified as endangered, three were in the category rare (75% of the endangered species) and one was in the category vulnerable (25%). Most endangered species were included in the category rare, and among IUCN's threat categories (IUCN 2001), the category critically endangered (CR) is the most similar to the category rare, which represented the highest extinction risk in the First Official List.

Red List

The Red List (Fundação Biodiversitas 2007b) was created based on IUCN's criteria (IUCN 2001) and included 427 Asteraceae species (Appendix 1) belonging to 92 genera (Tab. 1).

The 165 endangered species included in this Red List represent 38% of all species analyzed (Tab. 2). Out of this total, 70 species were pointed out as threatened in the category CR (43% of the endangered species), 21 species as EN (13%), and 74 as VU (45%).

The 212 species included in this list (Fundação Biodiversitas 2007b) (almost 50% of all species) were considered as data deficient (DD), hindering a reliable assessment of their conservation status (Tab. 2). The lack of information about their geographic distribution and threats to their populations hinders the conservation of these species and, hence, they

Table 1 – Genera of the Asteraceae indicated in the revised Red List of Brazilian Flora (Fundação Biodiversitas 2007b) with the number of species (n) and the percentage of these genera (%) in relation to the total number of species.

Genera	n	%	Genera	n	%	Genera	n	%
Acmella	1	0.23	*Gorceixia*	1	0.23	*Piptocoma*	1	0.23
Acritopappus	3	0.7	*Graphistylis*	6	1.4	*Planaltoa*	1	0.23
Ageratum	2	0.47	*Heterocoma*	1	0.23	*Porophyllum*	3	0.7
Agrianthus	2	0.47	*Hieracium*	1	0.23	*Praxeliopsis*	1	0.23
Ambrosia	1	0.23	*Hoehnephytum*	2	0.47	*Proteopsis*	1	0.23
Anteremanthus	1	0.23	*Holocheilus*	1	0.23	*Pseudogynoxys*	1	0.23
Apopyros	1	0.23	*Hysterionica*	3	0.7	*Quelchia*	1	0.23
Argyrovernonia	2	0.47	*Ianthopappus*	1	0.23	*Radlkoferotoma*	1	0.23
Aspilia	27	6.31	*Ichthyothere*	6	1.4	*Richterago*	13	3.04
Baccharis	19	4.44	*Inulopsis*	1	0.23	*Schlechtendalia*	1	0.23
Baltimora	1	0.23	*Irwinia*	1	0.23	*Senecio*	23	5.37
Bidens	1	0.23	*Isocarpha*	1	0.23	*Simsia*	1	0.23
Blainvillea	1	0.23	*Isostigma*	3	0.7	*Smallanthus*	2	0.47
Calea	16	3.74	*Lasiolaena*	6	1.4	*Stenachaenium*	1	0.23
Catolesia	1	0.23	*Lomatozona*	1	0.23	*Stenocline*	4	0.93
Chaptalia	4	0.93	*Lucilia*	1	0.23	*Stenopadus*	4	0.93
Chionolaena	8	1.87	*Lychnophora*	19	4.44	*Stenophalium*	1	0.23
Chresta	4	0.93	*Lychnophoriopsis*	4	0.93	*Stevia*	9	2.1
Chrysolaena	1	0.23	*Mattfeldanthus*	1	0.23	*Stifftia*	3	0.7
Dasyphyllum	7	1.63	*Mikania*	22	5.14	*Stilpnopappus*	5	1.17
Dendrophorbium	5	1.17	*Minasia*	4	0.93	*Stylotrichium*	5	1.17
Dimerostemma	9	2.1	*Monogereion*	1	0.23	*Symphyopappus*	6	1.4
Eleutheranthera	1	0.23	*Moquinia*	2	0.47	*Trichocline*	4	0.93
Eremanthus	9	2.1	*Neblinaea*	1	0.23	*Trichogonia*	2	0.47
Erigeron	2	0.47	*Noticastrum*	3	0.7	*Trixis*	6	1.4
Eupatorium	18	4.2	*Onoseris*	2	0.47	*Verbesina*	1	0.23
Eurydochus	1	0.23	*Ophryosporus*	1	0.23	*Vernonia*	26	6.08
Gardnerina	1	0.23	*Pamphalea*	6	1.4	*Viguiera*	9	2.1
Glossarion	2	0.47	*Paralychnophora*	6	1.4	*Wedelia*	2	0.47
Gochnatia	8	1.87	*Perezia*	3	0.7	*Wunderlichia*	5	1.17
Gongylolepis	3	0.7	*Piptocarpha*	11	2.57		427	100

can be under high extinction risk. The same was also observed for all species initially assessed (5,212 species) in the Brazilian Angiosperm Red List (Fundação Biodiversitas 2007b), since 2,513 of them (48%) were considered as data deficient.

The remaining 50 species (12% of all species) included in the Red List (Fundação Biodiversitas 2007b) were classified as least concern (Tab. 2). These species were included because they were probably threatened. However, after using IUCN's criteria (IUCN 2001), they were not proven to be endangered.

Current Official List

The Current Official List (MMA 2008), contrary to the Red List (Fundação Biodiversitas 2007b), included only 168 Asteraceae species (Appendix 1) of 56 genera (Tab. 3). Among all species included in this list, only 15 species (10% of all species) were classified as endangered (Appendix 1) and considered as priority for public conservation policies in Brazil (MMA 2008). Out of these 15 species, *Anteremanthus hatschbachii* H.Rob., *Aspilia grazielae* J.U.Santos, *Aspilia pohlii* Baker, *Hysterionica pinnatisecta* Matzenb.

Table 2 – Number (n) and percentage (%) of Asteraceae species indicated in each threatened categories (TC) in the revised Red List of Brazilian Flora (Fundação Biodiversitas 2007b).

Species	TC	n	% (List)	% (threatened species)
Data deficient	Data deficient (DD)	212	49.64	
Least concern	Least concern (LC)	50	11.70	
Threatened	Critically endangered (CR)	70		42.42
	Endangered (EN)	21		12.73
	Vulnerable (VU)	74		44.85
	Threatened species (total)	**165**	38.64	**100**
Total of species		**427**	**100**	

& Sobral, *Senecio promatensis* Matzenb., *Senecio ramboanus* Cabrera, and *Viguiera corumbensis* Malme were also considered as rare (Giulietti *et al*. 2009). However, there are other rare Asteraceae species (Giulietti *et al*. 2009) and that are also other endangered species (Fundação Biodiversitas 2007b), but those were not classified by MMA (2008) as endangered, and the criteria for their exclusion were not explained.

According to Giulietti *et al*. (2009), rare species with range smaller than 10,000 km^2 may have low genetic variability; hence, they are more vulnerable to extinction in case of environmental changes (Primack & Rodrigues 2001). This criterion is used to justify the classification of rare species as endangered and conservation priority, considering the intensive environmental degradation in Brazil (Primack & Rodrigues 2001).

Among the eight remaining Asteraceae species classified as threatened by MMA (2008) is also *Lychnophora ericoides* Mart., locally known as 'arnica', whose use in popular medicine grows fast due to its analgesic, antiseptic, and healing properties, though there is no scientific evidence of its effectiveness. It is classified as vulnerable or endangered in all red lists due to commercial exploitation (Melo *et al*. 2009). In addition, *Aspilia paraensis* (Huber) J.U.Santos and *Aspilia procumbens* Baker were already included in the First Official List (IBAMA 1992), what could justify their classification as endangered.

The 152 remaining species included in the Current Official List (MMA 2008) (90% of all species) were considered as data deficient (Tab. 4), i.e, they are included in no categories of threat.

Number of species and categories of threat

Among all Asteraceae species and genera that occur in Brazil (Nakajima *et al*. 2010), only 0.3% (Tab. 5) of the species and approximately 1% of the genera have been included in the First Official List (IBAMA 1992). Although the First Official List (IBAMA 1992) was a great accomplishment for Brazilian conservation, it has a low number of species, because at the time of its elaboration there were no standard criteria for the assessment of conservation status, which were elaborated only in 1994 with the IUCN's Red List of Threatened Species (IUCN 2010).

In the Red List (Fundação Biodiversitas 2007b) 22% of the species are at some degree of threat (Tab. 5). This significant increase in the number of species compared to the First Official list (IBAMA 1992) reflects mainly an increase in the knowledge of Asteraceae species, the use IUCN's criteria (IUCN 2001), and the participation of an expressive part of the scientific community in the elaboration of the list, making it more reliable, objective, and likely to reach its goals.

In the Current Official List (MMA 2008), approximately 8.5% of the species and 20.5% of the genera are classified as endangered (Tab. 5). This reduction in the number of indicated species compared to the Red List (Fundação Biodiversitas 2007b) was not discussed by MMA (2008).

The Current Official List (MMA 2008) should have been based on the Red List (Fundação Biodiversitas 2007b) and should also have presented the same results, but there was no agreement between the parties. Hence, out of a group of 1,495

Table 3 – Genera of Asteraceae indicated in the current Official List of Endangered Species of Brazilian Flora (MMA 2008) with the number of species (n) and the percentage of these genera (%) in relation to the total number of species.

Genera	n	%	Genera	n	%	Genera	n	%
Acritopappus	3	1.8	*Ianthopappus*	1	0.6	*Richterago*	13	7.7
Agrianthus	2	1.2	*Ichthyothere*	2	1.2	*Schlechtendalia*	1	0.6
Anteremanthus	1	0.6	*Isostigma*	1	0.6	*Senecio*	7	4.1
Aspilia	5	2.9	*Lomatozona*	1	0.6	*Smallanthus*	2	1.2
Baccharis	5	2.9	*Lychnophora*	10	5.9	*Stenopadus*	4	2.4
Calea	4	2.4	*Lychnophoriopsis*	2	1.2	*Stenophalium*	1	0.6
Catolesia	1	0.6	*Mikania*	6	3.5	*Stevia*	5	2.9
Chaptalia	3	1.8	*Minasia*	2	1.2	*Stifftia*	1	0.6
Chionolaena	1	0.6	*Monogereion*	1	0.6	*Stilpnopappus*	5	2.9
Dendrophorbium	2	1.2	*Neblinaea*	1	0.6	*Stylotrichium*	4	2.4
Dimerostemma	7	4.1	*Noticastrum*	3	1.8	*Symphyopappus*	3	1.8
Eremanthus	3	1.8	*Ophryosporus*	1	0.6	*Trichocline*	2	1.2
Eupatorium	2	1.2	*Pamphalea*	2	1.2	*Trixis*	1	0.6
Gardnerina	1	0.6	*Paralychonophora*	6	3.5	*Verbesina*	1	0.6
Gochnatia	1	0.6	*Perezia*	2	1.2	*Vernonia*	14	8.3
Heterocoma	1	0.6	*Planaetoa*	1	0.6	*Viguiera*	9	5.3
Hoehnephytum	1	0.6	*Porophyllum*	1	0.6	*Wedelia*	1	0.6
Holocheilus	1	0.6	*Proteopsis*	1	0.6	*Wunderlichia*	3	1.8
Hysterionica	2	1.2	*Quelchia*	1	0.6	**Total**	**168**	**100**

Table 4 – Number (n) and percentage (%) of Asteraceae species indicated in each threatened categories (TC) in the current Official List of Endangered Species of Brazilian Flora (MMA 2008).

Species	TC	TC of Red List	n	% (List)	% (threatened species)
Data deficient	DD		152	90.47	
		Critically endangered (CR)	8	9.46	53.33
		Endangered (EN)	1		6.66
Threatened	AM	Vulnerable (VU)	5		33.33
		Data deficient (DD)	1		6.66
		Threatened species (total)	**15**		**100**
Total of species			**168**	**100**	

Table 5 – Comparison between the three Red Lists of Brazilian Flora.

IBAMA (1992)	Fundação Biodiversitas (2007c)	MMA (2008)
Scientific criteria not mentioned	Scientific criteria of IUCN (2001)	Scientific criteria not mentioned
6 (0,3% of Asteraceae species)	427 (22% of Asteraceae species)	168 (8,5% of Asteraceae species)
-	50 Least concern	-
4 Threatened: 3 (R); 1 (V)	165 Threatened: 70 (CR); 21 (EN); 74 (VU)	15 Threatened: 8 (CR); 1 (EN); 5 (VU); 1 (DD)
2 Indeterminated	212 Data deficient	152 Data deficient

angiosperm species classified as endangered in the total Brazilian Angiosperm Red List (Fundação Biodiversitas 2007b), only 472 (31%) were officially considered as endangered by MMA in the Current Official List (MMA 2008).

For Asteraceae, in particular, out of the 165 endangered species included in the Red List (Fundação Biodiversitas 2007b) only 15 were considered as threatened in the Current Official List (MMA 2008), i.e., 90% of the species were removed from threatened categories (Tab. 5).

The 168 Asteraceae species included in the Current Official List (MMA 2008) are also present in the Red List (Fundação Biodiversitas 2007b). However, only 18 species (11.24%) retained an equivalent conservation status. The other 150 species (88.76%) had their conservation status changed to DD in the Current Official List (MMA 2008). Among them, 61 species (41%) were transferred from CR to DD, 20 (13%) were transferred from EN to DD, and 69 (46%) were transferred from VU to DD. These 150 species diagnosed as endangered in the Red List (Fundação Biodiversitas 2007b) and as data deficient in the Current Official List (MMA 2008) are under the risk of extinction due to the lack of protective measures (Fundação Biodiversitas 2007b).

The most modified category of threat was VU, with 46% of the species having their conservation status modified to DD (MMA 2008). However, what is most disturbing is that 40% of the CR species were considered as DD by MMA (2008). The criteria used by MMA (2008) to change the conservation status of these species was not explained, and only a lack of information on the species was reported (Portal Ecodebate 2008).

Besides, the species that were included in the Red List (Fundação Biodiversitas 2007b) but not in the Current Official List (MMA 2008) were considered as least concern by MMA (2008), summing up 209 species, excluding the 50 species that were already pointed out as LC in the Red List (Fundação Biodiversitas 2007b). The criteria used in this assessed were not made public either.

All Asteraceae species included in the First Official List (IBAMA 1992) were also included in the Red List (Fundação Biodiversitas 2007b) and in the Current Official List (MMA 2008). Most species retained their conservation status, except for *Aspilia pohlii* Baker, which had its status modified from DD to EN in the Current Official List (MMA 2008). The criterion used in this change, as previously said, is unknown, since in the Red List (Fundação Biodiversitas 2007b) this species was classified as DD based in scientific criteria. The species *Lomatozona artemisiifolia* Baker also had its conservation status changed from EN (IBAMA 1992) to DD in the subsequent lists (Appendix 1). This change can be related to the lack of knowledge on this species.

In all three lists (IBAMA 1992; Fundação Biodiversitas 2007b; MMA 2008), the category with the highest number of species was DD (Tab. 5, Appendix 1), and the highest number of species was observed in the categories CR and VU (Tab. 5, Appendix 1). These results suggest that, in addition to public policies for biodiversity conservation, studies on species with scarcity of knowledge, as well as the publications resulting from these studies, should be made priority.

Based on this comparative analysis, it is evident that the Red List is the one that better portrays the degree of threat to Asteraceae species in Brazil. Thus, we suggest the use of this list instead the Current Official List (MMA 2008) for conservation purposes.

Distribution of the endangered species in the biomes

In the First Official List (IBAMA 1992), the endangered species were distributed in the biomes Amazon (25%), Atlantic Forest (25%), and Cerrado (50%).

In the Red List (Fundação Biodiversitas 2007b), the endangered species were distributed in all Brazilian biomes (Tab. 6 and Appendix 2). The biome in which most endangered species were distributed was the Cerrado, with ca. 64% of the species (Tab. 6). It is worth mentioning that rocky highlands fields, known as "campos rupestres" are within this domain and have a high number of endemic species, in particular of Asteraceae (Giulietti *et al*. 2005). Besides, most species of this family occur mainly in open vegetations (Funk *et al*. 2009).

Although other biomes have not so many endangered species as the Cerrado, the Atlantic Forest has 12% of all endangered species, and the Pampas 13% (Tab. 6). Thus, they also deserve attention in public conservation policies, since environmental degradation rates in these domains are also high (Fundação Biodiversitas 2007b).

Brazil is considered as one of the most megadiverse countries in the world, but threats to its wildlife and natural landscapes are dramatic (Giulietti *et al.* 2005). In general, the Cerrado is the domain where most endangered Asteraceae species are distributed (Tab. 7), since this family is very frequent in this domain (Ribeiro *et al*. 2008), which has been under strong anthropic pressure (MMA 2007).

The Cerrado is one of the main biodiversity regions in the world and covers approximately 25% of the Brazilian territory (MMA 2007). It is the second largest Brazilian biome and is located within twelve states (Torres *et al* 2007). Vegetation in this domain varies greatly, both in number of species and in number of vegetation formations (Ribeiro & Walter 1998).

The degree of endemism in the Cerrado is also high, and little is known about the distribution of species in the domain, though important research efforts have been started in the 1980's (Primack & Rodrigues 2001). It is estimated that over 40% of the Cerrado's woody plant species are endemic (MMA 2007), and it is the richest savanna vegetation in plant diversity in the world (Brandon *et al*. 2005).

However, human occupation and road construction turned this previously continuous biome into a set of fragmented landscapes, composed of islands inserted in matrices of agroecosystems (MMA 2007). Pastures and plantations are the two most frequent land use regimes, occupying 26 and 10% of the Cerrado, respectively (Sano *et al*. 2008). Approximately 70% of the Cerrado has already lost its natural vegetation (Torres *et al*. 2007).

The intensive anthropogenic transformation of the Cerrado may result in great biodiversity loss, mainly because of the small number of protected areas and concentrated in few regions (MMA 2007). Hence, the Cerrado, together with the Atlantic Forest, is considered as one of the world's biodiversity hotspots, i.e., one of the richest and most threatened biomes of the planet (MMA 2007). The Cerrado biome received for a long time low conservation priority (Primack & Rodrigues 2001), and therefore is almost deprived of conservation unities as national parks or reserves (Drummond *et al*. 2009).

Hence, floristic studies are urgent, since a better comprehension of the distribution and diversity of its vegetation will help define priority areas for conservation of the Cerrado (Brandon *et al*. 2005).

Table 6 – Distribution in Brazilian phytogeographical domains of threatened Asteraceae species indicated in the revised Red List of Brazilian Flora (Fundação Biodiversitas 2007b).

Domain	spp.	%
Amazon	8	4.85
Caatinga	11	6.67
Pampas	22	13.33
Cerrado	105	63.64
Atlantic Forest	20	12.12
Pantanal	4	2.42

Table 7 – Percentage of threatened Asteraceae species in the "cerrado" domain in all three lists.

IBAMA (1992)	Fundação Biodiversitas (2007c)	MMA (2008)
50% of species	Ca. de 64% of species	Ca. 37% of species
MMA (2008)		Ca. 37% of species

In the Current Official List (MMA 2008), the biomes where most endangered species are distributed are Cerrado (5 species or 33%), Pampas (4 species or 26%) and Atlantic Forest (4 species or 26%) (Tab. 8). The other biomes do not have a large number of endangered Asteraceae species.

Distribution of endangered species in Brazilian states

In the First Official List (IBAMA 1992), the endangered species were distributed in the states of Goiás (two species), Minas Gerais, Pará, Rio Grande do Norte and São Paulo (one species each). In this list (IBAMA 1992) the southeastern and midwestern regions exhibited the highest number of endangered Asteraceae (2 species each), followed by the northern and northeastern regions (one species each).

In the Red List (Fundação Biodiversitas 2007b), the endangered species were distributed in 20 states (Appendix 2). The state of Minas Gerais (53 species) exhibited the highest number of endangered species (53), followed by the states of Bahia (41), Rio Grande do Sul (25), Goiás (16), Paraná (10), Santa Catarina (8), São Paulo (7), Mato Grosso do Sul (7), Roraima (4), and Rio de Janeiro (3). In each of the other states (Pará, Amazonas, Pernambuco, Piauí, Mato Grosso, Distrito Federal, Rio Grande do Norte, Espírito Santo, Ceará, Rondônia) there were only one or two endangered species. The southeastern region exhibited the highest number of endangered Asteraceae species (80 species), followed by the northeastern (47), southern (43), midwestern (11), and northern regions (9). Minas Gerais, Bahia and Rio Grande do Sul are the states with the highest number of endangered species.

In the Current Official List (MMA 2008), the endangered species are distributed in 11 states, standing out the states of Minas Gerais (5 species) and Rio Grande do Sul (4 species), followed by the states of Goiás, Mato Grosso do Sul and Paraná (2 species each). In each of the other states (Mato Grosso, Pará, Rondônia, Rio Grande do Norte, Santa Catarina and São Paulo) there is only one endangered species. The southern region exhibits the highest number of endangered Asteraceae species (6 species), followed by the southeastern and midwestern (5), northern (2) and northeastern (1) regions. Minas Gerais and Rio Grande do Sul are the states with the highest number of endangered species.

As reported in the Red List (Fundação Biodiversitas 2007b), which shows the threat to Asteraceae, the southeastern region has the highest number of endangered species of the country. However, the northeastern, southern and midwestern regions are also very significant. Areas suitable for agriculture in the southern and southeastern regions and in the "Zona da Mata Nordestina" have been deforested in the last centuries (Primack & Rodrigues 2001), what can explain their high number of endangered species.

Table 8 – Distribution in Brazilian phytogeographical domains of threatened Asteraceae species indicated in the current Official List of Endangered Species of Brazilian Flora (MMA 2008).

Domain	Spp.	%
Amazon	1	6.6
Pampas	4	26.6
Cerrado	5	33.3
Atlantic Forest	4	26.6
Pantanal	1	6.6

The state of Minas Gerais has the highest number of endangered species, mainly due to the high rate of endemism (Fundação Biodiversitas, 2007b) and to intensive anthropogenic influence, which transforms the native vegetation into forest fragments, with a landscape that has been extremely altered by agriculture, cattle raising, mining, and urbanization (Drummond 2009).

In the state of Bahia, the high rate of endemism, mainly in "Chapada Diamantina" (Teles & Bautista 2006; Teles *et al.* 2009), in addition to the high degree of anthropogenic disturbance can explain the high number of endangered species found in this state (MMA 2008).

The family Asteraceae is one of the most frequent in grasslands of southern Brazil (Ferreira *et al*. 2001; Caporal & Boldrini 2007), mainly in Rio Grande do Sul (Caporal & Boldrini 2007). Several species of this family are weedy or invasive in pastures (Ferreira *et al*. 2001). In addition to having a characteristic and exclusive flora, the natural landscape of southern grasslands has been under strong anthropogenic pressure throughout the past three centuries due to the expansion of agriculture, silviculture, and cattle raising (Overbeck *et al*. 2007), what explains the high number of endangered species in this region. However, most of the vegetation in southern Brazil remains poorly known (Giulietti *et al*. 2005), so it is important to

increase studies, in order to allow a better assessment of the conservation status of Asteraceae species.

Finally, in the state of Goiás, the number of endemic species is high mainly in "campos rupestres" (Bringel & Cavalcanti 2007; Alves & Kolbek 2010), what can explain its high number of endangered species.

Red List and criteria of IUCN 3.1

Considering that the Red List (Fundação Biodiversitas 2007b) were not considered by MMA as reliable, it is important to analyze the reasons for classifying the species as endangered (Appendix 2), according to IUCN's criteria (2001).

In the Red List (Fundação Biodiversitas 2007b), 97% of the species classified as critically endangered were placed in this category because they have restricted distribution, with an estimated occurrence range smaller than 100 km^2 or an estimated area of occupancy smaller than 10 km^2, and evidence of decline or fluctuation in their populations (IUCN 2001).

Most species assessed as endangered (85%) were placed in this category also because they have restricted distribution, with an estimated occurrence range smaller than 5,000 km^2 or an estimated area of occupancy smaller than 500 km^2, and evidence of decline or fluctuation in their populations (IUCN 2001).

Most species assessed as vulnerable (93%) had also restricted distribution, similarly as the critically endangered and endangered species; their estimated occurrence range is smaller than 20,000 km^2 or they exhibit an estimated area of occupancy smaller than 2,000 km^2, and evidence of decline or fluctuation in their populations due to anthropic activities, such as the extractivism (IUCN 2001).

Hence, most species were placed in threat categories of the Red List (Fundação Biodiversitas 2007b), mainly because of their restricted distribution and decline or fluctuation in their populations. Species with restricted distribution are vulnerable to extinction, especially if their habitat is disturbed by human activities. Likewise, populations in decline are vulnerable to extinction, especially if the causes of their decline are not identified and corrected (Primack & Rodrigues 2001). Hence, these species' vulnerability to extinction can be related to the habitat degradation that has been occurring for centuries in Brazil, resulting from the expansion of agriculture and cattle raising, urbanization, and poorly planned infra-structure works.

Therefore, the main threat to endangered species in Brazil, mainly for highly endemic species, is the degradation of their natural environments, be it through partial loss, total loss or change in optimal conditions, (Drummond *et al*. 2009; Fundação Biodiversitas 2007b; Primack & Rodrigues 2001).

According to Fundação Biodiversitas (2007b), the main recommendation is habitat protection, followed by research in biology and ecology, monitoring, research in taxonomy, recovery of habitats, and surveillance. To successfully preserve species, human activities that affect population stability and lead species to extinction must be identified. It is also necessary to determine which factors make a population vulnerable to extinction (Primack & Rodrigues 2001). By identifying these factors, it is possible to detect the need for management of populations of species vulnerable to extinction (Primack & Rodrigues 2001).

Threatened genera

In the First Official List (IBAMA 1992), the category rare included the genera *Aspilia* Thouars and *Lomatozona* Baker, and over half of the species (67%) belong to *Aspilia* Thouars (Tab. 9, category R). In the category vulnerable, the genus *Lychnophora* Mart. had only a single species (Tab. 9, category V).

The genus *Aspilia* Thouars is the most threatened in the First Official List (IBAMA 1992), since it exhibits most species assessed as R, the category with the highest extinction risk in this list. Species of *Aspilia* Thouars that are in this category are endemic, with restricted and local distribution (Santos 1996); possibly, these criteria were used to classify these species as R.

The other genera classified as endangered in the First Official List, *Lomatozona* Baker and *Lychnophora* Mart., included only a single species each, *Lomatozona artemisiifolia* Baker included as

Table 9 – Distribution of genera in the threatened categories (R e V) of the first Official List of Endangered Species of Brazilian Flora (IBAMA 1992), with the number of species in each genera.

Category	Genera	Species
Rare (R)	*Lomatozona*	1
	Aspilia	2
Vulnerable (V)	*Lychnophora*	1

R, and *Lychnophora ericoides* Mart. as V. There are few records for *L. artemisiifolia* Baker, what can be the reason for its classification as a rare and endangered. However, *L. ericoides* Mart., even having broad distribution (Semir 1991), in under uncontrolled extractivism and consequently is vulnerable to local and possibly regional extinction (Melo *et al.* 2009).

In the Red List (Fundação Biodiversitas 2007b), the category critically endangered encompassed 32 genera; 27% of the species belong to the genera *Lychnophora* Mart. (6 spp.), *Richterago* Kuntze (7 spp.) and *Vernonia* Schreb. (6 spp.), which have the highest number of species included in the list (Tab. 10). In the category endangered there were 15 genera; 14% of the species belong to the genus *Vernonia* Schreb. (3 spp.), which has the highest number of species (Tab. 10). In the category vulnerable there were 38 genera; 16% of the species belong to the genera *Richterago* Kuntze (6 spp.) and *Vernonia* Schreb. (6 spp.), which have the highest number of species (Tab. 10).

The genus *Vernonia* Schreb. was the most threatened in the Red List (Fundação Biodiversitas 2007b); it has the highest number of species in all categories of threat (CR, EN and VU). The genus *Vernonia* Schreb. is one of the most significant in the Cerrado (Althoff 1998), and in general its species have restricted distribution or are broadly distributed in savannas (Rivera 2006). The restricted distribution and occurrence of this genus in the Cerrado, a domain under intensive anthropic pressure, were the criteria to classify it as the most threatened.

Although the genus *Lychnophora* Mart. and *Richterago* Kuntze did not stand out broadly in this list, they were significant in some categories. *Lychnophora* Mart. was significant in the category CR, which has the highest extinction risk, and *Richterago* Kuntze was significant in the categories CR and VU, those with the highest and lowest extinction risk, respectively. The genera *Lychnophora* Mart. and *Richterago* Kuntze have several species that are locally endemic, and that occur in rocky fields in the states of Minas Gerais, Bahia and Goiás, areas under strong anthropic pressure (Semir 1991; Roque 1999). These factors can explain the significance of these genera in these two categories of threat.

Since the Red List is the one that best portrays the threat to Asteraceae, the genera *Lychnophora* Mart., *Richterago* Kuntze and *Vernonia* Schreb. are the most threatened in Brazil, with the highest number of species classified as endangered. Hence, research aimed at the conservation of species of these genera should be encouraged.

In the Current Official List (MMA 2008), the category CR encompassed five genera; 62% of the species belong the genera *Senecio* L. (3 spp.) and *Viguiera* Kunth (2 spp.) (Tab. 11). In the category EN there was only one genus, *Viguiera* Kunth, with a single species (Tab. 11). In the category VU, four genera were reported; more than half of the species (66%) belong to the genera *Aspilia* Thouars (2 spp.) and *Viguiera* Kunth (2 spp.) (Tab. 11). In the category DD, only one genus is reported, *Aspilia* Thouars, with a single species (Tab. 11).

The genus *Viguiera* Kunth is the most threatened in the list; it stood out due to the high number of species recorded in all categories of threat (CR, EN, and VU). Although the genera *Senecio* L. and *Aspilia* Thouars were not present in all categories of threat in this list, they were also significant: *Senecio* L. in the category CR, which has the highest risk of extinction; and *Aspilia* Thouars in the category VU, which has the lowest risk of extinction.

These three genera have species with restricted distribution or with broad distribution in different Brazilian biomes, in particular Cerrado (*Viguiera* Kunth and *Aspilia* Thouars) and Atlantic Forest (*Senecio* L.). *Viguiera* Kunth was recently the focus of a recent taxonomic review (Magenta 2006), as well as *Aspilia* Thouars (Santos 1996), what has been probably considered to classify them as endangered. *Senecio* L. is possibly among the most significant, because many of its species occur in the Atlantic Forest, one of the world's biodiversity hotspots.

Data deficient genera

In the First Official List (IBAMA 1992), a single genus was cited in the category undetermined (U): *Aspilia* Thouars with two species (50% of all species).

In the Red List (Fundação Biodiversitas 2007b), 55 genera were included in the category data deficient (DD). Data deficient species are placed in this category, because there is not enough information available to assess their conservation status. Hence, species placed in this category need further research (Fundação Biodiversitas 2007b).

The genera *Aspilia* Thouars (22 species or 10% of the DD species), *Baccharis* L. (13 species or 6%), *Calea* L. (12 species or 5%), *Eupatorium* L. (15 species or 7%), *Mikania* Willd. (12 species or 5%), *Piptocarpha* R.Br. (11 species or 5%), and

Table 10 – Distribution of genera in the threatened categories (CR, EN, e VU) of revised Red List of Brazilian Flora (Fundação Biodiversitas 2007b), with the number of species (n) and percentage (%) in each genera.

Critically endangered (CR)			**Endangered (EN)**			**Vulnerable (VU)**		
Genera	n	%	Genera	n	%	Genera	n	%
Richterago	*7*	*10*	*Vernonia*	*3*	*14*	*Richterago*	6	8
Lychnophora	*6*	*8.5*	*Acritopappus*	*2*	*9.5*	*Vernonia*	6	8
Vernonia	*6*	*8.5*	*Stylotrichium*	*2*	*9.5*	*Calea*	4	5.5
Dimerostemma	5	7	*Symphyopappus*	2	9.5	*Lychnophora*	4	5.5
Senecio	5	7	*Viguiera*	2	9.5	*Paralychnophora*	4	5.5
Viguiera	4	6	*Baccharis*	1	4.8	*Stenopadus*	4	5.5
Baccharis	3	4	*Mikania*	1	4.8	*Mikania*	3	4
Agrianthus	2	3	*Minasia*	1	4.8	*Noticastrum*	3	4
Aspilia	2	3	*Perezia*	1	4.8	*Stilpnopappus*	3	4
Chaptalia	2	3	*Planaltoa*	1	4.8	*Viguiera*	3	4
Hysterionica	2	3	*Porophyllum*	1	4.8	*Aspilia*	2	3
Mikania	2	3	*Senecio*	1	4.8	*Dimerostemma*	2	3
Paralychnophora	2	3	*Stevia*	1	4.8	*Eremanthus*	2	3
Stevia	2	3	*Stilpnopappus*	1	4.8	*Eupatorium*	2	3
Stylotrichium	2	3	*Trichocline*	1	4.8	*Pamphalea*	2	3
Wunderlichia	2	3				*Stevia*	2	3
Acritopappus	1	1.5				*Baccharis*	1	1.3
Anteremanthus	1	1.5				*Chaptalia*	1	1.3
Catolesia	1	1.5				*Chionolaena*	1	1.3
Dendrophorbium	1	1.5				*Gardnerina*	1	1.3
Eremanthus	1	1.5				*Gochnatia*	1	1.3
Ianthopappus	1	1.5				*Heterocoma*	1	1.3
Ichthyothere	1	1.5				*Hoehnephytum*	1	1.3
Lychnophoriopsis	1	1.5				*Holocheilus*	1	1.3
Monogereion	1	1.5				*Ichthyothere*	1	1.3
Ophyosporus	1	1.5				*Isostigma*	1	1.3
Perezia	1	1.5				*Minasia*	1	1.3
Smallanthus	1	1.5				*Neblinae*	1	1.3
Stenophalium	1	1.5				*Proteopsis*	1	1.3
Stilpnopappus	1	1.5				*Quelchia*	1	1.3
Symphyopappus	1	1.5				*Schlechtendalia*	1	1.3
Verbesina	1	1.5				*Senecio*	1	1.3
						Smallanthus	1	1.3
						Stifftia	1	1.3
						Trichocline	1	1.3
						Trixis	1	1.3
						Wedelia	1	1.3
						Wunderlichia	1	1.3

Table 11 – Distribution of genera in the threatened categories (CR, EN, VU e DD) of current Official List of Endangered Species of Brazilian Flora (MMA 2008), with the number of species (n) and percentage (%) in each genera.

Critically endangered (CR)			Endangered (EN)			Vunerable (VU)			Data defficient (DD)		
Genera	n	%	Genera	n	%	Genera	n	%	Genera	n	%
Senecio	3	37.5	*Viguiera*	1	100	*Aspilia*	2	33.33	*Aspilia*	1	100
Viguiera	2	25				*Viguiera*	2	33.33			
Anteremanthus	1	12.5				*Chaptalia*	1	16.67			
Hysterionica	1	12.5				*Lychnophora*	1	16.67			
Aspilia	1	12.5									

Senecio L. (13 species or 6%) exhibited the highest number of data deficient species (Appendix 1).

Regarding the total number of species of each genus present in the list, 44% of the species of *Aspilia* Thouars were DD, 68% of *Baccharis* L., 75% of *Calea* L., 83% of *Eupatorium* L., 54% of *Mikania* Willd., 100% of *Piptocarpha* R.Br., and 56% of *Senecio* L.

All these genera have a high number of species and were not subjected to recent taxonomic review, except for *Aspilia* Thouars and *Senecio* L. Thus, for most species there is not enough knowledge on their distribution to apply IUCN's criteria (IUCN 2001), and so assess their conservation status.

In the Current Official List (MMA 2008), 55 genera are also included in the category data deficient. *Richterago* Kuntze (13 spp. or 9% of the DD species) and *Vernonia* Schreb. (15 spp. or 10%) had the highest number of data deficient species (Appendix 1).

All species of both genera included in this list were classified as data deficient. However, *Richterago* Kuntze was focused on a recent taxonomic review (Roque 1999), and *Vernonia* Schreb. is relatively well known through information from herbaria, corroborating the hypothesis that the Current Official List (MMA 2008) did not properly survey the scientific literature.

Red lists of the Brazilian flora have reported throughout 16 years (1992–2008) a variable number of both endangered and data deficient species of Asteraceae. This variation is a result of different criteria used to elaborate these lists. The Red List (Fundação Biodiversitas 2007b) is the only one that uses well-defined criteria in its methodology and, hence, it is the one that best portrays the real situation of endangered Asteraceae species in Brazil.

The Current Official List (MMA 2008) does not show the real situation of endangered Asteraceae, with a reduction of 90% in species that had been previously been classified as endangered in the Red List (Fundação Biodiversitas 2007b), but were classified as data deficient in the Current Official List (MMA 2008); there was also an arbitrary exclusion of 209 species included in the Red List, without using scientific criteria known.

All species included in the First Official List (IBAMA 1992) have been reported in the subsequent lists, and even after 16 years, those six Asteraceae species did not have their conservation status changed, what possibly portrays fragilities and deficiencies of the system for protection, management and control of endangered species in Brazil.

According to the analysis of the Red List, most Asteraceae species placed in any category of endangered were classified so mainly due to their restricted distribution, population decline, and deterioration of their natural habitats, which is the main threat to biodiversity in Brazil. Most species were placed in the categories critically endangered and vulnerable. The adoption of moderate conservation measures can reverse the threat to these vulnerable species. However, in order to reverse the threat to critically endangered species, more drastic measures are needed, since they are at high extinction risk in the near future.

In general, 20% of the Asteraceae species that occur in Brazil are reported in red lists as endangered or data deficient. The genera diagnosed as the most threatened in Brazil (*Lychnophora* Mart., *Richterago* Kuntze and *Vernonia* Schreb.) must be prioritized in studies that provide the basis for conservation and management projects of these endangered species and for identifying priority areas for their conservation.

Despite the significant number of endangered Asteraceae species, they represent less than half of the species reported in red lists. Most species are classified as data deficient, with insufficient information for assessing their real conservation status. Many gaps in knowledge still need to be filled so that science can help conservation actions. Hence, most data deficient genera in Brazil (*Aspilia* Thouars, *Baccharis* L., *Calea* L., *Eupatorium* L., *Mikania* Willd., *Piptocarpha* R.Br. and *Senecio* L.) should be prioritized in research programs aimed at understanding the distribution of these species, as they may be seriously threatened and under high risk of extinction.

Therefore, there has been an improvement in the reliability of Brazilian red lists, through the use of up-to-date, applicable and objective scientific criteria, which are consequently more reliable and viable. This development reflects the growing interest and concern about endangered species in Brazil, which can be observed in federal laws, as well as in the laws of several states.

With the analysis of threat to the Asteraceae, this study points out the importance of carrying out further floristic inventories in Brazil, in order to provide the basis for conservation of endangered and data deficient species. However, for inventories to be carried out and species to be correctly identified, it is necessary to form new generations of taxonomists, who should play a central role in the elaboration and assessment of the red lists of Brazilian flora.

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Comparative analysis of red lists of the Brazilian flora: Asteraceae

Anólise comparativa das listas vermelhas da flora do Brasil: Asteraceae

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Appendix 1 — Asteraceae species indicated in the Brazilian flora red lists (IBAMA 1992; Fundação Biodiversitas 2007b; MMA 2008), with threatened categories and changes. I: Indeterminated; R: Rare; V: Vulnerable; CR: Critically endangered; EN: Endangered; VU: Vunerable; DD: Data defficient; AM: Threatened of extinction; PEX: Presumably extinct; PA: Presumably threatened of extinction; NT: Near Threatened; LC: Least concern.

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
1	*Acmella pusilla*(Hook. & Arn.) R.K.Jansen		LC	
2	*Acritopappus catolesensis* D.J.N.Hind & Bautista		EN	DD
3	*Acritopappus connatifolius* (Soares Nunes) R.M.King & H.Rob.		EN	DD
4	*Acritopappus pintoi* Bautista & D.J.N.Hind		CR	DD
5	*Ageratum candidum* G.M.Barroso		DD	
6	*Ageratum glomeratum* G.M.Barroso & R.M.King		DD	
7	*Agrianthus almasensis* D.J.N.Hind		CR	DD
8	*Agrianthus giuliettiae* D.J.N.Hind		CR	DD
9	*Ambrosia microcephala* DC		LC	
10	*Anteremanthus hatschbachii* H. Rob.		CR	AM
11	*Apopyros warmingii* (Baker) Nesom		LC	
12	*Argyrovernonia harleyi* (H.Rob.) MacLeish		DD	
13	*Argyrovernonia martii* (DC) MacLeish		DD	
14	*Aspilia albuquerquei* J.U.Santos		DD	
15	*Aspilia almasensis* D.J.N.Hind		CR	DD
16	*Aspilia belohorizontina* J.U.Santos		DD	
17	*Aspilia caudata* J.U.Santos		DD	
18	*Aspilia cearensis* J.U.Santos		DD	
19	*Aspilia decumbens* D.J.N.Hind		DD	
20	*Aspilia diamantinae* J.U.Santos		DD	
21	*Aspilia dinizcruzeana* J.U.Santos		DD	
22	*Aspilia discolor* J.U.Santos		DD	
23	*Aspilia egleri* J.U.Santos		DD	
24	*Aspilia erosa* J.U.Santos		DD	
25	*Aspilia glaziovii* Baker		DD	
26	*Aspilia goyazensis* J.U.Santos		DD	

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
27	*Aspilia grazielae* J.U.Santos	I	VU	AM
28	*Aspilia hatschbachii* J.U.Santos		DD	
29	*Aspilia hermogenesii* J.U.Santos		DD	
30	*Aspilia ioletae* J.U.Santos		DD	
31	*Aspilia itabaianensis* J.U.Santos		DD	
32	*Aspilia matogrossensis* J.U.Santos		DD	
33	*Aspilia ovalifolia* (DC.) Baker		DD	
34	*Aspilia paraensis* (Huber) J.U.Santos	R	VU	AM
35	*Aspilia pereirae* J.U.Santos		DD	
36	*Aspilia pohlii* Baker	I	DD	AM
37	*Aspilia procumbens* Baker	R	CR	AM
38	*Aspilia prostrata* J.U.Santos		DD	
39	*Aspilia subscandens* J.U.Santos		DD	
40	*Aspilia vandenbergiana* J.U.Santos		LC	
41	*Baccharis aracatubensis* Teodoro & Hatschbach ex G.M.Barroso		DD	
42	*Baccharis arenaria* Baker		DD	
43	*Baccharis ciliata* Gardner		DD	
44	*Baccharis concinna* G.M.Barroso		DD	
45	*Baccharis elliptica* Gardner		VU	DD
46	*Baccharis gibertii* Baker		DD	
47	*Baccharis hypericifolia* Baker		DD	
48	*Baccharis macroptera* D.J.N.Hind		CR	DD
49	*Baccharis martiana* G.M.Barroso		CR	DD
50	*Baccharis minutiflora* Mart. ex Baker		DD	
51	*Baccharis muelleri* Baker		DD	
52	*Baccharis paranaensis* Heering & Dusén		DD	
53	*Baccharis polyphylla* Gardner		EM	DD
54	*Baccharis prenanthoides* Baker		DD	
55	*Baccharis pseudobrevifolia* D.J.N.Hind		CR	DD
56	*Baccharis rivularis* Gardner		LC	
57	*Baccharis truncata* Gardner		DD	
58	*Baccharis vismioides* DC.		DD	
59	*Baccharis xiphophylla* Baker		DD	
60	*Baltimora recta* L.		DD	
61	*Bidens edentula* G.M.Barroso		DD	

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
62	*Blainvillea lanceolata* Baker		LC	
63	*Calea abbreviata* Pruski & Urbatsch		VU	DD
64	*Calea abelioides* S.F.Blake		DD	
65	*Calea brittoniana* Pruski		VU	DD
66	*Calea caleoides* (DC.) H.Rob.		DD	
67	*Calea clematidea* Baker		VU	DD
68	*Calea grazielae* J.U.Santos		DD	
69	*Calea hatschbachii* Pruski & D.J.N.Hind		DD	
70	*Calea intermedia* Pruski & Urbatsch		DD	
71	*Calea irwinii* G.M.Barroso		DD	
72	*Calea kristinae* Pruski		VU	DD
73	*Calea nervosa* G.M.Barroso		DD	
74	*Calea purpurea* G.M.Barroso		DD	
75	*Calea robinsoniana* Pruski		DD	
76	*Calea semirii* Pruski & D.J.N.Hind		DD	
77	*Calea sickii* (G.M.Barroso) Urbatsch, Zlot. &Pruski		DD	
78	*Calea wedelioides* (Baker) S.F.Blake		DD	
79	*Catolesia mentiens* D.J.N.Hind		CR	DD
80	*Chaptalia arechavaletae* Hieron. ex Arechav.		VU	AM
81	*Chaptalia chapadensis* D.J.N.Hind		CR	DD
82	*Chaptalia cordifolia* (Baker) Cabrera		LC	
83	*Chaptalia hermogenis* M.D.Moraes		CR	DD
84	*Chionolaena capitata* (Baker) S.E.Freire		LC	
85	*Chionolaena isabellae* Baker		DD	
86	*Chionolaena jeffreyi* H.Rob.		DD	
87	*Chionolaena latifolia* (Benth.) Baker		DD	
88	*Chionolaena longifolia* Baker		DD	
89	*Chionolaena lychnophorioides* Sch.Bip.		VU	DD
90	*Chionolaena phylicoides* (Gardner) Baker		DD	
91	*Chionolaena wittigiana* Baker		DD	
92	*Chresta angustifolia* Gardner		DD	
93	*Chresta curumbensis* (Philipson) H.Rob.		LC	
94	*Chresta souzae* H.Rob.		LC	
95	*Chresta speciosa* Gardner		LC	
96	*Chrysolaena hatschbachii* H.Rob.		DD	

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
97	*Dasyphyllum lanosum* Cabrera		DD	
98	*Dasyphyllum leptacanthum* (Gardner) Cabrera		DD	
99	*Dasyphyllum reticulatum* (DC.) Cabrera		LC	
100	*Dasyphyllum retinens* (Moore) Cabrera		DD	
101	*Dasyphyllum sprengelianum* (Gardner) Cabrera		LC	
102	*Dasyphyllum synacanthum* (Baker) Cabrera		LC	
103	*Dasyphyllum trichophyllum* (Baker) Cabrera		DD	
104	*Dendrophorbium bradei* (Cabrera) C.Jeffrey		DD	
105	*Dendrophorbium catharinense* (Dusén ex Cabrera) C.Jeffrey		CR	DD
106	*Dendrophorbium fastigiaticephalum* (Cabrera) C.Jeffrey		DD	
107	*Dendrophorbium limosum* C.Jeffrey		LC	
108	*Dendrophorbium paranense* (Malme) Matzenb. & Baptista			DD
109	*Dimerostemma annuum* (Hassler) H.Rob.		CR	DD
110	*Dimerostemma apense* (Chodat) M.D.Moraes		VU	DD
111	*Dimerostemma bahiensis* (H.Rob.) M.D.Moraes		CR	DD
112	*Dimerostemma bishopii* H.Rob.		CR	DD
113	*Dimerostemma episcopale* (H.Rob.) H.Rob.		CR	DD
114	*Dimerostemma grazielae* H.Rob.		VU	DD
115	*Dimerostemma myrtifolium* (Chodat) M.D.Moraes		CR	DD
116	*Dimerostemma pseudosiphioides* (Hassler) M.D.Moraes		DD	
117	*Dimerostemma retifolium* (Baker) S.F.Blake		LC	
118	*Eleutheranthera ruderalis* (Sw.) Sch.-Bip.		LC	
119	*Eremanthus arboreus* (Gardner) MacLeish		LC	
120	*Eremanthus argenteus* MacLeish & Schumacher		VU	DD
121	*Eremanthus auriculatus* MacLeish & Schumacher		LC	
122	*Eremanthus elaeagnus* (Mart. Ex DC.) Sch. Bip.		LC	
123	*Eremanthus leucodendron* Mattf.		CR	DD
124	*Eremanthus pabstii* G.M.Barroso		DD	
125	*Eremanthus seidelii* MacLeish & Schumacher		VU	DD
126	*Eremanthus uniflorus* MacLeish & Schumacher		DD	
127	*Eremanthus veadeiroensis* H.Rob.		DD	
128	*Erigeron camposportoi* G.M.Barroso		DD	
129	*Erigeron catharinensis* G.M.Barroso		DD	
130	*Eupatorium adenolepis* Sch.Bip. ex Baker		LC	
131	*Eupatorium arrayanum* Gardner		DD	

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
132	*Eupatorium brunneolum* Baker		DD	
133	*Eupatorium bulbosum* Aristeg.		DD	
134	*Eupatorium costatipes* B.L.Rob.		VU	DD
135	*Eupatorium lineatum* Sch.Bip. ex Baker		VU	DD
136	*Eupatorium meyeri* Pilg.		DD	
137	*Eupatorium minasgeraesense* Hieron.		DD	
138	*Eupatorium myriocephalum* Gardner		DD	
139	*Eupatorium palmare* (Sch.Bip.) Baker		DD	
140	*Eupatorium parviceps* Malme		DD	
141	*Eupatorium pedundulosum* Hook. & Arn.		DD	
142	*Eupatorium perforatum* (Sch.Bip.) Baker		DD	
143	*Eupatorium pharcidodes* B.L.Rob.		DD	
144	*Eupatorium porphyrolepis* Baker		DD	
145	*Eupatorium roupalifolium* B.L.Rob.		DD	
146	*Eupatorium subserratum* Gardner		DD	
147	*Eupatorium ulei* Hieron.		DD	
148	*Eurydochus bracteatus* Maguire & Wurdack		DD	
149	*Gardnerina angustata* (Gardner) R.M.King & H.Rob.		VU	DD
150	*Glossarion bilabiatum* (Maguire) Pruski		DD	
151	*Glossarion rhodanthum* Maguire & Wurdack		DD	
152	*Gochnatia argyrea* (Dusén ex Malme) Cabrera		DD	
153	*Gochnatia discolor* Baker		DD	
154	*Gochnatia gardneri* (Baker) Cabrera		DD	
155	*Gochnatia hatschbachii* Cabrera		DD	
156	*Gochnatia haumaniana* Cabrera		DD	
157	*Gochnatia mollissima* (Malme) Cabrera		DD	
158	*Gochnatia orbiculata* (Malme) Cabrera		VU	DD
159	*Gochnatia ramboi* Cabrera		DD	
160	*Gongylolepis benthamiana* R.H.Schomb.		DD	
161	*Gongylolepis martiana* (Baker) Steyerm. & Cuatrec.		DD	
162	*Gongylolepis oblanceolata* Pruski		DD	
163	*Gorceixia decurrens* Baker		DD	
164	*Graphistylis argyrotricha* (Dusén) B.Nord.		DD	
165	*Graphistylis cuneifolia* (Gardner) B.Nord.		DD	
166	*Graphistylis dichroa* (Bong.) D.J.N.Hind		DD	

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
167	*Graphistylis oreophila* (Dusén) B.Nord.		DD	
168	*Graphistylis serranus* (Zardini) D.J.N.Hind		DD	
169	*Graphistylis toledoi* (Cabrera) B.Nord.		DD	
170	*Heterocoma albida* (DC. Ex Pers.) DC.		VU	DD
171	*Hieracium stanardii* D.J.N.Hind		DD	
172	*Hoehnephytum almasense* D.J.N.Hind		VU	DD
173	*Hoehnephytum imbricatum* (Gardner) Cabrera		LC	
174	*Holocheilus monocephalus* Mondin		VU	DD
175	*Hysterionica nebularis* Deble, Oliveira & Marchiori		DD	
176	*Hysterionica pinnatiloba* Matzenb. & Sobral		CR	DD
177	*Hysterionica pinnatisecta* Matzenb. & Sobral		CR	AM
178	*Ianthopappus corymbosus* (Less.) Roque & D.J.N.Hind		CR	DD
179	*Ichthyothere connata* S.F.Blake		VU	DD
180	*Ichthyothere elliptica* H.Rob.		CR	DD
181	*Ichthyothere glabrata* (Benth.) R.C.Pereira & J.Semir		DD	
182	*Ichthyothere matogrossensis* R.C.Pereira & J.Semir		DD	
183	*Ichthyothere palustris* Malme		LC	
184	*Ichthyothere petiolata* H.Rob.		LC	
185	*Inulopsis phoenix* Nesom		LC	
186	*Irwinia coronata* G.M.Barroso		LC	
187	*Isocarpha megacephala* Mattf.		LC	
188	*Isostigma crithmifolium* Less.		VU	DD
189	*Isostigma scorzonerifolium* (Baker) Sherff		DD	
190	*Isostigma simplicifolium* Less.		DD	
191	*Lasiolaena blanchetii* (Sch.Bip. ex Baker) R.M.King & H.Rob.		DD	
192	*Lasiolaena carvalhoi* D.J.N.Hind		DD	
193	*Lasiolaena duartei* R.M.King & H.Rob.		DD	
194	*Lasiolaena morii* R.M.King & H.Rob.		DD	
195	*Lasiolaena pereirae* R.M.King & H.Rob.		DD	
196	*Lasiolaena santosii* R.M.King & H.Rob.		DD	
197	*Lomatozona artemisaefolia* Baker	R	DD	DD
198	*Lucilia ferruginea* Baker		DD	
199	*Lychnophora albertinioides* Gardner		DD	
200	*Lychnophora bishopii* H.Rob.		DD	
201	*Lychnophora blanchetii* Sch.Bip.		VU	DD

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
202	*Lychnophora brunioides* Mart. - arnica-da-serra		CR	DD
203	*Lychnophora crispa* Mattf.		CR	DD
204	*Lychnophora diamantinana* Jones & Coile		VU	DD
205	*Lychnophora ericoides* Mart. - arnica, candeia	V	VU	AM
206	*Lychnophora granmogolensis* (Duarte) D.J.N.Hind		LC	
207	*Lychnophora harleyi* H.Rob.		DD	
208	*Lychnophora humillima* Sch.Bip.		DD	
209	*Lychnophora markgravii* G.M.Barroso		DD	
210	*Lychnophora martiana* Gardner		DD	
211	*Lychnophora mellobarretoi* G.M.Barroso		DD	
212	*Lychnophora phylicifolia* DC.		CR	DD
213	*Lychnophora regis*H.Rob.		VU	DD
214	*Lychnophora santosii* H.Rob.		CR	DD
215	*Lychnophora sericea* D.J.N.Hind		CR	DD
216	*Lychnophora souzae* H. Rob.		CR	DD
217	*Lychnophora triflora* (Mattf.) H.Rob.		DD	
218	*Lychnophoriopsis candelabrum* (Sch.Bip.) H.Rob.		DD	
219	*Lychnophoriopsis damazioi* (Beauverd) H. Rob.		CR	DD
220	*Lychnophoriopsis hatschbachii* H.Rob.		DD	
221	*Lychnophoriopsis heterotheca* Sch.Bip.		DD	DD
222	*Mattfeldanthus mutisioides* H.Rob. & R.M.King		DD	
223	*Mikania alvimii* R.M.King & H.Rob.		VU	DD
224	*Mikania anethifolia* (DC.) Matzenb.		VU	DD
225	*Mikania capricorni* B.L.Rob.		VU	DD
226	*Mikania citriodora* W.C.Holmes		DD	
227	*Mikania chlorolepis* Baker		LC	
228	*Mikania clematidifolia* Dusén		LC	
229	*Mikania decumbens* Malme		LC	
230	*Mikania dusenii* B.L.Rob.		DD	
231	*Mikania glabra* D.J.N.ind		CR	DD
232	*Mikania glandulosissima* W.C.Homes & D.J.N.Hind		DD	
233	*Mikania hartbergii* W.C.Holmes		CR	DD
234	*Mikania hastatocordata* Malme		DD	
235	*Mikania jeffreyi* D.J.N.Hind		DD	
236	*Mikania mosenii* Malme		EN	DD

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
237	*Mikania nelsonii* D.J.N.Hind		DD	
238	*Mikania oliveirae* R.Esteves & Capel		DD	
239	*Mikania oreophila* M.R.Ritter & Miotto		DD	
240	*Mikania pinnatiloba* DC.		DD	
241	*Mikania reynoldsii* W.C.Holmes		DD	
242	*Mikania ulei* Hieron.		LC	
243	*Mikania variifolia* Hieron.		DD	
244	*Mikania viminea* DC.		DD	
245	*Minasia alpestris* (Gardner) H. Rob.		VU	DD
246	*Minasia cabralensis* H.Rob.		DD	
247	*Minasia lewinsohnii* J.Semir & de Jesus		DD	
248	*Minasia pereirae* H. Rob.		EN	DD
249	*Monogereion carajensis* G.M.Barroso & R.M.King		CR	DD
250	*Moquinia kingii* (H.Rob.) Gamerro		DD	
251	*Moquinia racemosa* (Spreng.) DC.		DD	
252	*Neblinaea promontoriorum* Maguire & Wurdack		VU	DD
253	*Noticastrum hatschbachii* Zardini		VU	DD
254	*Noticastrum malmei* Zardini		VU	DD
255	*Noticastrum psammophilum* (Klatt) Cuatrec.		VU	DD
256	*Onoseris brasiliensis* Cabrera		DD	
257	*Onoseris fraterna* Blake		DD	
258	*Ophryosporus organensis* G.M.Barroso		CR	DD
259	*Pamphalea bupleurifolia* Less.		VU	DD
260	*Pamphalea cardaminifolia* Less.		LC	
261	*Pamphalea maxima* Less.		VU	DD
262	*Pamphalea missionum* Cabrera		DD	
263	*Pamphalea ramboi* Cabrera		DD	
264	*Pamphalea squarrosa* (Vahl) Less.		LC	
265	*Paralychnophora atkinsiae* D.J.N.Hind		CR	DD
266	*Paralychnophora bicolor* (DC.) MacLeish		VU	DD
267	*Paralychnophora harleyi* (H.Rob.) D.J.N.Hind		VU	DD
268	*Paralychnophora patriciana* D.J.N.Hind		CR	DD
269	*Paralychnophora reflexoauriculata* (G.M.Barroso) MacLeish.		VU	DD
270	*Paralychnophora santosii* (H.Rob.) D.J.N.Hind		VU	DD
271	*Perezia catharinensis* Cabrera		LC	

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
272	*Perezia eryngioides* (Cabrera) Crisci & Martic.		EN	DD
273	*Perezia squarrosa* (Vahl) Less.		CR	DD
274	*Piptocarpha barrosoana* G.Lom.Smith		DD	
275	*Piptocarpha brasiliana* Cass.		DD	
276	*Piptocarpha foliosa* Cuatrec.		DD	
277	*Piptocarpha gustavovalerioana* G.Lom.Smith		DD	
278	*Piptocarpha lucida* (Spreng.) Bent. ex Baker		DD	
279	*Piptocarpha matogrossensis* H.Rob.		DD	
280	*Piptocarpha organensis* Glaz.		DD	
281	*Piptocarpha prancei* G.Lom.Smith		DD	
282	*Piptocarpha ramboi* G.Lom.Smith		DD	
283	*Piptocarpha rotundifolia* G.L.Sm.		DD	
284	*Piptocarpha verticillata* (Vell.) G.L.Smith		DD	
285	*Piptocoma schomburgkii* (Sch.Bip.) Pruski		DD	
286	*Planaltoa lychnophorioides* G.M.Barroso		EN	DD
287	*Porophyllum bahiense* D.J.N.Hind		EN	DD
288	*Porophyllum linifolium* (L.) DC.		LC	
289	*Porophyllum oppositifolium* Kuntze		DD	
290	*Praxeliopsis mattogrossensis* G.M.Barroso		DD	
291	*Proteopsis argentea* Mart. & Zucc. ex Sch. Bip.		VU	DD
292	*Pseudogynoxys lobata* Pruski		DD	
293	*Quelchia conferta* N.E.Br.		VU	DD
294	*Radlkoferotoma ramboi* (Cabrera) R.M.King & H.Rob.		DD	
295	*Richterago angustifolia* (Gardner) Roque		VU	DD
296	*Richterago arenaria* (Baker) Roque		VU	DD
297	*Richterago campestris* Roque & J.N.Nakaj.		VU	DD
298	*Richterago caulescens* Roque		CR	DD
299	*Richterago conduplicata* Roque		CR	DD
300	*Richterago elegans* Roque		CR	DD
301	*Richterago hatschbachii* (Zardini) Roque		VU	DD
302	*Richterago lanata* Roque		CR	DD
303	*Richterago petiolata* Roque & J.N.Nakaj.		VU	DD
304	*Richterago polyphylla* (Baker) Ferreyra		CR	DD
305	*Richterago riparia* Roque		VU	DD
306	*Richterago stenophylla* (Cabrera) Roque		CR	DD

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
307	*Richterago suffrutescens* (Cabrera) Roque		CR	DD
308	*Schlechtendalia luzulifolia* Less.		VU	DD
309	*Senecio almasensis* Mattf.		EN	DD
310	*Senecio auritifolius* Cabrera		DD	
311	*Senecio caparoensis* Cabrera		CR	AM
312	*Senecio claussenii* Decne.		DD	
313	*Senecio colpodes* Bong.		LC	
314	*Senecio dumetorum* Gardner		DD	
315	*Senecio emiliopsis* C.Jeffrey		LC	
316	*Senecio gertii* Zardini		CR	DD
317	*Senecio graciellae* Cabrera		DD	
318	*Senecio gynoxoides* Baker		DD	
319	*Senecio harleyi* D.J.N.Hind		DD	
320	*Senecio hatschbachii* Cabrera		CR	DD
321	*Senecio langei* Malme		DD	
322	*Senecio macrotis* Baker		LC	
323	*Senecio malacophyllus* Dusén		DD	
324	*Senecio nemoralis* Dusén		DD	
325	*Senecio promatensis* Matzenb.		CR	AM
326	*Senecio ramboanus* Cabrera		CR	AM
327	*Senecio ramentaceus* Baker		DD	
328	*Senecio regis* H.Rob.		DD	
329	*Senecio riograndensis* Matzenb.		VU	DD
330	*Senecio stigophlebius* Baker		DD	
331	*Senecio subnemoralis* Dusén		DD	
332	*Simsia dombeyana* DC.		LC	
333	*Smallanthus araucariophilus* Mondin		CR	DD
334	*Smallanthus riograndensis* Mondin		VU	DD
335	*Stenachaenium macrocephalum* (DC.) Benth. ex Benth. & Hook.f.		DD	
336	*Stenocline chionaea* DC.		LC	
337	*Stenocline eriodes* Mattf.		DD	
338	*Stenocline gardneri* Baker		LC	
339	*Stenocline heringeri* H.Rob.		DD	
340	*Stenopadus aracaensis* Pruski		VU	DD
341	*Stenopadus connellii* (N.E.Br.) S.F.Blake		VU	DD

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
342	*Stenopadus sericeus* Maguire & Aristeg.		VU	DD
343	*Stenopadus talaumifolius* S.F.Blake		VU	DD
344	*Stenophalium almasense* D.J.N.Hind		CR	DD
345	*Stevia alternifolia* Hieron.		EN	DD
346	*Stevia camporum* Baker		VU	DD
347	*Stevia catharinensis* Cabrera & Vittet		DD	
348	*Stevia decussata* Baker		LC	
349	*Stevia hilarii* B.L.Rob.		VU	DD
350	*Stevia hypericifolia* Hieron.		DD	
351	*Stevia leptophylla* Sch.Bip. ex Baker		CR	DD
352	*Stevia organensis* Gardner		CR	DD
353	*Stevia resinosa* Gardner		DD	
354	*Stifftia axillaris* G.M.Barroso & Vinha		DD	
355	*Stifftia chrysantha* J.C.Mikan		DD	
356	*Stifftia fruticosa* (Vell.) D.J.N.Hind & Semir		VU	DD
357	*Stilpnopappus cearensis* Huber		VU	DD
358	*Stilpnopappus rubropappus* Soares Nunes		VU	DD
359	*Stilpnopappus semirianus* R.Esteves		EN	DD
360	*Stilpnopappus suffruticosus* Gardner		CR	DD
361	*Stilpnopappus tomentosus* Mart.		VU	DD
362	*Stylotrichium corymbosum* (DC.) Mattf.		EN	DD
363	*Stylotrichium edmundoi* G.M.Barroso		CR	DD
364	*Stylotrichium glomeratum* Bautista, Rodr.Oubina & S.Ortiz		EN	DD
365	*Stylotrichium rotundifolium* Mattf.		LC	
366	*Stylotrichium sucrei* R.M.King & H.Rob.		CR	DD
367	*Symphyopappus angustifolius* Cabrera		LC	
368	*Symphyopappus casarettoi* B.L.Rob.		EN	DD
369	*Symphyopappus lymansmithii* B.L.Rob.		EN	DD
370	*Symphyopappus myricifolius* B.L.Rob.		DD	
371	*Symphyopappus reitzii* (Cabrera) R.M.King & H.Rob.		DD	
372	*Symphyopappus uncinatus* H.Rob.		CR	DD
373	*Trichocline catharinensis* var.*discolor* Cabrera		VU	DD
374	*Trichocline incana* Cass.		EN	DD
375	*Trichocline macrocephala* Less.		LC	
376	*Trichocline maxima* Less.		DD	

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
377	*Trichogonia attenuata* G.M.Barroso		DD	
378	*Trichogonia barrosoana* G.M.Barroso		DD	
379	*Trixis calycina* D. Don		DD	
380	*Trixis pallida* Less.		DD	
381	*Trixis pruskii* D.J.N.Hind		VU	DD
382	*Trixis thyrsoidea* Dusén ex Malme		DD	
383	*Trixis verbascifolia* ssp. *gigas*(Wawra) Katinas		DD	
384	*Trixis verbascifolia* ssp. *verbascifolia*(Gardner) Blake		DD	
385	*Verbesina pseudoclaussenii* D. J. N. Hind		CR	DD
386	*Vernonia almasensis* D.J.N.Hind		CR	DD
387	*Vernonia almedae* H.Rob.		DD	
388	*Vernonia bradeana* G.M.Barroso		DD	
389	*Vernonia chamissonis* Less.		CR	DD
390	*Vernonia constricta* Matzenb. & Mafioletti		LC	
391	*Vernonia echinocephala* H.Rob.		VU	DD
392	*Vernonia eitenii* H.Rob.		VU	DD
393	*Vernonia ganevii* D.J.N.Hind		DD	
394	*Vernonia gertii* Dematteis		CR	DD
395	*Vernonia glandulosodentata* Hieron.		VU	DD
396	*Vernonia goiasensis* S.B.Jones		VU	DD
397	*Vernonia hagei* H.Rob.		DD	
398	*Vernonia hatschbachii* (H.Rob.) D.J.N.Hind		LC	
399	*Vernonia irwinii* G.M.Barroso		EN	DD
400	*Vernonia leucodendron* (Mattf.) MacLeish		LC	
401	*Vernonia linearifolia* Less.		LC	
402	*Vernonia luetzelburgii* Mattf.		CR	DD
403	*Vernonia morii* H.Rob.		DD	
404	*Vernonia phaeoneura* Toledo		DD	
405	*Vernonia pseudaurea* D.J.N.Hind		CR	DD
406	*Vernonia sessilifolia* Less.		EN	DD
407	*Vernonia soderstromii* H.Rob.		DD	
408	*Vernonia souzae* H.Rob.		VU	DD
409	*Vernonia spixiana* Mart. ex DC.		EN	DD
410	*Vernonia subverticillata* Sch.Bip. ex Baker		DD	
411	*Vernonia xiquexiquensis* D.J.N.Hind		CR	DD

n	Species	Brazilian Flora Red Lists		
		1992	2007	2008
412	*Viguiera aspilioides* Baker		VU	DD
413	*Viguiera corumbensis* Malme		EN	AM
414	*Viguiera filifolia* Sch.Bip. ex Baker		CR	DD
415	*Viguiera guaranitica* Chodat		CR	AM
416	*Viguiera hilairei* Blake		VU	AM
417	*Viguiera hispida* Baker		VU	DD
418	*Viguiera hypoleuca* Blake		EN	DD
419	*Viguiera linearifolia* Chodat		CR	DD
420	*Viguiera paranensis* (Malme) J.U.Santos		CR	AM
421	*Wedelia macedoi* H.Rob.		VU	DD
422	*Wedelia hispidula* (Baker) J.U.Santos		DD	
423	*Wunderlichia azulensis* Maguire & G.M.Barroso		CR	DD
424	*Wunderlichia bahiensis* Maguire & G.M.Barroso		DD	
425	*Wunderlichia cruelsiana* Taub.		VU	DD
426	*Wunderlichia insignis* Baill.		DD	
427	*Wunderlichia sennaeii* Glaziou ex Maguire & G.M.Barroso		CR	DD

Appendix 2 — Asteraceae species indicated in the revised Red List of Brazilian Flora (Fundação Biodiversitas 2007b), with criteria and threatened categories and geographical distribution. AM: Amazon; CA: Caatinga; PP: Pampas; CE: Cerrado; AF: Atlantic Forest; PA: Pantanal. CA: Category; UF: Federation Unity; CR: Critically endangered; EN: Endangered; VU: Vunerable; DD: Data defficient; LC: Least concearn.

	Species	CA	Criteria	Domain	UF	Locality
1	*Acmella pusilla*	**LC**		PP	RS	Barra do Quaraí
2	*Acritopappus catolesensis*	**EN**	B2ab(iii)	CE	BA	Abaíra, Piatã
3	*Acritopappus connatifolius*	**EN**	B2ab(iii)	CE	BA	Palmeiras (Morro do Pai Inácio) e Lençóis (Morro da Chapadinha)
4	*Acritopappus pintoi*	**CR**	B2ab(iii)	CE	BA	Piatã (Serra da Tromba)
5	*Ageratum candidum*	**DD**		CE	MG	Pedra Azul (Morro Pedra Azul)
6	*Ageratum glomeratum*	**DD**		AM	PA	Marabá (Serra dos Carajás)
7	*Agrianthus almasensis*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)
8	*Agrianthus giuliettiae*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)
9	*Ambrosia microcephala*	**LC**		AM, AF		região costeira
10	*Anteremanthus hatschbachii*	**CR**	B2ab(iii)	CE	MG	Grão-Mogol (Rio Itacambiruçu)
11	*Apopyros warmingii*	**LC**		CE	-	-
12	*Argyrovernonia harleyi*	**DD**		CA	-	-
13	*Argyrovernonia martii*	**DD**		CA	-	-
14	*Aspilia albuquerquei*	**DD**		CE	TO	Serra da Cangalha
15	*Aspilia almasensis*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)
16	*Aspilia belohorizontina*	**DD**		CE	MG	Belo Horizonte
17	*Aspilia caudata*	**DD**		CE	MG	Lavras Novas (Serrinha)
18	*Aspilia cearensis*	**DD**		CA	CE	Santo Antônio de Aracati
19	*Aspilia decumbens*	**DD**		CE	MG	Grão-Mogol (estrada para o rio Ventania)
20	*Aspilia diamantinae*	**DD**		CE	MG	Diamantina (rodovia para Medanha)
21	*Aspilia dinizcruzeana*	**DD**		CE	MG	Mariana (Serra do Caraça)
22	*Aspilia discolor*	**DD**		CE	MG	estrada entre Xavantina e Cachimbo
23	*Aspilia egleri*	**DD**		CE	MG	Diamantina
24	*Aspilia erosa*	**DD**		CE	MG	Estrada de Três Marias para Corinto
25	*Aspilia glaziovii*	**DD**		CE	MG	Sabará, próximo ao Morro da Glória
26	*Aspilia goyazensis*	**DD**		CE	GO, BA, MT	Serra do Tombador
27	*Aspilia grazielae*	**VU**	D2	PA	MS	Corumbá (Morro do Urucum)
28	*Aspilia hatschbachii*	**DD**		PA	MS	Rio Verde
29	*Aspilia hermogenesii*	**DD**		CA	CE	Areias
30	*Aspilia ioletae*	**DD**		CE	DF	10 km S de Guará
31	*Aspilia itabaianensis*	**DD**		CE	SE	Alto da Serra de Itabaiana.
32	*Aspilia matogrossensis*	**DD**		CE	SP	Serra de São Vicente
33	*Aspilia ovatifolia*	**DD**		CE	MG	Sabará
34	*Aspilia paraensis*	**VU**	B2ab(iii)	AM	PA, RO	

	Species	CA	Criteria	Domain	UF	Locality
35	*Aspilia pereirae*	**DD**		CE	MG	Paracatú
36	*Aspilia pohlii*	**DD**		CE	-	-
37	*Aspilia procumbens*	**CR**	B2ab(iii)	AF	RN	Natal
38	*Aspilia prostrata*	**DD**		CE	MG	Santana do Riacho (Serra do Cipó)
39	*Aspilia subscandens*	**DD**		CE	BA	Vitória da Conquista
40	*Aspilia vandenbergiana*	**LC**		AM	PA	Marabá (Serra dos Carajás)
41	*Baccharis aracatubensis*	**DD**		PP	PR, SC	Bom Retiro; campo Alegre
42	*Baccharis arenaria*	**DD**		PP	SC	Porto Uniao
43	*Baccharis ciliata*	**DD**		AF	RJ	Serra dos Órgãos
44	*Baccharis concinna*	**DD**		CE	MG	Santana do Riacho (Serra do Cipó)
45	*Baccharis elliptica*	**VU**	B2ab(ii,iii)	CE	MG	Diamantina
46	*Baccharis gibertii*	**DD**		PP	RS	Pelotas
47	*Baccharis hypericifolia*	**DD**		PP	RS	Vacaria
48	*Baccharis macroptera*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)
49	*Baccharis martiana*	**CR**	B2ab(iii)	CE	MG	Diamantina, Água Limpa
50	*Baccharis minutiflora*	**DD**		AF	SC	Sombrio
51	*Baccharis muelleri*	**DD**		PP	SC	Garuva, Garopava, Pilões, Palhoça, Rio Tavares, Sombrio
52	*Baccharis paranaensis*	**DD**		PP	SC	Entre Ipiranga e Volta Grande
53	*Baccharis polyphylla*	**EN**	B2ab(iii)	CE	MG	Diamantina, Rio dos Cristais, Biribiri
54	*Baccharis prenanthoides*	**DD**		PP	SC, RS	Bom Jardim da Serra e Vacaria
55	*Baccharis pseudobrevifolia*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)
56	*Baccharis rivularis*	**LC**		CE	-	-
57	*Baccharis truncata*	**DD**		CE	MG	Diamantina, Agua Limpa
58	*Baccharis vismioides*	**DD**		CE	ES, SP	Pinheiros
59	*Baccharis xiphophylla*	**DD**		CE	MG	Diamantina, subida para o cruzeiro
60	*Baltimora recta*	**DD**		AF, CA	BA	Municipios do agreste mais úmido e do sertão mais seco e proximidades da zona da mata
61	*Bidens edentula*	**DD**		CE	GO	Alto Paraíso do Goiás (Chapada dos Veadeiros)
62	*Blainvillea lanceolata*	**LC**		AM, CA	PE, CE	material tipo (região do alto amazonas)
63	*Calea abbreviata*	**VU**	B2ab(iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
64	*Calea abelioides*	**DD**		AM	-	-
65	*Calea brittoniana*	**VU**	B2ab(iii)	CE	MG	São Roque de Minas (Parque Nacional da Serra da Canastra)
66	*Calea caleoides*	**DD**		AM	-	-
67	*Calea clematidea*	**VU**	B2ab(ii)	PP	RS	Quaraí, Quevedos, Santa Maria, Santana do Livramento, São Francisco de Assis
68	*Calea grazielae*	**DD**		CE	MG	Santana do Riacho (Serra do Cipó)
69	*Calea hatschbachii*	**DD**		CE	MG	Grão Mogol e Jequitai
70	*Calea intermedia*	**DD**		CE	MG	Serra do Cabral
71	*Calea irwinii*	**DD**		CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)

	Species	CA	Criteria	Domain	UF	Locality
72	*Calea kristinae*	**VU**	C2a(i)	PP	RS	Porto Alegre, Rosário do Sul (Morro Redondo), Santana do Livramento (Cerro Armour), Vila Maresa, Morro da Polícia, Morro das Abertas, Morro do Osso, Morro Teresópolis (Porto Alegre)
73	*Calea nervosa*	**DD**		CE	GO	São João da Aliança (Serra Geral do Paraná)
74	*Calea purpurea*	**DD**		CE	BA	Barreiras (Serra do Espigão Mestre)
75	*Calea robinsoniana*	**DD**		CE	GO, MT	Piranhas e Alto Garcas
76	*Calea semiri*	**DD**		CE	MG	Grão-Mogol
77	*Calea sickii*	**DD**		CE	-	-
78	*Calea wedelioides*	**DD**		AF	RJ	Nova Friburgo, Petrópolis, Alto Macaé
79	*Catolesia mentiens*	**CR**	B2ab(iii)	CE	BA	Abaíra (Serra das Brenhas)
80	*Chaptalia arechavaletae*	**VU**	D2	PP	RS	Bagé
81	*Chaptalia chapadensis*	**CR**	B2ab(iii)	CE	BA	Palmeiras (Morro do Pai Inácio)
82	*Chaptalia cordifolia*	**LC**		AF	SC, RS	Bom Jardim, Bom Retiro, Lauro Müller, Cambará do Sul
83	*Chaptalia hermogenis*	**CR**	B2ab(iii)	AF	SP	Eldorado (Núcleo Caverna do Diabo)
84	*Chionolaena capitata*	**LC**		CE	-	-
85	*Chionolaena isabellae*	**DD**		AF	RJ	Itatiaia e Itamontes (Serra de Itatiaia)
86	*Chionolaena jeffreyi*	**DD**		CE	BA	Rio de Contas (Pico das Almas)
87	*Chionolaena latifolia*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
88	*Chionolaena longifolia*	**DD**		-	-	-
89	*Chionolaena lychnophorioides*	**VU**	B1ab(iii)	CE	MG	Ouro Preto (Itacolomi), Santo Antônio do Itambé (Itambé), Ibitipoca (Serra de Ibitipoca)
90	*Chionolaena phylicoides*	**DD**		AF	RJ, MG	Serra do Caparaó, Serra dos órgãos
91	*Chionolaena wittigiana*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
92	*Chresta angustifolia*	**DD**		CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
93	*Chresta curumbensis*	**LC**		CE	GO, MT	(Serra dos Pirineus e Serra Dourada)
94	*Chresta souzae*	**LC**		CE	DF, MG	Distrito Federal e São Roque de Minas (Parque Nacional da Serra da Canastra)
95	*Chresta speciosa*	**LC**		CE	GO, MT	Alto Paraíso de Goiás (Chapada dos Veadeiros), Serra dos Pirineus e Serra Dourada
96	*Chrysolaena hatschbachii*	**DD**		PP	PR	Piraí do Sul (Serra das Furnas)
97	*Dasyphyllum lanosum*	**DD**		CE	MG	Santana do Riacho (Serra do Cipó)
98	*Dasyphyllum leptacanthum*	**DD**		AF	RJ	Serra dos Órgãos
99	*Dasyphyllum reticulatum*	**LC**		CE	MG	Gouveia (Cadeia do Espinhaço)
100	*Dasyphyllum retinens*	**DD**		CE	MT	Chapada dos Guimarães
101	*Dasyphyllum sprengelianum*	**LC**		CE	MG	Gouveia (Cadeia do Espinhaço), São Roque de Minas (Parque Nacional da Serra da Canastra)
102	*Dasyphyllum synacanthum*	**LC**		AF	RS	São José dos Ausentes, Aparados da Serra Geral, Praia Grande, Cambará do Sul
103	*Dasyphyllum trichophyllum*	**DD**		CE	MG	Mariana (Serra do Caraça)
104	*Dendrophorbium bradei*	**DD**		AF	RJ	Serra dos Órgãos
105	*Dendrophorbium catharinense*	**CR**	B2ab(iii)	PP	SC	Nova Teutonia

	Species	CA	Criteria	Domain	UF	Locality
106	*Dendrophorbium fastigiaticephalum*	**DD**		AF	SP, TO, MG, PR, MS, SC	Campos do Jordão e Serra da Bocaina
107	*Dendrophorbium limosum*	**LC**		PP		Monte Alegre (Serra do Mar)
108	*Dendrophorbium paranense*	**DD**		AF	SP	Serra do Mar
109	*Dimerostemma annuum*	**CR**	B2ab(iii)	PA	MS	Bonito
110	*Dimerostemma apense*	**VU**	B2ab(iii)	PA	MS	Bonito, Corumbá
111	*Dimerostemma bahiensis*	**CR**	B2ab(iii)	CE	BA	Cocos
112	*Dimerostemma bishopii*	**CR**	B2ab(iii)	CE	GO	Nova Roma
113	*Dimerostemma episcopale*	**CR**	B2ab(iii)	CE	BA	Rio de Contas
114	*Dimerostemma grazielae*	**VU**	B2ab(iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
115	*Dimerostemma myrtifolium*	**CR**	B2ab(iii)	CE	MS	Coronel Sapucaia, Iguatemi
116	*Dimerostemma pseudosiphioides*	**DD**		CE	MS	Bonito (Porto Murtinho)
117	*Dimerostemma retifolium*	**LC**		CE	GO, MS	Mineiros e Camapuã
118	*Eleutheranthera ruderalis*	**LC**		AM, AF	PE	Recife e Olinda
119	*Eremanthus arboreus*	**LC**		CA	CE	Crato (Chapada do Araripe)
120	*Eremanthus argenteus*	**VU**	B2ab(iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
121	*Eremanthus auriculatus*	**LC**		CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
122	*Eremanthus elaeagnus*	**LC**		CE	MG	Diamantina (Cadeia do Espinhaço), Serro, São Roque de Minas Parque Nacional da Serra da Canastra)
123	*Eremanthus leucodendron*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)
124	*Eremanthus pabstii*	**DD**		CE	GO	Cristalina
125	*Eremanthus seidelii*	**VU**	B2ab(iii)	CE	MG	represa de Furnas
126	*Eremanthus uniflorus*	**DD**		CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
127	*Eremanthus veadeiroensis*	**DD**		CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
128	*Erigeron camposportoi*	**DD**		AF	RJ	Serra dos Órgãos
129	*Erigeron catharinensis*	**DD**		AF	SC	Bom Retiro (Campo dos Padres)
130	*Eupatorium adenolepis*	**LC**		CE	-	-
131	*Eupatorium arrayanum*	**DD**		-	-	-
132	*Eupatorium brunneolum*	**DD**		-	-	-
133	*Eupatorium bulbosum*	**DD**		-	-	-
134	*Eupatorium costatipes*	**VU**	B2ab(iii)	CE	MG	São Roque de Minas (Parque Nacional da Serra da Canastra)
135	*Eupatorium lineatum*	**VU**	B2ab(iii)	CE	MG	São Roque de Minas (Parque Nacional da Serra da Canastra)
136	*Eupatorium meyeri*	**DD**		-	-	-
137	*Eupatorium minasgeraesense*	**DD**		-	-	-
138	*Eupatorium myriocephalum*	**DD**		-	-	-
139	*Eupatorium palmare*	**DD**		-	-	-
140	*Eupatorium parviceps*	**DD**		-	-	-
141	*Eupatorium pedundulosum*	**DD**		-	-	-
142	*Eupatorium perforatum*	**DD**		-	-	-

	Species	CA	Criteria	Domain	UF	Locality
143	*Eupatorium pharcidodes*	**DD**		AM	AM	Barcelos (Serra do Aracá)
144	*Eupatorium porphyrolepis*	**DD**		-	-	-
145	*Eupatorium roupalifolium*	**DD**		AM	RR	Serra do Sol
146	*Eupatorium subserratum*	**DD**		-	-	-
147	*Eupatorium ulei*	**DD**		-	-	-
148	*Eurydochus bracteatus*	**DD**		AM	AM	Serra Pirapuçú
149	*Gardnerina angustata*	**VU**	D2	CE	GO, MG	Arcos e Arraiais
150	*Glossarion bilabiatum*	**DD**		AM	AM	Pico da Neblina
151	*Glossarion rhodanthum*	**DD**		AM	AM	Pico da Neblina
152	*Gochnatia argyrea*	**DD**		PP	PR	Ponta Grossa (Vila Velha)
153	*Gochnatia discolor*	**DD**		CE	-	-
154	*Gochnatia gardneri*	**DD**		CE	-	-
155	*Gochnatia hatschbachii*	**DD**		CE	MG	Santana do Riacho (Serra do Cipó)
156	*Gochnatia haumaniana*	**DD**		CE	MS	Ponta Porã
157	*Gochnatia mollissima*	**DD**		PP	RS	Cachoeira do Sul, Porto Alegre, Santa Maria
158	*Gochnatia orbiculata*	**VU**	D2	CE, PP	PR, RS, SP	Jabaquara, São Paulo; Moóca, São Paulo, São Caetano; Ponta Grossa; Vila Velha; Fazenda Neugebauer, Itapuã, Viamão; Guaíba; Porto Alegre
159	*Gochnatia ramboi*	**DD**		PP	SC, RS	Abelardo Luz, Coronel Bicaco, Palmeira das Missões
160	*Gongylolepis benthamiana*	**DD**		-	-	-
161	*Gongylolepis martiana*	**DD**		AM	AM, RR	Manacapuru e Itapiranga (estrada Manaus – Caracaraí)
162	*Gongylolepis oblanceolata*	**DD**		AM	AM	Barcelos (Serra do Aracá)
163	*Gorceixia decurrens*	**DD**		AF	-	-
164	*Graphistylis argyrotricha*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
165	*Graphistylis cuneifolia*	**DD**		AF	RJ	Rio de Janeiro, Serra dos Órgãos
166	*Graphistylis dichroa*	**DD**		CE	-	-
167	*Graphistylis oreophila*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
168	*Graphistylis serranus*	**DD**		AF	PR	Campina Grande do Sul
169	*Graphistylis toledoi*	**DD**		CE	SP	Serra da Bocaina
170	*Heterocoma albida*	**VU**	B2ab(iii)	CE	MG	Datas, Diamantina, Serro (Cadeia do Espinhaço)
171	*Hieracium stanardii*	**DD**		CE	BA	Rio de Contas (Pico das Almas)
172	*Hoehnephytum almasense*	**VU**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)
173	*Hoehnephytum imbricatum*	**LC**		CE	-	-
174	*Holocheilus monocephalus*	**VU**	B2ab(iii)	PP	RS, SC	campos turfosos situados nos Aparados da Serra Geral. Bom Jardim da Serra, Serra da Rocinha, São José dos Ausentes
175	*Hysterionica nebularis*	**DD**		PP	SC, RS	Serra Geral, Cambará do Sul, Fortaleza
176	*Hysterionica pinnatiloba*	**CR**	B1ab(iii)	AF	RS	São José dos Ausentes e Candelária
177	*Hysterionica pinnatisecta*	**CR**	B2ab(iii)	PP, AF	SC	Lauro Muller (Serra do Rio do Rastro)

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178	*Ianthopappus corymbosus*	**CR**	B2ab(iii)	PP	RS	Arroio Inhanduí (Alegrete), Reserva de Ibirapuitã (Alegrete), Uruguaiana
179	*Ichthyothere connata*	**VU**	B2ab(iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
180	*Ichthyothere elliptica*	**CR**	B2ab(iii)	CE	GO	Cristalina (Serra dos Cristais)
181	*Ichthyothere glabrata*	**DD**		AM	RR	rio Xié, rio Sipapo, Serra dos Surucucus
182	*Ichthyothere matogrossensis*	**DD**		CE	MS	Campo Grande (Lagoa Rica)
183	*Ichthyothere palustris*	**LC**		CE	GO, MT	Chapada dos Guimarães, Alto Paraíso de Goiás (Chapada dos Veadeiros)
184	*Ichthyothere petiolata*	**LC**		AM	RO	Porto Velho e Ariquemes
185	*Inulopsis Phoenix*	**LC**		CE	DF	Brasília
186	*Irwinia coronata*	**LC**		CA	BA	Seabra
187	*Isocarpha megacephala*	**LC**		CA	-	-
188	*Isostigma crithmifolium*	**VU**	D2	PP	RS	Cerro do Jarau, Quaraí
189	*Isostigma scorzonerifolium*	**DD**		CE	MT	Cuiabá
190	*Isostigma simplicifolium*	**DD**		CE	MG	Diamantina
191	*Lasiolaena blanchetii*	**DD**		CE	BA	Jacobina (Serra da Jacobina)
192	*Lasiolaena carvalhoi*	**DD**		CE	BA	Chapada Diamantina
193	*Lasiolaena duartei*	**DD**		CE	BA	Lençois, Piatã
194	*Lasiolaena morii*	**DD**		CE	BA	Rio de Contas (Pico das Almas), Mucugê
195	*Lasiolaena pereirae*	**DD**		CE	BA	entre Palmeiras e Lençois
196	*Lasiolaena santosii*	**DD**		CE	BA	Rio de Contas (Pico das Almas)
197	*Lomatozona artemisaefolia*	**DD**		CE	-	-
198	*Lucilia ferruginea*	**DD**		CE	MG	Caldas
199	*Lychnophora albertinioides*	**DD**		CE	MG	Santo Antônio do Itambé (Pico do Itambé)
200	*Lychnophora bishopii*	**DD**		CE	BA	Rio de Contas, Mucugê
201	*Lychnophora blanchetii*	**VU**	B2ab(iii)	CE	BA	Barra da Estiva (Serra da Jacobina e Morro do Ouro)
202	*Lychnophora brunioides*	**CR**	B2ab(iii)	CE	MG	Santo Antônio do Itambé (Pico do Itambé)
203	*Lychnophora crispa*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas
204	*Lychnophora diamantinana*	**VU**	B2ab(iii)	CE	MG	Diamantina
205	*Lychnophora ericoides*	**VU**	A4d	CE:	GO, MG, SP	Alto Paraíso (Chapada dos Veadeiros), São Roque de Minas (Parque Nacional da Serra da Canastra), Diamantina (Cadeia do Espinhaço), Serra Geral, Fazenda Água Limpa [DF]
206	*Lychnophora granmogolensis*	**LC**		CE	MG	Grão-Mogol (Serra do Grão-Mogol)
207	*Lychnophora harleyi*	**DD**		CE	BA	Lençóis (Serra dos Lençóis)
208	*Lychnophora humillima*	**DD**		CE	MG	Serra da Lapa
209	*Lychnophora markgravii*	**DD**		CE	MG	Grão-Mogol
210	*Lychnophora martiana*	**DD**		CE	MG	Diamantina e Montes Claros
211	*Lychnophora mellobarretoi*	**DD**		CE	MG	Santana do Riacho (Serra do Cipó)
212	*Lychnophora phylicifolia*	**CR**	B2ab(iii)	CE	BA	Serra do Sincorá
213	*Lychnophora regis*	**VU**	B2ab(iii)	CE	BA	Andaraí e Mucugê
214	*Lychnophora santosii*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico das Almas)

	Species	CA	Criteria	Domain	UF	Locality
215	*Lychnophora sericea*	**CR**	B2ab(iii)	CE	BA	Rio de Contas (Pico do Itobira)
216	*Lychnophora souzae*	**CR**	B2ab(iii)	CE	MG	Diamantina
217	*Lychnophora triflora*	**DD**		CE	BA	Rio de Contas (Pico das Almas), Lençóis (Serra dos Lençóis)
218	*Lychnophoriopsis candelabrum*	**DD**		CE	MG	Diamantina (Cadeia do Espinhaço)
219	*Lychnophoriopsis damazioi*	**CR**	B2ab(iii)	CE	MG	Santana do Riacho (Serra do Cipó)
220	*Lychnophoriopsis hatschbachii*	**DD**		CE	MG	Diamantina (Rodovia Conselheiro Mata – Guinda)
221	*Lychnophoriopsis heterotheca*	**DD**		CE	MG	Gouveia (Cadeia do Espinhaço)
222	*Mattfeldanthus mutisioides*	**DD**		AF	BA	Cocos (Rio Itaguari)
223	*Mikania alvimii*	**VU**	B2ab(iii)	CE	BA, MG	Rio de Contas, Grão Mogol
224	*Mikania anethifolia*	**VU**	A4c + C2a(i)	PP	RS	-
225	*Mikania capricorni*	**VU**	A4c + C2a(i)	PP, AF	PR, RS, SC	-
226	*Mikania chlorolepis*	**LC**		AF		-
227	*Mikania citriodora*	**DD**		CE	MG	Grão-Mogol
228	*Mikania clematidifolia*	**LC**		AF	-	-
229	*Mikania decumbens*	**LC**		CE, PP	-	-
230	*Mikania dusenii*	**DD**		PP, AF	-	-
231	*Mikania glabra*	**CR**	B2ab(iii)	CE	MG	Grão-Mogol (Morro Papo da Ema)
232	*Mikania glandulosissima*	**DD**		CE	BA	Mucugê, Abaíra, Palmeiras e Seabra (Chapada Diamantina)
233	*Mikania hartbergii*	**CR**	B2ab(iii)	CE	MG	Grão-Mogol
234	*Mikania hastatocordata*	**DD**		AF	-	-
235	*Mikania jeffreyi*	**DD**		CE	BA	Rio de Contas (Pico das Almas)
236	*Mikania mosenii*	**EN**	B2ab(iii)	CE	MG	São Roque de Minas (Parque Nacional da Serra da Canastra)
237	*Mikania nelsonii*	**DD**		CE	BA	Rio de Contas (Pico das Almas)
238	*Mikania oliveirae*	**DD**		AF	SP	Bragança Paulista
239	*Mikania oreophila*	**DD**		AF	-	-
240	*Mikania pinnatiloba*	**DD**		PP	-	-
241	*Mikania reynoldsii*	**DD**		CE	MG	Grão-Mogol
242	*Mikania ulei*	**LC**		AF	-	-
243	*Mikania variifolia*	**DD**		PP, AF	-	-
244	*Mikania viminea*	**DD**		PP	-	-
245	*Minasia alpestris*	**VU**	B2ab(iii)	CE	MG	Datas, Diamantina, Serro (Cadeia do Espinhaço)
246	*Minasia cabralensis*	**DD**		CE	MG	Joaquim Felício, Várzea da Palma (Serra do Cabral)
247	*Minasia lewinsohnii*	**DD**		CE	MG	Diamantina (Estrada Guinda - São João da Chapada)
248	*Minasia pereirae*	**EN**	B2ab(iii)	CE	MG	Diamantina, Gouveia (Cadeia do Espinhaço)
249	*Monogereion carajensis*	**CR**	B2ab(iii)	AM	PA	Marabá (Serra dos Carajás)
250	*Moquinia kingii*	**DD**		CE	BA	Mucugê e Rio de Contas
251	*Moquinia racemosa*	**DD**		CE	MG	Santana do Riacho (Serra do Cipó), (Morro do Chapéu)

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252	*Neblinaea promontoriorum*	**VU**	D2	AM	AM	Serra da Neblina
253	*Noticastrum hatschbachii*	**VU**	B2ab(iii) + D2	PP	PR, RS	-
254	*Noticastrum malmei*	**VU**	B2ab(iii) + D2	PP	PR, RS	-
255	*Noticastrum psammophilum*	**VU**	B2ab(iii) + D2	PP	PR, RS	-
256	*Onoseris brasiliensis*	**DD**		CE	MT	Rodonópolis (Serra da Petroliva)
257	*Onoseris fraterna*	**DD**		AM	AC	rio Acre
258	*Ophryosporus organensis*	**CR**	B2ab(iii)	AF	RJ	Serra dos Órgãos
259	*Pamphalea bupleurifolia*	**VU**	D2	PP	RS	Reserva Biológica de Ibirapuitã Alegrete; Livramento; Arenal, Santa Maria; Fazenda Santa Cecília, São Gabriel
260	*Pamphalea cardaminifolia*	**LC**		PP	RS	Campos de Palmas, Água Doce; Campo de Capivaras, Bom Jardim da Serra; Caçador; Lajes; Faxinal, Cambará do Sul; Morrinhos, São Francisco de Paula; Fazenda Englert, São Francisco de Paula
261	*Pamphalea maxima*	**VU**	B2ab(ii,iii)	PP	RS, SC	Campos de Palmas, Água Doce , Fazenda Delapieve, Triunfo, Jari, Tupanciretã, Fazenda da Ronda, Vacaria
262	*Pamphalea missionum*	**DD**		PP	RS	Santa Rosa, Rincão de São Lucas, São Borja
263	*Pamphalea ramboi*	**DD**		AF	RS	Cambará do Sul, Taimbesinho, Serra da Pedra, Faxinal e Canela
264	*Pamphalea squarrosa*	**LC**		-	-	-
265	*Paralychnophora atkinsiae*	**CR**	B2ab(iii)	CE	BA	Mucugê (Estrada Mucugê – Andaraí)
266	*Paralychnophora bicolor*	**VU**	B2ab(iii)	CE	MG, BA	Diamantina, Gouveia, Grão-Mogol
267	*Paralychnophora harleyi*	**VU**	B2ab(iii)	CE	BA	Rio de Contas, Mucugê, Lençois, Piatã e Abaíra (Chapada Diamantina)
268	*Paralychnophora patriciana*	**CR**	B2ab(iii)	CE	BA	Abraíra (Chapada Diamantina)
269	*Paralychnophora reflexoauriculata*	**VU**	B2ab(iii)	CE	BA	Jacobina e Morro do Chapéu (Serra do Tombador)
270	*Paralychnophora santosii*	**VU**	B2ab(iii)	CE, AF	BA	Canasvieiras, Barra da Estiva, Abaíra
271	*Perezia catharinensis*	**LC**		PP	SC, RS	Rio dos Bugres, Caçador; Curitibanos; Passo do Socorro, Lages; Augusto Pestana; Osório; Passo do Socorro, Vacaria; Cabanha Branco, Vacaria
272	*Perezia eryngioides*	**EN**	B1ab(i,ii)	PP	SC	Fazenda Campo dos Bugres, Bom Retiro; Painel, Lages
273	*Perezia squarrosa* ssp. *squarrosa*	**CR**	C2a(i) + D	AF	RS	Butiazal, Torres
274	*Piptocarpha barrosoana*	**DD**		AM	MT	Serra do Roncador
275	*Piptocarpha brasiliana*	**DD**		AF	RJ	Tombos, Jacarepaguá
276	*Piptocarpha foliosa*	**DD**		AM	AM	Rio Solimões e Rio Javari
277	*Piptocarpha gustavovalerioana*	**DD**		CE	BA	Encruzilhada, saída para Itambé
278	*Piptocarpha lucida*	**DD**		AF	RJ	Corcovado
279	*Piptocarpha matogrossensis*	**DD**		CE	MT	Barra do Garças e Serra do Roncador
280	*Piptocarpha organensis*	**DD**		AF	RJ	Serra dos Órgãos
281	*Piptocarpha prancei*	**DD**		AM	RR	rio Uraricoeira e Serra dos Surucucus
282	*Piptocarpha ramboi*	**DD**		PP	SC	Pinheiral, Sombrio, Taimbé, Taimbesinho
283	*Piptocarpha rotundifolia* ssp. *Hatschbachii*	**DD**		CE	MS, SC, RO	Bataguaçu, Xavantina, Vilhena
284	*Piptocarpha verticillata*	**DD**		AF	RJ	Rio de Janeiro (Floresta Nacional da Tijuca)

	Species	CA	Criteria	Domain	UF	Locality
285	*Piptocoma schomburgkii*	**DD**		-	-	-
286	*Planaltoa lychnophorioides*	**EN**	B2ab(iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
287	*Porophyllum bahiense*	**EN**	B2ab(iii)	CE	BA	Ibiquara (estrada para Mucugê), Piatã (estrada Piatã – inúbia)
288	*Porophyllum linifolium*	**LC**		PP	RS	Porto Alegre
289	*Porophyllum oppositifolium*	**DD**		PA	-	-
290	*Praxeliopsis mattogrossensis*	**DD**		CE	MT	Campos dos Urupós
291	*Proteopsis argentea*	**VU**	B2ab(iii)	CE	MG	Datas, Diamantina, Serro (Cadeia do Espinhaço)
292	*Pseudogynoxys lobata*	**DD**		AM	MT, RO	Juru; Distrito de Alta Floresta, Costa Marques (estrada Cuiabá-Porto Velho)
293	*Quelchia conferta*	**VU**	B2ab(iii)	AM	RR	Monte Roraima
294	*Radlkoferotoma ramboi*	**DD**		PP	RS	São Leopoldo (Morro da Sapucaia), Pareci Novo (Monte Agudo), Taimbesinho
295	*Richterago angustifolia*	**VU**	B2ab(iii)	CE	MG	Diamantina, Santana do Riacho (Serra do Cipó), (Serra do Cabral)
296	*Richterago arenaria*	**VU**	B2ab(iii)	CE	MG	Diamantina, Santana do Riacho (Serra do Cipó)
297	*Richterago campestris*	**VU**	B2ab(iii)	CE	MG	São Roque de Minas, São Tomé das Letras, Lavras, Ouro Preto, São João Del Rey e Tiradentes
298	*Richterago caulescens*	**CR**	B2ab(iii)	CE	MG	Santana do Riacho (Serra do Cipó)
299	*Richterago conduplicata*	**CR**	B2ab(iii)	CE	MG	Santana do Riacho (Serra do Cipó)
300	*Richterago elegans*	**CR**	B2ab(iii)	CE	MG	Diamantina
301	*Richterago hatschbachii*	**VU**	B2ab(iii)	CE	MG	Diamantina, Santana do Riacho (Serra do Cipó)
302	*Richterago lanata*	**CR**	B2ab(iii)	CE	MG	Santana do Riacho (Serra do Cipó)
303	*Richterago petiolata*	**VU**	D2	CE	GO, MG	Alto Paraíso (Chapada dos Veadeiros), São Roque de Minas (Parque Nacional da Serra da Canastra)
304	*Richterago polyphylla*	**CR**	B2ab(iii)	CE	MG	Diamantina
305	*Richterago riparia*	**VU**	B2ab(iii)	CE	MG	Santana do Riacho (Serra do Cipó), Carmo do Rio Claro, Delfinópolis
306	*Richterago stenophylla*	**CR**	B2ab(ii,iii)	CE	MG	Santana do Riacho (Serra do Cipó)
307	*Richterago suffrutescens*	**CR**	B2ab(ii,iii)	CE	MG	São João Del Rey
308	*Schlechtendalia luzulifolia*	**VU**	A4c	PP	RS	Granja Faxinal, Arroio dos Ratos; Capão do Leão; Ecruzilhada do Sul; Guaíba; Cerro Palomas, Santana do Livramento; Morro da Glória, Porto Alegre; Morro da Polícia, Porto Alegre; Morro Santa Tereza, Porto Alegre; Jardim Botânico, Porto Alegre; Morro do Oss
309	*Senecio almasensis*	**EN**	B2ab(iii)	CE	BA	Rio de Contas e Mucugê
310	*Senecio auritifolius*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
311	*Senecio caparoensis*	**CR**	B2ab(iii)	AF	MG	Serra do Caparaó, Pico do Cristal
312	*Senecio claussenii*	**DD**		CE	MG, MT	Mariana (Serra do Caraça) e Serra do Batatal
313	*Senecio colpodes*	**LC**		CE	MG	Itacolomi, Serra da Piedade, Santana do Riacho (Serra do Cipó).
314	*Senecio dumetorum*	**DD**		CE	MG	Diamantina
315	*Senecio emiliopsis*	**LC**		CE	-	-
316	*Senecio gertii*	**CR**	B2ab(ii,iii)	CE	MG	Grão - Mongol
317	*Senecio graciellae*	**DD**		CE	ES	Castelo (Forno Grande)
318	*Senecio gynoxoides*	**DD**			MG, RJ	-
319	*Senecio harleyi*	**DD**		CE	BA	Rio de Pires (Garimpo das Almas)
320	*Senecio hatschbachii*	**CR**	B2ab(ii,iii)	CE	MG	Santo Antônio do Itambé (Pico do Itambé)

	Species	CA	Criteria	Domain	UF	Locality
321	*Senecio langei*	**DD**		PP	PR	Pinhais, Vila Velha
322	*Senecio macrotis*	**LC**		CE	MG	Santana do Riacho (Serra do Cipó), Santo Antônio do Itambé (Pico do Itambé), Diamantina
323	*Senecio malacophyllus*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
324	*Senecio nemoralis*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
325	*Senecio promatensis*	**CR**	B2ab(ii,iii)	PP	RS	São Francisco de Paula (Pró-Mata PUCRS)
326	*Senecio ramboanus*	**CR**	B2ab(ii,iii)	PP	RS	Kuntze, Itambezinho
327	*Senecio ramentaceus*	**DD**		AF	RJ	Serra dos Órgãos
328	*Senecio regis*	**DD**		CE	BA	Rio de Contas
329	*Senecio riograndensis*	**VU**	B2ab(ii,iii)	PP	RS	Guaíba, Santa Maria, Tramandaí e Júlio Castilho
330	*Senecio stigophlebius*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
331	*Senecio subnemoralis*	**DD**		PP	SC	Serra Geral.
332	*Simsia dombeyana*	**LC**		CA	-	-
333	*Smallanthus araucariophilus*	**CR**	B1ab(ii,iii)	AF	RS	Ouro Verde, Cambará do Sul
334	*Smallanthus riograndensis*	**VU**	B2ab(ii,iii)	AF	RS	Marcelino Ramos; Serra do Pinto, Aratinga, São Francisco de Paula
335	*Stenachaenium macrocephalum*	**DD**		PP	-	-
336	*Stenocline chionaea i*	**LC**		-	-	-
337	*Stenocline eriodes*	**DD**		-	-	-
338	*Stenocline gardneri*	**LC**		-	-	-
339	*Stenocline heringeri*	**DD**		CE	DF	Distrito Federal
340	*Stenopadus aracaensis*	**VU**	D2	AM	AM	Barcelos (Serra do Aracá)
341	*Stenopadus connellii*	**VU**	D2	AM	RR	Monte Roraima
342	*Stenopadus sericeus*	**VU**	D2	AM	RR	Serra do Sol
343	*Stenopadus talaumifolius*	**VU**	D2	AM	RR	Serra dos Surucucus
344	*Stenophalium almasense*	**CR**	B2ab(ii,iii)	CA	BA	Rio de Contas (Pico das Almas)
345	*Stevia alternifolia*	**EN**	B2ab(ii,iii)	CE	PR	Arapoti e Guarapuava
346	*Stevia camporum*	**VU**	B2ab(ii,iii)	AF	RJ	Serra de Itatiaia
347	*Stevia catharinensis*	**DD**		AF	BA	Jaçoaba
348	*Stevia decussata*	**LC**		CE	MG	Caldas
349	*Stevia hilarii*	**VU**	D2	CE	MG	São Roque de Minas (Parque Nacional da Serra da Canastra)
350	*Stevia hypericifolia*	**DD**		CE	MG	Caldas
351	*Stevia leptophylla*	**CR**	B1ab(ii,iii)	AF	PR	Vila Velha
352	*Stevia organensis*	**CR**	B2ab(ii,iii)	AF	RJ	Serra dos Órgãos
353	*Stevia resinosa*	**DD**		CE, AF	MG, PE	Serra da Piedade
354	*Stifftia axillaris*	**DD**		AF	BA	Una
355	*Stifftia chrysantha* var. *chrysantha*	**DD**		AF	RJ	Rio de Janeiro
356	*Stifftia fruticosa*	**VU**	B1ab(ii,iii)	AF	SP	Caraguatatuba, Ilha Bela, Ubatuba
357	*Stilpnopappus cearensis*	**VU**	D2	CA	CE, PE, RN	Fortaleza, Goiana, També, Açu, Goianinha, Natal
358	*Stilpnopappus rubropappus*	**VU**	B1ab(ii,iii)	CA	BA, PE	Petrolina e Caldeirão Grande
359	*Stilpnopappus semirianus*	**EN**	B1ab(ii,iii)	CA	BA	Morro do Chapéu e Rio de Contas, Chapada Diamantina

	Species	CA	Criteria	Domain	UF	Locality
360	*Stilpnopappus suffruticosus*	**CR**	B2ab(ii,iii)	CE	PI	Oieiras
361	*Stilpnopappus tomentosus*	**VU**	B2ab(ii,iii)	CE	BA	(Chapada Diamantina)
362	*Stylotrichium corymbosum*	**EN**	B2ab(iii)	CE	BA	Entre Lençois e Palmeiras (Chapada Diamantina)
363	*Stylotrichium edmundoi*	**CR**	B2ab(ii,iii)	CA	BA	Rio de Contas (Morro do Chapéu)
364	*Stylotrichium glomeratum*	**EN**	B2ab(ii,iii)	CA	BA	Barra da Estiva (Morro do Ouro)
365	*Stylotrichium rotundifolium*	**LC**		CE	BA	entre Palmeiras e Lençois
366	*Stylotrichium sucrei*	**CR**	B2ab(ii,iii)	CA	BA	Chapada Diamantina (Morro do Chapéu)
367	*Symphyopappus angustifolius*	**LC**		CE	MG	Gouveia (Cadeia do Espinhaço)
368	*Symphyopappus casarettoi*	**EN**	B2ab(ii,iii)	AF	PR, SC	-
369	*Symphyopappus lymansmithii*	**EN**	B2ab(ii,iii)	AF	SP	-
370	*Symphyopappus myricifolius*	**DD**		CE	-	-
371	*Symphyopappus reitzii*	**DD**		AF	RJ	Serra da Lapa
372	*Symphyopappus uncinatus*	**CR**	B2ab(ii,iii)	CE	MG	Diamantina
373	*Trichocline catharinensis* var. *discolor*	**VU**	B2ab(ii,iii)	PP	RS, SC	Morro do Iquererim, Campo Alegre , Morro do Campo Alegre, Garuva , Júlio de Castilhos
374	*Trichocline incana*	**EN**	B2ab(ii,iii)	PP	RS	Quaraí; Rio Grande
375	*Trichocline macrocephala*	**LC**		PP	SC, RS	Abelardo Luz, Campos de Palmas, Água Doce, Fazendo Campo São Vicente, Campo Erê, Campos Novos, Passo do Socorro, Lages, São Joaquim, Passo da Guarda, Bom Jesus, Dom Feliciano, Encruzilhada do Sul, Granja Sodal
376	*Trichocline maxima*	**DD**		PP	-	-
377	*Trichogonia attenuata*	**DD**		CE	MG	Ituiutaba
378	*Trichogonia barrosoana*	**DD**		CE	MG	Diamantina
379	*Trixis calycina*	**DD**		CE	BA	Morro do Chapéu (Serra do Tombador)
380	*Trixis pallida*	**DD**		PP	RS	Caçapava do Sul (Pedra do Segredo); Giruá (Granja Sodal); Livramento (Morro do Vigia); Santo Ângelo (Granja Piratini); Tupanciretã (Jari)
381	*Trixis pruskii*	**VU**	B2ab(ii,iii)	CA	BA	Rio de Contas, Carrapato
382	*Trixis thyrsoidea*	**DD**		PP	RS	Farroupilha
383	*Trixis verbascifolia* ssp. *gigas*	**DD**		AF	RJ	Itatiaia (Serra de Itatiaia)
384	*Trixis verbascifolia* ssp. *verbascifolia*	**DD**		AF	RJ	Serra dos Órgãos, Carangola (Serra do Caparaó)
385	*Verbesina pseudoclaussenii*	**CR**	B2ab(ii,iii)	CE	MG	Grão-Mogol (Trilha da Tropa
386	*Vernonia almasensis*	**CR**	B2ab(ii,iii)	CA	BA	Rio de Contas (Pico das Almas)
387	*Vernonia almedae*	**DD**		CE	DF, MG	Reserva Ecológica do IBGE, Brasília (Chapada da Contagem), Planaltina
388	*Vernonia bradeana*	**DD**		AF	MG	Serra do Caparaó
389	*Vernonia chamissonis*	**CR**	B2ab(ii)	CE	SP	Agudos
390	*Vernonia constricta*	**LC**		-	-	-
391	*Vernonia echinocephala*	**VU**	B2ab(iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
392	*Vernonia eitenii*	**VU**	B1ab(ii,iii)	CE	DF, GO	Alto Paraíso (Chapada dos Veadeiros), (Chapada da Contagem)
393	*Vernonia ganevii*	**DD**		CA	BA	Abaíra (Serra da Bicota e Veio dos Cristais)
394	*Vernonia gertii*	**CR**	B2ab(ii,iii)	PA	MS	Serra da Bodoquena (rodovia Bodoquena a Morraria do Sul)
395	*Vernonia glandulosodentata*	**VU**	B2ab(iii)	CE	MG	Jaboticatubas, Santana do Riacho (Serra do Cipó)
396	*Vernonia goiasensis*	**VU**	B2ab(iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)

	Species	CA	Criteria	Domain	UF	Locality
397	*Vernonia hagei*	**DD**		CA	BA	Rio de Contas e Abaíra
398	*Vernonia hatschbachii*	**LC**		CE	MG	Grão-Mogol (Rio Itacambiruçu)
399	*Vernonia irwinii*	**EN**	B1ab(ii,iii)	CE	DF, MG	Distrito Federal, São Roque de Minas (Parque Nacional da Serra da Canastra)
400	*Vernonia leucodendron*	**LC**		CA	BA	Rio de Contas e Abaíra
401	*Vernonia linearifolia*	**LC**		CE	MG	Diamantina (Cadeia do Espinhaço), São Roque de Minas (Parque Nacional da Serra da Canastra)
402	*Vernonia luetzelburgii*	**CR**	B2ab(ii,iii)	CE	PI	Baixa Grande do Ribeiro, Currais
403	*Vernonia morii*	**DD**		CA	BA	Abaíra e arredores
404	*Vernonia phaeoneura*	**DD**		AF	GO, MG	Monte Verde, Serra da Mantiqueira
405	*Vernonia pseudaurea*	**CR**	B2ab(ii,iii)	CA	BA	Rio de Contas (Pico das Almas)
406	*Vernonia sessilifolia*	**EN**	B2ab(iii)	CE	MG	Jaboticatubas, Santana do Riacho (Serra do Cipó)
407	*Vernonia soderstromii*	**DD**		CE	GO	Fazenda Sucupira, Rio São Bartolomeu e Caiapônia
408	*Vernonia souzae*	**VU**	B2ab(ii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros)
409	*Vernonia subverticillata*	**DD**		CE	BA, PE	Serra de Jacobina e Ribeirão Mestre D´Armas
410	*Vernonia spixiana*	**EN**	B2ab(iii)	CE	MG	Jaboticatubas, Santana do Riacho (Serra do Cipó)
411	*Vernonia xiquexiquensis*	**CR**	B2ab(ii,iii)	CA	BA	Xique-Xique (Rio São Francisco)
412	*Viguiera aspilioides*	**VU**	B2ab(i,ii,iv)	CE	PR	Guaiba, Palmeiras, Colombo, Ponta Grossa, Capão Grande
413	*Viguiera corumbensis*	**EN**	B2ab(i,iii,iv)	CE	MS, MT	Miranda, Corumbá
414	*Viguiera filifolia*	**CR**	B2ab(ii,iii,iv)	CE	GO	Alto Paraíso de Goiás
415	*Viguiera guaranitica*	**CR**	B2ab(ii,iii,iv)	AF	RS	Santana do Livramento
416	*Viguiera hilairei*	**VU**	D2	CE	MG	São Roque de Minas
417	*Viguiera hispida*	**VU**	D2	CE	MG, SP	Ituiutaba, Mogi Guaçu, Itirapina
418	*Viguiera hypoleuca*	**EN**	B2ab(ii,iii,iv)	CE	MT	Buriti, Chapada dos Guimarães, Diamantino, Juciara
419	*Viguiera linearifolia*	**CR**	B2ab(i,ii,iii)	CE	MS	Ponta Porã
420	*Viguiera paranensis*	**CR**	C2a(ii)	AF	PR	Ponta Grossa
421	*Wedelia macedoi*	**VU**	B1ab(ii,iii)	CE	MG	São Roque de Minas (Parque Nacional da Serra da Canastra), Araxá
422	*Wedelia hispidula*	**DD**		CE	MG, GO	Lagoa Santa
423	*Wunderlichia azulensis*	**CR**	B2ab(ii,iii)	CE, AF	ES, MG	Domingos Martins (Pedra Azul)
424	*Wunderlichia bahiensis*	**DD**		CE	BA	(Chapada Diamantina)
425	*Wunderlichia crulsiana*	**VU**	B1ab(ii,iii)	CE	GO	Alto Paraíso de Goiás (Chapada dos Veadeiros), (Serra Dourada) e (Serra dos Pirineus)
426	*Wunderlichia insignis*	**DD**		AF	RJ	Nova Friburgo
427	*Wunderlichia sennaeii*	**CR**	B2ab(ii,iii)	CE	MG	Diamantina