

Brazilian Biodiversity Informatics Infrastructure

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Biodiversity data networks

Establish a network of excellence to

- understand and explain biodiversity
- respond to modern challenges

Overcoming the taxonomic impediment

- Have enough trained taxonomists
- Make taxonomic information available to those who need it

Complexity of biodiversity data, information, & *knowledge* systems

The essence is

- Advanced communication and informatics infrastructure
- Integration (data, information, people ...)
- Assemble virtual collaboration at different scales
- Understand, measure, predict, minimize impacts, restore

Information is the fundamental currency of the
new biology

Data

Species & specimen data: what, where, when

- ❑ Ongoing projects (inventories, monitoring, ...)
- ❑ Biological collections (legacy data)
- ❑ Literature (including legacy taxonomic literature)
- ❑ Checklists, redlists, invasive, ...

Spatial data: satellite images, maps, ...

Social, economic data

Ongoing projects: SinBiota (1999)

Aim: Preserving data that is born digital (Biota-Fapesp Program)

Integrating information generated by researchers involved with the program and relate it to a digital map base

- ❑ Standardized data sheet for inventories (consensus of the scientific community)
- ❑ Use of GPS
- ❑ Centralized database capable of receiving data through the Internet and integrating data from all taxonomic groups
- ❑ Data providers with full control over their data

BIOTA/FAPESP - Ficha Padrão Para Coleta/Registro

Usuário Érica Speglich (erica)
Projeto Desenvolvimento e estruturação de um Sistema de Informação Ambiental para o Programa Biota/Fapesp

Autor da Coleta

Referência Bibliográfica da Coleta

Data da Coleta
Início
Fim

Município , SP

Localidade

Unidade de conservação

Ambiente

Dados adicionais para Ambiente AQUÁTICO:

Temperatura	<input type="text"/>	°C
Condutividade	<input type="text"/>	µS/cm
Oxigênio Dissolvido	<input type="text"/>	mg/l
pH	<input type="text"/>	
Disco de Secchi	<input type="text"/>	m
Turbidez	<input type="text"/>	NTU
Ordem do Rio	<input type="text"/>	

Bacia Hidrográfica

Coordenadas

Latitude

Longitude

OU

UTM X

UTM Y

Zona

Precisão da Coleta

Extensão da Coleta m

Ecosistema

- | | |
|---|---|
| <input type="checkbox"/> Floresta Ombrófila Densa | <input type="checkbox"/> Área c/ influência flúvio-marinha - Mangue (Arbórea) |
| <input type="checkbox"/> Floresta Ombrófila Mista | <input type="checkbox"/> Área c/ influência flúvio-marinha - Marisma |

Habitat/Localização GERAL/Área Ripária

- | | |
|---|--|
| <input type="checkbox"/> Formação alto-montana | <input type="checkbox"/> Pasto |
| <input type="checkbox"/> Formação montana | <input type="checkbox"/> Cultura perene |
| <input type="checkbox"/> Formação sub-montana | <input type="checkbox"/> Cultura anual |
| <input type="checkbox"/> Formação baixo-montana | <input type="checkbox"/> Área de uso intensivo |

Microhabitats/Localização Particular

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> Ambiente de copa | <input type="checkbox"/> Areia grossa |
| <input type="checkbox"/> Serapilheira | <input type="checkbox"/> Cascalho |
| <input type="checkbox"/> Perífiton | <input type="checkbox"/> Arçolla |

Método de Coleta

Descrição do método

Observações Finais

Palavras Chave

Listas de Espécies

Lista de espécies 1

Lista de espécies 2

Lista de espécies 3

Lista de espécies 4

Lista de espécies 5

O campo abaixo possibilita a associação desta ficha de coleta com outra ficha inserida pelo mesmo usuário(login). Isto permite indicar interações ecológicas entre espécies (ex: fitófago, predador, dispersor, etc.).

Espécies Associadas

Atenção: Caso você ainda não tenha publicado seu artigo, dissertação ou tese sobre a sua coleta e tem receio de que os dados sejam copiados por pessoas mal-intencionadas, informe abaixo a data que deseja liberar a lista de espécies para o público. Suas listas de espécies **não** serão mostradas antes desta data.

Data de Liberação



Sinbiota Biota **Busca**

Buscar coletas nas quais

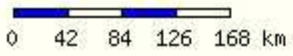
autor contém

Marque nas linhas abaixo as opções que deseja plotar

Giselda Durigan

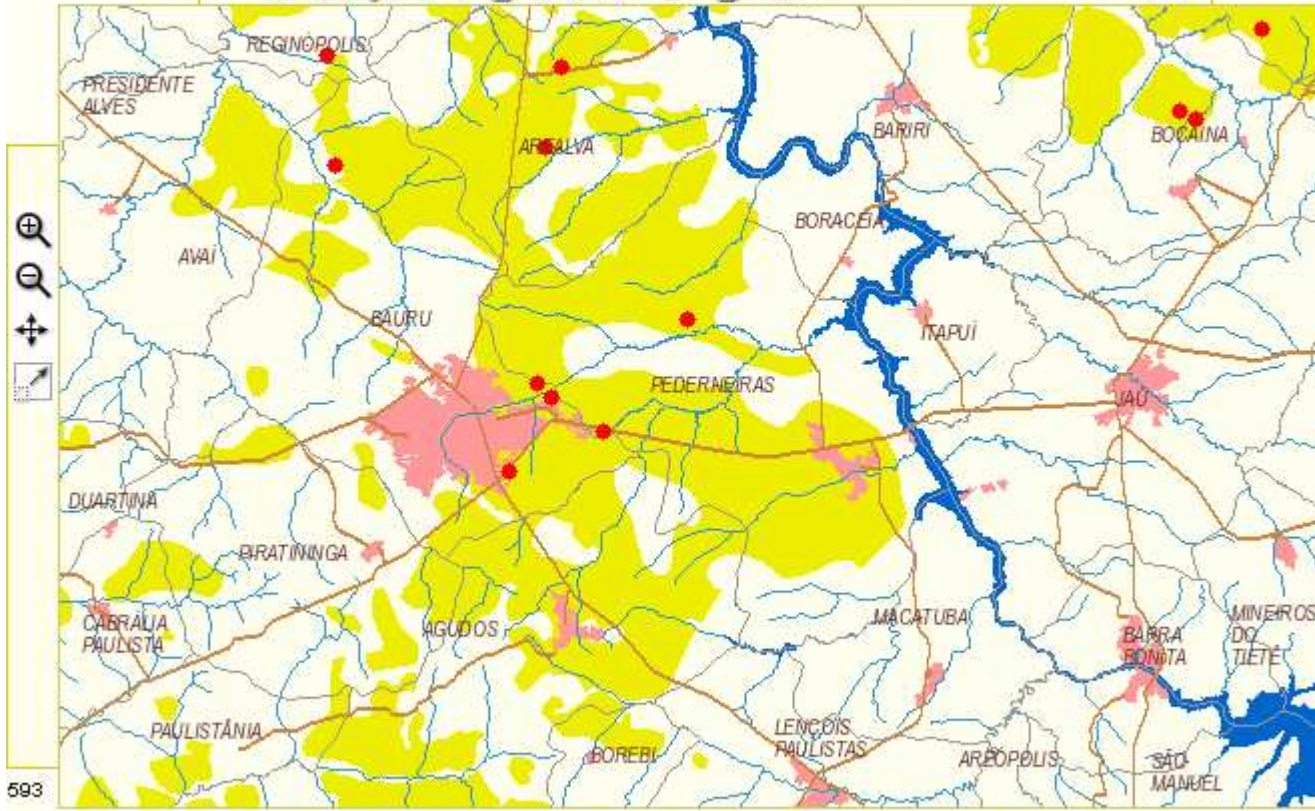
Etiquetar pontos no mapa

591





en

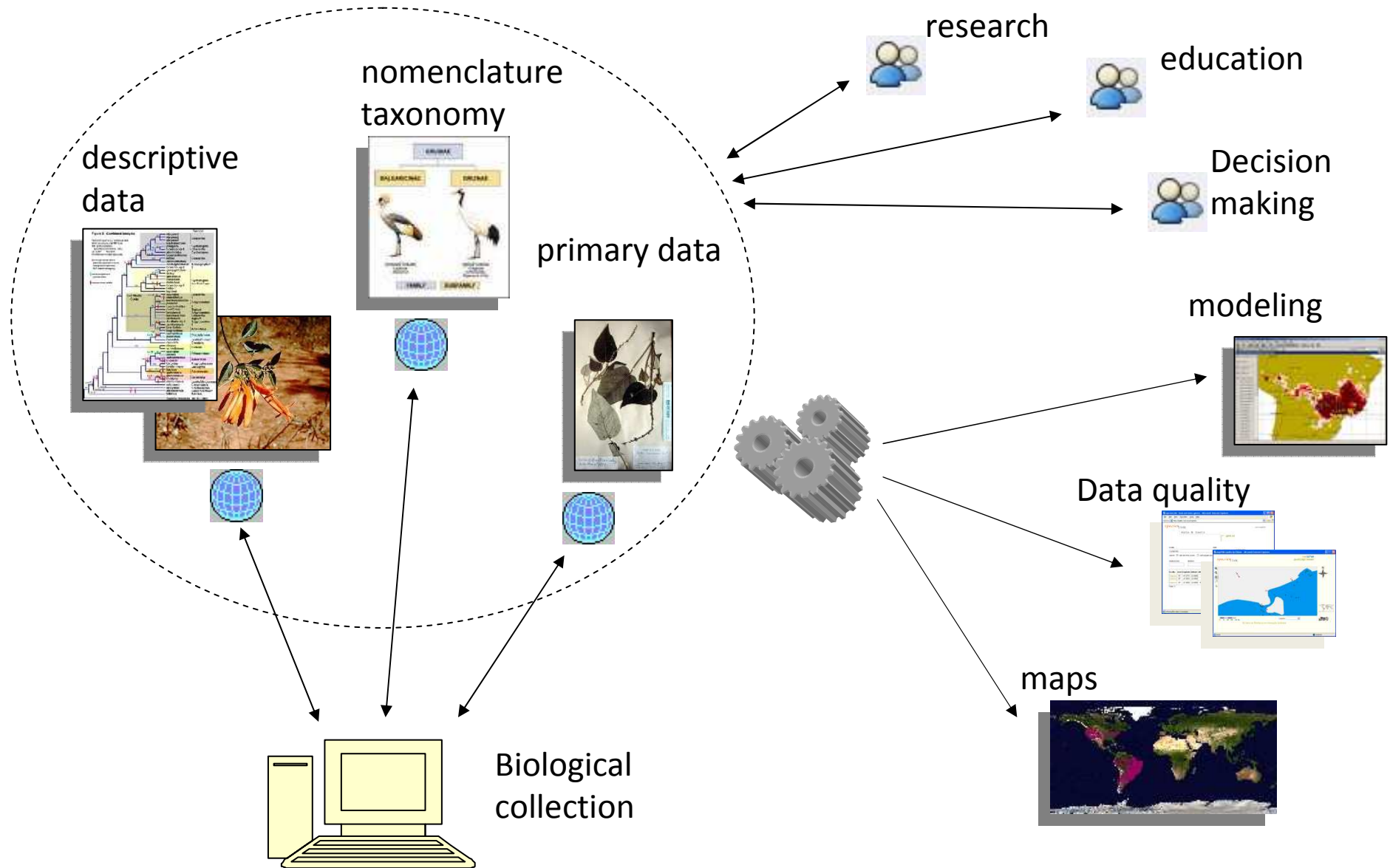


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- Biota - Unidades de conservação do IF**
- Nomes das UCs
- Biota - Área Urbana**
- Biota - Represa**
- Biota - Hidrografia**
- Nomes dos Rios
- Biota - Rodovia**
- Siglas das Rodovias
- Nomes das Rodovias
- Biota - Divisa Municipal**
- Nomes dos municípios
- Biota - Unidades de gerenciamento de recursos hídricos**
- Nomes das URGRHs
- Biota - Divisa Estadual transparente**
- # grid**
- ▲ Registros do speciesLink no estado de São Paulo**
- ▲ Todas as coletas do SinBiota**
- Giselda Durigan [info](#)**

The speciesLink network – legacy data



português

the project



speciesLink

speciesLink is a distributed information system that integrates primary data from biological collections. The development was funded by **FAPESP**, **GBIF**, **JRS Foundation**, **MCT**, **CNPq**, **FINEP** and **CRIA**.

news



180 collections and sub-collections
3,572,556 on-line records
1,676,869 georeferenced
295,975 different species names
01 feb 2010 - 17:36

indicators



data & tools

<http://splink.cria.org.br>

Data Sharing

Does not depend only on the will to share data

- ❑ It must be planned: adequate resources, expertise, infrastructure
- ❑ Must be organized: data models, controlled vocabulary, communication protocols, ...
- ❑ Must be easy or at least “doable”
- ❑ Must have a compatible data policy: free and open access to non sensitive data

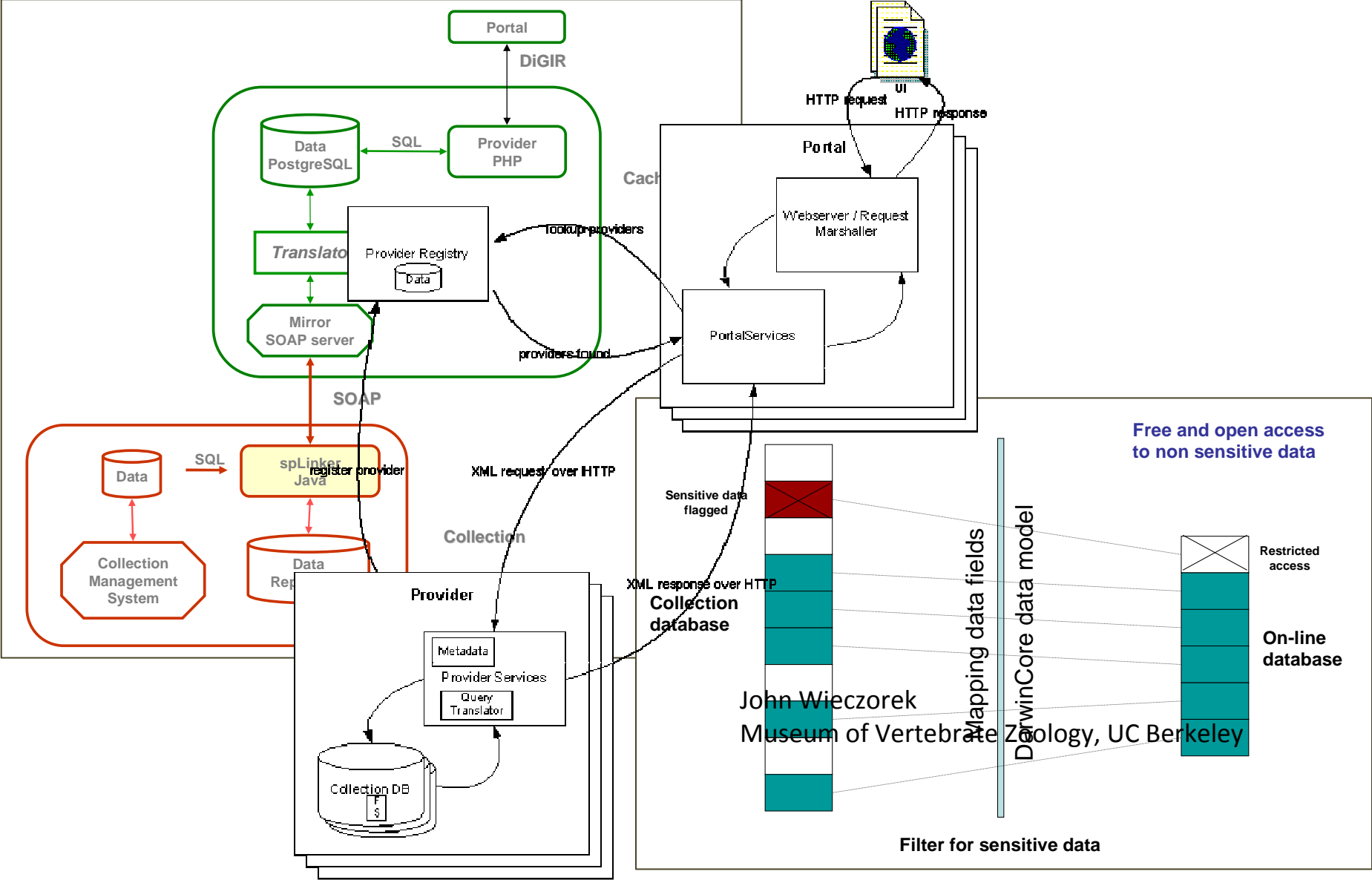
Challenges

- ❑ Integration of primary data from all taxa, from distributed collections, using different software in diverse environments
- ❑ Integrating data from collections with low and/or unstable internet connectivity, using basic hardware and no computer expertise
- ❑ Maintain full control over the data served to the network at the provider's end

Development parameters - architecture

- ❑ Collection's routine must not be altered
 - Practically any software is accepted (Excel, Access, Specify, Biota, Brahms, PostgreSQL, MySQL, ...)
- ❑ Data provider must have full control over the data
 - What is sensitive data, what is open and free
 - Digitization strategy, data cleaning strategy
- ❑ Data provider must be fully acknowledged
- ❑ Connectivity problem must be overcome
- ❑ Network must be interoperable with international initiatives

Network architecture



The development of the speciesLink network

specieslink

data & tools

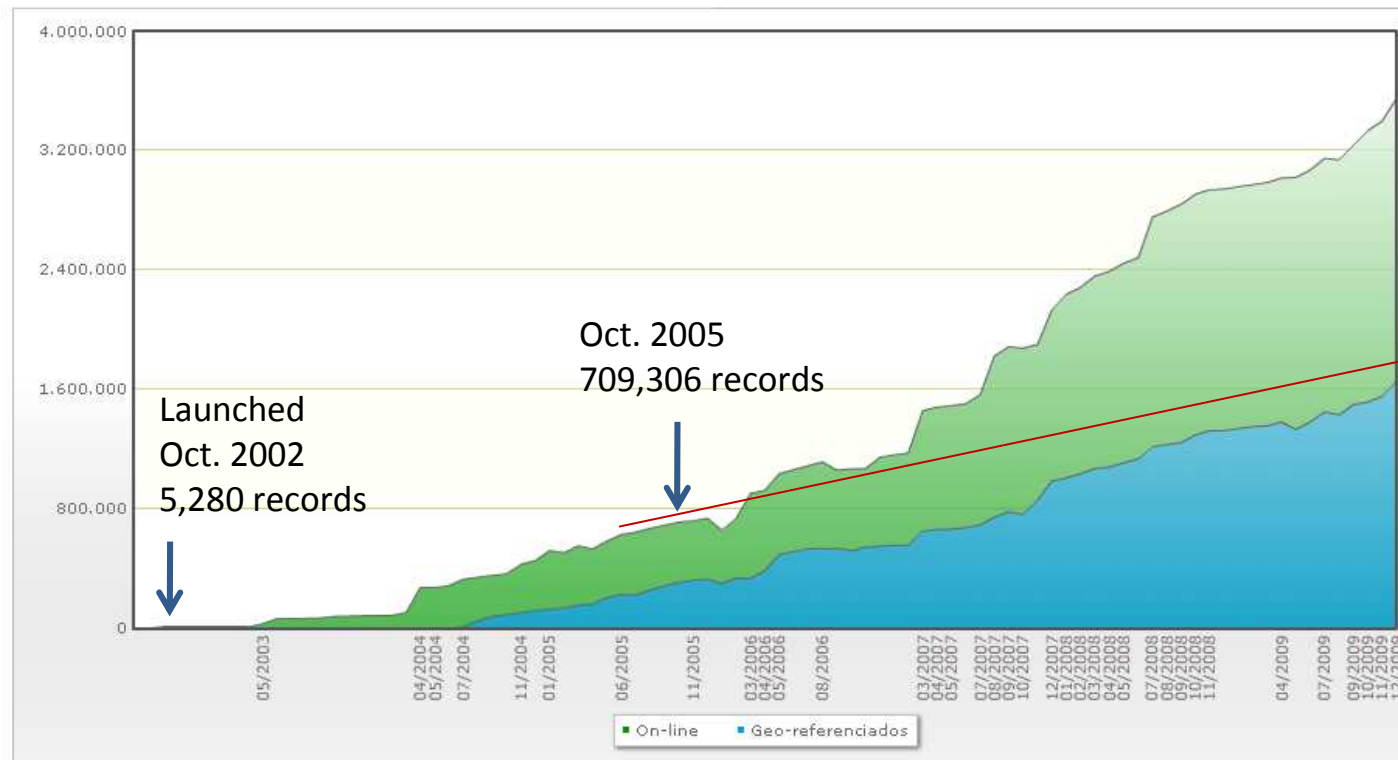
Indicators

português the project

All indicators presented are based on on-line data only. They are dynamic or daily reports presented as charts or graphs. The indicator reflects only the analysis of data that is available on-line so therefore may not reflect the reality of each collection, especially those with a low percentage of digitized data.

[See other options for indicators here](#)

All Networks - All Collections - records



3.5 million

Estimated Growth
1.7 million

What do we have?

Adequate resources, expertise, infrastructure?

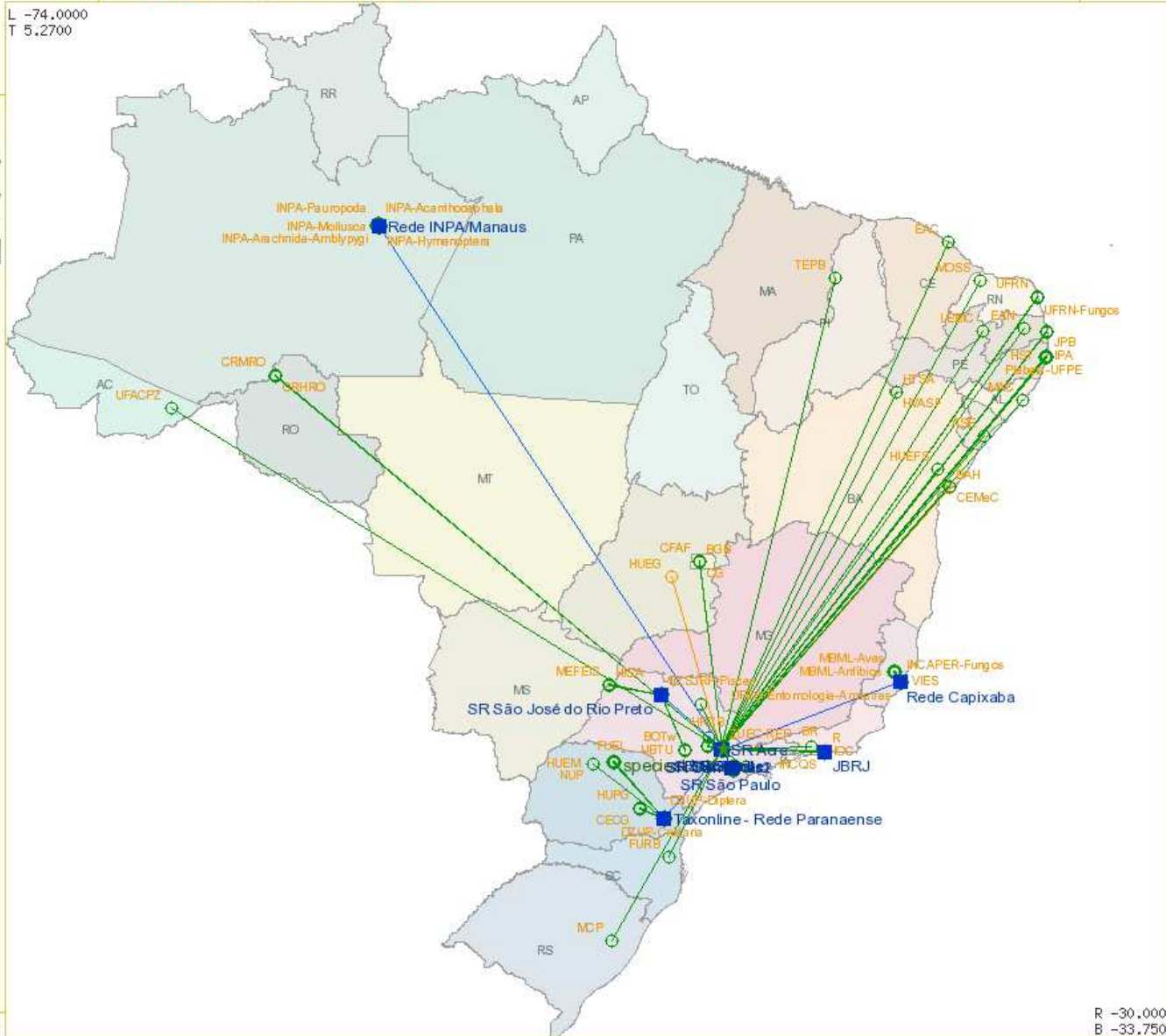
NO

Technology that makes it

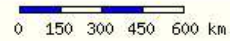
- ❑ easy or doable
- ❑ adds value to data
- ❑ acknowledges data source
- ❑ allows different data policies at source, but only deals with free and open data



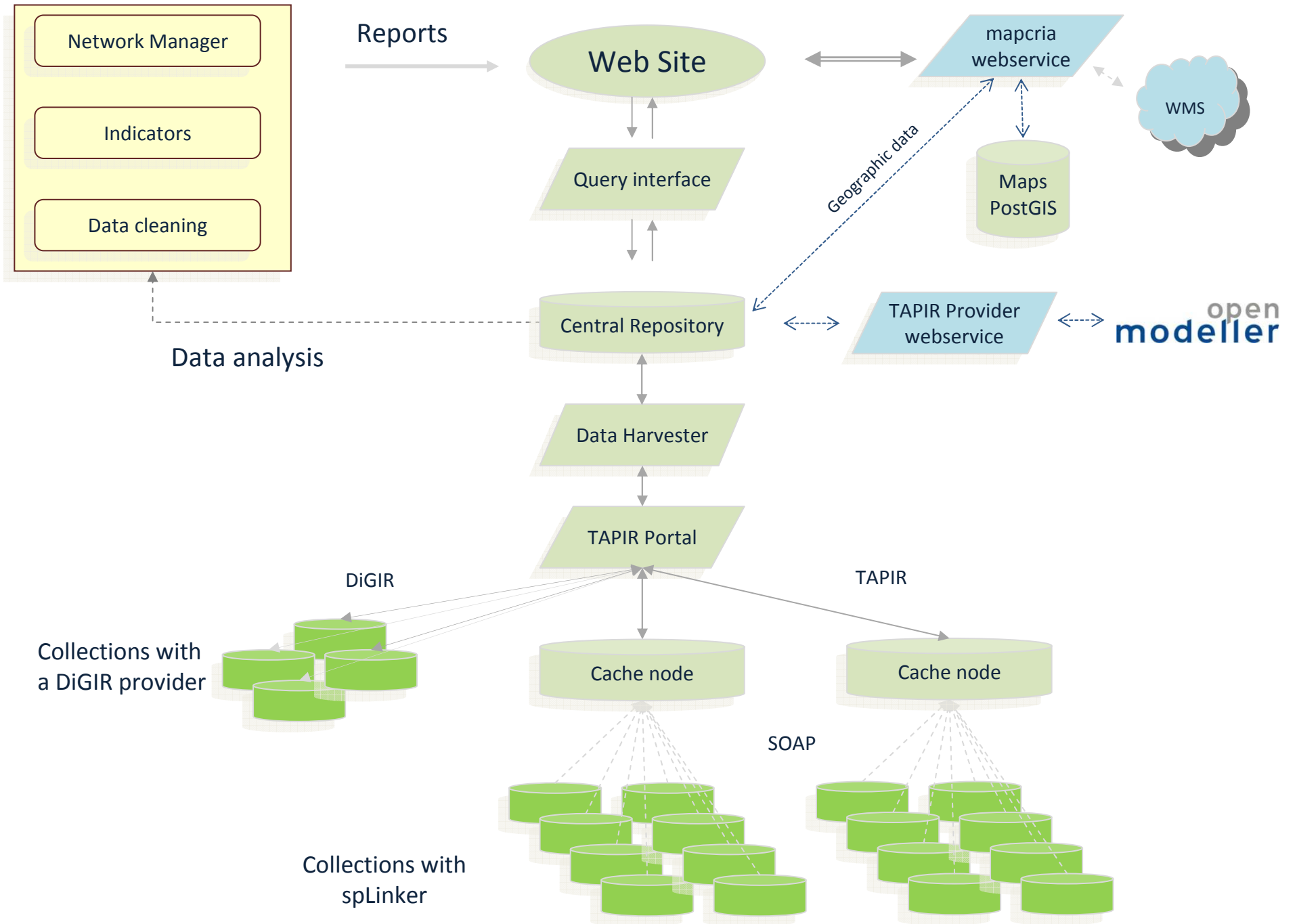
en
L -74.0000
T 5.2700



595



speciesLink architecture



data & tools

tools



search

Query the collections databases using the search engine

subprojects

data cleaning

This tool was developed to facilitate the detection of possible errors and to help collections in the process of standardizing data. (only portuguese version available)

geoLoc

Geo reference your data based on locality descriptions.

infoXY

Get locality information using geographic coordinates.

spOutlier

Detect outliers in latitude, longitude and altitude using techniques modified from Chapman, 1999.

speciesMapper

Plot geo referenced points on a map.

converter

Convert different types of representations of geographic coordinates and datum's.

networkManager

Manager of the metadata of each participating collection of the speciesLink network.

indicators

Dynamic or daily reports are submitted in the form of maps and charts.

openModeller

Open source spatial distribution modelling tool used to predict species distribution.

spLinker

Application that enables biological collections to mirror their data in regional servers integrated to the speciesLink network.

speciesBase

Collection management system developed in Microsoft® Access using Darwin Core 2 data elements.

plant collectors in Brazil

This database aims at offering a standard list of collectors' names which we believe important to taxonomic studies and herbaria digitization projects.



Centralized query

- ❑ Classification system to select data providers
- ❑ Data outputs: files (html, xml, Excel), mapCRIA, Google Maps
- ❑ Data filters: type specimen, georeferencing at source or automatic, inconsistent records
- ❑ Results: presented per collection, integrated with red lists, show geographic inconsistencies, smart links to CRIA's name server and GBIF

Centralized Search

Advanced search

Simple inventory

Advanced inventory

Use the options below to select the collections to be searched

[Uncheck all](#)

Collection type

Plants and Macroscop
All

Collection location

All

Net

All

Data source

Voucher

- ASE - Herbario da Universidade Federal de Sergipe
- BCTw - Xiloteca Calvin Mainieri
- BOTU - Herbario "Irina Delanova Gemtchújnicov"
- BOTw - Xiloteca "Profa. Dra. Maria Aparecida Mourão Brasil"
- CPMA - Coleção de plantas medicinais e aromáticas
- EAC - Herbario Prisco Bezerra
- EAN - Herbario Jaime Coelho de Moraes
- ESA - Herbario da Escola Superior de Agricultura Luiz de Queiroz
- FUEL - Herbario da Universidade Estadual de Londrina
- FURB - Herbario Dr. Roberto Miguel Klein
- HISA - Herbario de Ilha Solteira

Search

Higher taxonomy

Scientific name

Collector

Catalog Number

Locality

County

State





























































Country

Filters (data subsets) - [about](#)

- Type specimen
- Georeferenced at source
- Select "suspect" records
- Automatic georeferencing (municipality level)
- Select "not suspect" records

Result

Result

Source	Records	Georeferenced records			Content	Format		
		At source	Automatic					
ESA	4	2	2	All 	html 	see	 	
FUEL	1	0	1	Locality 	excel 	see	 	
HUMC	1	1	0	Summary 	xml 	see	 	
IAC	5	5	0	All 	html 	see	 	
IPA	1	0	1	All 	html 	see	 	
JBRJ_RB	6	6	0	All 	html 	see	 	
MBM	6	0	6	All 	html 	see	 	
MBML-Herbario	2	2	0	All 	html 	see	 	
MOBOT_BR	5	1	0	All 	html 	see	 	
NYBG_BR	5	1	3	All 	html 	see	 	
SP	22	2	18	All 	html 	see	 	
SPSF	8	1	7	All 	html 	see	 	
UEC	3	2	0	All 	html 	see	 	
UPCB	1	0	1	All 	html 	see	 	
Total	70	23	39	All 	html 	see	 	

ESA - Herbário da Escola Superior de Agricultura Luiz de Queiroz

Escola Superior de Agricultura Luiz de Queiroz, ESALQ

[How to cite](#) e [Use conditions](#)

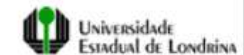


spLink	Institution	Collection	Catalog number	Scientific name	Basis of record	Kingdom	Phylum	Class	Order
	ESALQ	ESA	75352	Campomanesia phaea	S	Plantae	Magnoliophyta	-	-
	ESALQ	ESA	17676	Campomanesia phaea	S	Plantae	Magnoliophyta	-	-
	ESALQ	ESA	13138	Campomanesia phaea	S	Plantae	Magnoliophyta	-	-
	ESALQ	ESA	68271	Campomanesia phaea	S	Plantae	Magnoliophyta	-	-

FUEL - Herbário da Universidade Estadual de Londrina

Universidade Estadual de Londrina, UEL

[How to cite](#) e [Use conditions](#)



spLink	Institution	Collection	Catalog number	Scientific name	Basis of record	Kingdom	Phylum	Class	Order	Fam
	UEL	FUEL	39902	Campomanesia phaea	S	-	-	-	-	Myrt

HUMC - Herbário Mogiense

Universidade de Mogi das Cruzes, UMC

[How to cite](#) e [Use conditions](#)



spLink	Institution	Collection	Catalog number	Scientific name	Basis of record	Kingdom	Phylum	Class	Order	F
	UMC	HUMC	-	Campomanesia phaea	-	-	-	-	-	M



Scientific Name Search

português

[Terms of use](#)



Genus: Species: subspecies: Kingdom:

- Help
- Dictionaries
- Resources at CRIA**
- External Resources

- Flora brasiliensis
- speciesLink**

speciesLink

speciesLink is a distributed information system that integrates primary data from biological collections of the State of São Paulo, Parana's network Taxonline, the SICol network, Rio de Janeiro Botanical Garden Herbarium and observation data from the Biota/Fapesp program, and some collections outside of Brazil. The development was funded by Fapesp (Process 2001/02175-5).

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[See matches](#)

CT

specieslink

1

RTACEAE

[View Printer Friendly](#)



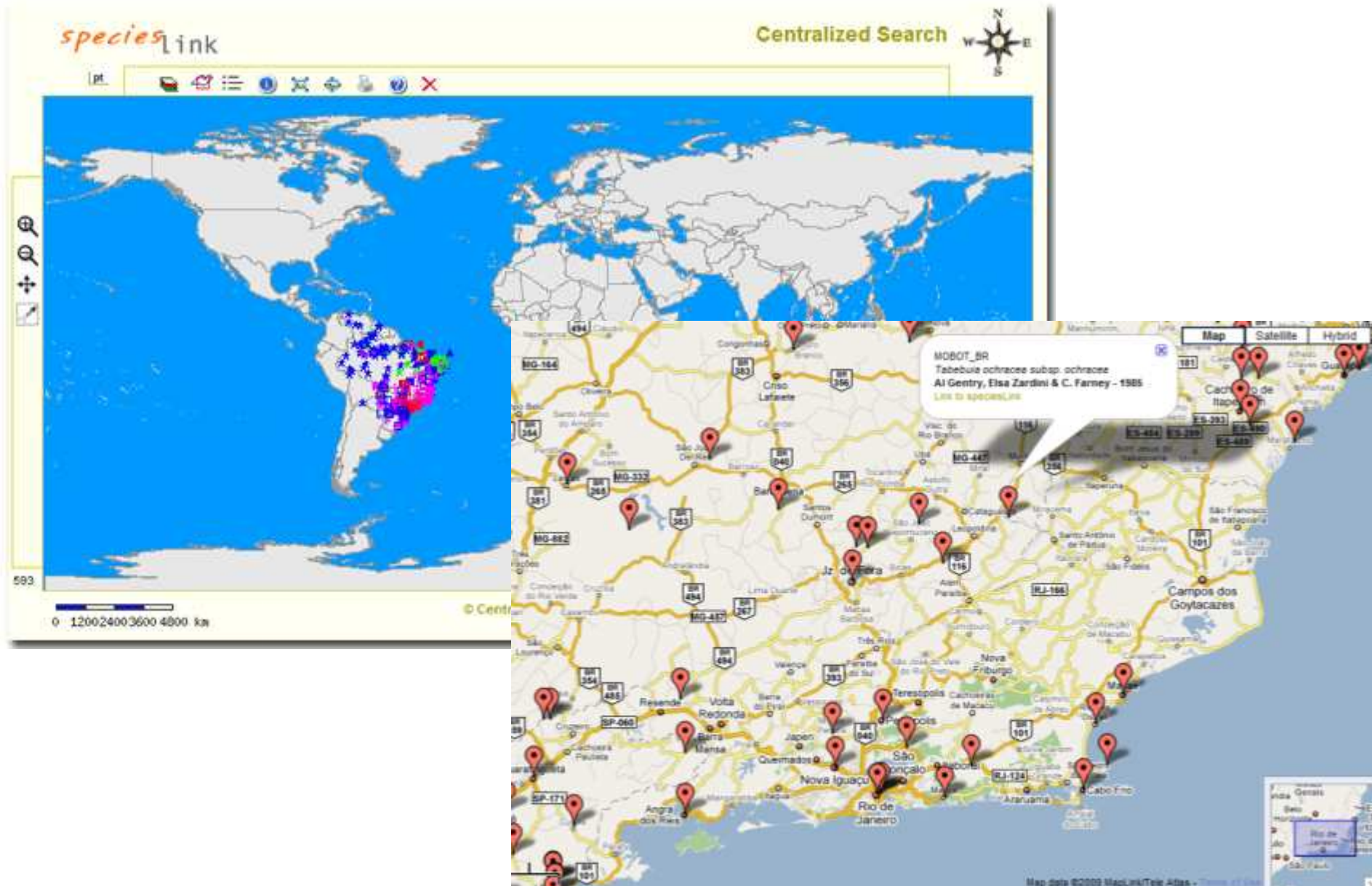
ãos N

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Centralized query: Tabebuia

Result							
Source	Records	Georeferenced records		Content	Format		
		At source	Automatic				
ASE	33	2	27	All	html	see	G
BOTU	4	4	0	All	html	see	G
CPMA	10	8	2	All	html	see	G
EAC	12	2	10	All	html	see	G
ESA	192	12	172	All	html	see	G
FUEL	39	2	32	All	html	see	G
FURB	11	7	4	All	html	see	G
HISA	5	4	1	All	html	see	G
HRCB	11	0	11	All	html	see	G
HST	79	6	54	All	html	see	G
HUMC	24	12	12	All	html	see	G
HUPG	6	0	6	All	html	see	G
IAC	57	51	0	All	html	see	G
INPA-Herbario	295	46	100	All	html	see	G
IPA	17	0	13	All	html	see	G
JBRJ_RB	747	747	0	All	html	see	G
JPB	117	17	91	All	html	see	G
MAC	47	18	27	All	html	see	G
MBM	294	0	214	All	html	see	G
MBML-Herbario	52	43	7	All	html	see	G
MOSS	22	0	20	All	html	see	G
SP	41	2	37	All	html	see	G
SPSF	133	6	119	All	html	see	G
UEC	60	19	39	All	html	see	G
UFRN	13	0	13	All	html	see	G
UPCB	59	2	53	All	html	see	G
VIES	31	0	29	All	html	see	G
Total	2411	1010	1093	All	html	see	G

Centralized query – maps



Centralized query – retrieved record

specieslink

english

dados e ferramentas

Busca Centralizada

MOBOT_BR - Missouri Botanical Garden - Brazilian records

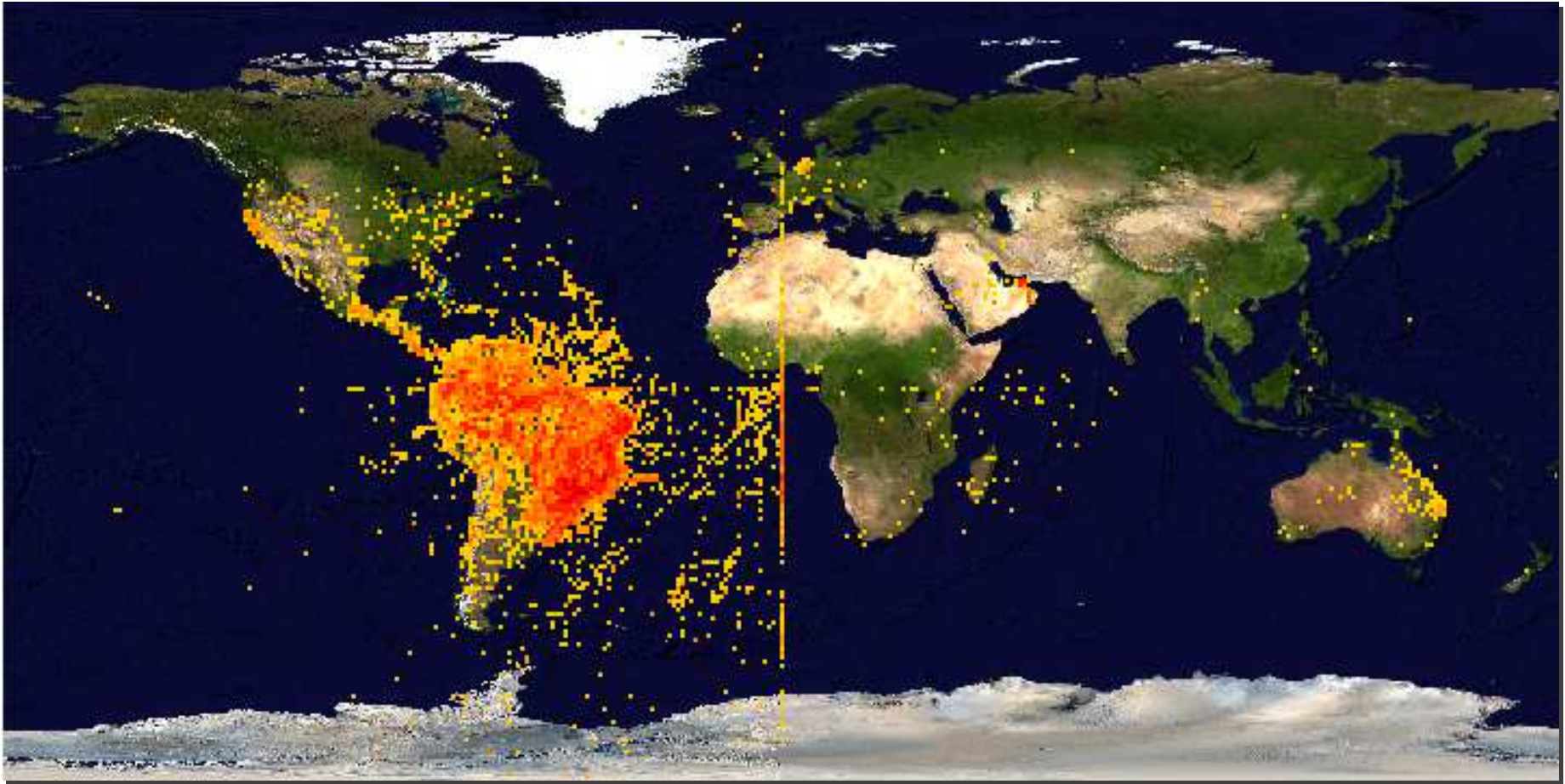
Missouri Botanical Garden, MOBOT

[Como citar e Condições de uso](#)



Instituição	MOBOT
Coleção	MOBOT_BR
Catálogo	483917
Nome científico	Tabebuia ochracea subsp. ochracea <small>sp.</small>
Forma de registro	S
Reino	-
Filo	-
Classe	-
Ordem	-
Família	Bignoniaceae
Gênero	Tabebuia
Espécies	ochracea
Subespécie	subsp. ochracea
Autor do nome científico	-
Identificado por	-
Ano de identificação	-
Mês de identificação	-
Dia de identificação	-
Tipo nomenclatural	-
Número do coletor	-
Número do campo	-
Coletor	Al Gentry, Elsa Zardini & C. Farney
Ano da coleta	1985
Mês da coleta	01
Dia da coleta	18
Horário	-
Continente ou oceano	America
País	Brazil
Estado	Minas Gerais
Município	-
Localidade	34 km NW of Leopoldina on road to Muriaé, dry deforested hillsides in Paraiba Valley.
Longitude	-42.45
Latitude	-21.42

Data Cleaning is a process !



collection: **NYBG_BR**

total number of records on-line	241281
- without coordinates	142083
- georeferenced	99198
- access to georeferenced data denied	0
- in the sea	1995

repeated records

catalog number	30
all fields	2
collector's name and number	30348

last update

of the collection	11-09-2009
of data cleaning	24-09-2009

taxonomic data

inventory	scientific name - collector - types
family	not found
genus	244 suspect records ←
species	484 suspect records
subspecies	not found
author	4194 suspect records
duplicate	1491 suspect records ←

date collected

collect before 1767	15 suspect records
last update previous to date collected	1 suspect records

geographic distribution of the specimens




collection profile
data cleaning statistics
geographic coordinates analysis

locality data

inventory	country - state - municipality
name of the country/state	419 suspect records
outlier	not found
long/lat outside the world limit	not found
equal long/lat	not found
long or lat equal to zero	33 suspect records
long/lat in the sea (Brazil)	71 suspect records
municipality name (Brazil)	21305 suspect records
coordinate unit analysis (Brazil)	459 suspect records

suggestions for blank fields

long/lat (Brazil)	84090 suggestions 
country/state name	52 suggestions
municipality name (Brazil)	22360 suggestions



collection: NYBG_BR

Suspect genus names

List of records that have the same family name with a phonetic variation of the genus

Title: The names in red are not included in the dictionaries available, those in green are.

family	genus	species	subspecies	records	speciesLink	status CoL	catalog number
[Rhamnaceae]	<i>SP</i> [Zyziphus]	[joazeiro]	[]	0	1		
[Rhamnaceae]	<i>SP</i> [Zyzyphus]	[joazeiro]	[]	0	3		
[Rhamnaceae]	<i>SP</i> [Ziziphus]	[joazeiro]	[]	30	see	331	
[Rhamnaceae]	<i>SP</i> [Zizyphus]	[joazeiro]	[]	1	see	24	1034302
[Rubiaceae]	<i>SP</i> [Emmeorhiza]	[umbelata]	[]	0	1		
[Rubiaceae]	<i>SP</i> [Emmeorrhiza]	[umbellatta]	[]	0	2		
[Rubiaceae]	<i>SP</i> [Emmeorrhiza]	[umbellata]	[]	0	1		
[Rubiaceae]	<i>SP</i> [Emmeorrhiza]	[umbellata]	[]	92	see	109	
[Rubiaceae]	<i>SP</i> [Emmeorhiza]	[umbellata]	[]	17	see	477	accepted name
[Euphorbiaceae]	[]	[hieronyma]	[]	0	1		
[Euphorbiaceae]	<i>SP</i> [Hieronyma]	[]	[]	5	see	38	1064903 1064904 1064905 1064906 1064907
[Euphorbiaceae]	<i>SP</i> [Hyeronima]	[]	[]	3	see	24	195423 40920 896135

Checking duplicates

collection: **ESA**

Suspect records are those that have the same collector and collector number, but different names for genus, species, and subspecies. The system is trying to compare data of duplicates deposited in different collections. This tool enables collections to share expert identification data.

Obs: this tool is particularly useful for herbaria

collector number	collector	collectioncode	genus	species	subspecies	identified by	identified date	records	catalog number
09	Kampf, E.	ESA	<i>SP</i> Thevetia	peruviana		Kampf, E.		1	see 5542
09	Kämpf, E.	UEC	<i>SP</i> Thevetia	neriifolia		Simões, A.O.	2004-11	1	see 88041
1	Andrade, D.	ESA	<i>SP</i> Plantago	tomentosa				1	see 16982
1	Andrade, D.	UPCB	<i>SP</i> Plantago	major		Hefler, S.M.	2002-12-22	1	see 46539
1	Atarassi, R.K.	ESA	<i>SP</i> Campomanesia	guazumaefolia		Kawasaki, M.L.		1	see 30797
1	Atarassi, R.K.	MBM	<i>SP</i> Campomanesia	guazumifolia		Kawasaki, M.L.		1	see 235399
1	Augustin, E.	ESA	<i>SP</i> Chorisia	speciosa				1	see 36784
1	Augustin, E.	MBM	<i>SP</i> Ceiba	crispiflora		Gibbs, P.E.		1	see 22808
1	Augustin, E.	MBM	<i>SP</i> Ceiba	insignis		Santos, E.		1	see 180304
1	Bernarde et al.	ESA	<i>SP</i> Zeyheria	montana				1	see 31604
1	Bernarde; et al.	FUEL						1	see 14880
1	Campos, C.J.	ESA	<i>SP</i> Chamaecrista	nictitans			1999-08-24	1	see 69782
1	Campos, C. J.	BOTU	<i>SP</i> Gomphrena	macrocephala		Campos, C.J.		1	see 23410
1	Coelho, L.	ESA	<i>SP</i> Mimosa	spruciana				1	see 68025
1	Coêlho, L	UFACPZ	<i>SP</i> Vismia	sp.				1	see 1
1	Francisco, E.M.	ESA	<i>SP</i> Celtis	iguanaea		Lovato, M.C.		1	see 52533
1	Francisco, E.M.	MBM	<i>SP</i> Paullinia	meliifolia				1	see 241737
1	Galhego, A.A.	ESA	<i>SP</i> Duranta	repens		Rodrigues, R.R.		1	see 5981
1	Galhego, A.A.	SP	<i>SP</i> Myrcia	tomentosa		Kawasaki, M.L.	1994-01-01	1	see 269902
1	Kampf, E.	ESA	<i>SP</i> Carissa	arduina		Ivanauskas, N.M.		1	see 6867
1	Kämpf, E.	UEC	<i>SP</i> Carissa	grandiflora		Souza, V.C.	1992-02	1	see 114275
1	Marques, C.	ESA	<i>SP</i> Cochlospermum	cf. vitifolium		Kirizawa, M.		1	see 16641
1	Marques, C.	MBM	<i>SP</i> Myrcia	richardiana		Sobral, M.		1	see 287542
1	Macedo, M.	ESA	<i>SP</i> Miconia					1	see 60387

collection: **ESA**

total number of records on-line	94179
- without coordinates	77149
- georeferenced	17030
- access to georeferenced data denied	643
- in the sea	2177

repeated records

catalog number	1273
all fields	42
collector's name and number	3394

last update

of the collection	08-11-2007
of data cleaning	07-04-2008

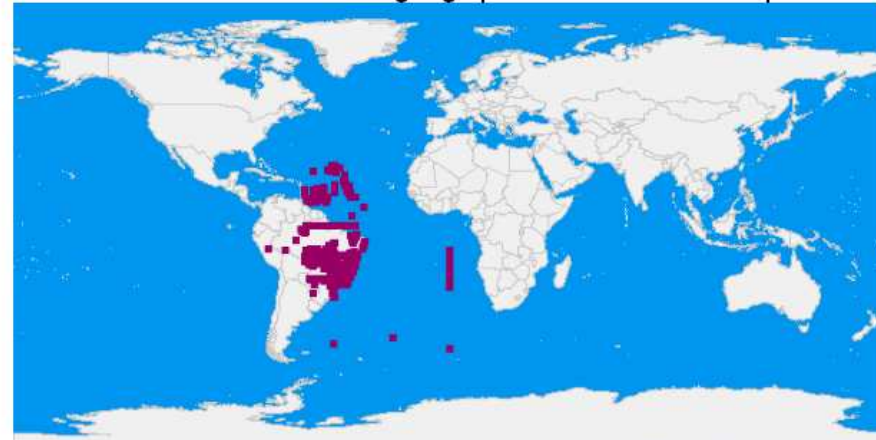
taxonomic data

inventory	scientific name - collector - types
family	3 suspect records
genus	1389 suspect records
species	2769 suspect records
subspecies	not found
author	41477 suspect records
duplicate	1348 suspect records

date collected

collect before 1930	220 suspect records
last update previous to date collected	not found

geographic distribution of the specimens



collection profile
data cleaning statistics
geographic coordinates analysis

locality data

inventory	country - state - municipality
name of the country/state	3 suspect records
outlier	1110 suspect records
long/lat outside the world limit	3 suspect records
equal long/lat	not found
long or lat equal to zero	1498 suspect records
long/lat in the sea (Brazil)	1738 suspect records
municipality name (Brazil)	6128 suspect records
coordinate unit analysis (Brazil)	2770 suspect records

suggestions for blank fields

long/lat (Brazil)	67066 suggestions
country/state name	2 suggestions
municipality name (Brazil)	36 suggestions

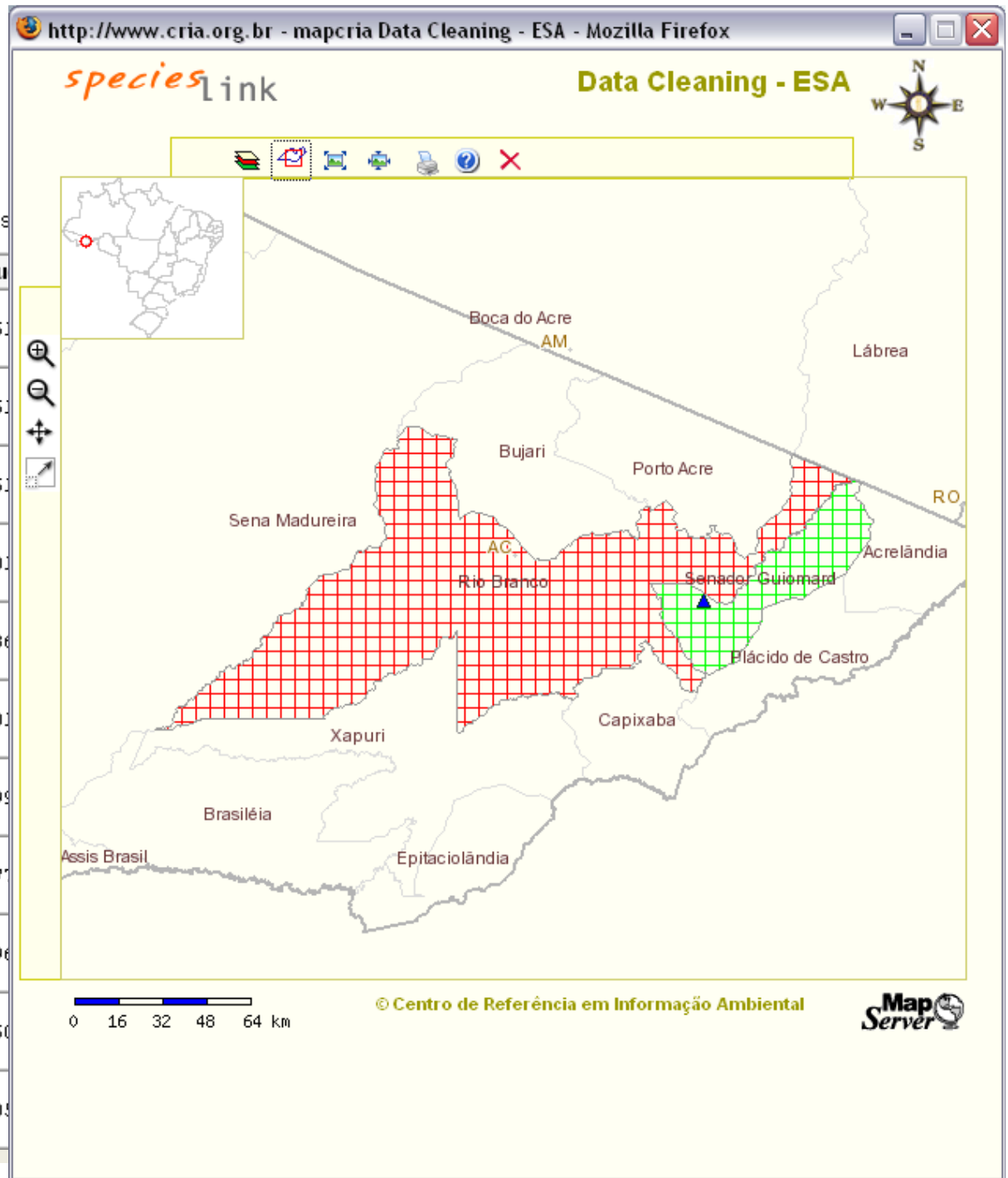


Locality data:
Suspect Municipality name (Br)

collection: **ESA**

Suspect municipality or county - the informed coordinate does

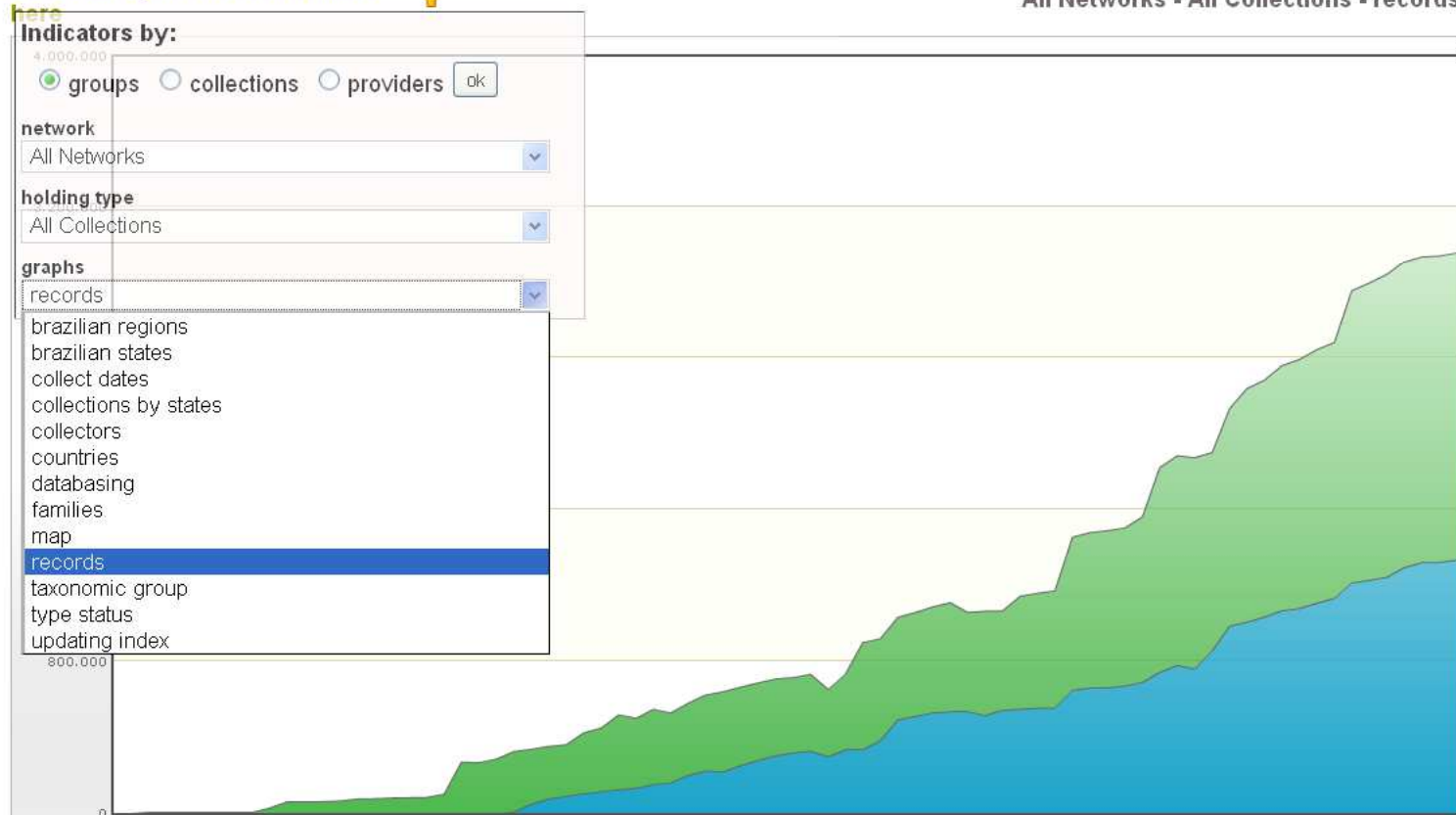
country	state	county	longitu
Brasil	[AC]	[Rio Branco]	-67.63
Brasil	[AC]	[Rio Branco]	-67.63
Brasil	[Acre]	[Rio Branco]	-67.63
Brasil	[AL]	[Pilar]	-36.03
Brasil	[AL]	[União dos Palmares]	-35.86
Brasil	[Alagoas]	[Pilar]	-36.03
Brasil	[AM]	[Manaus]	-47.99
Brasil	[AM]	[Manaus]	-46.77
Brasil	[AM]	[Manaus]	-47.96
Brasil	[AM]	[Manaus]	-59.60
Brasil	[AM]	[Manaus]	-60.03



All indicators presented are based on on-line data only. They are dynamic or daily reports presented as charts or graphs. The indicator reflects only the analysis of data that is available on-line so therefore may not reflect the reality of each collection, especially those with a low percentage of digitized data.

See other options for indicators 

All Networks - All Collections - records

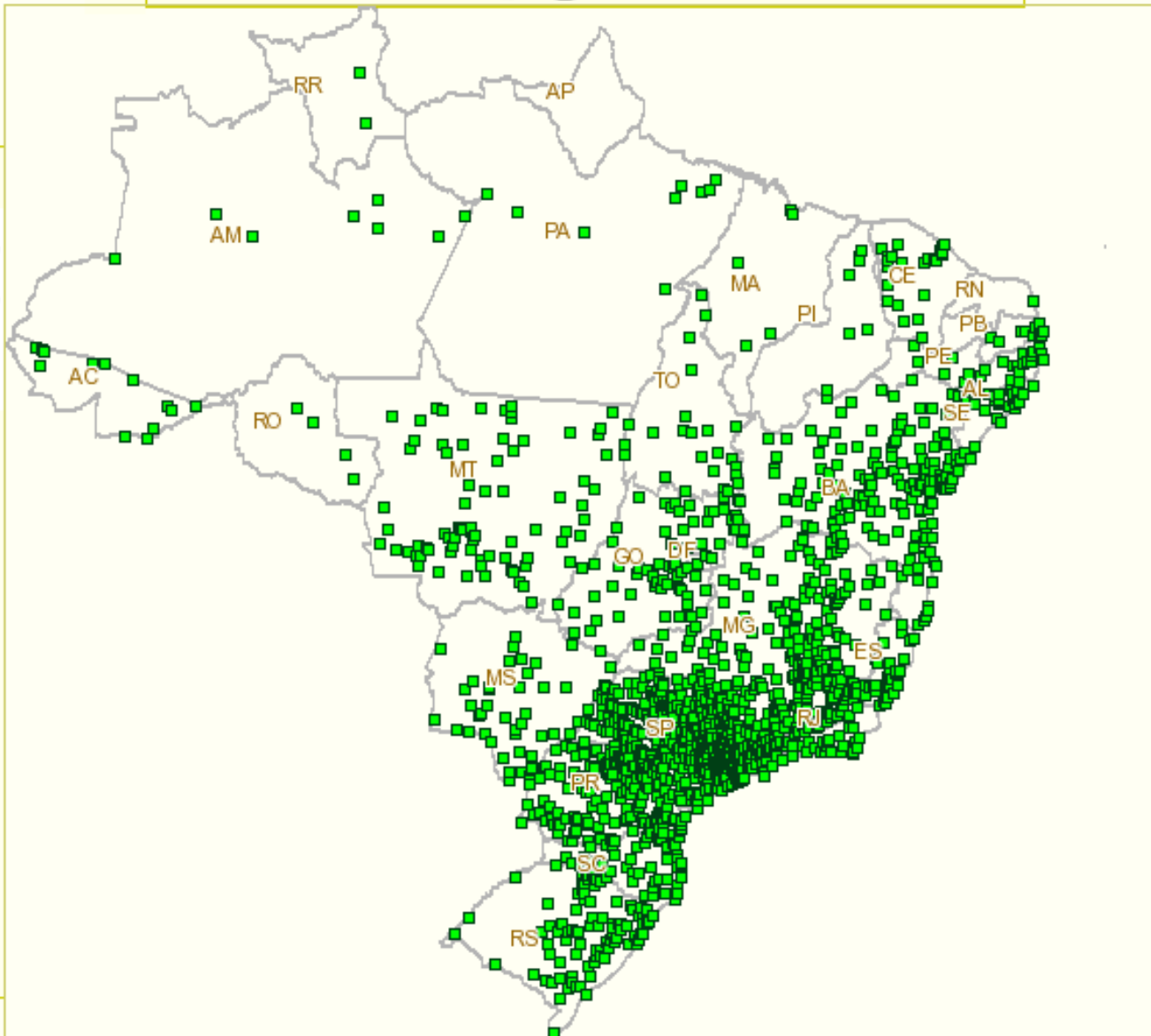
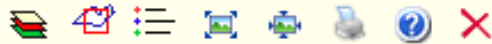


This graph reflects the movement of data (entry and removal) in the network. Monthly averages are presented for both total on-line records and total georeferenced records.



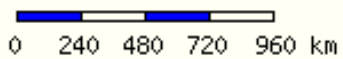


en



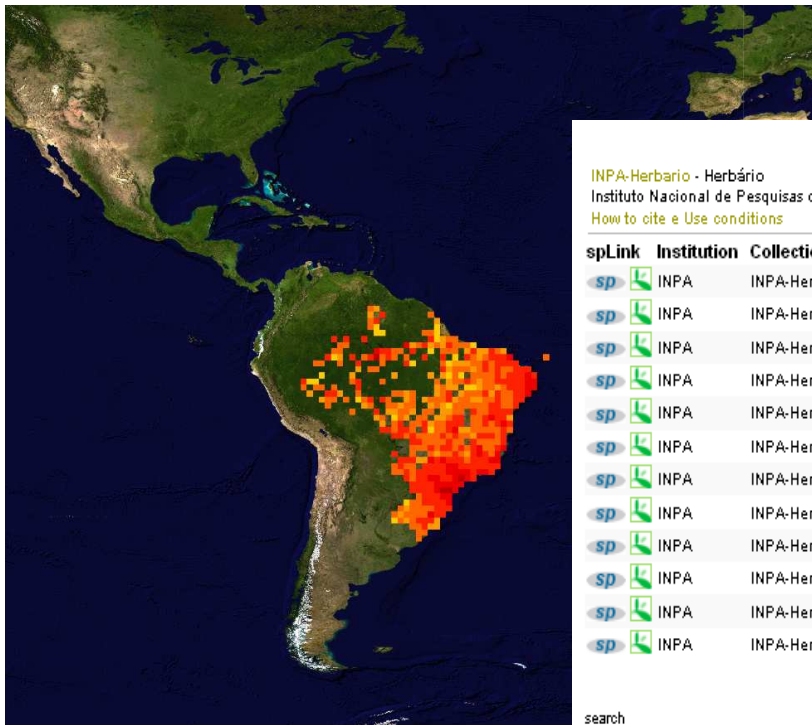
	datum	max error (meters)	records	map
†	SAD69 49901		1 see	
†	SAD69 212961		1 see	
†	SAD69 25000		1 see	
†	SAD69 18354		4 see	
†	SAD69 23900		1 see	
†	SAD69 21359		1 see	
†	SAD69 55628		1 see	
†	SAD69 19971		1 see	
†	SAD69 19648		1 see	
†	SAD69 31264		1 see	
†	SAD69 17990		1 see	
†	SAD69 44778		1 see	
†	SAD69 12676		1 see	
†	SAD69 102608		1 see	

594



Automatic georeferencing

Records of specimens collected in Brazil that do not have geographic coordinates, but have data on state and municipality, are georeferenced at the municipality level. Three new data fields are added: latitude, longitude and maximum error in meters




INPA-Herbario - Herbário
 Instituto Nacional de Pesquisas da Amazônia, INPA
[How to cite e Use conditions](#)



spLink	Institution	Collection	Catalog number	Scientific name	Longitude	Latitude	Coordinate precision	Long county	Lat county	Error max(mt)
sp	INPA	INPA-Herbario	119029	Tabebuia insignis	-	-	-	-	-	-
sp	INPA	INPA-Herbario	142682	Tabebuia insignis	-	-	-	-	-	-
sp	INPA	INPA-Herbario	58109	Tabebuia insignis	-	-	-	-	-	-
sp	INPA	INPA-Herbario	84857	Tabebuia insignis	-	-	-	-	-	-
sp	INPA	INPA-Herbario	84899	Tabebuia insignis	-61.916667	0	-	-	-	-
sp	INPA	INPA-Herbario	199604	Tabebuia insignis var. monophylla	-58.216667	6.5	-	-	-	-
sp	INPA	INPA-Herbario	220791	Tabebuia insignis var. monophylla	-58.283333	6.333333	-	-	-	-
sp	INPA	INPA-Herbario	124689	Tabebuia insignis	-	-	-	-54.2708	-23.9381	19849
sp	INPA	INPA-Herbario	16062	Tabebuia insignis	-	-	-	-56.745	-2.17139	342029
sp	INPA	INPA-Herbario	28389	Tabebuia insignis	-	-	-	-48.5044	-1.45583	48462
sp	INPA	INPA-Herbario	158535	Tabebuia insignis	-	-	-	-52.5817	-1.52333	564800
sp	INPA	INPA-Herbario	16372	Tabebuia insignis var. monophylla	-	-	-	-60.6733	2.81972	90031

search
 indicators
 data cleaning
 networkManager

Discussion List
 Centro de Referência em Informação Ambiental
 Fundação de Amparo à Pesquisa do Estado de São Paulo



Indicators

- ❑ “On the fly” indicators based on online data
- ❑ Dynamic daily reports presented as charts or graphs
- ❑ Only reflects the analysis of data that is available online and may not reflect the reality of each collection or group of collections, especially those with a low percentage of digitized data
- ❑ With the growth of the network (more collections and more digital data) the indicators will support the identification of information gaps (geographic and taxonomic)

Indicators: online x offline records

species link

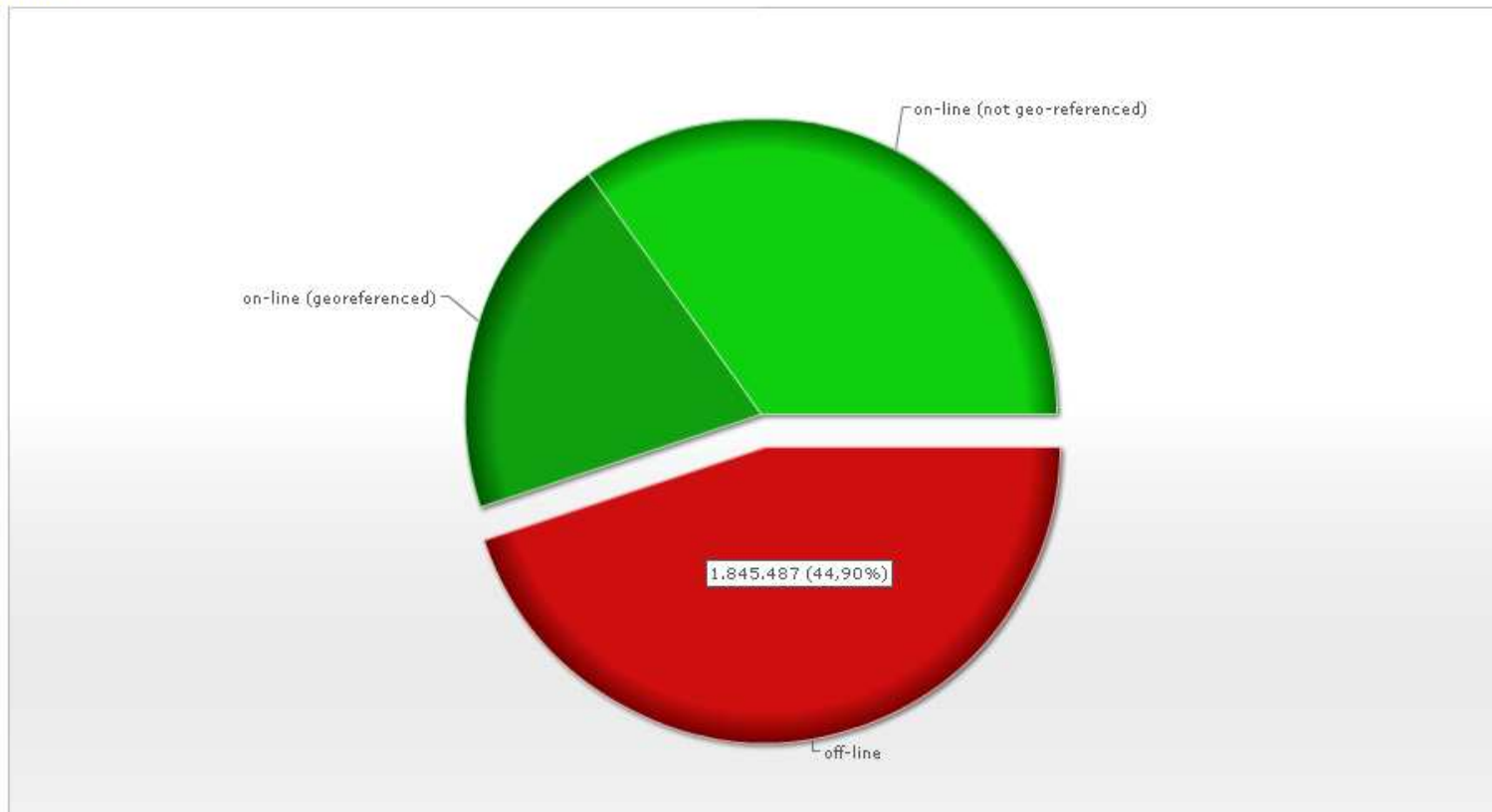
data & tools

Indicators

português
the project

See other options for indicators
here

All Networks - Plants and Macroscopic fungi - databasing

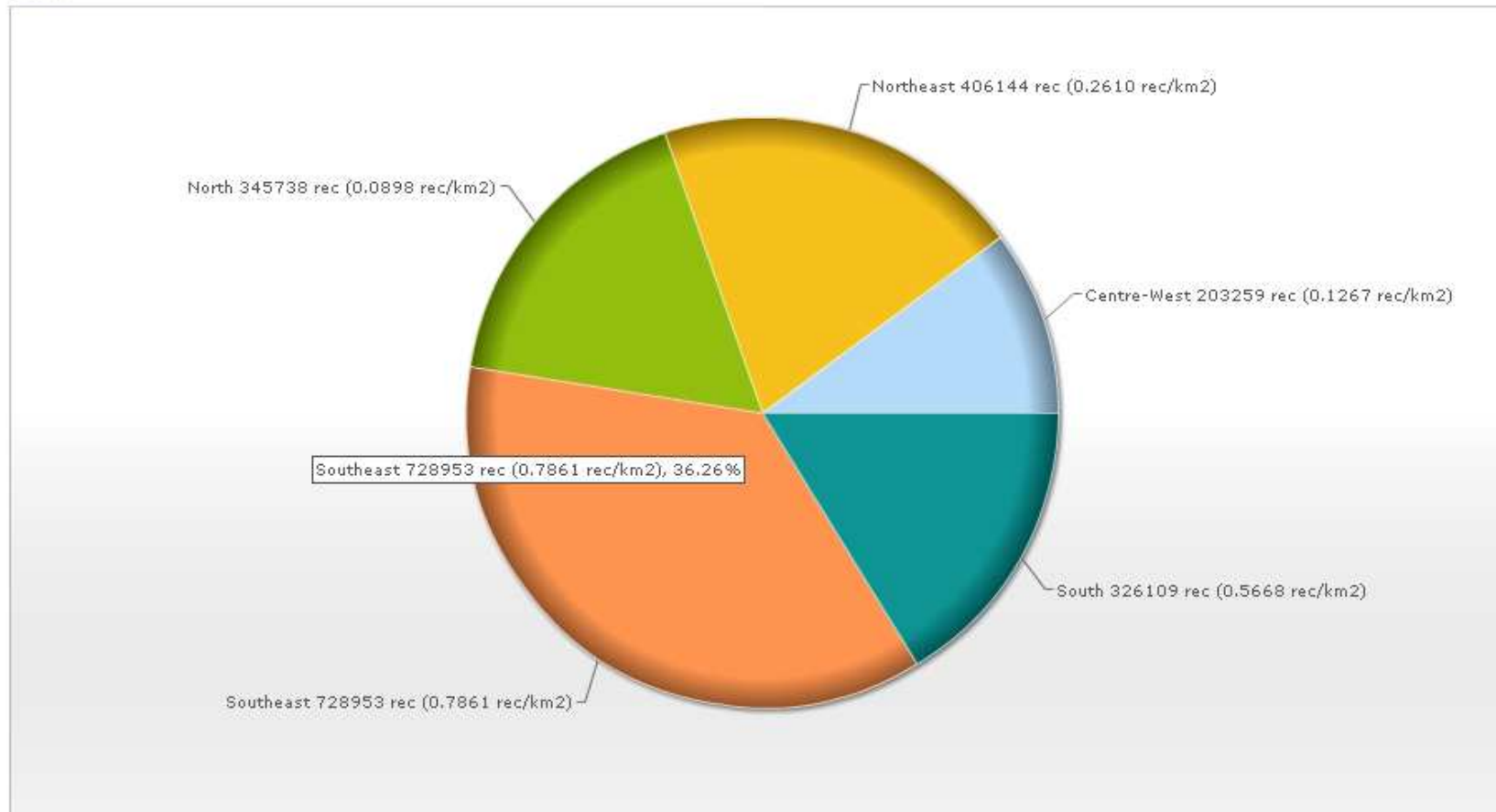


Indicators: records per region, per km2

See other options for indicators here



All Networks - Plants and Macroscopic fungi - brazilian regions

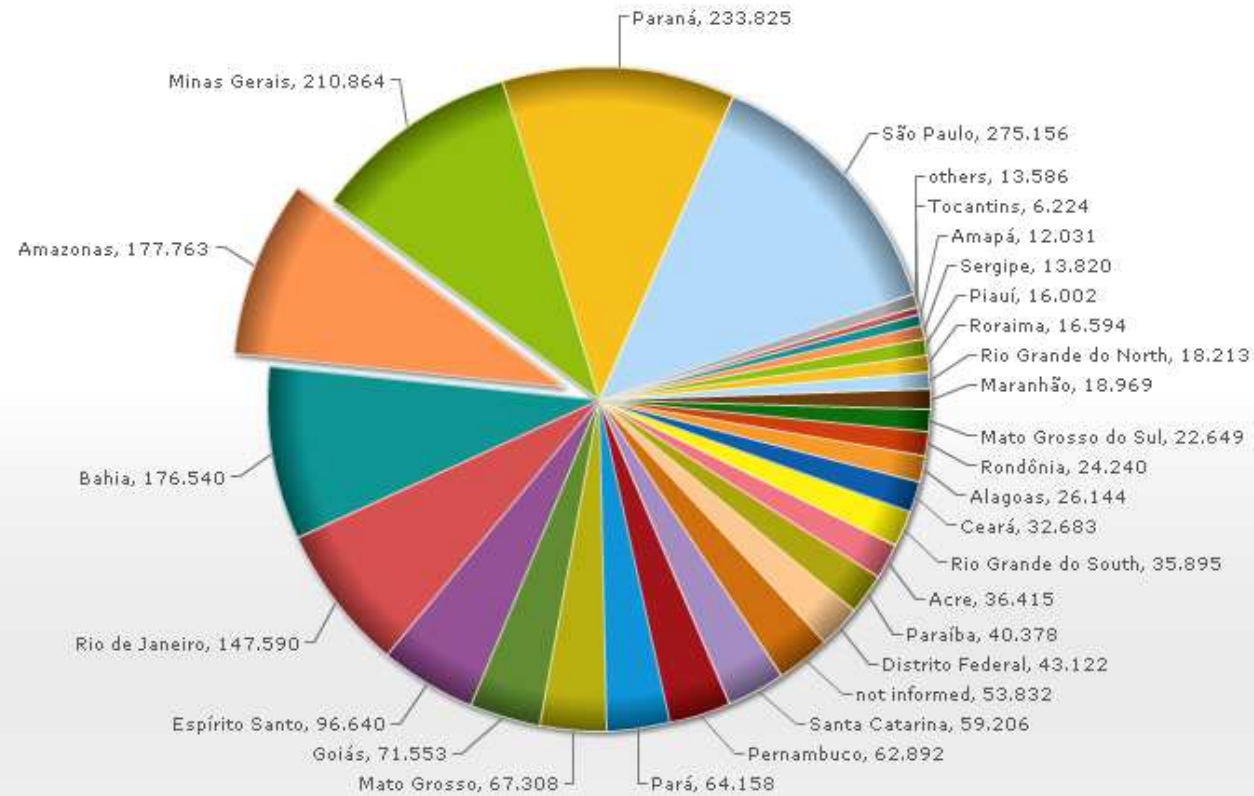


Indicators: records per state

[See other options for indicators here](#)



All Networks - Plants and Macroscopic fungi - brazilian states

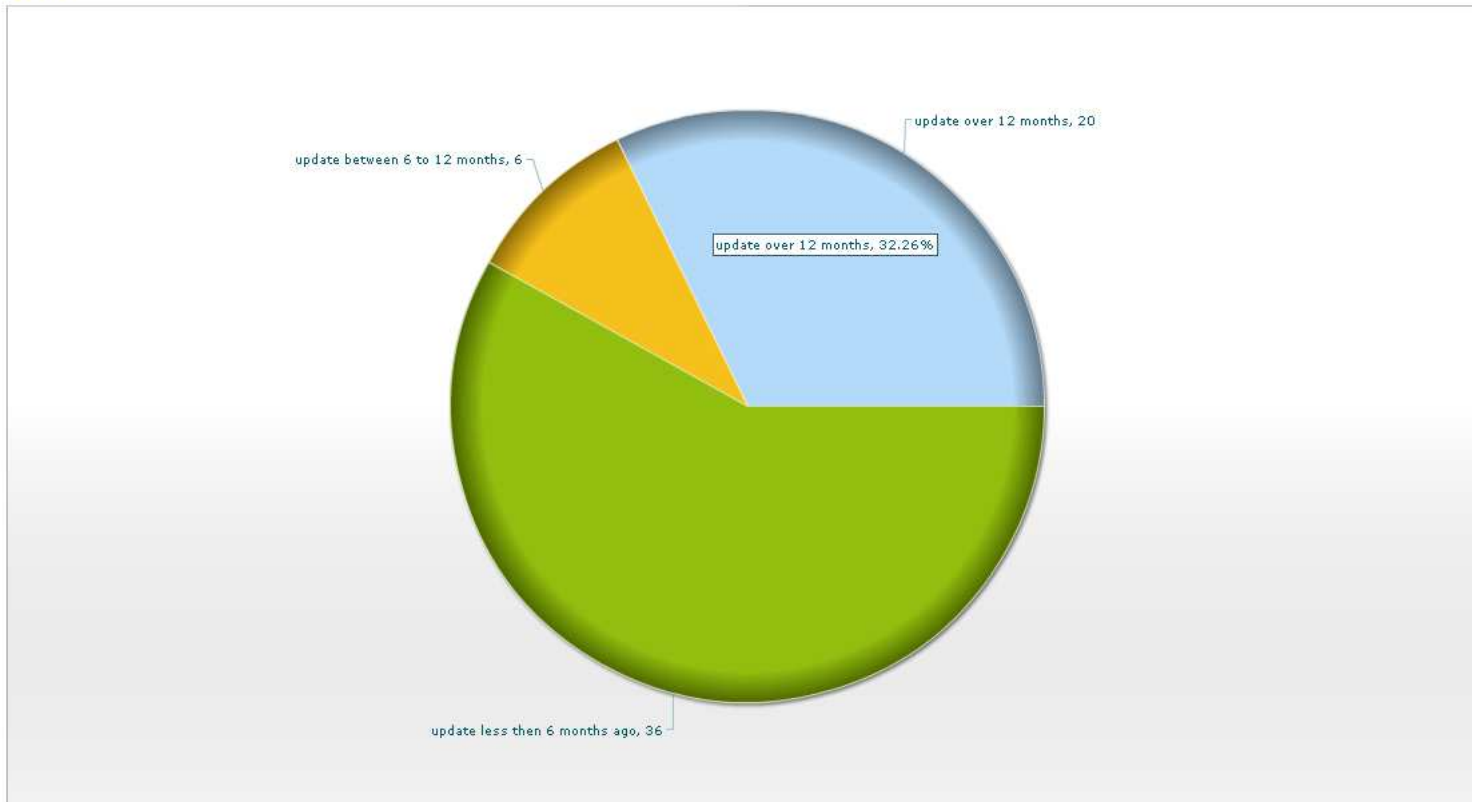


Indicators

See other options for indicators here



All Networks - Plants and Macroscopic fungi - updating index



P

- first
- previous
- next
- last
- slide show
- save PDF
- details



by Eichler, and Ignatz
mostly Brazilian

LISTA DE ESPÉCIES DA FLORA DO BRASIL

Jardim Botânico do Rio de Janeiro, JBRJ
Ministério do Meio Ambiente, MMA



coordenadores | colaboradores | en

consulta

nome

grupo

Fanerógamas

família

Lauraceae

gênero

Cryptocarya

espécie

autor

incluir

nome comum

sinônimos

abrangência geográfica

região

estado

dom. fitogeográficos

só endêmicas

limpar

Lista de Espécies da Flora do Brasil

O Brasil, como país signatário da Convenção sobre a Diversidade Biológica (CDB), assumiu perante a comunidade internacional uma série de compromissos para 2010. Dentre eles, está a elaboração de uma lista das espécies brasileiras formalmente descritas de plantas, animais e microorganismos. Para atingir parte desta meta, o Jardim Botânico do Rio de Janeiro foi designado pelo Ministério do Meio Ambiente para coordenar a elaboração da Lista de Espécies da Flora do Brasil. Além da obrigação política, a produção de uma lista é um velho sonho de toda a comunidade botânica do Brasil.

Para que este sonho seja alcançado, é necessário que todos os taxonomistas que estudam a flora brasileira trabalhem em conjunto dentro de uma grande e única base de dados que não só permitirá a elaboração da lista, mas também poderá, no futuro próximo, agregar muitas outras informações sobre nossa biodiversidade.

Bem vindo ao sistema **Lista de Espécies da Flora do Brasil**.

Coordenação

Rafaela Campostrini Forzza, Jardim Botânico do Rio de Janeiro.

Comitê Organizador

Andrea Costa (Museu Nacional); **Ariane Luna Peixoto** (JBRJ); **Bruno Machado Teles Walter** (CENARGEN); **Daniela Zappi** (KEW); **Eduardo Lleras** (CENARGEN); **Gustavo Martinelli** (JBRJ); **Haroldo Cavalcante de Lima** (JBRJ); **João Renato Stehmann** (UFMG); **José Fernando Baumgratz** (JBRJ); **José Rubens Pirani** (USP); **Lucia G. Lohmann** (USP); **Luciano Paganucci** (UEFS); **Marcos Silveira** (UFAC); **Marcus Nadruz** (JBRJ); **Maria Cândida Mamede** (IBt-SP); **Maria Nazaré C. Bastos** (Museu Goeldi); **Maria Regina Barbosa** (UFPB); **Marli Pires Morim** (JBRJ); **Mike Hopkins** (INPA); **Ricardo Secco** (Museu Goeldi); **Taciana Cavalcanti** (CENARGEN); **Vinicius de Castro Souza** (ESALQ/USP); **Denise Pinheiro da Costa** (JBRJ) (Briófitas); **Lana Sylvestre** (UFRRJ) & **Jefferson Prado** (IBt-SP) (Pteridófitas); **Leonor Costa Maia** (UFPE) & **Aníbal Alves de Carvalho Jr.** (JBRJ) (Fungos); **Mariângela Menezes** (Museu Nacional) & **Carlos Bicudo** (IBt-SP) (Algas).

Sistema de Informação

Sidnei de Souza, **Dora A. L. Canhos**, Centro de Referência em Informação Ambiental, CRIA

Contato

Paula Leitman, Assistente
Email: listadobrasil@jbrj.gov.br

resultado da busca

- Lauraceae* *Cryptocarya* R.Br. 
- Lauraceae* *Cryptocarya aschersoniana* Mez
- Lauraceae* *Cryptocarya botelhensis* P. L. R. Moraes
- Lauraceae* *Cryptocarya citriformis* (Vell.) P. L. R. Moraes
- Lauraceae* *Cryptocarya granulata* Vattimo-Gil
- Lauraceae* *Cryptocarya guianensis* Meisn.
- Lauraceae* *Cryptocarya guyanensis* Meisn.
- Lauraceae* *Cryptocarya longistyla* Mez
- Lauraceae* *Cryptocarya mandiocana* Meisn.
- Lauraceae* *Cryptocarya micrantha* Meisn.
- Lauraceae* *Cryptocarya moschata* Nees et Mart.
- Lauraceae* *Cryptocarya nigropunctata* Vattimo-Gil
- Lauraceae* *Cryptocarya riedeliana* P. L. R. Moraes
- Lauraceae* *Cryptocarya saligna* Mez
- Lauraceae* *Cryptocarya schwackeana* Mez
- Lauraceae* *Cryptocarya sellowiana* P. L. R. Moraes
- Lauraceae* *Cryptocarya subcorymbosa* Mez
- Lauraceae* *Cryptocarya velloziana* P. L. R. Moraes
- Lauraceae* *Cryptocarya wiedensis* P. L. R. Moraes

Critério de busca: família: **Lauraceae**, gênero: **Cryptocarya**, incluir sinónimos

FB000143 

Lauraceae

Nome aceito, Nome correto

hierarquia taxonômica

Lauraceae

distribuição

subespontânea, não é endêmica do Brasil

domínios fitogeográficos

Pantanal¹, Amazônia¹, Mata Atlântica¹, Cerrado¹, Caatinga¹

distribuição geográfica

Norte (Acre¹, Amapá¹, Amazonas¹, Pará, Rondônia¹, Roraima¹, Tocantins¹), **Nordeste**¹ (Alagoas¹, Bahia¹, Ceará¹, Maranhão¹, Paraíba¹, Pernambuco¹, Piauí¹, Rio Grande do Norte¹, Sergipe¹), **Centro-Oeste**¹ (Distrito Federal¹, Goiás¹, Mato Grosso¹, Mato Grosso do Sul¹), **Sudeste**¹ (Espírito Santo¹, Minas Gerais¹, Rio de Janeiro¹, São Paulo¹), **Sul**¹ (Paraná¹, Rio Grande do Sul¹, Santa Catarina¹)



¹ Informação inferida dos táxons hierarquicamente subordinados.

sinopse

	aceitos	endemicos	sinonimos
gêneros	24		9
espécies	418	209	111
subespécies	1	0	3
variedades	6	3	4

gêneros

Aiouea Aubl., *Anaueria* Kosterm., *Aniba* Aubl., *Beilschmiedia* Nees, *Caryodaphnopsis* Airy Shaw, *Cassytha* L., *Cinnamomum* Schaeff., *Clinostemon* Kuhl. & A. Samp., *Cryptocarya* R.Br., *Dicypellium* Nees & Mart., *Endlicheria* Nees, *Licaria* Aubl., *Mezilaurus* Taub., *Nectandra* Rol. ex Rottb., *Ocotea* Aubl., *Paraia* Rohwer, H.G.Richt. & van der Werff, *Persea* Mill., *Phoebe* Nees, *Phyllostemonodaphne* Kosterm., *Pleurothyrium* Nees, *Rhodostemonodaphne* Rohwer & Kubitzki, *Sextonia* van der Werff, *Systemonodaphne* Mez, *Urbanodendron* Mez, *Williamodendron* Kubitzki & H.G.Richt.

como citar

Quinet, A., Baitello, J.B., Moraes, P.L.R. de 2010. *Lauraceae* in *Lista de Espécies da Flora do Brasil*. Jardim Botânico do Rio de Janeiro. (<http://checklist.florabrasil.net>). 02-Fev-2010 14:09

search result

Lauraceae Cryptocarya R.Br. 
Lauraceae Cryptocarya aschersoniana Mez
Lauraceae Cryptocarya botelhensis P. L. R. Moraes
Lauraceae Cryptocarya citriformis (Vell.) P. L. R. Moraes
Lauraceae Cryptocarya guianensis Meisn.
Lauraceae Cryptocarya guyanensis Meisn.
Lauraceae Cryptocarya longistyla Mez
Lauraceae Cryptocarya mandioccana Meisn.
Lauraceae Cryptocarya micrantha Meisn.
Lauraceae Cryptocarya moschata Nees et Mart.
Lauraceae Cryptocarya nigropunctata Vattimo-Gil
Lauraceae Cryptocarya riedeliana P. L. R. Moraes
Lauraceae Cryptocarya saligna Mez
Lauraceae Cryptocarya schwackeana Mez
Lauraceae Cryptocarya sellowiana P. L. R. Moraes
Lauraceae Cryptocarya subcorymbosa Mez
Lauraceae Cryptocarya velloziana P. L. R. Moraes
Lauraceae Cryptocarya wiedensis P. L. R. Moraes

Search criteria: family: **Lauraceae**, genus: **Cryptocarya**


FB008408 ***Cryptocarya moschata*** Nees et Mart.

Accepted name, Correct name

taxonomic hierarchy

Lauraceae → *Cryptocarya* R.Br. → *Cryptocarya moschata* Nees et Mart.

voucher

P.L.R. de Moraes 2192 ESA, HRCB, SPSF
 F. Sellow s.n. LE, CGE, E109558, HAL101917, K, K, KIEL, L0246990, L0246991,
 US00811475 

distribution

native, endemic to Brazil

phyto-geographic domains

Mata Atlântica, Cerrado

geographic distribution

Nordeste (Alagoas, Bahia, Pernambuco),
Centro-Oeste (Distrito Federal, Goiás, Mato Grosso), **Sudeste** (Minas Gerais, São Paulo), **Sul** (Paraná)



vernacular names

canela-batalha, sudeste, Portuguese
 louro-precioso, nordeste, Portuguese

reference bibliography

Moraes, P.L.R. de 2007. Taxonomy of *Cryptocarya* species of Brazil. Royal Belgian Institute of Natural Sciences, Brussels. *Abc Taxa* vol. 3, 191 p.

how to cite

Quinet, A., Baitello, J.B., Moraes, P.L.R. de 2010. *Lauraceae* in *Lista de Espécies da Flora do Brasil*. Jardim Botânico do Rio de Janeiro. (<http://checklist.florabrasil.net>). 2010-Feb-02 16:23



Viewer



100.0%

Data Repatriation

speciesLink

data & tools

networkManager



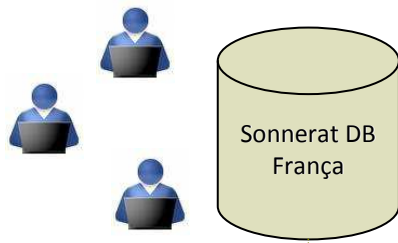
networkManager is a tool used to manage the collections of speciesLink network. In order to obtain more information on each collection, please click on the acronym. It is possible to "filter" the data by typing in keywords such as "plants" or "Ribeirão Preto" in order to view only information about plant collections or about collections locate in the Ribeirão Preto city. See the network [indicators](#).

[Click here to also see collections that are off-line](#)

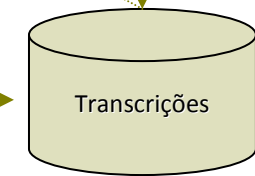
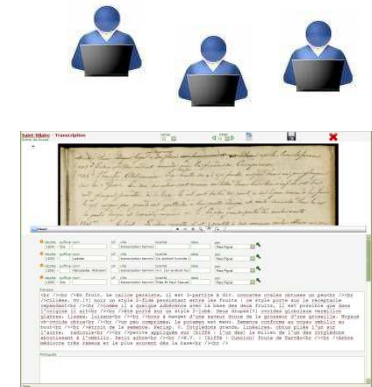
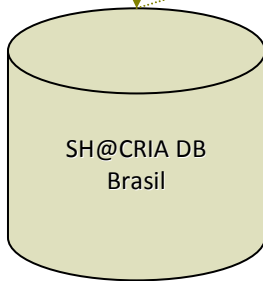
international

acronym * v	county	state	network	software	records **	on-line	%	georef ***	%	auto georef****	update *****
FPR Colombia	Bogotá	Cundinamarca	International	MS-Excel	47.021	47.021	100%	45.121	96%	0	13/02/2008
MOBOT BR	St. Louis	Missouri	International	DiGIR provider	177.874	177.874	100%	44.465	25%	0	22/09/2009
MVZ BR	Berkeley	California	International	DiGIR provider	5.778	5.778	100%	5.132	89%	0	17/04/2008
NMNH Botany BR	Washington	District of Columbia	International	DiGIR provider	37.662	37.662	100%	2.289	6%	4.532	17/10/2009
NYBG BR	Bronx	NY	International	MS-Access	241.281	241.281	100%	98.849	41%	83.998	11/09/2009
5 collections					509.616	509.616	100%	195.856	38%	88.530	

Date of last update: 12/12/2009 16:36



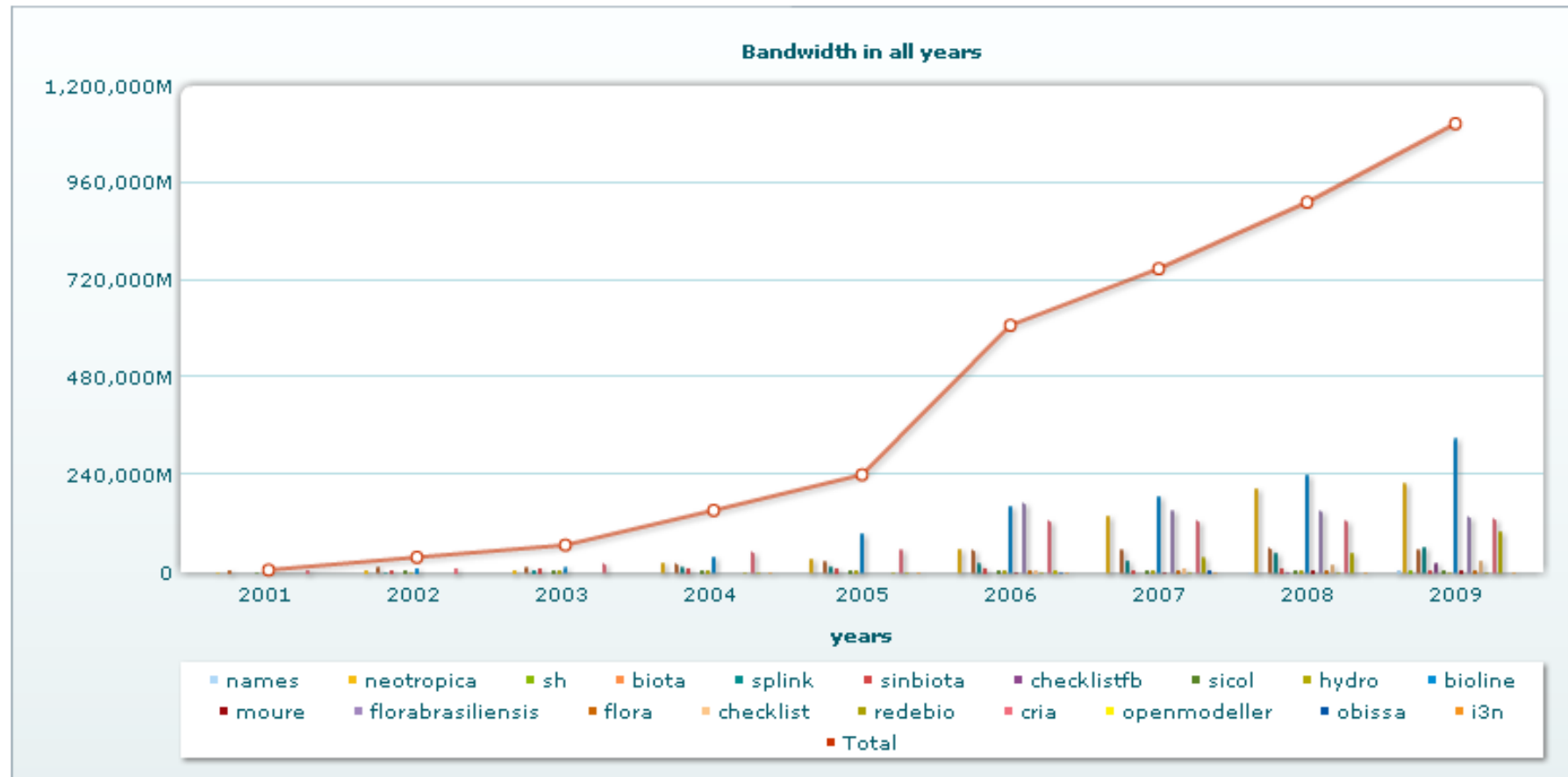
XML



Usage

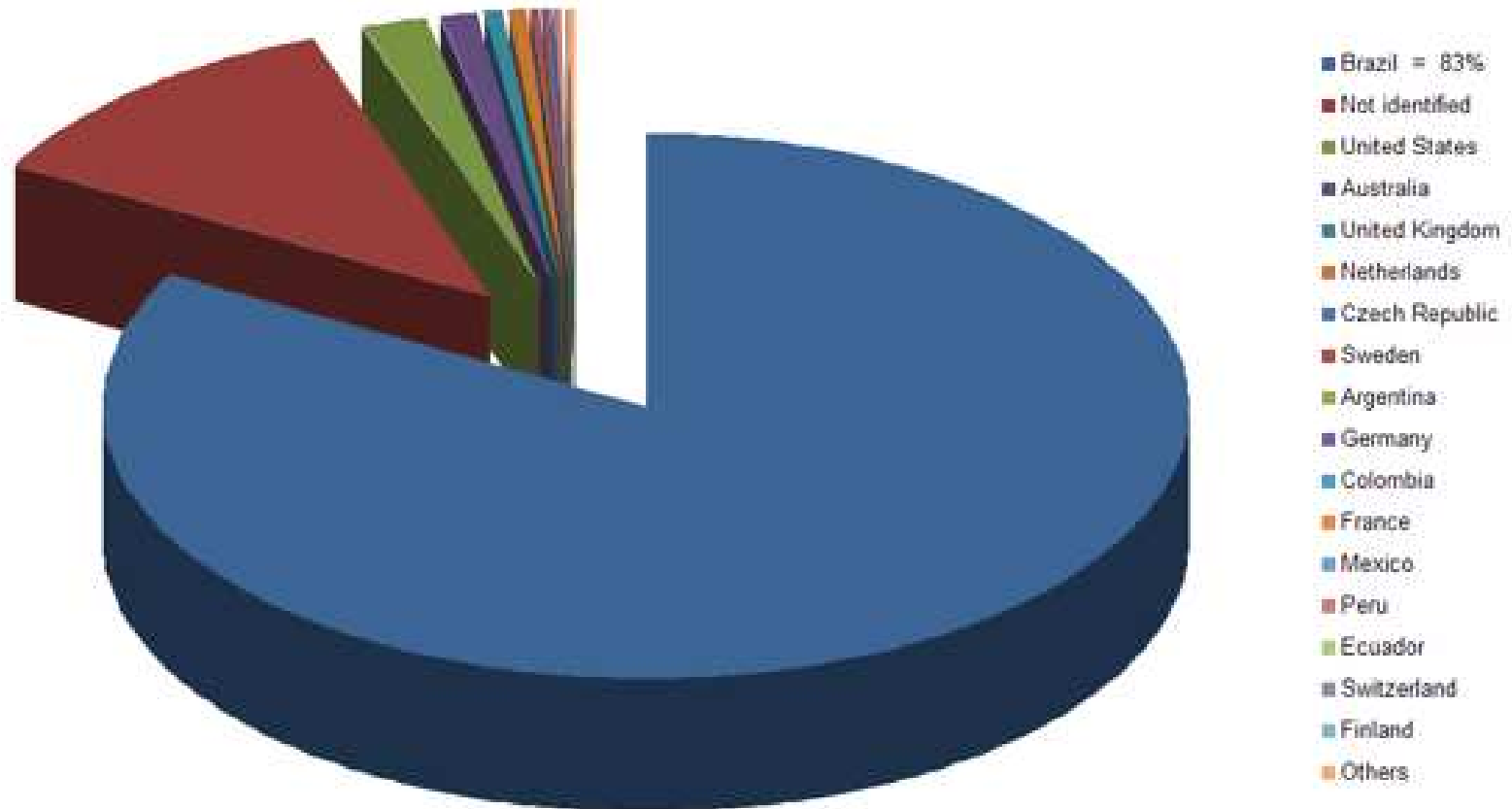
- ❑ Basic statistics available: bandwidth, hits, and visits
- ❑ Future applications will qualify usage, indicating top searches
- ❑ Scripts to interpret logs of the system to be developed

Usage is increasing !



Usage: mainly Brazil

IP of origin only considering access to the centralized search page



Records offered and viewed per month

Monthly average for 2009:

- 11 million records *served* (result from *query*)
- 1.9 million records *seen*

What are the first targets?

- Great discussions on knowledge generation, access and use...

But

- Where is the data?

Lessons learned

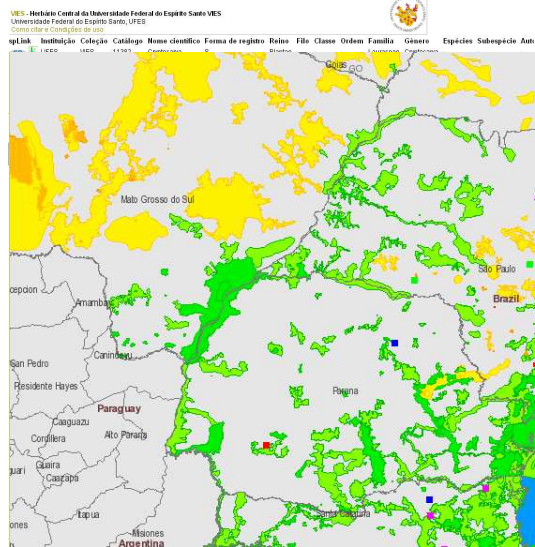
- Adoption of internationally agreed standards and protocols is key
- Support unlocking and sharing of data (make it simple and easy!)
- Enable data providers to have full control of their data determining what can be openly shared and what is sensitive
- Full credit and acknowledgement to the data providers at all levels!
- Data providers must see the benefit in participating
- Data flagging and data cleaning tools are key to support the identification of data inconsistencies
- Stable and long term funding is necessary to ensure development and the persistency of open and free data networks (persistent repositories are critical; funding mechanisms need to be improved!)

UEC - Herbário da Universidade Estadual de Campinas, UNICAMP
Universidade Estadual de Campinas, UNICAMP
Como citar e condições de uso

link	Instituição	Coleção	Catálogo	Nome científico	Forma de registro	Reino	Filo	Classe	Ordem	Família	Gênero	Espécies
	UNICAMP	UEC	148889	Cryptocarya moschata	B	Plantae	-	-	-	Lauraceae	Cryptocarya	moschata
	UNICAMP	UEC	148890	Cryptocarya saligna	B	Plantae	-	-	-	Lauraceae	Cryptocarya	saligna
	UNICAMP	UEC	148346	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UNICAMP	UEC	147745	Cryptocarya saligna	B	Plantae	-	-	-	Lauraceae	Cryptocarya	saligna
	UNICAMP	UEC	150293	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UNICAMP	UEC	147701	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana

UFPR - Herbário do Departamento de Botânica
Universidade Federal do Paraná, UFPR
Como citar e condições de uso

link	Instituição	Coleção	Catálogo	Nome científico	Forma de registro	Reino	Filo	Classe	Ordem	Família	Gênero	Espécies
	UFPR	UFCB	29456	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	13104	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UFPR	UFCB	10316	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UFPR	UFCB	5398	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UFPR	UFCB	50489	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	5374	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	37403	Cryptocarya moschata	B	Plantae	-	-	-	Lauraceae	Cryptocarya	moschata
	UFPR	UFCB	1624	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UFPR	UFCB	32610	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	66548	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	41235	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UFPR	UFCB	8888	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UFPR	UFCB	37188	Cryptocarya moschata	B	Plantae	-	-	-	Lauraceae	Cryptocarya	moschata
	UFPR	UFCB	28558	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	1974	Cryptocarya mandocana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	mandocana
	UFPR	UFCB	33965	Cryptocarya moschata	B	Plantae	-	-	-	Lauraceae	Cryptocarya	moschata
	UFPR	UFCB	60214	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	44522	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	14658	Cryptocarya ascherisoniana	B	Plantae	-	-	-	Lauraceae	Cryptocarya	ascherisoniana
	UFPR	UFCB	37388	Cryptocarya moschata	B	Plantae	-	-	-	Lauraceae	Cryptocarya	moschata



Cryptocarya moschata



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Lauraceae
Cryptocarya moschata Mart.
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Thank you

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