

# THE *species*Link Network

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## ABOUT CRIA

- Not-for-profit civil association of public interest established in 2000
- Mission: contribute to the conservation and sustainable use of Brazil's natural resources
- Means to achieve its mission: dissemination of data and information generated by the scientific community



## CRIA'S FOCUS

- Development of online systems
- Development of tools and applications to increase data quality, usability, and analysis
- Species and specimen data
- Free and open access
- Target users:
  - scientific community
  - graduate programs
  - policy & decision makers

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



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

news

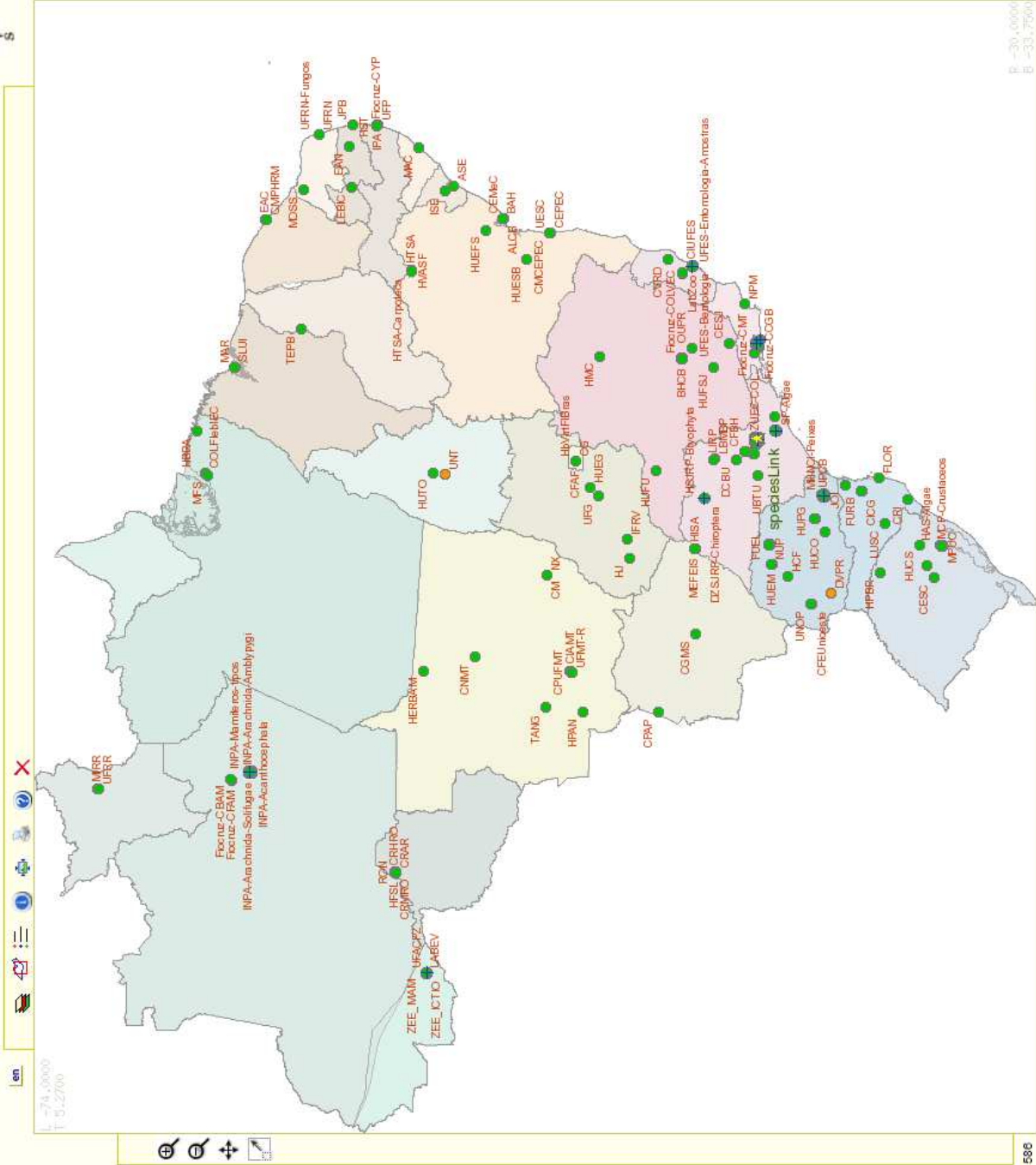


326 collections and sub-collections  
6,415,419 on-line records  
2,703,997 georeferenced  
427,472 different species names  
27 feb 2014 - 13:10



data & tools



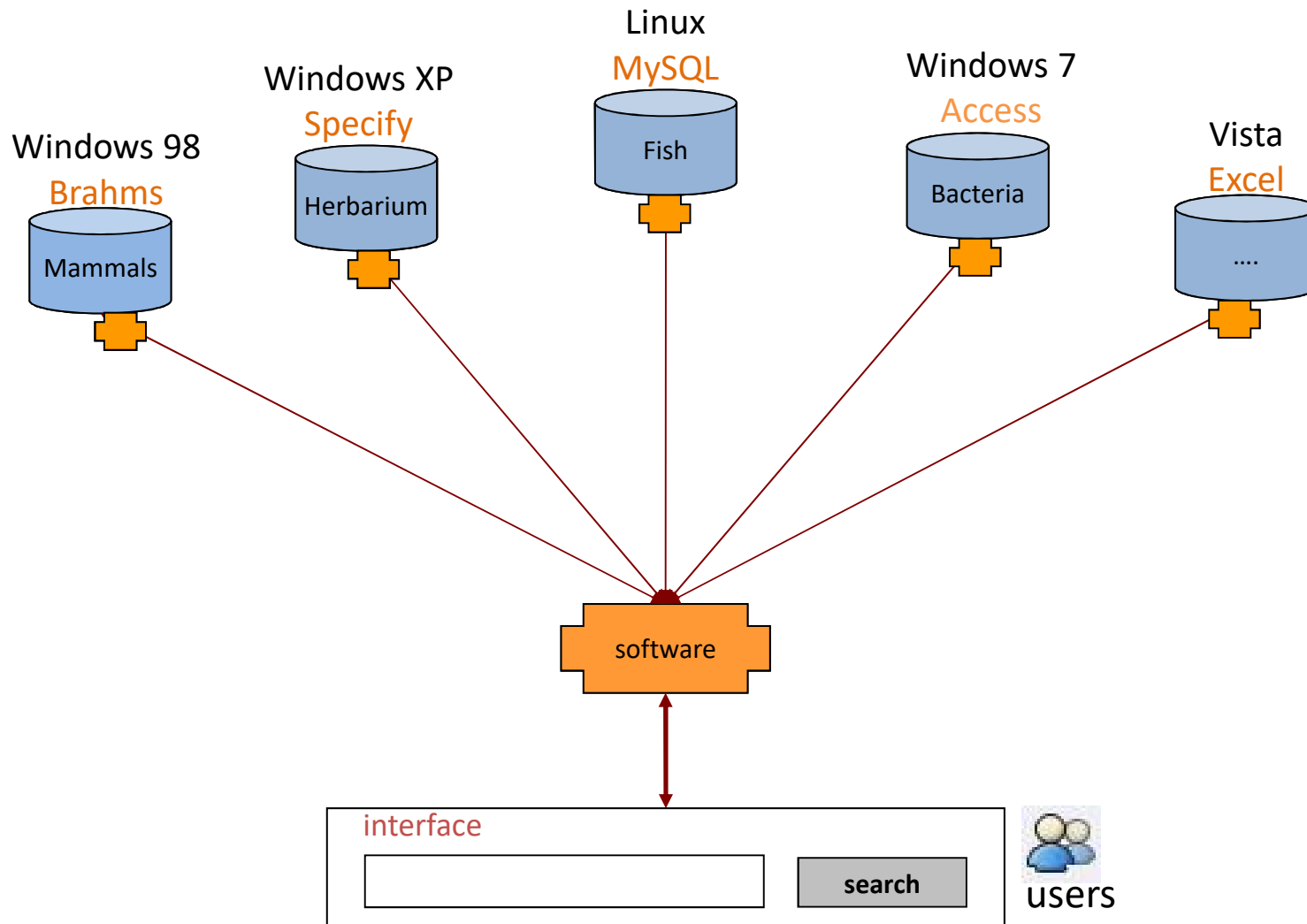


1 km  
L: -74,00000  
T: -5,27000

## OUTLINE

- Architecture
- Data cleaning
- Search, retrieval, and visualization
- Indicators

# CHALLENGES



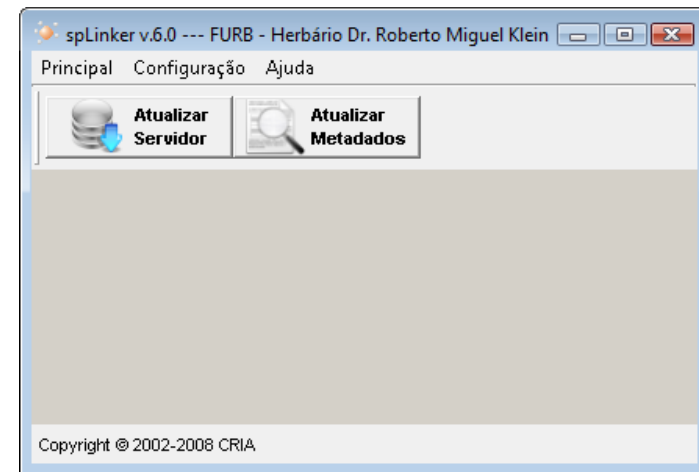
... and the cultural change as to open data sharing

## BASIC CONCEPTS

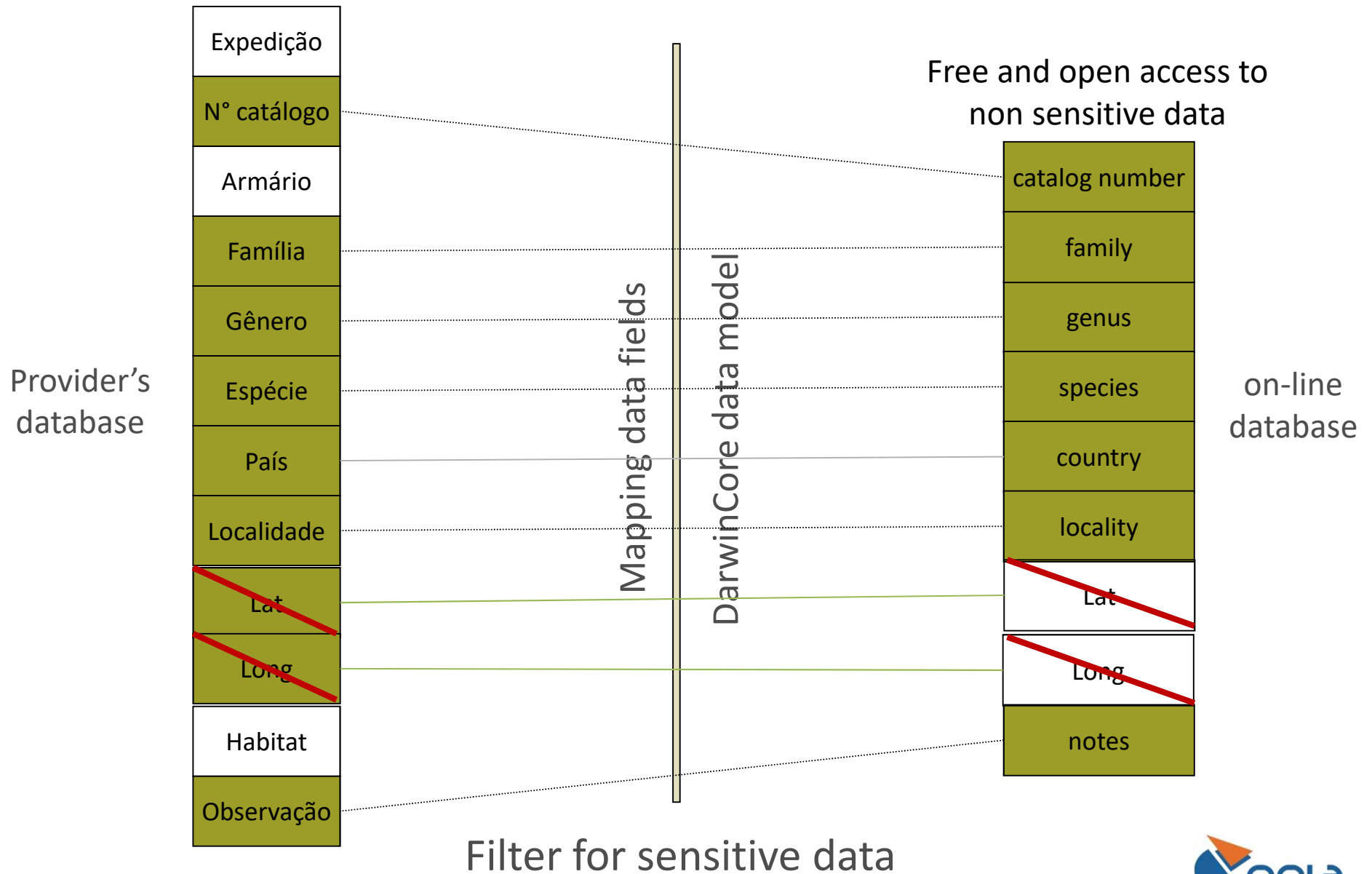
- Data provider end:
  - Software of their choice
  - Full control over their data
  - Ability to participate even with bad connectivity and/or no dedicated server
  - Participation must be as easy as possible
- Infrastructure end:
  - Use of free and open source software whenever possible
  - Use accepted international standards and protocols
  - On-line system: free and open access to all data and tools

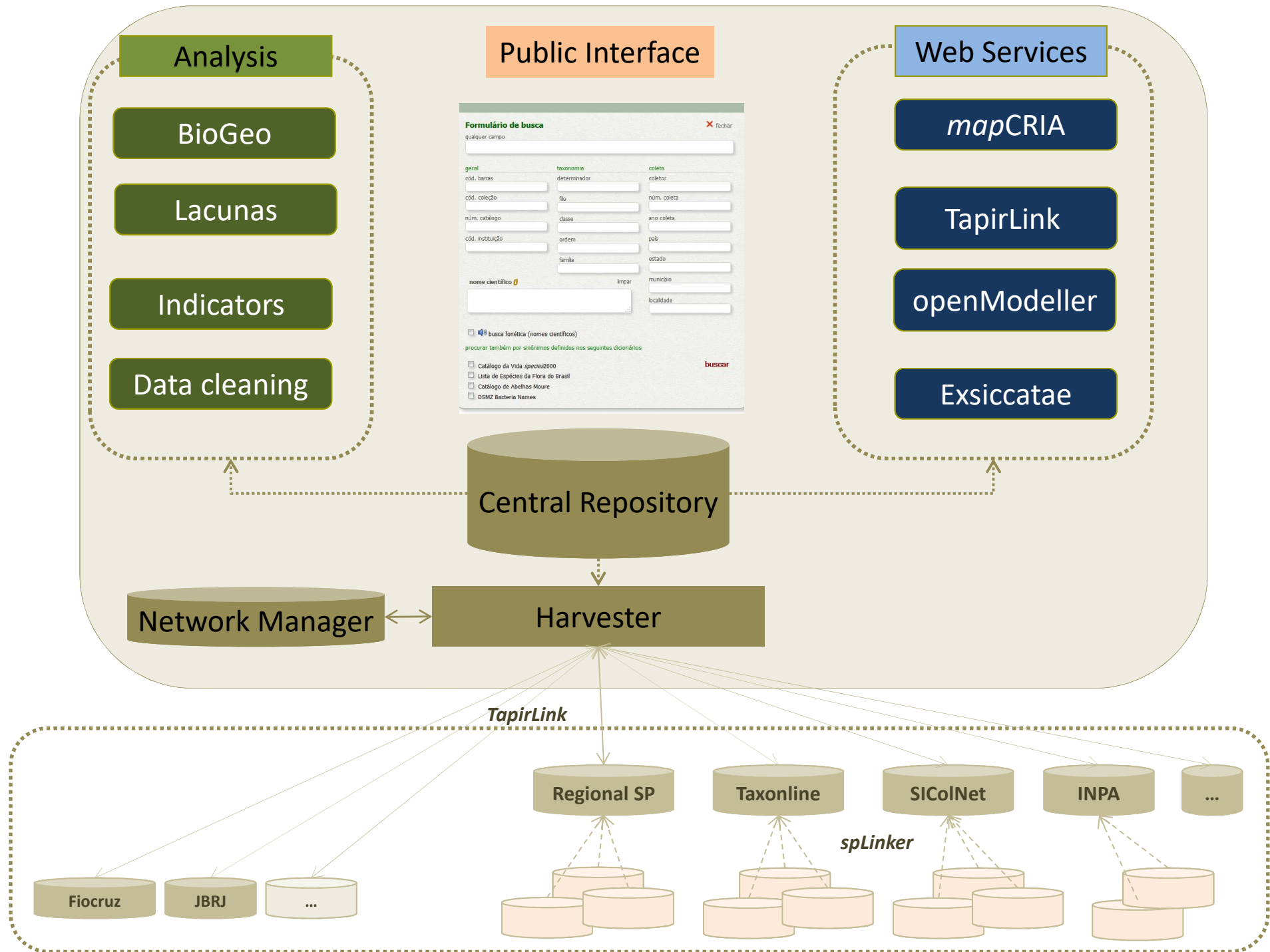
## spLINKER: SOFTWARE DEVELOPED TO SHARE DATA

- Platform independent (java)
- Connects to practically any database (simple text files are also supported)
- Complete control over data
- Low traffic
- Possibility of filtering sensitive data using a regular expression



# spLinker: mapping data fields





## data & tools



## search

Query the collections databases using the search engine

## tools

- **dataCleaning**  
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.
- **spSearch firefox plugin**  
Optimize the search of species scientific names in the speciesLink network, which can be done directly on your Mozilla Firefox without having to visit the web page.

## applications

- **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.
- **Lacunas**  
Tool that presents the status of the data available through the speciesLink network for each species listed in the List of Species of the Brazilian Flora.
- **Biogeo**  
System that uses ecological niche modelling techniques to improve our understanding of plant biogeography in Brazil. Potential distribution maps can be generated, searched, visualized and downloaded for each species.
- **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**  
The aim was to offer a standard list of collectors' names, important to taxonomic studies and herbaria digitization projects. This work ended together with the project, but the results obtained are available online.

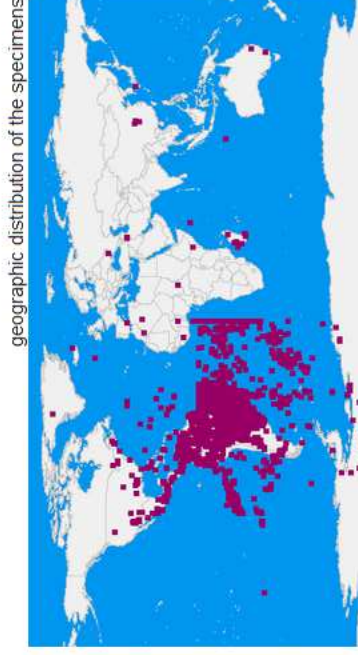
## TOOLS

- Architecture ✓
- Data cleaning
- Search, retrieval, and visualization
- Indicators

This tool aims at helping curators in identifying possible errors and to standardize data. Records are not modified. The system just presents "suspect" records, recommending that they be checked by each author or curator. The tool is under constant development, so any suggestion is more than welcome.

Select a collection **HUEFS**

<b>collection:</b> <b>HUEFS</b>	
total number of records on-line	201539
- without coordinates	64334
- georeferenced	137205
- access to georeferenced data denied	0
- in the sea	4298
- blank catalognumber	0
smaller: 0 larger: 203536	[ gap ]
<b>repeated records</b>	
catalog number	0
duplicate records	0
collector's name and number	8485
<b>last update</b>	
of the collection: 21-02-2014	of dataCleaning: 24-02-2014



collection profile  
dataCleaning statistics  
geographic coordinates analysis

<b>inventory</b>	
family	not found
genus	81 suspect records
species	854 suspect records
subspecies	42 suspect records
author	103693 suspect records
duplicate	24947 suspect records
other inconsistencies	45 suspect records

<b>locality data</b>	
country - state - municipality	country - state - municipality
name of the country/state	1900 suspect records
outlier	11 suspect records
long/lat outside the world limit	not found
equal long/lat	1 suspect records
long or lat equal to zero	980 suspect records
long/lat in the sea (Brazil)	1575 suspect records
municipality name (Brazil)	24154 suspect records
coordinate unit analysis (Brazil)	334 suspect records
other inconsistencies	170 suspect records

<b>date collected</b>	
collected before 1807	6 suspect records
last update previous to date collected	1 suspect records
identification year previous to date collected	67 suspect records

<b>suggestions for blank fields</b>	
long/lat (Brazil)	52358 suggestions
country/state name	not found
municipality name (Brazil)	not found

Select a collection

HUEFS



collection: **HUEFS**

total number of records on-line 201539

- without coordinates 64334

- georeferenced 137205

- access to georeferenced data denied 0

- in the sea 4298

- blank catalognumber 0

smaller: 0 larger: 203536 [ gap ]

#### repeated records

catalog number 0

duplicate records 0

collector's name and number 8485


#### last update

of the collection: 21-02-2014 of dataCleaning: 24-02-2014

collection: HUEFS  
Records on the ocean

longitude	latitude	country	stateprovince	county	locality	records
-38.55	-18.1	Brasil	Bahia	Mucuri		1 <a href="#">see</a>
-11.311389	-42.673056	Brasil	Bahia	Gentio do Ouro	caminho para Itajubaquera, Área ecotonal Cerrado.	1 <a href="#">see</a>
-37.958333	-12.493611	Brasil	Bahia	Mata de São João	Imbassai	1 <a href="#">see</a>
-4.227778	-3.460556	Brasil	Ceará	Viçosa	Santa Teresinha. Na subida da serra. Estrada para Santa Teresinha.	1 <a href="#">see</a>
0	-14.131944	Brasil	Bahia	Ibirataia	Estrada Ipiaú-Ibirataia 13 Km , entrada à direita para Ubatã, subindo rampa à direita, ca. 3,4 Km. Fazenda de cacau à esquerda; junto a um pequeno lago.	3 <a href="#">see</a>
-39.002222	0	Brasil	Bahia	Valença	Estrada para Maricultura, após aeroporto.	1 <a href="#">see</a>
-37.686111	-13.05	Brasil	Bahia	Conde	Fazenda do Bu Mata do São Miguel	2 <a href="#">see</a>
-31.683333	-12.7	Brasil	Bahia	Mucugê	Fazenda Casquilho, Serra do Bastião. Chapada Diamantina. Beira de rio.	1 <a href="#">see</a>
-19.299444	-43.592222	Brasil	Minas Gerais	Santana do Riacho	Serra do Cipó.	1 <a href="#">see</a>
0	-16.362778	Brasil	Bahia	Porto Seguro	Sito Gameleira	2 <a href="#">see</a>
-14.666667	-13.233333	Brasil	Bahia	Abaiara	Estrada nova Abaiara - Catolés.	1 <a href="#">see</a>
-24.633333	-47.766667	Brasil	São Paulo	Pariquera-Açu	Parque Estadual do Pariquera Abaixo - aprox.	1 <a href="#">see</a>
-40.4675	0	Brasil	Pernambuco	Petrolina	EMBRAPA.	1 <a href="#">see</a>
-39.183333	0	Brasil	Bahia	Canavieiras	Região da Jararaca (próximo da Fazenda Catita).	4 <a href="#">see</a>
0	-9.6	Brasil	Alagoas	Maceió	Fernão Velho, 3 Km do posto da polícia / ladeira da fábrica Carmem.	1 <a href="#">see</a>

## taxonomic data



inventory	scientific name - collector - identifier - types
family	not found
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collection: **HUEFS**  
Inventory - List of types and the number of occurrences in the collection

type	records
[Epitype]	3 <a href="#">see</a>
[Holotype]	609 <a href="#">see</a>
[Holotype (Fragment)]	9 <a href="#">see</a>
[Holotype (Photocopy)]	5 <a href="#">see</a>
[Isoectotype]	1 <a href="#">see</a>
[Isolectotype]	48 <a href="#">see</a>
[Isoparatype]	30 <a href="#">see</a>
[Isosyntype]	121 <a href="#">see</a>
[Isótipo do Neótipo]	1 <a href="#">see</a>
[Isotype]	1618 <a href="#">see</a>
[Isotype?]	2 <a href="#">see</a>
[Lectotype]	82 <a href="#">see</a>
[Neoholotype]	3 <a href="#">see</a>
[Paratype]	430 <a href="#">see</a>
[prob. Isotype]	1 <a href="#">see</a>
[Syntype]	248 <a href="#">see</a>
[Type]	845 <a href="#">see</a>



## taxonomic data

inventory scientific name - collector - identifier - types

family not found

genus 81 suspect records

species 854 suspect records **↔**

subspecies 42 suspect records

author 103693 suspect records

duplicate 24947 suspect records

other inconsistencies 45 suspect records

collection: **HUEFS**

Suspect species names

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

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

genus	species	subspecies	records	speciesLink	status Col	catalog number
<b>SP</b> [+ Byrsonima]	[vacciniifolia]	[]	0	1		
<b>SP</b> [Aeschynomene]	[histris]	[]	1 <b>see</b>	346	<b>synônimo</b>	197870
<b>SP</b> [Aeschynomene]	[hystris]	[]	46 <b>see</b>	55		
<b>SP</b> [Albizia]	[pedicellaris]	[]	6 <b>see</b>	276	<b>nome aceito</b>	186705 191117 192467 198923 198924 198925
<b>SP</b> [Albizia]	[pedicelaris]	[]	1 <b>see</b>	1		200937
<b>SP</b> [Banisteriopsis]	[harleyi]	[]	21 <b>see</b>	91		
<b>SP</b> [Banisteriopsis]	[harley]	[]	1 <b>see</b>	1		164866
<b>SP</b> [Banisteriopsis]	[sp.]	[]	1 <b>see</b>	240		202449
<b>SP</b> [Banisteriopsis]	[sp]	[]	1 <b>see</b>	7		200515
<b>SP</b> [Bauhinia]	[corifolia]	[]	1 <b>see</b>	80		198200
<b>SP</b> [Bauhinia]	[coriifolia]	[]	38 <b>see</b>	38		
<b>SP</b> [Byrsonima]	[sp]	[]	11 <b>see</b>	31		
<b>SP</b> [Birsonima]	[sp.]	[]	0	1		
<b>SP</b> [Byrsonima]	[sp.]	[]	1 <b>see</b>	586		202458
<b>SP</b> [Byrsonima]	[vacciniifolia]	[]	56 <b>see</b>	414		
<b>SP</b> [Byrsonima]	[vaccinifolia]	[]	1 <b>see</b>	6		197497
<b>SP</b> [Camposema]	[sp]	[]	1 <b>see</b>	4		197874
<b>SP</b> [Camposema]	[sp.]	[]	2 <b>see</b>	45		197869 197881

## taxonomic data

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author 103693 suspect records

duplicate 24947 suspect records ←

other inconsistencies 45 suspect records

Filtro: [\[sem filtro\]](#) [\[familia indeterminada\]](#) [\[género indeterminado\]](#)

[mesma data de coleta](#)

collector	collector number	date collected	img	catalognumber	family	genus	species	subspecies	identified by	date identified
Abreu, L.C.	304	1976-02-09		SP 145408	Melastomataceae	<b>sp</b> Tibouchina	sebastianopolitana		Chiea, S.A.C.	1987-04
Abreu, L.C.	304	1976-02-09		UEC 156355	Melastomataceae	<b>sp</b> Tibouchina	cerastifolia		Silva, C.M.	1997-03-17
Abreu, L.C.	331	1979-10-19		SP 202885	Araceae	<b>sp</b> Pistia	stratotes		Nadruz, M.	2012-01-01
L.C. Abreu	331	1979-10-19		RB 427653	Araceae	<b>sp</b> Pistia	stratoides		L.C. Abreu	1980-04-14
Abreu, L.C.	335	1980-07-23		SP 202879	Araceae	<b>sp</b> Spirodela	punctata		Pott, V.J.	2002-01-01
Abreu, L.C.	335	1980-07-23		CPAP 11186	Araceae	<b>sp</b> Lemna	minor		L.C. Abreu	1980-07
Abreu, L.C.	335	1980-07-23		CPAP 11186	Araceae	<b>sp</b> Lemna	minor		L.C. Abreu	1980-07
Abreu, L.C.	336	1980-07-23		SP 202877	Araceae	<b>sp</b> Spirodela	punctata		Pott, V.J.	2002-01-01
Abreu, L.C.	336	1980-07-23		CPAP 11187	Araceae	<b>sp</b> Lemna	minor		L.C. Abreu	1980-07
Abreu, L.C.	344	1980-10-22		SP 202894	Cyperaceae	<b>sp</b> Eleocharis	selowiana		Faria, A.D.	2000-02
Abreu, L.C.	344	1980-10-22		FUEL 39662	Cyperaceae	<b>sp</b> Eleocharis	subarticulata		Vitfa, F.A.	2005-01-01
Abreu, L.C. de	344	1980-10-22		HUEFS 100076	Cyperaceae	<b>sp</b> Eleocharis	subarticulata			
L.C. Abreu	344	1980-10-22		ICN 144350	Cyperaceae	<b>sp</b> Eleocharis	subarticulata		F.A. Vitfa	2005-01-01
Abreu, L.C.	366	1981-02-02		SP 202903	Lentibulariaceae	<b>sp</b> Utricularia	foliosa		Corrêa, M.A.	2002-01-01
Abreu, L.C.; Lopes, G.G.; Sallini, O.; Lopes, G.G.; Sallini, O.	366	1981-02-02		UEC 122379	Lentibulariaceae	<b>sp</b> Utricularia	obtusata		Abreu, L.C.	
Abruzzi, M.L.	602	1982-04-06		SP 249688	Myrtaceae	<b>sp</b> Eugenia	vincaeifolia		Mattos, J.R.	1982-07-10
Abruzzi, M.L.	602	1982-04-06		UFG 13045	Myrtaceae	<b>sp</b> Eugenia	vincifolia		Mattos, J.	1982-07-10



Tibouchina cerastigolia  
 Det. Cristiane m. Silva 17/11

INSTITUTO DE BOTÂNICA **SP**  
 São Paulo - Brasil

Melastomataceae

Tibouchina sebastianopolitana Cognon

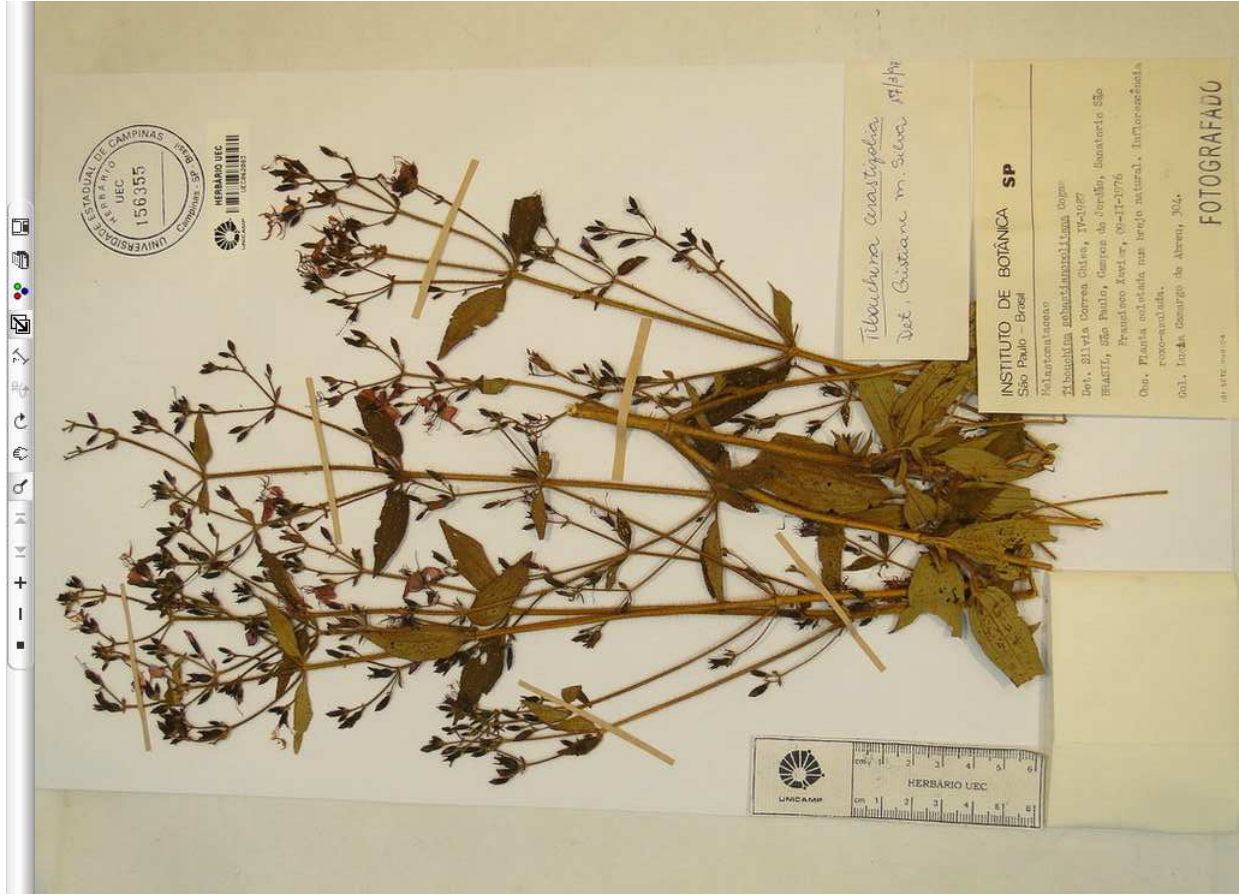
Det. SILVIA Correa Chiea, IV-1987

BRASIL, São Paulo, Campos do Jordão, Sanatorio São

Francisco Xavier, 09-II-1976

Obs. Planta coletada num brejo natural. Inflorescência roxo-azulada.

Col. Lucía Camargo de Abreu, 304.



Tibouchina cerastigolia  
 Det. Cristiane m. Silva, 17/11

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Melastomataceae

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Col. Lucía Camargo de Abreu, 304.

FOTOGRAFADU

10-1520 (10/11/24)

## taxonomic data

inventory scientific name - collector - identifier - types

family not found

genus 81 suspect records

species 854 suspect records

subspecies 42 suspect records

author 103693 suspect records

duplicate 24947 suspect records

other inconsistencies 45 suspect records ↩

collection: HUEFS  
Inconsistency between family, genus, species and subspecies fields.

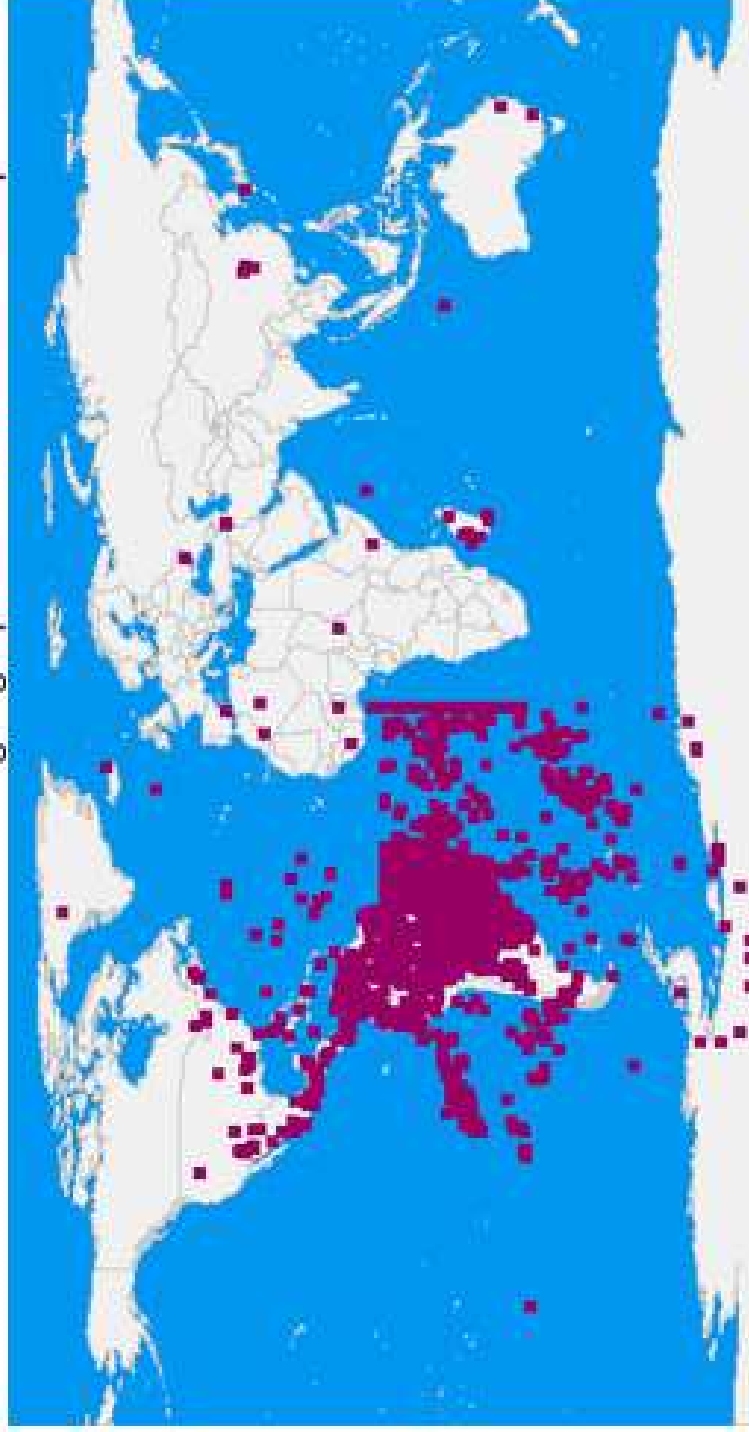
family	genus	species	subspecies	records
[ ]	[ ]	[marginatum]	[ ]	1 <a href="#">see</a>
[ ]	[Alpava]	[ ]	[ ]	1 <a href="#">see</a>
[ ]	[Bunchosia]	[acuminata]	[ ]	1 <a href="#">see</a>
[ ]	[Cyathea]	[microdonta]	[ ]	1 <a href="#">see</a>
[ ]	[Eremitis]	[parviflora]	[ ]	1 <a href="#">see</a>
[ ]	[Erythroxylum]	[martii]	[ ]	3 <a href="#">see</a>
[ ]	[Fabronia]	[ciliaris]	[ ]	2 <a href="#">see</a>
[ ]	[Fabronia]	[ciliaris]	[var.]	1 <a href="#">see</a>
[ ]	[Fabronia]	[ciliaris]	[var. polycarpa]	8 <a href="#">see</a>
[ ]	[Fabronia]	[macroblepharis]	[ ]	6 <a href="#">see</a>
[ ]	[Galphimia]	[sp]	[ ]	1 <a href="#">see</a>
[ ]	[Hydrolea]	[spinosa]	[ ]	1 <a href="#">see</a>
[ ]	[Licania]	[dealbata]	[ ]	1 <a href="#">see</a>
[ ]	[Parkia]	[pendula]	[ ]	1 <a href="#">see</a>
[ ]	[Phyllanthus]	[ ]	[ ]	1 <a href="#">see</a>
[ ]	[Schoenobryum]	[concaivifolium]	[ ]	1 <a href="#">see</a>
[ ]	[Senegalia]	[grandistipula]	[ ]	1 <a href="#">see</a>
[ ]	[Siparuna]	[brasiliensis]	[ ]	1 <a href="#">see</a>
[ ]	[Spondias]	[venulosa]	[ ]	1 <a href="#">see</a>
[ ]	[Tibouchina]	[ ]	[ ]	1 <a href="#">see</a>
[ ]	[Turnera]	[calyptrocarpa]	[ ]	1 <a href="#">see</a>
[COMMELINACEAE]	[ ]	[glabrescens]	[ ]	1 <a href="#">see</a>
[LAMIACEAE]	[ ]	[polygama]	[ ]	1 <a href="#">see</a>
[LEGUMINOSAE]	[ ]	[molle]	[ ]	1 <a href="#">see</a>
[LEGUMINOSAE]	[ ]	[moniliformis]	[ ]	1 <a href="#">see</a>
[LEGUMINOSAE]	[Calliandra]	[ ]	[var.]	2 <a href="#">see</a>
[LICHENS]	[ ]	[punctatum]	[var. clatum]	1 <a href="#">see</a>

collection: HUEFS

Identification year previous to collected year.

catalognumber	family	yearcollected	monthcollected	daycollected	yearidentified	monthidentified	dayidentified
152446	ASTERACEAE	1956	09	02	1950	01	
146140	AMARANTHACEAE	1973	04	29	1953	01	01
146159	AMARANTHACEAE	1984	02	15	1980	10	
29656	BURMANNIACEAE	1988	12	22	1980	01	01
1654	POACEAE	1992	11	30	1984	01	01
3590	LEGUMINOSAE	1993	01	01	1991	01	01
2772	MELASTOMATACEAE	1993	11	19	1992	01	01
5835	LEGUMINOSAE	1994	07	18	1991	01	01
114037	SAPINDACEAE	1995	05	08	1987	01	01
27555	LEGUMINOSAE	1997	01	26	1996	01	01
27557	MOLLUGINACEAE	1997	01	26	1996	01	01
27554	PORTULACACEAE	1997	01	26	1996	01	01
144972	RHAMNACEAE	1997	02	04	1996	12	
27561	CONVOLVULACEAE	1997	02	22	1996	01	01
27552	BORAGINACEAE	1997	02	23	1996	01	01
27562	MALVACEAE	1997	02	23	1996	01	01
27567	TURNERACEAE	1997	03	16	1996	01	01
31438	POLYGONACEAE	1997	06	15	1989	01	01
35558	SCROPHULARIACEAE	1998	04	21	1995	09	
1292	ASTERACEAE	1998	06		1992	02	
27432	LEGUMINOSAE	1998	09	08	1997	05	
8087	CELASTRACEAE	1998	09	12	1992	10	
15314	BIGNONIACEAE	1998	11	14	1997	03	
10575	ACANTHACEAE	1999	04	13	1997	01	

geographic distribution of the specimens



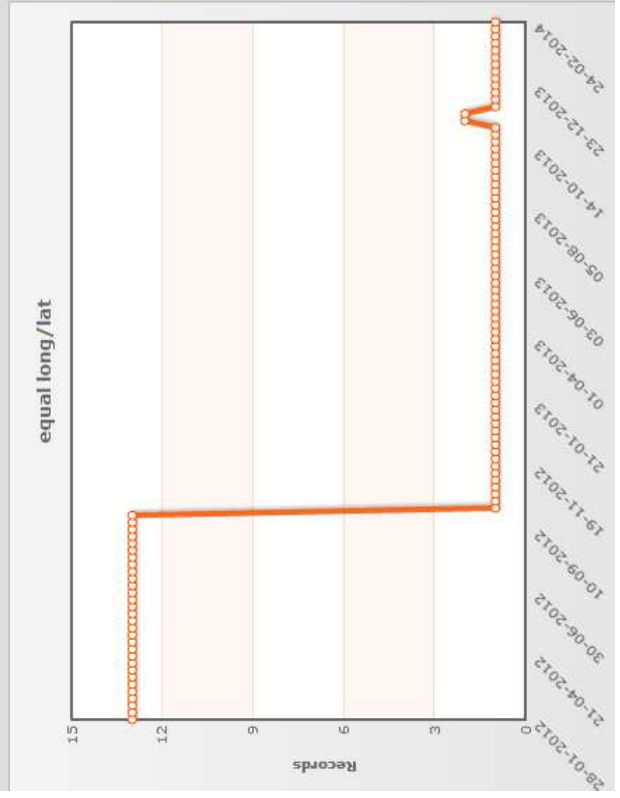
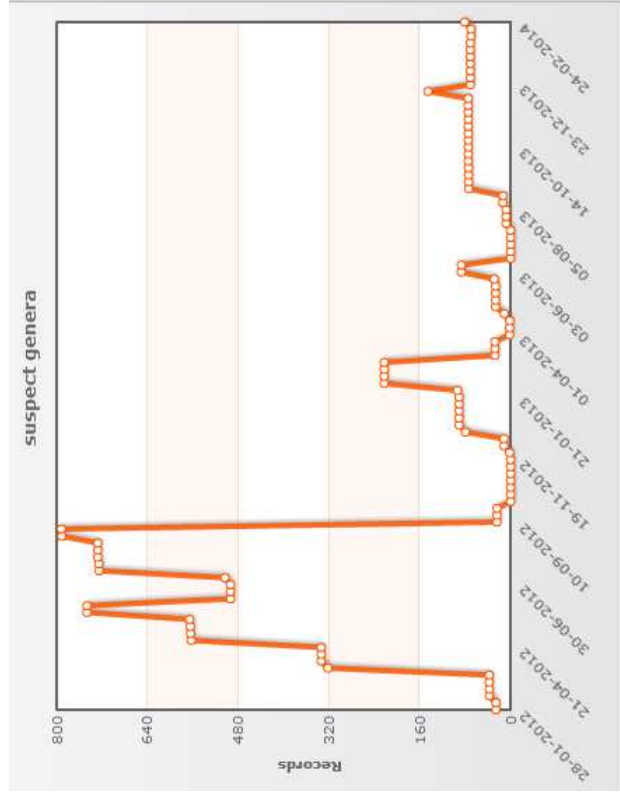
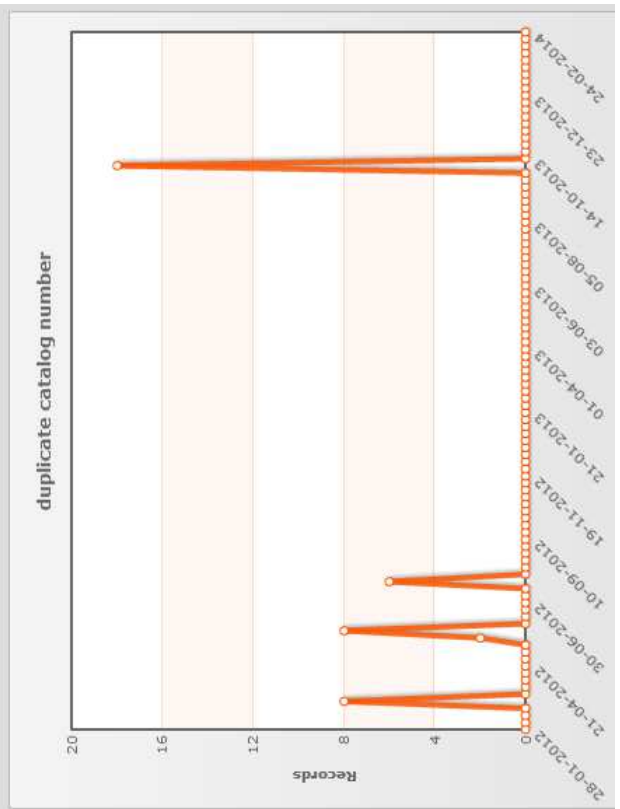
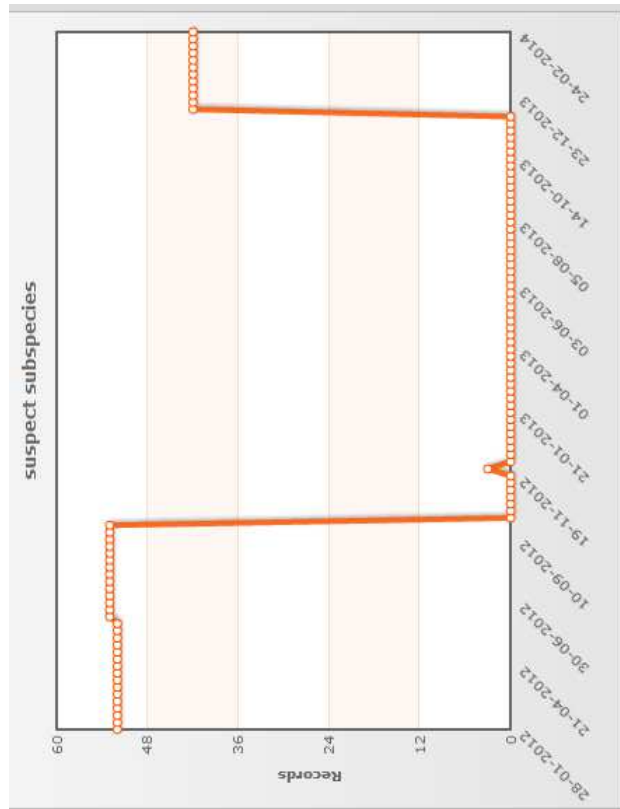
collection profile

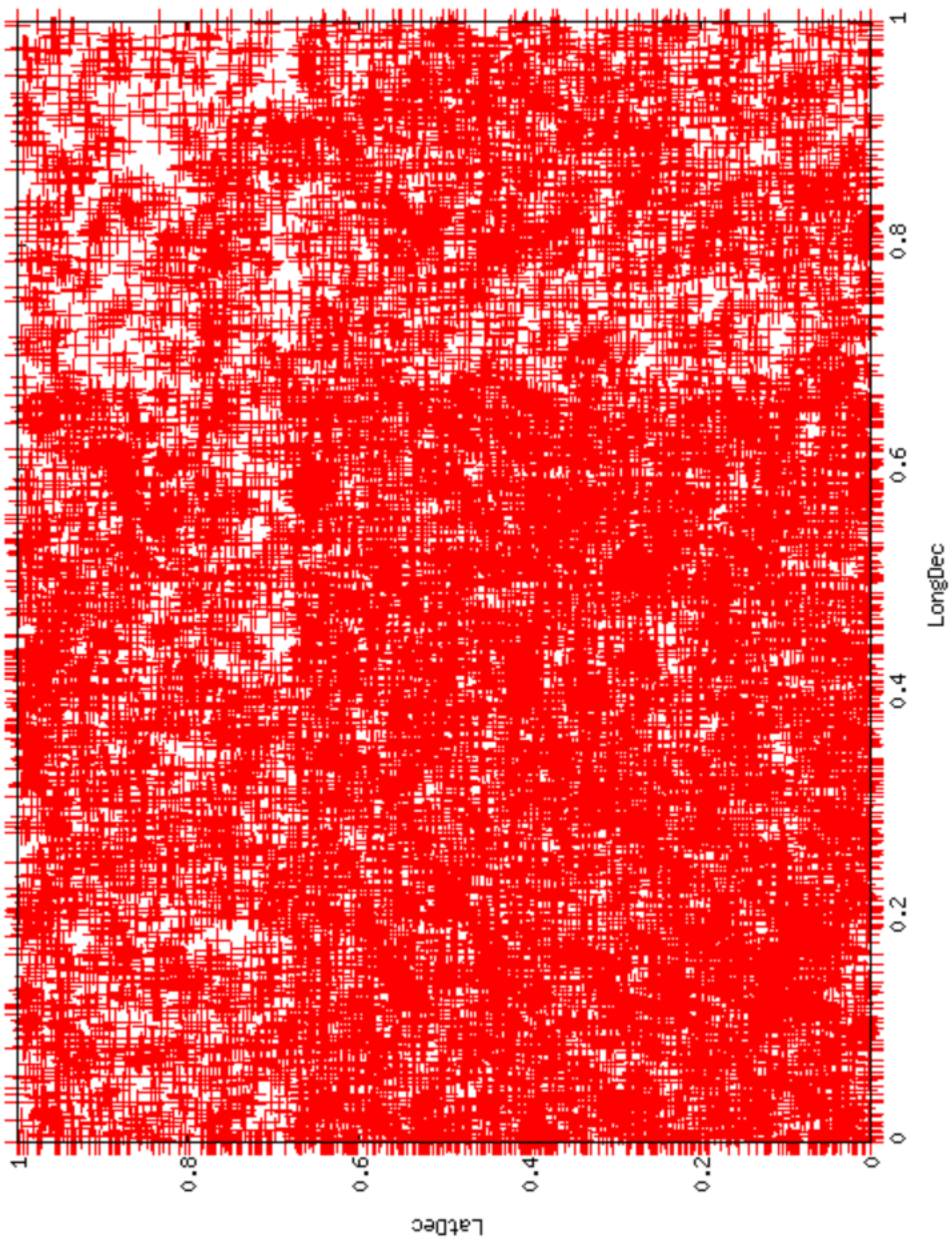


dataCleaning statistics



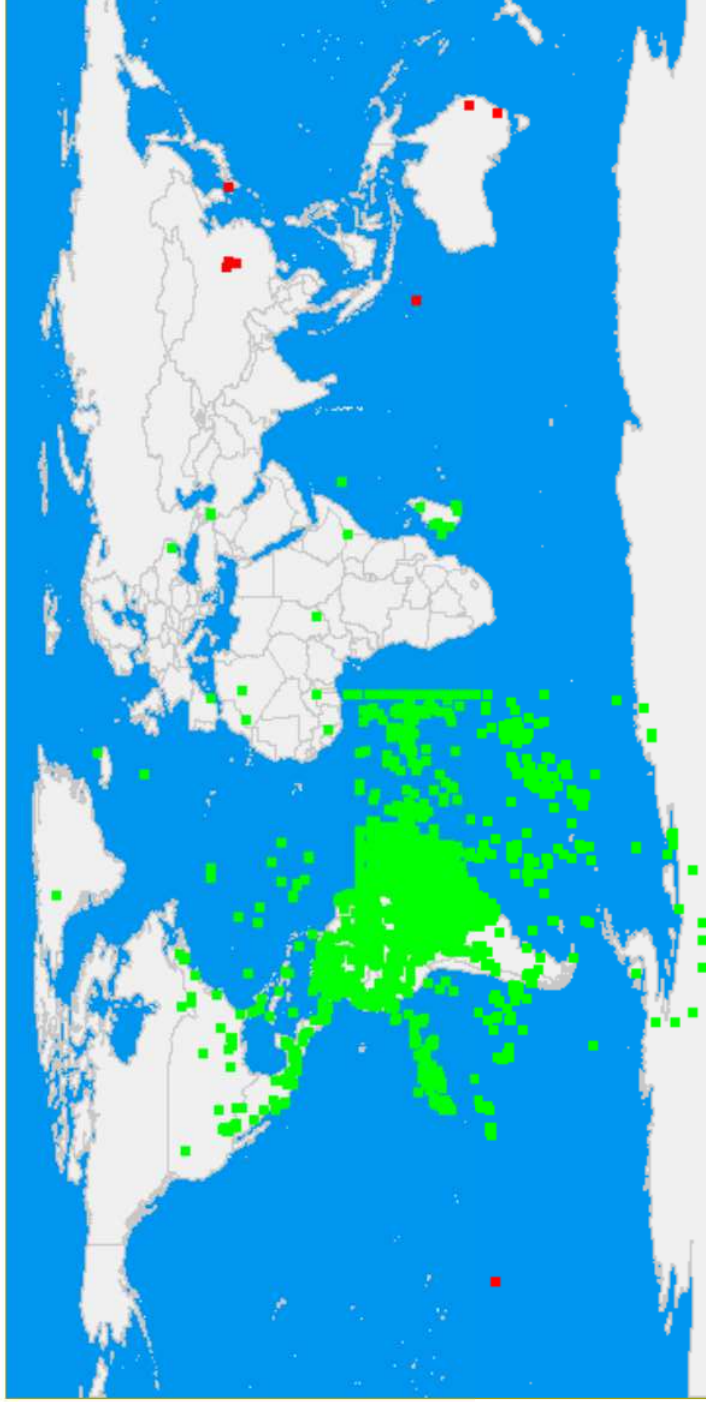
geographic coordinates analysis





<b>locality data</b>	
inventory	country - state - municipality
name of the country/state	1900 suspect records
outlier	11 suspect records
long/lat outside the world limit	not found
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long/lat in the sea (Brazil)	1575 suspect records
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collection: HUEFS  
Outlier - see more details about the Outlier tool

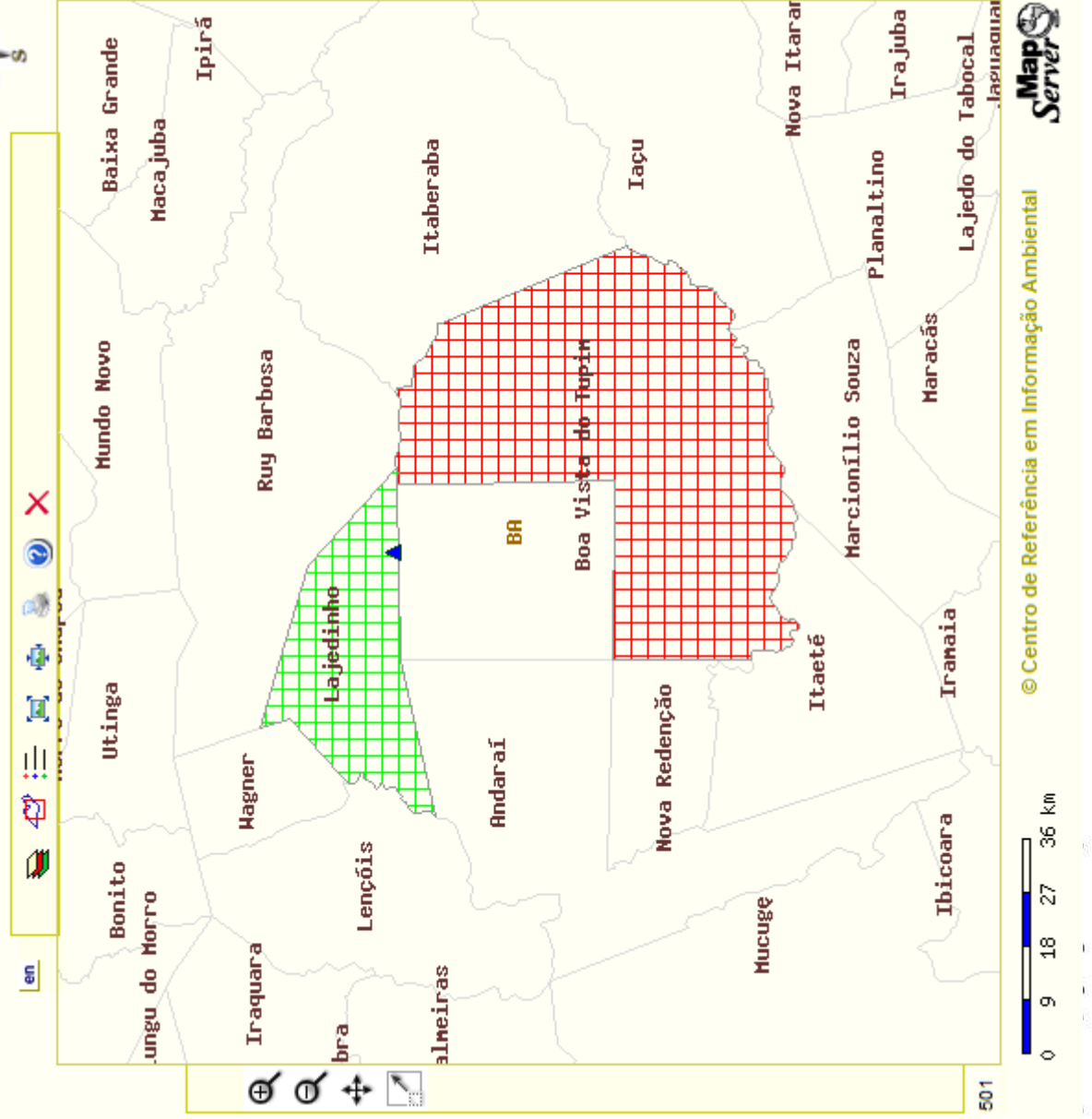


id	longitude	latitude	country	stateprovince	county	records
91342099	151.083333	-28.066667	Australia	Queensland	Darling Downs	1 <a href="#">see</a>
91307796	149.25	-35.5	Australia			3 <a href="#">see</a>
91311823	130.220556	33.603889	Japão	Kyushu	Fukuoka	1 <a href="#">see</a>
91310794	111.083333	33.3	Estados Unidos	Arizona		1 <a href="#">see</a>
91293443	111.066667	33.3	Estados Unidos	Arizona		1 <a href="#">see</a>
91309326	110.730833	31.413611	Estados Unidos da América	Arizona	Santa Cruz	1 <a href="#">see</a>
91321978	109.45	34.2	Estados Unidos	Arizona		1 <a href="#">see</a>
91313071	101.216667	-14.616667	Brasil			1 <a href="#">see</a>
91347808	-150.683333	-35.15	Australia			1 <a href="#">see</a>

collection: HUEFS  
Suspect municipality

country	state
Brasil	[ ]
Brasil	[ ]
Brasil	[ ]
Brasil	[Acre]
Brasil	[Acre]
Brasil	[Acre]
Brasil	[Acre]
Brasil	[Acre]
Brasil	[Acre]
Brasil	[Alagoas]
Brasil	[Alagoas]
Brasil	[Alagoas]
Brasil	[Alagoas]
Brasil	[Alagoas]
Brasil	[Alagoas]
Brasil	[Alagoas]
Brasil	[Alagoas]

records	map
1	<a href="#">see</a>
1	<a href="#">see</a>
2	<a href="#">see</a>
2	<a href="#">see</a>
4	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
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1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>
1	<a href="#">see</a>

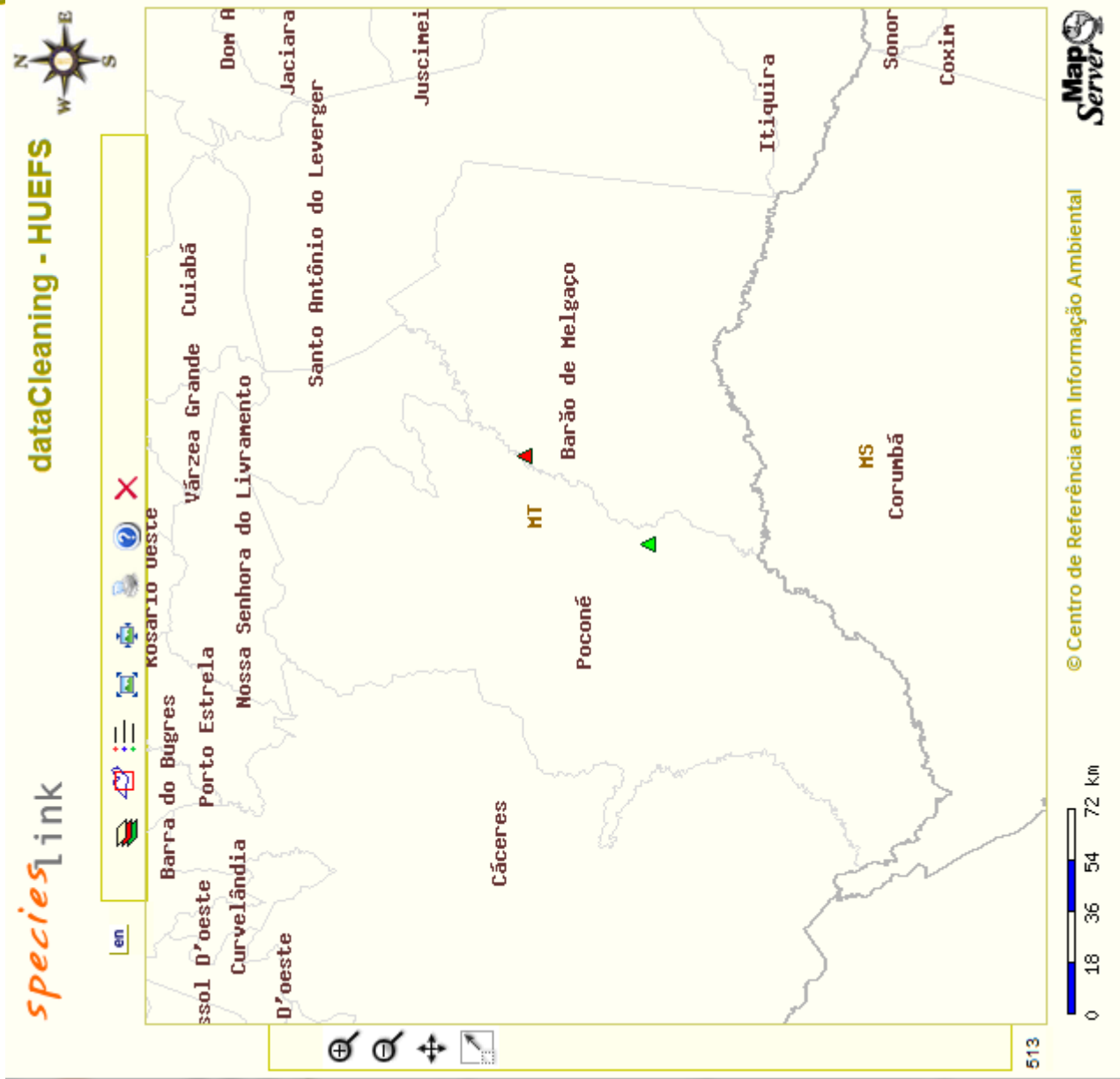


collection: HUEFS  
 Analysis of geographic coordinate given, the system about this tool here.

long_ori	lat_ori
-56.411111	-16.5
-56.1	-12.2
-56.1	-12.2
-56.1	-12.2
-56.0625	-20.4

present with the records. Know more

records	map
100 1	<a href="#">see</a>
133 1	<a href="#">see</a>
133 1	<a href="#">see</a>
133 1	<a href="#">see</a>
188 1	<a href="#">see</a>



Miranda.



## TOOLS

- Architecture ✓
- Data cleaning ✓
- Search, retrieval and visualization
- Indicators

# speciesLink All groups

since 2002



[open search form](#)

The speciesLink network promotes free and open access to data, information, and tools available to any individual or group. All data providers have previously accepted to make their data available in order to promote scientific development and research all over the world, and to stimulate the public use of scientific information. But to make use of any data available through the speciesLink network, users must understand and accept that:

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- Users must respect and follow any additional restrictions indicated by the respective data providers.
- Users must give credits to the original data source - the speciesLink network and the corresponding data providers - when publishing any work based on data retrieved from this network.

**326**

collections and subcollections

**6,424,089**

online records

**4,993,515**

georeferenced records

**245,056**

records with images

**234,280**

type records

**87,960**

records of species in redlists

**+ More...**



The **INCT - Virtual Herbarium of Flora and Fungi** promotes free and open access to data, information, and tools available to any individual or group. All data providers have previously accepted to make their data available in order to promote scientific development and research all over the world, and to stimulate the public use of scientific information. But to make use of any data available through this network, users must understand and accept that:

**127** collections and subcollections  
**4,475,611** online records  
**3,435,508** georeferenced records  
**245,056** records with images  
**97,898** type records  
**50,123** records of species in redlists  
**+ More...**



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- Users must respect and follow any additional restrictions indicated by the respective data providers.
- Users must give credits to the original data source - the **INCT - Virtual Herbarium of Flora and Fungi** and the corresponding data providers - when publishing any work based on data retrieved from this network.

**Herbário do Vale do Taquari (HVAT) contributes with the INCT - Virt**

## Search form

**X** close

any field

general

barcode

collection code

catalog number

institution code

taxonomy

determinator

phyl/o

class

order

family

**cactaceae**

scientific name 

clear

collect

collector

collect number

collect year


country

**brazil**

state

county

locality

 phonetic search (scientific names)

search also for synonyms defined in the following dictionaries

*species2000* Catalog of Life

List of Species of the Brazilian Flora

search only within records

images

with images

without images

live material

pollen

material type

type

not type

red list

spp. in **MMA red lists**

spp. that are not red lists

geographic coordinates

with coords.

without coords.

original

by county

blocked by collection

coordinates quality

not suspect

are suspect

search



português

INCT-Herbário Virtual  
do Fungi e das Fungos  
since 2009

Plants and Fungi  
{ see how to cite, data use restrictions ... }

species link

summary images map download graph

feedback

Inventory of the records found

scientific name 1,2

<i>Em branco</i>	436
<i>Acanthocereus abicaulis</i>	2
<i>Acanthocereus brasiliensis</i>	10
<i>Acanthocereus sp.</i>	2
<i>Arrojaodoa</i>	17
<i>Arrojaodoa?</i>	1
<i>Arrojaodoa bahiensis</i>	6
<i>Arrojaodoa cf. rhodantha</i>	1
<i>Arrojaodoa dhinae</i>	15
<i>Arrojaodoa dhinae eriocaulis</i>	1
<i>Arrojaodoa dhinae eriocaulis</i>	1
<i>Arrojaodoa eriocaulis</i>	2
<i>Arrojaodoa marylandae</i>	1
<i>Arrojaodoa penicillata</i>	2
<i>Arrojaodoa penicillata</i>	107
<i>Arrojaodoa penicillata penicillata</i>	1
<i>Arrojaodoa penicillata</i>	1
<i>Arrojaodoa praxeloides</i>	2
<i>Arrojaodoa rhodantha</i>	196
<i>Arrojaodoa rhodantha</i>	1
<i>Arrojaodoa rodantha</i>	2
<i>Arrojaodoa rodantha</i>	2
<i>Arrojaodoa rodantha</i>	1
<i>Arrojaodoa sp.</i>	1
<i>Arthrocerus</i>	12
<i>Arthrocerus campos-portoi</i>	2
<i>Arthrocerus glaziovii</i>	15
<i>Arthrocerus melanurus</i>	24
<i>Arthrocerus melanurus</i>	9
<i>Arthrocerus melanurus magnus</i>	1
<i>Arthrocerus melanurus melanurus</i>	2
<i>Arthrocerus melanurus odorus</i>	1
<i>Arthrocerus melanurus subsp. magnus</i>	1
<i>Arthrocerus mello-barretoii</i>	1

**Attention!**

The scientific names and genera listed at right are compared with available dictionaries according to the biological group.

In **bold green** are the accepted ones, in **bold gray** the synonyms and in **orange** the ones that were not found. Family names are only checked for existing or not in the dictionaries. See **tips** for detailed information.

**PLANTAE DICOTYLEDONIAE CARYOPHYLLALES CACTACEAE**

*Cereus jamaicensis* DC.  
NMNH-Botany\_BR 762102.2473373 Bahia, Brazil, 2/6/1915.  
© Smithsonian Department of Botany - Brazilian records (NMNH-Botany\_BR)

**PLANTAE DICOTYLEDONIAE CARYOPHYLLALES CACTACEAE**

*Cephalocereus pachycidus* Ritter. Det: Zappi, D. C. 10/1992  
NMNH-Botany\_BR 762147.2457760 Bahia, Brazil, 7/6/1915.  
© Smithsonian Department of Botany - Brazilian records (NMNH-Botany\_BR)

**PLANTAE MAGNOLIOPHYTA MAGNOLIOPSIDA CARYOPHYLLALES CACTACEAE**

**unesp** *Cereus hildmannianus* R. Schum. Det.: D. Zappi, 10/04/2000  
HSJRP 18888 Col: L. Madi-Ravazzi. em beira de mata do rio Tietê, Novo Horizonte, São Paulo, Brasil, 14/12/1998. Coord. munic.: [lat: -21.46 long: -49.22 err: +32394 WGS84]  
© Herbário de São José do Rio Preto (HSJRP)

**PLANTAE DICOTYLEDONIAE CARYOPHYLLALES CACTACEAE**

*Cereus sp.*  
NMNH-Botany\_BR 2911173.2599028 Col: G. Teixeira Pernambuco, Brazil, 18/2/1965.  
© Smithsonian Department of Botany - Brazilian records (NMNH-Botany\_BR)

**PLANTAE DICOTYLEDONIAE CARYOPHYLLALES CACTACEAE**

*Acanthocereus abicaulis* Britton & Rose **Type collection**  
NMNH-Botany\_BR 762166.2109844 Bahia, Brazil, 8/6/1915.  
© Smithsonian Department of Botany - Brazilian records (NMNH-Botany\_BR)

**PLANTAE MAGNOLIOPHYTA MAGNOLIOPSIDA CARYOPHYLLALES CACTACEAE**

**unesp** *HSJRP 09224* Col: Rodrigues Jr, C.E. 334. Rio Bagagem, ca 4 km Rod. GO070, Goiás, Brasil, 18/12/1993. Coord. munic.: [lat: -15.9344 long: -50.1403 err: +63502 WGS84]  
© Herbário de São José do Rio Preto (HSJRP)

**PLANTAE DICOTYLEDONIAE CARYOPHYLLALES CACTACEAE**

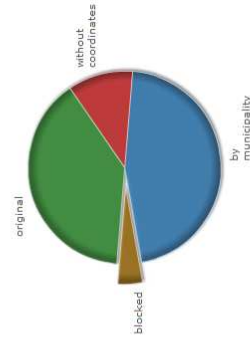
javascript:restoreDetail(1);  
© Smithsonian Department of Botany - Brazilian records (NMNH-Botany\_BR)

## Data summary

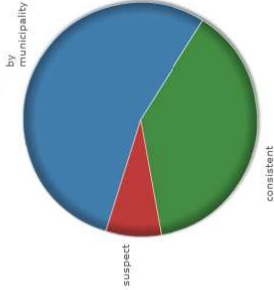
The graphs and information below are a brief analysis of the data retrieved in the last search.

coordinates		records
by municipality		6,706
original		5,696
blocked		604
without coordinates		1,571
suspect		944
consistent		4,752
by municipality		6,706

### coordinates origin



### coordinates quality

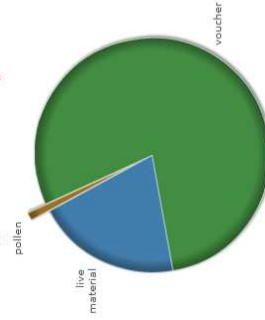


The figures represent the **number of records** in the speciesLink network with geographic coordinates. **By municipality** are records with coordinates automatically assigned by a georeferencing tool. **Blocked coordinates** are records that do have coordinates but the data provider considers this information sensitive. **Suspect coordinates** refer to records with original coordinates that do not fall within the municipality informed.

<b>91</b>	collections and subcollections
<b>14,577</b>	online records
<b>12,402</b>	georeferenced records
<b>787</b>	records with images
<b>159</b>	type records
<b>602</b>	records of species in redlists
<b>232</b>	distinct accepted species

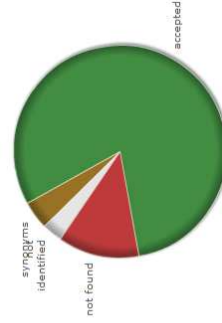
images		quantity
voucher		698
live material		175
pollen		10
total		883

### type of material with images



spp. names		records
accepted		11,719
synonyms		624
not found		1,798
not identified		436

### names quality





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português

# Plants and Fungi

(see how to cite, data use restrictions ...)








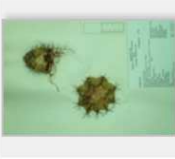

















since 2009

specimens ink

open search form

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showing imagens from 1 to 100 of 779 found

 CVRD001313	 CVRD006375	 FUR001179	 CVRD003542	 CVRD008320	 FUR001180	 FUR001184
 CVRD003544	 CVRD009764	 FUR001181	 CVRD004558	 CVRD002520	 FUR001182	 FUR001183
 CVRD004569	 CVRD002520	 FUR001183	 CVRD004977	 CVRD001341	 FUR001184	 FUR001184
 CVRD005012	 FUR001179	 FUR001184				



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map

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# Plants and Fungi

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UECO041416 *Cereus hidmannianus*



SP023324 *Cereus hidmannianus*



UECO041417 *Cereus hidmannianus*



UECO041422 *Cereus hidmannianus*



UECO041422 Cactaceae *Cereus hidmannianus*



SP023324 Cactaceae *Cereus hidmannianus*



UECO041417 Cactaceae *Cereus hidmannianus*



UECO041422 Cactaceae *Cereus hidmannianus*

summary



images



map



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Inventory of the records found

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species link

# Plants and Fungi

{ see how to cite, data use restrictions ... }

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news

collections

indicators

data cleaning

tools

tips

preferences

português

close

UEC041416  
*Cereus hidimannianus*



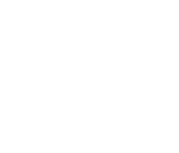
SP023324  
*Cereus hidimannianus*



UEC041417  
*Cereus hidimannianus*



UEC041422  
*Cereus hidimannianus*



UEC041422 Cactaceae *Cereus hidimannianus*



SP023324 Cactaceae *Cereus hidimannianus*



UEC041417 Cactaceae *Cereus hidimannianus*



summary

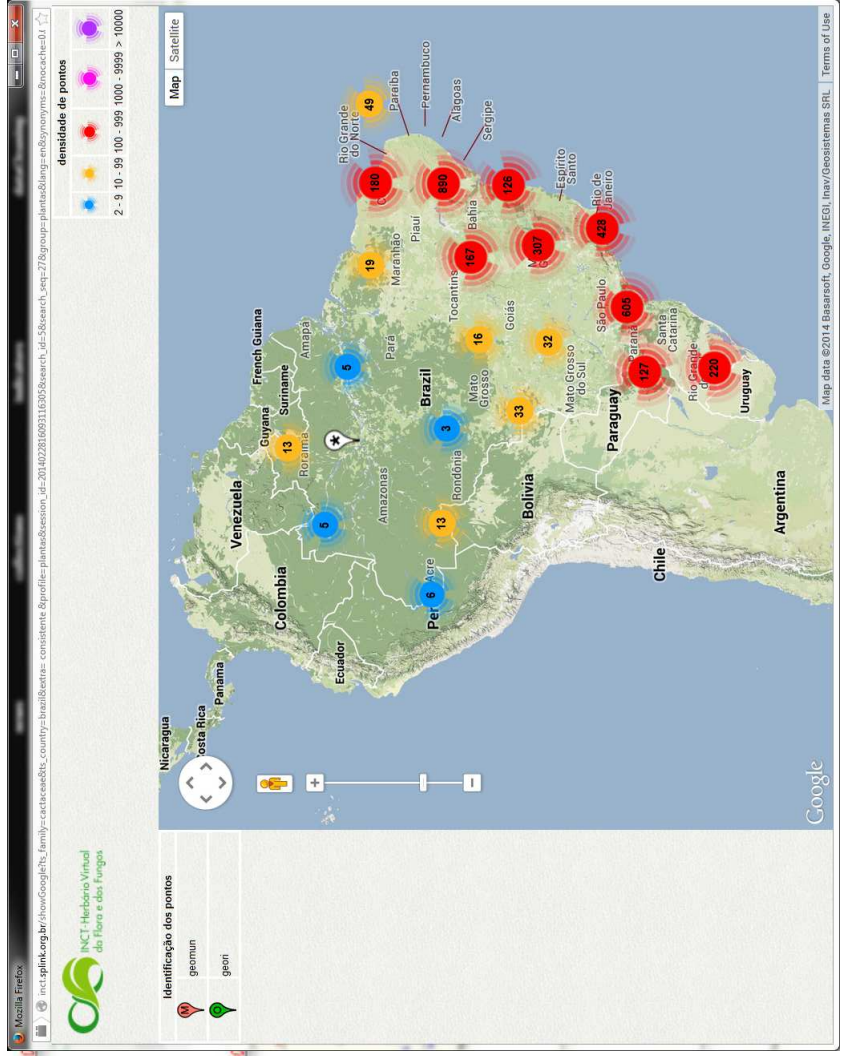
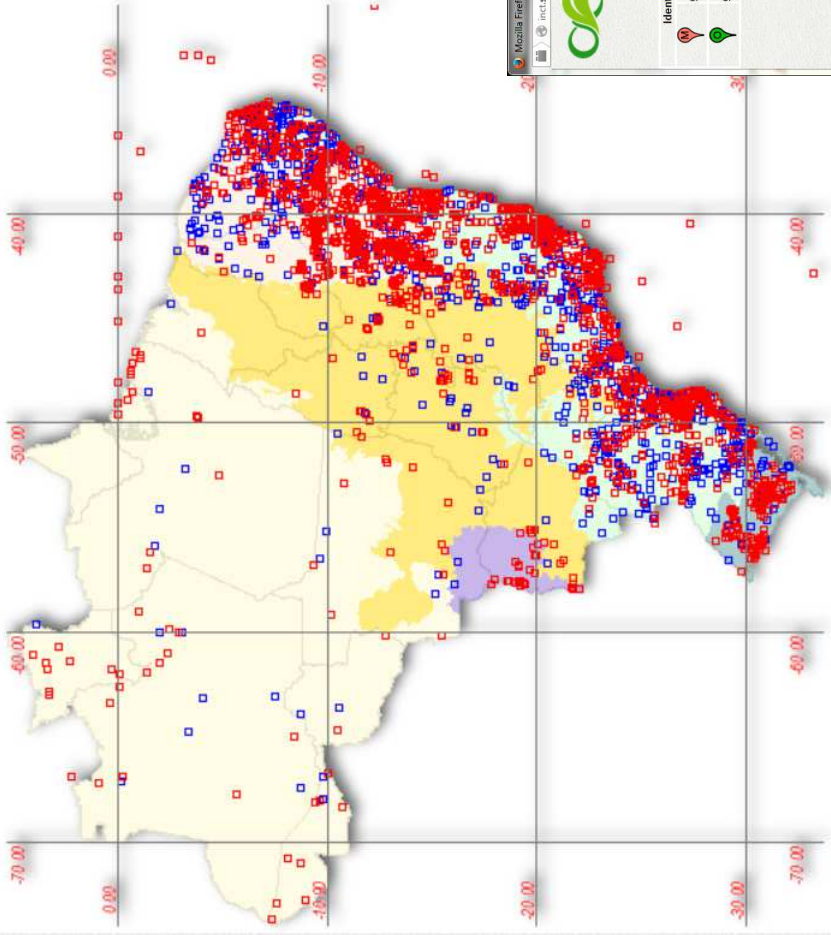
images

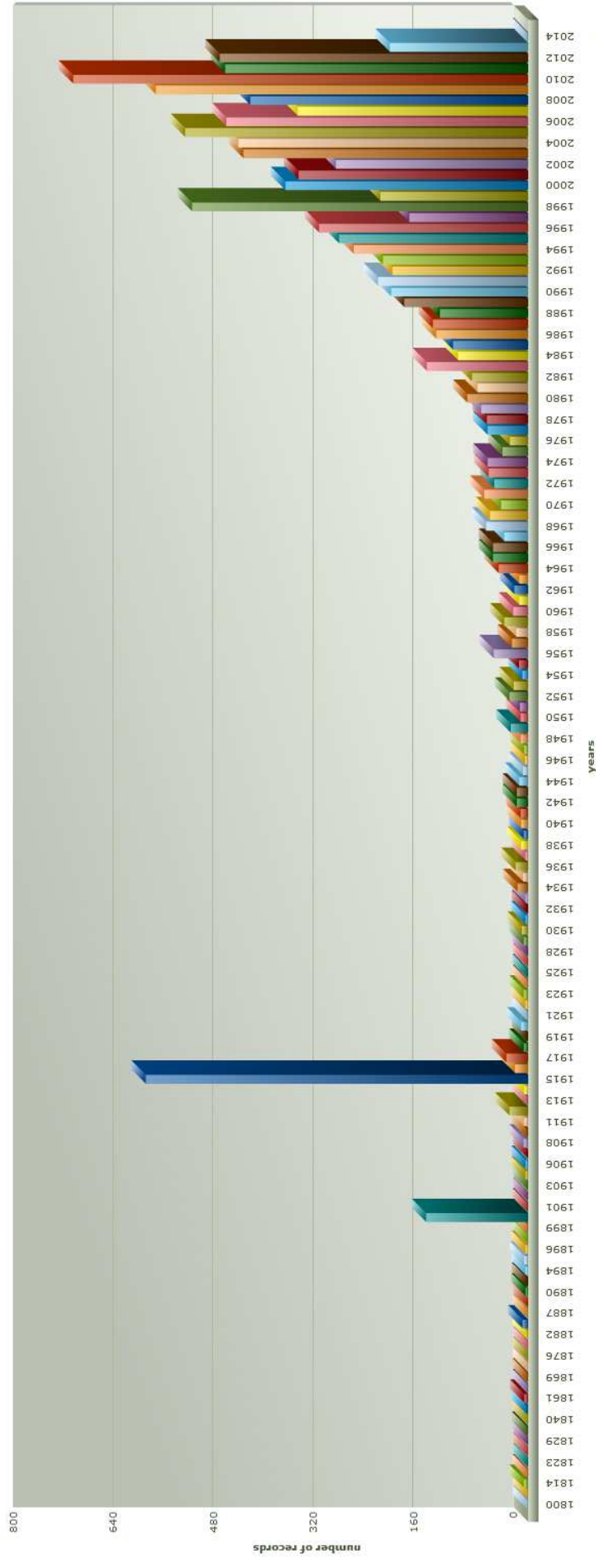
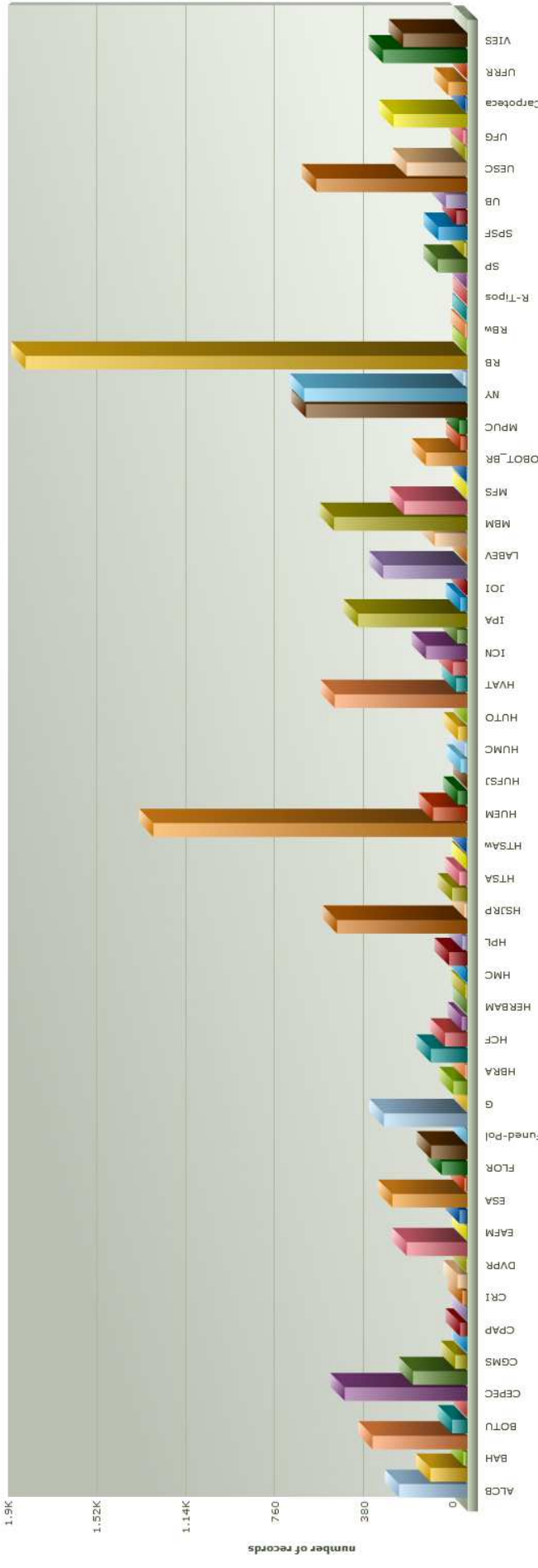
map

download

graph

Inventory of the records found





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# Plants and Fungi




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species link open search form

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**Carefully read the data use restrictions stated by each data provider and observe the requirements and how to cite the source of the data before downloading. Clicking on one of the download icons you are accepting the conditions.**

The records found are available for download in three different formats:

-  Microsoft Office Excel 2007
-  Microsoft Office Excel 2003. Up to 65535 records.
-  UTF8 tab delimited text.

Please select the format that better matches your needs clicking in the corresponding icon.

**TOTAL**   

number of records: 14577

I accept the terms of use and how to cite each source.

**ALCB**   

**Herbário Alexandre Leal Costa**  
 Universidade Federal da Bahia

number of records: 292

data use restrictions  
 It is necessary to cite the original data base.



**ASE**   

**Herbário da Universidade Federal de Sergipe**  
 Universidade Federal de Sergipe, UFS

number of records: 159

data use restrictions  
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INCT-Herbario Virtual  
do flora e dos fungos  
since 2009

see how to cite, data use restrictions ...

open search form

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### how to cite

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### data use restrictions



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- Users must give credits to the original data source - the INCT - Virtual Herbarium of Flora and Fungi - and the corresponding data providers - when publishing any work based on data retrieved from this network.

### search details

(( family = [ cactaceae ])) and (( country = [ brasil ]))

INCT-Herbário Virtual da Flora e dos Fungos since 2009

Plants and Fungi { see how to cite, data use restrictions ... }

open search form

português

Herbário UEC


showing records from 1 to 3 of 3 found using phonetic search including synonyms in 0.69 s

scientific name 1, 2  3

**Attention!** The scientific names and genera listed at right are compared with available dictionaries according to the biological group. In **bold green** are the accepted ones, in **bold gray** the synonyms and in **orange** the ones that were not found. **Family** names are only checked for existing or not in the dictionaries. See **tips** for detailed information.


**PLANTAE MAGNOLIOPSIDA MONIMIACEAE**

**Macrotorus utriculatus** Perkins. Det: Peixoto, A.L. **03/2008** **redlist**  
 UEC 170000 Col: Rochelle, A.L.C. 288. Fazenda Capricórnio - Bairro Taquaral, Floresta Ombrófila Densa Submontana., Ubatuba, São Paulo, Brazil Barcode: UEC041661. Coord. orig.: [lat: -23.366667 long: -45.084167 WGS84]  
 © Herbário da Universidade Estadual de Campinas (UEC)



**PLANTAE MAGNOLIOPSIDA MONIMIACEAE**

**Macrotorus utriculatus** Perkins. Det: Peixoto, A.L. **redlist**  
 UEC 173755 Col: Sanchez, M.; Pedroni, F.; Laps, R.R.; Belinello, R.; Pedroni, F.; Laps, R.R.; Belinello, R. 1773. Pinguaba, Morro do Corisco, Ubatuba, São Paulo, Brazil, **29/05/1997**. Barcode: UEC089629. Coord. orig.: [lat: -23.3025 long: -44.816944 WGS84]  
 © Herbário da Universidade Estadual de Campinas (UEC)



**PLANTAE MAGNOLIOPHYTA MONIMIACEAE**

**Macrotorus utriculatus** Perkins **redlist**  
 NY 894148 Col: L. Riedel s.n. Brazil, **6/1832**. Barcode: NY00894148.  
 © The New York Botanical Garden - Brazilian records (NY)



**Species list used to search**  
 Macrotorus utriculatus → *Macrotorus utriculatus* List of Species of the Brazilian Flora  
 Macrotorus utriculatus → *Mollinedia utriculata* List of Species of the Brazilian Flora

PLANTAE **MAGNOLIOPSIDA** **MONIMIACEAE**

**Macrotorus utriculatus** Perkins. Det: Peixoto, A.L. **03/2008** **MMA Flora Red List - Annex 1**

**UEC 170000** Col: Rochelle, A.L.C. 288. Fazenda Capricórnio - Bairro Taquaral, Floresta Ombrófila Densa Submontana., Ubatuba, São Paulo, Brazil

Barcode: UEC041661.  Coord orig: [*lat*: -23.366667 *long*: -45.084167 WGS84]

Altitude: min 450m., max 450m.

notes: Indivíduo J288 da parcela J do Projeto Temático BIOTA-Gradiente Funcional.

associated [images](#)



 More...

### comments

no comments for this record



new comment

[ mais detalhes ] >>



UEC041661 - Monimiaceae - *Macrodon urticulatus*  
© Herbário da Universidade Estadual de Campinas

exsiccatæ



## other information associated to the name at CRIA

### *Macrotorus utriculatus*

#### in List of Species of Brazilian Flora 2012

Lista de espécies  
da flora do Brasil

#### Monimiaceae

*Macrotorus utriculatus* (Mart.) Perkins.

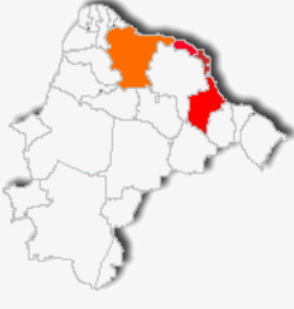
Accepted name. Correct name.

#### synonyms

- *Mollinedia utriculata* Mart. ex Tul.

#### credits

Peixoto, A.L. 2012. *Monimiaceae in Lista de Espécies da Flora do Brasil*. Jardim Botânico do Rio de Janeiro



#### in Flora brasiliensis



- Monimiaceae *Mollinedia utriculata* Mart.

#### in Lacunas de conhecimento da flora e dos fungos do Brasil

#### lacunas

- *Macrotorus utriculatus*
- *Mollinedia utriculata*

#### in Biogeografia da Flora do Brasil

- *Macrotorus utriculatus*

## other information associated to the name

### *Macrotorus utriculatus*

#### in Encyclopedia of Life



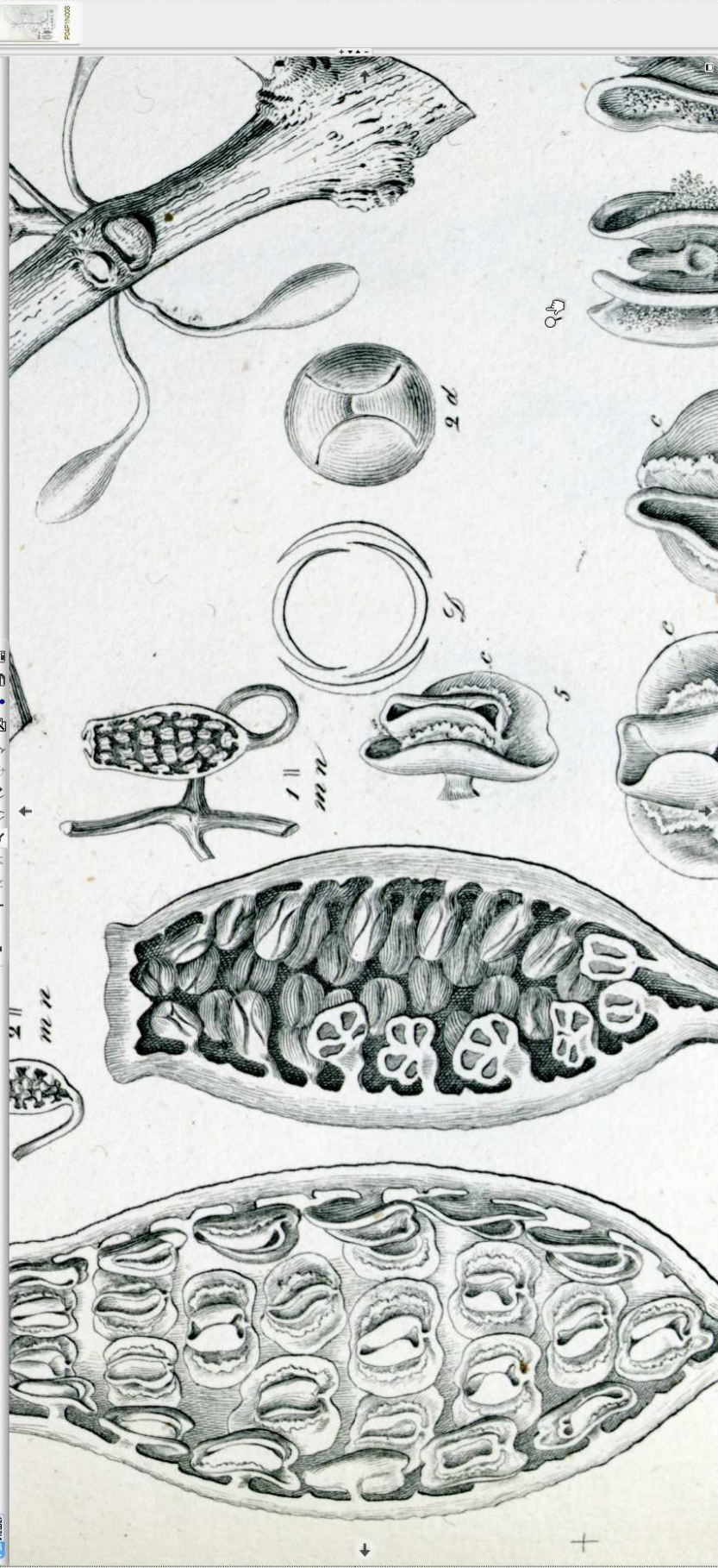
1. *Macrotorus utriculatus* Perkins; *Macrotorus utriculatus*

#### in Biodiversity Heritage Library



1. Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie. *Schweizerbart*, v.25(1898), [1881]-2009.
2. Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie. *Schweizerbart [etc.]*, v.25 (1898)
3. Das Pflanzenreich *W. Engelmann*, heft 4 (1901), 1900-1968.
4. Just's botanischer Jahresbericht. *Gebr. Borntraeger*, Jahrg. 29, Abt. 2 (1901), 1874-98;

[ mais detalhes ] »



Flora Brasiliensis - Mollinedia - Mollinedia - Mollinedia articulata  
© Flora Brasiliensis

exsiccatae



MOLLINEDIA articulata.

# ANNOTATION

## Herbário Vale do São Francisco - HVASF

Universidade Federal do Vale do São Francisco


### PLANTAE CACTACEAE

*Cereus stenogonus* K.Schum.. Det: D. Zappi **18/12/2012**

**HVASF 15940** Col: J.A. Siqueira Filho 2809. Estrada de acesso perto da Fazenda Retiro Conceição, cerca de 2,3km da BR 267. Acesso à estrada a 11,7km de Porto Murinho., Porto Murinho, Mato Grosso do Sul, Brasil, **21/06/2012**. Coord.: Bloqueadas Sex: U

Altitude: min 90m., max 90m.

notes: Cacto colunar com cerca de 6 metros de altura, vegetando em área degradada. Em estado vegetativo. Planta cultivada na Coleção Viva (VIVASF 366).

 More...

### comments

#### reference

##### CACTACEAE



*Cereus hildmannianus* subsp. *hildmannianus* K.Schum.. Det: N.P. Taylor **2012** Barcode: HVASF015940. **HVASF 15940** Col: J.A. Siqueira Filho 2809 Estrada de acesso perto da Fazenda Retiro Conceição, cerca de 2,3km da BR 267. Acesso à estrada a 11,7km de Porto Murinho. Porto Murinho Mato Grosso do Sul Brasil **2012**.

#### comment

##### sciname

Prezado curador observando a distribuição de *C. hildmannianus* juntamente com Nigel Taylor, chegamos a conclusão de que este registro na verdade deve ser *Cereus stenogonus* K.Schum., cuja ocorrência no Brasil é um registro recente, nas proximidades do Chaco. Por favor atualize a determinação! Obrigada Zappi

Daniela Zappi  
17-Dec-2012 06:06

  new comment

Note: The origin of the comments is not checked.  
CRIA does not take any responsibility for their contents or origin. Use with caution.

# DATA CLEANING & SEARCH INTERFACE

plants & fungi news collections indicators dataCleaning tools tips preferences

INCT-Herbário Virtual da Flora e dos Fungos since 2009

Plants

species ink

The INCT - Virtual Herbarium of Flora and Fungi promote access to data, information, and tools available to any in All data providers have previously accepted to make their order to promote scientific development and research all and to stimulate the public use of scientific information. of any data available through this network, users must accept that:

- There is no warranty about data quality and data co when making use of any information retrieved from
- Users must respect and follow any additional restri providers.
- Users must give credits to the original data source and Fungi and the corresponding data providers - v retrieved from this network.

### Search form

any field

general	taxonomy	collect
barcode <input type="text"/>	determinator <input type="text"/>	collector <input type="text"/>
collection code <b>BHCB</b> <input type="text"/>	phylo <input type="text"/>	collect number <input type="text"/>
catalog number <input type="text"/>	class <input type="text"/>	collect year <input type="text"/>
institution code <input type="text"/>	order <input type="text"/>	country <input type="text"/>
	family <input type="text"/>	state <input type="text"/>
scientific name <input type="text"/>	clear	county <input type="text"/>
		locality <input type="text"/>

phonetic search (scientific names)

search also for synonyms defined in the following dictionaries

species2000 Catalog of Life

List of Species of the Brazilian Flora

**search**

### search only within records

images

with images  without images

live material  pollen

material type

type  not type

red list

spp. in MMA red lists

spp. that are not red lists

geographic coordinates

with coords.  without coords.

original  by county

blocked by collection

coordinates quality

not suspect  are suspect

Herbario da Universidade E:



Inventory of the records found	
scientific name <sup>1 2</sup>	Inventory of the records found
<i>Em branco</i>	5734
<b>Abarema</b>	10
<i>Abarema brachystachya</i>	1
<i>Abarema brachystachya</i>	7
<i>Abarema cochleata</i>	1
<i>Abarema cochliacarpus</i>	1
<i>Abarema langsdorffii</i>	9
<i>Abarema obovata</i>	21
<i>Abarema turbinata</i>	1
<i>Abatia</i>	1
<i>Abatia americana</i>	7
<i>Abatia brasiliensis</i>	1
<i>Abatia tomentosa</i>	2
<i>Abelia chinensis</i>	1
<i>Abies</i>	1
<i>Abies lasiocarpa</i>	1
<i>Abolboda</i>	5
<i>Abolboda brasiliensis</i>	2
<i>Abolboda egleri</i>	1
<i>Abolboda killipii</i>	1
<i>Abolboda macrostachya</i>	2
<i>Abolboda poarchon</i>	4
<i>Abolboda pulchella</i>	1
<i>Abrus fruticulosus</i>	1
<i>Abrus preicatorius</i>	1
<i>Abuta convexa</i>	1

graph

scientific name <sup>1 2</sup>

Em branco

Abarema

Abarema brachystachya

Abarema brachystachya

Abarema cochleata

Abarema cochliacarpus

Abarema langsdorffii

Abarema obovata

Abarema turbinata

Abatia

Abatia americana

Abatia brasiliensis

Abatia tomentosa

Abelia chinensis

Abies

Abies lasiocarpa

Abolboda

Abolboda brasiliensis

Abolboda egleri

Abolboda killipii

Abolboda macrostachya

Abolboda poarchon

Abolboda pulchella

Abrus fruticulosus

Abrus preicatorius

Abuta convexa

summary

showing records from 1 to 100 of 110341 found in 1.58 s

PLANTAE DICOTYLEDON SALICACEAE  
*Abatia tomentosa* Mart.  
 BHCB 62555 Col: Barreto, H.L.M. 11075 Caldas, Minas Gerais, Brasil Coord  
 © Herbario da Universidade Federal de Minas Gerais (BHCB)

PLANTAE DICOTYLEDON FABACEAE  
*Abarema brachystachya* (DC.) Bameby & J.W.Grimes  
 BHCB 156366 Col: Pena, F.S.R. s.n.. Cava do Sapo, Conceição do Mato [  
 © Herbario da Universidade Federal de Minas Gerais (BHCB)

PLANTAE DICOTYLEDON FABACEAE  
*Abarema brachystachya* (DC.) Bameby & J.W.Grimes  
 BHCB 156365 Col: Pena, F.S.R. s.n.. Cava do Sapo, Conceição do Mato [  
 © Herbario da Universidade Federal de Minas Gerais (BHCB)

PLANTAE DICOTYLEDON FABACEAE  
*Abrus preicatorius* 04/2012  
 BHCB 93468 Col: Stehmann, J.R.; et al.; et al. 3835. estrada para Prado,  
 WGS84]  
 © Herbario da Universidade Federal de Minas Gerais (BHCB)

PLANTAE MONOCOTYLEDON XYRIDACEAE  
*Abolboda*  
 BHCB 134353 Col: Hattori, E.K.O.; Batista, J.A.N.; Batista, J.A.N. 1071. P



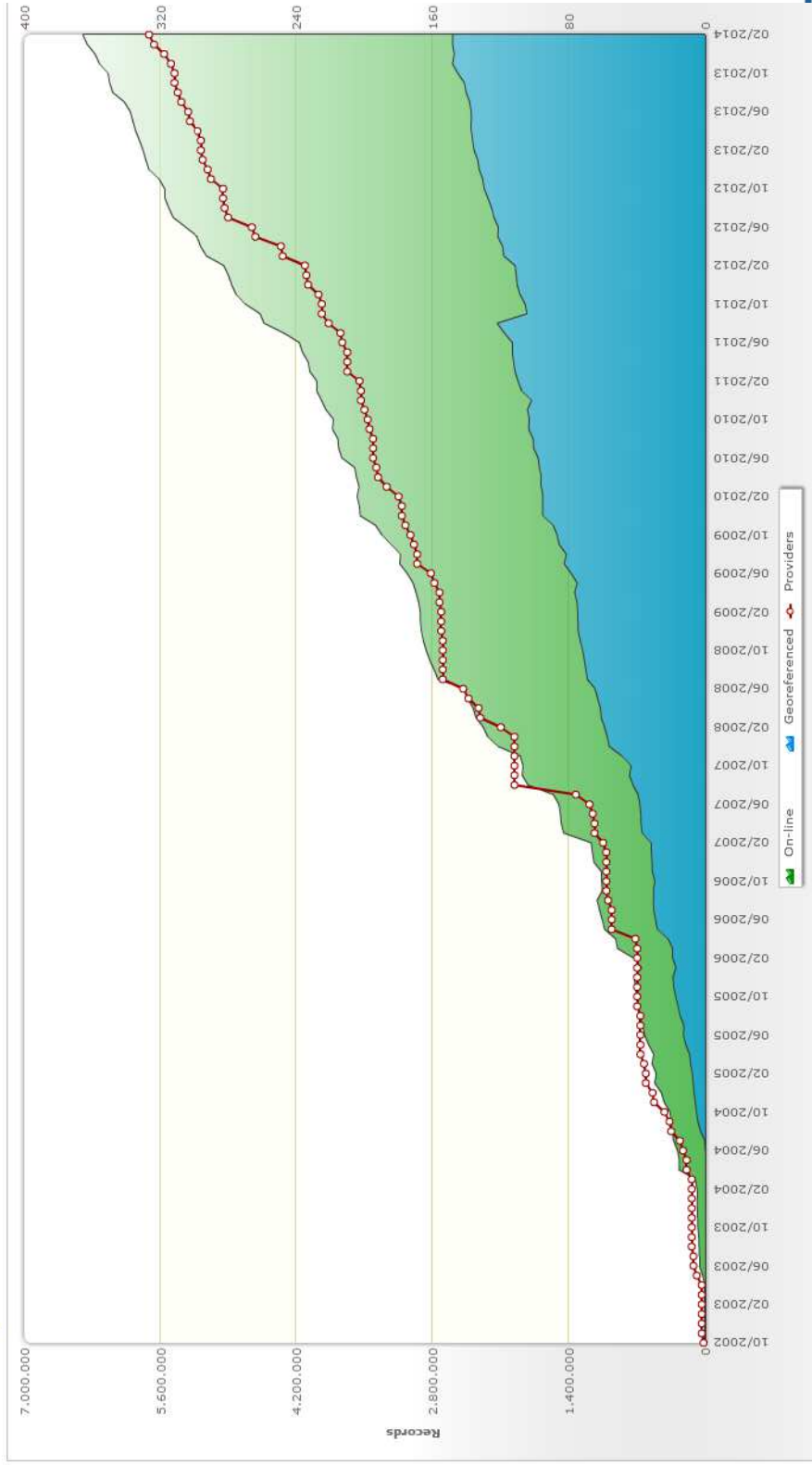
## TOOLS

- Architecture ✓
- Data cleaning ✓
- Search, retrieval and visualization ✓
- Indicators

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. [Click here](#) to view the table data contribution x dependency per state.

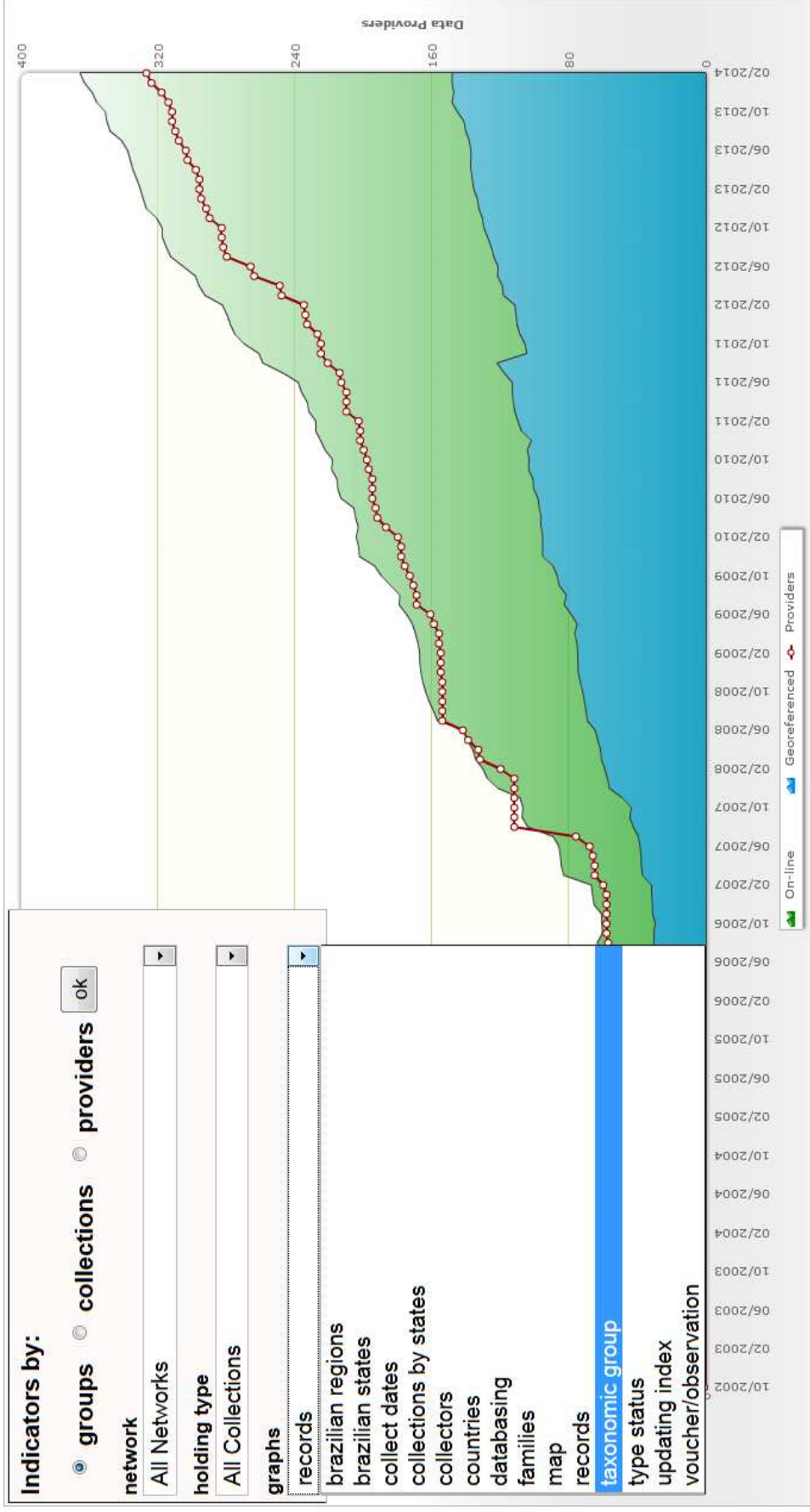
[See other options for indicators here](#) ↓

All Networks - All Collections - rec



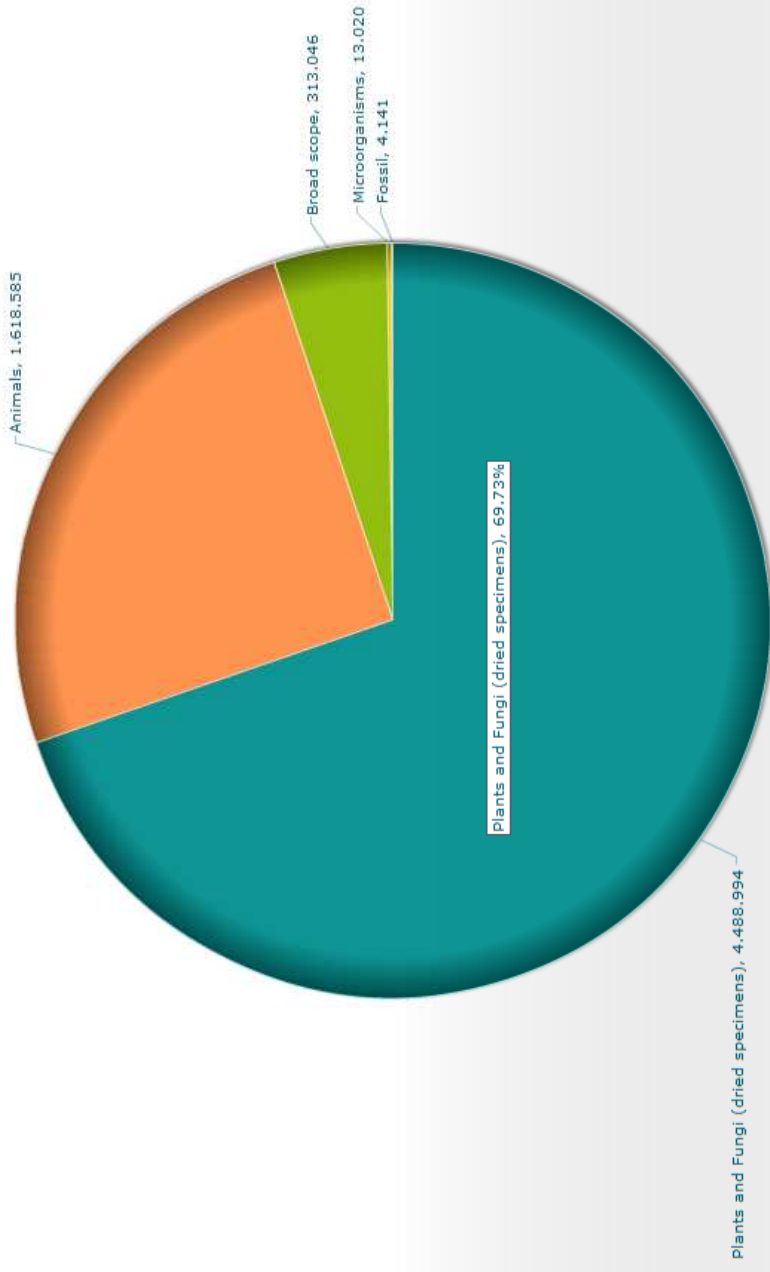
See other options for indicators [here](#) ↗

## All Networks - All Collections - records



See other options for indicators [here](#) ↓

## All Networks - All Collections - taxonomic group

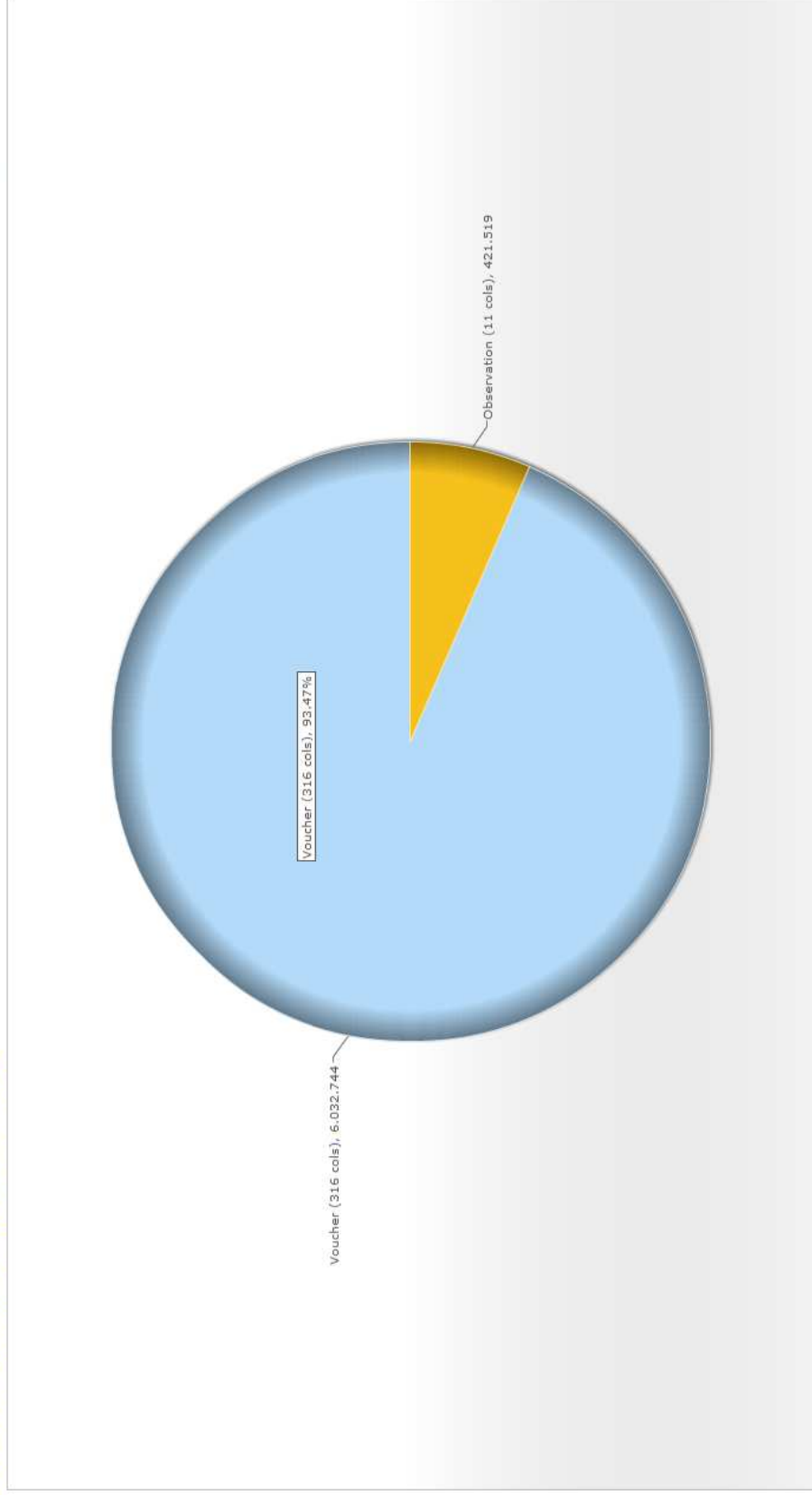


This indicator shows the number of records per group and depends on the type of taxonomic group selected by the user. Each collection indicates its "classification" in a hierarchy that is part of its metadata. Therefore, this indicator is based on the collection's metadata and not on the actual data.



See other options for indicators [here](#) →

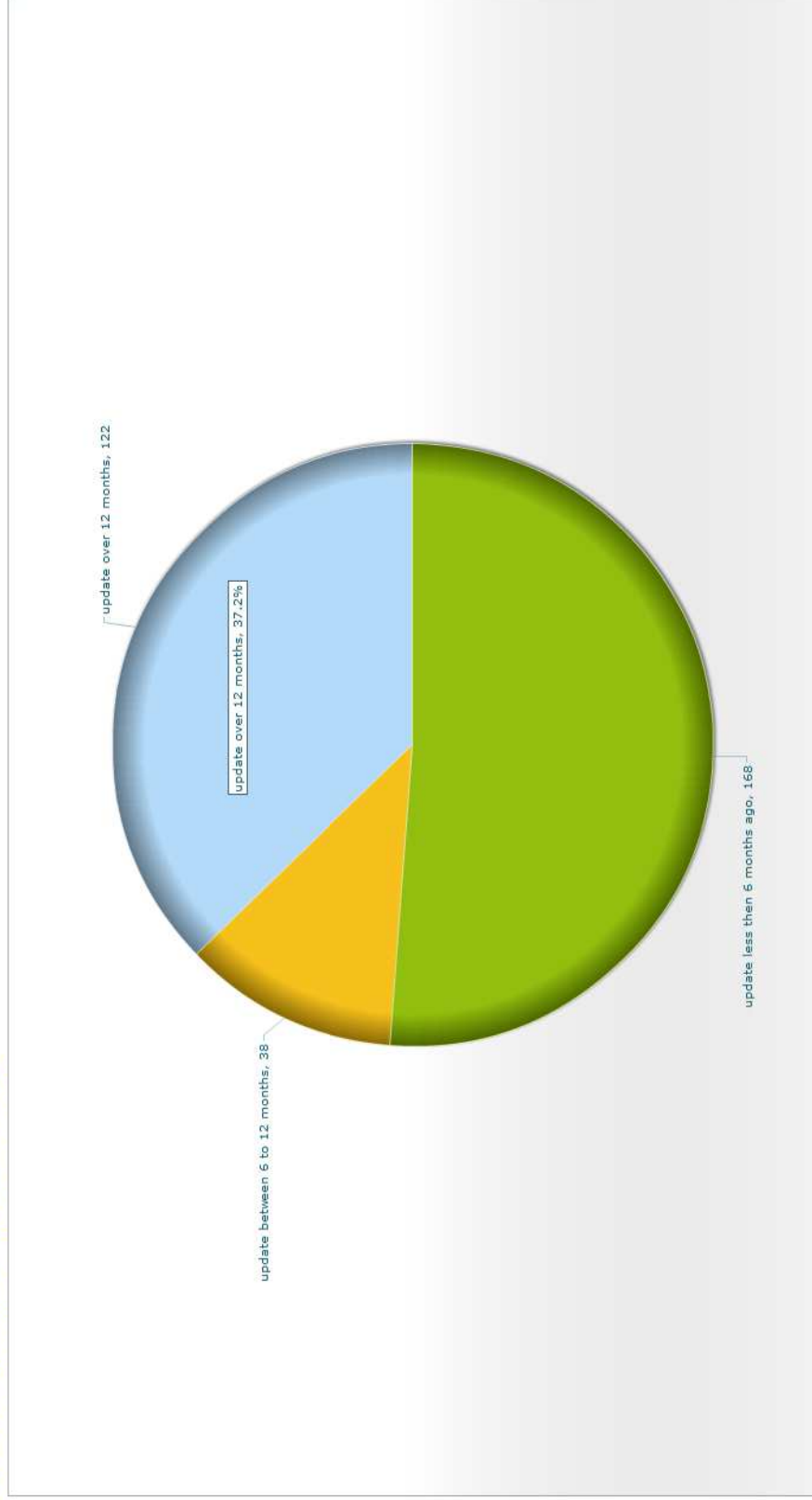
All Networks - All Collections - voucher/observation



This chart shows the number of records per type of data, associated to an observation or voucher and the number of collections serving each type of data.

See other options for indicators [here](#) →

All Networks - All Collections - updating index



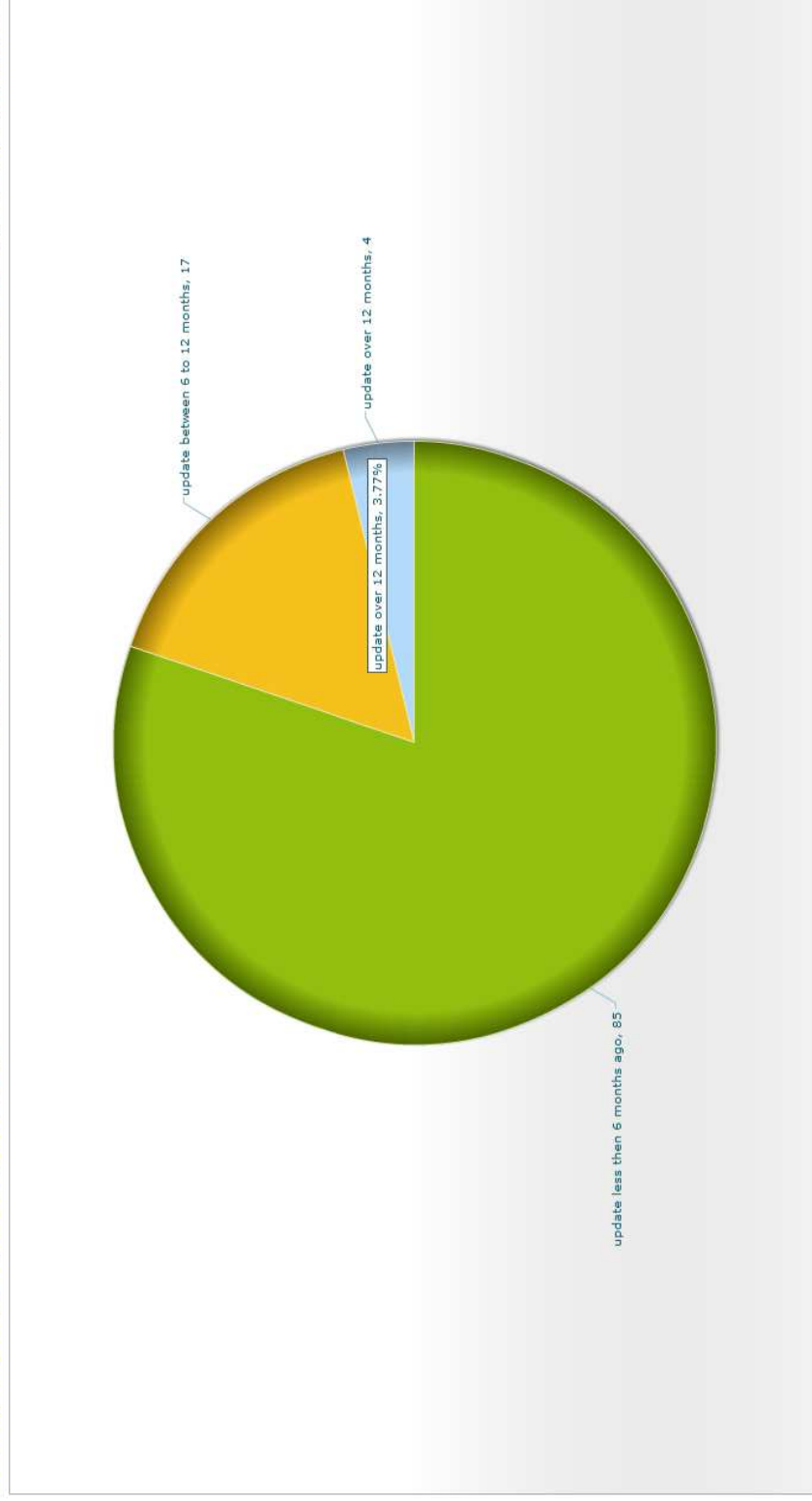
The indicator considers all collections that have at least 10 records on-line.

- update over 12 months, number = The number of collections that have not updated the on-line system for over one year
- update between 6 to 12 months, number = The number of collections that updated the on-line system between 6 to 12



See other options for indicators [here](#) →

INCT Virtual Herbarium Network - All Collections - updating index



The indicator considers all collections that have at least 10 records on-line.

- update over 12 months, number =
- update between 6 to 12 months, number =

See other options for indicators [here](#) →

All Networks - All Collections - databasing

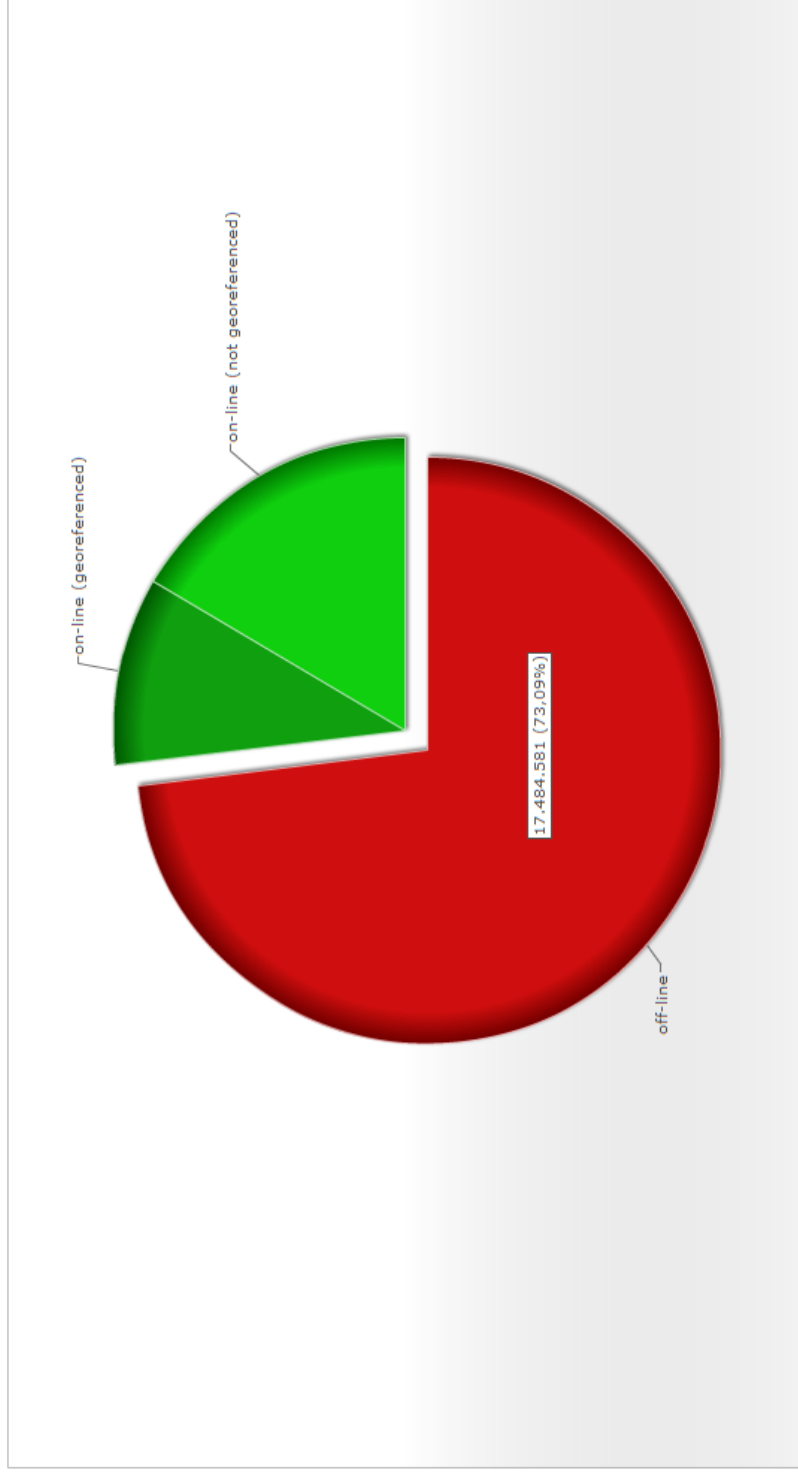


Chart with the percentages of on-line and georeferenced records compared to total records. This indicator aims to show the work still required to digitize and georeference collections' holdings.

Updated on 02/03/14 04:05



UF [InCo]	AC	AL	AM	AP	BA	CE	DF	ES	GO	MA	MG	MS	MT	PA	PB	PE	PI	PR	RJ	RN	RO	RR	RS	SC	SE	SP	TO	Total	Cont(%)	
AC [7]	27718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	27719	0.49%	
AL [1]	0	20859	38	20	1015	138	58	30	65	38	71	8	57	335	163	892	114	29	51	723	6	15	12	22	626	371	67	25823	0.46%	
AM [35]	12261	50	174447	1797	2248	313	1132	455	1591	1488	1506	308	13219	28374	172	647	202	1983	1041	45	15798	18693	1094	141	6	906	667	280584	5.01%	
AP [0]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	
BA [8]	154	2409	1408	218	333295	7100	3669	7130	6334	1584	15014	1542	2674	1472	2536	8271	4893	6622	4977	1917	1031	258	1521	1191	2045	7955	1513	428733	7.65%	
CE [2]	5	484	48	63	2601	36549	393	66	464	1934	296	234	181	662	943	1299	3561	203	218	1452	32	94	388	22	217	286	56	52751	0.94%	
DF [6]	94	196	2649	205	13642	443	65467	666	37972	2824	32738	2868	12277	3546	113	801	1754	4369	10668	502	134	506	586	1022	273	12160	5411	213886	3.82%	
ES [18]	275	459	1336	59	11647	116	359	241250	992	444	8036	220	941	1679	107	364	126	1387	3569	1297	445	10	2662	401	369	12516	261	291327	5.20%	
GO [4]	3	0	26	5	231	32	800	21	21625	71	814	134	161	68	2	12	14	81	45	5	14	9	81	40	0	195	1042	25631	0.46%	
MA [2]	8	0	40	6	1	0	57	0	3	1751	18	0	11	150	0	2	35	0	0	0	0	9	11	0	0	0	98	0	2200	0.04%
MG [14]	389	129	2318	256	4075	1283	1799	3668	4850	518	204347	2104	1855	1543	133	1577	627	7227	3595	182	592	328	2500	2235	71	6883	641	255725	4.56%	
MS [2]	7	0	48	118	196	18	191	30	435	46	300	42580	3830	67	1	21	11	1357	19	3	2	29	393	84	1	595	10	50372	0.90%	
MT [15]	3	0	163	5	10	24	23	29	194	40	116	831	36197	1050	5	9	19	101	28	0	415	0	104	241	0	227	100	39934	0.71%	
PA [3]	0	0	294	110	31	0	0	0	1	83	3	0	37	7808	0	0	0	24	1	0	2	0	0	155	0	4	1	8554	0.15%	
PB [4]	15	1393	417	4	3842	613	335	303	421	78	276	224	317	89	50734	5816	349	121	412	3023	85	7	221	23	1729	981	46	71874	1.28%	
PE [13]	410	10354	9859	7169	26968	8388	1689	652	1394	13728	2395	307	1852	3018	9765	115708	5679	1351	1088	4856	6259	1629	1386	341	9886	3448	791	250450	4.17%	
PI [1]	16	431	10	14	561	380	495	33	467	401	219	42	43	64	25	313	8004	48	13	326	7	7	0	1	41	240	72	12273	0.22%	
PR [37]	962	523	11868	488	25289	852	3581	16180	10320	819	34699	14394	17723	3945	574	1946	306	360892	12410	936	4639	406	16765	32647	304	28015	1641	603124	10.76%	
RJ [26]	8343	1476	29107	2997	49695	4921	11839	28900	22193	3119	73396	5778	21076	26554	2675	8071	3543	17870	166978	1695	6253	3112	7020	15440	1839	32182	4820	560792	10.00%	
RN [3]	0	569	7	1	1263	3191	262	23	83	336	254	26	33	13	387	1227	523	153	12	21081	8	103	66	24	229	77	81	30032	0.54%	
RO [6]	0	49	1284	0	57	4	5	0	17	0	115	0	861	28	1	30	7	5	6	0	14207	138	59	0	2	0	0	16875	0.30%	
RR [2]	79	33	557	82	110	6	3	3	33	9	35	4	5	449	3	143	42	3	0	0	31	9927	13	0	0	11	13	11594	0.21%	
RS [20]	1444	539	5030	523	3235	666	517	1333	5064	374	6370	1316	7196	3788	210	1195	227	9896	1548	453	1876	553	277260	31004	69	5380	284	367350	6.55%	
SC [5]	103	39	315	61	1454	104	574	231	520	80	1756	573	424	790	256	286	44	7588	752	88	80	854	9754	82940	10	1354	57	111087	1.98%	
SE [2]	0	648	14	1	1031	790	172	2	66	117	348	18	127	19	1197	993	129	210	21	216	4	58	7	20	25242	351	40	31841	0.57%	
SP [78]	7206	4153	61988	4378	47197	5499	10096	27289	23642	9772	105681	23762	46982	31078	3706	21016	4645	43954	31049	5154	13081	4418	29138	24913	3575	662648	7089	1263109	22.53%	
TO [1]	0	0	0	0	1	0	125	0	88	54	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3405	3688	0.07%
EX [9]	25736	1520	74790	8710	74660	3124	23425	8584	35782	10007	65848	5849	23176	42926	2222	5800	1589	33554	31869	504	9915	7745	16295	19578	1171	30888	3022	568289	10.14%	
Total	85231	46313	378161	27290	604355	74554	127066	336778	174616	49715	554666	103102	191255	159515	75930	176439	36443	499028	270350	44458	74926	48910	367325	212485	47705	807771	31130	5605517	100%	
Dep(%)	67%	55%	54%	100%	45%	51%	48%	28%	88%	96%	63%	59%	81%	95%	33%	34%	78%	28%	38%	53%	81%	80%	25%	61%	47%	18%	89%			

The aim of this table is to show each state's dependency on data from institutions outside of the state. If one reads each row, the chart shows the state's acronym followed by a number which is the number of data providers of that state. The numbers that follow indicate the number of records that the providers of that specific State have of other States. This may indicate the existence of joint research with other states. At the end of the row is the total number of records being provided by institutions of that state and what this represents in terms of percentage of the total network.

Following the numbers by columns, one can see if there are important data providers from other states or from collections abroad "EX" that are repatriating data from Brazil. At the end of the column a dependency rate is shown. A dependency rate of 90% means that 90% of the data from that state is being shared by providers outside of the state.

Updated on 01/02/2014



## GROWTH AND USAGE 2013

Type of Holding	2012	2013	Growth (records)	Growth (%)
Plants	3,955,358	4,408,058	452,700	11
Animals	1,442,640	1,538,482	95,842	7
Microorganisms	11,235	12,177	942	8
All taxa	313,051	317,187	4,136	1
Total records	5,722,284	6,275,904	553,620	10
Images	218,605	260,538	41,933	19

Data retrieval – speciesLink network	Monthly average for 2013
Searches	20 thousand
Data Retrieved	145 million records
Data Downloaded/Visualized	26 million records



# Obrigada !



**ORNIAS**

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vem por projetos e programas informações sobre os Centros de Recursos Biológicos do Brasil e servir de elemento integrador às diversas e diferenciadas coleções de interesse biotecnológico. Saiba mais.

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**cria**

sobre o cria  
projetos  
eventos

Dora Ann Lange Canhos  
[dora@cria.org.br](mailto:dora@cria.org.br)

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