Brazil's Virtual Herbarium: Outputs, Outcomes, and Challenges

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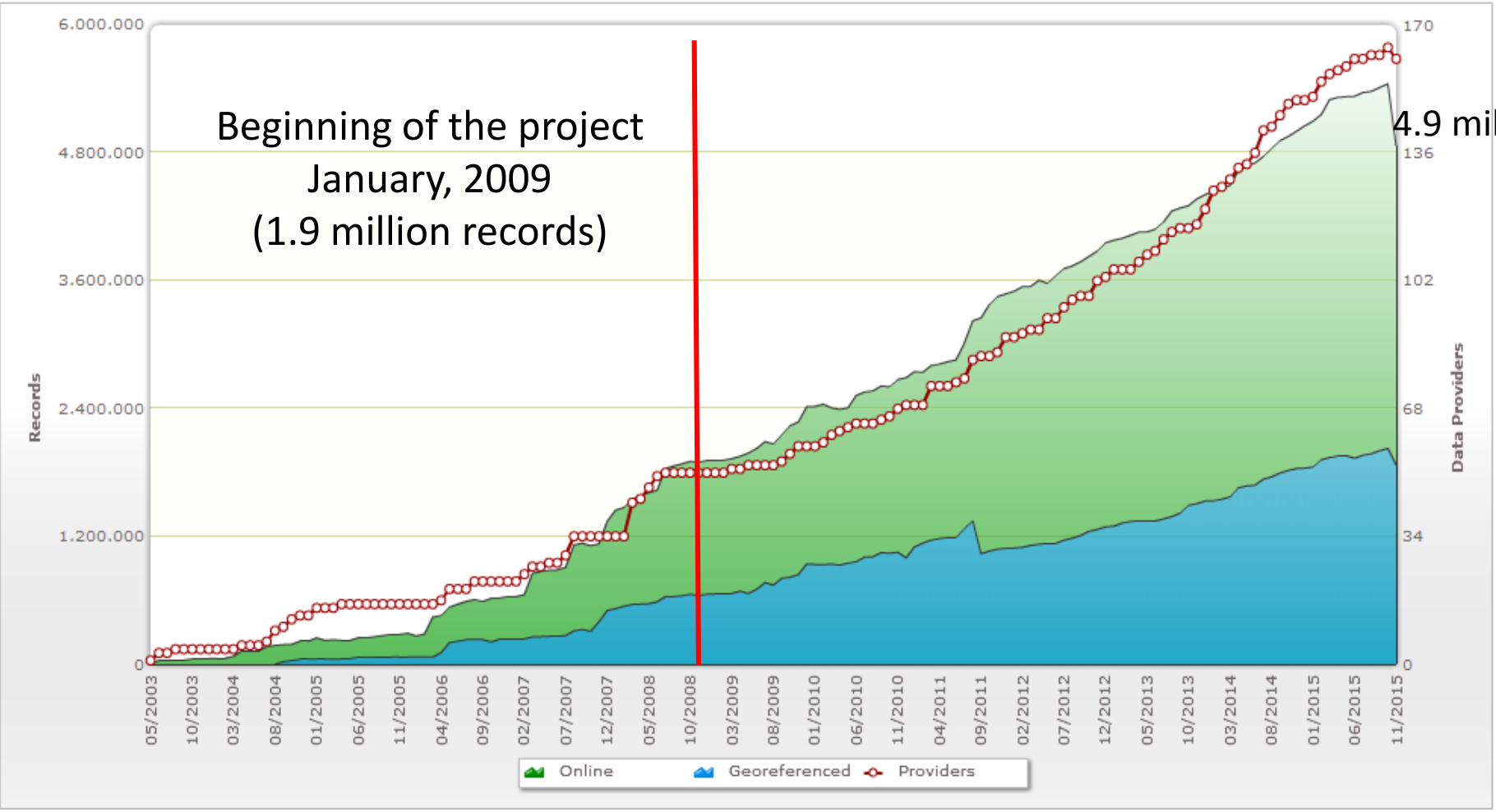
INCT-Herbário Virtual da Flora e dos Fungos

Indicators

Yr 7

See other options for indicators here



78,079 distinct species; > 1 million images

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Brazil's Virtual Herbarium

http://www.splink.org.br/showNetwork

2008: 48 datasets

2 from abroad

2015: 161 datasets

13 from abroad

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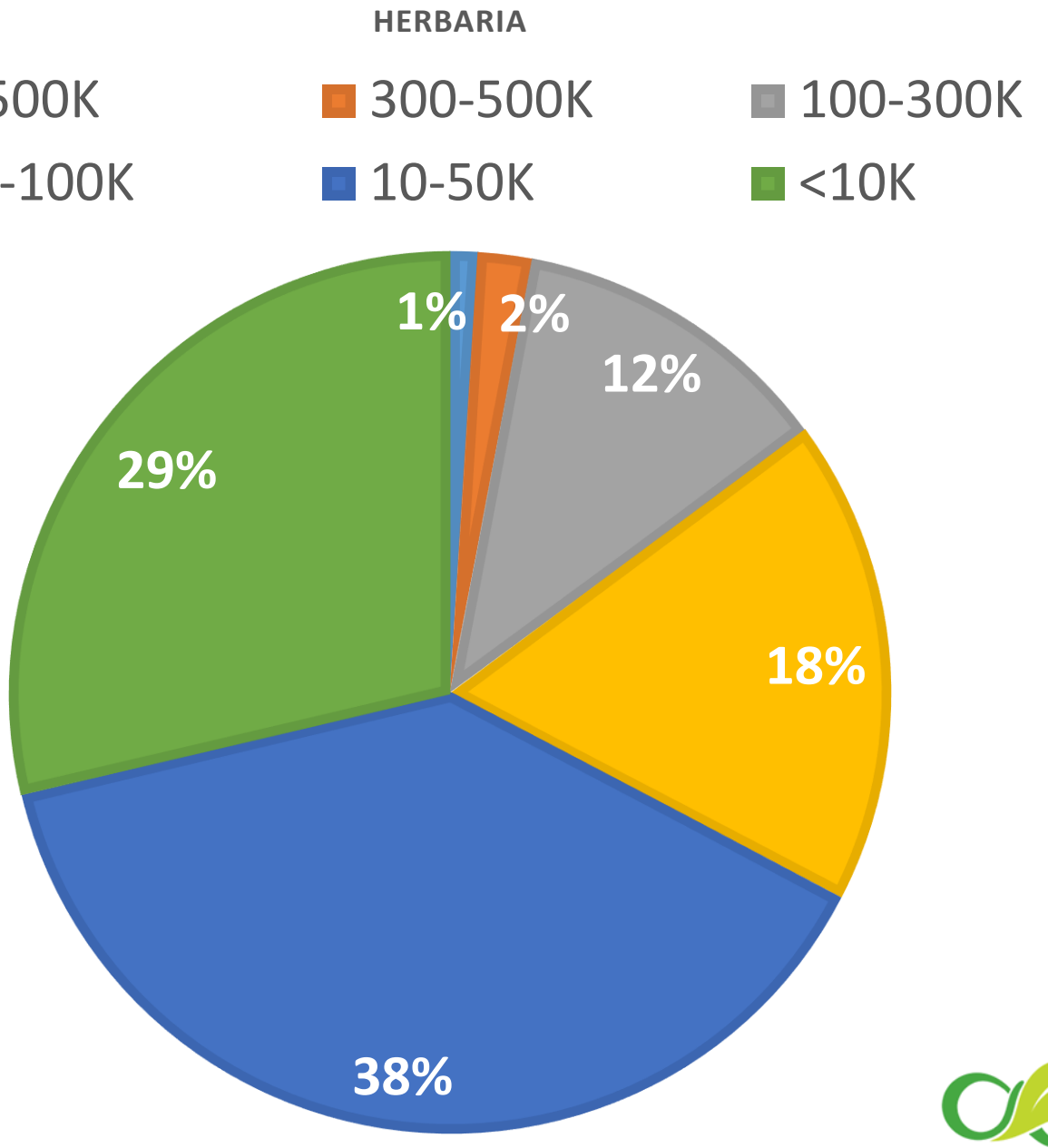
Brazil's Virtual Herbarium



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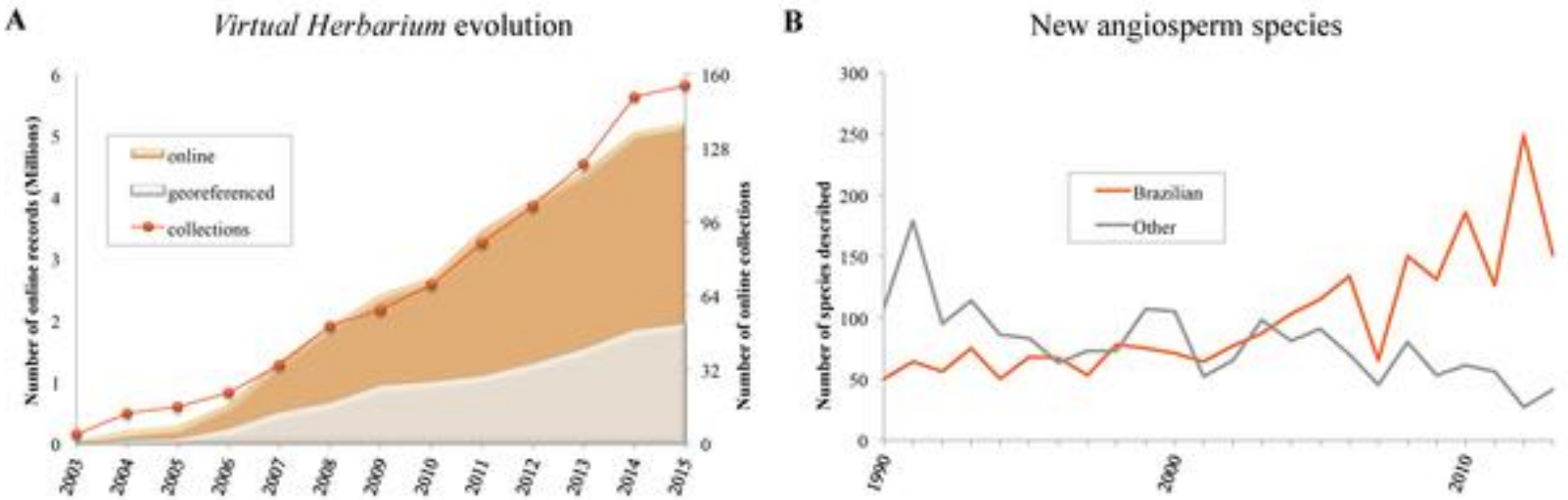
Outcomes from sharing data

- greater institutional recognition
- greater involvement with graduate courses
- increased number of visits to the herbaria
- increase of the holdings
- increase of grants

The evolution of Brazilian flora primary data available online and species described by Brazilian specialists.



Canhos DAL, Sousa-Baena MS, de Souza S, Maia LC, Stehmann JR, et al. (2015) The Importance of Biodiversity E-infrastructures for Megadiverse Countries. PLoS Biol 13(7): e1002204. doi:10.1371/journal.pbio.1002204
http://journals.plos.org/plosbiology/article?id=info:doi/10.1371/journal.pbio.1002204

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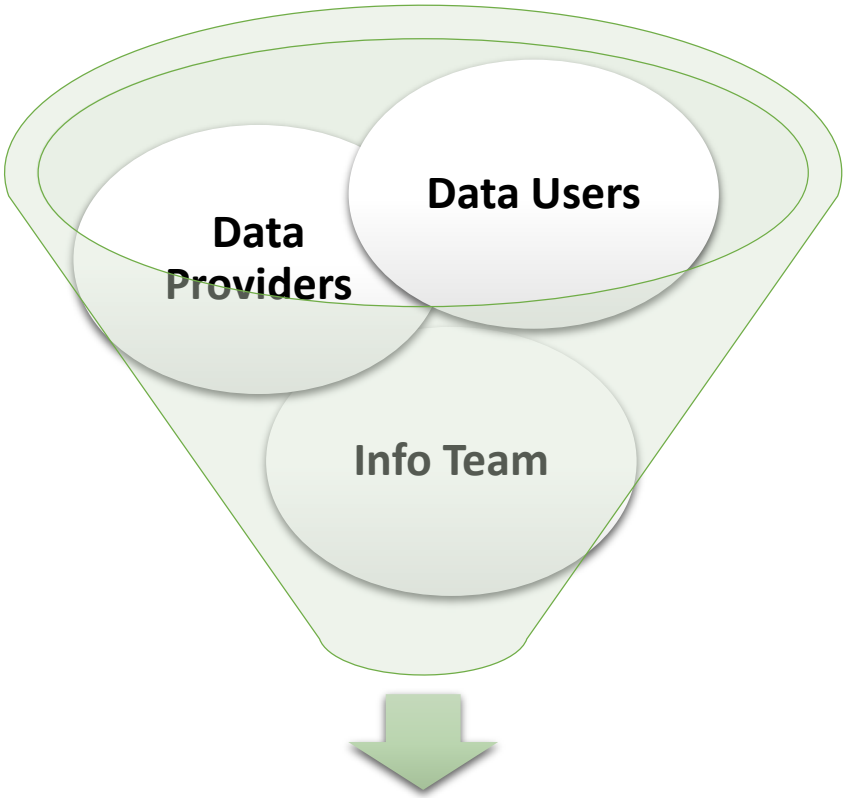
Lesson learned

- The social network is an essential component of an *e*-infrastructure
- Interaction among data providers, users, and information management team is the center of innovation



Data Cleaning Reports

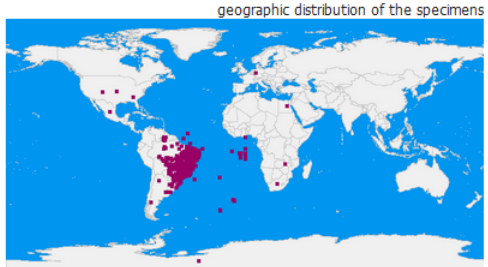
speciesLink — dataCleaning (português)

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 then welcome.

Select a collection: ASE

collection: ASE	
total number of records on-line	32796
- without coordinates	18
- georeferenced	32778
- access to georeferenced data denied	0
- in the sea	58
- blank catalognumber	1
smaller: 1 larger: 35763	[gap]
repeated records	
catalog number	335
duplicate records	0
collector's name and number	1296
last update - error logs	
of the collection: 12-09-2015	of dataCleaning: 13-09-2015

geographic distribution of the specimens



collection profile
dataCleaning statistics
geographic coordinates analysis

taxonomic data	
inventory	scientific name - collector - identifier - types
family	not found
genus	not found
species	24 suspect records
subspecies	not found
author	142 suspect records
duplicate	1648 suspect records
other inconsistencies	not found

locality data	
inventory	country - state - municipality
name of the country/state	610 suspect records
outlier	9 suspect records
long/lat outside the world limit	not found
equal long/lat	not found
long or lat equal to zero	12 suspect records
long/lat in the sea (Brazil)	27 suspect records
municipality name (Brazil)	3740 suspect records
coordinate unit analysis (Brazil)	11 suspect records
other inconsistencies	not found

date collected	
collected before 1902	not found
last update previous to date collected	not found
identification year previous to date collected	not found

suggestions for blank fields	
long/lat (Brazil)	11 suggestions
country/state name	22 suggestions
municipality name (Brazil)	211 suggestions

search dataCleaning — email Centro de Referência em Informação Ambiental, CRIA

Suspect Records & Inconsistencies

- Taxonomic data
- Dates
- Locality data
- Blank fields

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Data cleaning and duplicates

Filter: [no filter] [undetermined family] [undetermined genus] ☑ same collection date

collector	collector number	date collected	img	catalognumber	family	genus	species
Almeida, MN de	30	1982-01-23		ASE 2111	Solanaceae	sp *Solanum*	*stipulaceum*
Almeida, MN	30	1982-01-23		JPB 58260	Solanaceae	sp *Solanum*	*asperum*

identified by	date identified	stateprovince	county
Agra, MF	2012-04	Sergipe	São Cristóvão
Viana, G	1988-10-31	Sergipe	São Cristovão

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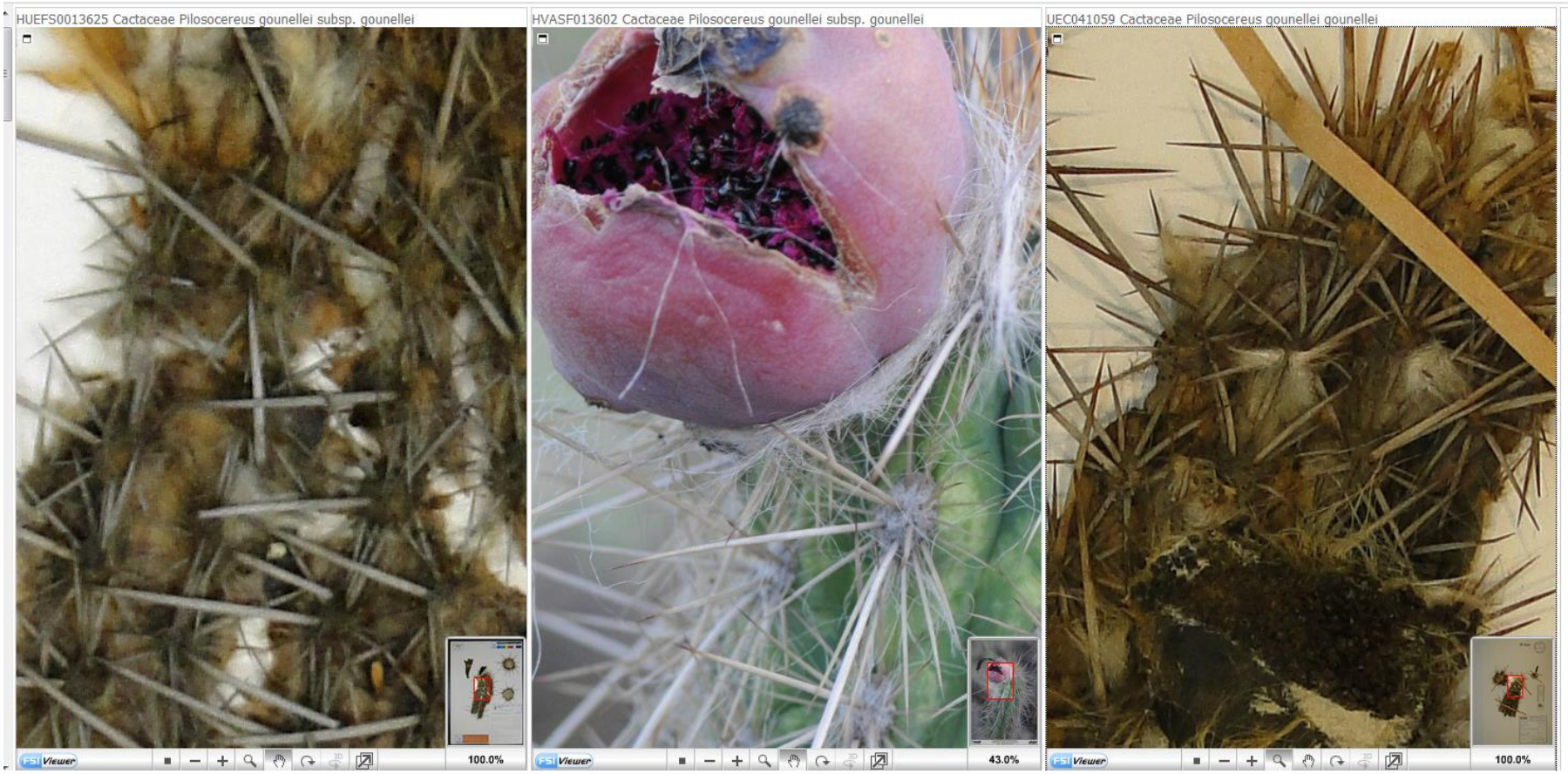
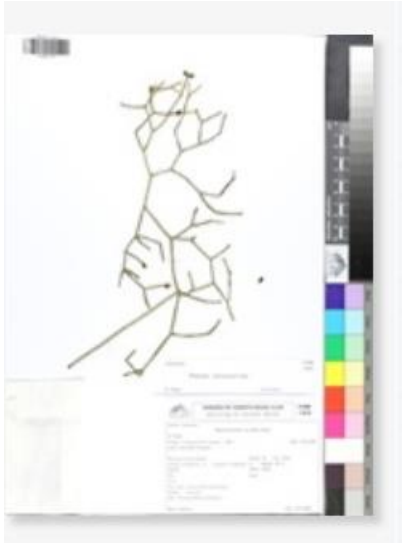
Cybertaxonomy


HUEFS0013625 Cactaceae Pilosocereus gounellei subsp. gounellei
100.0%
HVASF013602 Cactaceae Pilosocereus gounellei subsp. gounellei
43.0%
UEC041059 Cactaceae Pilosocereus gounellei gounellei
100.0%

Annotations

Herbário Dr. Roberto Miguel Klein - FURB
Universidade Regional de Blumenau, FURB

PLANTAE DICOTYLEDON CACTACEAE
Rhipsalis cereuscula Haw.. Det: Zappi, DC **13/12/2012**
FURB 11879 Collect: Dreveck, S; Carneiro, FE 386 **18/11/2008**.
Loc: Linha Santa Terezinha, Herval d'Oeste, Santa Catarina, Brasil Barcode: **FURB01187.**
Coord orig: [*lat:* -27.135 *long:* -51.435 WGS84] Altitude: 742m.
Notes: Florística IFFSC 2100(Epífita); epífita;; Floresta Estacional Decidual; Estágio Avançado
Basis of record: preserved specimen



reference
CACTACEAE
Rhipsalis baccifera (J.S.Muell.) Stearn. Det: S. Dreveck **18/11/2008** Barcode: **FURB01187. FURB 11879** Collect: S. Dreveck 386 Loc: Linha Santa Terezinha Herval d'Oeste Santa Catarina Brasil **18/11/2008**. [*lat:* -27.135 *long:* -51.435 WGS84]

comment
sciname
Olá! Com certeza esse espécime não é R. baccifera, poderia enviar uma imagem em alta resolucao para que eu possa identificar corretamente? Muito obrigada, Zappi

Daniela Zappi
13-Dec-2012 00:16

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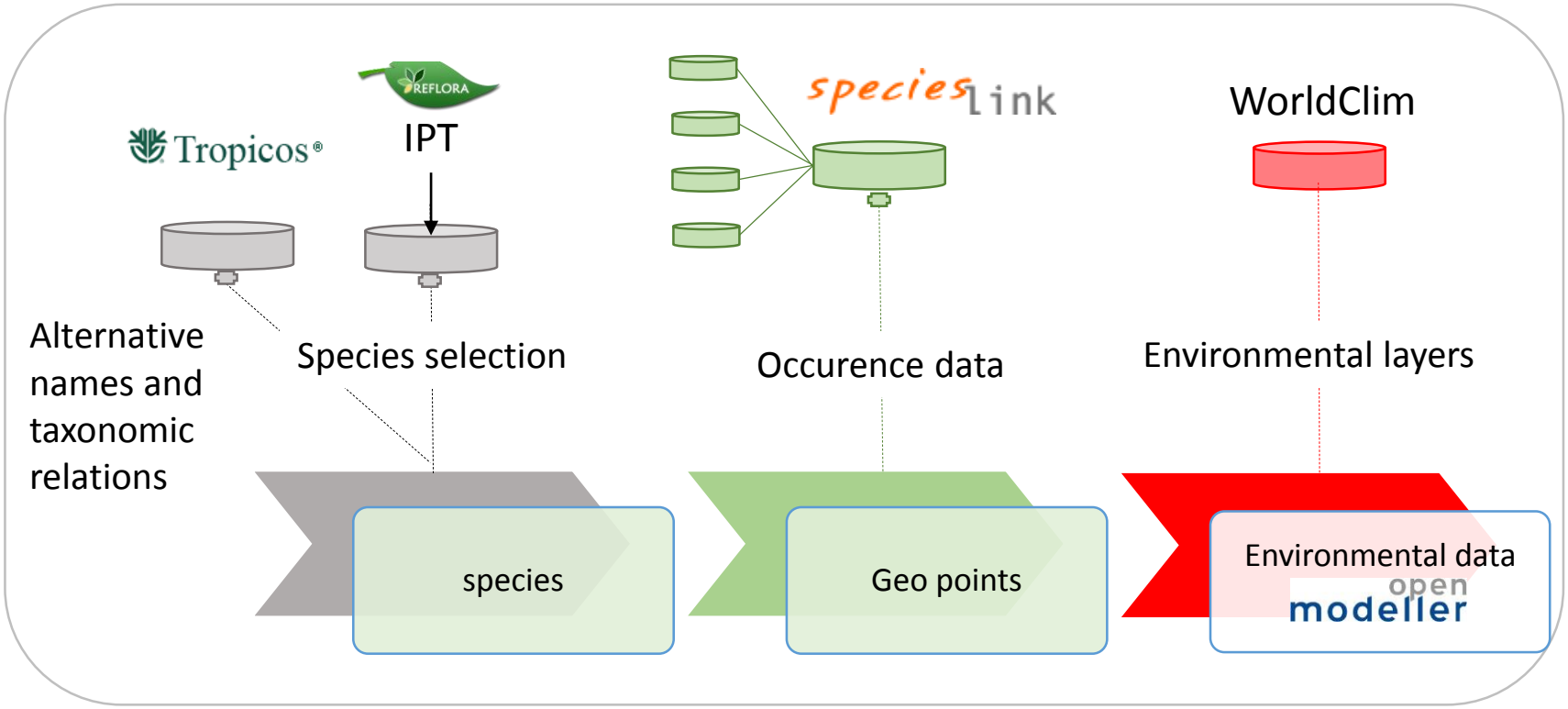
Plataform for *e-Science: BioGeo*



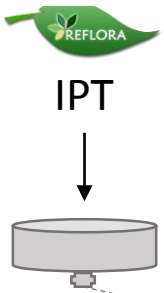
BioGeo (ecological niche model)

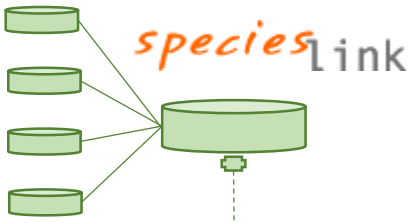
http://biogeo.inct.florabrasil.net

Accepted names, synonyms, states of occurrence

Status and origin of data states of occurrence

Portaria 443 (redlist)





Filtrer accepted names and synonyms (phonetic)

Lacunas database

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Lacunas: September 2012 – August 2015

Species with no data records: phonetic search including synonyms, with or without geographic coordinates

Taxonomic Groups	Brazil's Flora	Sept/2012		Aug/2015	
	No. Species	Species	%	Species	%
Algae	4.746	2.555	54%	2.424	51%
Angiosperms	32.824	2.429	7%	1.578	5%
Bryophytes	1.524	324	21%	196	13%
Fungi	5.710	2.925	51%	2.453	43%
Gymnosperms	30	0	0%	1	3%
Ferns & Lycophytes	1.253	121	10%	62	5%
Total	46.087	8.354	18%	6.714	15%

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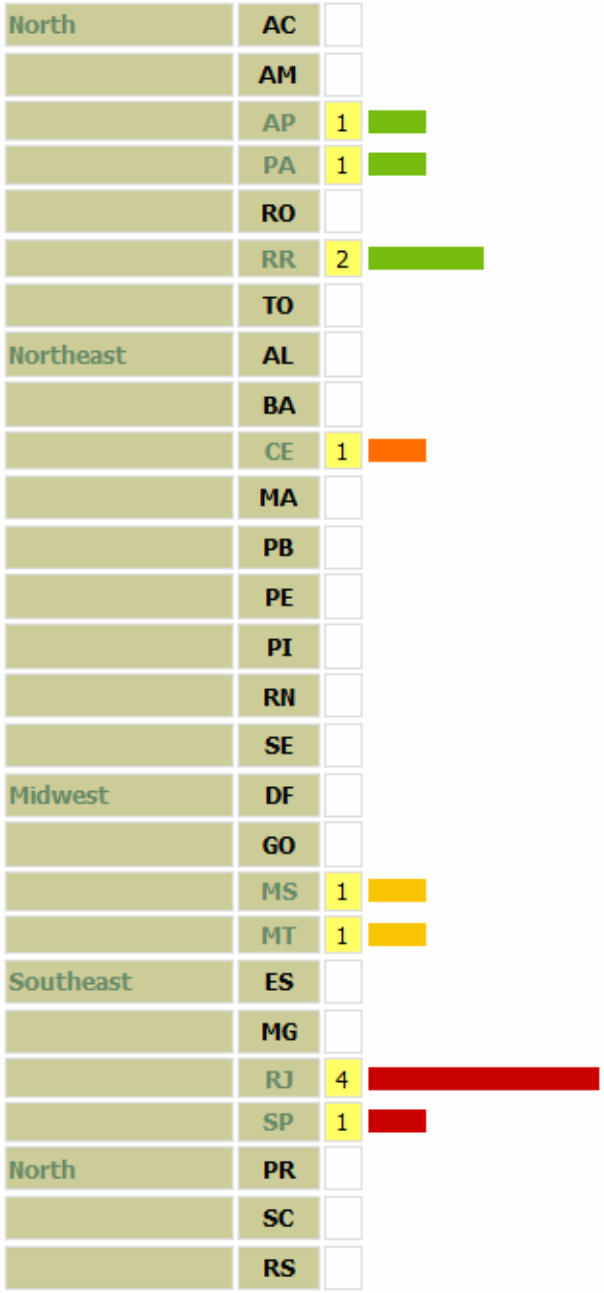
Lacunas: September 2012 – August 2015

Species > 20 records: phonetic search including synonyms, with consistent & distinct geographic coordinates (origin)

Taxonomic Groups	Brazil's Flora	September 2012		August 2015	
	No. Species	Species	%	Species	%
Algae	4.746	46	1%	103	2%
Angiosperms	32.824	5.587	17%	8.250	25%
Bryophytes	1.524	158	10%	246	16%
Fungi	5.710	13	0,2%	21	0,4%
Gymnosperms	30	4	13%	5	17%
Ferns & Lycophytes	1.253	274	22%	473	38%
Total	46.087	6.082	13%	9.098	20%

Geographic Gaps - Monimiaceae



- *Hennecartia omphalandra* J.Poiss.
- *Mollinedia calodonta* Perkins
- *Mollinedia myriantha* Perkins
- *Mollinedia sphaerantha* Perkins

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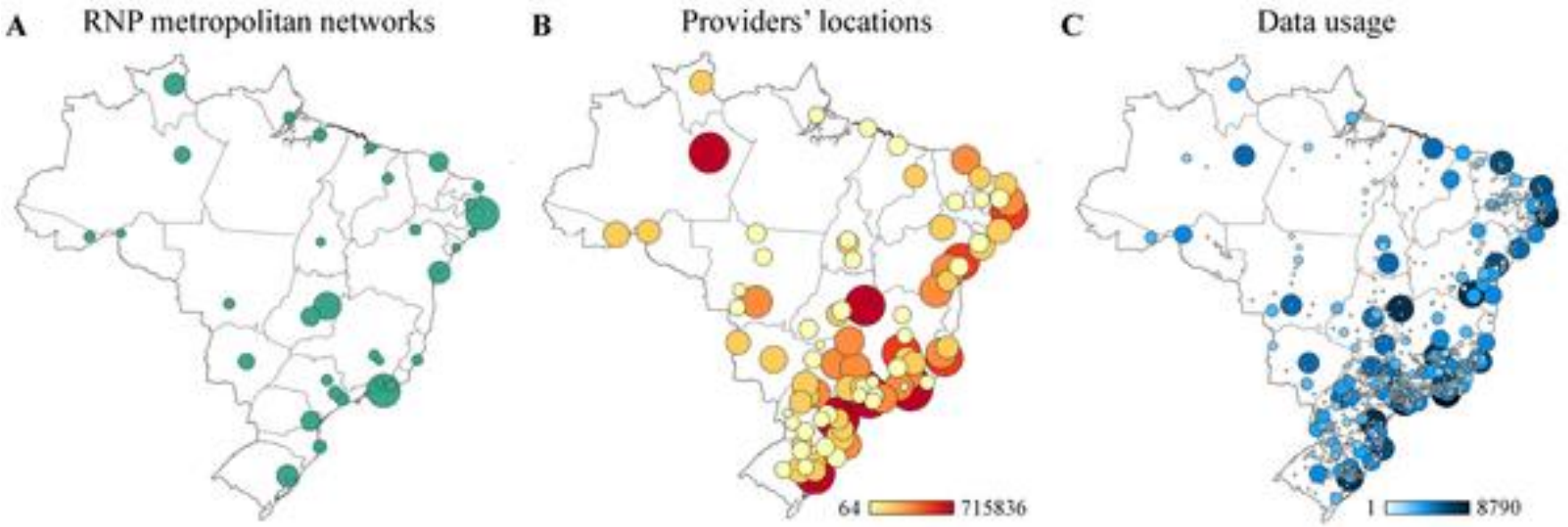
Research infrastructure and biodiversity data usage in Brazil.

1.4 million records/day



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http://journals.plos.org/plosbiology/article?id=info:doi/10.1371/journal.pbio.1002204

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Challenges

- Large institutions resilient to change
- Making data useful and usable to other communities
- Governance of Virtual Institutes
- Sustainability of *e*-infrastructures: from project based grants to long-term support

Thank you!

Dora Canhos (dora@cria.org.br)

- *species*Link search interface (www.splink.org.br)
- The Virtual Herbarium (inct.splink.org.br)
- *Lacunas* (lacunas.inct.florabrasil.net)
- *BioGeo* (biogeo.inct.florabrasil.net)
- Data Cleaning Reports (splink.cria.org.br/dc)
- Other tools (splink.cria.org.br/tools)
- CRIA's blog (blog.cria.org.br)

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