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Cartagena, Colombia | May 18-20 | In partnership with COLCIENCIAS

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The Brazilian Biodivesity Database and Information System - SinBIOTA

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Executive Manager – Virtual Institute for Biodiversity

SinBIOTA

Content of this presentation

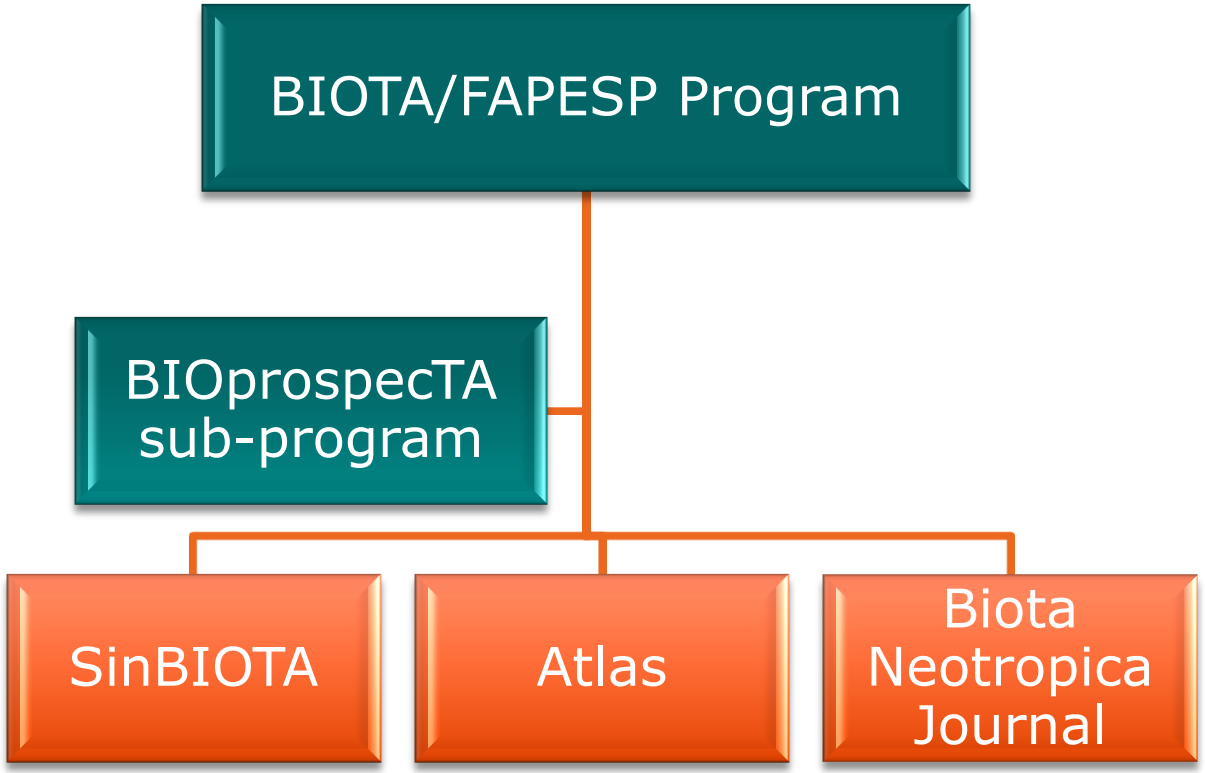
- The BIOTA/FAPESP Program and SinBIOTA development
- How the Program works
- BIOTA+10
- The need for re-development
- Future steps

The BIOTA/FAPESP Program and SinBIOTA creation

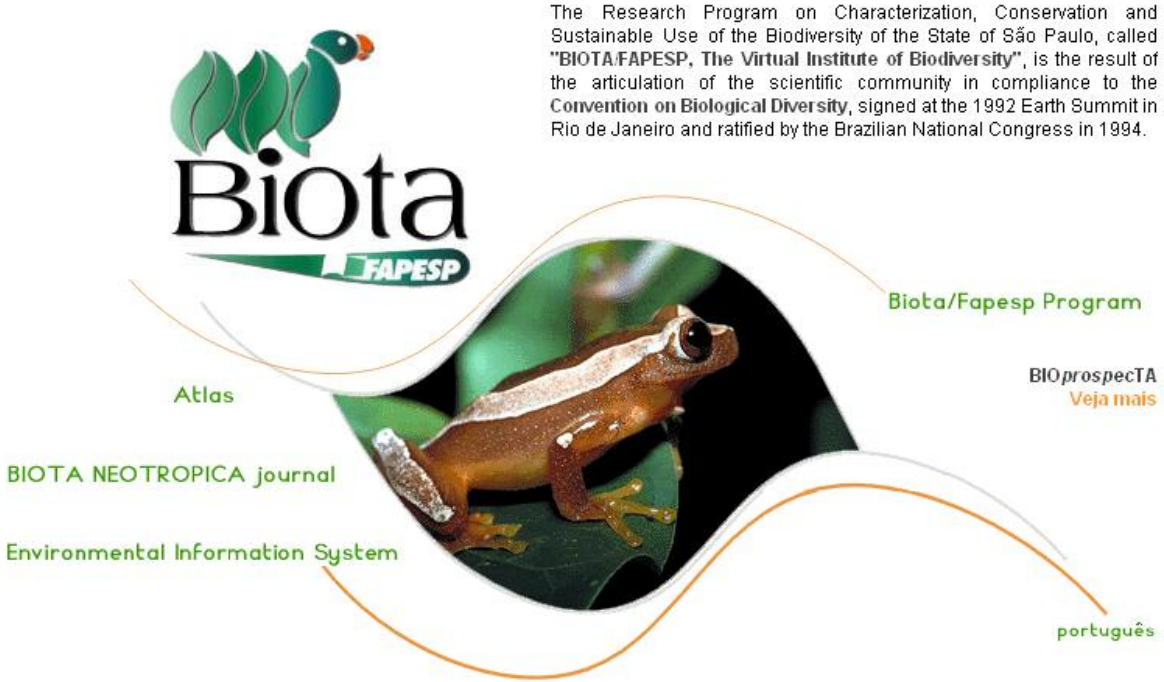
Scientific Community response for the implementation of CBD

- Three years of development by a group of scientists (1996 - 1999) – Dr. Carlos Alfredo Joly
- Support from the Biological Sciences Coordination and Scientific Directory from FAPESP
- March 1999 – BIOTA/FAPESP Program – Virtual Institute of Biodiversity
- Objectives, Financial Support and Structure for Research on Biodiversity
- Informational "backbone" for community integration - SinBIOTA

Program and components

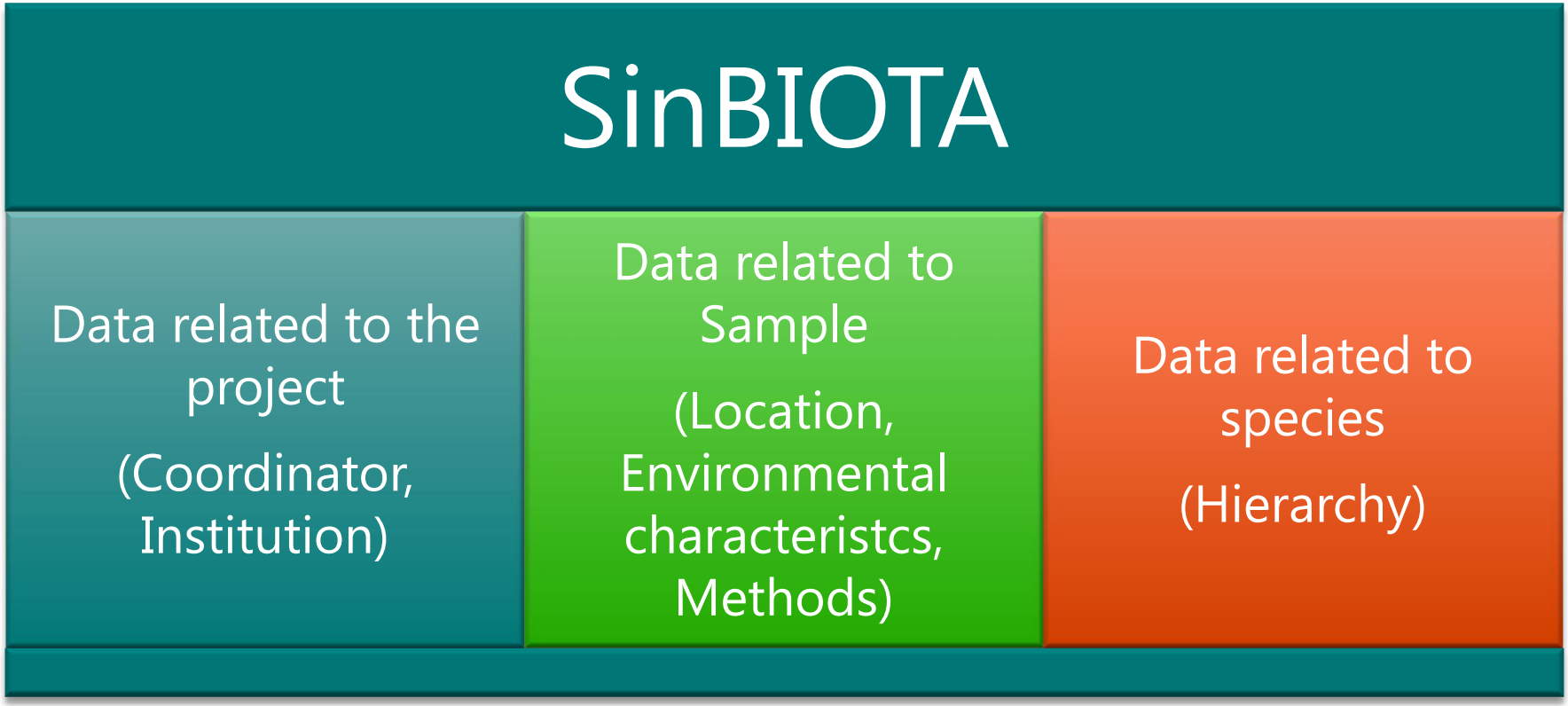


BIOTA Interface

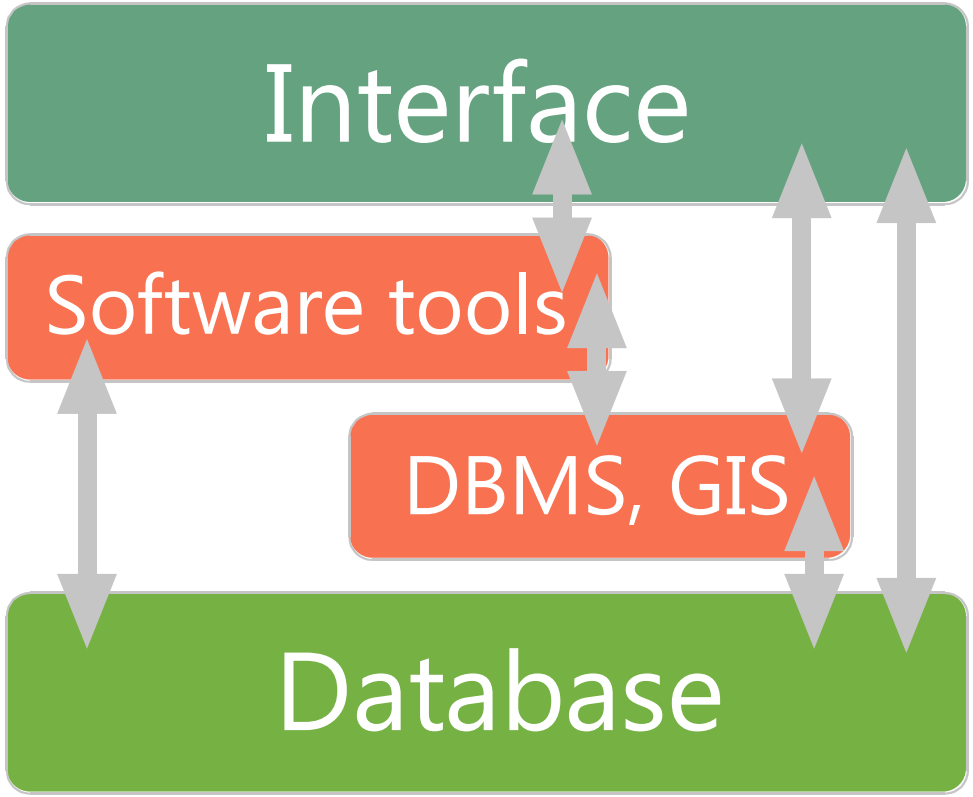


www.biota.org.br

SinBIOTA


SinBIOTA
Data related to the project
(Coordinator, Institution)
Data related to Sample
(Location, Environmental characteristcs, Methods)
Data related to species
(Hierarchy)

SinBIOTA



Web Server: Linux + Apache

Map Server: Map Server + PostgreSQL

SinBIOTA Form

BIOTA/FAPESP - Ficha Padrão

Usuário Érica Speglich (erica)

Projeto Desenvolvimento e estruturação de un
Programa Biota/Fapesp

Autor da Coleta

Referência Bibliográfica da Coleta

Data da Coleta Início

Fim

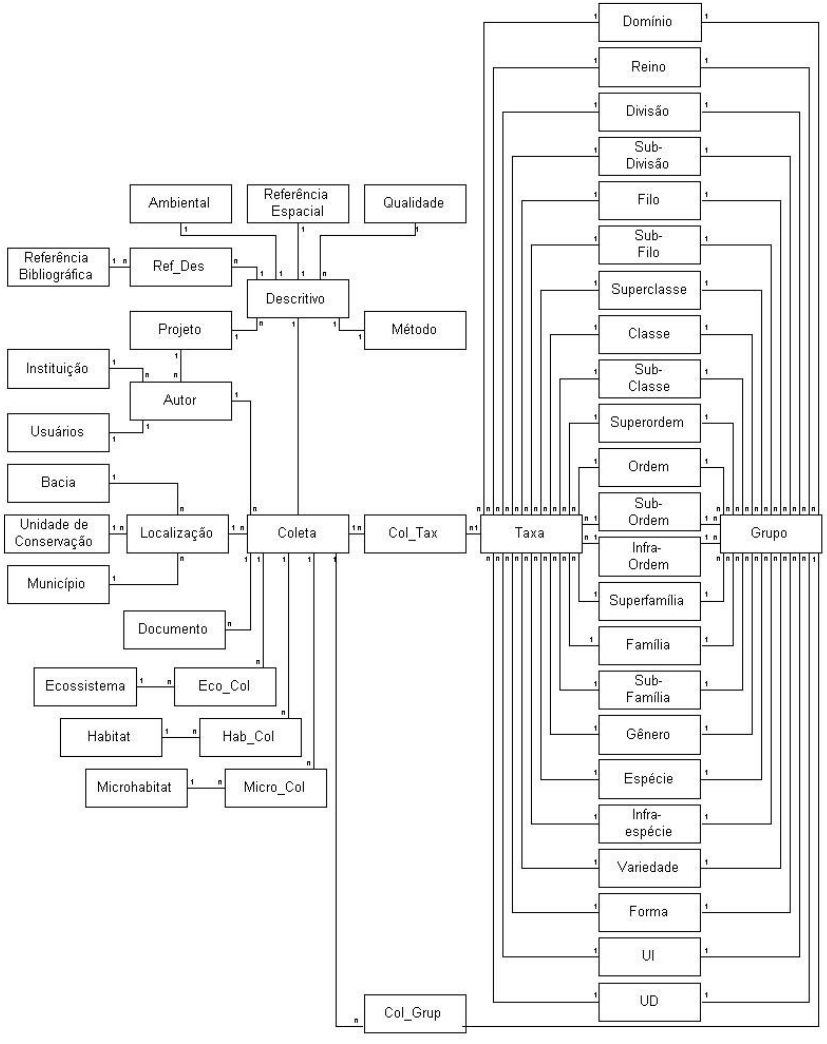
Município Adamantina

Localidade

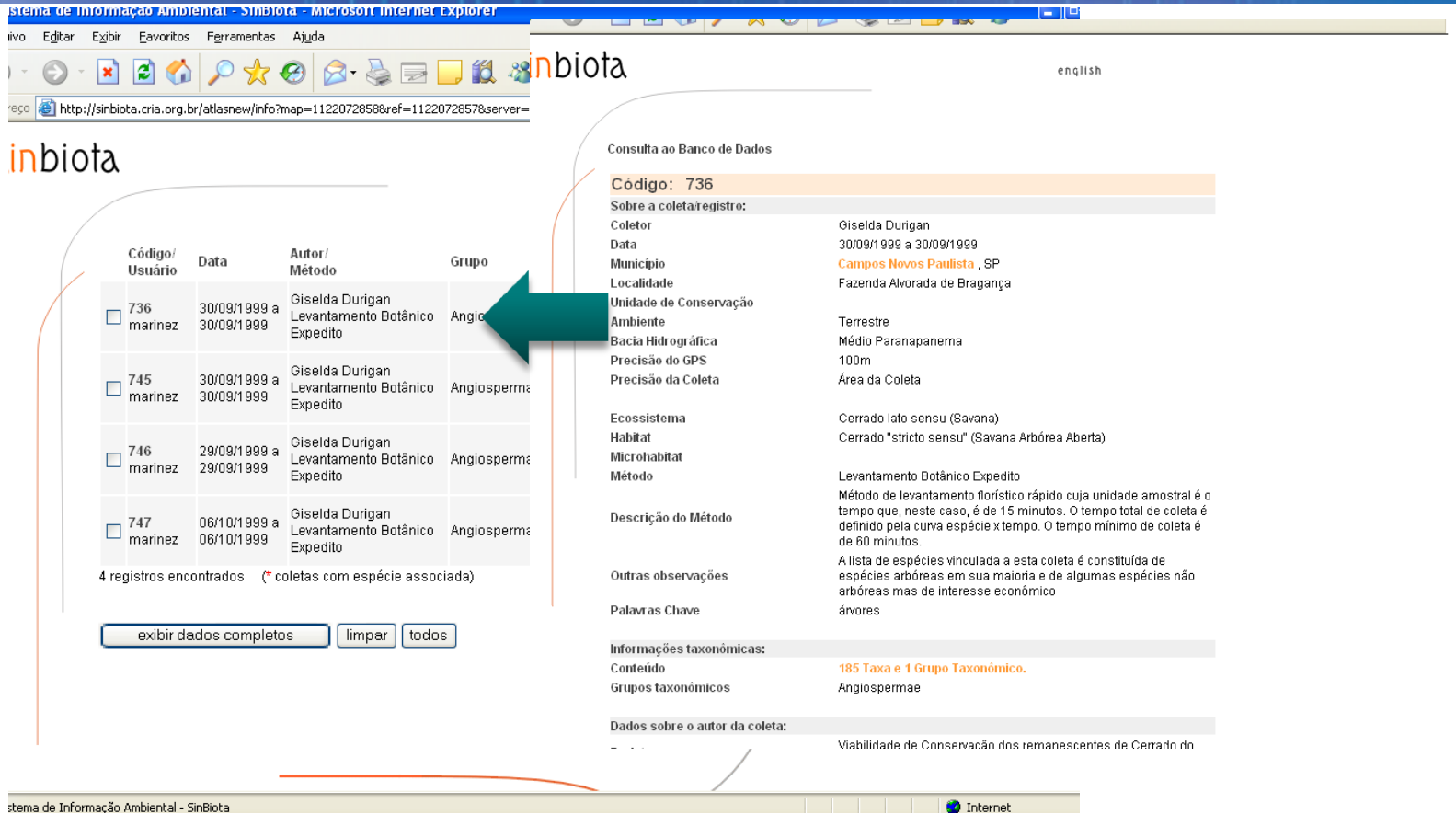
Unidade de conservação

Ambiente Terrestre

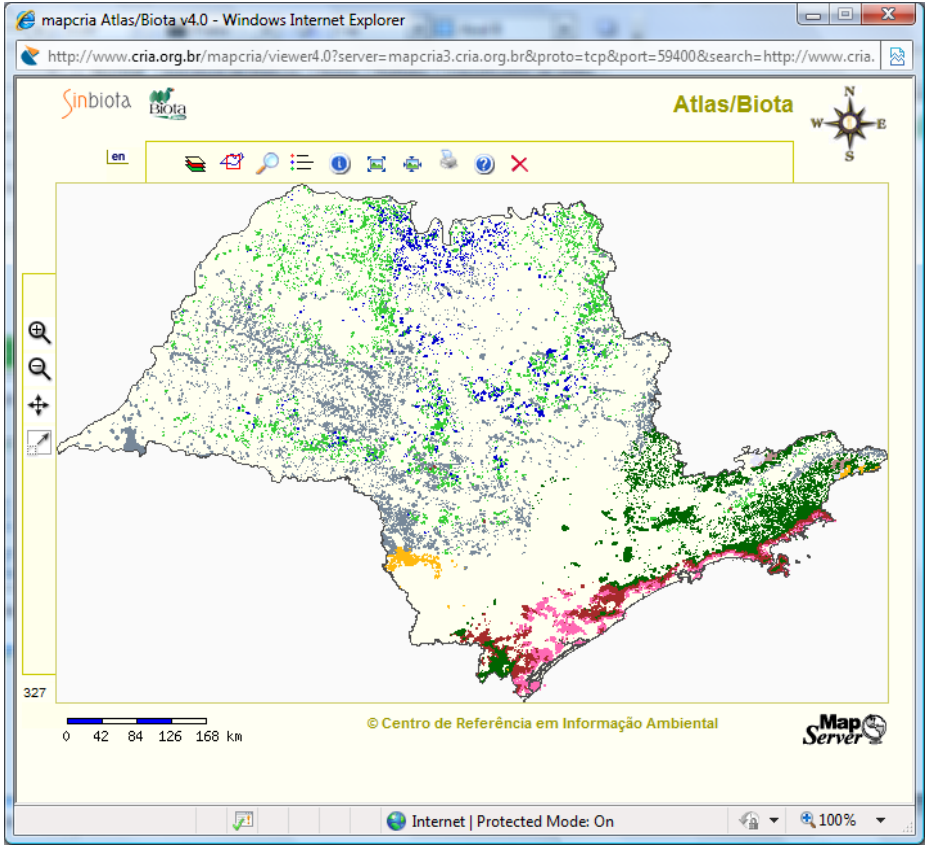
Dados Temperatura



SinBIOTA Revgisters



Atlas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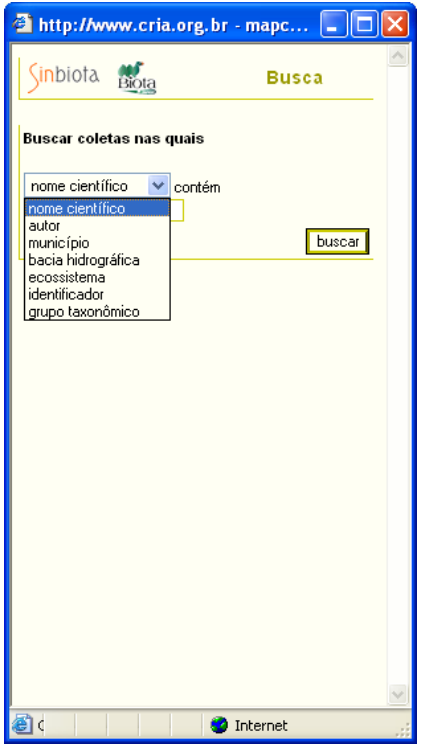
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Sinbiota
Biota
Busca
Buscar coletas nas quais
nome científico
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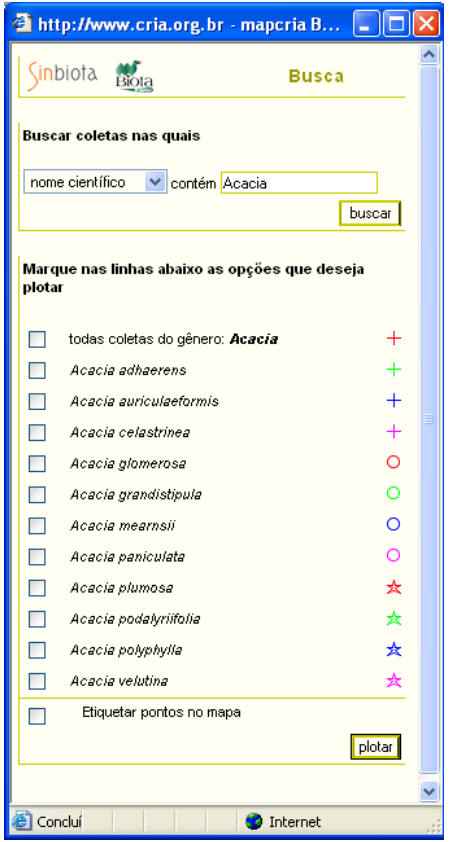
autor
município
bacia hidrográfica
ecossistema
identificador
grupo taxonômico
buscar
Internet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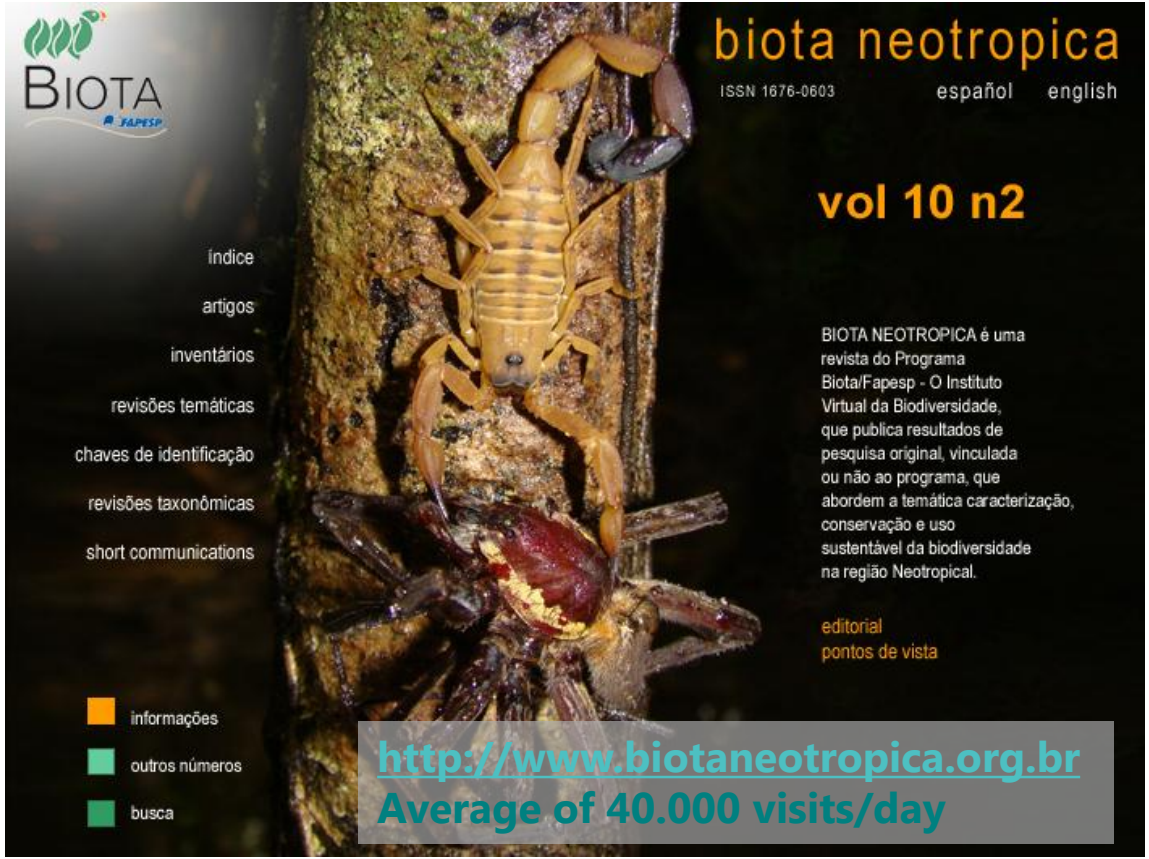
Acacia adhaerens
Acacia auriculaeformis
Acacia celastrinea
Acacia glomerosa
Acacia grandistipula
Acacia mearnsii
Acacia paniculata
Acacia plumosa
Acacia podalyriifolia
Acacia polyphylla
Acacia velutina
Etiquetar pontos no mapa
plotar
Concluí
Internet

Biota Neotropica



http://www.biotaneotropica.org.br
Average of 40.000 visits/day

BIOTA +10

Success of the first 10 years pushed for more 10 years

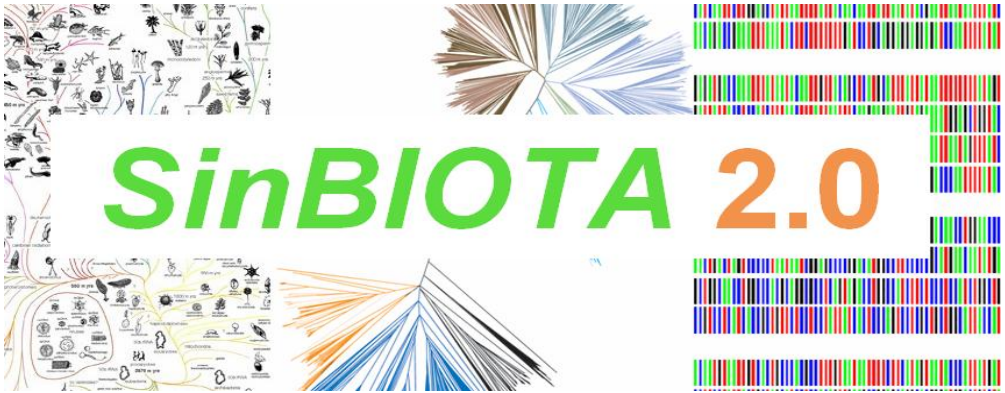
- Community meeting 2009 (300 researchers + “Scientific Plan”)
- More engagement from the State Universities (UNESP, UNICAMP, USP)
- Review of the processes and mechanisms inside the Program
- Expansion of the objectives
- Improvement of structure available

BIOTA FAPESP +10

Need for a re-develop the system

Microsoft/FAPESP project – 2 years started December 2009

- Objectives
  - Migration of the system from the original developer server to CENAPAD
  - Prototype building of new system
  - Reference Document – Specification



Need for a re-develop the system

Elements acessed in the re-development

- Visits to users to get feedback
- Integration with external systems and repositories – Explicit Data Policies, Metadata, Interoperabilities
- Study of GBIF, OBIS, ALA, EOL, etc.
- Scalability and security of large DBs
- Multimodal data and search
- Survey of map systems
- Specialized tools (sp. distribution, etc.)
- Data mining, knowledge discovery
- Use of mobile clients
- Cloud computing
- Social networks

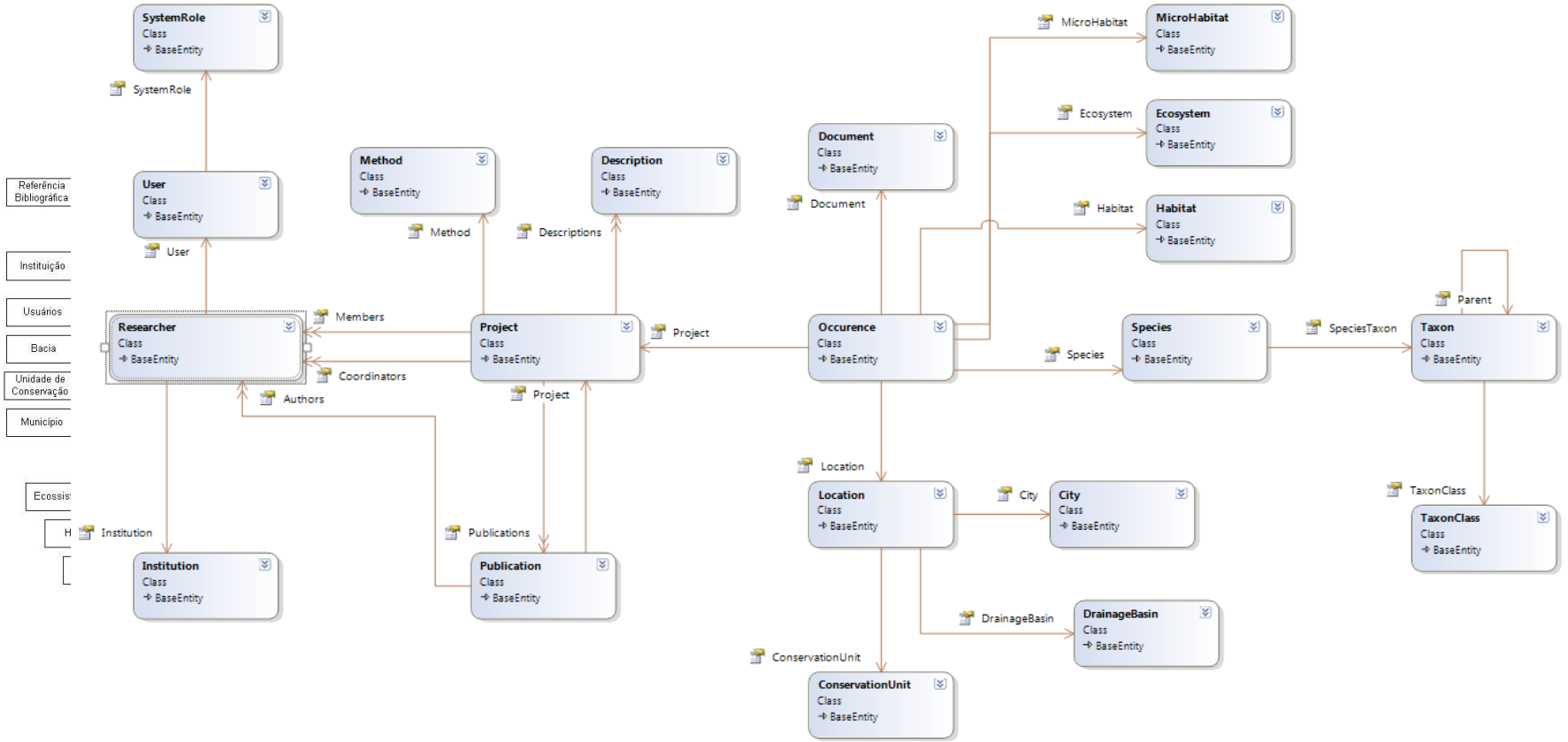
Need for a re-develop the system

Changes in the DB

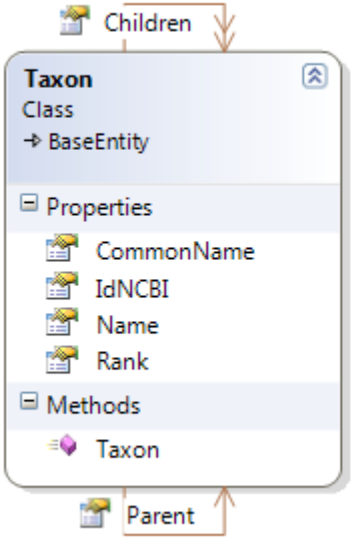
- Relaxed integrity constraints
- Redundancy
- Each taxon rank as individual table

- Class Modelling
- Object-Relational Mapping

Need for a re-develop the system



Need for a re-develop the system



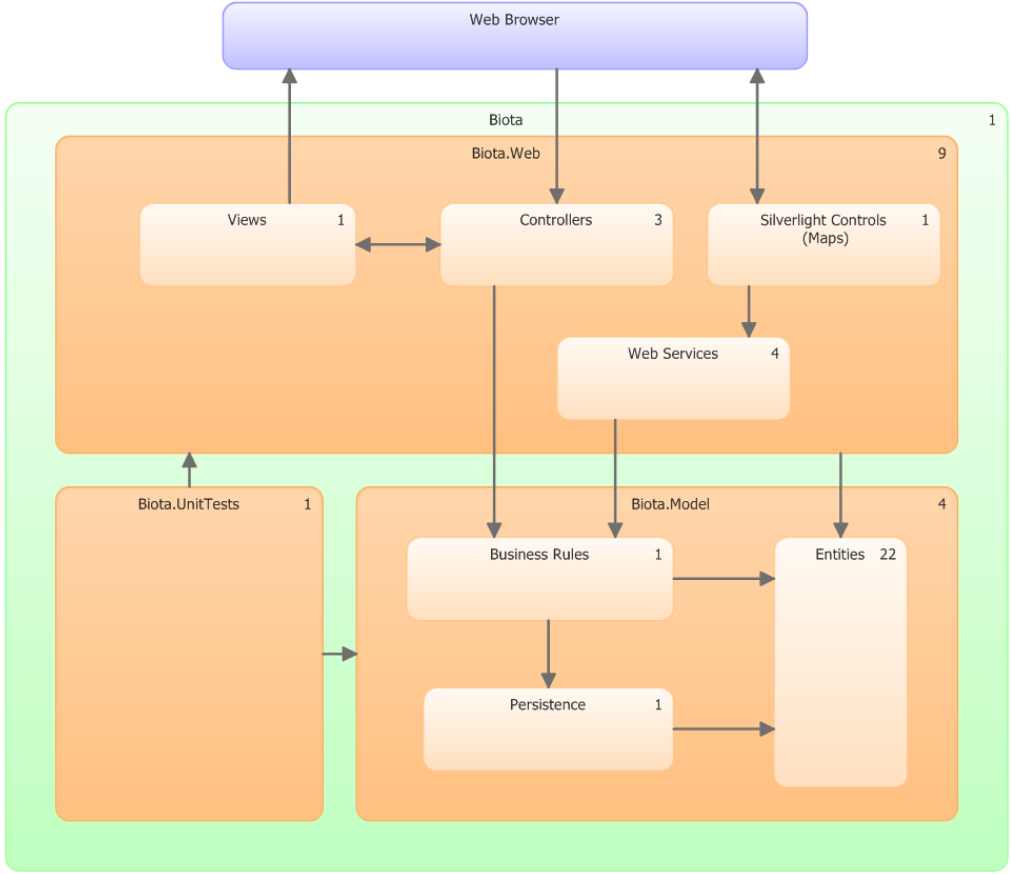
BIOTA01.sinbiota_domain - dbo.Taxon

Column Name	Data Type	Allow Nulls
Id	int	☐
Version	int	☐
Name	nvarchar(160)	☐
Rank	nvarchar(30)	☐
CommonName	nvarchar(100)	☑
IdNCBI	int	☑
Parent_id	int	☑
		☐

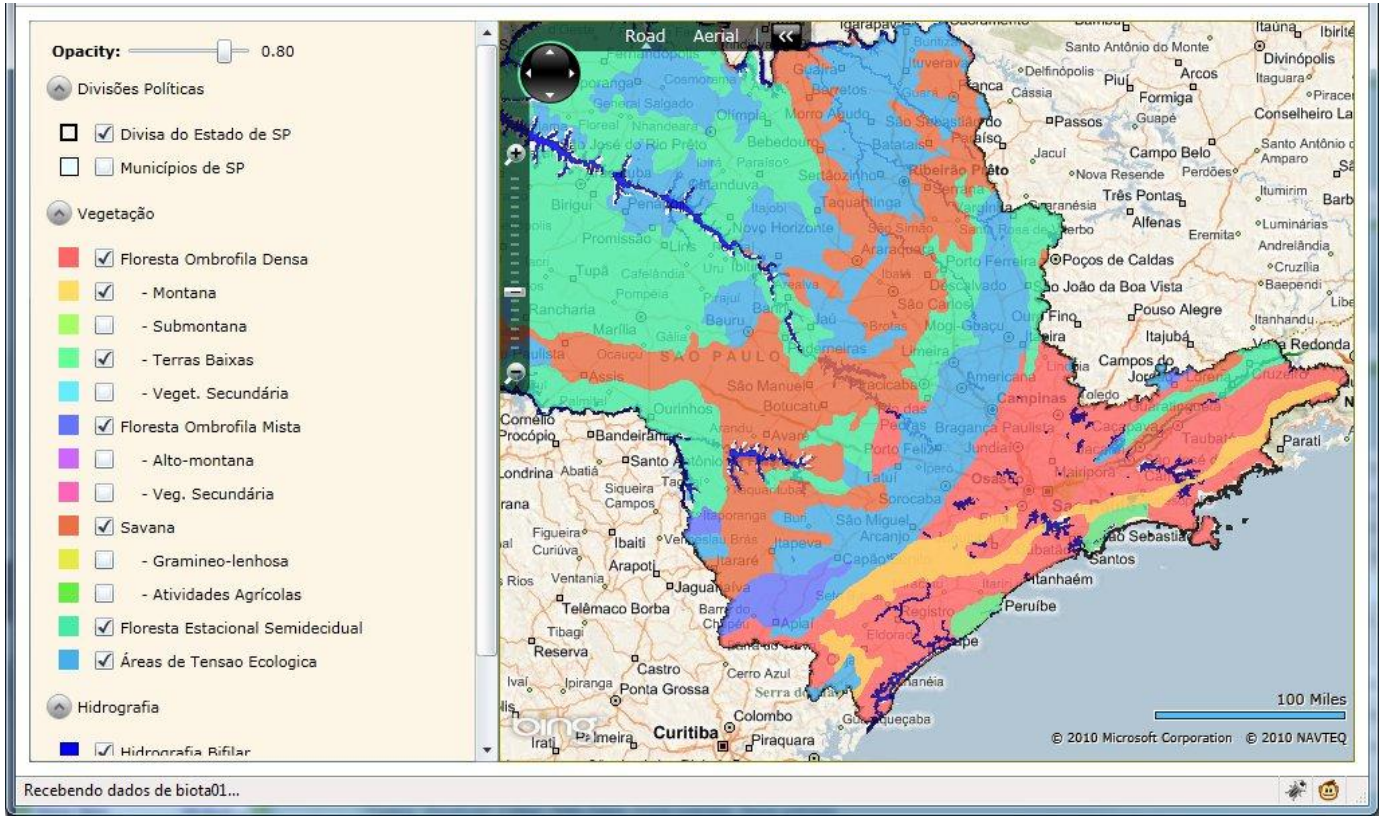
- Each taxon group is a row in Taxon table
- Rank is attribute of taxon group
- Explicit parent / child relationship

Need for a re-develop the system

Architecture



Need for a re-develop the system



New atlas service

The Future

Scientific community, Environmental Governance to provide directions

- Feedback as guidance for new directions
- Modular system – new tools will be easily incorporated
- Horizon scanning activities for identifying and stimulating innovative research and technology in Biodiversity
- Create solid bridges between Biodiversity and Computational Sciences
- Capacity for new formats of data – Modelling, Workflows, Repositories
- Getting more mechanisms to present data and information for community

Thank you!

For further information and potential partnerships

- Scientific Coordinator – PhD. Carlos A. Joly – cjoly@unicamp.br
- Computational Development Coordinator – PhD. João Meidanis – meidanis@scylla.com.br
- Executive Manager – MSc. Tiago E. M. Duque Estrada – tiagode@unicamp.br