

PPBio

Programa de Pesquisa em Biodiversidade



Programa de Pesquisa em Biodiversidade
Brazilian Biodiversity Research Programme

Cintia Gomes de Freitas

cintuca@gmail.com

Instituto Nacional de Pesquisas da Amazônia (INPA)



Brazil - A megadiverse country

- Challenges in describe, manage and conserve biodiversity
- Convention on Biological diversity member: Conserve, sustainable use and sharing the biodiversity benefits

PPBio

2004:

The Ministry of Science and Technology established the Program for Planned Biodiversity Studies – PPBio to integrate and conduct studies of biodiversity over large areas using its institutes and partners.



Components

- (1) Biological collections (maintenance, extension and make it available on-line)
- (2) Biological inventories (integrate network: surveys on research sites)
- (3) Thematic projects (support researches about biodiversity commercial applications)

And by strengthening Regional Centers and capacity building of human resources



Financing

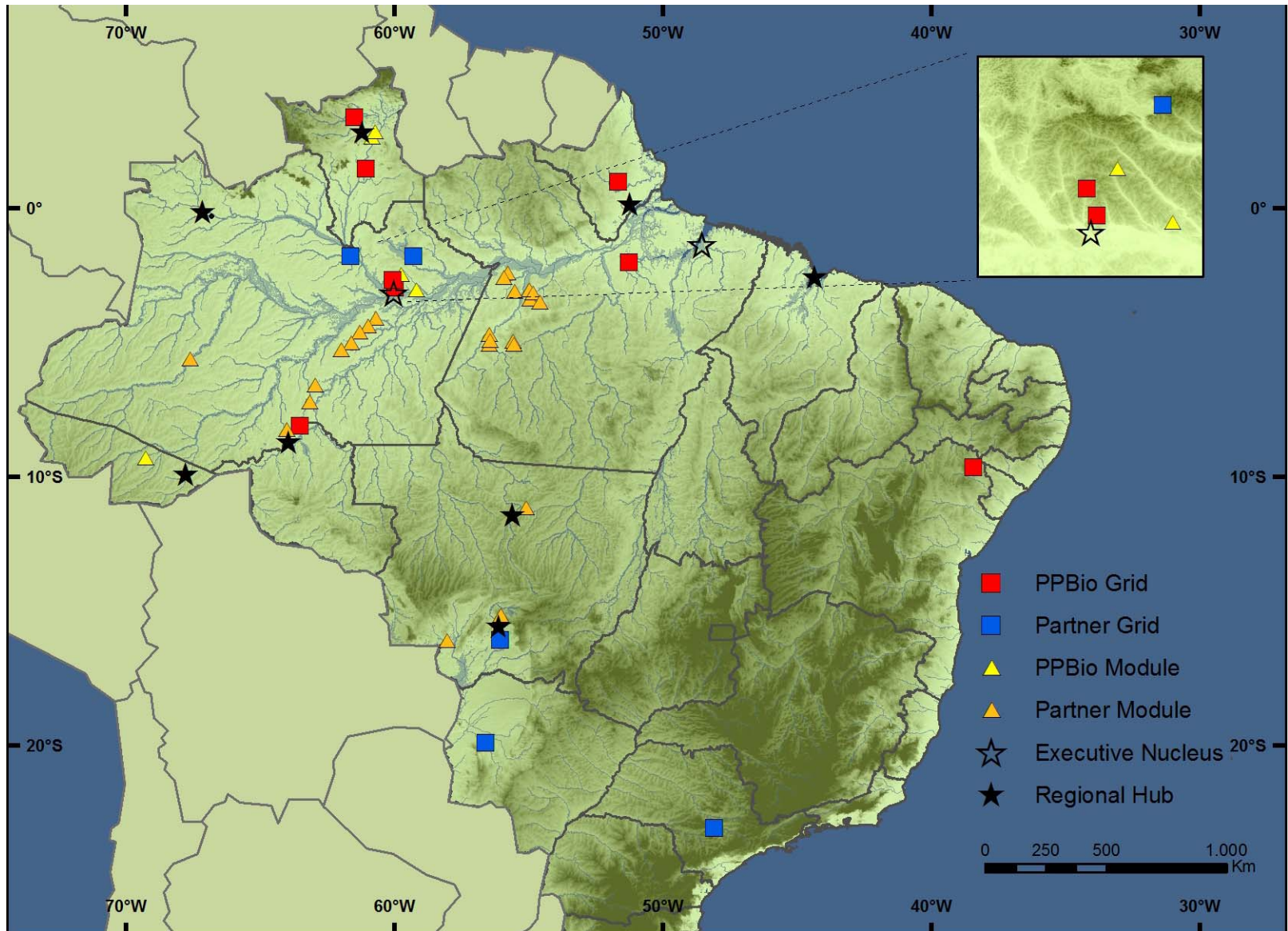
- Initially by MCT (Ministry of Science and Technology)
- Nowadays, MCT (through CNPq – Brazilian National Council for Scientific and technological Development) - Regional hubs and coordination of the network
- Most of the financing comes from projects submitted by individual or groups of researchers to many agencies



Partnerships

- Research Institutes and Universities, Environmental Agencies in states and the Federal Government
- IBAMA (Supervise and regulates potential impactants activities)
- ICMBio (regulates use of protected areas)
- SFB (Brazilian Forestal Service)
- Partnerships with other international efforts, such as RAINFOR
- International PPBio in Australia: Coordinator - Prof. Jean-Marc Hero (m.hero@Griffith.edu.au) – Grids in Australia and Nepal

PPBio research sites in Brazil





Philosophy

Biodiversity inventories are expensive and must be useful to several users.





Who needs information on biodiversity?

Decision Makers

Conservation planning

Land-use planning

Impact evaluation

Natural resources management (wood, non-timber products, medicinal products, game animals)

Industry

Live collections for bioprospection

Modelers

Prediction of impacts from human disturbances

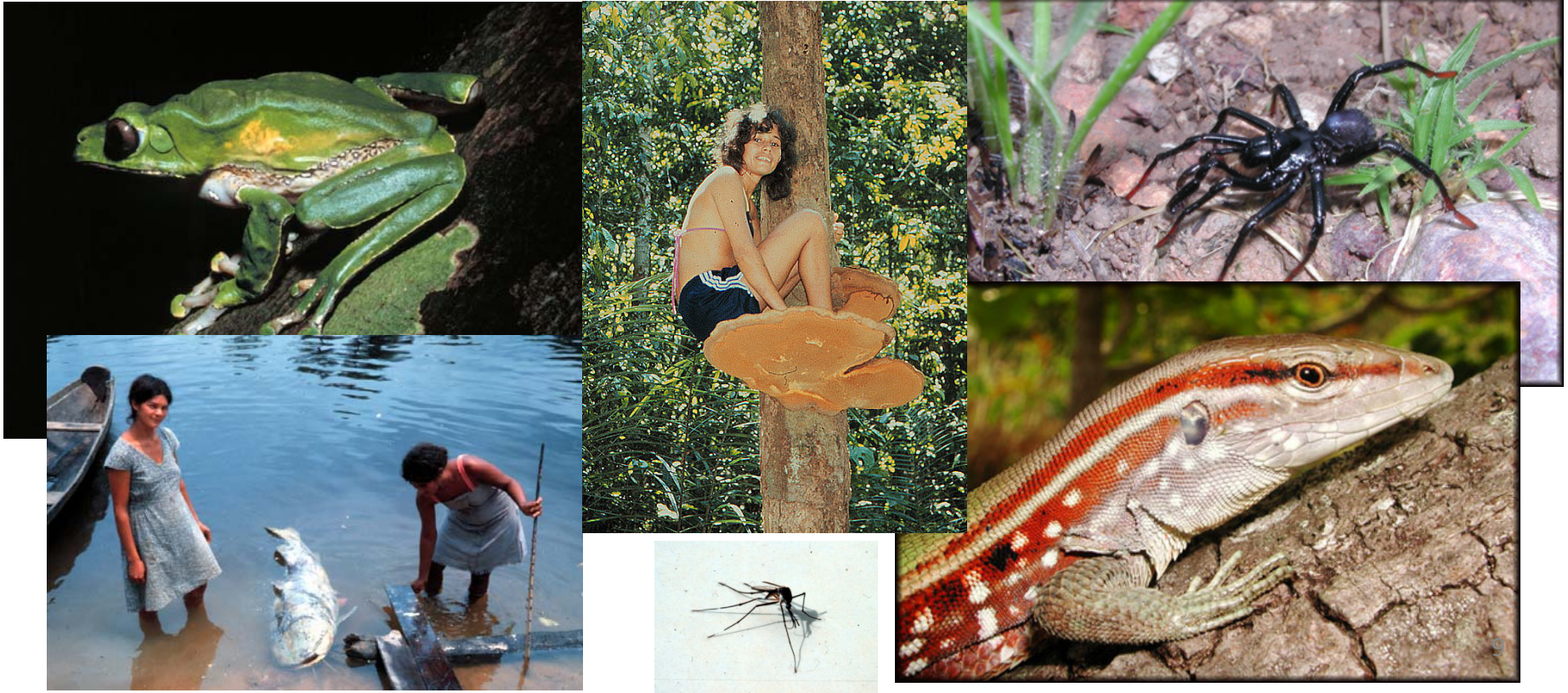
Academic Community

Studies on ecology and evolution



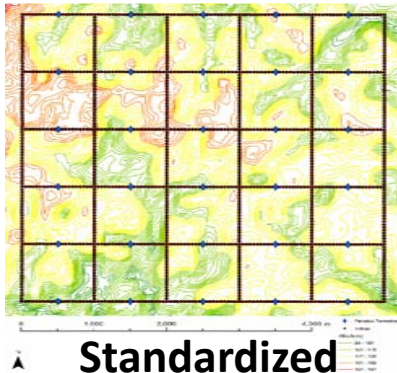
Philosophy

Biodiversity can not be studied without considering the environment.





Philosophy



Standardized inventories



Biological information

Metadados Meso-invertebrados do Solo e da Littera
 Título: Meso-invertebrados do Solo e da Littera na Reserva Florestal Adolpho Ducke, Manaus, Amazonas, Brasil

Responsáveis:

- Dra. Elizabeth Franklin Chilson
Email: beth@irpa.gov.br, lz_2355@yahoo.com
- Roziete L. Guimarães
Email: rozieteluniviera@bol.com.br
- Eliane Débora L. Soares
Email: elianesoares@ckk21.com.br
- Biol. Maria L. C. Albuquerque
Email: lvore@irpa.gov.br

Endereço:
 Coordenação de Pesquisas em Ecologia - CPEn
 Instituto Nacional de Pesquisas da Amazônia - INPA
 Av. André Araújo, 2936, Petrópolis
 69083-000
 Telefone: 55 92 3643 3196

Financiamento:
 Projeto PRCOP 55 04 09/01-7, concedido p/ Dra. Elizabeth Franklin Chilson
 CNPq/ PELO 520039/98-0 (concedido ao Dr. Flávio J. Luizão)
 CNPq/ PRCOP 550651/01-02 (concedido p/ Dra. Albertina P. Lima)
 CAPES/ bolsa de mestrado (concedida p/ Roziete L. Guimarães)
 CNPq/ bolsa de iniciação científica (concedida p/ Eliane Débora Leite Soares)
 CNPq/ 472799/03-7 (concedido ao Dr. William E. Magnusson)



Data availability in internet for everyone



Long term infrastructure



Local people involved



Training people



Philosophy

Training people

17 courses

332 people

20 capacity activities

106 people





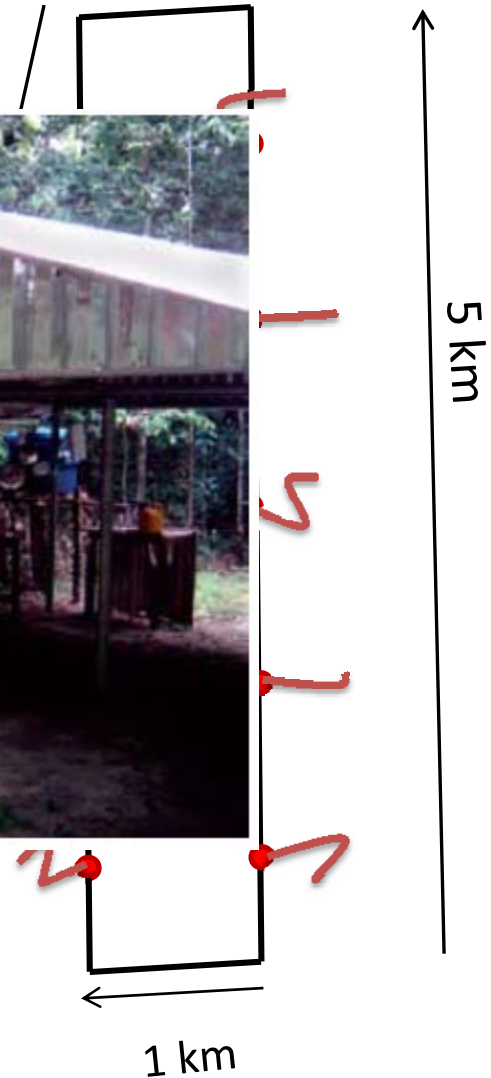
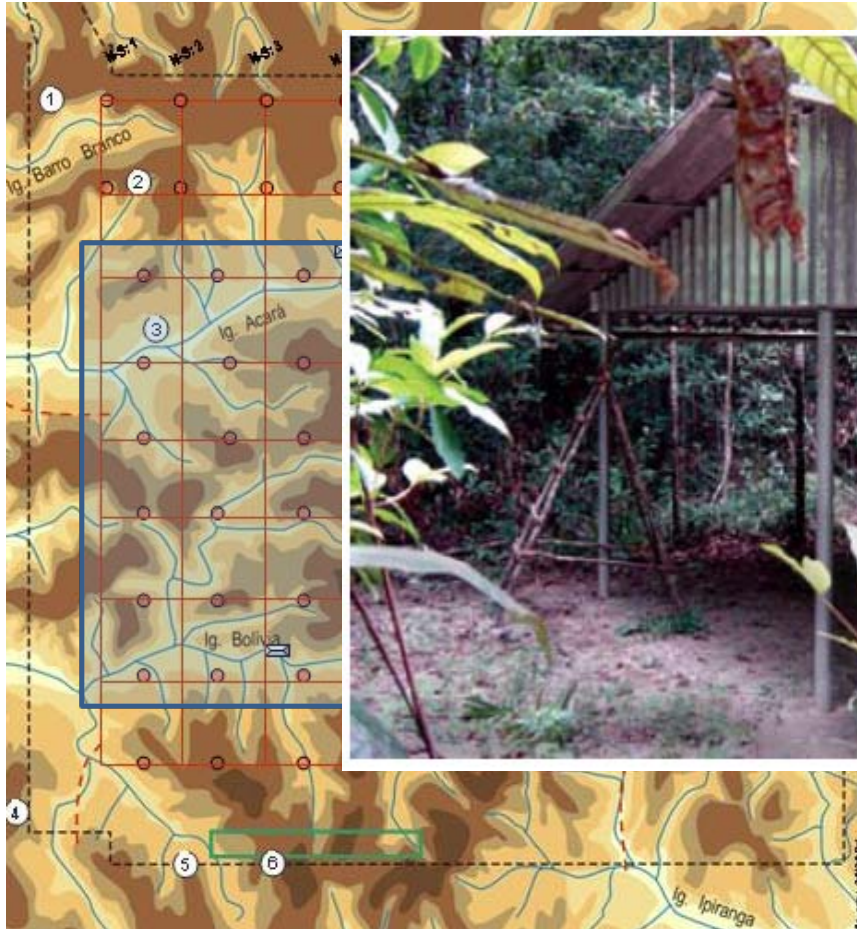
Methods

PPBio uses the RAPELD method,
which integrates
RAP – rapid inventories
and
PELD (LTER) – long-term research

RAPELD Grids and modules

25 km² – 30 permanent plots

Plots 250 x 40 m





An **efficient** system for studying biodiversity must:

- (1) Be **standardized**
- (2) Permit **integrated inventories**
- (3) Be **large**, to permit inventory and monitoring of all elements of biodiversity and ecosystem processes
- (4) Be **modular**, to permit comparisons with less intensive sampling over large study areas.
- (5) Be **compatible** with other existing initiatives.
- (6) **Make data available** quickly and in a usable form to managers and scientific community

(1) Standardization

- Data collected on different geographical scales generally cannot be compared (Urban 2005).
- Biodiversity measures (such as species richness, community composition, genetic variability, biomass change, and productivity) are all strongly scale dependent.
- It is more important to standardize sampling design than sampling methods.



Why do we need standardized plots and not only occurrence points?

Occurrence points allows:

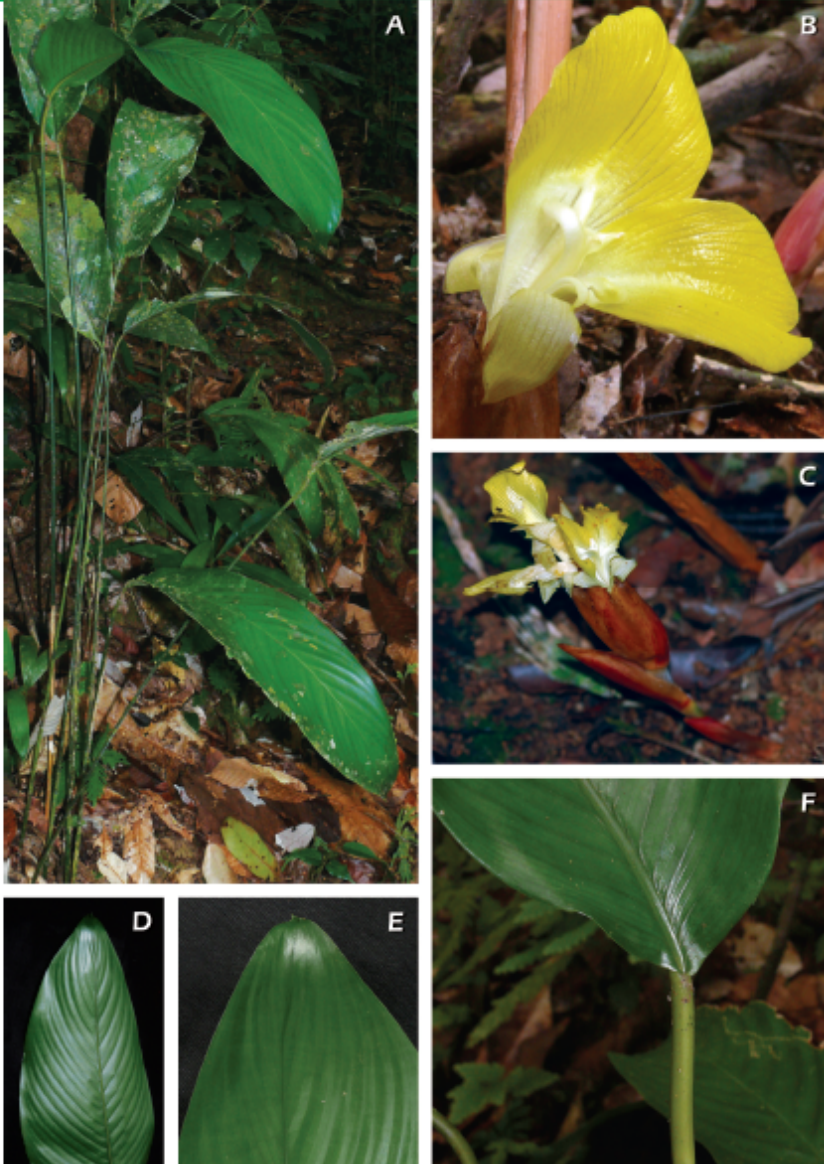
- Mapping species distribution
- To calculate species richness

Why they are not enough?

Calathea zingiberina

Amazônia Central
Central Amazonia

Guia de Marantáceas da RFAD e Rebio Uatumã
Guide to the Marantaceae of RFAD and Rebio Uatumã



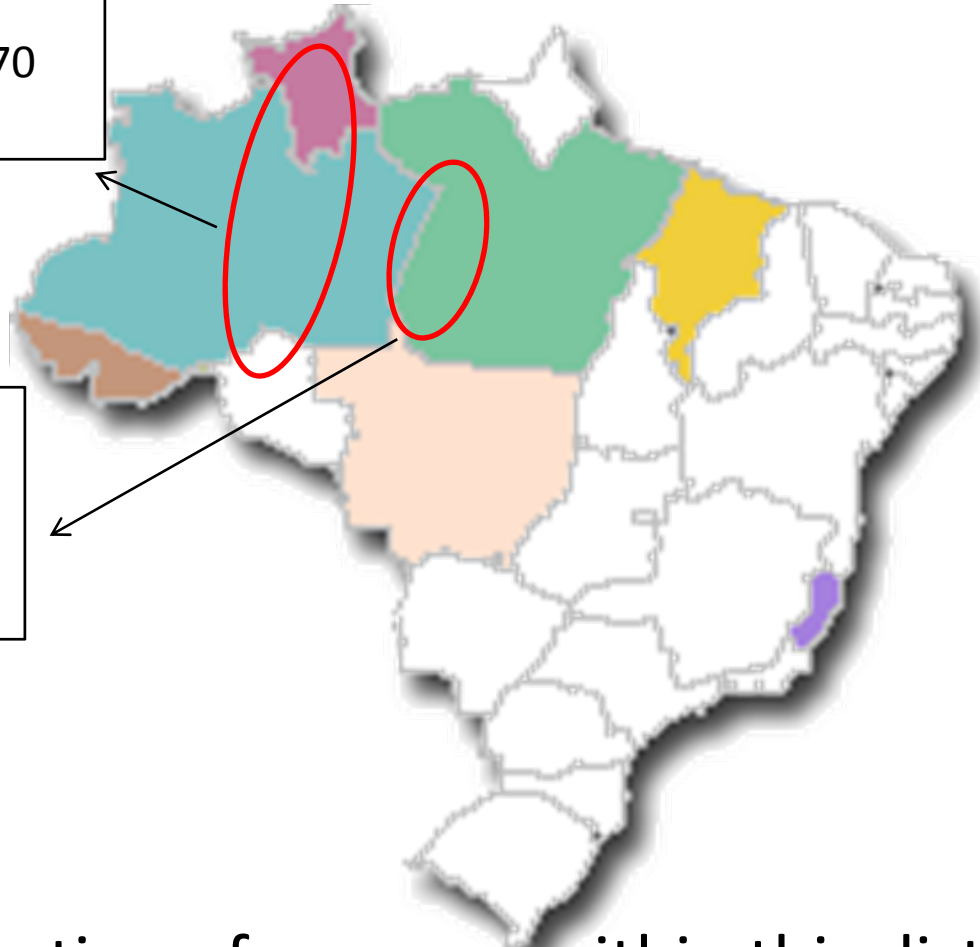
Let's see...



This is a widely distributed specie, correct?

0 a 83 ind/plot

509 individuals in 170
plots

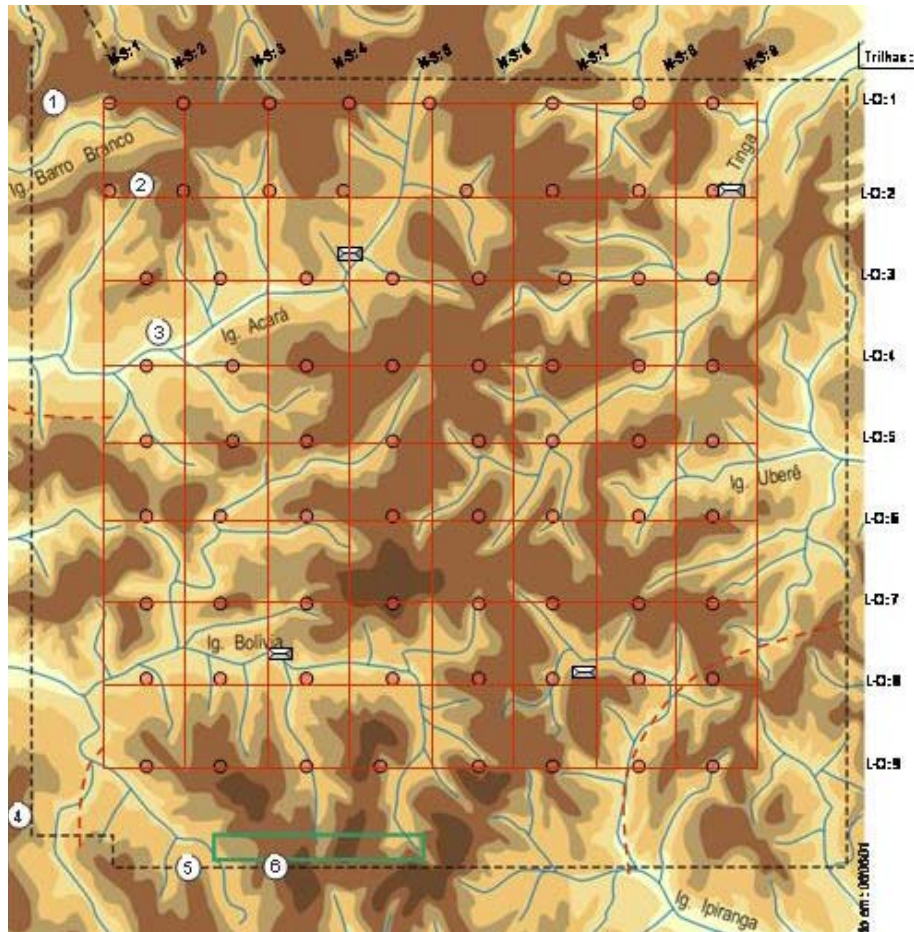


0 a 477 ind/plot

1750 ind in 105
plots

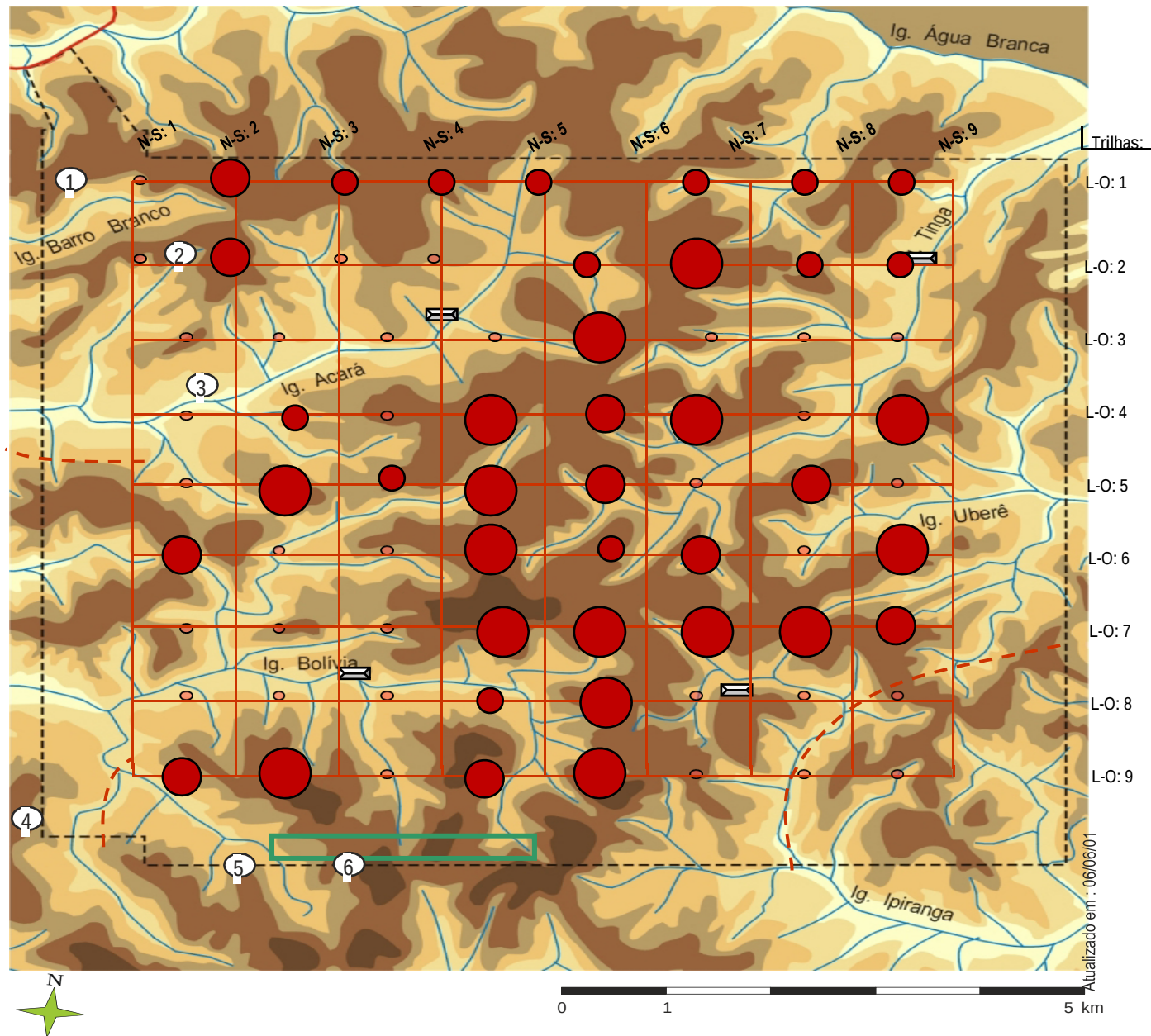
Destruction of any area within this distribution
is equally relevant for this species?

Occurrence points allow mapping of species' habitats?



Attalea attaleoides (Barb. Rodr.) Wess. Boer

Distribution of *Attalea attaleoides* at Reserva Ducke



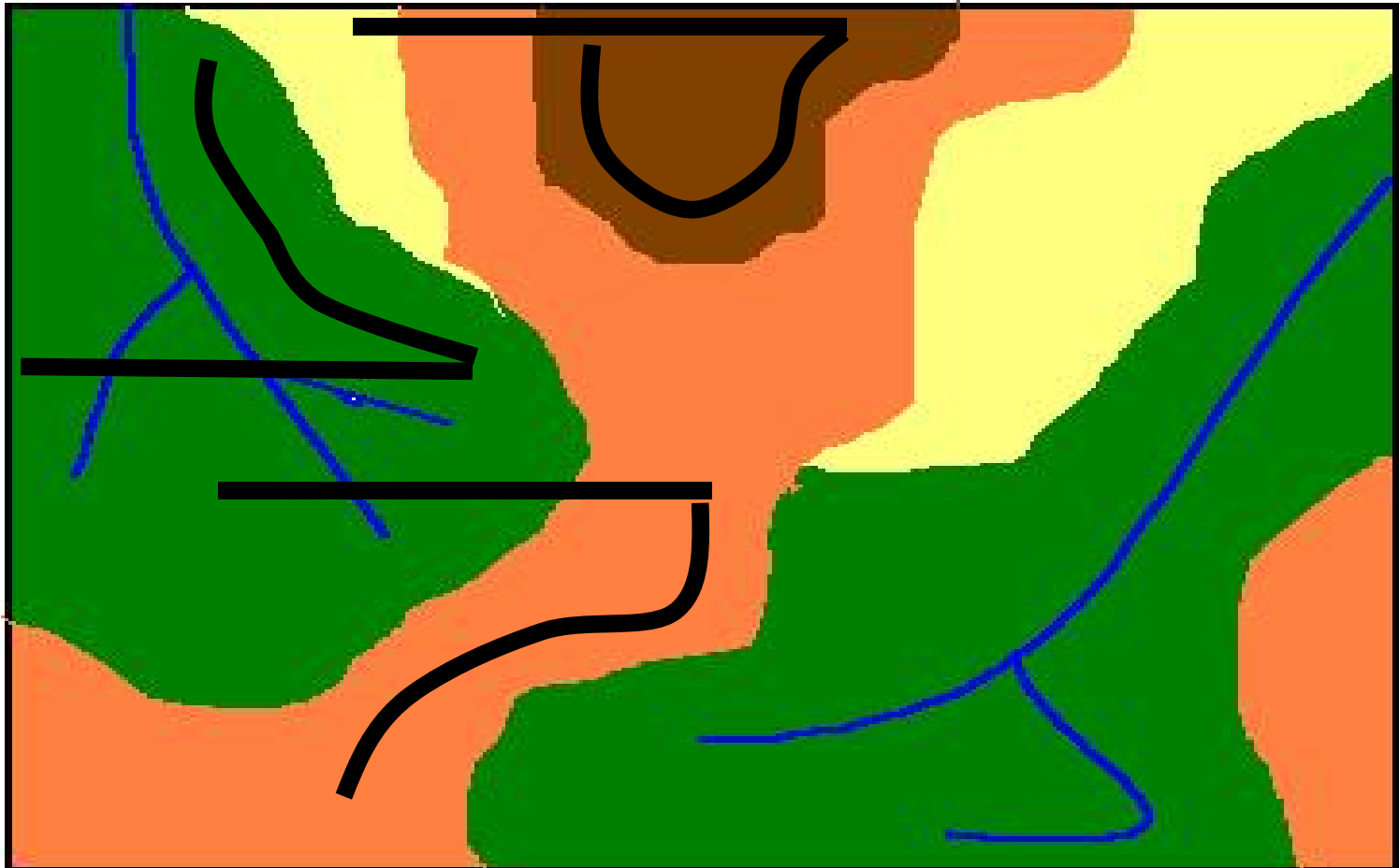


Occurrence x Abundance

- Occurrence points do not provide abundance information
- Occurrence points are not always enough to understand the relationships between species and environment, and therefore to predict impacts of climate or other anthropogenic changes



Why does PPBio uses plots following contour lines?





Permanent plots follow **contour lines**

- If each plot sample only one “environment”, it is possible to determine the relationships between species or ecosystem processes and these environments
- These relationships may be used to model species distributions or processes and make predictions for unsampled areas



PPBio

Programa de Pesquisa em Biodiversidade

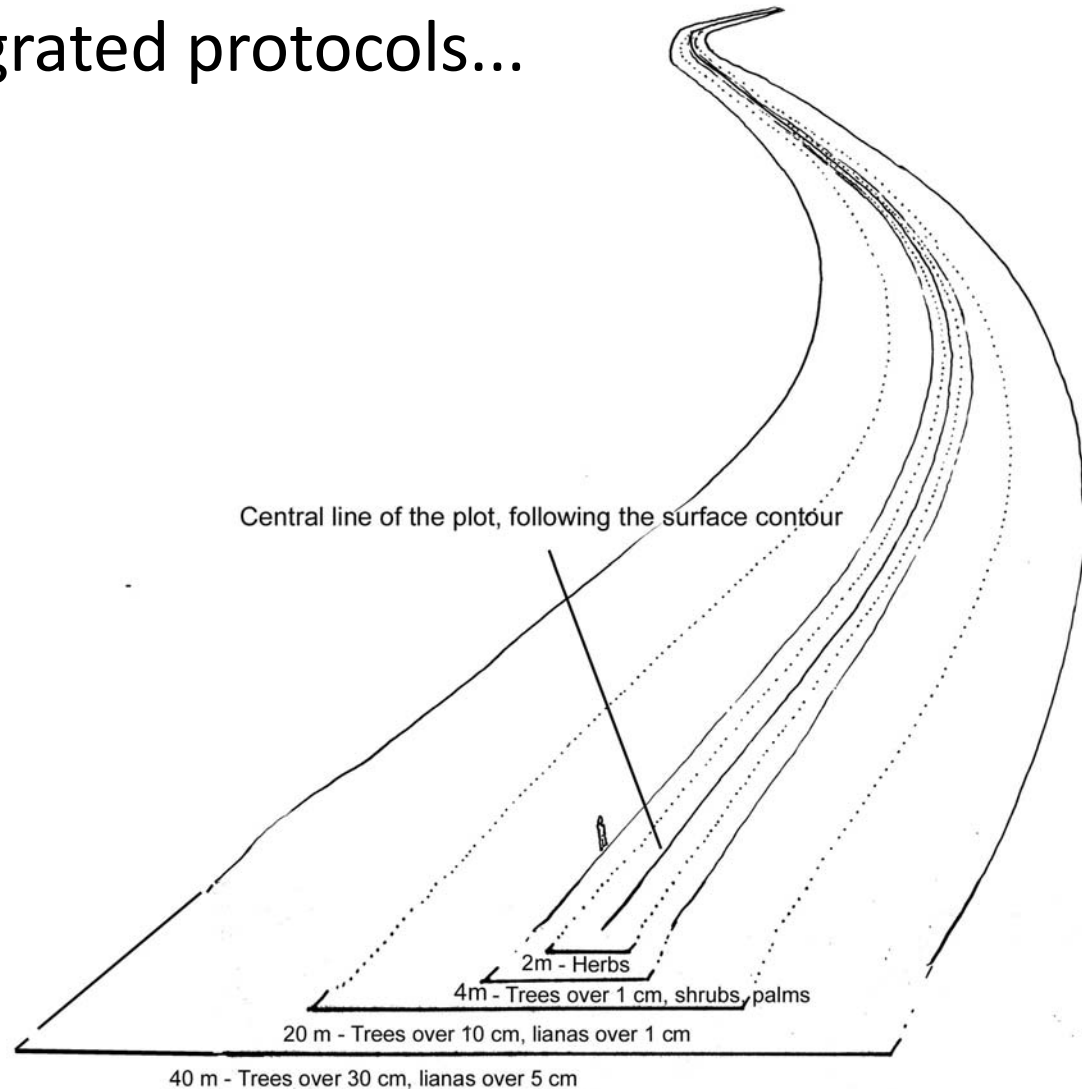
(2) Integration

Since there are many potential biodiversity targets and users, **integrated surveys** are much more efficient than isolated studies.



How different sampling needs, from different taxonomic groups, can be adjusted in integrated protocols...

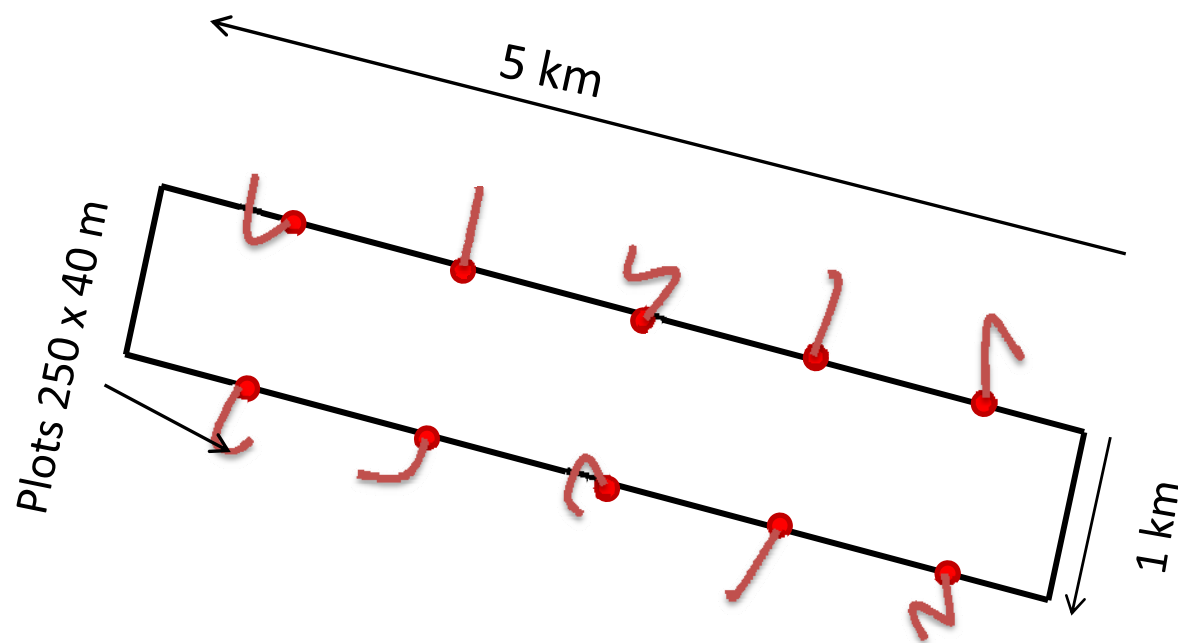
Plots are 250 m long, but the width is adjusted according to the size of the organisms to be sampled



PPBio

Programa de Pesquisa em Biodiversidade

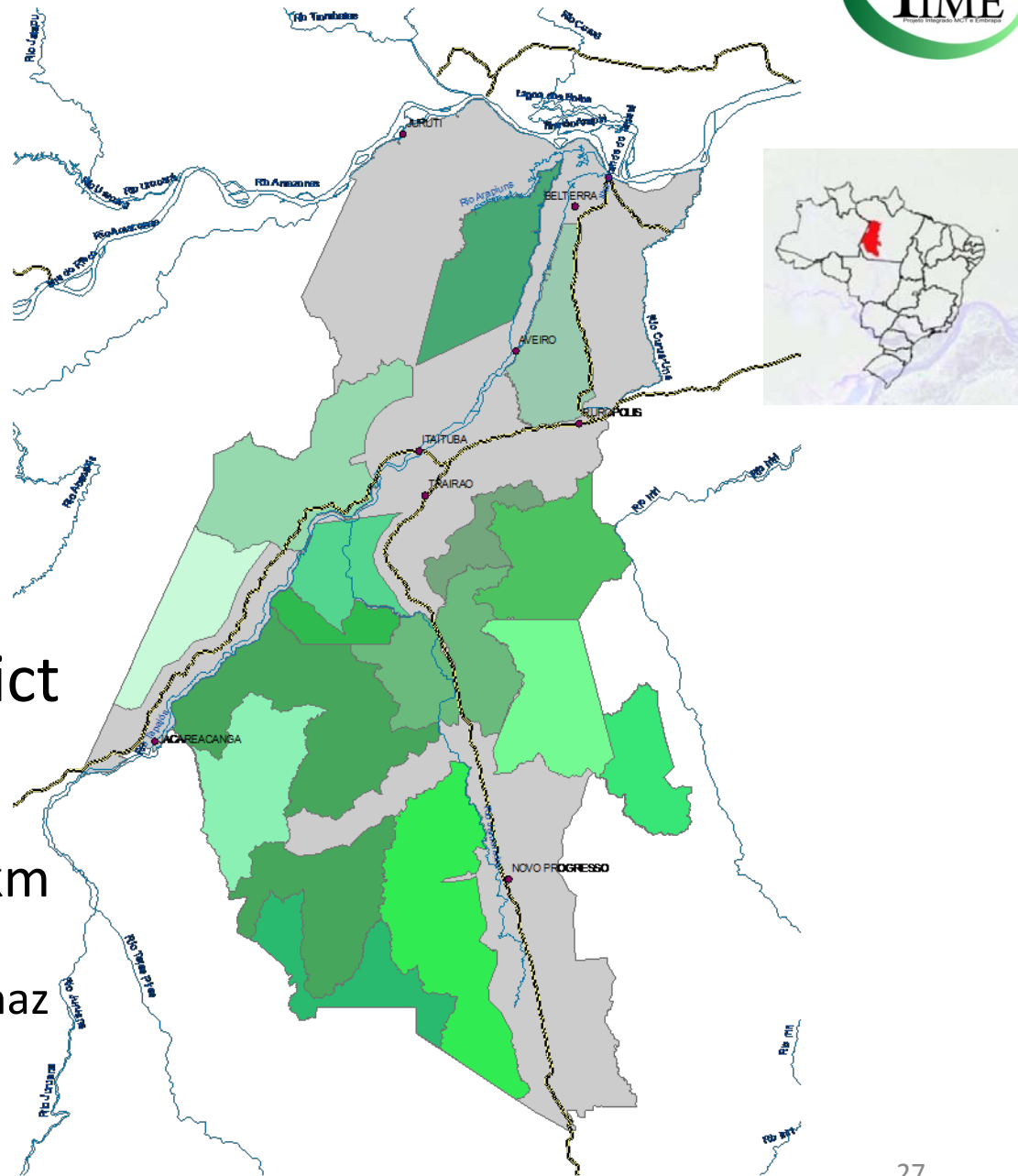
(4) Modularity





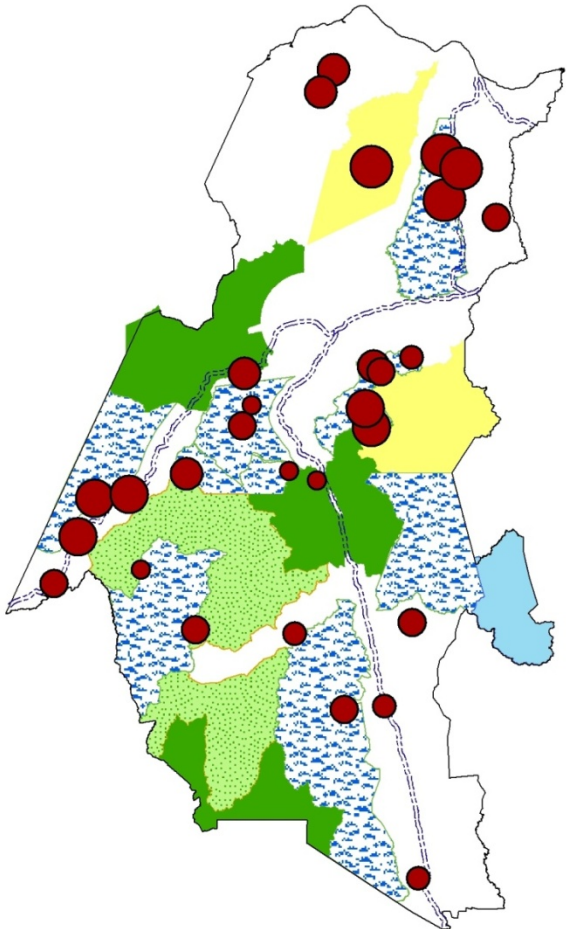
30 modules over 600 x 200 km

Project coordinated by Ana Albernaz

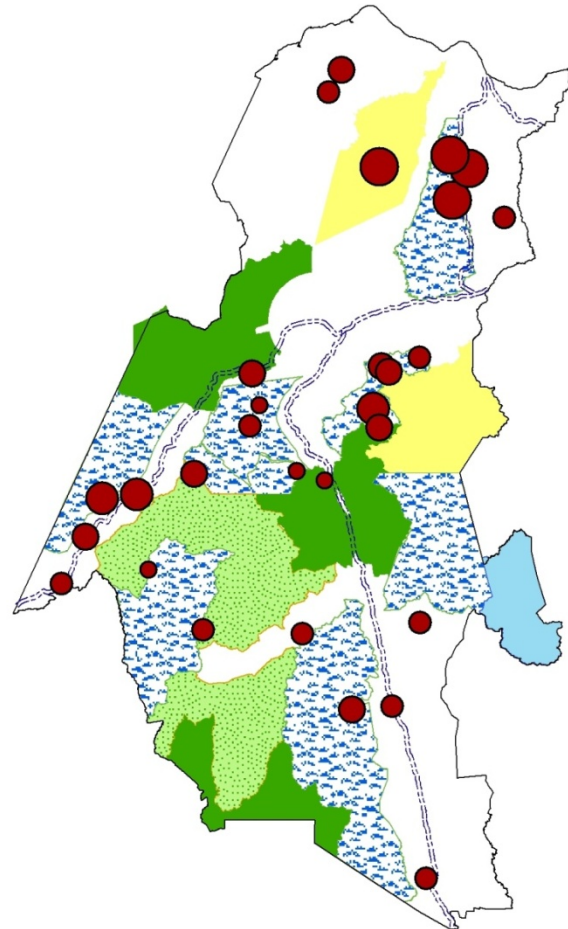


Wood Potential

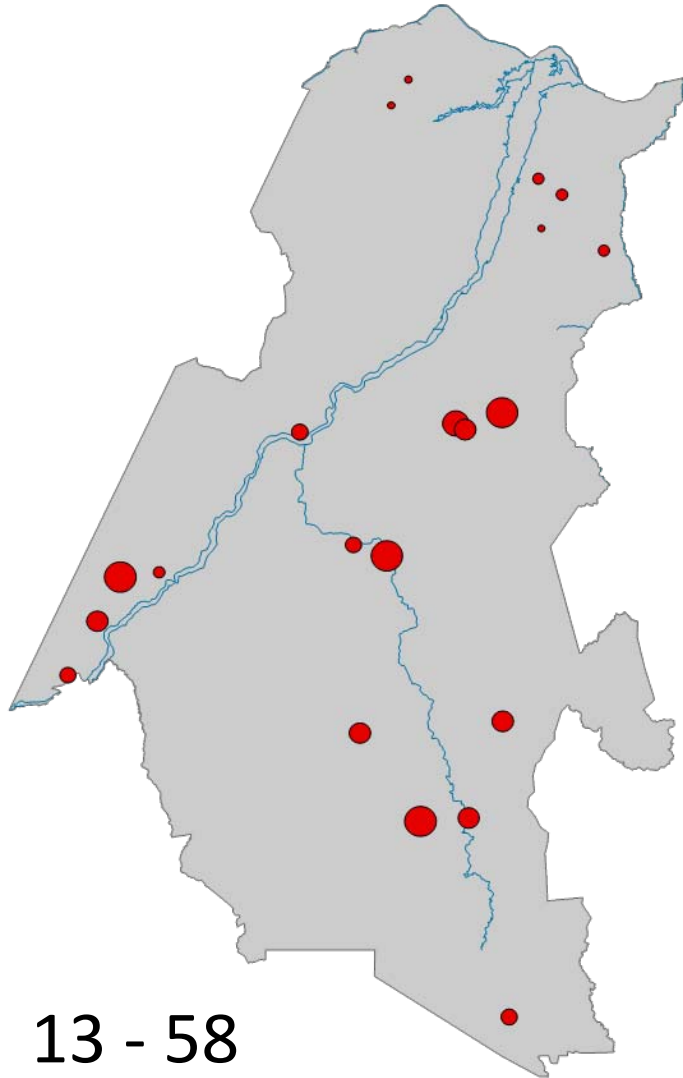
basal area (m^2/ha)



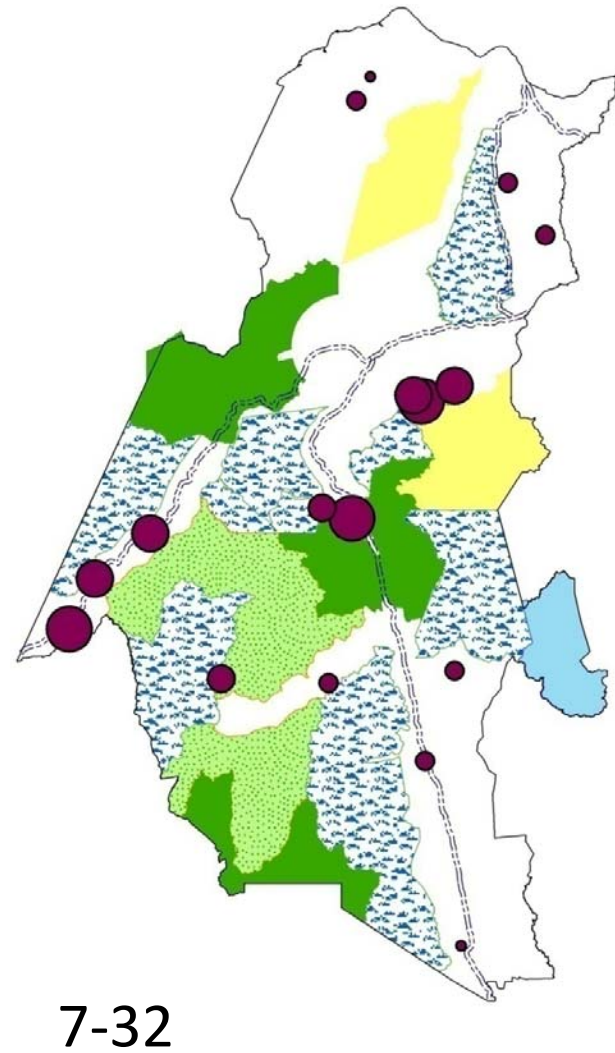
Wood Volume (m^3/ha)



Herb Richness



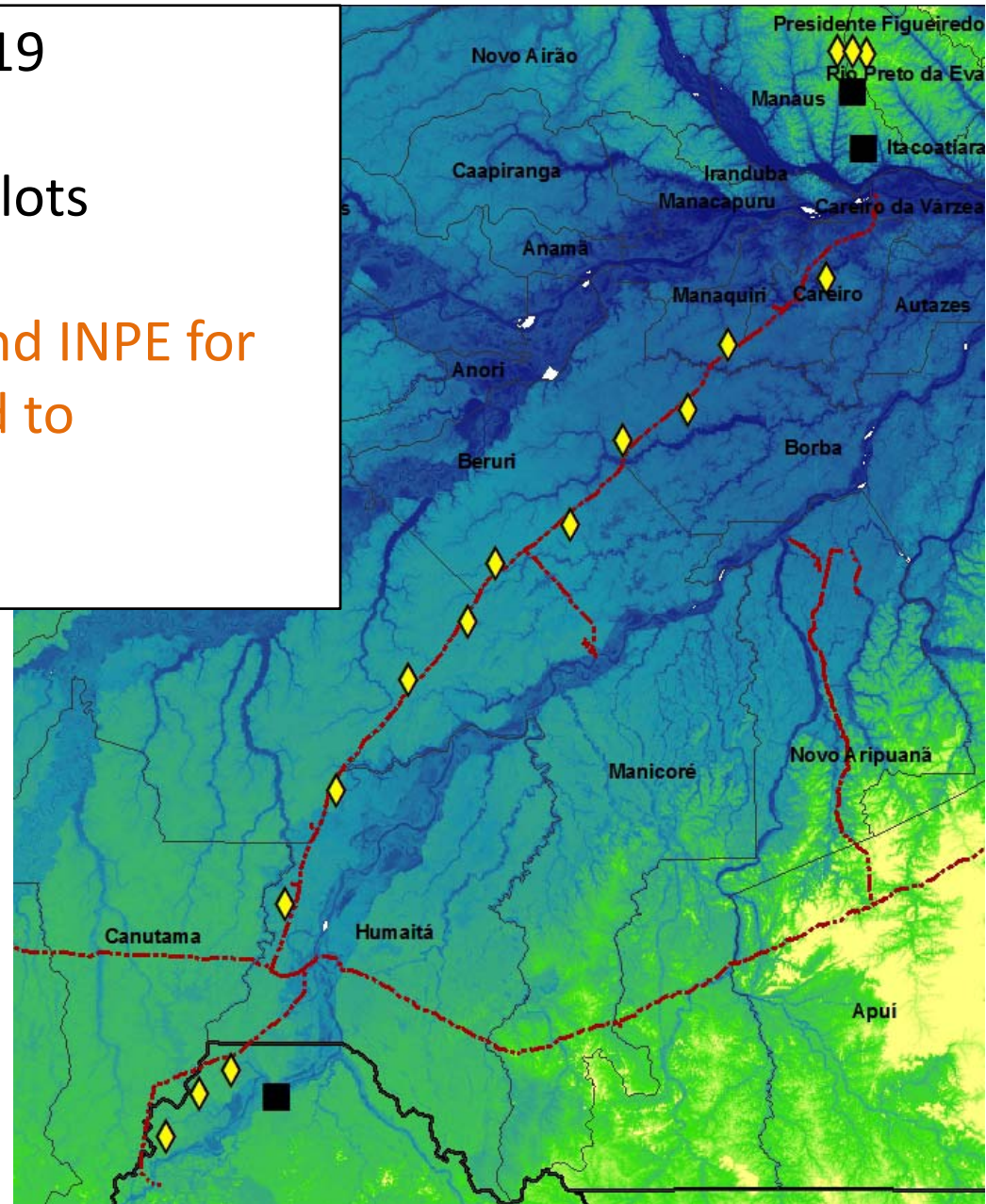
Palm Richness



Ecohydrology project at BR 319

11 research modules – 110 plots

Partnership between INPA and INPE for
vegetation dynamics coupled to
hydrological research



PPBio

Programa de Pesquisa em Biodiversidade

(5) Compatibility with other initiatives

TEAM:

Conservation
International

100 ha

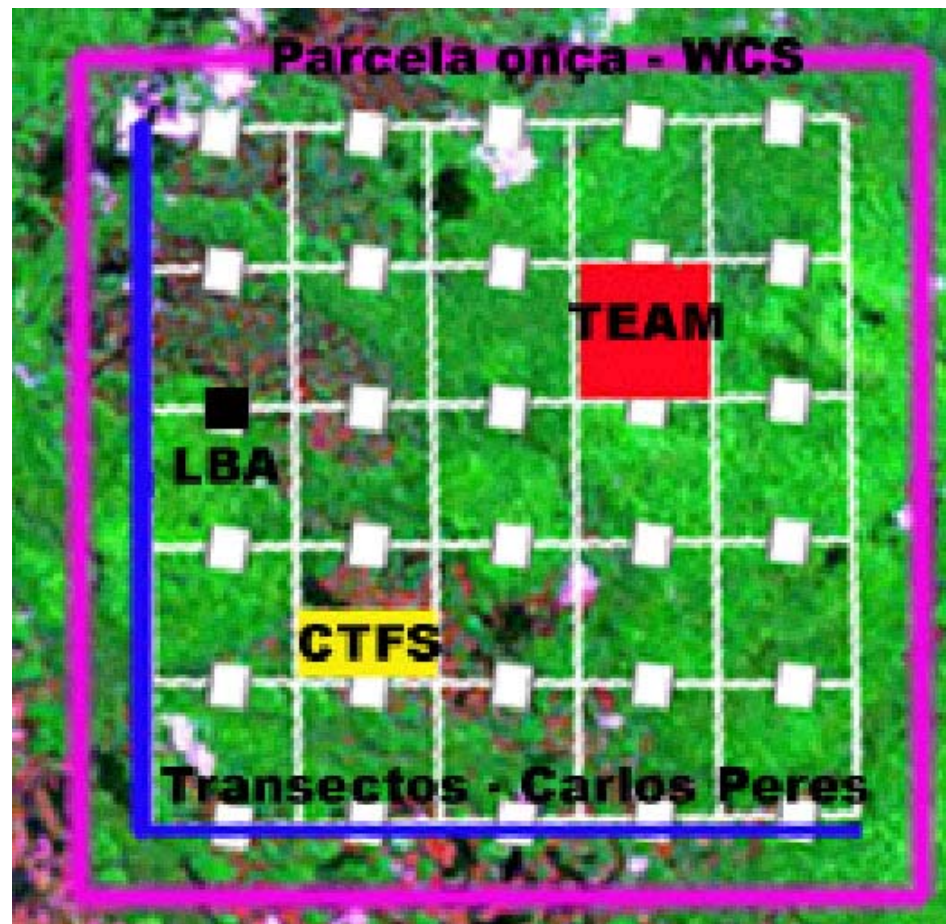
CTFS:

Smithsonian

50 ha

LBA: NASA

<50 ha



Mammal

Transects:

Carlos Peres

UNIVERSITY OF

EAST ANGLIA UK

WCS: Wildlife

Conservation
Society

Jaguars: 3,600 ha



PPBio

Programa de Pesquisa em Biodiversidade

(7) Make data available quickly

- Data collected under PPBio is public
- Data and metadata are freely accesible through internet



Metadata are essential to data management

- Metadata describe data and how they were collected.
- They should be made available as soon as possible, to allow other researchers to know what is being studied and where.
- PPBio uses the Ecological Metadata Language (EML), which is also used by LTER



língua/language | página inicial | inventários | coleções | proj. temáticos

você não está autenticado | acessar

você está aqui: página inicial » inventários biológicos » núcleo regional roraima » esec maraca » metadados herpetofauna esec maracá



navegação

Página Inicial

Sobre o Programa

Coleções Biológicas

Inventários Biológicos

Núcleo Regional
Roraima

ESEC Maraca

Projetos Temáticos

PPBio Internacional

Núcleos Regionais

Sítios de Coleta

Metadados e Dados

Produção Bibliográfica

Guias de Identificação

Instalação Infra-estrutura

Treinamento e
Capacitação

Intercâmbio

Projetos Associados

Acervo Digital

Metadados Herpetofauna Esec Maracá



Título: Efeitos dos Fatores Bióticos e Abióticos nas Comunidades de Serpentes e Lagartos na Esec – Maracá

Responsáveis

- 1. Luiz Felipe Pimenta de Moraes
Email: moraes@inpa.gov.br
Para acessar o currículo lattes do pesquisador(a) [clique aqui](#)
- 2. Pedro de Sá Petit Lobão
Email: pedrolobao@inpa.gov.br
Para acessar o currículo lattes do pesquisador(a) [clique aqui](#)



Endereço:

Coordenação de Pesquisas em Ecologia – CPEC
Instituto Nacional de Pesquisas da Amazônia – INPA

notícias RSS

Oportunidade no
Programa de
Monitoramento de Médios
e Grandes Mamíferos -
UNIR

2010-05-31

Curso de
Capacitação e Integração
em Projetos de
Biodiversidade - PPBio e
CENBAM

2010-05-29

Núcleo Regional
Angatuba realiza
workshop interno

2010-05-21

Bolsista PPBio faz
palestra em ciclo de
seminários do PDBFF

2010-05-07

Seminário sobre o
Monitoramento de
Impactos sobre a
Biodiversidade em áreas
de Concessões Florestais

Título: Efeitos dos Fatores Bióticos e Abióticos nas Comunidades de Serpentes e Lagartos na Esec – Maracá

Responsáveis

- 1. Luiz Felipe Pimenta de Moraes
Email: moraes@inpa.gov.br
Para acessar o currículo lattes do pesquisador(a) [clique aqui](#)
- 2. Pedro de Sá Petit Lobão
Email: pedrolobao@inpa.gov.br
Para acessar o currículo lattes do pesquisador(a) [clique aqui](#)

Endereço:

Coordenação de Pesquisas em Ecologia – CPEC
Instituto Nacional de Pesquisas da Amazônia – INPA
Avenida Efigênio Sales 2239
69011-970
Telefone: 55 92 3643 1834



Resumo:

O projeto em questão busca gerar informações sobre ecologia de comunidades de serpentes e lagartos, com o intuito de contribuir para o conhecimento sobre biodiversidade da Unidade de Conservação Estação Ecológica de Maracá, RR.

Coordenadas Geográficas:

Oeste: -61.4869
Leste: -61.4599
Norte: +3.4073
Sul: +3.3866

Abrangência Temporal:

Setembro de 2006 a setembro de 2007.

Métodos de Coleta dos Dados:

Foi realizada coleta de dados se nas parcelas presentes na grade do PPBio na ESEC Maracá, num total de 30 parcelas. Dois métodos principais foram aplicados para lagartos e serpentes: 1) Transecto de amostragem visual, uma combinação do método de levantamento por encontros visuais e do método de contagem pontual; e 2) Procura ativa (removendo liteira, procurando debaixo de troncos, etc.) nas parcelas em transectos de 1x250m. Também foram coletados dados através de encontros ocasionais. Para estimar a composição da comunidade de presas foram utilizadas armadilhas de queda com isca em cada uma das parcelas. Os dados referentes aos fatores bióticos e abióticos foram disponibilizados por outros pesquisadores através do Programa PPBio.

Arquivos de Dados:

- [Herpetofauna Maracá.pdf](#) (melhor para visualização)
- [Herpetofauna Maracá.csv](#) (melhor para importação em planilha de dados)
número de registros: 30
- [Disponibilidade de Presas.pdf](#) (melhor para visualização)
- [Disponibilidade de Presas.csv](#) (melhor para importação em planilha de dados)
número de registros: 30

Informações sobre as tabelas de atributos:

Herpetofauna Maracá

Nome do Atributo: TRILHA

Definição: Identificador da TRILHA na qual os dados foram coletados

Nome do Atributo: PARCELA

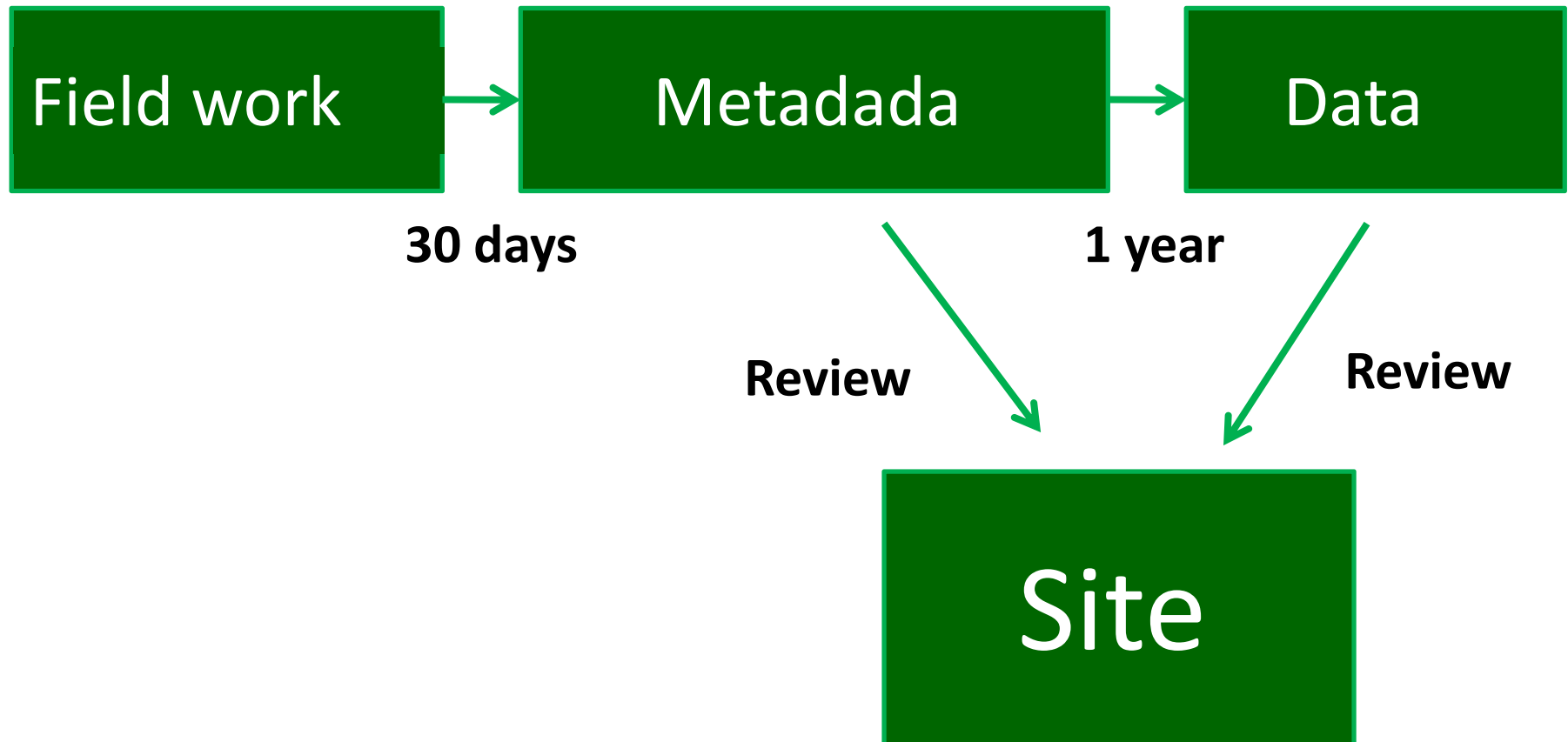
Definição: Identificador da PARCELA na qual os dados foram coletados

Nome do Atributo: A. ame

Definição: Número de indivíduos da espécie *Ameiva ameiva* amostrados na parcela

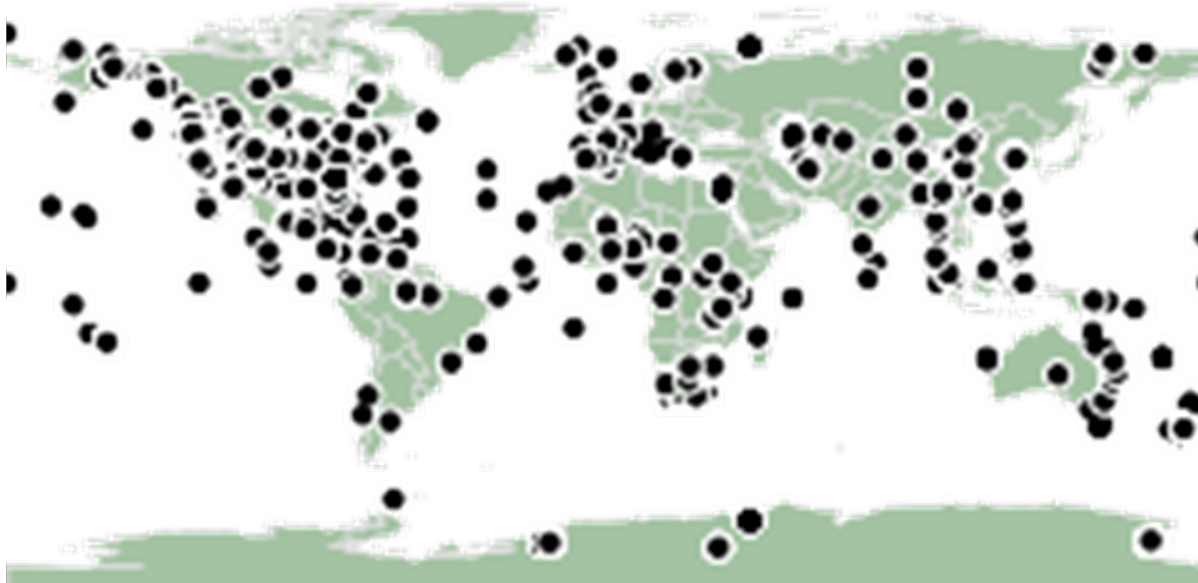


Data flow - How it works today



Knowledge Network for Biocomplexity (KNB)

<http://knb.ecoinformatics.org/>



- Morpho: a tool to create, administrate and share metadata.
- Metacat : a tool to store, browse and recover data

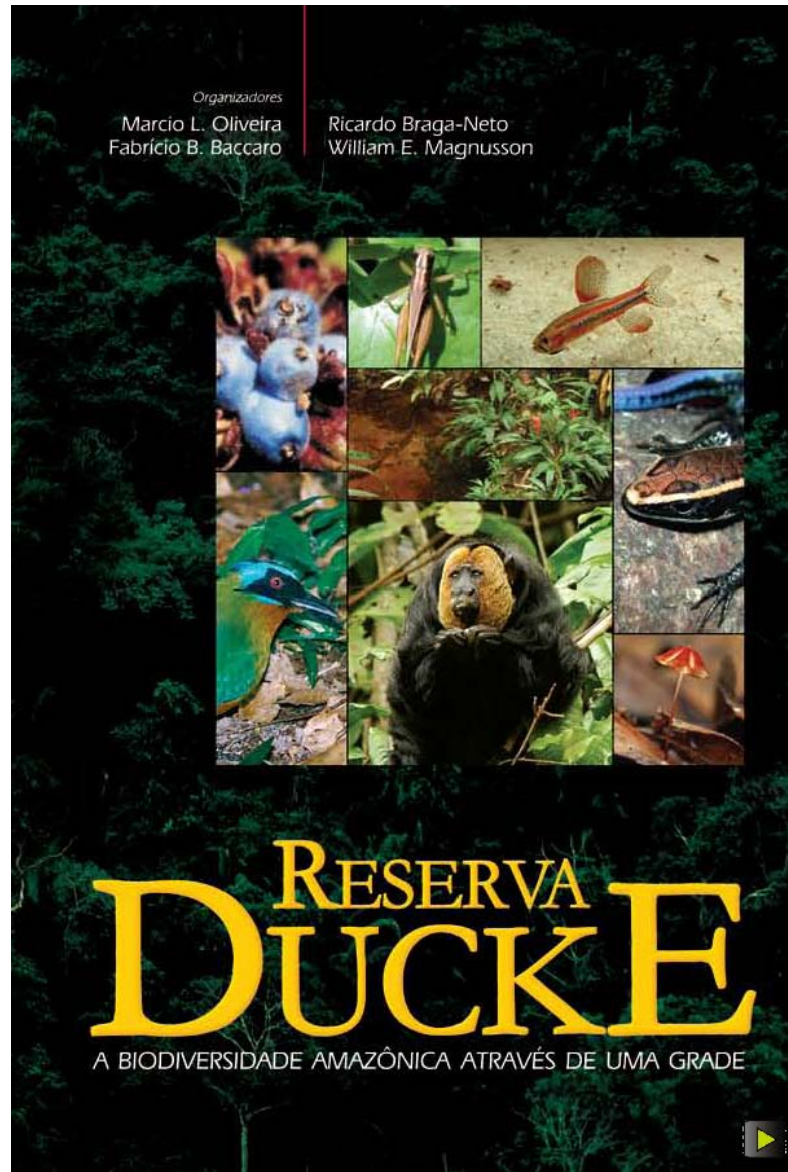


Integration and synthesis

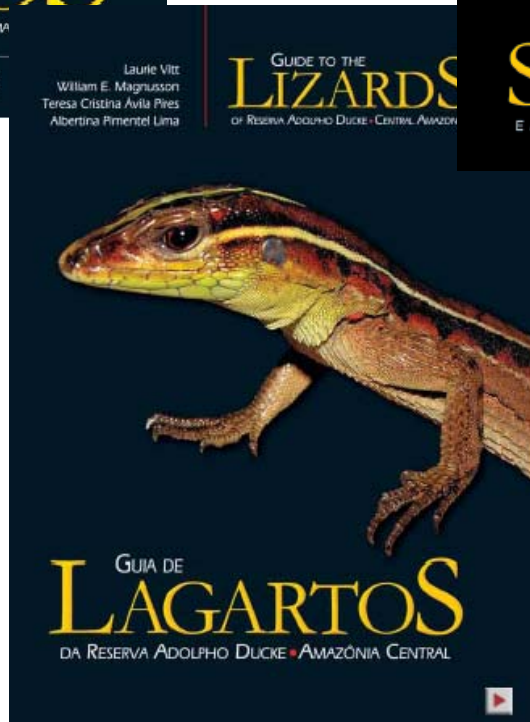
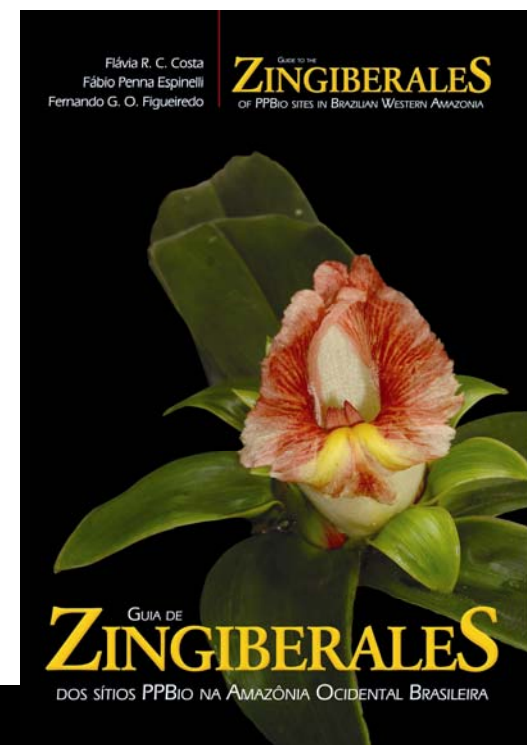
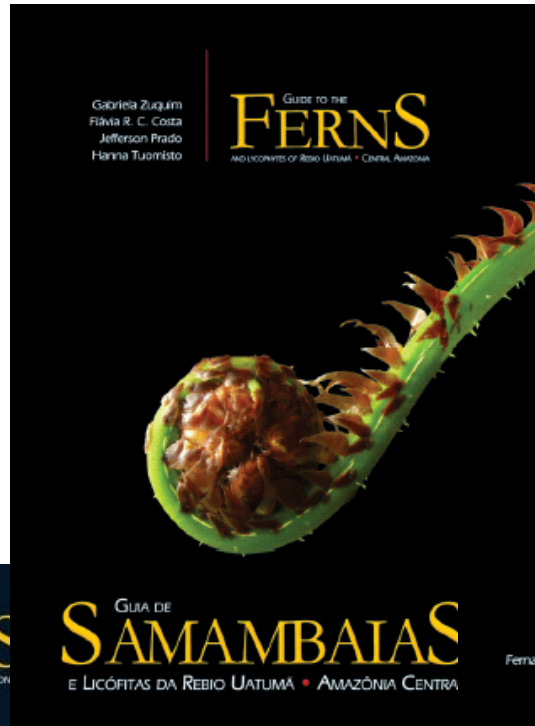
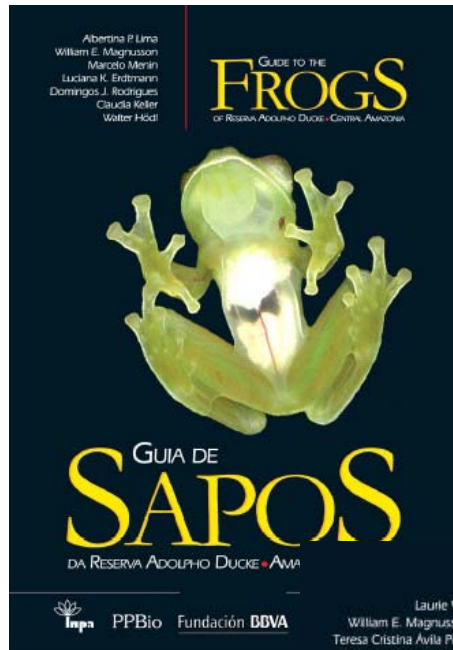
- Annual meetings to share results among regional hubs
- Workshops for analysis and writing of papers
 - I workshop on vegetation studies in 2009 had 8 researchers and produced 3 papers
 - II workshop on vegetation studies in 2010 had more than 150 people (researches, students and MCT members) and the potential for 7 papers



eBook about Reserva Ducke



Field Guides





Guides donated to more than 120
public highschools in Manaus







Willian Magnusson (Researcher
INPA/PPBio Coordinator)



Flávia Costa (Researcher
INPA/PPBio)



Carolina Castilho (PhD at
INPA/Tree community)



Thaise Emílio (PhD st -
INPA/Palm community and
hidrology)



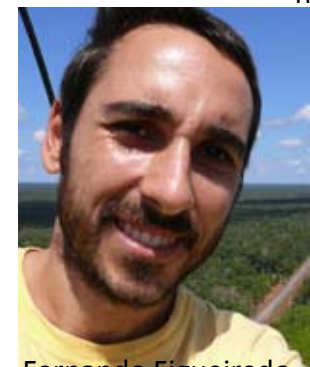
Gabriela Zuquim (PhD
st -University of Turku,
Finland/ferns)



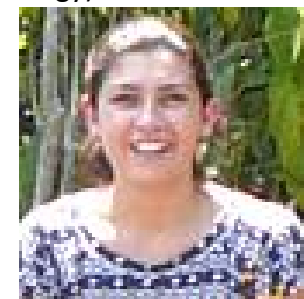
Flávia Pezzini (PPBio
Researcher - Data
Management)



Fabrício Baccaro (PhD st. -
INPA/Ant community)



Fernando Figueiredo
(PPBio - INPA/herbs
community)



Juliana Schietti (PhD
st.-INPA/Tree
community /Satelite
imagery)



Andressa Scabin (M. Sc.
INPA-Brisbane
University/Impact
wood exploitation)



Cristian Dambros (M. Sc.
INPA-PPBio/Termites
community ecology)



Cintia Freitas (PhD st. -
INPA-Arhus
University/Reproduction
of palms)



Carlos Eduardo Barbosa (PhD st -
INPA-CA University/Seeds and
seedlings of tree community)



Hélder Espírito-Santo(PhD
st-INPA/Fish community)



Thank you!

Tak!

Obrigada!

Flávia Fonseca Pezzini – flaviapezzini@gmail.com

Flávia RC Costa – flaviacosta001@gmail.com

Willian Magnusson – bill@inpa.gov.br

<http://ppbio.inpa.gov.br>