

INAU

**INSTITUTO NACIONAL DE CIÊNCIA
E TECNOLOGIA EM ÁREAS ÚMIDAS**



**ANNUAL ACTIVITY
REPORT 2010**



INAU Progress Report 2010-08-15

1. Presentation

In August 2008, The Brazilian Research Council (CNPq) published a call for the foundation of new National Institutes for Science and Technology. At the end of November, the proposal for the National Institute for Science and Technology in Wetlands (Instituto Nacional de Ciência e Tecnologia em Áreas Úmidas, INAU), to be established at the Federal University of Mato Grosso, Cuiabá, was approved, and in February 2010 the funds became available to initiate the research work.

The following major goals of the institute were formulated:

1. Delineation of the four large wetlands of the states Mato Grosso and Mato Grosso do Sul: Pantanal and the wetlands along the rivers Guaporé, Araguaia and Paraná.
2. Characterization and classification of their *habitats*
3. Description of their functions and interactions
4. Elaboration of a plan for the sustainable management of their natural resources, for the protection of their *habitats* including their biodiversity, and for the improvement of the quality of life of the traditional people living in the areas.
5. Elaboration of criteria for decision-makers for the elaboration of regulations to reach sustainable management goals
6. Contribution to the formation of high-quality researchers and technicians in wetland research and management

Why there is a need for this institute?

Wetlands play an important role in the landscape.

1. They store surplus water from precipitation and deliver it slowly to the drainage system and to the subterranean aquifer
2. They clean water from pollutants and hinder sediments from the upland to enter streams and rivers
3. They provide clean water for wildlife and domestic animals and for humans for drinking, bathing and domestic purposes
4. They stabilize stream beds
5. Large wetlands, such as the Pantanal, are colonized since centuries by people and support them with fish, timber and non-timber products (medicinal plants, ornamental plants, material for construction, etc.)
6. They are traditionally used by low density cattle ranching and in recent times increasingly for eco-tourism
7. They provide important *habitats* for a large number of plant and animal species and contribute substantially to the maintenance of biodiversity
8. Some of them store major amounts of organic matter, source of the greenhouse gas carbon dioxide

Despite these multiple functions in the landscape, wetlands call little attention of politicians and the public in Brazil. Most people consider wetlands still as wastelands that should be drained to make them “useful” for agriculture and other purposes. In the paragraphs of the Brazilian constitution that deal with aquatic resources, wetlands are not mentioned. Riparian vegetation is included in the Permanent Protected Areas but in practice, land owners care very little about this regulation and environmental authorities are too weak to guarantee its implementation.

In 1992, Brazil signed the Ramsar Convention, a treaty that protects wetlands of international importance. Actually, Brazil has 8 Ramsar sites covering a total area of 6,434,086 ha. However, recommendation 4.6 of the Ramsar Convention

urges contracting parties to *“the establishment of wetland inventories, based on the best scientific information available at both national and international level”* (Montreux 1990). And here, Brazil has serious deficiencies.

There are no data available, about the amount of the Brazilian territory that is covered by wetlands, which type of wetlands exist, what is their percentage on the total area, which benefits they bring to the local population, the status of their ecological integrity, which threats exist, etc. These are no questions of mere scientific interest. We estimate that at least 20% of the Brazilian territory is covered by wetlands with a higher percentage in Amazonia and a lower one in the southern parts of the country. This is an order of magnitude that should give wetlands a top priority position in national policy.

The situation becomes even more dramatic, when considering the predictions of the global climate panel for Brazil. Beside an increase in temperature and extreme weather events there is a prediction of reduced rainfall in the northeast of the country and a change in precipitation pattern in most of the area with more rain in the wet season and less rain in the dry season. Availability of water will be the key issue of future economic development, and intact wetlands will play a key role as buffers in the hydrological cycle, reducing surface runoff, maintaining water in the landscape and releasing it slowly to streams, rivers and the groundwater table for the benefit of nature and humans including agriculture and cattle ranching.

INAU will deal for the next years with the Pantanal and the wetlands along the rivers Guaporé, Araguaia and Paraná. These are the largest wetland complexes of the Brazilian cerrado belt and should have a key position in national and regional landscape planning. The Pantanal and the Paraná River wetlands are already relatively well studied. This will help with the projects at the Guaporé and Araguaia River wetlands, which are very little known.

To reach the goals and to increase visibility of the institute, the coordinators of INAU have already established cooperation with the wetland research groups in Amazonia [National Amazon Research Institute (INPA), Manaus-AM] and at the Paraná River [Núcleo de Pesquisas em Limnologia, Ictiologia e Aqüicultura (NUPELIA), Maringá-PR]. Links to several important foreign wetland centers are planned. Also, the exchange of students and scientists and training courses is in planning and will help to overcome the shortage in qualified man-power. According to the requirements of CNPq *“the program”* (of the new institutes) *has ambitious and far reaching goals in the national context, mobilizing and aggregating in an articulate manner the best research groups in innovative science and in strategic areas for the sustainable development of the country, stimulating scientific research to be competitive at international level’*. We are sure that INAU will contribute to reach this goal.

Cuiabá, 25.8.2010



Wolfgang J. Junk
(Coordinator)



Paulo Teixeira de Sousa Jr
(Vice-coordinator)

2. History

INAU is linked to the Federal University of Mato Grosso (UFMT)

UFMT realizes research about the Pantanal since its foundation in 1974. At the beginning of the 1990s, the studies became a strong impulse for the establishment of two cooperation treaties between UFMT, Geographic Institute of the University of Tübingen, and the Max-Planck-Institute for Limnology, Working Group Tropical Ecology, both Germany. These cooperation treaties were established under the umbrella of a large bilateral research program financed by the Brazilian Research Council (CNPq) and the German Ministry for Science and Technology (BMBF) with the title “Studies of Human Impacts on Forests and Floodplains in the Tropics (SHIFT)”. At UFMT, the Nucleus of Pantanal Research (NEPA) and a post-graduate course became established with the title “Ecology and Conservation of Biodiversity”, to stimulate the formation of human resources.

When the collaboration projects ended in 2003, the Pantanal Research Centre (Centro de Pesquisas do Pantanal - CPP) was established at UFMT by Prof. Paulo Teixeira. This centre gave continuity to the research of the scientists. But it also opened the way for cooperation with researchers of other institutions and universities in the states of Mato Grosso and Mato Grosso do Sul by the establishment of four research networks about cattle ranching, fisheries, bioprospection and water resources, an innovative and very efficient approach.

A highlight was the realization of the 8th International Wetland Conference of INTECOL in Cuiabá in July 2008, organized by CPP/UFMT. The conference was realized for the first time in South-America and called attention of the international scientific community to the wetlands of Latin America in general and the Pantanal in specific.

During the congress, the representative of the Brazilian minister of science and technology announced the establishment of the National Pantanal Research

Institute (INPP) in Cuiabá. This decision was supported by UFMT, which provided the area for the construction of the institute at the university campus, and by the state secretary of science and technology of Mato Grosso, who offered additional funding of the state government. Today (August 2010) the construction is in an advanced stage.

In August 2008, CNPq published a call for the foundation of new National Institutes for Science and Technology. Because of their long research tradition and experience in network administration, the coordinators of CPP decided to propose the foundation of the Institute for Science and Technology in Wetlands (Instituto Nacional de Ciência e Tecnologia em Áreas Úmidas, INAU).

The following major goals of the institute were formulated:

1. Delineation of the four large wetlands of the states Mato Grosso and Mato Grosso do Sul: Pantanal and the wetlands along the rivers Guaporé, Araguaia and Paraná.
2. Characterization and classification of their *habitats*
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5. Elaboration of criteria for decision-makers for the elaboration of regulations to reach sustainable management goals
6. Contribution to the formation of high-quality researchers and technicians in wetland research and management

The research institutions of Mato Grosso and Mato Grosso do Sul (both states share the Pantanal) were invited to participate in the INAU research network and to encourage their scientists to submit individual research proposals. Aiming to increase communication with society and to foster the emergence of

new talent, a High School from Cuiabá was invited to participate in INAU, sending student to do internship.

On September 19th of 2008, the proposal was submitted to CNPq and at the end of November, the coordinators of INAU were informed about the approval by CNPq.

In February 2009, the coordinators of INAU met with the researchers in Cuiabá, Campo Grande and Dourados to discuss scientific, technical and financial readjustments of the individual project proposals, and to evaluate the available infrastructure. At this occasion, they discussed with the deans of the universities the possibilities to receive additional institutional assistance for the participants of INAU and got full approval. Requests were addressed to the state agencies to foster science and technology FAPEMAT and FUNDECT to get additional assistance in form of scholarships and funding, and were positively responded.

Because of technical and administrative problems the liberation of funds was possible only in February 2010.

In a ceremony on 26th of July, INAU was presented to the public with ample participation of press, television and radio.

On 26th of July, the first meeting of the Managing Council, and in the following 3 days the first meeting of the International Scientific Council was realized. The researchers presented their project proposals in short power point presentations and the individual project proposals were analyzed by the council members. Adaptation of the individual projects according to the recommendations of the council is going on and research activities have started.

3. Organization

3.1 Abbreviations:

AU = Wetland (Área Úmida)

CPP = Pantanal Research Center (Centro de Pesquisas do Pantanal)

INPP = National Pantanal Research Institute (Instituto Nacional de Pesquisas do Pantanal)

INAU = National Institute of Science and Technology in Wetlands (Instituto Nacional de Ciência e Tecnologia em Áreas Úmidas)

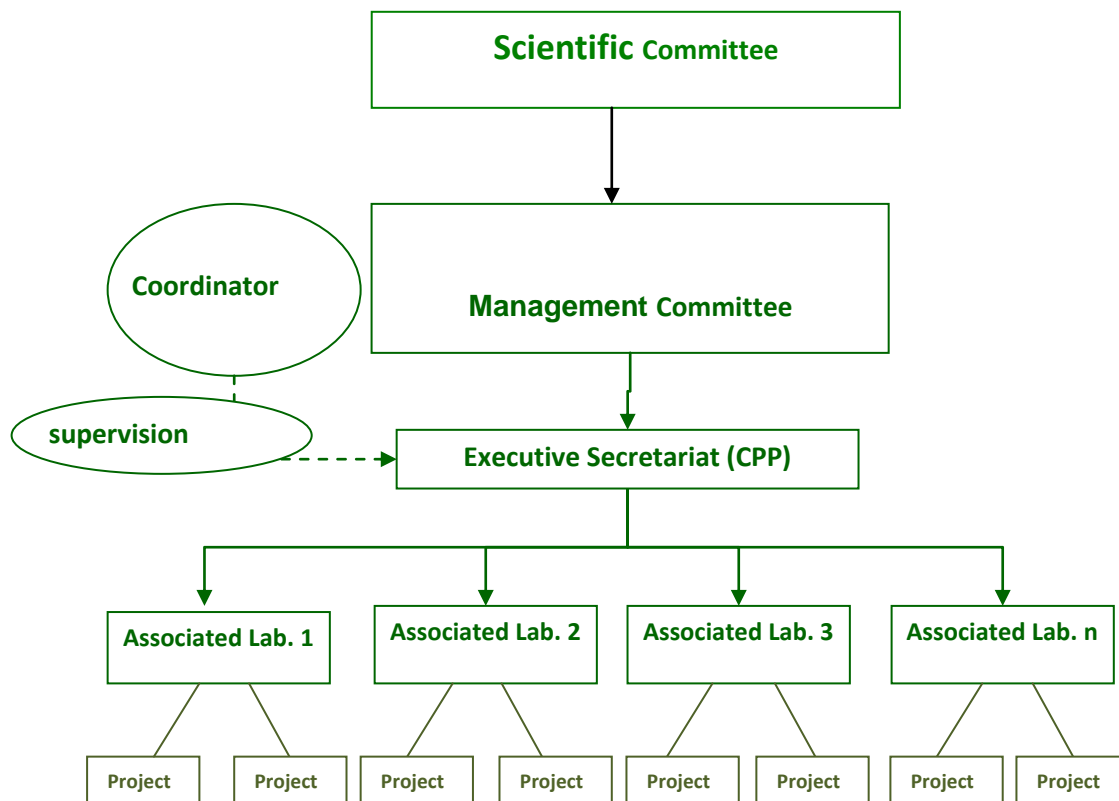
SE = Executive Secretary (Secretaria Executiva)

LA = Associated Laboratory (Laboratório Associado)

CCI = International Scientific Council (Conselho Científico Internacional)

CG = Managing Council (Conselho Gestor)

The organization of INAU is given in Fig. 1.



3.2 Executive Secretariat and coordinators

INAU established an Executive Secretariat (SE) at CCP, which will handle with the two coordinators all scientific, technical, administrative and political aspects of the program. The e-mail address is: inau@cppantanal.org.br

The SE will put in practice the orders of the coordinators, organize meetings, seminars, workshops and congresses, take care of financial transfers and the control of resource administration, realize the acquisition of equipment, consumables, tickets, etc. and realize refunding of expenses.

The coordinators of INAU will call for and lead meetings, accompany the projects and help with their realization, guarantee the accomplishment of the roles, represent INAU to financing agencies and others, including the acquisition of additional funds. They will represent the program to MCT, CNPq and other political and scientific organizations and on high-level scientific and political meetings, if required.

The Vice-Coordinator assists the Coordinator when required and substitutes him during his absence.

INAU will establish high visibility in the public by intensive contacts with the press. This visibility will be maintained by the team of Dr. Michelle Sato together with the press office of CPP and UFMT, which will also help in passing the scientific results of the individual projects by the press.

Today, INAU counts on the participation of seven national and four foreign institutions (Tab. 1). This number will certainly increase in the next future.

Tab. 1: Preliminary list of the institutions, participating on INAU

Name	Abbreviation	Address
Universidade Federal de Mato Grosso	UFMT	Av. Fernando Correa da Costa s/n 78060-900 Cuiabá - MT - Brasil
Universidade Federal de Mato Grosso do Sul	UFMS	Caixa Postal 549 79070-90 Campo Grande-MS – Brasil
Universidade Estadual de Mato Grosso do Sul	UEMS	Caixa postal 351 79804-970 Dourados – MS - Brasil
Universidade Católica de Dom Bosco	UCDB	Av. Tamandaré 6000 – Jardim Seminário 79117-900 Campo Grande – MS - Brasil
Universidade para o Desenvolvimento da Região do Pantanal	UNIDERP	Caixa Postal 2351 Rua Ceará 333, B. Miguel Couto 79003-010 Campo Grande – MS - Brasil
Universidade Estadual Paulista Júlio de Mesquita Filho	UNESP	Rua Quirino de Andrade, 215 01049-010 São Paulo – SP - Brasil
Universidade de São Paulo	USP	Brasil
Un. Hamburgo		Alemanha
Un. Konstanz		Alemanha
Un. British Columbia		Vancouver, BC- Canadá
San Marco, CA-EUA		Un. Estadual Califórnia

3.3 Associated Laboratories

The projects are joined in 6 “Associated Laboratories” (LAs). Every LA has a coordinator and a vice-coordinator. The coordinator is the contact person between the scientists of the respective LA and the SE of INAU. He passes information coming from the coordination office to the scientists of the individual projects, and information from the projects to the coordination office. In his absence, the vice-coordinator assumes these duties. The LAs are responsible for the technical and, if required, the financial execution of general activities which affect the projects, according to the instructions of CCI and CG. They report about their activities and are controlled by technical visits when required

by the coordinators. The numbers and titles of LAs and their respective coordinators and vice-coordinators are given in Tab. 2.

Tab. 2: Number, title, and coordinators of Activity Áreas (AAs)

Number	Title	Coordinator
01	Identification, Delineation and Classification of Wetlands and Their Habitats	Prof. Dr. Wolfgang Junk (UEA/UFMT)
02	Aquatic-Terrestrial Interactions and Carbon Fluxes	Prof. Dr. Eduardo G. Couto (UFMT)
03	Ecology and Management of Fishery	Prof. Dr. Miguel Petrere (UNESP)
04	Wetlands Biodiversity and Management	Prof ^a . Dr ^a . Cátia Nunes da Cunha (UFMT)
05	Bioprospection for the Sustainable Use of Wetlands	Prof. Dr. Paulo Teixeira de Sousa Jr (UFMT)
06	Cultural Practices, Socio-Economy and Education	Prof ^a . Dr ^a . Michèle Sato (UFMT)

3.4 Managing Committee (CG)

Every institution indicates a representative for the CG, which leads with technical aspects of INAU that involve actions of the institutions involved. The CG is lead by the INAU Coordinator or, in his absence, by the Vice-Coordinator. The CG meets annually or when called. It is the duty of the CG after consideration of the recommendations of the CCI, to take administrative decisions for the well functioning of INAU, including the allocation of resources for the LAs, which CCI and CG consider more appropriate. The members of the CG are indicated in Tab. 3.

Tab. 3: List of the members of the Managing Committee (CG) and their institutions

Name	Institution
Prof. Dr. Wolfgang Junk	UFMT/UEA
Prof. Dr. Paulo Teixeira Sousa Jr	UFMT
Prof ^a . Dr ^a Cátia Nunes da Cunha	UFMT
Prof ^a . Dr ^a . Maria Rita Marques	UFMS
Prof ^a . Dr ^a . Antonia Railda Roel	UCDB
Prof. Dr. Silvio Fávero	UNIDERP
Prof. Dr. Miguel Petrere	UNESP
Prof. Dr. Yzel Suárez Rondon	UEMS

3.5 International Scientific Committee (CCI)

The scientific quality and the progress of the activities of the individual projects will be evaluated every year by the CCI. The CCI will be composed by six members of international scientific reputation (Tab. 5). During the first meeting, planned for July 2010, the members will evaluate the working plans of the individual projects and will make recommendations for their improvement. During the realization of INAU, they will meet every year to analyze the functioning of the program and the scientific progress of the individual projects.

Tab. 4: List of the members of the International Scientific Committee (CCI) and their institutions

Name	Institution
Prof. Dr Max Finlayson	Institute for Land, Water and Society (Charles Sturt University), Australia
Prof. Dr Willian J. Mitsch	Wilma H. Schiermeier Olentangy River Wetland Research Park – The Ohio State University, USA
Prof. Dr. Brij Gopal	School of Environmental Sciences - Jawaharlal Nehru University; New Delhi, India
Prof. Dr. Guillermo Schmeda Hirschmann	Universidad de Talca, Chile
Dr ^a . Maria Teresa Fernandez Piedade	Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Brazil

For this aim, the leading scientists of the individual projects will elaborate well condensed reports of about 2 pages in English, citing the principle results (1 figure and/or 1 table) and citing published papers and papers in press. Before submitted to CCI, the drafts of these reports will be sent to the coordinators of INAU for quality control and for inclusion in the general annual report about the activities of INAU. The members of CCI can invite some scientists to refer during the meeting about the progress of their projects. The CCI has the power to stop the flux of new funds for individual projects, until the goals for the respective year are attained, when the proposed working plan is to much delayed. Official language during the meetings of CCI is English.

4. Preliminary list of projects and their leaders

Thirty-seven projects are being carried out nowadays by INAU's team (Tab. 5):

Tab. 5: Numbers and titles of the projects in the order of ALs and names of participants

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- 1/1.1 Classification of four large AUs (Pantanal of Mato Grosso and Mato Grosso do Sul, AUs of Araguaia, Paraná and Guaporé Rivers) (W.J. Junk, C. Nunes da Cunha, Temilze Duarte, Florian Wittmann, Erica Cezarina de Arruda, Gilmar Lima, Julia Arieira Couto)
- 1/1.1.1 Scientific coordinations of INAU (Wolfgang Junk)
- 1/1.1.2 Applicability of the Pantanal Habitats and acceptance by the local population (Wolfgang Junk, Catia Nunes da Cunha, Temilze Duarte)
- 1/1.1.3 Delineation of the wetlands of Guapore River and classification of their major habitats (Wolfgang Junk, Catia Nunes da Cunha, Gilmar Lima)
- 1/1.1.4 Delineation of the wetlands of Araguaia River and classification of their major habitats (Wolfgang Junk, Catia Nunes da Cunha, Erica Cezarina de Arruda)
- 1/1.1.5 Delineation of the wetlands of the Paraná River and classification of their major habitats (Wolfgang Junk, Catia Nunes da Cunha, Florian Wittmann, scientists from NUPELIA, Maringa)
- 1/1.1.6 Combining Radar and LANDSAT-TM imagery and ancillary data to improve wetland mapping in a floodplain in the Pantanal (Wolfgang Junk, Julia Arieira, Catia Nunes da Cunha, Marcos A. Figueiredo, Orleans Soares Nasser)
- 1/1.2. Identify, define, classify and map the wetlands of the Guaporé river - Mato Grosso, in periods of dry and wet (Felipe Augusto Dias)
- 2/2.1 Monitoring aquatic carbon fluxes and water quality (Eduardo Guimarães Couto, Mark. S. Johnson, Ricardo Santos Silva Amorim, Indira Ashant Martins Messias, Susan Dignart Ferronato, João Paulo Novaes Filho)
- 2/2.2 Biogenic carbon storage in permanent wetland habitats of the Pantanal (Karl Matthias Wantzen, Eduardo Guimarães Couto, Roberto de Moraes Lima Silveira, Marcia de Oliveira, João Paulo Novaes Filho, Luisa Vega)
- 2/2.3 Floodplain food webs, interactions between aquatic and terrestrial systems (Roberto de Moraes Lima Silveira, Karl Matthias Wantzen, Leandro Battirola, Jerry Penha, Márcia Teixeira de Oliveira, Veronica Dahm, Claudia Callil)
- 2/2.4 Aquatic-Terrestrial Interactions and Carbon Fluxes (Eduardo Guimarães Couto, Mark. S. Johnson, Marcelo de Carvalho Alves, João Paulo Novaes Filho, Elaine de Arruda Oliveira Coringa, Julia Arieira Couto)
- 3/3.1 Large scale ecological patterns for the Pantanal fish populations (Yzel Rondon Suárez, Jerry Magno Ferreira Penha, Fabio Edir dos Santos Costa, Luis Humberto Cunha Andrade, Sandro Marcio Lima, Karina Keyla Tondato, Alexandro Cezar Florentino, Izaias Médici

Fernandes)

4/4. Space and time patterns of habitat use, demography and movements of birds, in different space scales in different habitat types at Pirizal region, Pantanal of Poconé – MT. (João Batista de Pinho, Roberto Silveira, Leonardo Esteves Lopes, Miguel Ângelo Marini, Cleiton Adriano Signor)

4/4.2 Space and time patterns of habitat use and local migration of terrestrial small mammals among periodically flooded and non-flooded areas in Pantanal (Mônica Aragona, Rogério V. Rossi, Viviane Layme)

4/4.3 The effect of flooding on arthropod communities: A comparative study between flooded and non-flooded areas in the Pantanal floodplain of Mato Grosso (Marinêz Isaac Marques, Leandro Dênis Battirola, Geane Brizzola dos Santos, Wesley Oliveira Sousa)

4/4.4 Distribution and seasonal vegetation dynamics in different habitats in the Pantanal in Mato Grosso do Sul (Arnildo Pott, Geraldo Alves Damasceno Junior, Edna Scremin-Dias, Paulo Robson de Souza, Adriana Guglieri, Francisco José Machado Caporal, Vali Joana Pott, Francielli Bao)

4/4.5 Flooding effects on germination and establishment of wetland plants (Catia Nunes da Cunha, Pia Parolin, Carmen Eugenia Rodríguez Ortíz, Wolfgang Junk, Cristina M. Ferreira de Albuquerque, Olivio Favalessa, Thayse Maria Marestoni, Algislane Fechtnes Coenga, Regiane Costa e Silva, Adriana Neves da Silva)

4/4.6 Isolation and determination of the functional role of endophytes in the adaptability of *Vochysia divergens* Pohl to water stress in Wetlands of Pantanal and Cerrado (Marcos Antonio Soares, Daniela Tiago da Silva Campos, Alexandre Paulo Machado, Carmen Eugenia Rodríguez Ortíz)

4/4.7 Habitat use and migratory movements by anuran amphibians in the Pantanal

(Thematic group: Amphibians and reptiles as bioindicators of the nature and role of distinct habitats in wetlands) (Christine Strüssmann, Tami Mott, Vanda Lúcia Ferreira, Erika Alessandra Santos Rodrigues, Tainá Figueras Dorado Rodrigues, Miquéias Ferrão da Silva Jr, Vitor Azarias de Azevedo da Silva Campos, André Pansonato, Elizangela Silva de Brito)

4/4.8 Characterization of dominant plant species ecophysiological attributes in the Pantanal and the Cerrado of Mato Grosso (Carmen Eugenia Rodríguez Ortíz, Francisco de Almeida Lobo, Catia Nunes da Cunha, George Louis Vourlitis, Wolfgang Junk, Pia Parolin, Andrea Carla Dalmolin, Higo Dalmagro)

4/4.9 The dynamics of woody plant communities and their control in pastures of the Pantanal (Catia Nunes da Cunha, Wolfgang Junk, Jerry Magno Penha, Luciana Rebelato, Julia Couto, Candida Pereira da Costa, Monica Aragona, Walnir G. Ferreira Junior, Temilze Gomes Duarte, Viviane Layme, Thayse Maria Marestoni, Fernando Henrique Barbosa, Orleans Soares Nasser, Abílio Ferraz, Emilio Bruno)

4/4.10 Dendroecology in large wetlands of Mato Grosso and Mato Grosso do Sul (Jochen

Schöngart, Catia Nunes da Cunha, Fabiano Micheletto Scarpa)

4/4.11 Occurrence and distribution of passeriform birds in floodable grasslands of the Pantanal in Mato Grosso do Sul (Iêda Maria Novaes Ilha, Maristela dos Santos Benites, Arnildo Pott)

4/4.12 Dynamics and effects of wildfire in areas of riparian Forest of the Paraguai river, Pantanal (Geraldo Alves Damasceno Junior, Arnildo Pott, Edna Scremin-Dias, Angela Lúcia B. Sartori, Liana Baptista de Lima, Ieda Maria Bortolotto, Vali Joana Pott, Iria Hiromi Ishii, Augusto Francener Nogueira Gonzaga, Dali Roxana Castro Padilha, Lígia Sturza Rodrigues, Maria do Carmo Andrade Santos e Rosa Helena da Silva)

5/5.1 Chemical Study of Plants from the Pantanal with Potencial Anti-ulcer, Antinflammatory, Antioxidant and Antidiabete Activities (Paulo Teixeira de Sousa Jr, Evandro Luiz Dal'Oglio, Virgínia C. da Silva, Uir Santana de Figueiredo)

5/5.2 Evaluation of antiulcer activity of *Calophyllum brasiliense* and anti-inflammatory of *Echinodorus macrophyllus* from Pantanal (Domingos Tabajara de Oliveira Martins, Lousã Lopes, Danielle Ayr Tavares de Almeida, Maria Cristina Fuzari, Larissa Maria Scalon Lemos, Thaís Bezerra Martins, Guilherme Henrique Tanajura, Mariana Canevari de Oliveira, Amílcar Sabino Damazo, Valdir Cechinel Filho)

5/5.3 Evaluation of the antidiabetic and antioxidant properties of the plant species from Brazilian Humid Areas (Amanda Martins Baviera Nair Honda Kawashita, Shirley Kuhnen, Edson Moleta Colodel, Gisele Lopes Bertolini, Carbene França Lopes)

5/5.4 Morphological determination of the efficiency of extracts and/or isolated products of plant species of the Southern Mato Grosso Pantanal with insecticide, antidotal and healing properties in experimental models (Doroty Mesquita Dourado, Rosemary Matias, Antonia Railda Roel, Karla Rejane, Maria Rita Marquez, Carlos Alexandre Carolo)

5/5.5 Botanical insecticide from Pantanal's flora (Silvio Favero, Cíntia de Oliveira Conte)

5/5.6 The Isolation of compounds of the species of the Southern Mato Grosso that have insecticide and pharmacological (healing, antidotal, potential anti-tumor and cytotoxicity) properties (Rosemary Matias Coelho, Antonia Railda Roel, Carlos Alexandre Carolo, Doroty Mesquita Dourado, Karla Rejane Porto, Mami Yano, Maria Rita Marques, Silvio Favero)

5/5.7 Effect of plant extracts to the Pantanal region on development, physiology and mortality of insect pests (Antonia Railda Roel, Rosemary Matias, Carlos Alexandre Carolo, Doroty Mesquita Dourado)

5/5.8 Investigation of the genotoxic potential of biomolecules obtained from plants of wetlands with potential pharmacological and insecticide activities (Susana Elisa Moreno, Ana Paula Ferreira Leal, Gleicieli Libório, Brunna Mary Okubo, Frederiko Nakassone)

5/5.9 Study on bioactivity of native plant species to cerrado and pantanal before evaluating the impracticability of Erlich tumor cells in vitro (Mami Yano)

5/5.10 Effects of essential oils and extracts of selected plants in the development and survival of *Aedes aegypti* (CULICIDAE). (Karla Rejane de Andrade Porto, Alexandre Alves Machado,

Hemerson Pistori, Kleber Padovani de Souza, Jaime Henrique)

5/5.11 Evaluation of formulations of active principles of selected plants on development and survival of *Aedes aegypti* (CULICIDAE)(Alexandre Alves Machado, Karla Rejane de Andrade Porto, Hemerson Pistori, Kleber Padovani de Souza, Jaime Henrique)

5/5.12 Bioprospection of active substances from native plants of Wetlands (Maria Rita marques, Alexandre Alves Machado, Antonia Railda Roel, Antônio Pancrácio, Carlos Alexandre Carollo, Claudia Cardoso, Cristiano Espínola, Doroty Mesquita Dourado, Eloty Justina Dias Schleder, Helma Jeller, Jonas Mota, Karla Rejane Porto, Mami Yano, Marize Teresinha Lopes Pereira, Rosemary Matias Coelho, Suzana Moreno)

6/6.1 Socioeconomic aspects of Brazilian North Pantanal (Onélia Carmem Rossetto, Eduardo Paulon Girardi, Jocenaide Maria R.Silva, Suely Tocantins, Diogo Marcelo Delben F. de Lima, Rogério Andrade Júnior, Gracindo Rogério Gomes, Kelly Cristina Carvalho, Marcelo Carlos Moreira)

6/6.2 Science and culture through edu-communication reinvention (Michèle Sato, Aluizio Azevedo, Amanda Nascimento, Débora Pedrotti-Mansilla, Imara Quadros, Jorge Gabriel Ramires Júnior, Lúcia Kawahara, Maria Liete A. Silva, Michelle Jaber, Regina Silva, Regina Silva, Ronaldo Senra, Samuel Borges Oliveira Jr, Sonia Palma, Wanderson

6/6.3 Pantanal people voice: The lived and narrated in South – Mato – Grossense Pantanal Inhabitants Life Histories (Maria Leda Pinto, Léia Teixeira Lacerda, Márcia Maria de Medeiros, Onilda Sanches Nincao, Paulo Goulart Junior)

Tab.6: Preliminary list of scientists (with PhD) in alphabetic order participating at INAU, abbreviation of their institutions, number(s) of their LAs / number of their project(s), and e-mail address.

Name	Institution	AL/projetct	e.mail
AlexandreAlves Machado	UCDB	5/5.11	amachado.net@ig.com.br
Amanda Baviera	UFMT	5/5.3	bavieraam@gmail.com
Antonia Railda Roel	UCDB	5/5.7	arroel@ucdb.br
Arnildo Pott	UFMS	4/4.4	arnildo.pott@gmail.com
Carmen Eugenia Ortíz	UFMT	4/4.8	cerortiz@ufmt.br
Cátia Nunes da Cunha	UFMT	4/4.5	catianc@ufmt.br
		4/4.9	
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5. Facilities



Headquarters of RPPN Acorizal (UFMT / Ecotropica) located in the confluence of the rivers Paraguay and Cuiabá. Pantanal of maximum flood. It has all logistics infrastructure, apartments, dining hall, electricity, internet, labs, and boats.



UFMT's advanced Research Base in the Pantanal. Accommodation for 20 people, including laboratory, classroom, dormitory, cafeteria along with access road throughout the year



For research development INAU has the support of the Rural Union of Poconé that through the farmers, the farms provide and promote facilities like riding, local assistants, food, etc..



The first INAU's scientific expedition to Guaporé wetlands.



Dendrochronology laboratory



HPLC-MS facility at Bioprospecting Associated Laboratory

6. Results

6.1 Classification of four major wetlands and their habitats:

We drew up a preliminary classification of the Pantanal *habitats* using hydrology, water and soil chemistry, and vegetation composition as top criteria. More than fifty units covering permanently aquatic habitats, periodically flooded habitats and permanently terrestrial habitats were distinguished and characterized (Nunes da Cunha & Junk, in press).

Data analysis of the literature showed that this classification will serve, with some modifications, also for the wetlands of the Araguaia River. However, it will

require a detailed characterization of higher plants, which to some extent differs from that of the Pantanal.

From the hydro-morphological standpoint, *habitats* of the Paraná River are comparable to those of the Solimões/Amazonas. The characterization by higher plants is underway.

A first 12 days expedition to the Guaporé River in August 2010 showed that a combination of the different classification approaches will also serve to characterize and classify the Guaporé wetlands. In comparison to the large Amazonian river floodplains and the Pantanal of Mato Grosso, the Guaporé wetlands show a rather low habitat diversity. This is in part due to the relatively small size of the river, the rather small flood amplitude and the low sediment load, which reduce the dynamics of erosion and deposition processes. Another factor may be the fact that in contrast to Central Amazonian river floodplains and the Pantanal, paleo-climatic changes obviously left little traces behind in the surface structure of the Guaporé floodplain. This results in a very flat landscape and the formation of a few, very large, uniform vegetation units.

6.2 Sustainable management of habitats of the Pantanal

The core group of users of the *habitats* of the Pantanal is the farmers, who manage large areas in a sustainable manner for over two centuries.

To find a compromise between the demands of farmers and the needs of environmental protection, we proposed a master plan for the sustainable management of *habitats* of the Pantanal, which also includes the Cleaning Field as a tool.

The conclusions of this study are valuable, to some extent, also for the management of Araguaia's and Guaporé's wetlands. A manuscript on this subject is at advanced stage of preparation and should soon be submitted for publication.

6.3 Socio-economy

Were analyzed life stories of the Pantaneiros (natives from the Pantanal) in relation to the environment, in a perspective of discourse analysis, Applied Linguistics, Education, Anthropology, Biology and Cultural History. Through analysis of the campaigns to preserve the environment and the life stories of the Pantaneiros we could see a mismatch between the speech of the Pantaneiros and the official discourse of the Ministry of Environment (Pinto et al, 2009).

6.4 Bioprospecting

Mato Grosso is characterized by three major biomes: The Pantanal, the Amazon rainforest and the Cerrado. The rapid and disorderly process of occupation of the region, however, makes urgent the establishment of programs for bioprospecting. Despite the critical mass existing in Brazil, work on bioprospecting is experiencing difficulties imposed by inadequate legislation. The potential of the Pantanal biodiversity to produce new drugs is examined in this light (Sousa Jr, in press). Traditional medicines from the Pantanal have been an important source for Chemical and Pharmacological investigations (Bavolini *et al*, in press).

7. Publications

Nunes da Cunha, C. & Junk, W.J. (in press): A preliminary classification of habitats of the Pantanal of Mato Grosso and Mato Grosso do Sul, and its relation to national and international wetland classification systems. In: Junk, W.J., da Silva, C.J., Nunes da Cunha, C. & Wantzen, K.M. (eds.): The Pantanal: Ecology, biodiversity and sustainable management of a large neotropical seasonal wetland. Pensoft, Sofia, Moscow.

Sousa Jr, P. T (in press): Traditional knowledge in the Pantanal region in Brasil and potential usage in modern medicine: The legal framework for Bioprospection in Brazil.- In: Junk, W.J., da Silva, C.J., Nunes da Cunha, C. & Wantzen, K.M. (eds.): The Pantanal: Ecology, biodiversity and sustainable management of a large neotropical seasonal wetland. Pensoft, Sofia, Moscow.

Baviloni, P.D.; Santos, M.P; Aiko, G.M; Reis, S.R.; Latorraca, M.Q.; Silva, V.C.; Dall'Oglio, E. L.; , Sousa-Jr, P.T.; Lopes, C.F.; Baviera, A.M.; Kawashita, N.H.. Mechanism of anti-hyperglycemic action of *Vatairea macrocarpa* (Leguminosae): Investigation in peripheral tissues. Journal of Ethnopharmacology (in press)

PINTO., Maria Leda; NINCAO, O. S.; MACIEL, L. T. L.; MEDEIROS, M. M. Uma leitura da pedagogia pantaneira como protagonista da preservação e respeito ao meio ambiente. In: COLE - Congresso de Leitura do Brasil, 2009, Campinas. Anais do 17 COLE - Congresso de Leitura do Brasil. Campinas : UNICAMP, 2009. p. 471-471.

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