



CLARIS | LPB

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A Europe-South America Network for Climate Change Assessment
And Impact studies in La Plata Basin
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Deliverables



Instrument: **SP1 Cooperation**

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A Europe-South America Network for Climate Change Assessment and Impact Studies in La Plata Basin

DELIVERABLES

D9.6: Iberá database in a GIS environment of geographical and thematic maps

Due date of deliverable: Month 18

Start date of project: **01/10/2008**

Duration: **4 years**

Organisation name of lead contractor for this deliverable: P12-UFPR

Deliverable No	Deliverable title	WP	Lead beneficiary	Estimated indicative person-months (permanent staff)	Nature	Dissemination level	Delivery date
D9.6	Ibera database in a GIS environment of geographic and thematic maps.	WP9	P14-UBA	22,00	R	PU	18

Report of Deliverable 9.6

Introduction

The main objective is to understand how Iberá wetlands will cope with climate change by identifying the structural and functional components of Iberá Ecosystem most vulnerable (vegetation communities, vertebrate species, and other functional assemblies) and their tolerance/adaptation capacity to expected climate and ecosystem changes through scenario analyses. We will use current approaches in animal species and vegetation geographic distribution modeling, combined with climate change and land cover/land use change scenarios to evaluate main trends and impacts on biodiversity distribution. These results will be used to assess current protected area conservation effectiveness, to propose areas and species with further conservation needs, and to suggest good land use practices to further reduce biodiversity threats.

Objectives of the deliverable 9.6

- Collate databases on topography and wetland vegetation distribution from available datasets to build current wetland distribution models
- Collate information on vertebrate biodiversity distribution for species current distribution models.

Results

During this period, we have collated and preprocessed spatially explicit environmental datasets and built a database of vertebrate species records from published sources. This dataset includes so far a total of 420 nominal vertebrate species from Esteros del Iberá (125 fish, 40 amphibian, 53 reptile, 135 bird, and 67 mammal species) from bibliographic references, on-line museum collection records and field data collected by us. We are currently developing a set of landuse/landcover layers adequate to complement climate data for habitat modeling purposes and to serve as basis for landuse scenario development. Main difficulty so far has relied on defining the set of cover/habitat/landuse types to meet the needs of animal, vegetation and carbon storage modelers, which must take into account differences between dry and wet seasons. We started testing OpenModeller as species modeling environment using Worldclim data as substitutes for local and regional downscaled datasets being currently developed by other work packages.

A GIS environmental database was built from different sources, subset to Corrientes province extent. An Elevation database at 400m cells was processed from a 90m SRTM digital elevation model for Natalia Montroull, who works modelling the Corriente River runoff (see Figs.1-5).

So far we have compiled distribution occurrences for a total of 420 nominal vertebrate species known for Esteros del Iberá (125 fish, 40 amphibian, 53 reptile, 135 bird, and 67 mammal species). Data sources include bibliographic references, on-line museum collection records and field data collected by us. Distribution information extends beyond the Iberá region in order to have reduced bias, overfitting and enough data for model calibration and validation.

Main difficulties so far have been defining landcover classes at different scales adequate for modelling different groups of organisms, vegetation formations and carbon storage as well as developing landuse scenarios. We will conduct a workshop during March/April 2010 to set up cover type definitions appropriate to work with downscaled climate data.

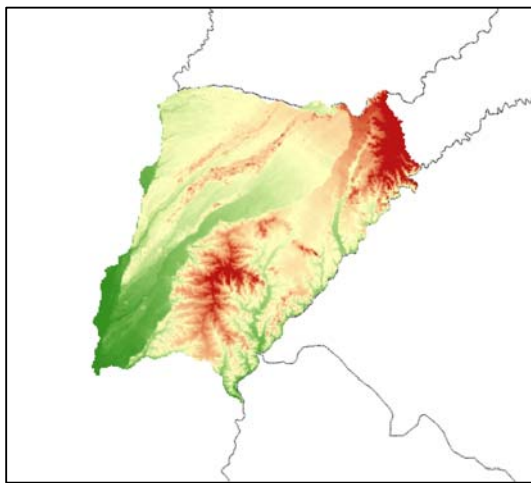


Figure 1: Elevation map data base of the Corrientes province (90m pixel size)

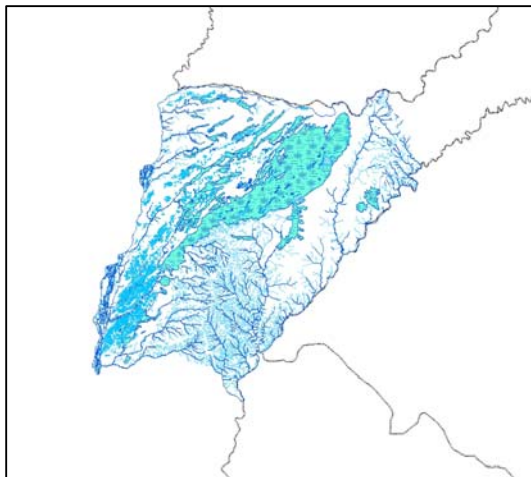


Figure 2: Current aquatic ecosystems data base of the Corrientes province.

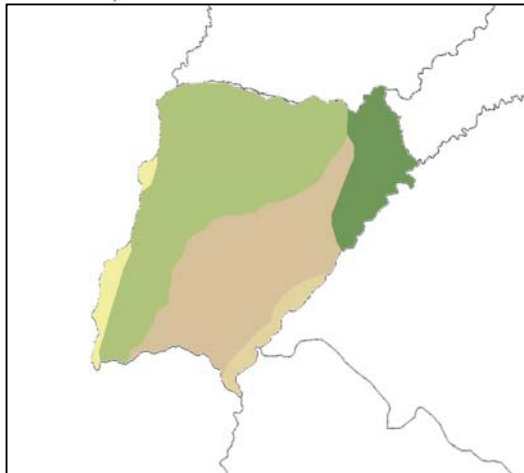


Figure 3: Geomorphic units data base of the Corrientes province.

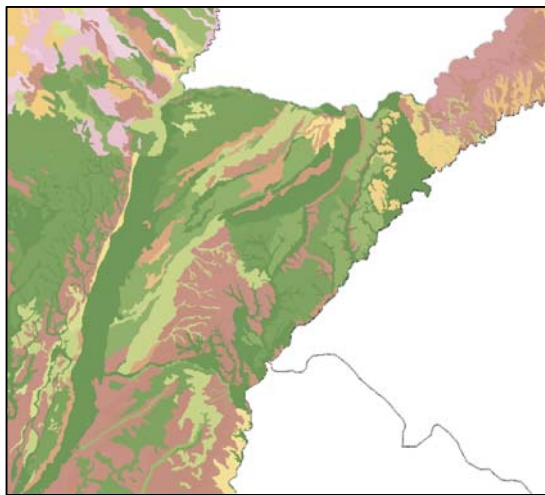


Figure 4: Soil units data base of the Corrientes province.

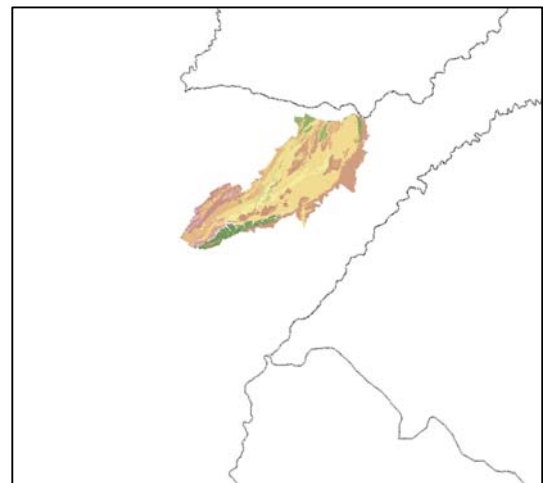
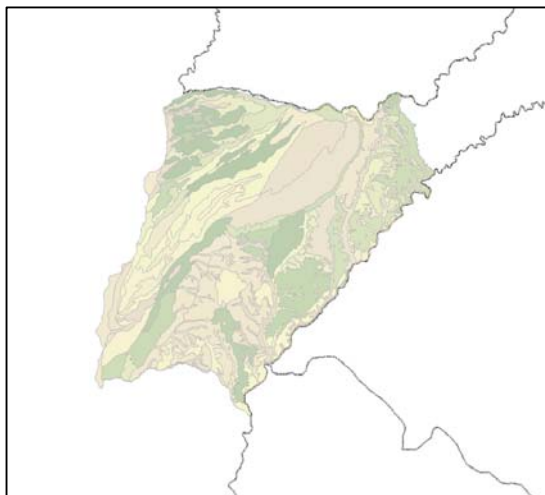


Figure 5 (Left): Vegetation units data base of the Corrientes province. **(right):** Wetland environments within Ibera Natural Reserve at the Corrientes province.

The analysis of information extracted from the data bases will be processed considering the following scheme:

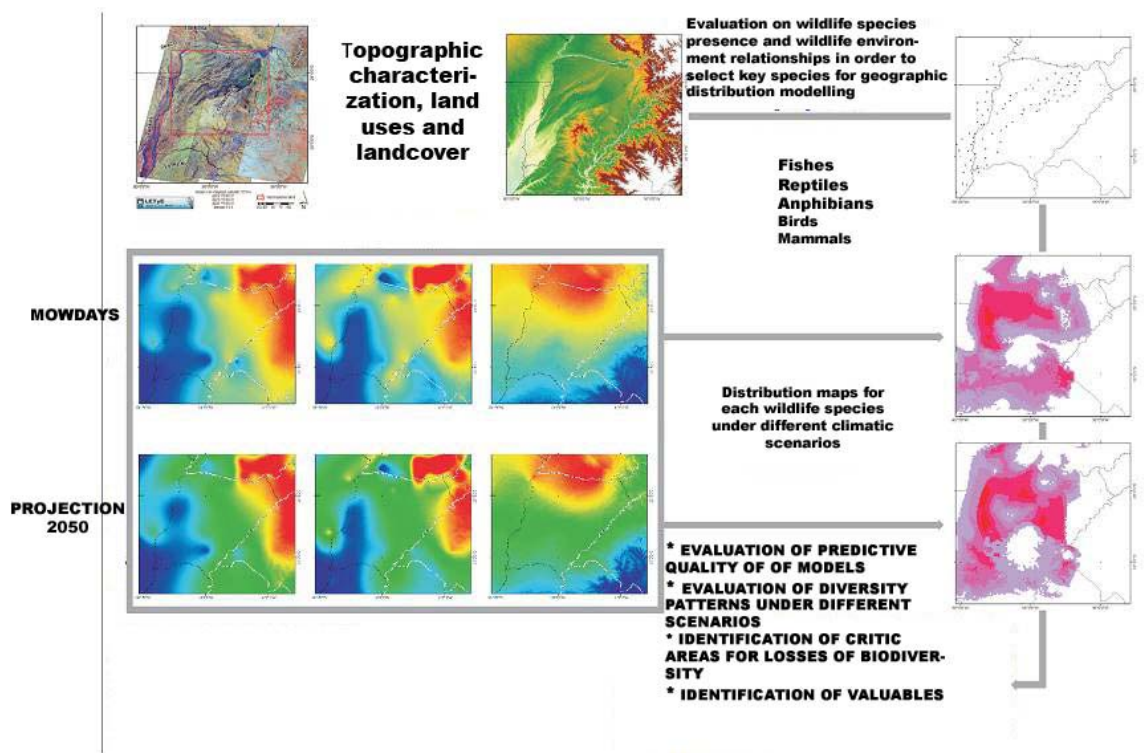


Figure 6: Scheme for data processing considering de future climatic change scenarios

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