



**Biodiversity Conservation  
in the Atlantic Forest Corridor:  
the São João River Basin**



**Conservation in the São João River Basin  
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The Atlantic Forest is a threatened biodiversity hotspot

The Serra do Mar Corridor is an important link between the Northern and Southern Areas of the Atlantic Forest

The lowland areas of the Serra do Mar Corridor are the most vulnerable

Region with high endemism of species and also with extensive human habitation

That is: Conservation where People live and work



## Conservation in the São João River Basin Conservation in the São João River Basin

### The Conservation Challenge

- To Conserve biodiversity and maintain Environmental Services
- That support human activities
- That are compatible with conservation goals



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Develop strategies or plans that can be adopted by the government and/or Organized Civil Society and/or their partnerships such as River Basin Committees

River Basin Consortia are a method being used in Brasil for the last 10 years to manage large areas and integrate the needs and interests of different sectors of society



## Conservation in the São João River Basin Conservation in the São João River Basin

Meaning:

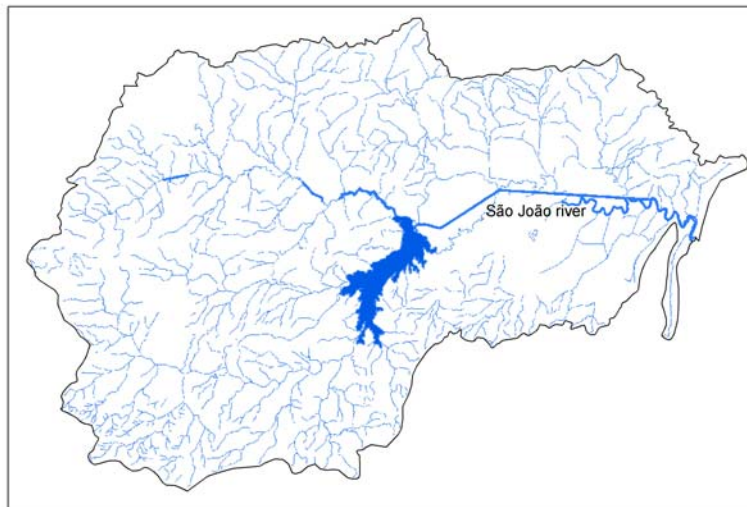
Bringing together biologists, ecologists, environmental scientists and social scientists with government (local and state), law enforcement and especially private interests

To this end our CEPF funded project brought together participants from Universities, NGOs, IBAMA, Municipal Governments, and the River Basin Consortium



## Conservation in the São João River Basin

São João River Basin





## Goals of the CEPF Project

- Integrated Management for the mosaic of conservation units and private areas to:
  - Guarantee Ecological Processes and Environmental Services
  - Join biodiversity conservation and economic activities
- Develop a set of strategies for conservation that integrate spatial and biological information with land use patterns



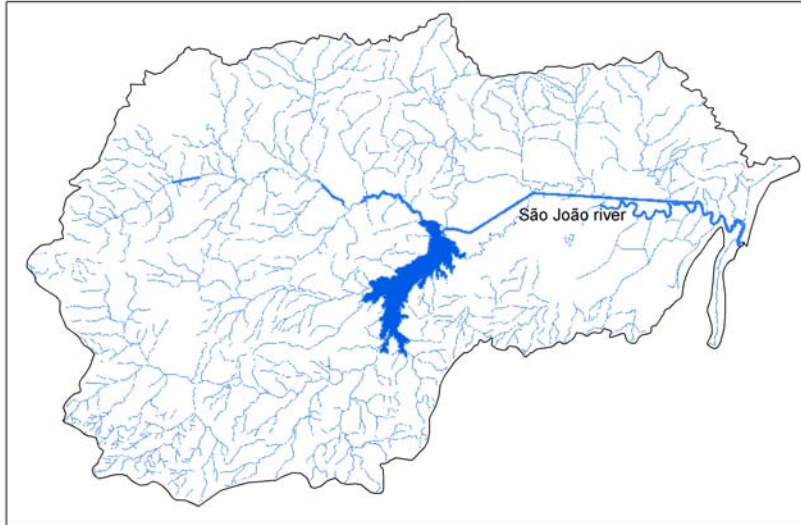
## Current Situation

- The River Basin includes 8 municipalities
- Extensive and diverse land use patterns
- Extensive habitat fragmentation
- Mosaic of Conservation Unit Types
- High Biodiversity, Endemisms and Endangered Species
- Patchy Knowledge of Ecological and Social Processes



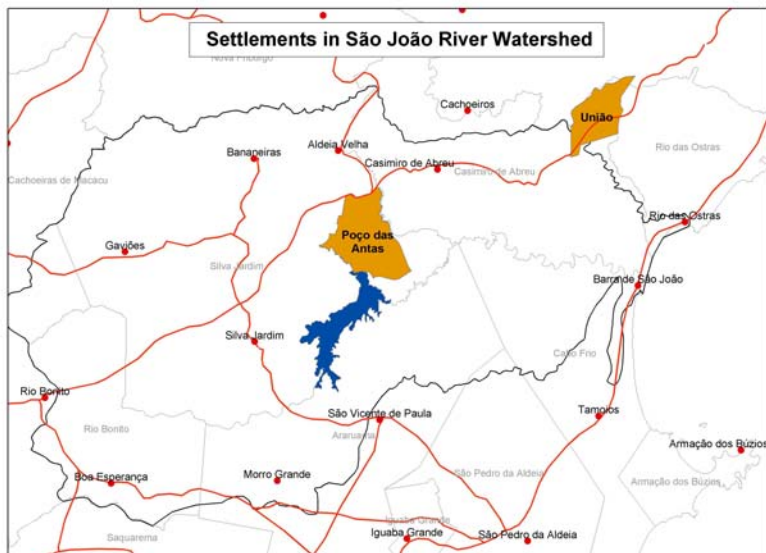
## Conservation in the São João River Basin

### São João River Basin



## Conservation in the São João River Basin

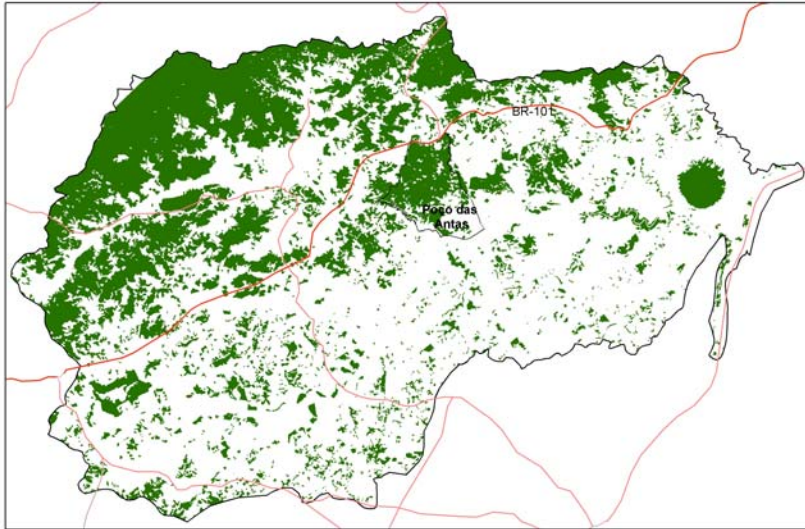
### Settlements in São João River Watershed





## Conservation in the São João River Basin

### Forest Fragments of the São João River Basin



## Conservation in the São João River Basin





## Modeling the Scenarios

- Landscape Approach
- Flagship Species Approach
- Ecological Processes Approach



## Analysis Variables

- Structuring a cost analysis
- Two Positive value variables: Location Value (distance to Conservation Units and other fragments, Altitude), Intrinsic Value (forest quality, size, age, topography)
- Two Negative value variables: Pressure (fires, deforestation); Threats (Distance to human settlements, roads, major developments)



## Landscape Approach

- Fragment distribution and connectivity
- Matrix use- Land Use
- Threats and Vulnerability to Forest and Water Sources
- Socioeconomic Data
- Location of Protected Areas



## Landscape Approach

- Build scenarios of landscape architecture with potential contributions to biodiversity conservation





## Landscape Approach

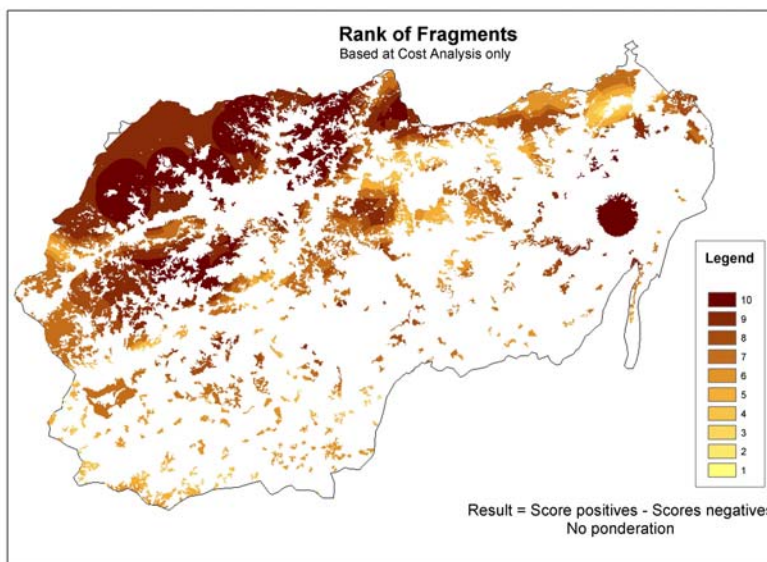
- **Cost Analysis:**

What is Positive?

RRPN, Size and shape of Fragments, Environmental Quality, Topography (High Slope Angles, Altitude).

What is Negative?

Proximity to Human Settlements, Roads, Low Slope Degree, Invasive Species.



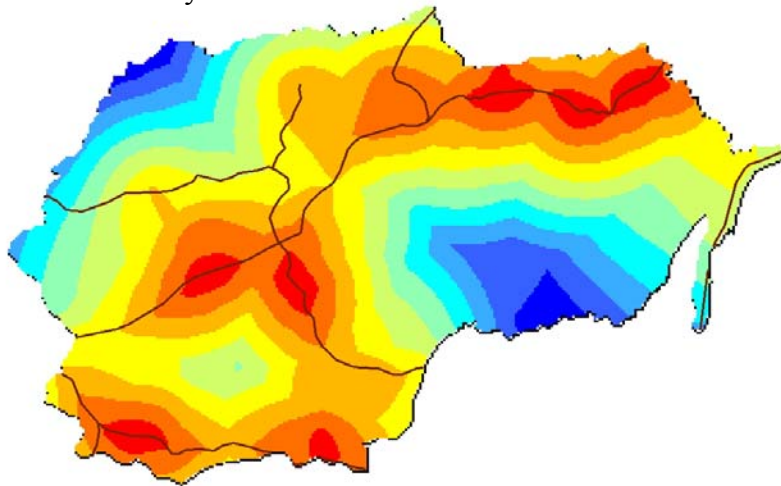


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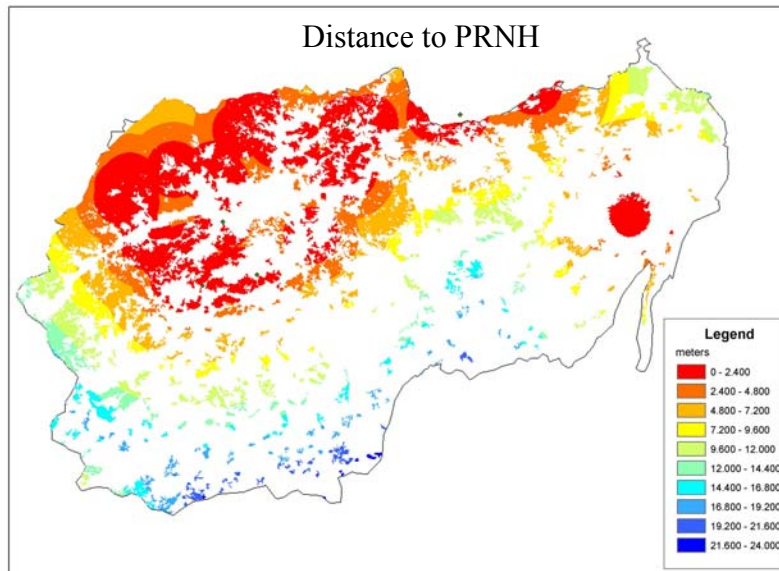
## Conservation in the São João River Basin

Vulnerability





## Conservation in the São João River Basin



## Conservation in the São João River Basin

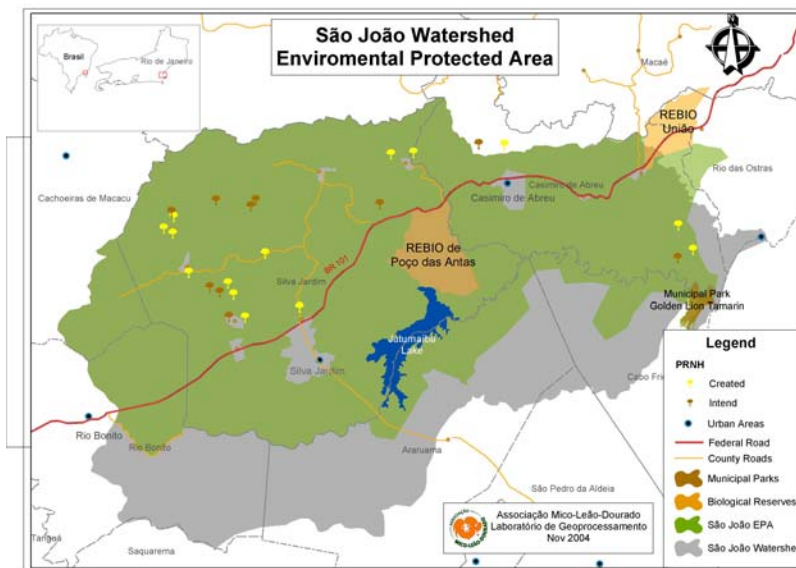
### Flagship Species

- Merging flagship species approach with landscape ecology
- Data on GLT distribution, dispersal routes, population genetics, behavior
- Threats to GLTs: hunting and invasive species
- Construct a scenario for conservation of the key species



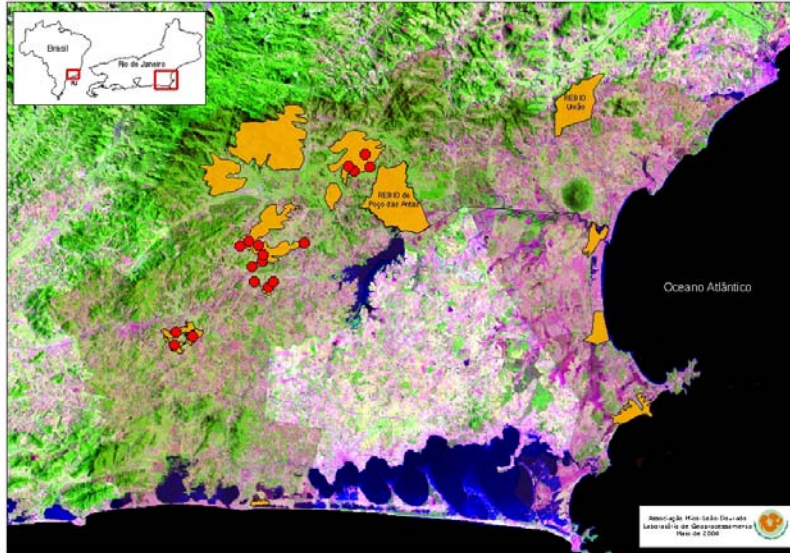
## Other Flagships?

- Biodiversity hotspots within this region?
- Indicator species: habitat quality
- Invasive species concerns: which species and their potential for threat
- Include these for yet another scenario for biodiversity conservation

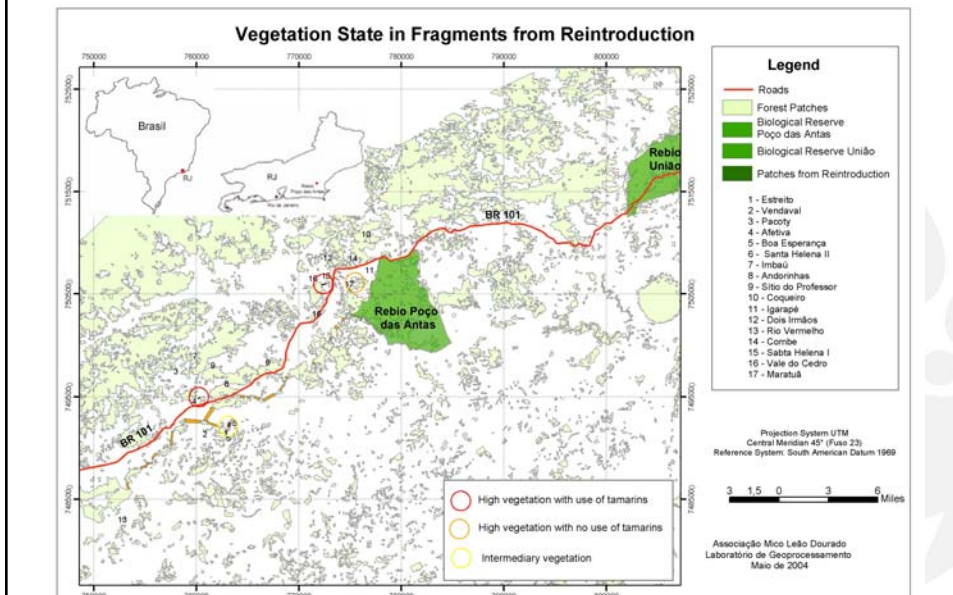




## Conservation in the São João River Basin



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## Process Approach

- Socio-economic processes that have influenced historically and currently
- Degradation of forests: increasing or declining?
- Other environmental processes affecting ecology of the region
- Use of corridors by mammals and birds
- Population biology of tamarins and other mammals
- Behavior of tamarins related to translocation and use of corridors



## Process Approach

- Necessary data are being collected
- Work of Universities and AMLD: long term monitoring
- Possibility of merging this approach to the other approaches for short term scenario building



## Approaches Revisited

- Estructural Approach would include information on ecological processes leading to degradation (intrinsic value) and socio-economic development plans (Threats)
- Flagship Species Approach would include information on translocation and use of corridors
- Create the Biodiversity Approach: includes indicator species and local hotspots, Biodiversity Indexes



## Synthesis

- Set the hypothetical scenarios
- Look for missing data and information
  - Decision making process for priorities and selecting feasible courses of action
    - carbon sequestering projects
    - Micro-corridors
    - Economic options and zoning