

PANTANAL WETLAND FLOOD DYNAMICS: ECOLOGICAL, HODROLOGICAL AND GEOQUEMISTRY PROCESSES

Embrapa Pantanal

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Grants: PELD/CNPq

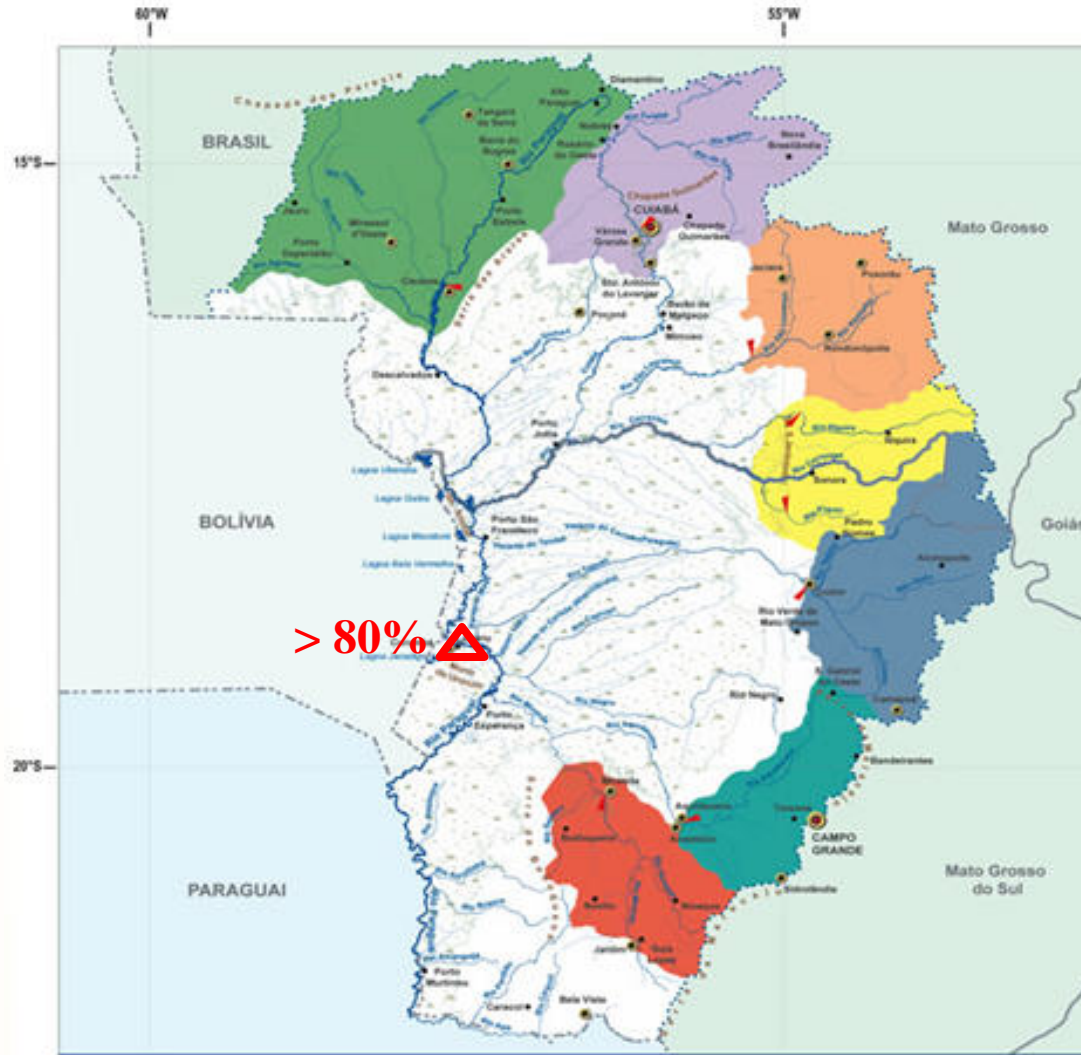
ILTER – International Long Term Ecological Research



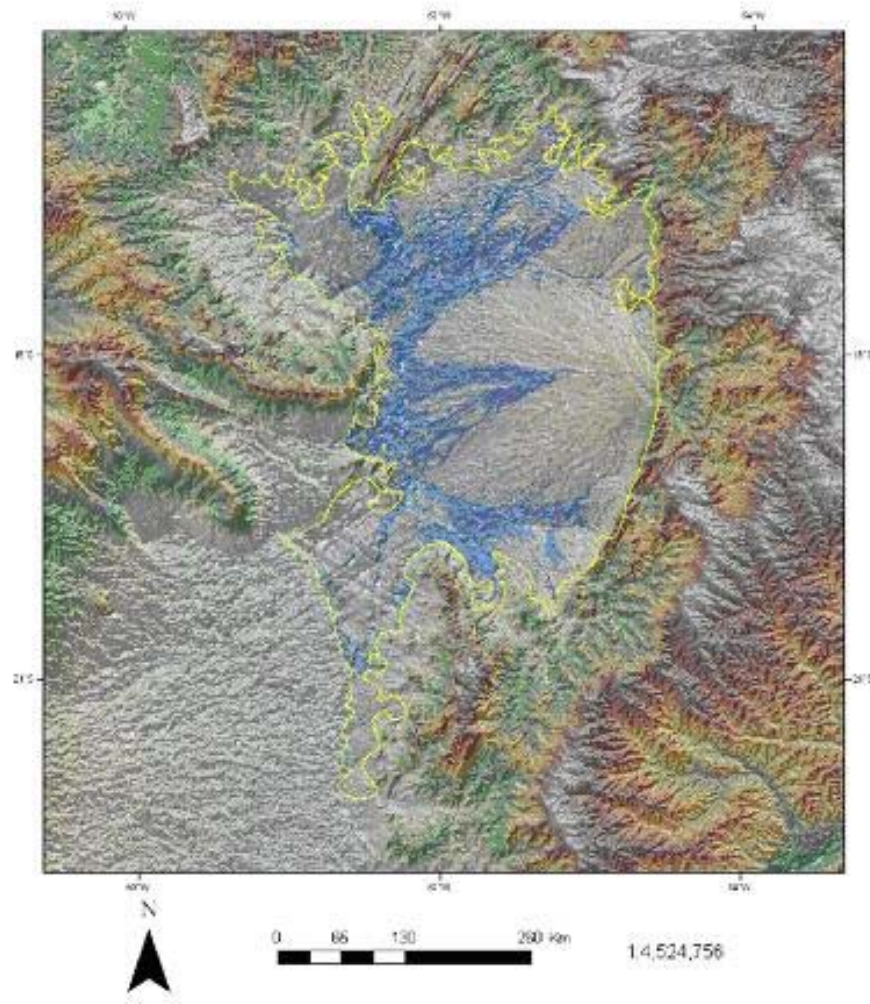
- Flood dynamics drives the abundance and the spatio-temporal distribution of organisms on the Pantanal wetland
- Mainly input surface water sources in the Pantanal:
 - rivers
 - rain
- **From where the water comes from?**
- **What are the nutrients and pollutants dynamics from highlands in the Pantanal and it's relation to floods?**
- **What can be the spatial extend contamination of nutrients and pollution?**



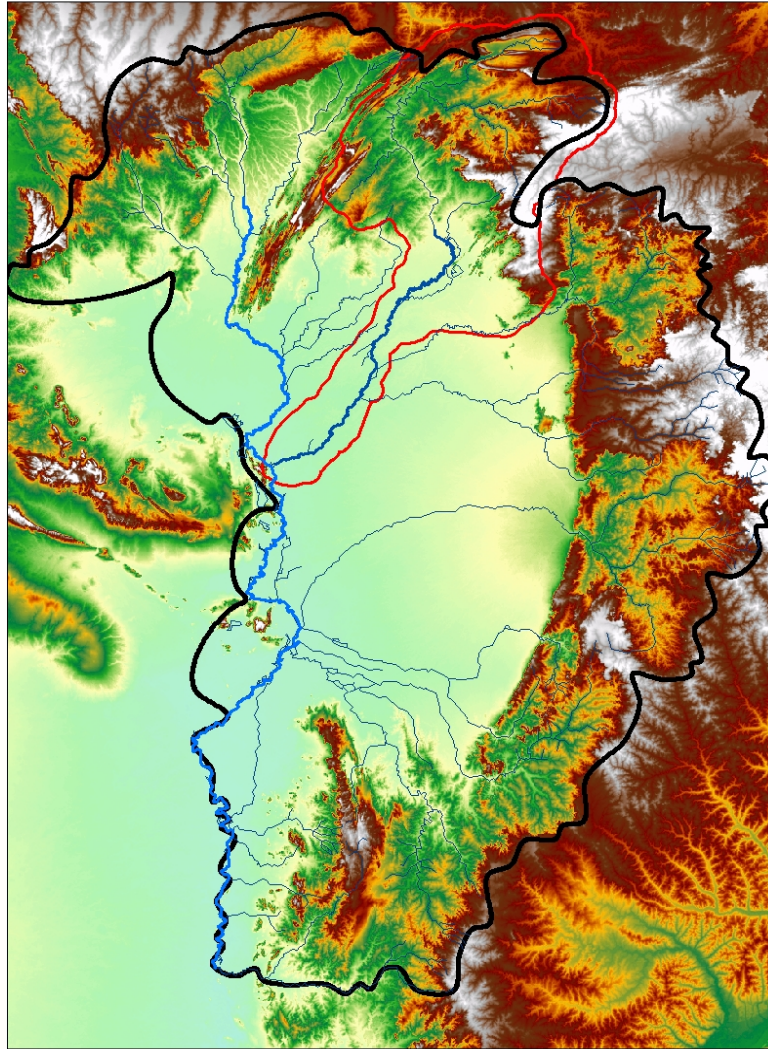
Main drainage of the High Paraguai river basin



Relief & floods



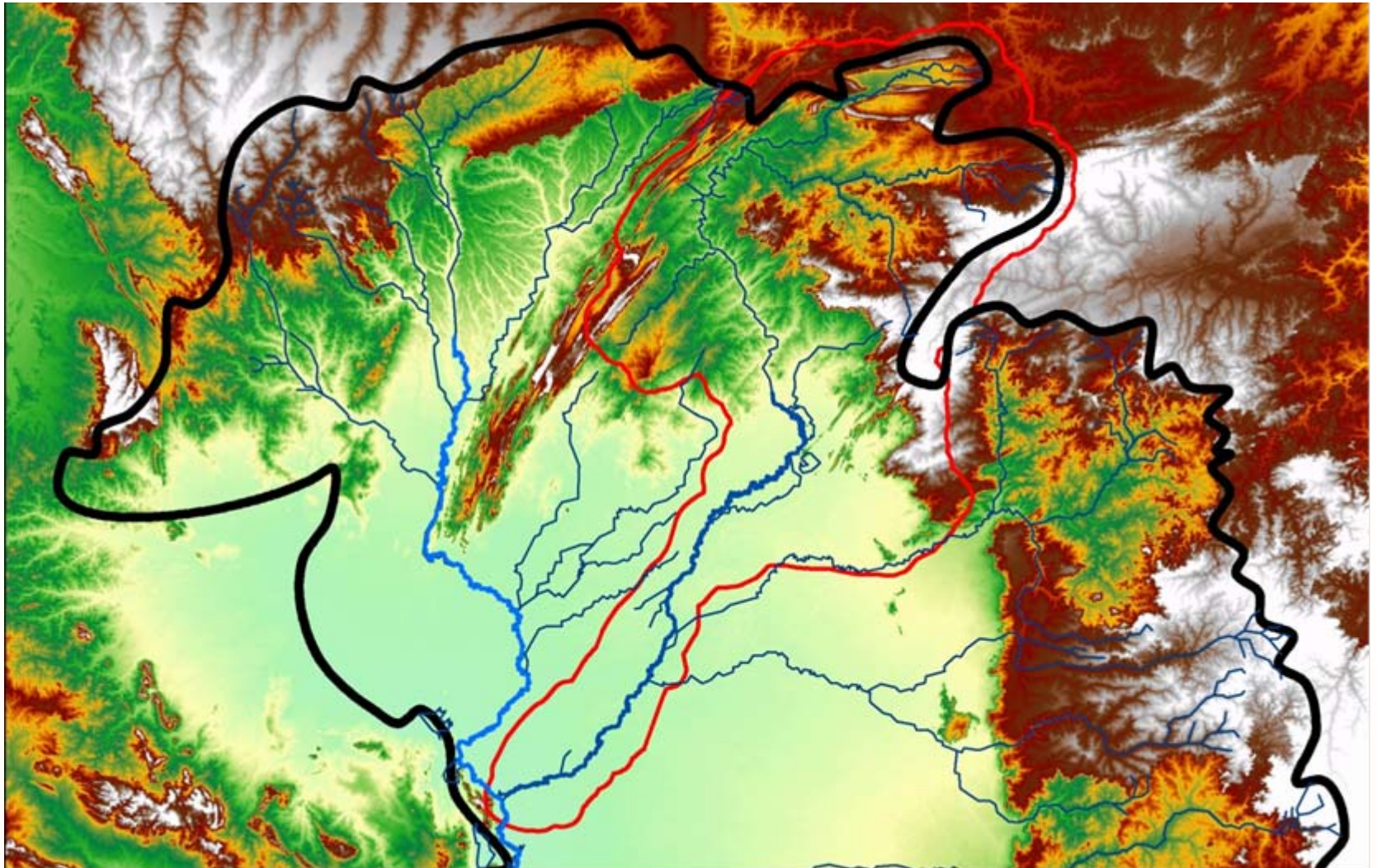
Relief & Cuiaba Basin



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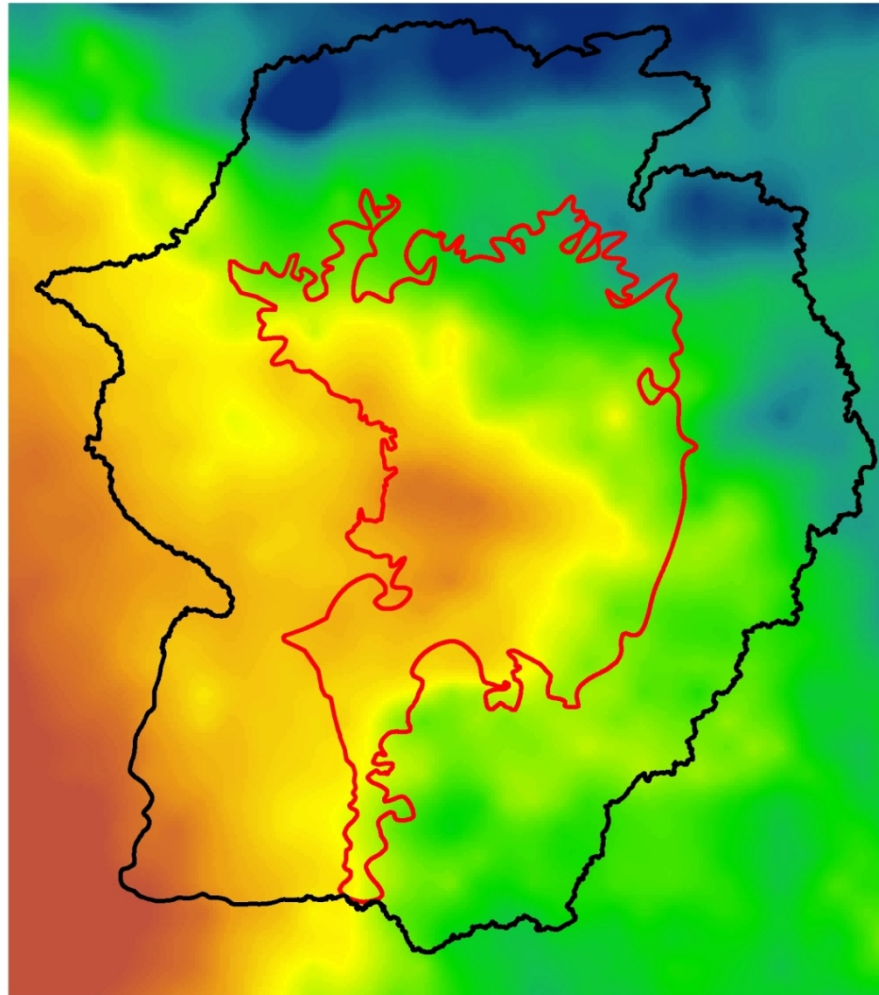
Relief & Cuiaba Basin



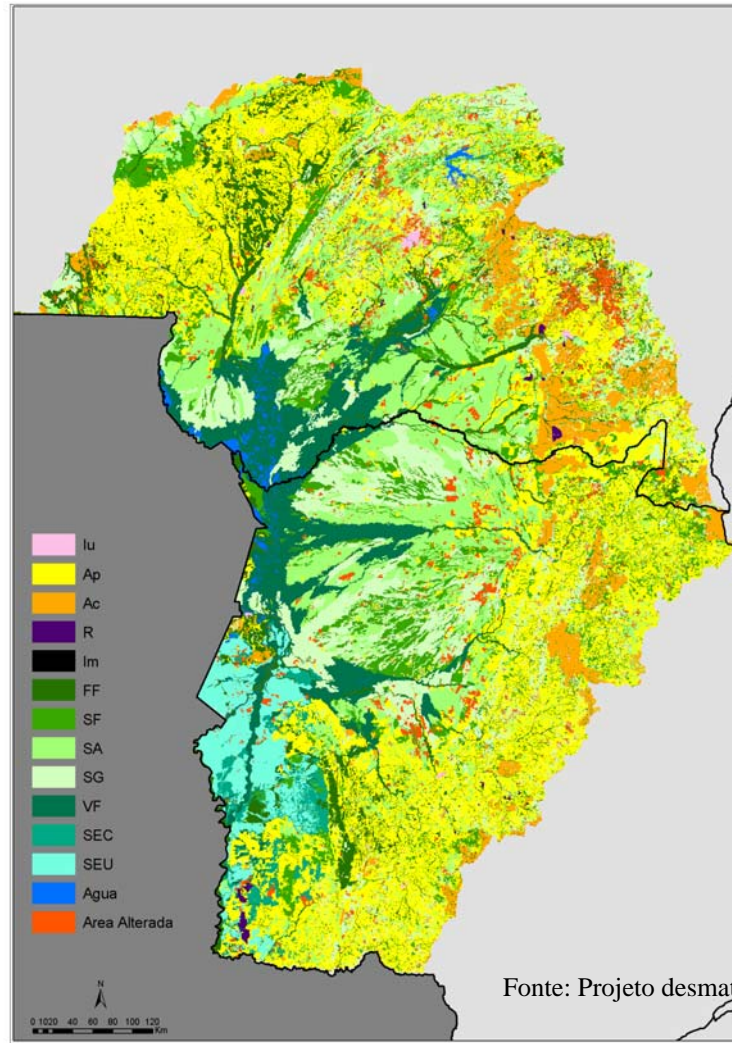
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Accumulated precipitation – TRMM



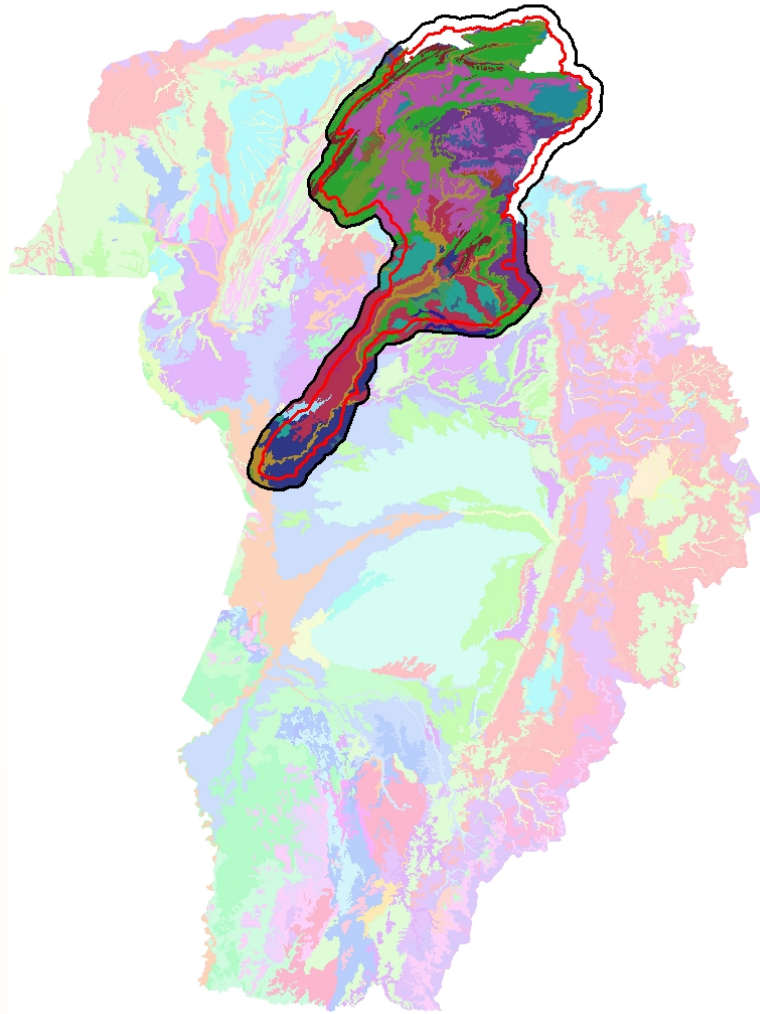
Vegetation Map



Fonte: Projeto desmatamento Pantanal 2008



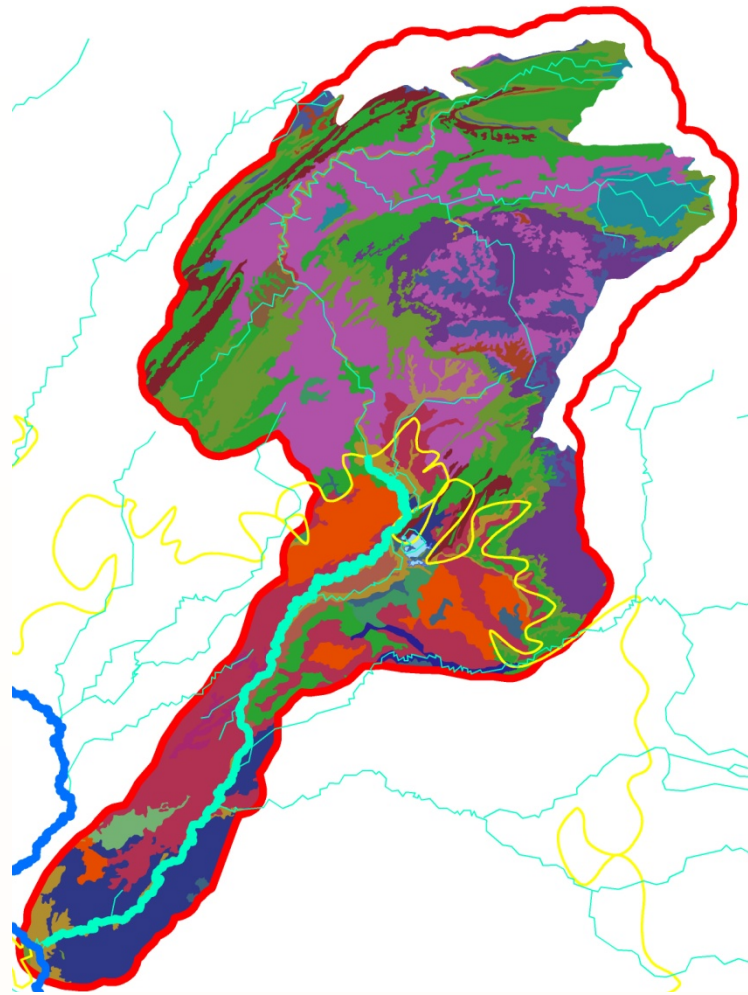
Soil Map BAP & Cuiaba Basin



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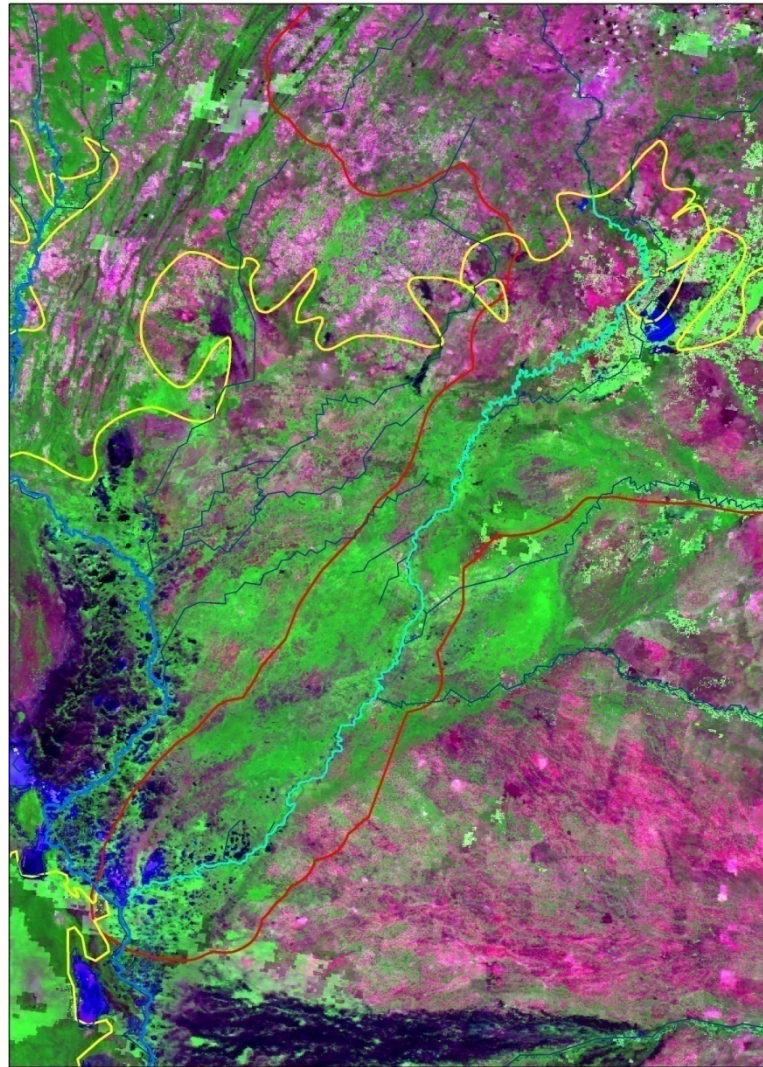
Soil Map of Cuiaba Basin



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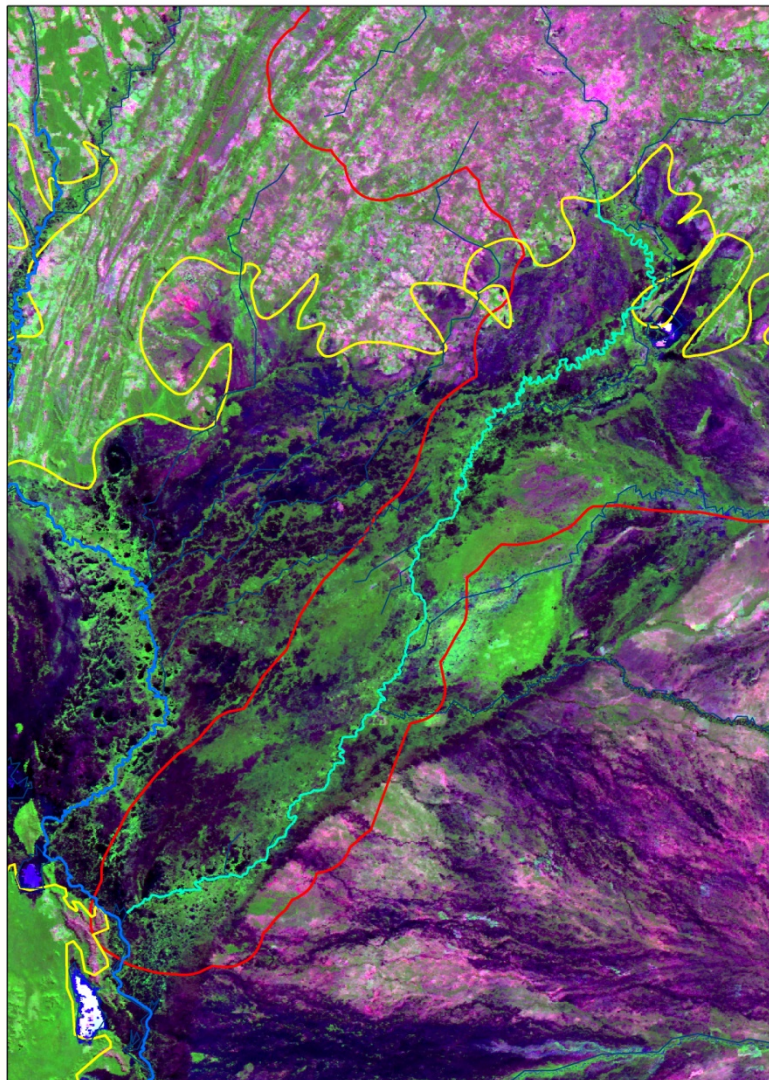
October, 31, 2003



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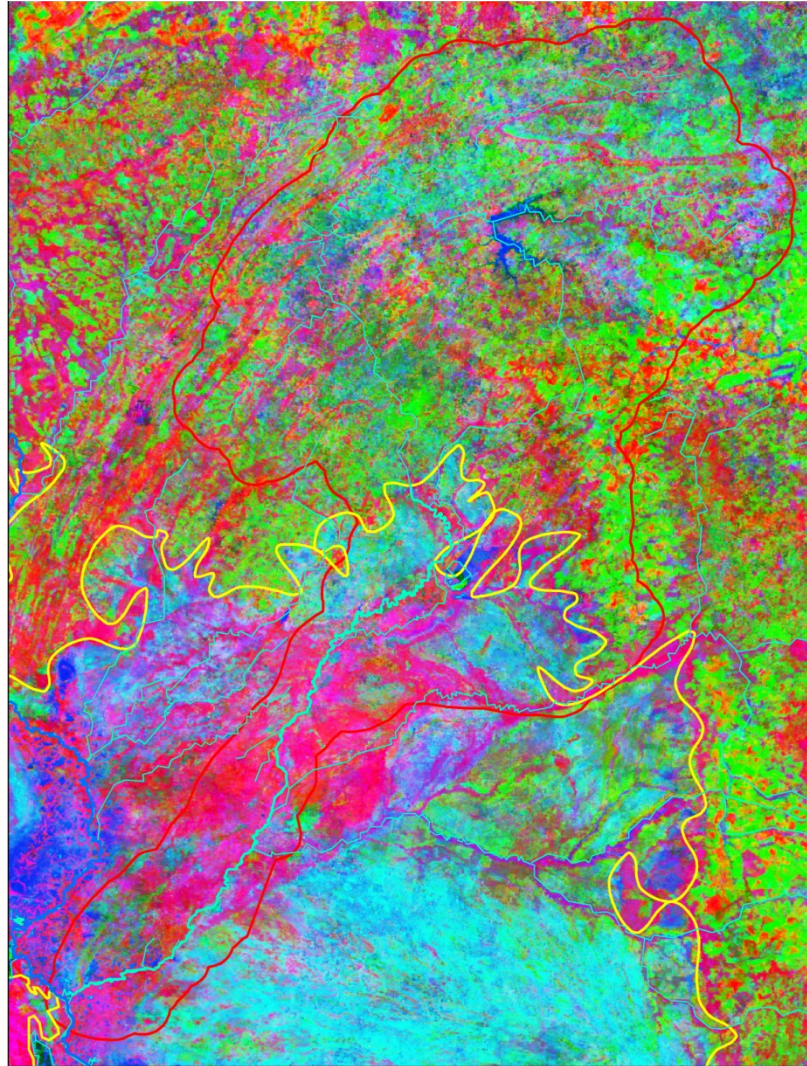
April, 23, 2003



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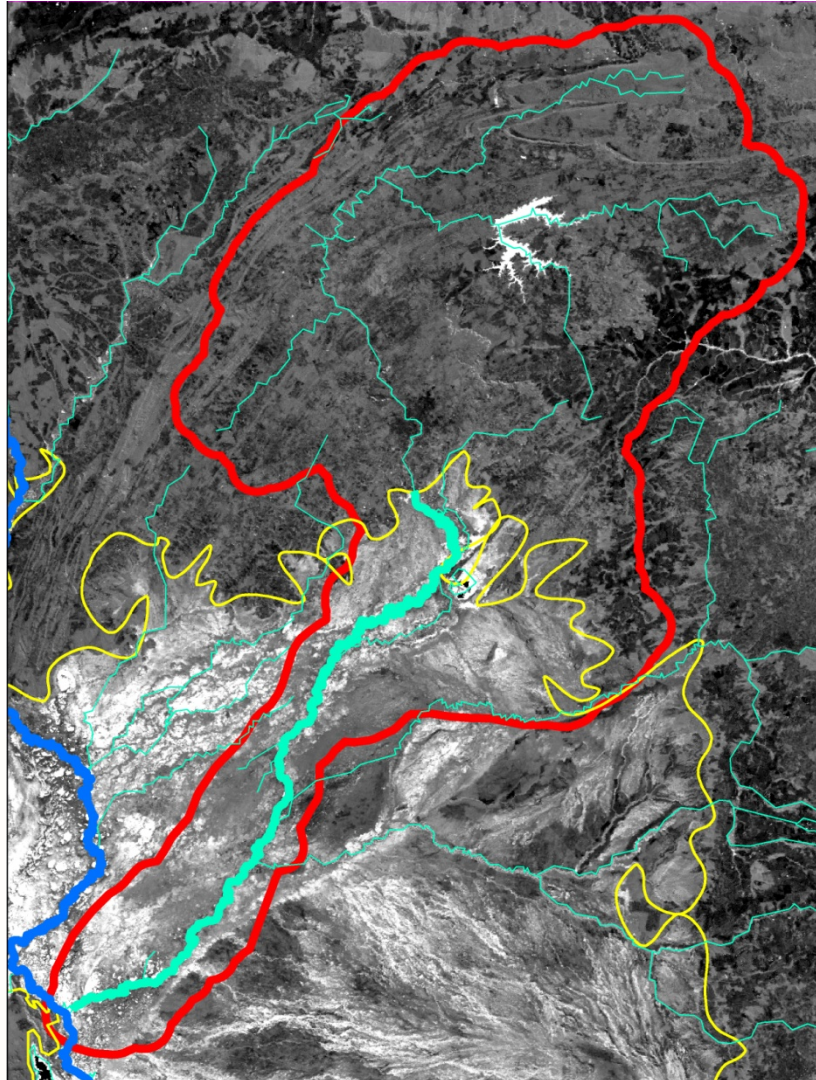
Principal Components of fraction images



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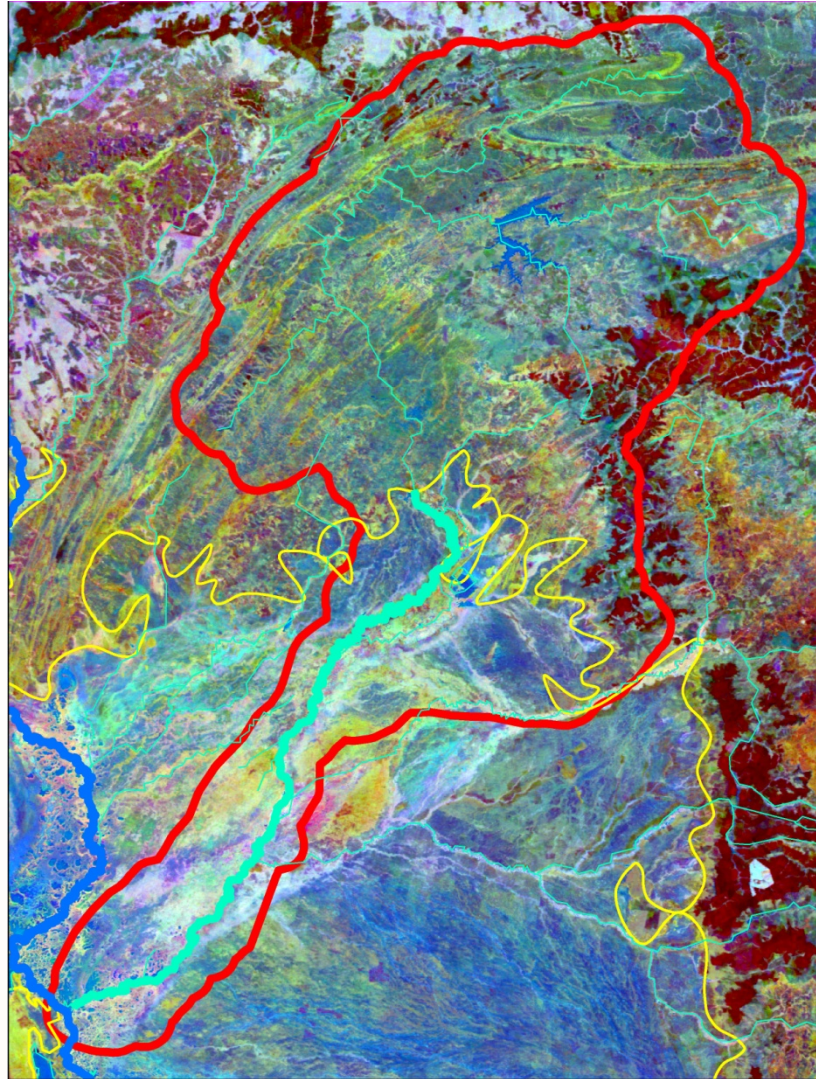
Principal Components of water fraction



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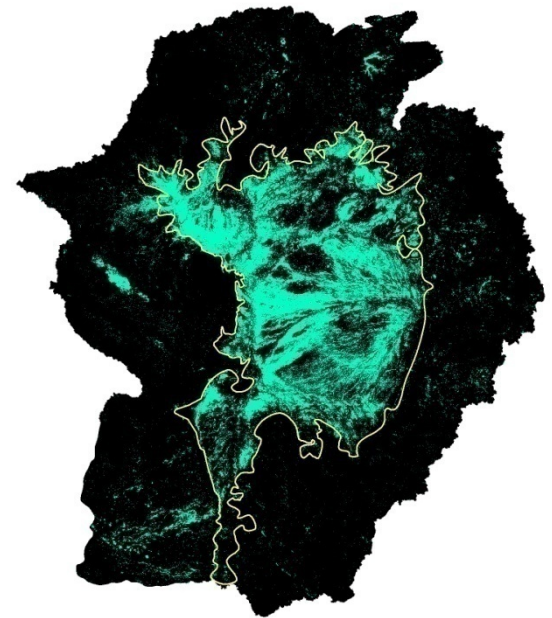
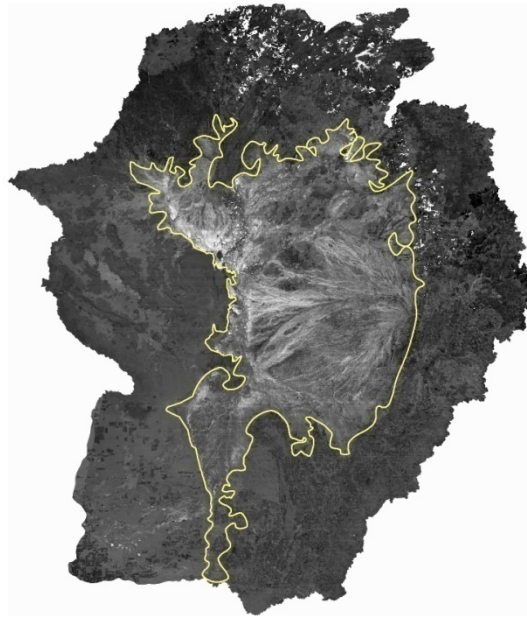
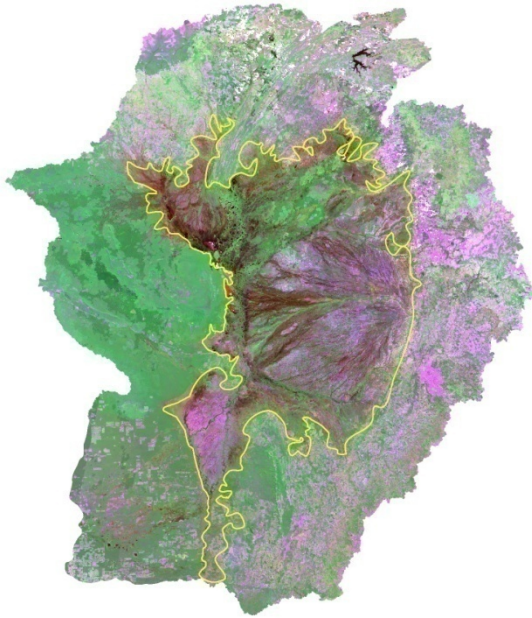
Principal components of vegetation fraction



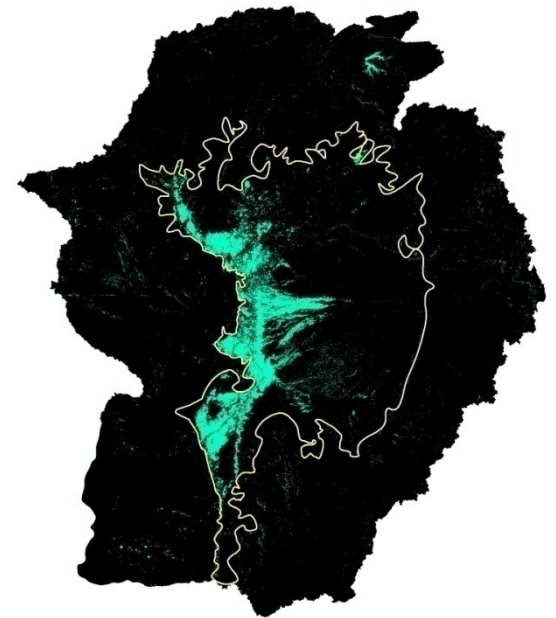
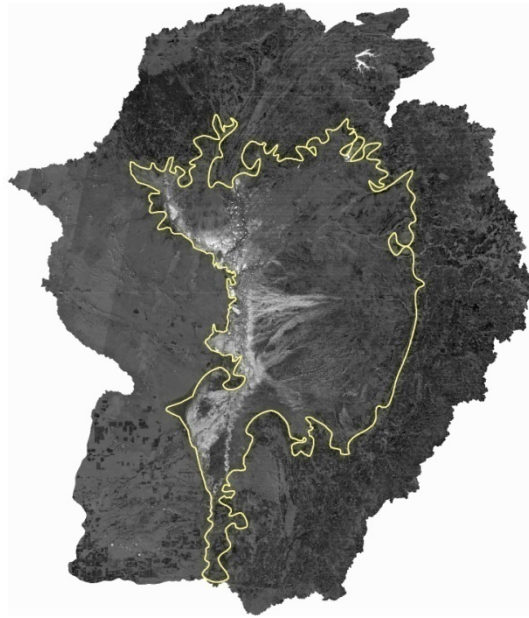
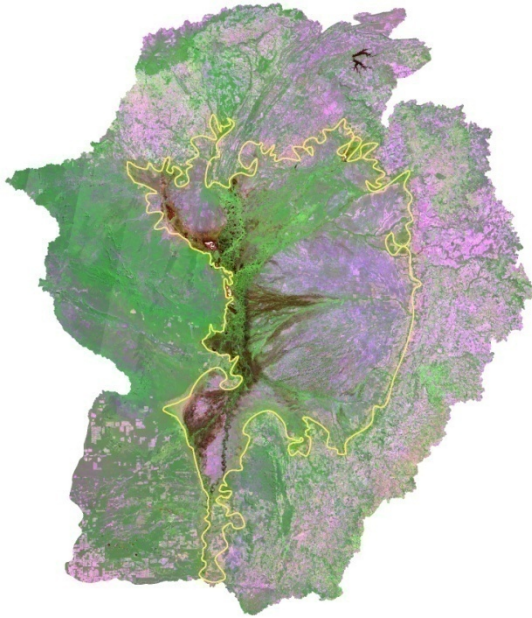
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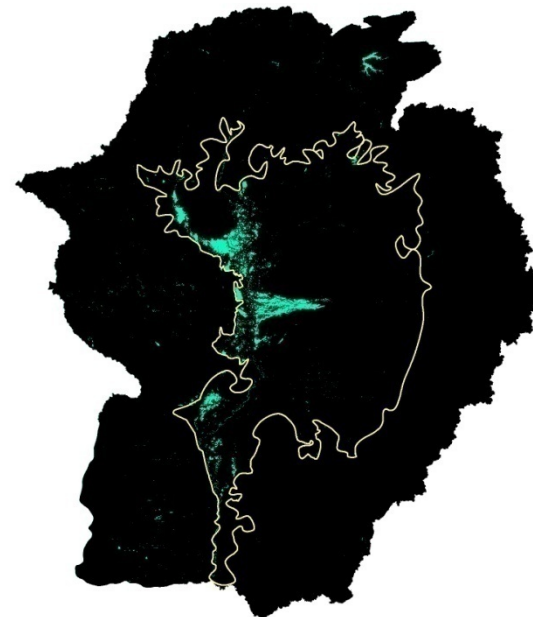
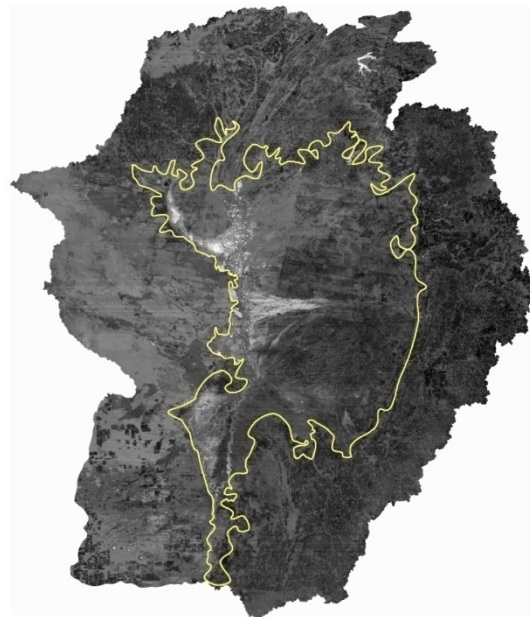
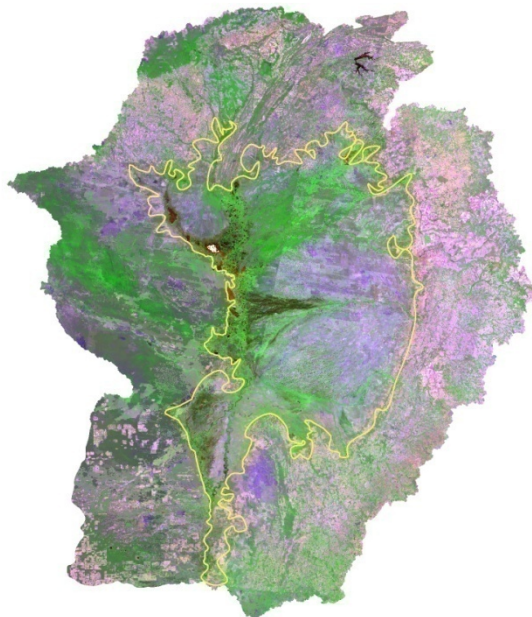
March, 21th - 08081



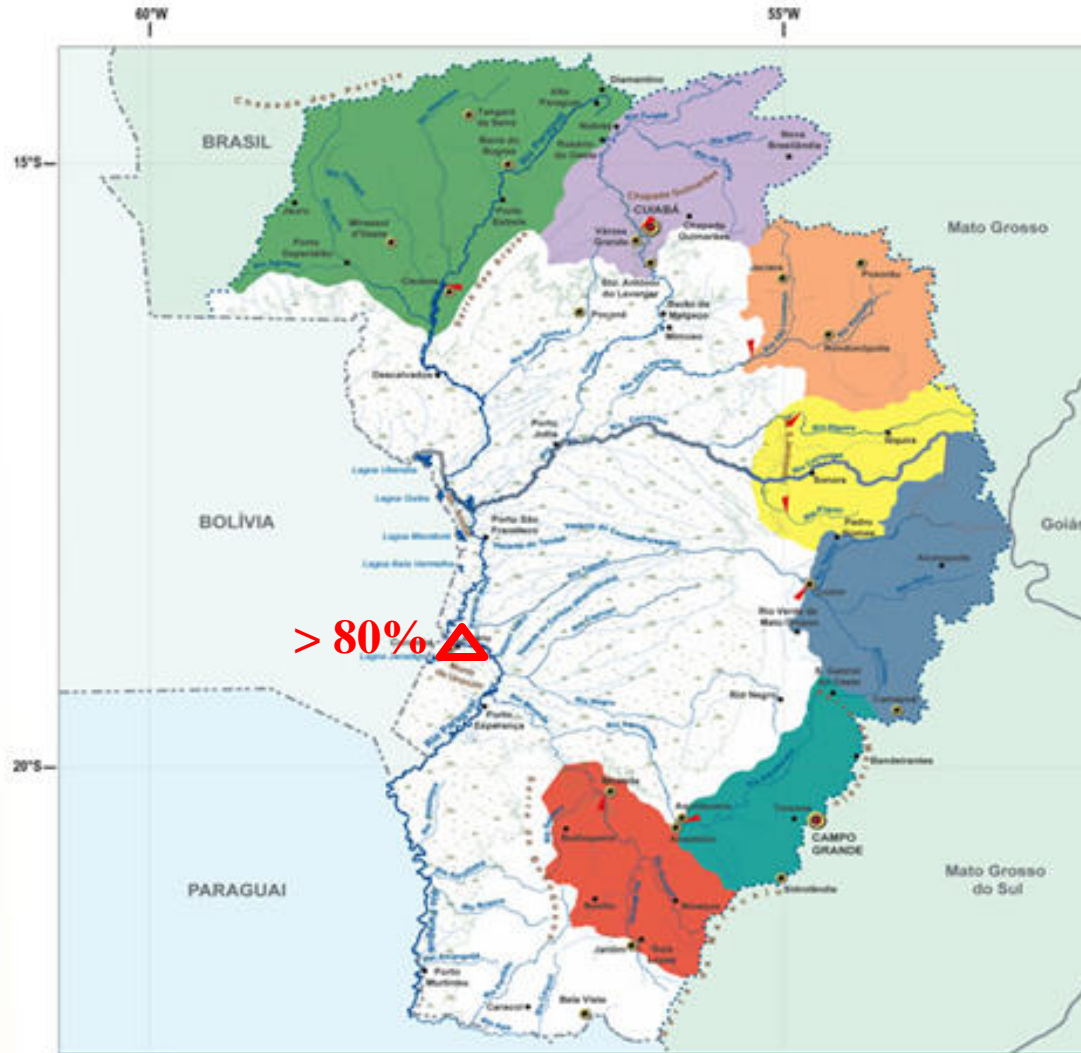
July, 25th - 08177



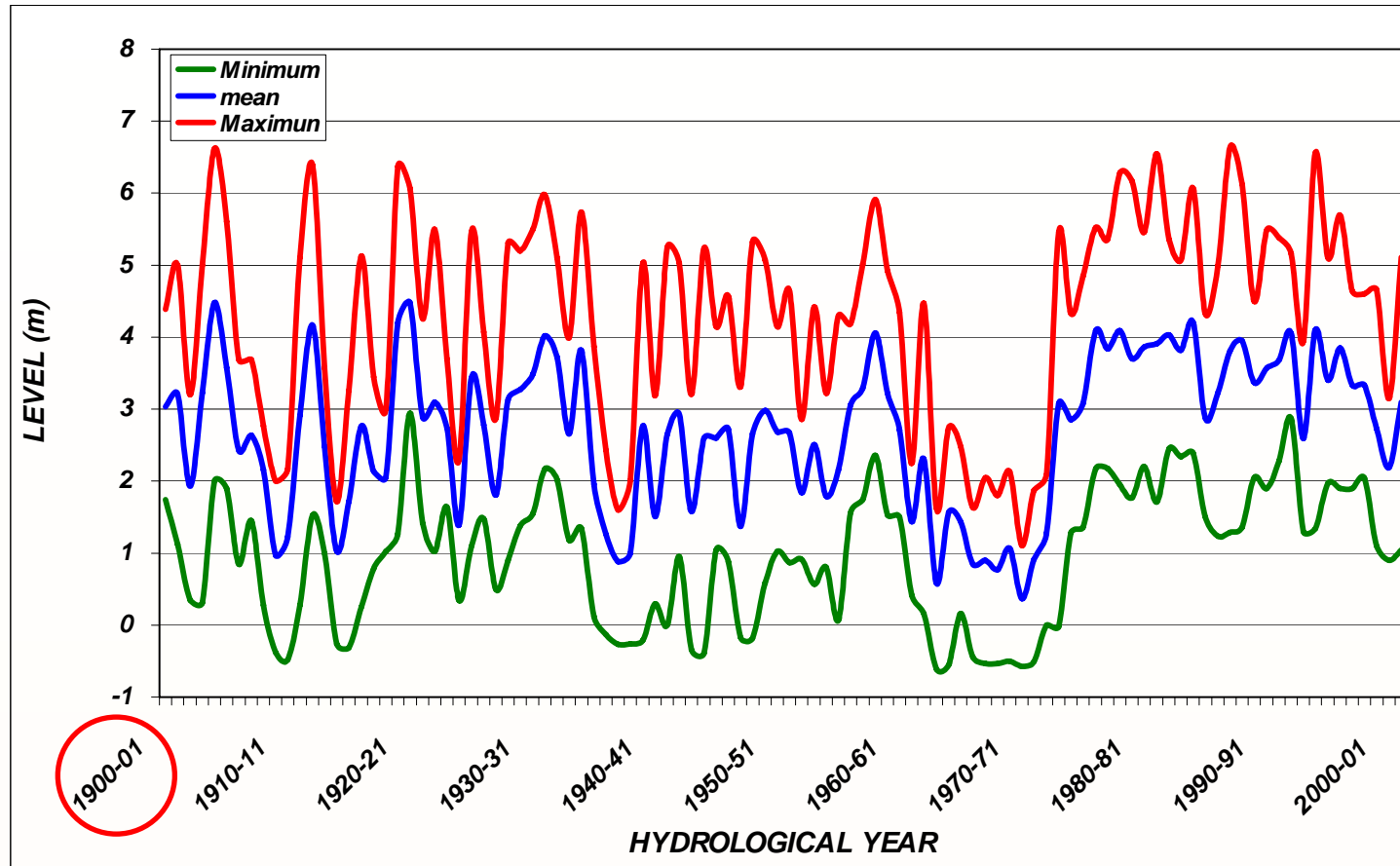
September, 13th - 08257



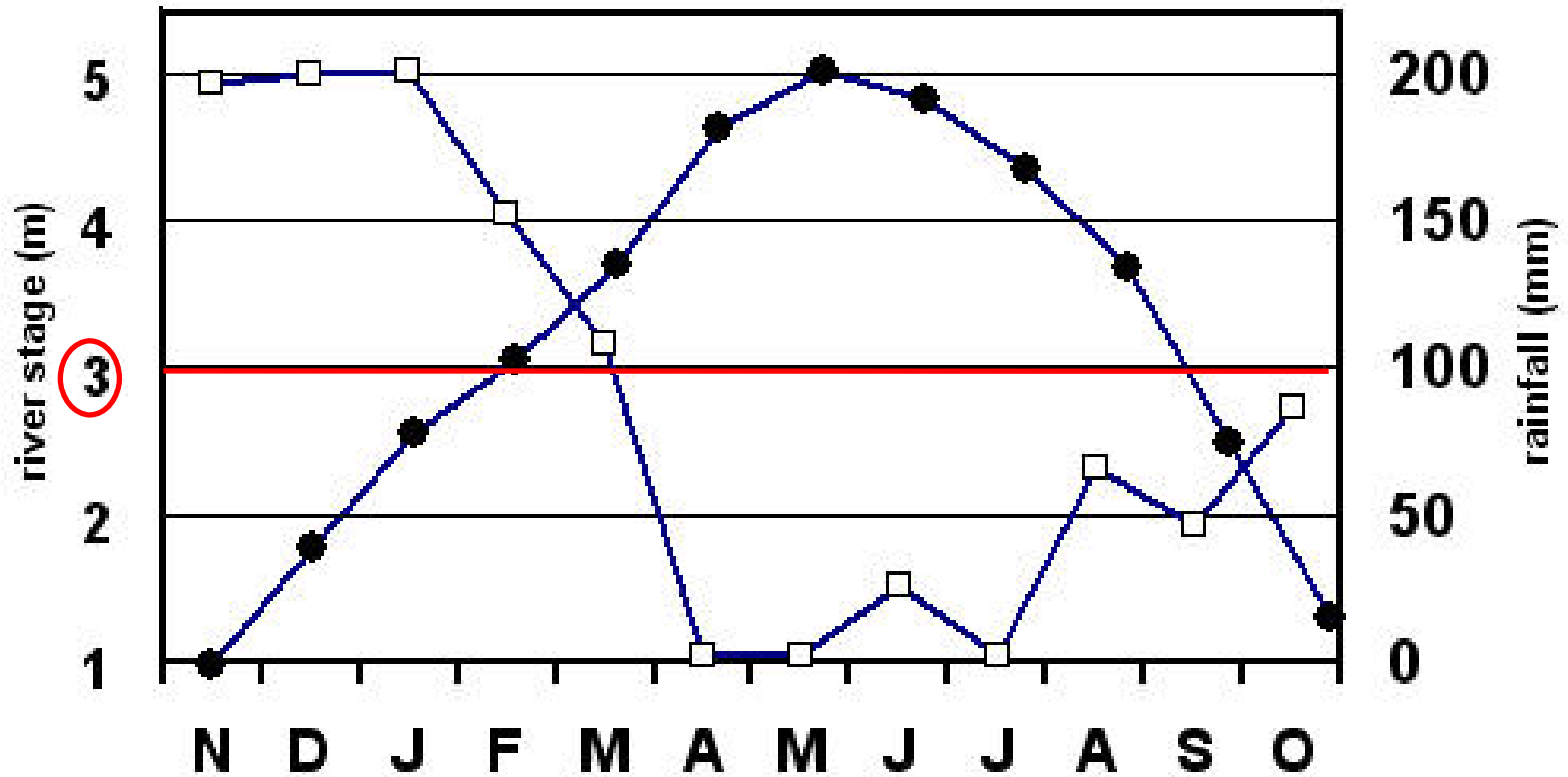
Main drainage of the High Paraguai river basin



Hydrograph of Paraguay river basin at Ladario



River stage at Ladario and rain for the Pantanal



Mean monthly stage water level of the Paraguay River from Brazilian NAVY (filled points), monthly accumulated rainfall data from Tropical Rainfall Measuring Mission (TRMM) (open squares) from 1998 to 2008



Paraguay River water level at Ladario station is used as a flood indicator and is commonly correlated with hydrological, ecological and other processes for the entire basin and Pantanal

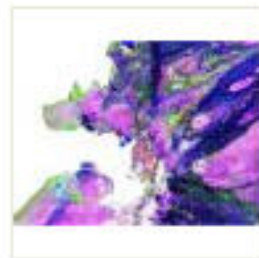
But actually what are the reach of the Paraguay river floods at Ladario station area?



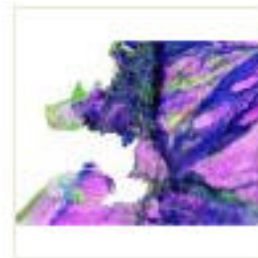
Color composition (R7, G2, B1) of the time serie



07049



07065



07081



07097



07113



07129



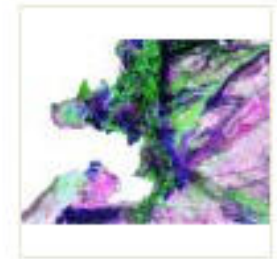
07145



07161



07177



07193



07209



07225



07241



07257



Classified images of the time serie



mixagua07049



mixagua07065



mixagua07081



mixagua07097



mixagua07113



mixagua07129



mixagua07145



mixagua07161



mixagua07177



mixagua07193



mixagua07209



mixagua07225



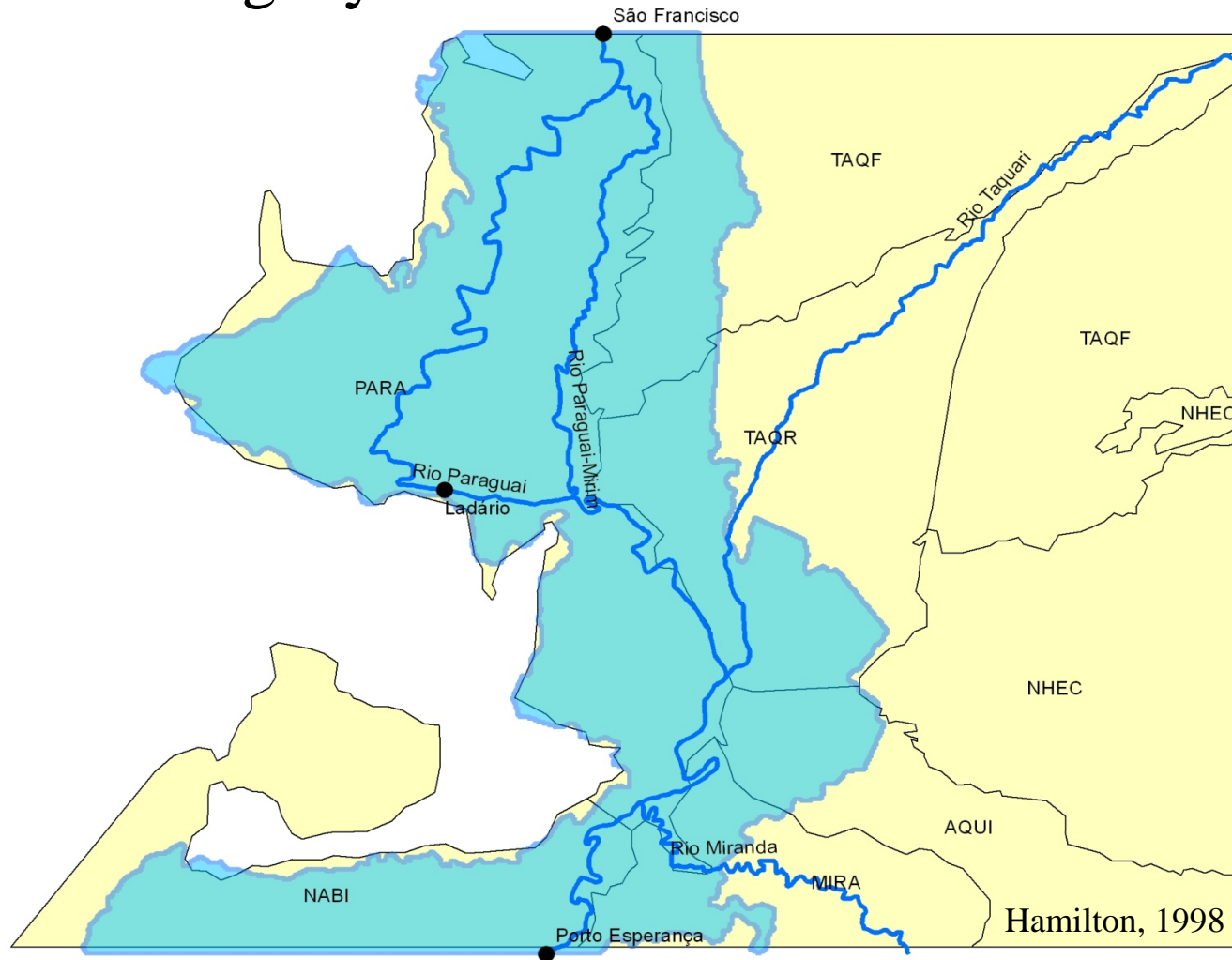
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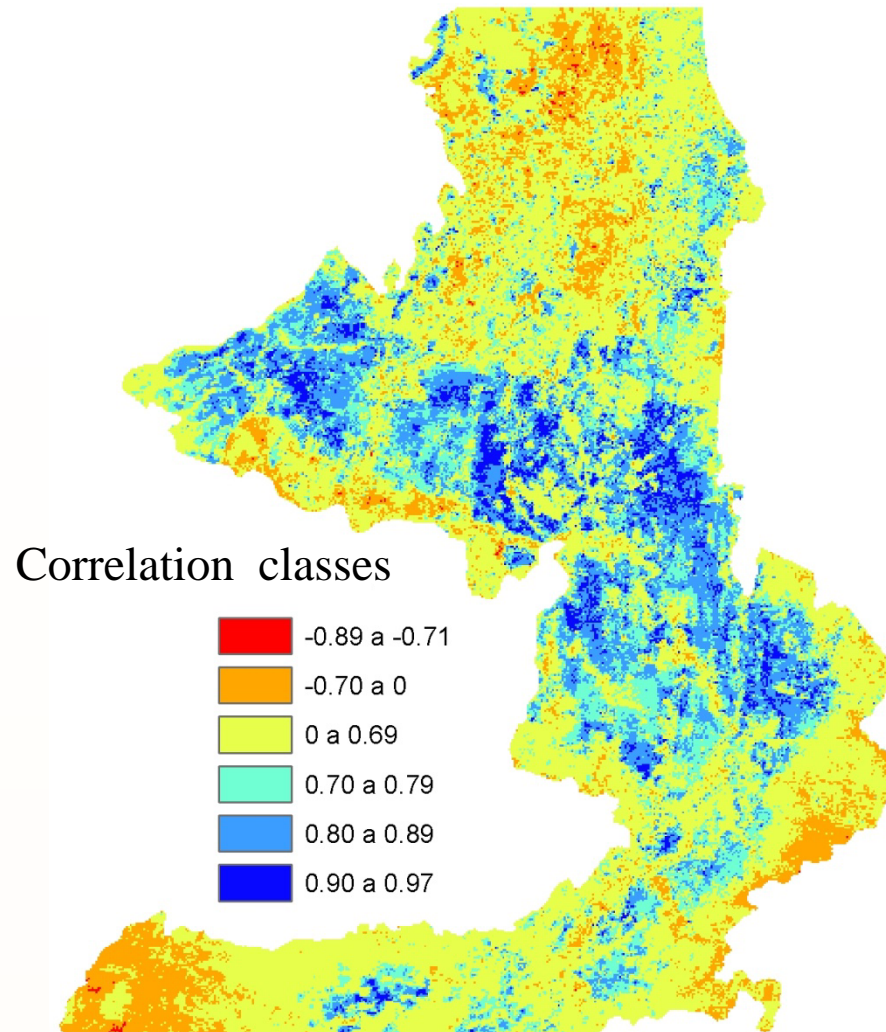
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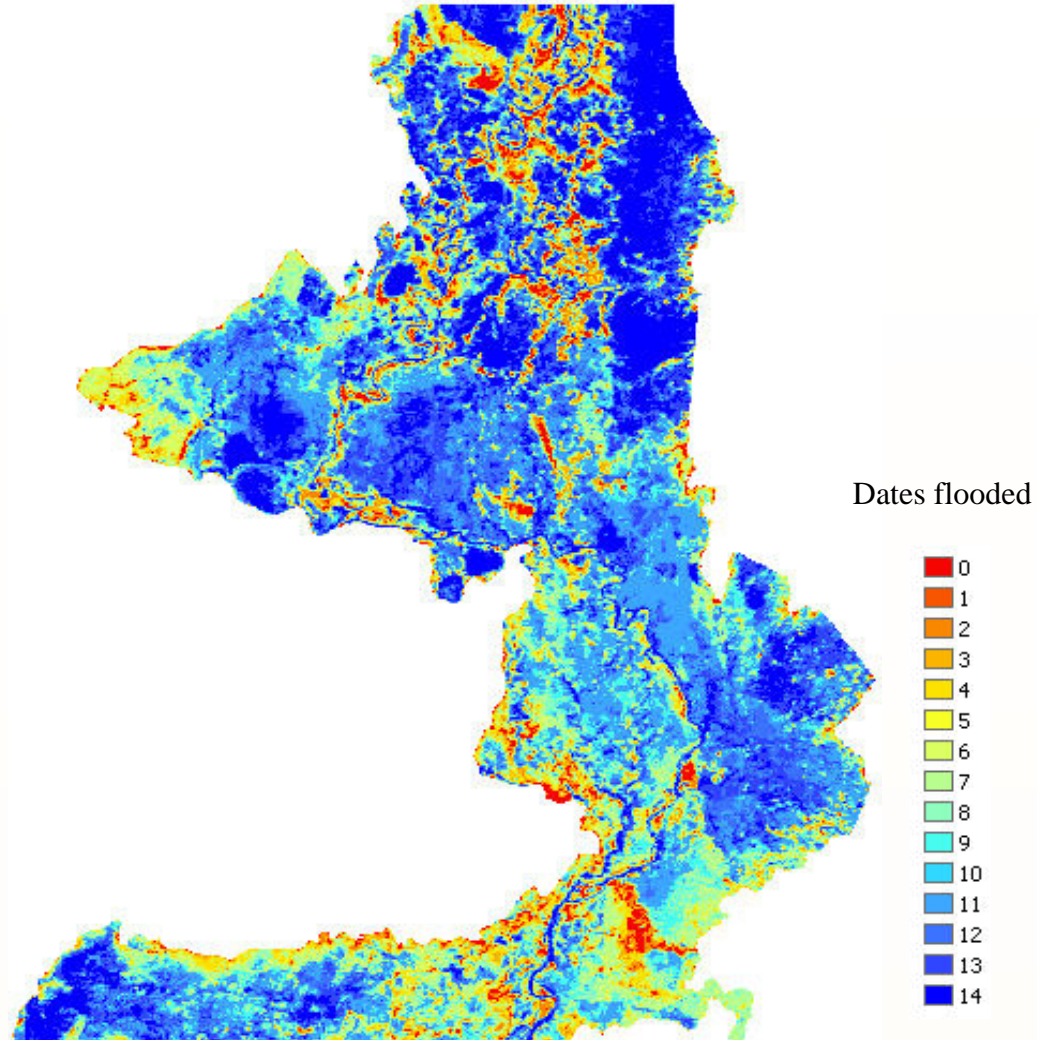
Paraguay river flooded area at Ladario



Correlation map



Flood frequency map



THANKS!
OBRIGADO!

