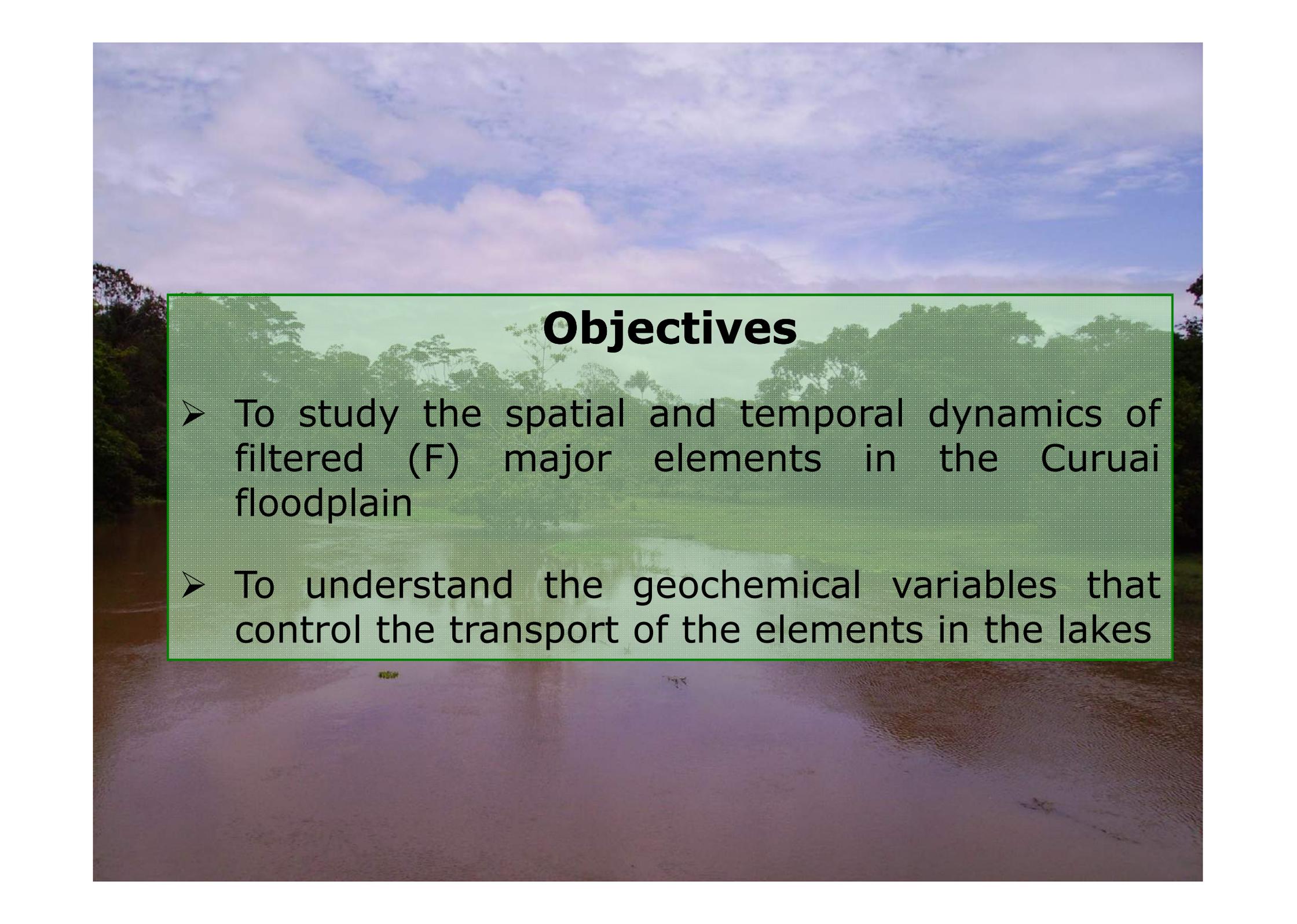


# Distribution and transport of major and trace elements in the Curuai floodplain, Amazon River - Brazil

Profa Dra Poliana Dutra Maia (UnB – FUP)

Laurence Maurice (IRD, GET, FR)  
Marcela Perez (UFF, BR)  
Patricia Moreira Turcq (IRD, BR)

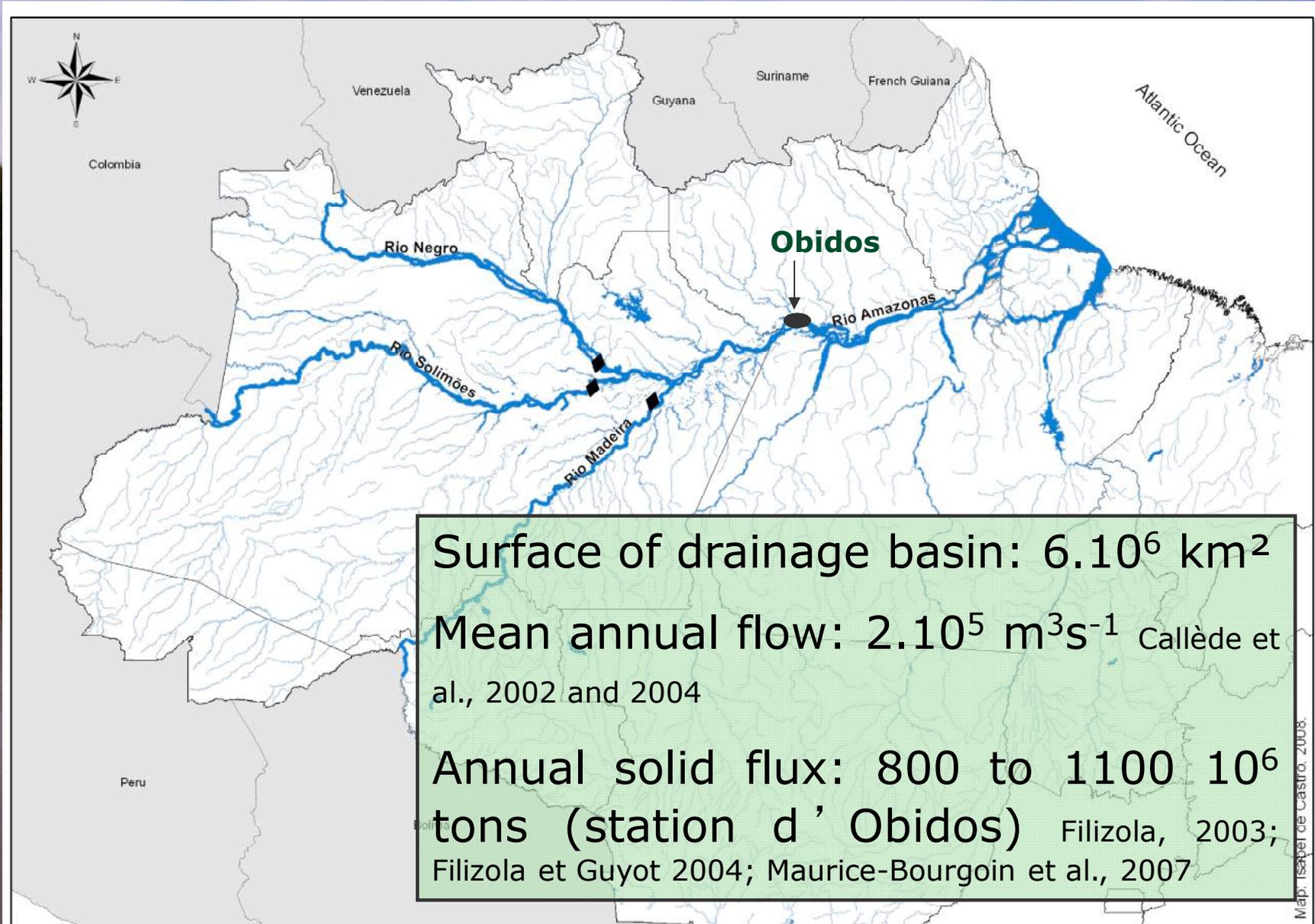




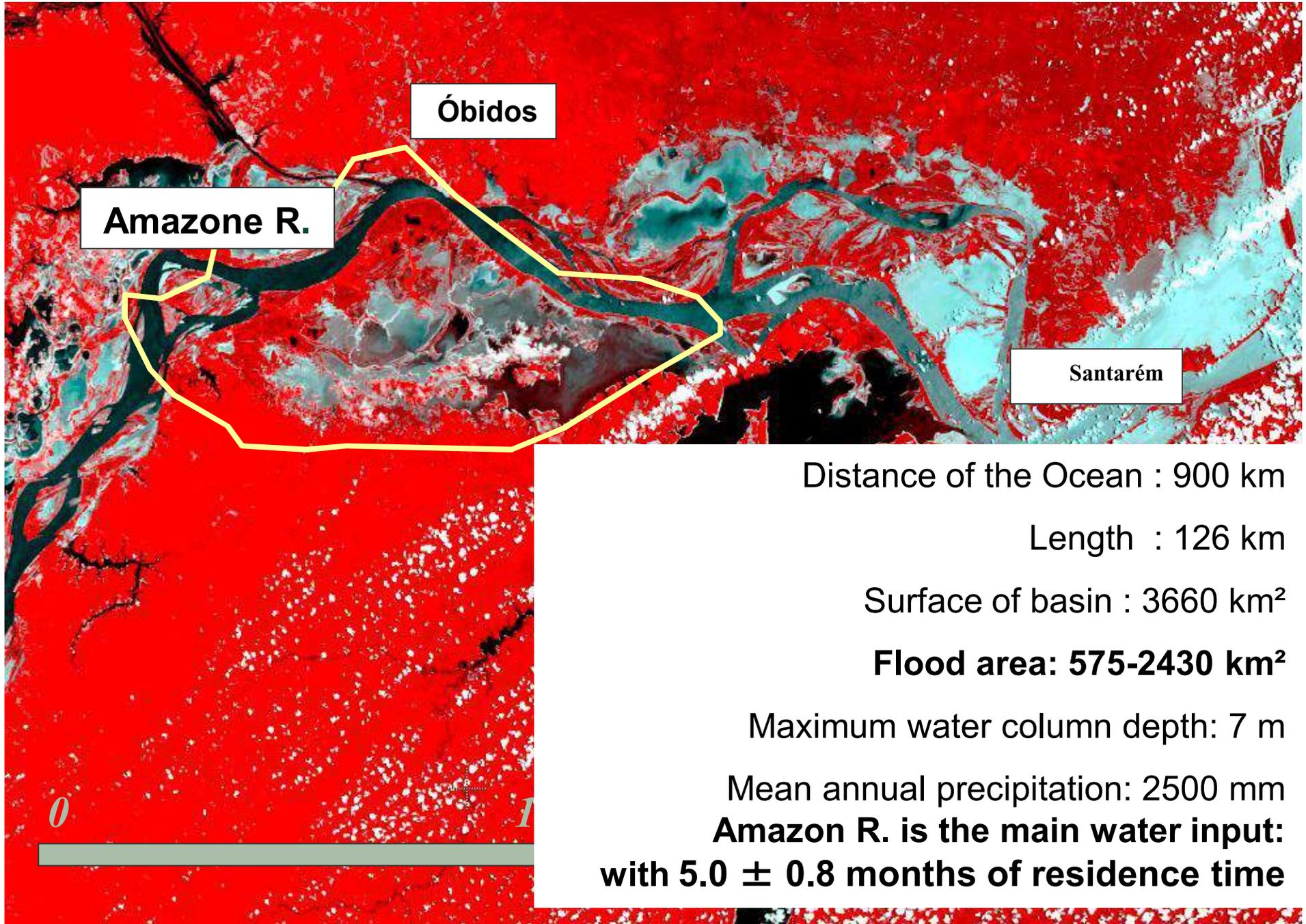
## Objectives

- To study the spatial and temporal dynamics of filtered (F) major elements in the Curuai floodplain
- To understand the geochemical variables that control the transport of the elements in the lakes

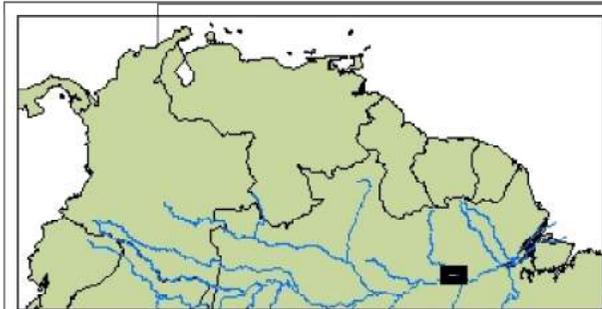
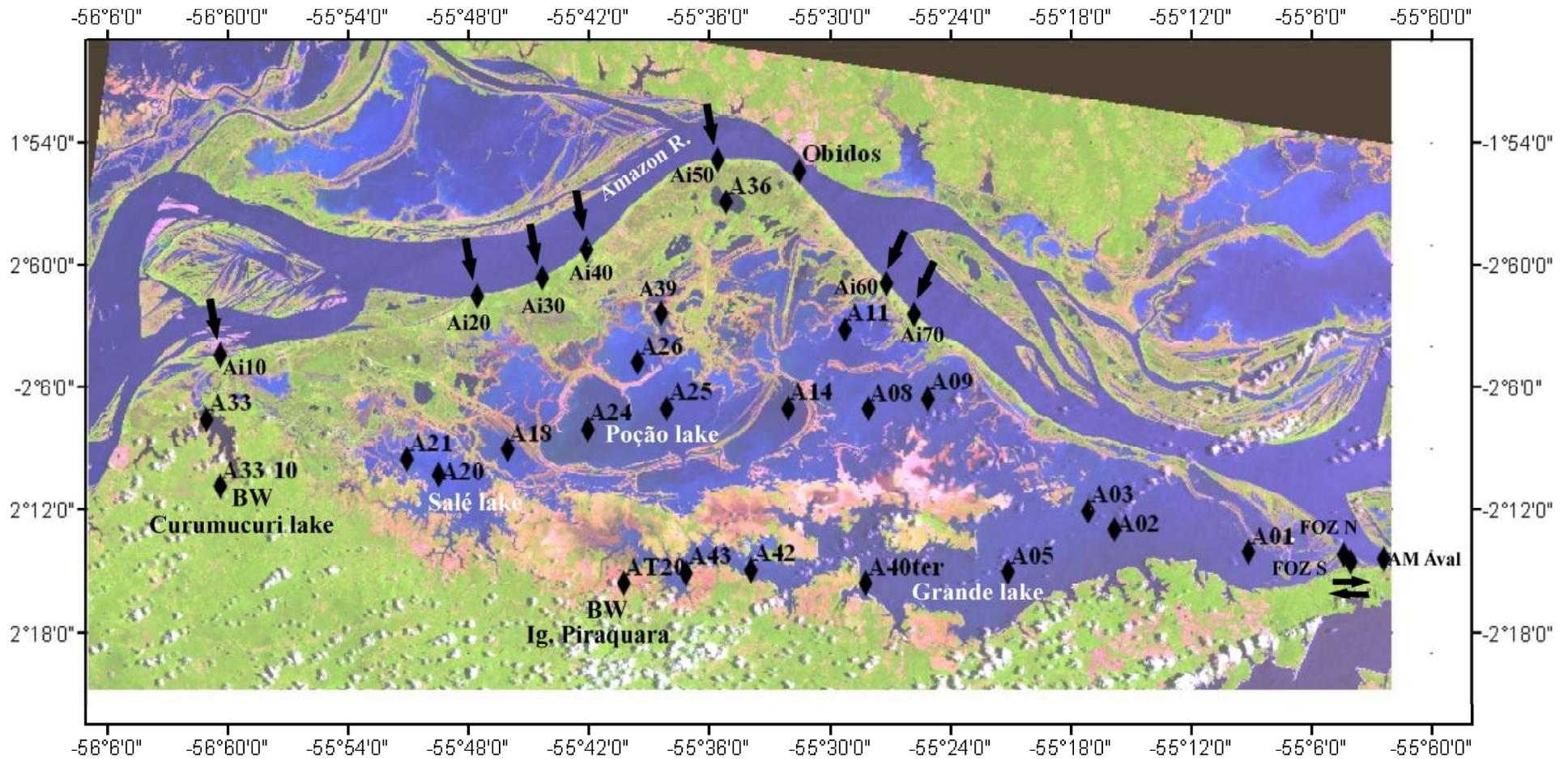
# Study area : the Amazon R.



# Study area: Curuai floodplain



# Curuai Floodplain



## Legende

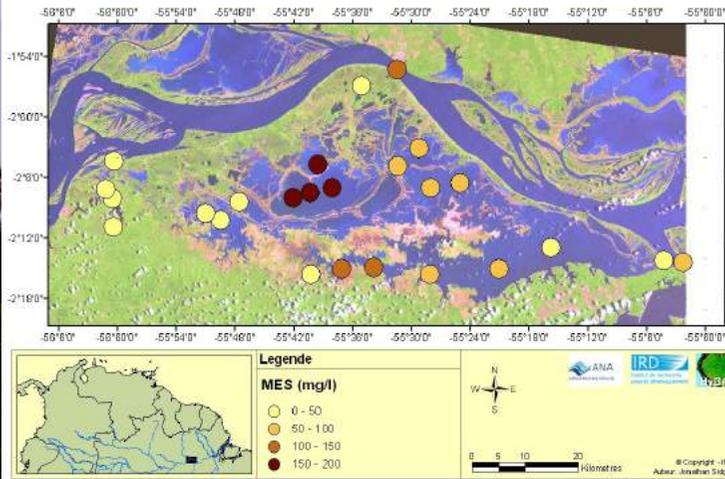
- ◆ Sampling points
- ➔ Connecting channels (input)
- ➔➔ Connecting channels (input and output)
- BW Black water



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Auteur: Pollana Dutra Maia

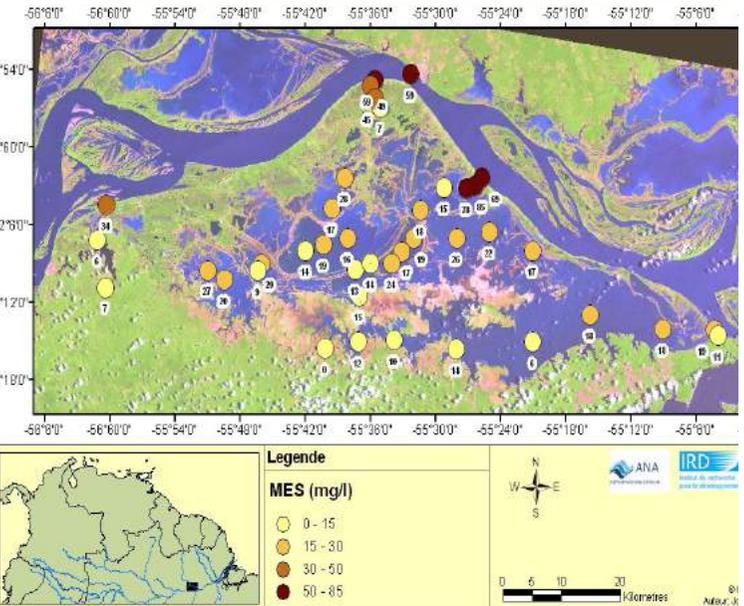
# Curuai floodplain – Sampling Cr

Concentration en MES dans les eaux de surface de la Varzea de Curuai  
Campagne du 20 mars au 4 avril 2005



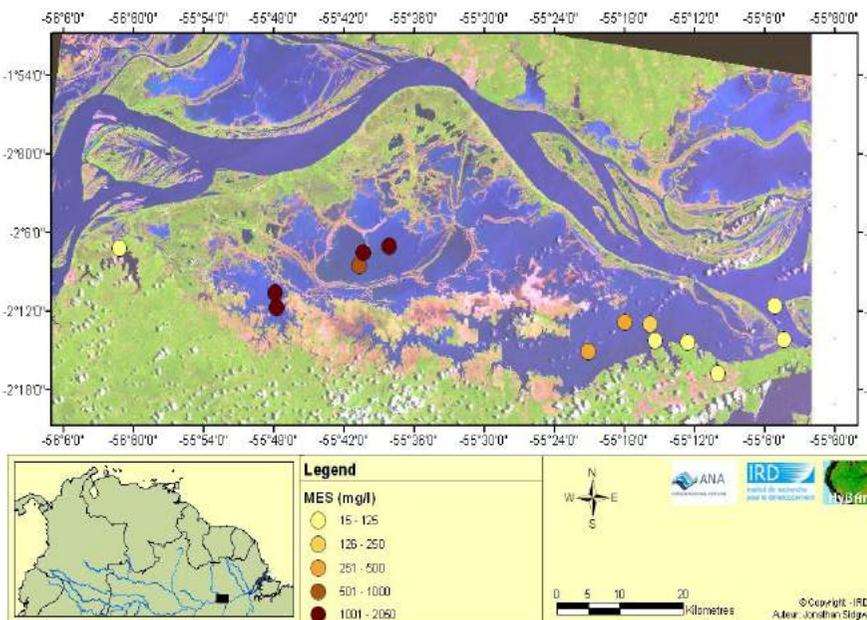
I in 2005 - Varz

Concentration en MES dans les eaux de surface de la Varzea de Curuai  
Campagne du 07 au 16 juin 2005



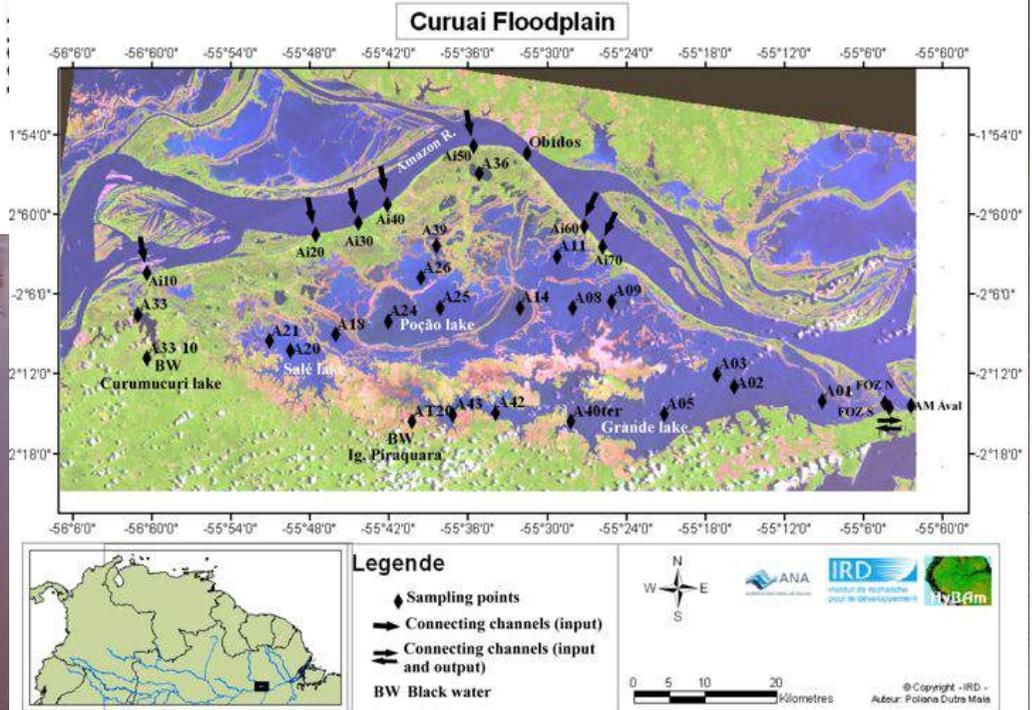
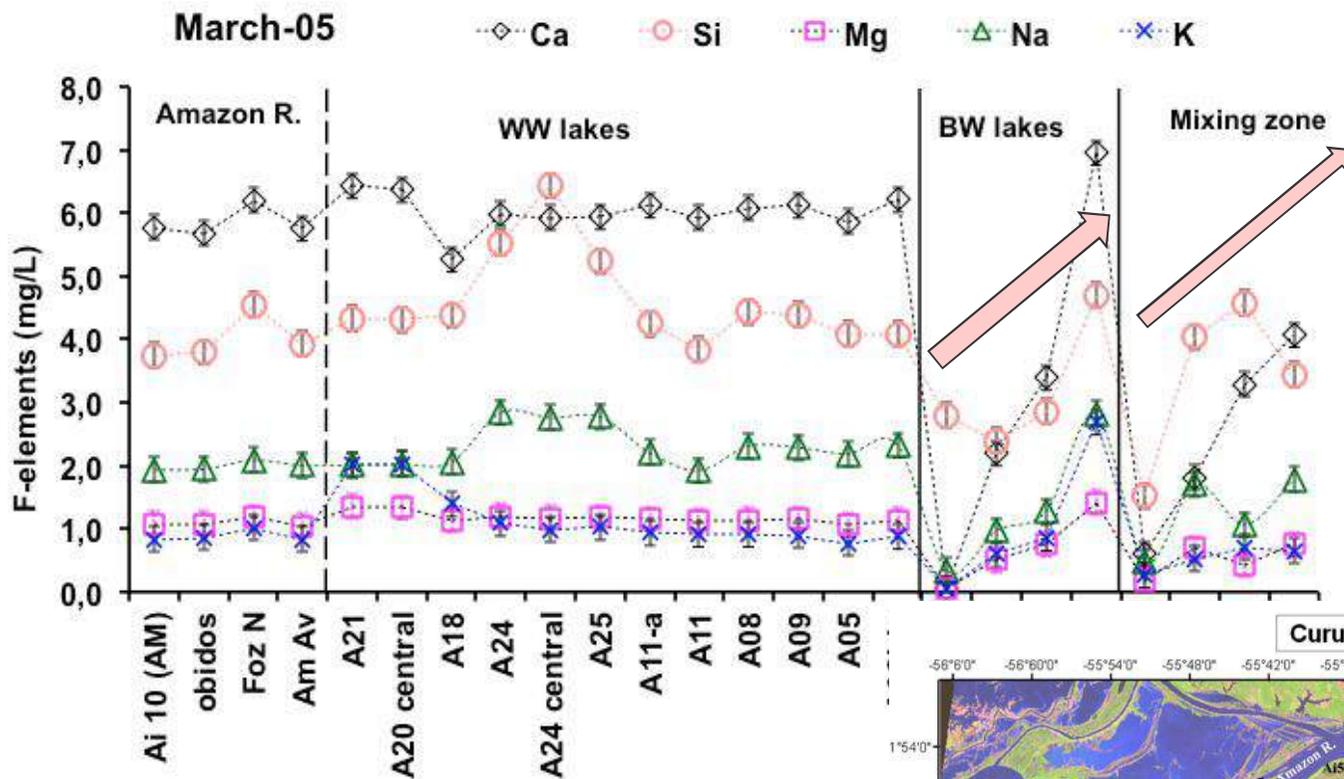
water level (cm)  
500  
400  
300  
200  
100  
0  
janv-05

MES (mg/l) dans les eaux de surface de la Varzea de Curuai  
Campagne du 22 au 30 novembre 2005

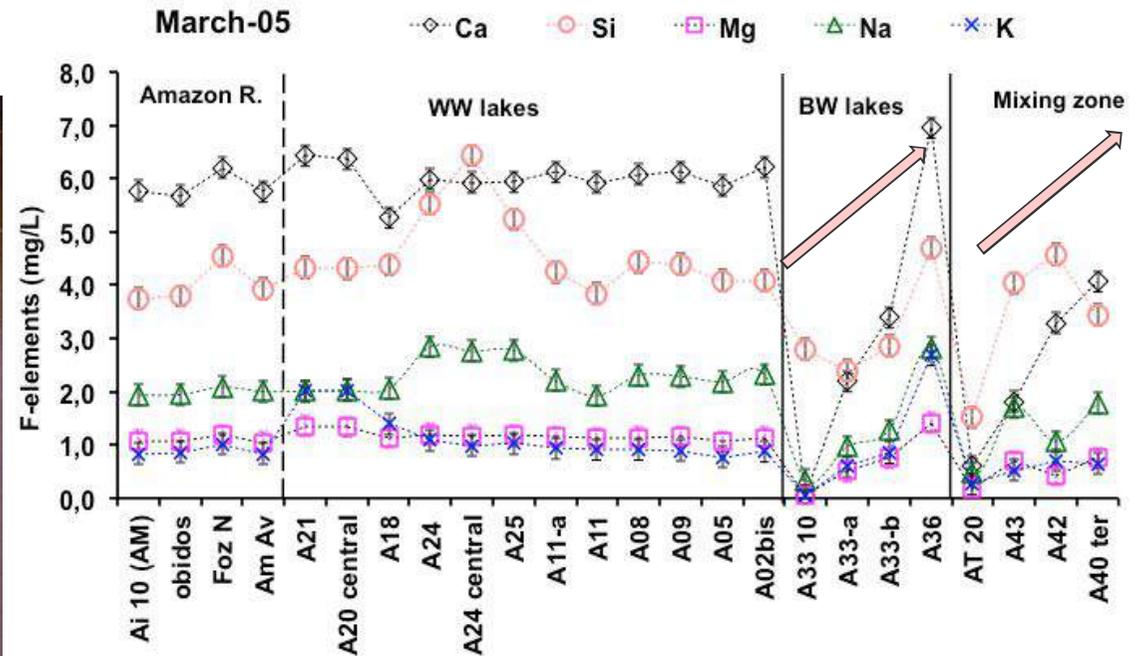
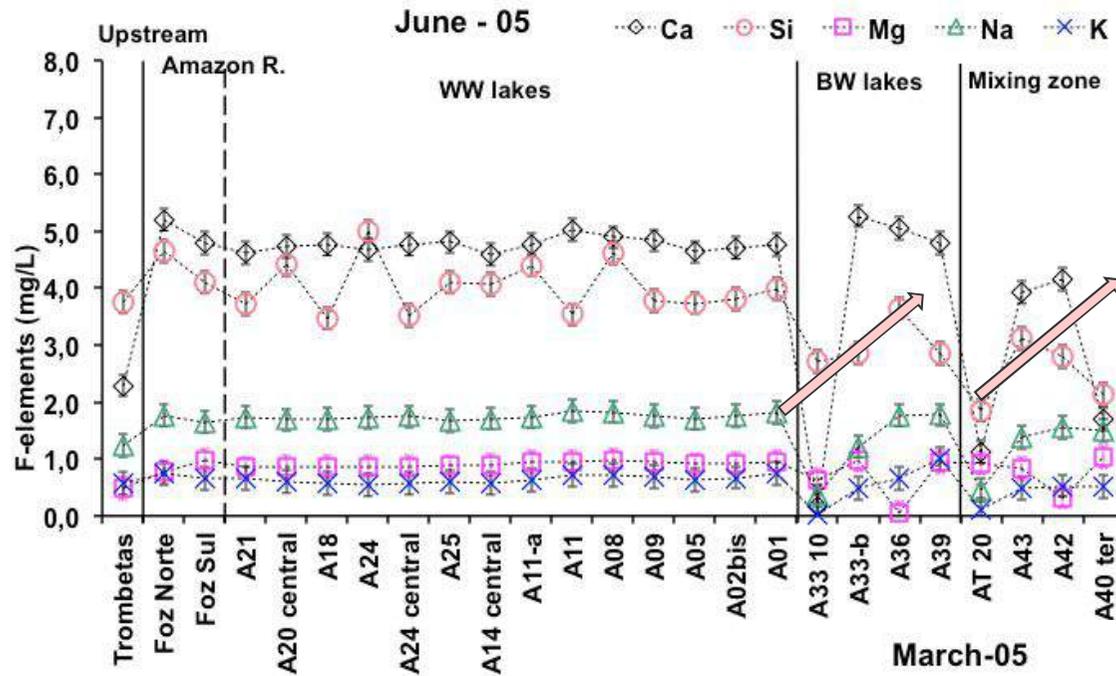


sept-05 oct-05 déc-05

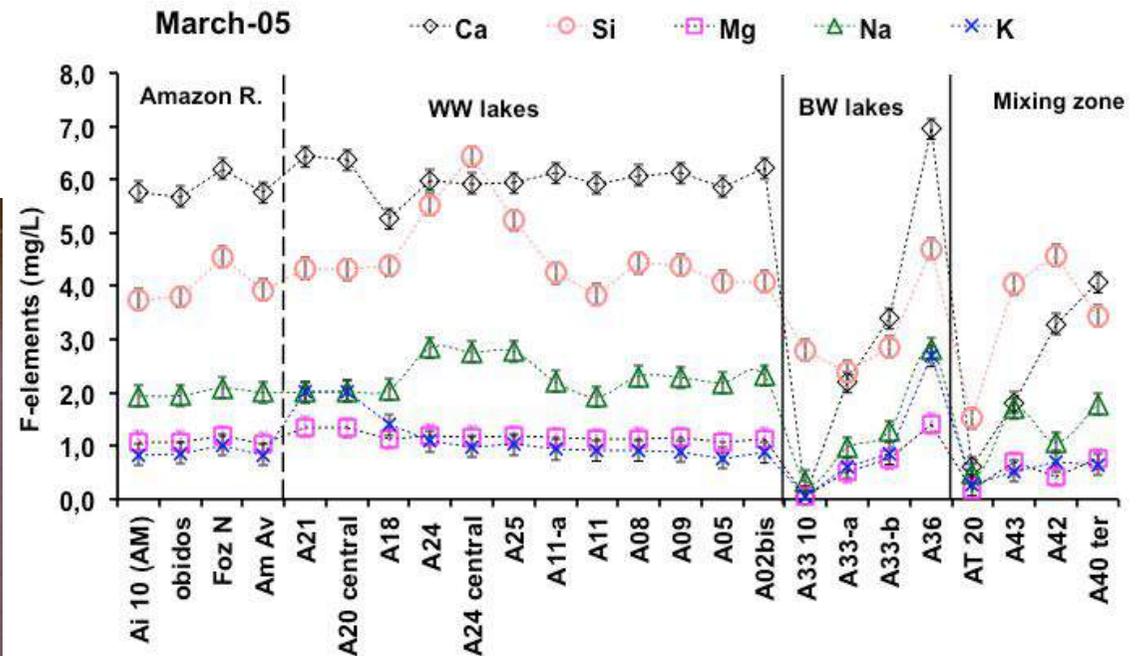
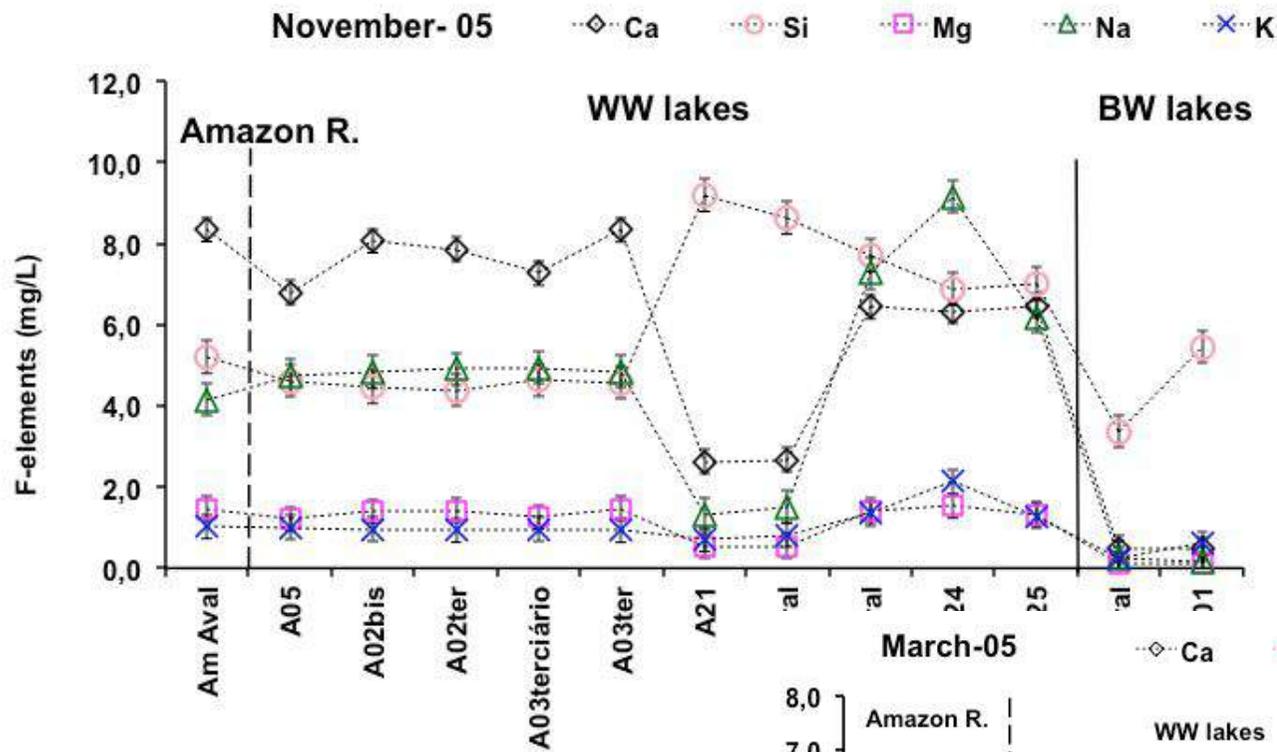
# Spatial and temporal variation of major elements



# Spatial and temporal variation of major elements

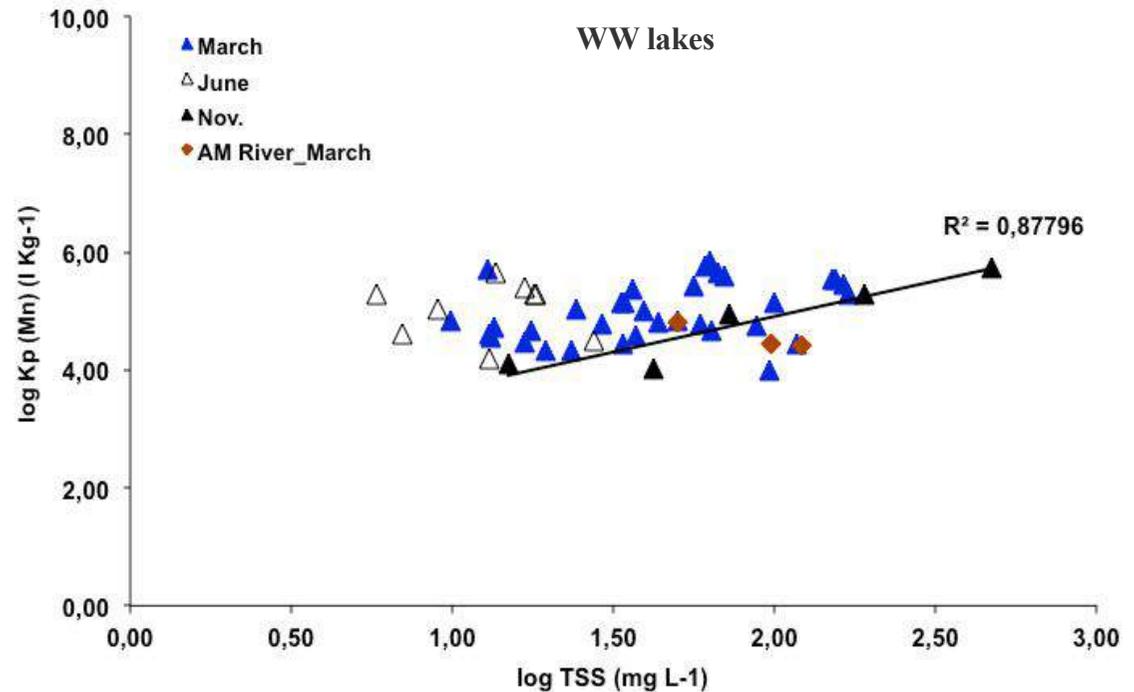
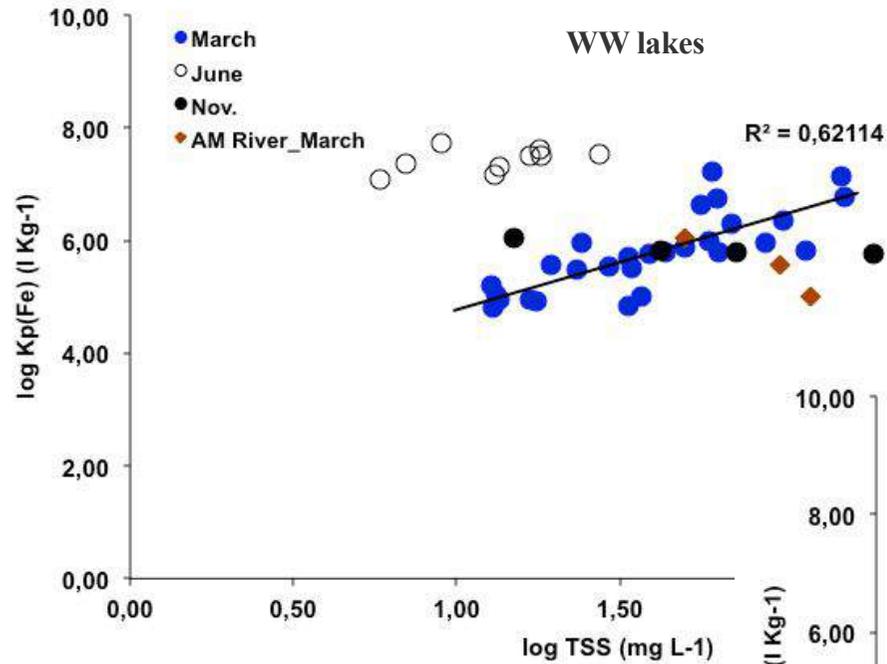


# Spatial and temporal variation of major elements

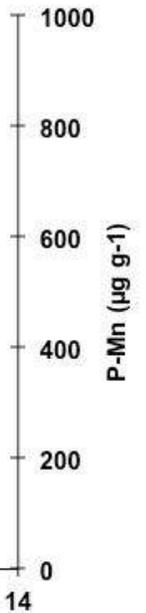
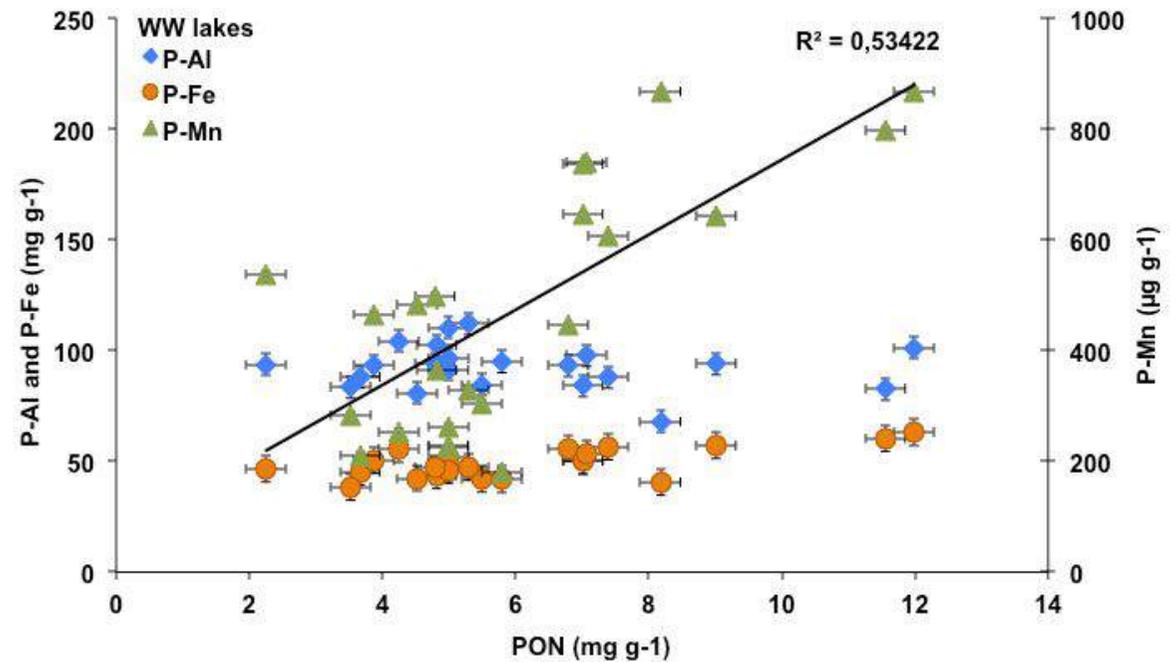
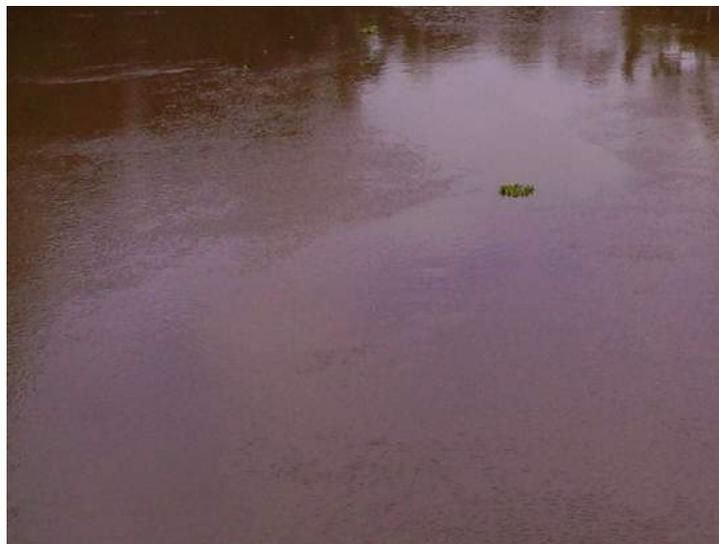
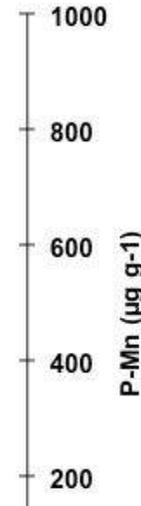
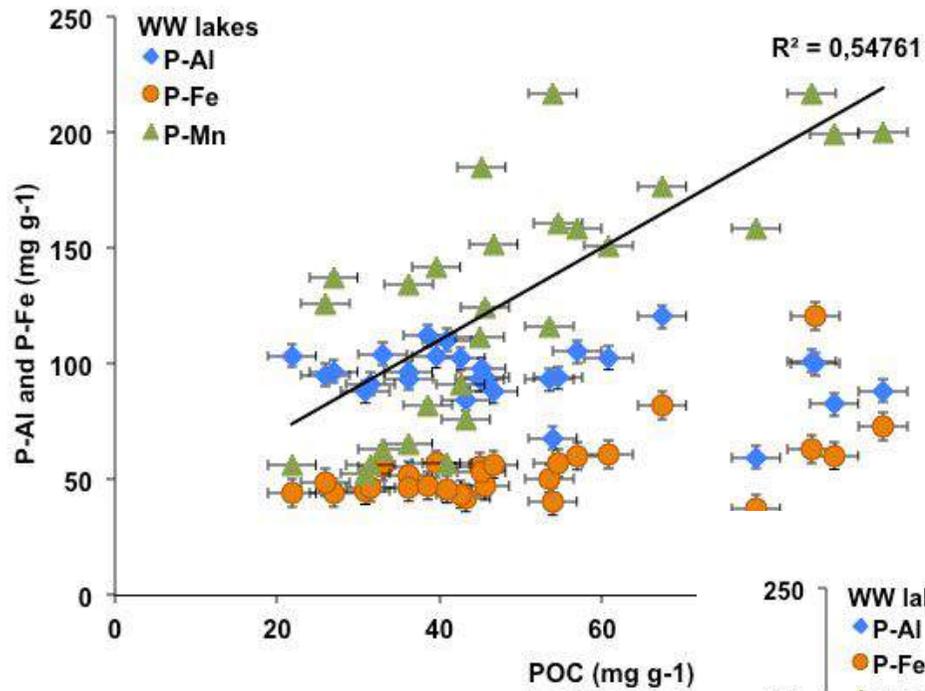


# Transport of the elements in the Curuai floodplain

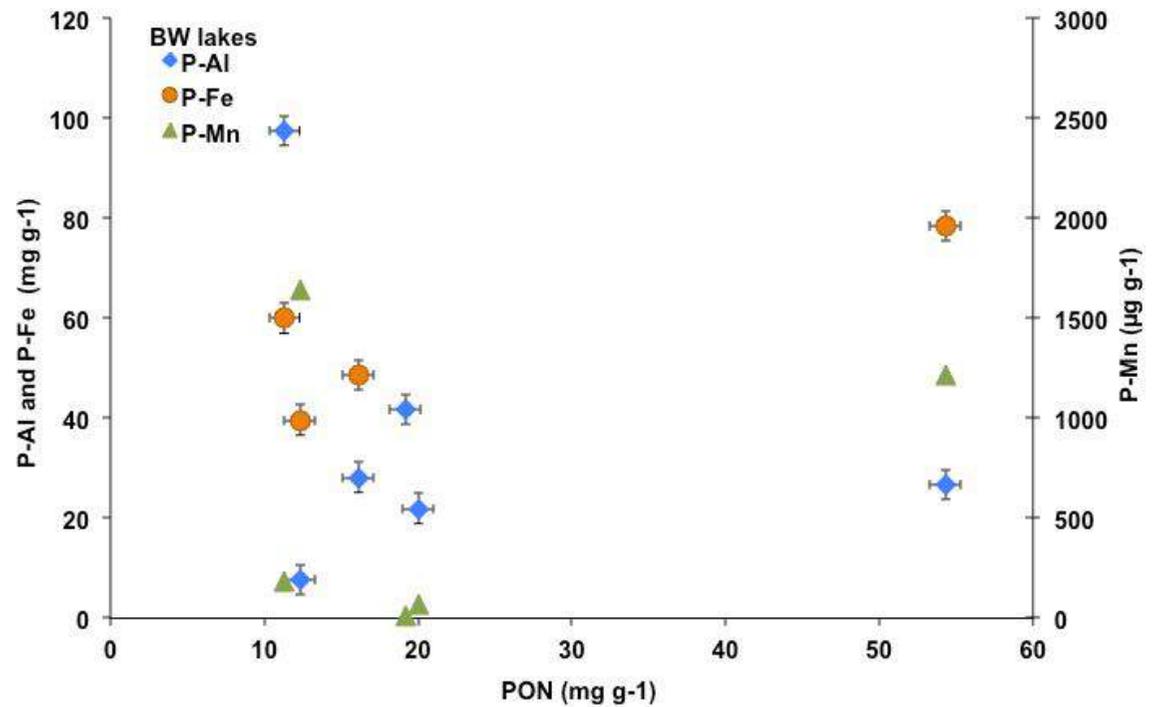
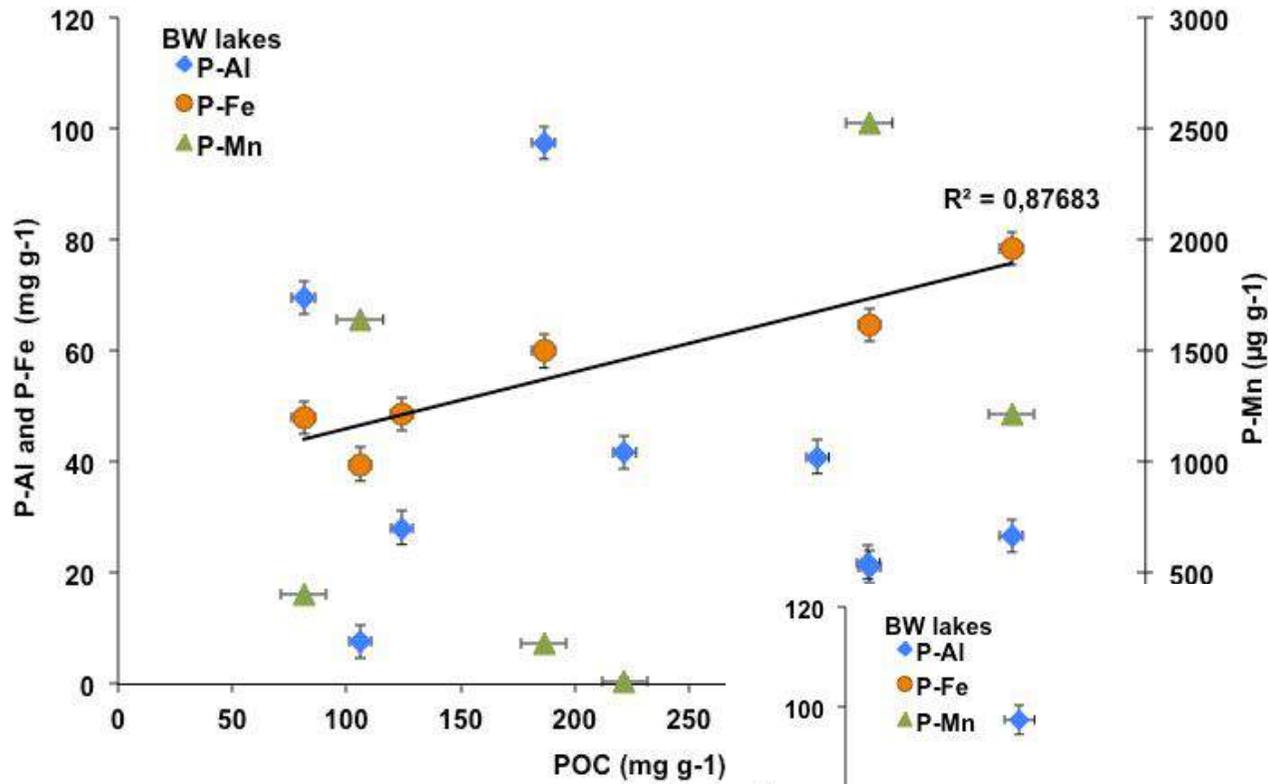
$$K_p (\text{elements}) \text{ in } L/Kg = \frac{[P - \text{elements}] \text{ in } pmol/Kg}{[F - \text{elements}] \text{ in } pmol/L}$$



# Role of organic matter in the elements' distribution



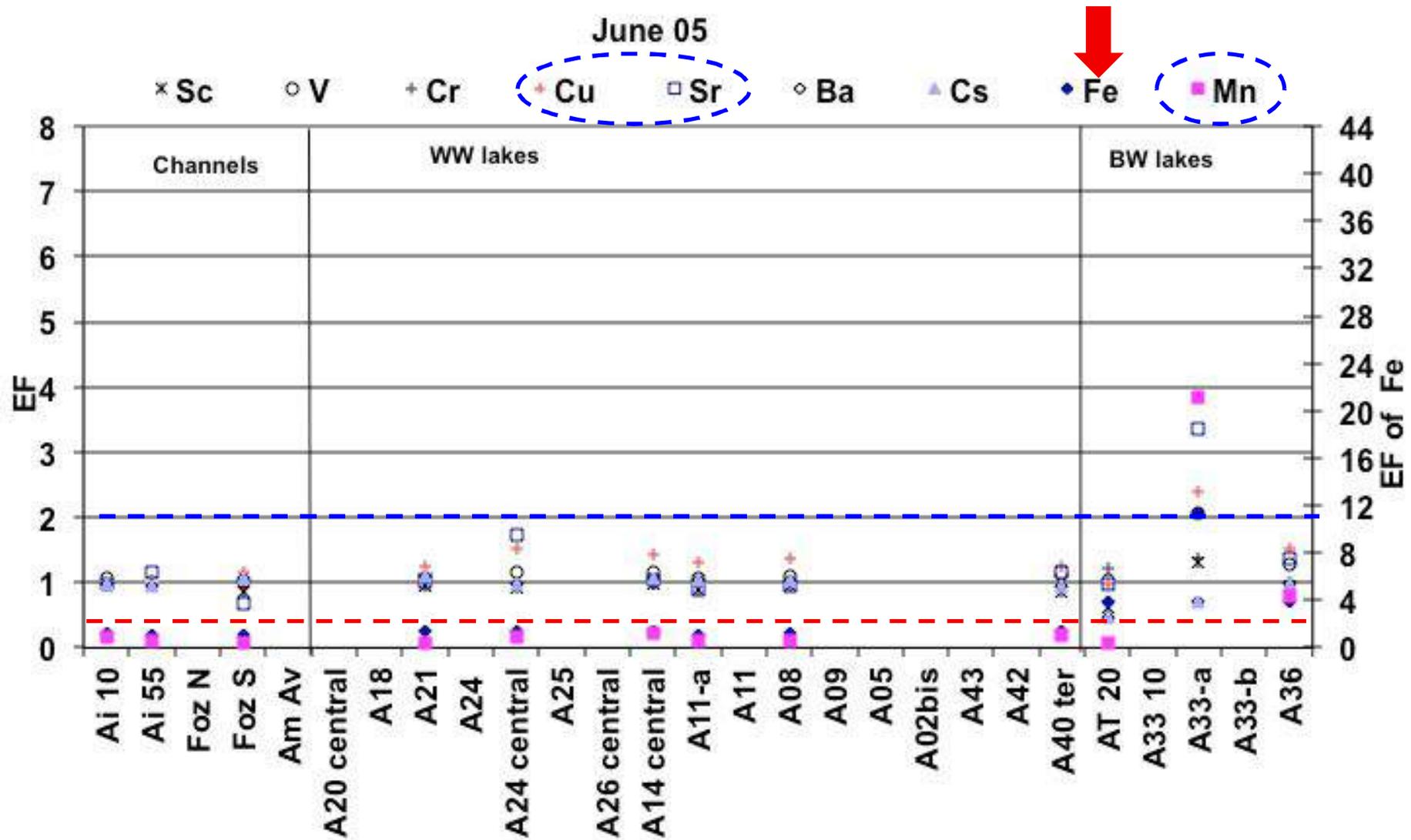
# Role of organic matter in the elements' distribution





# Temporal exchanges of particulate elements between the Curuai floodplain and the Amazon R.

$$EF = [P\text{-elements}] / [P\text{-Al}] \text{ in the lakes}$$



## Conclusions

- ✓ High concentrations of filtered Ca, Si and Na in the WW lakes during the dry season
- ✓ The transport of P- elements are controlled by:
  - The hydrological dynamic of the Amazon River into lakes: no significant enrichment of P-elements compared to the Amazon R. inputs is observed during the wet periods
  - However, in the BW lakes the local runoff inputs contribute to a significant enrichment of P-elements as well in all lakes for the P-Fe remobilization
  - During the flood peak and dry season, P-Fe and Mn are transported in the particulate phase associated to organic matter

A photograph of a sunset over a body of water. The sun is low on the horizon, creating a bright, shimmering path of light across the water's surface. The sky is a deep blue, and the water is dark with gentle ripples. The text is overlaid in the center in a blue, handwritten-style font.

MUITO OBRIGADA!  
Thank you!  
Muchas Gracias!