

K&C Phase 4 – Status report

Pantanal: Wildlife habitat spatial characteristics using SAR imagery - Lakes diversity and spatial analysis

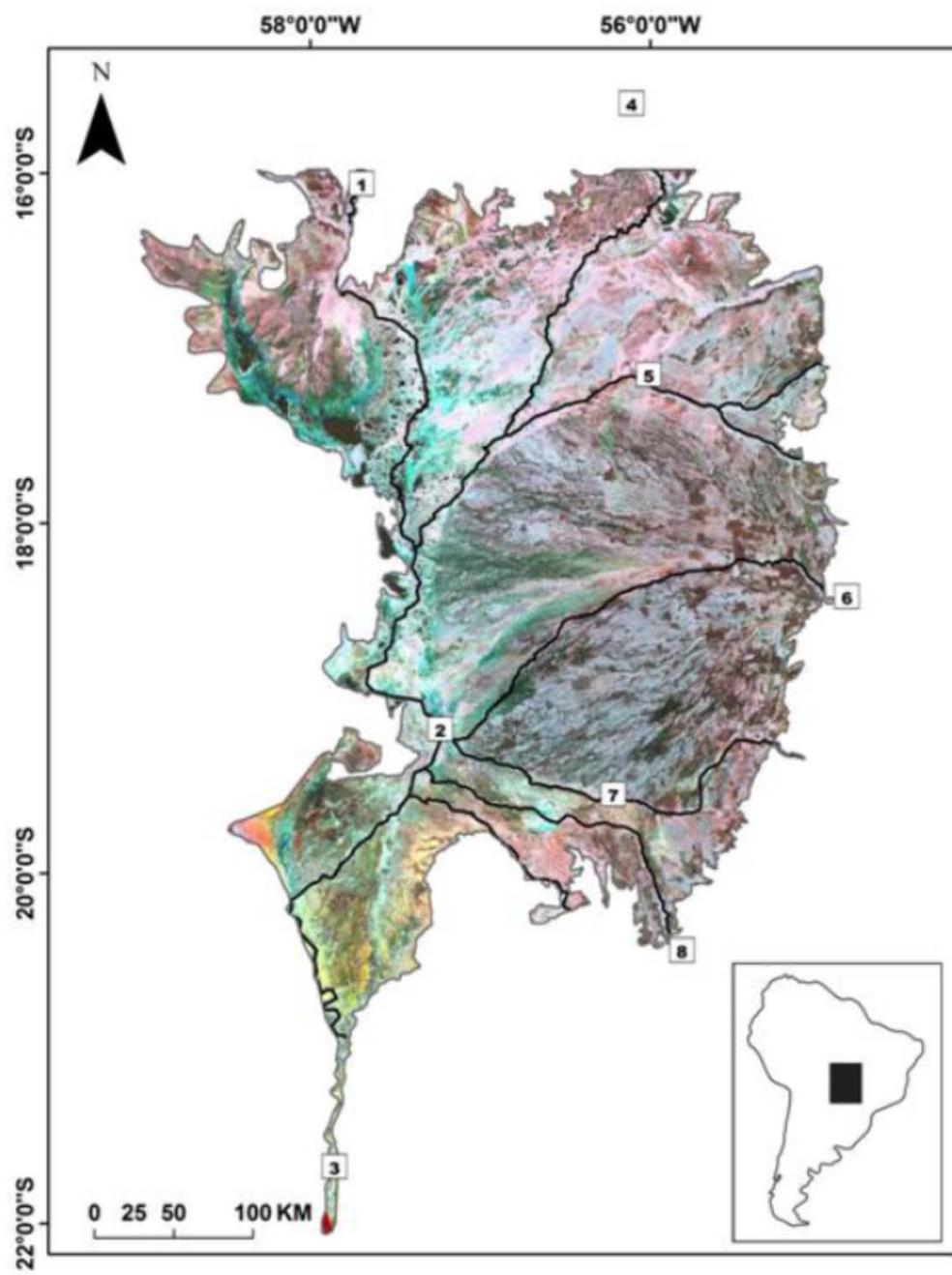
K&C: Environmental Conservation

*Maycira Costa
University of Victoria*

ALOS

K&C Initiative

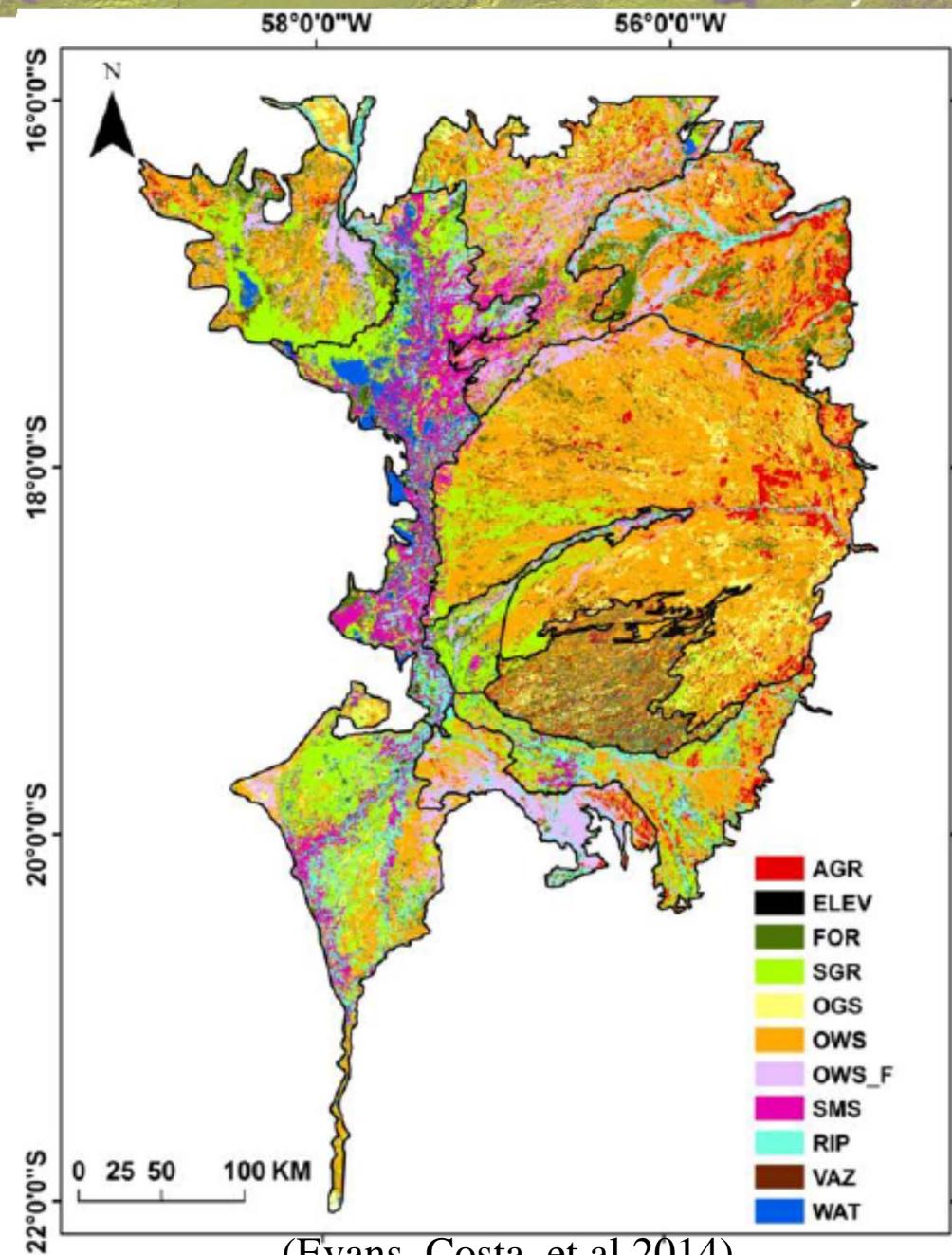
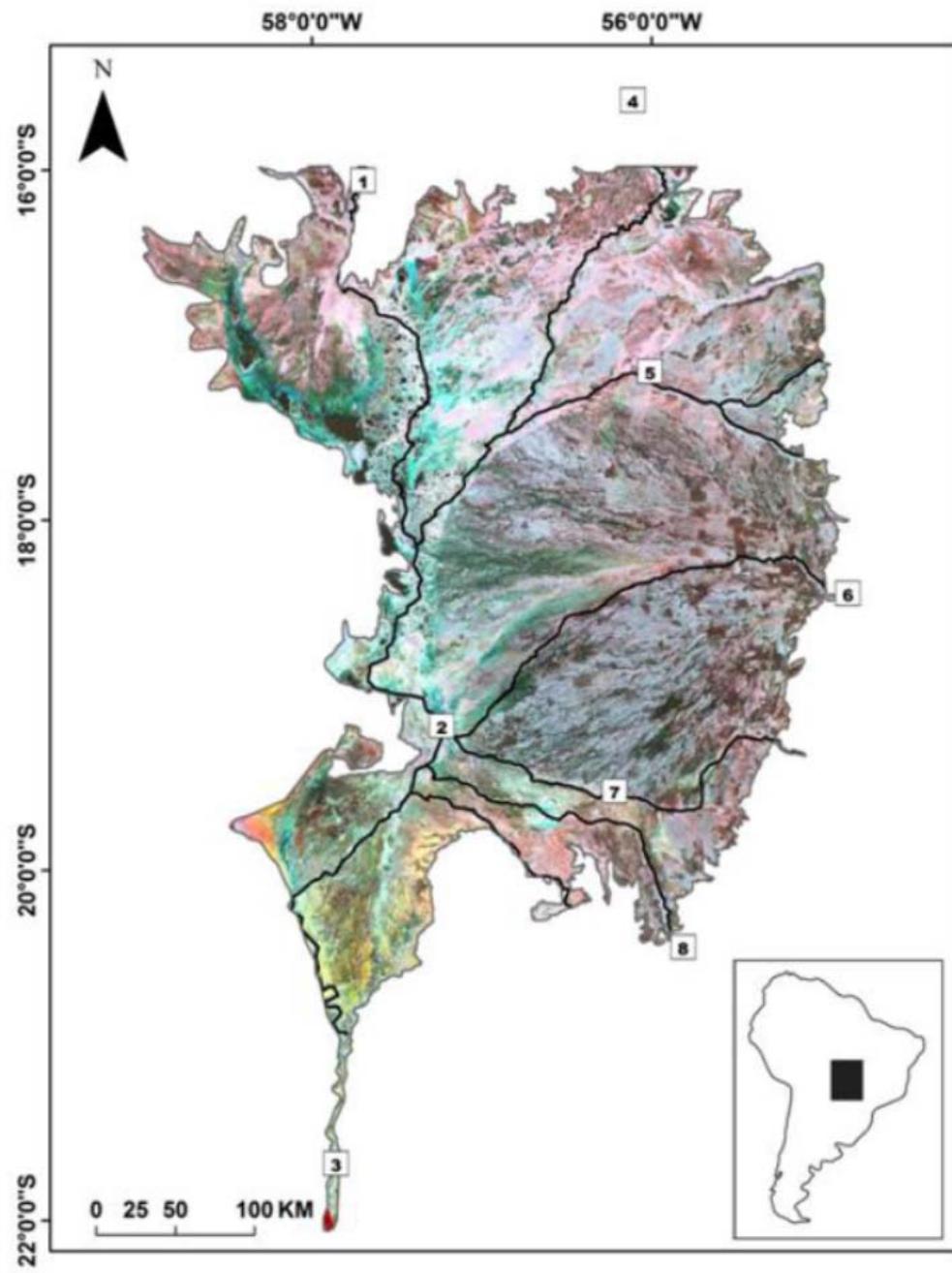
An international science collaboration led by JAXA



ALOS

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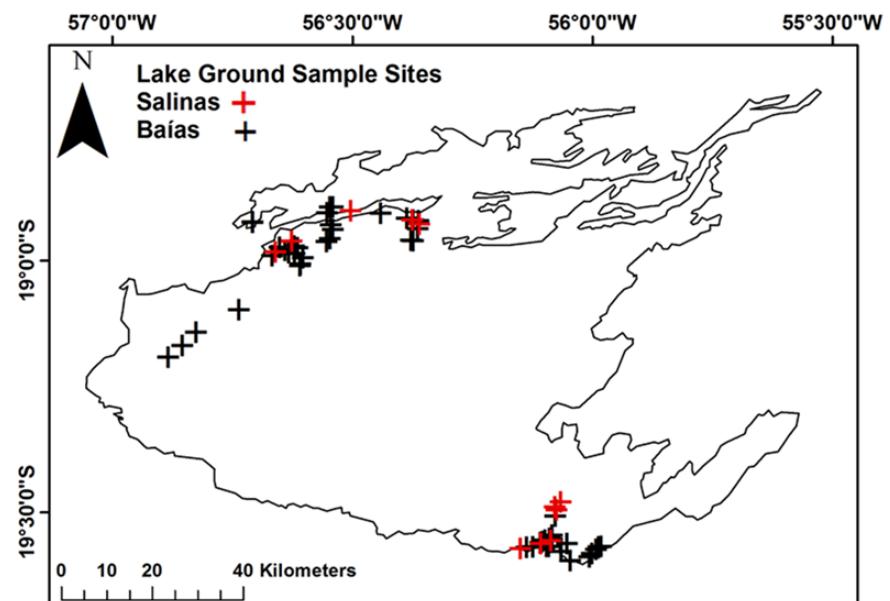
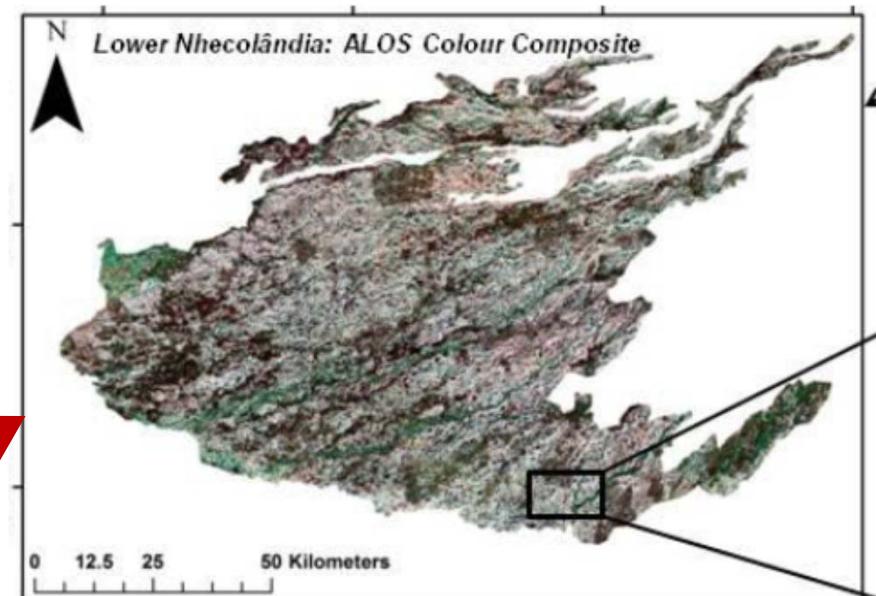
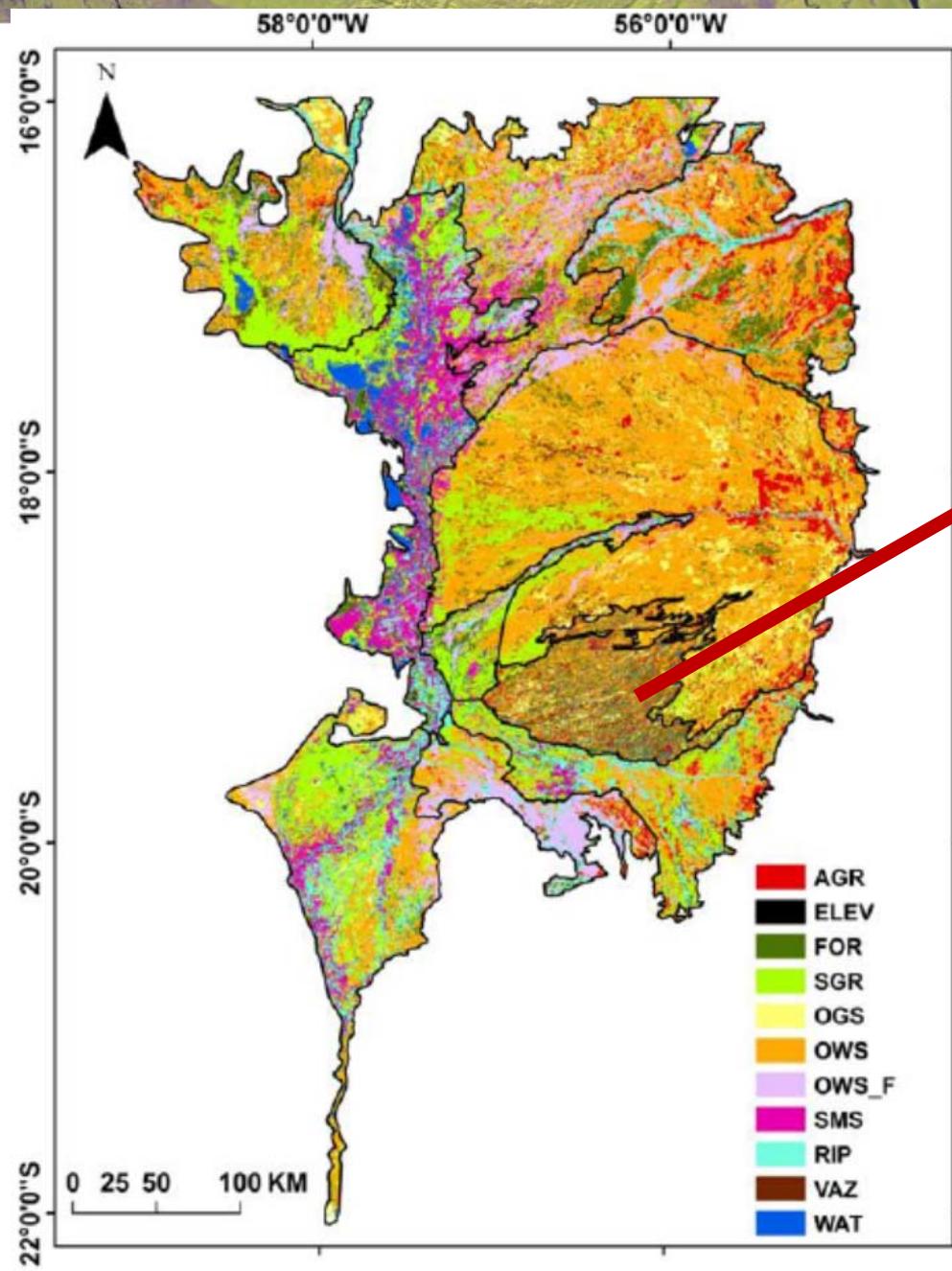


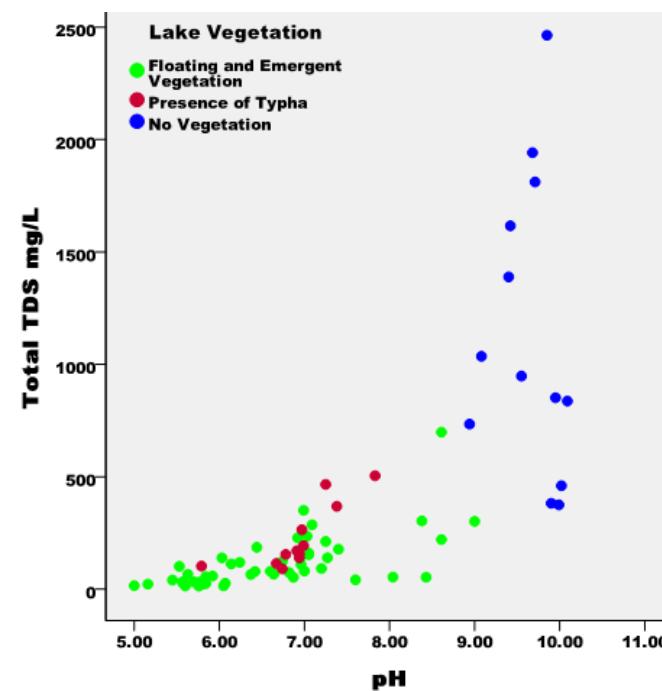
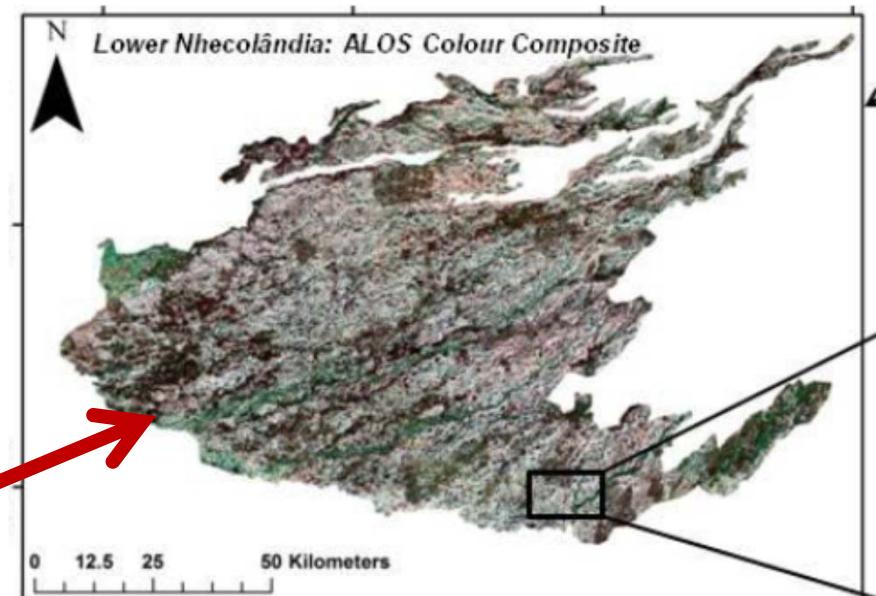
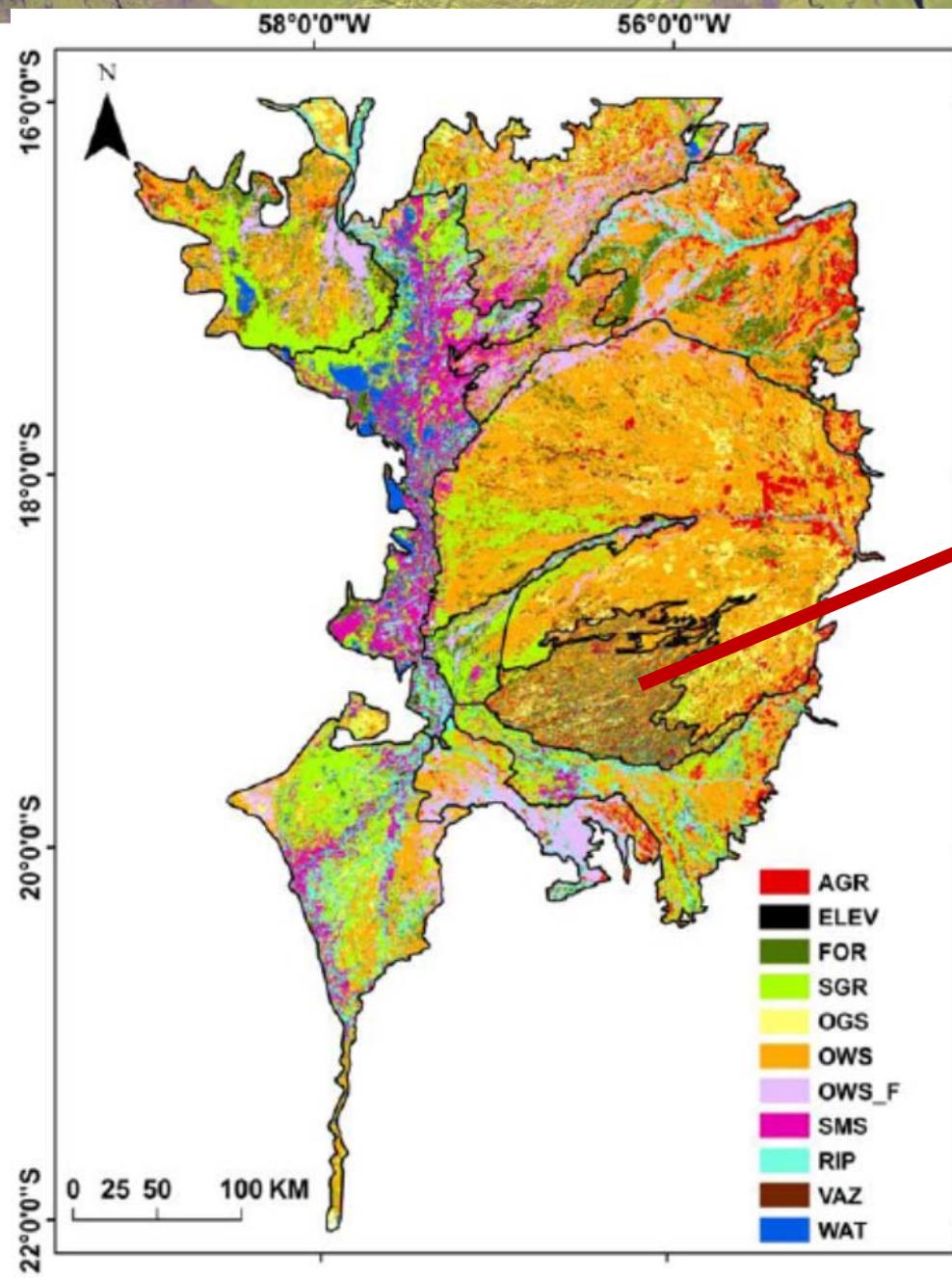
(Evans, Costa, et al 2014)

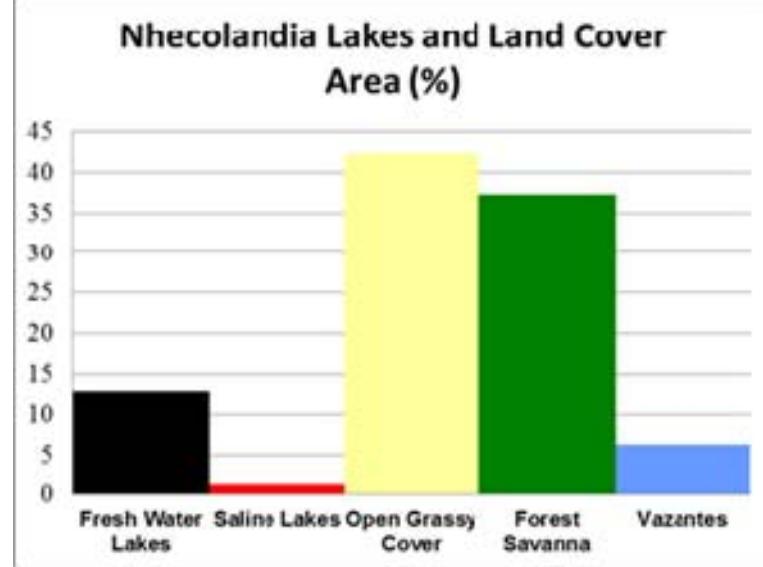
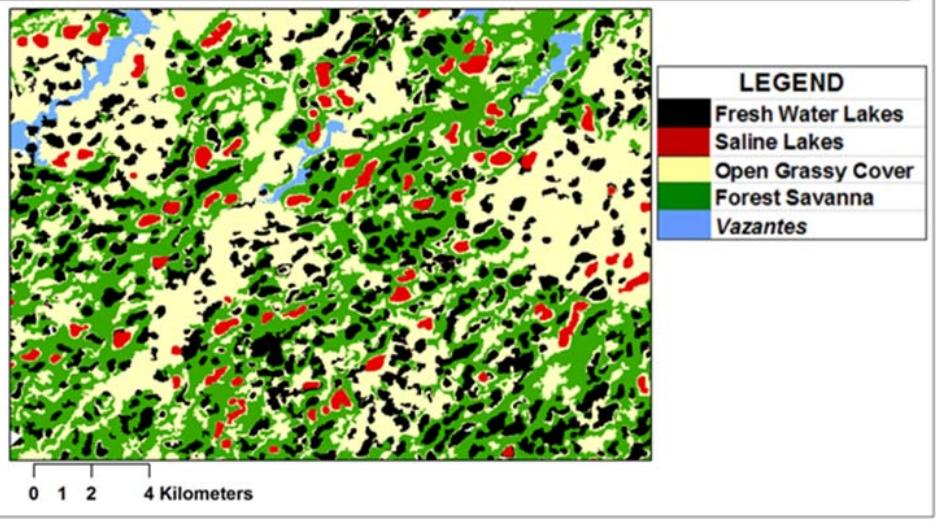
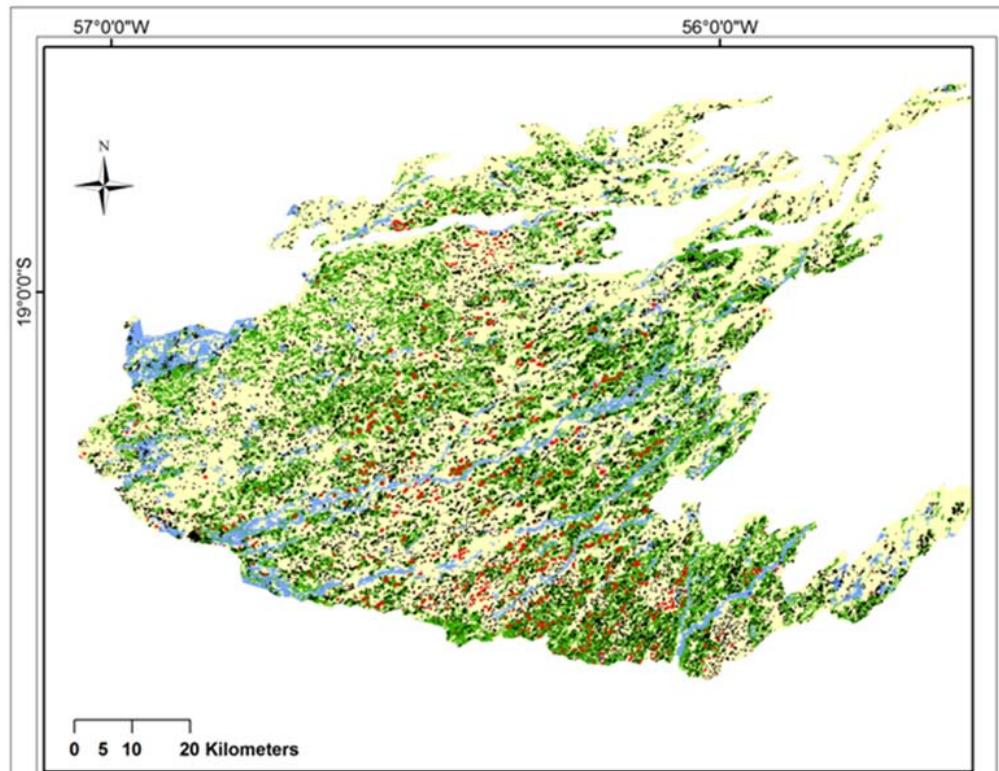
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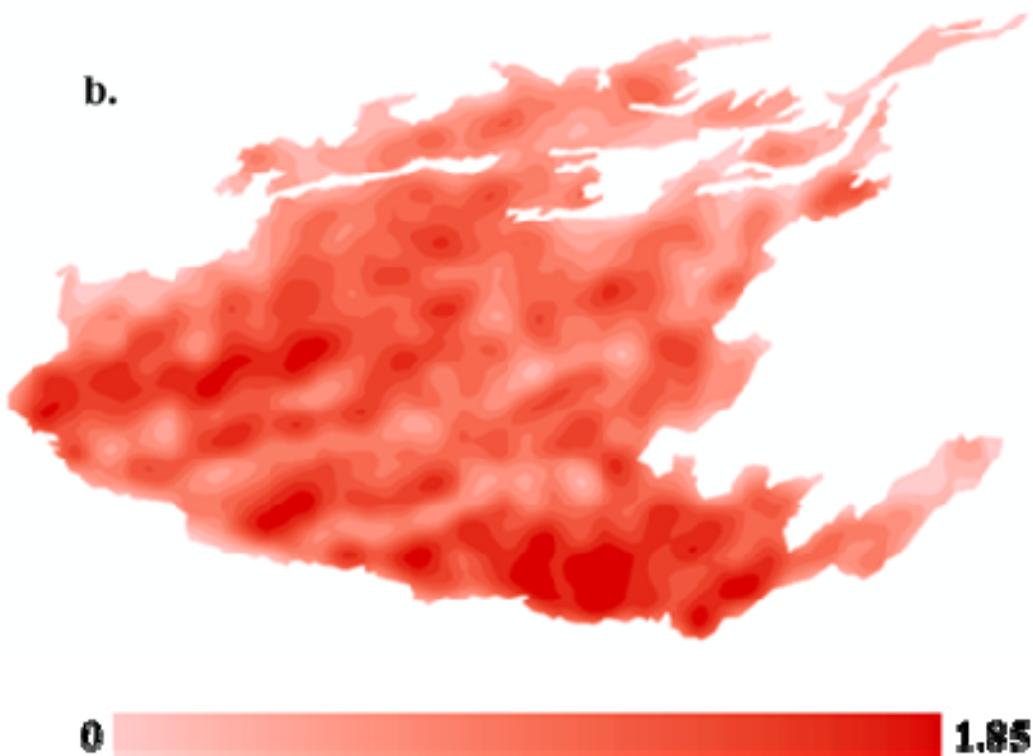
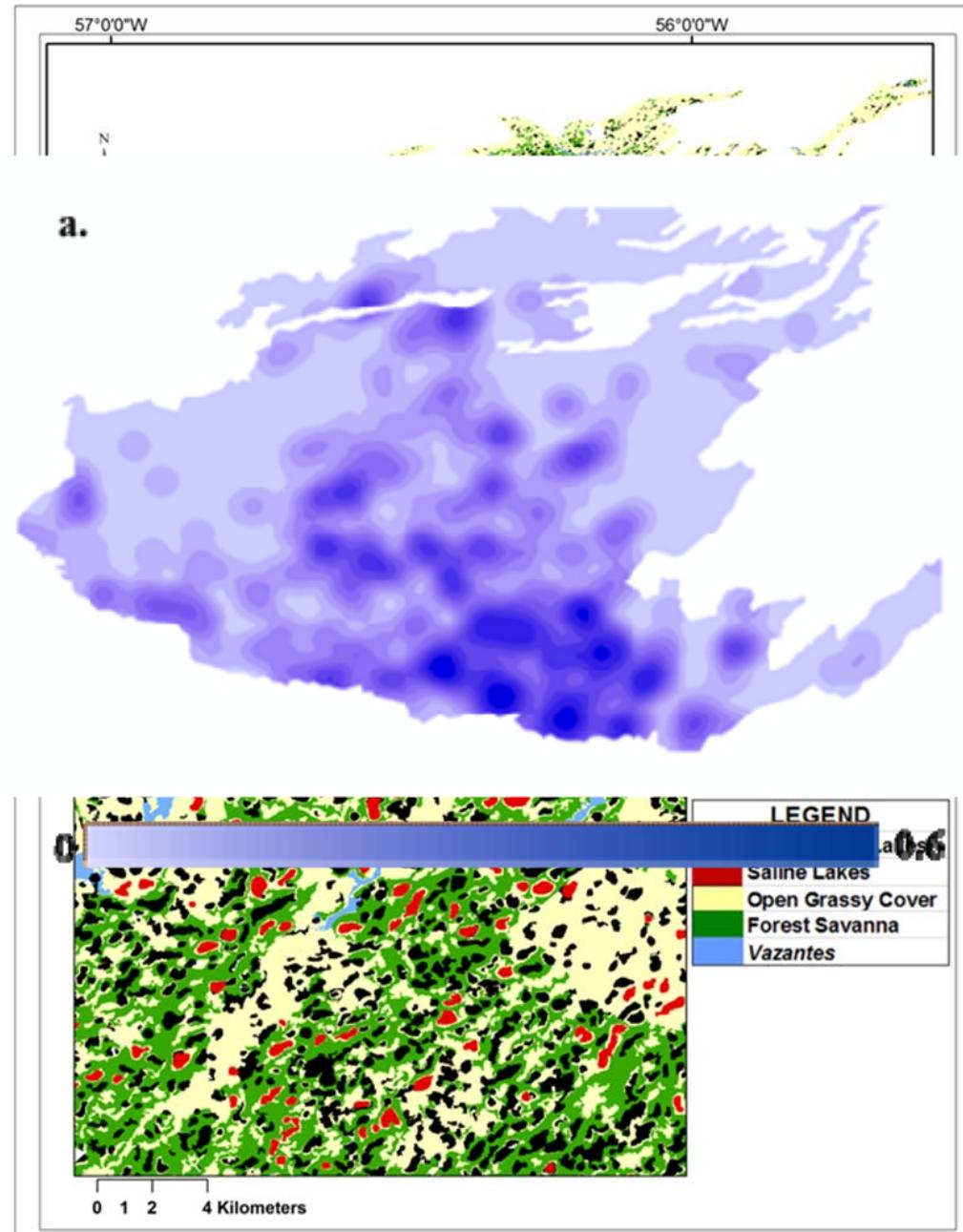
98% accuracy

8,214 Baias
637 Salinas

(Evans and Costa, 2013)
(Costa et al., 2015)

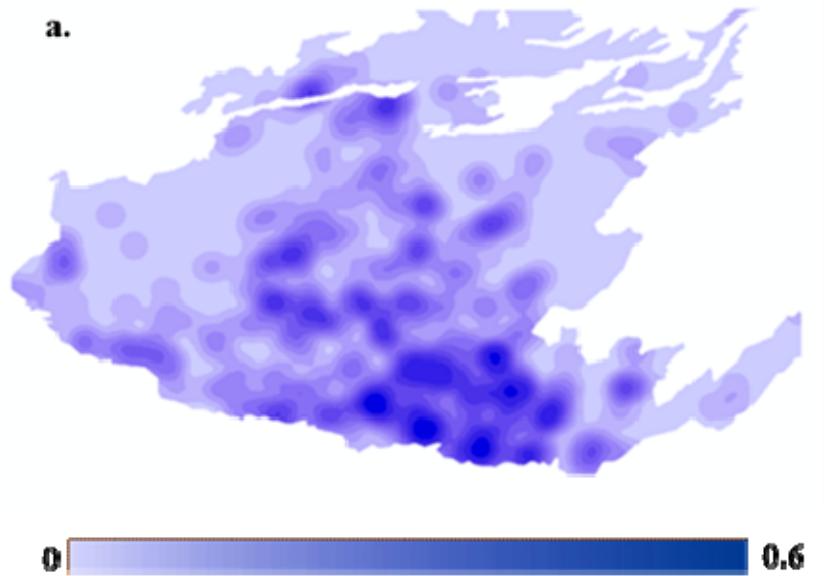
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Salinas: spatial analysis

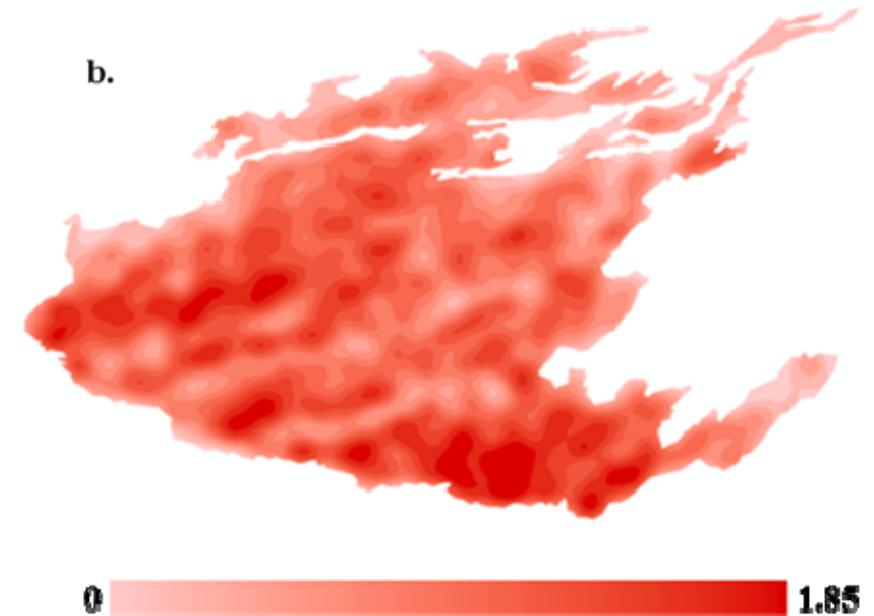
a.



- Clustered
- Not in flooding prone areas
- Surrounded by higher elevation (2-5m) with tall dense trees
- About 1.0m lower in elevation than baías

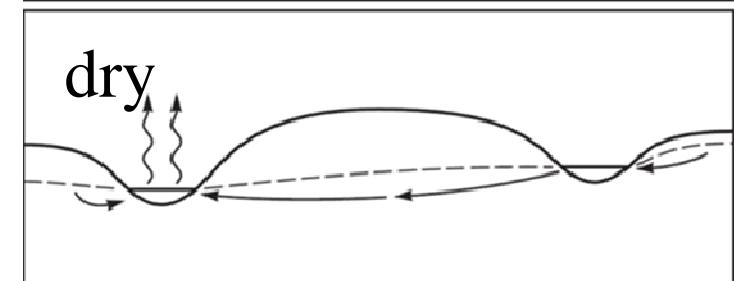
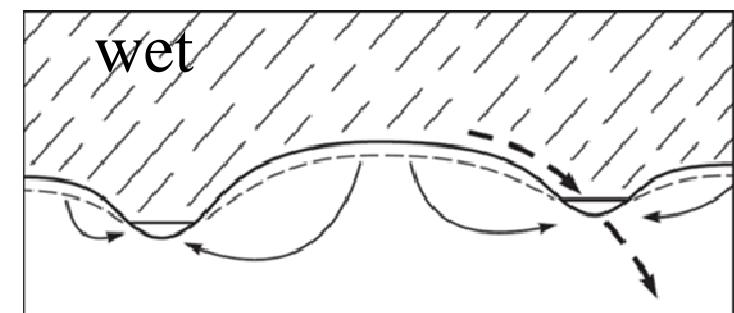
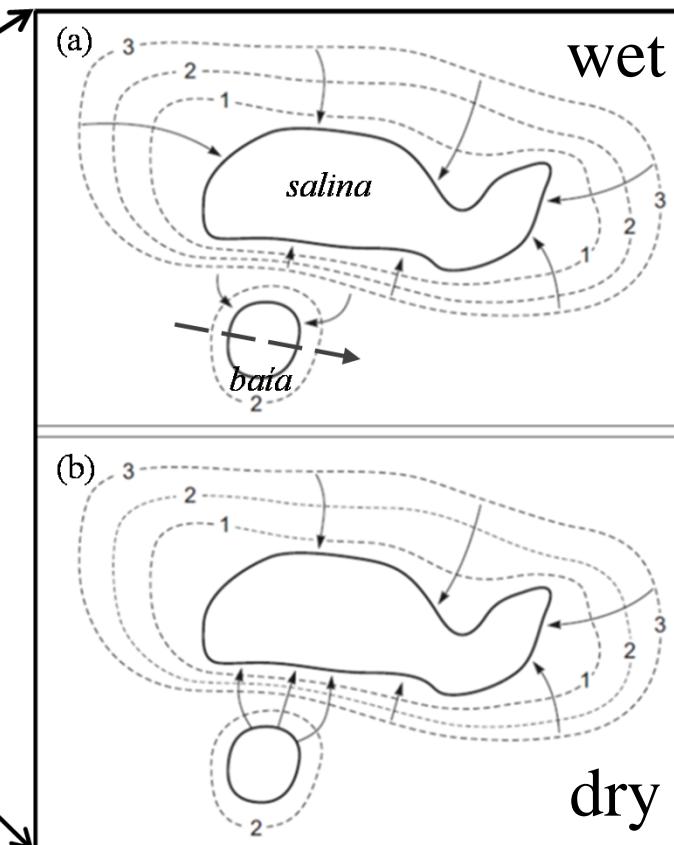
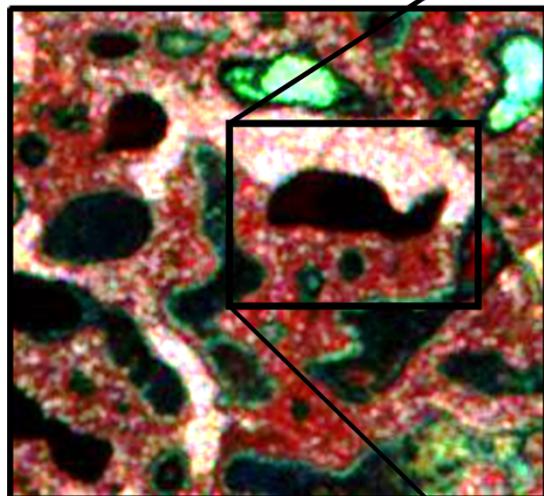


Baias: spatial analysis

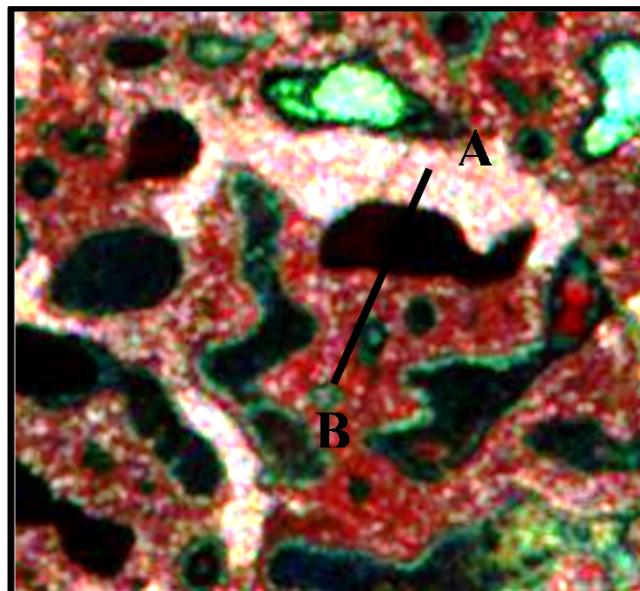


Broadly distributed
In flooding prone areas
Grasslands
Low topography gradients

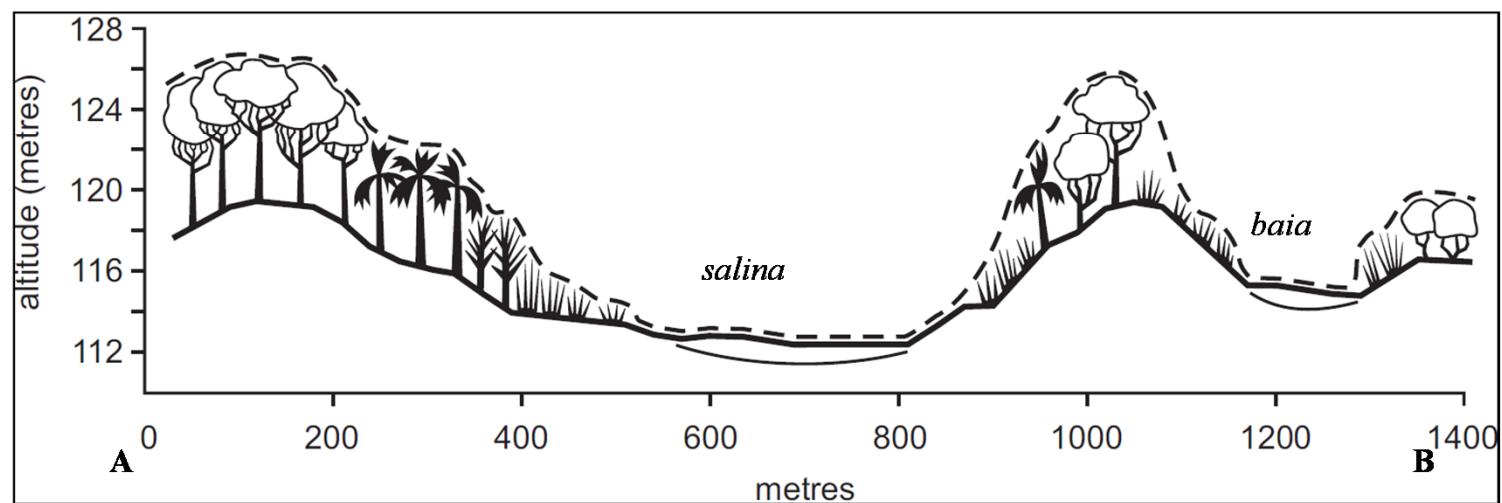
Salinas hydrodynamic: SAR and geochemistry



(a)



(b)



Salinas hydrodynamic: SAR and geochemistry

Flushing of salinas depends on:

- Extent of flooding
- Characteristic of the surrounding landscape
 - cattle paths through “cordilheiras”
 - Does it increase flushing?



“salitradas”

(Costa et al., 2015)

Defining spatial-temporal flooding dynamics and habitat connectivity in the Brazilian Pantanal wetland

K&C: Environmental Conservation, Climate Change

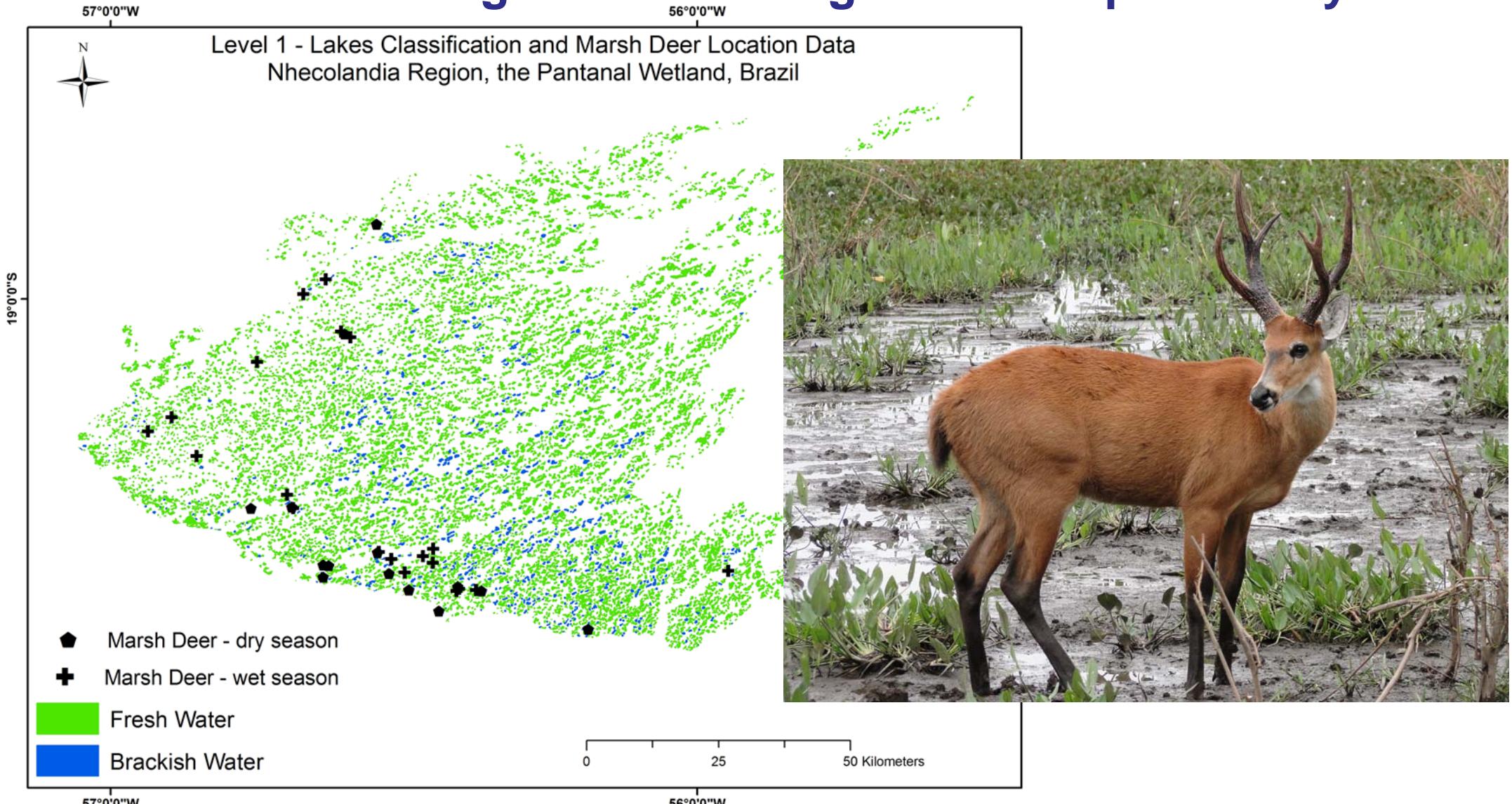
Maycira Costa (Uvic)

Walfredo Tomas (EMBRAPA)

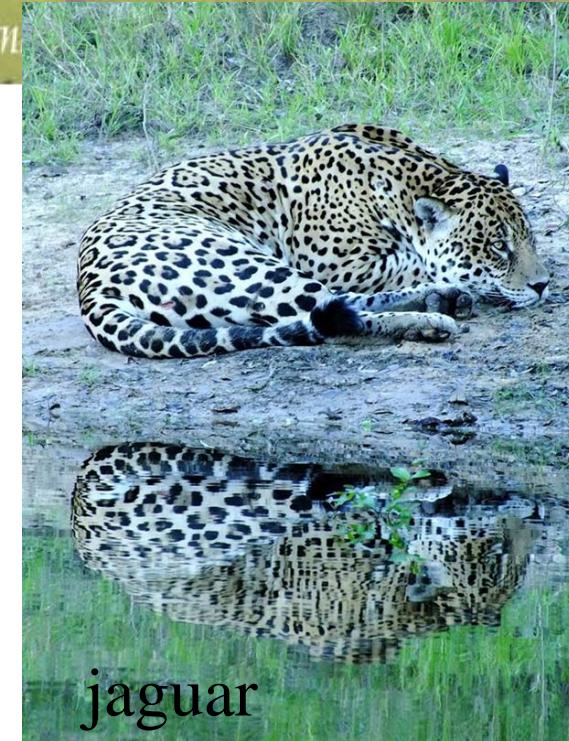
Edson Sano (IBAMA)

Daniel Freitas (IBAMA)

Results and significant findings thus far: pilot study



Species	Common name	Brazil	IUCN
<i>Blastocerus dichotomus</i>	Marsh deer	VU	VU
<i>Chrysocyon brachyurus</i>	Manned wolf	VU	NT
<i>Leopardus colocolo</i>	Pampas cat	VU	NT
<i>Leopardus pardalis</i>	Ocelot	VU	
<i>Leopardus guttulus</i>	Oncilla	EM	VU
<i>Leopardus wiedii</i>	Magay	VU	NT
<i>Lycalopex vetulus</i>	Hoary fox	VU	
<i>Myrmecophada tridactyla</i>	Giant anteater	VU	
<i>Ozotoceros bezoarticus</i>	Pampas deer	VU	NT
<i>Panthera onca</i>	Jaguar	VU	NT
<i>Priodontes maximus</i>	Giant armadillo	VU	VU
<i>Pteronura brasiliensis</i>	Giant otter	VU	EM
<i>Puma concolor</i>	Puma	VU	
<i>Puma yagouaroundi</i>	Weasel cat	VU	
<i>Sapajus cay</i>	Capuchin monkey	VU	
<i>Speothos venaticus</i>	Bush dog	VU	NT
<i>Tapirus terrestris</i>	Tapir	VU	VU
<i>Tayassu pecari</i>	White-lipped peccary	VU	VU
<i>Tolypeutes matacus</i>	Southern three-banded armadillo		NT



jaguar



Giant otter

(Tomas et al., 2015)

An intern

- Survey:
Marsh deer: airplane transects – Sept 2016
Hist: 8 years

Large mammals: car, boats, horse,
tracks and camera traps
(continues; Aug 2016)

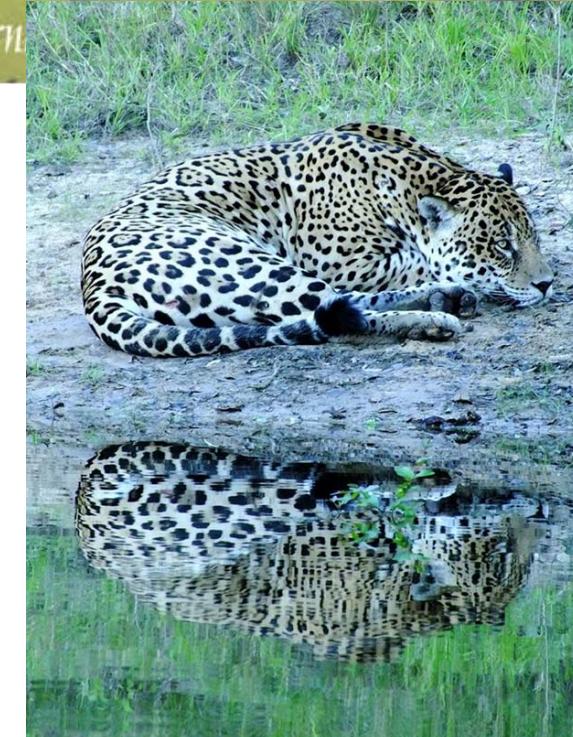
- SAR:
Data – 6 cover/year 10m HH+HV
9 cover/year 100m HH+HV

Habitat: vegetation, deforestation, lakes

Flooding duration/habitat

Large continues forested areas

River distance



(Tomas et al., 2015)

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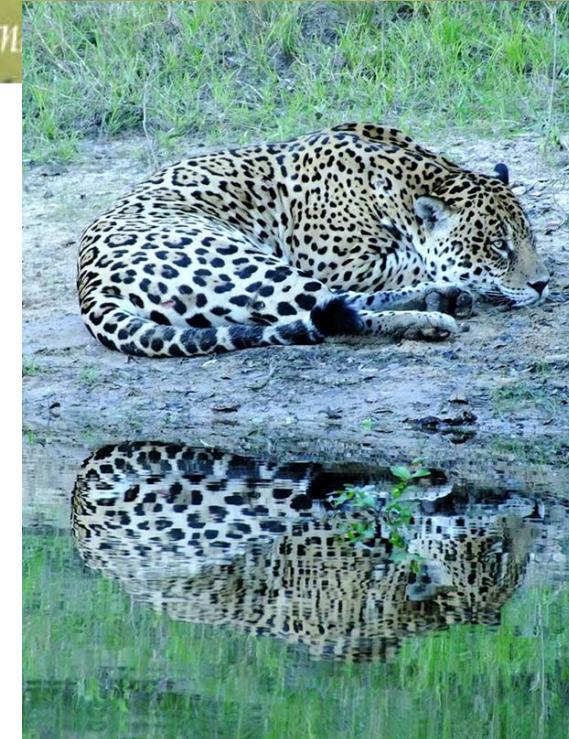
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Relevant regions for conservation
selectivity of habitats and resources availability



(Tomas et al., 2015)

Project milestones & Data sharing

- Milestone 1: Field work on August 2016: setting of the water level sensors and large mammals survey; September 2016 - marsh deer flight survey.**
- Milestone 2: Production of land cover and inundations maps for the entire Pantanal based on ALOS 2 and results from ALOS 1**

Deliverable products: Land cover and inundation spatial-temporal maps for the Pantanal – March 2018

- Milestone 3: Spatial analysis – Marxan - March 2018**
Publications