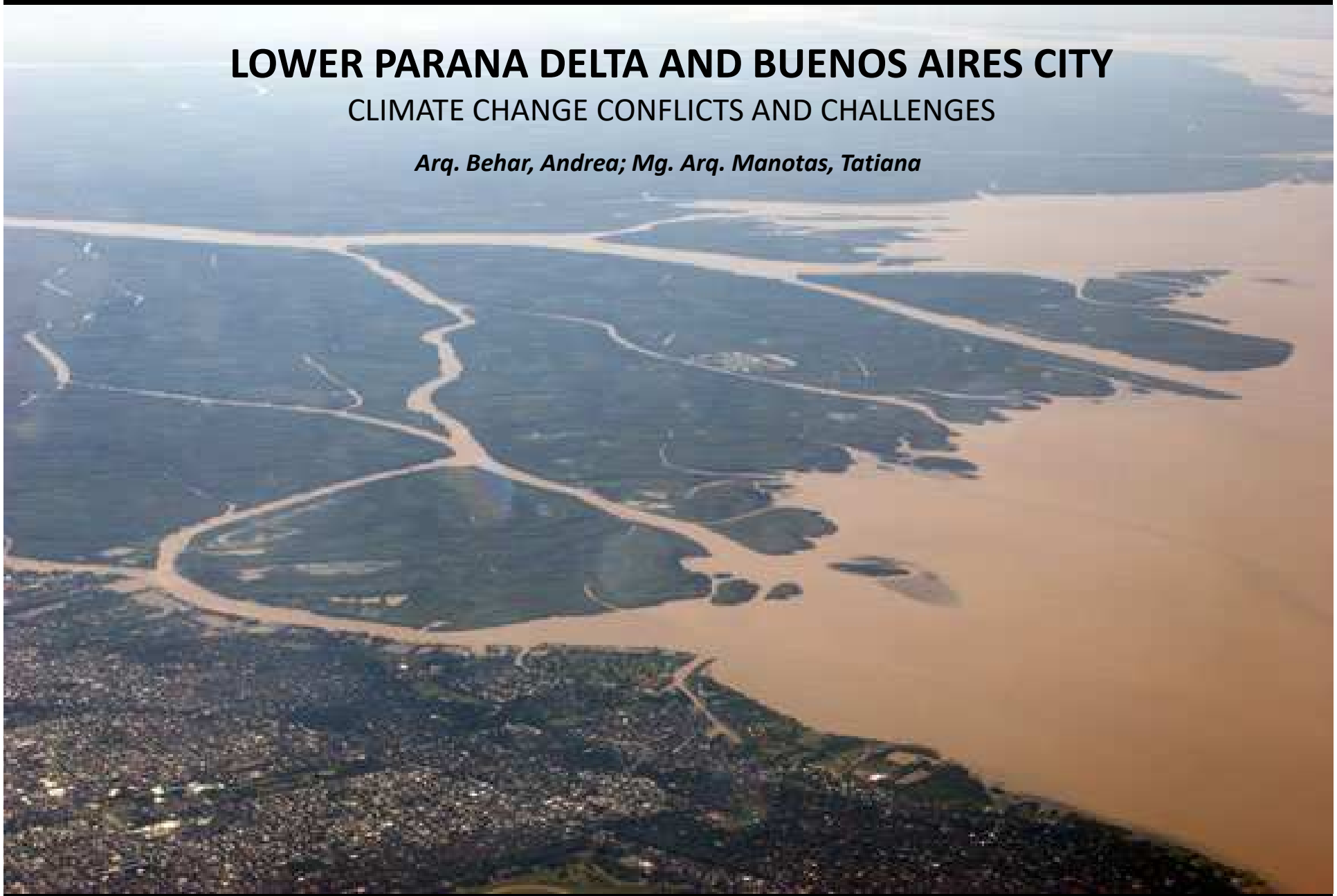
LOWER PARANA DELTA AND BUENOS AIRES CITY

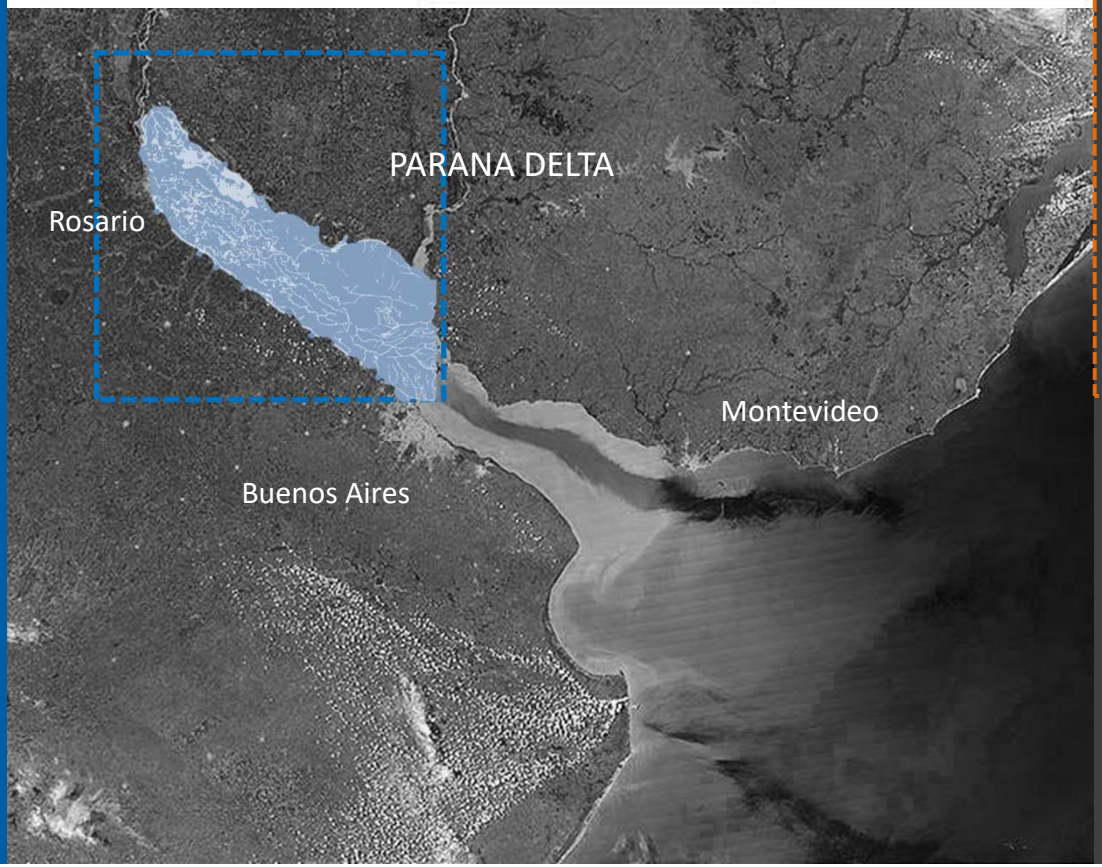
CLIMATE CHANGE CONFLICTS AND CHALLENGES

Arq. Behar, Andrea; Mg. Arq. Manotas, Tatiana



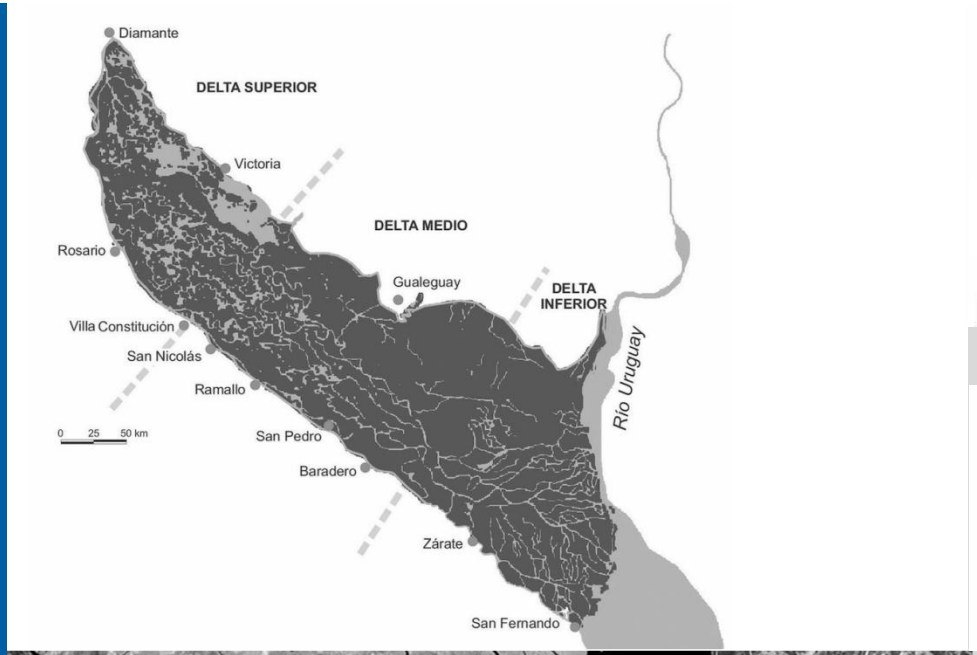
BUENOS AIRES UNIVERSITY
Instituto Superior de Urbanismo, Territorio y Ambiente

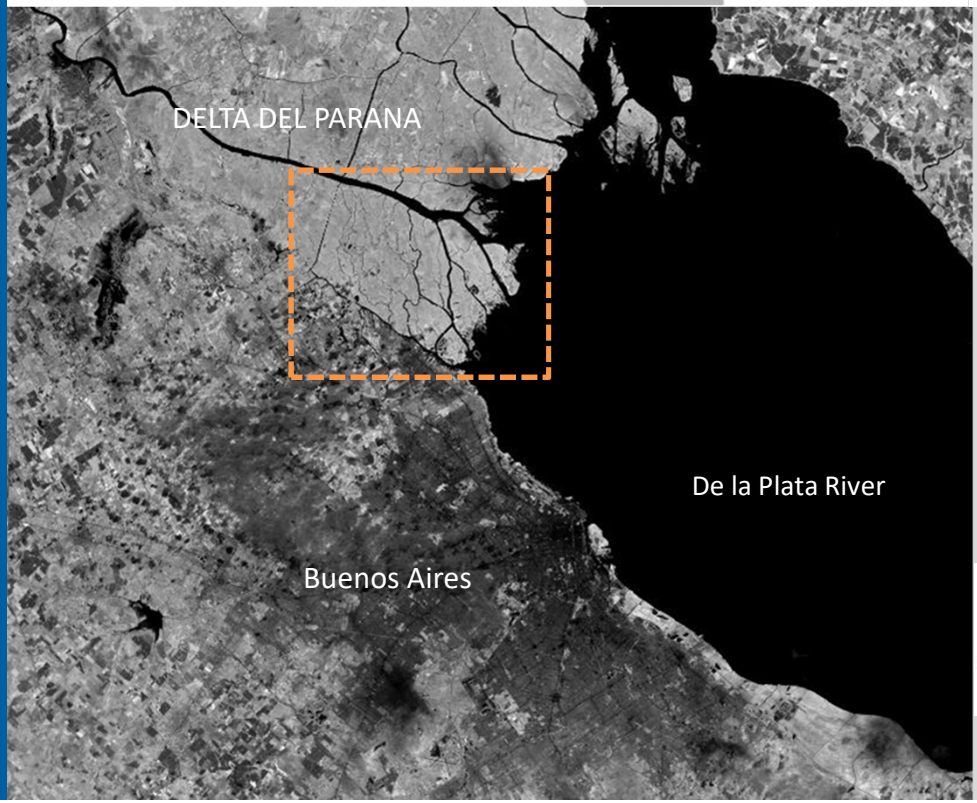
Paraná Delta and Rio de la Plata Estuarine system



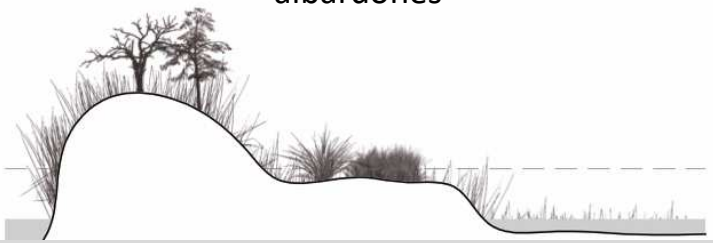
- Continent: South America
- Parana River length: 2570 km
- Delta area : 15000 km2
- Major Cities along the Parana Delta and Rio de la Plata: Buenos Aires, Rosario
- Sediment transportation: 1.600.000 ton/year

Lower Paraná Delta





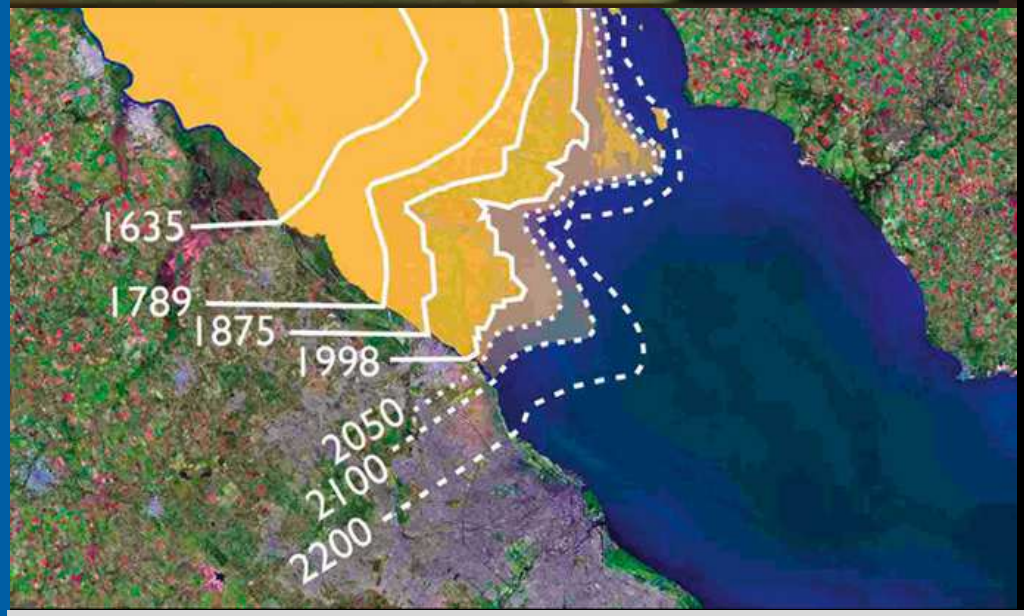
Landscape Patterns: small meadow islands of "albardones"



The Parana River Delta is considered both, a complex estuary delta and a wetland, influenced by fresh water tides.

forests, meadows and meanders

Sediment over the years



The high sediment transportation rate of the Parana River turns the delta into a changing territory. Its front is expanding towards the Rio de la Plata and it is expected to reach Buenos Aires city's coast in around 110 years.

Sediment transportation rate of the Parana River/ **65m per year**

Lower Paraná Delta, Tigre

Lower Paraná DELTA, TIGRE

Tourism and leisure activities are relevant for the Delta, in particular in the Lower Paraná where connectivity and proximity with the metropoli attracts day visitors, foreigners and local residents.

Delta Island vs. Continent

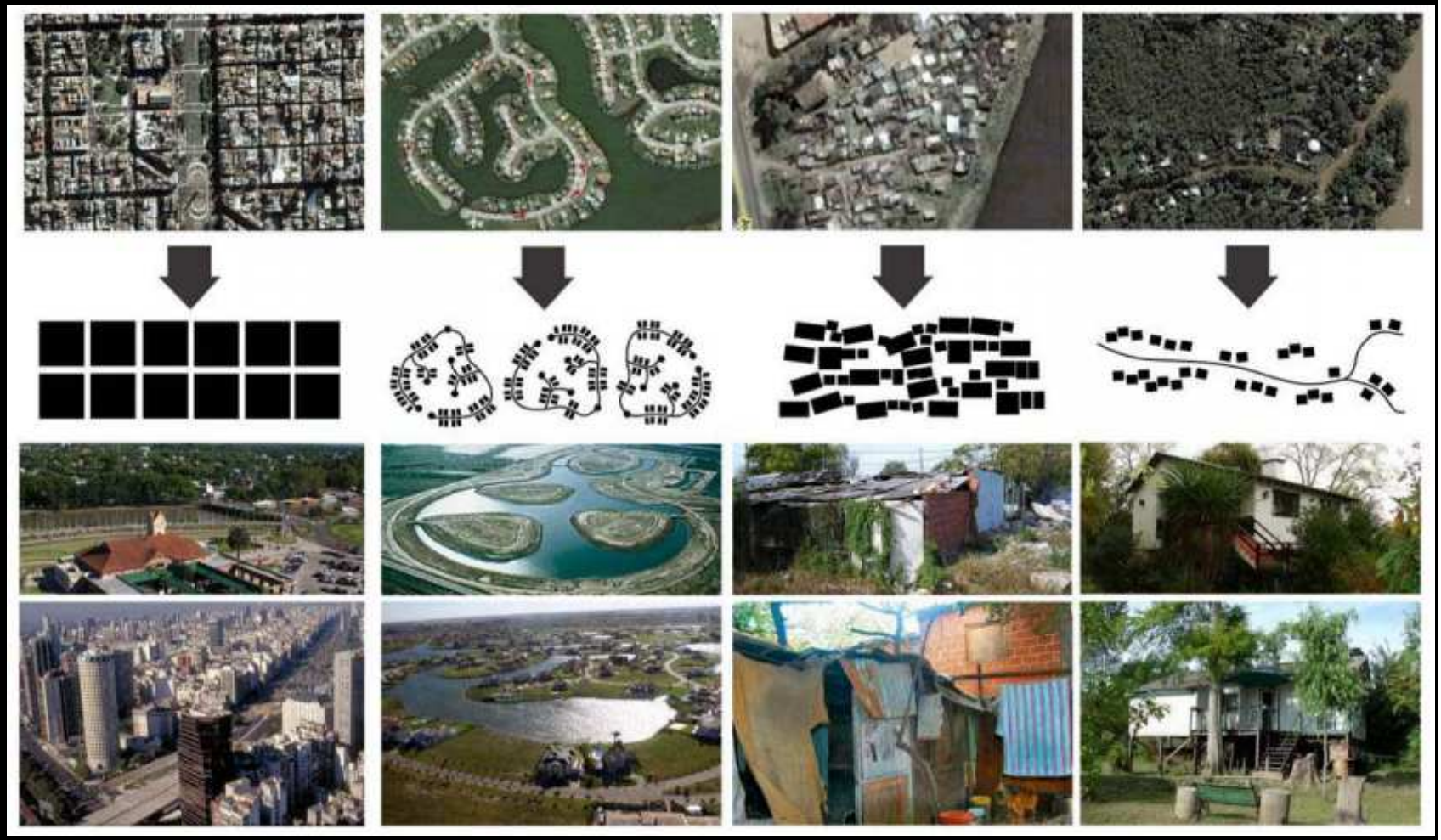
Adapted housing

Flooding as a natural phenomenon

Modified wetland

Infrastructure and modified land

Urban Patterns



Source: Zagare (2011)

Buenos Aires City- Metropolitan Area

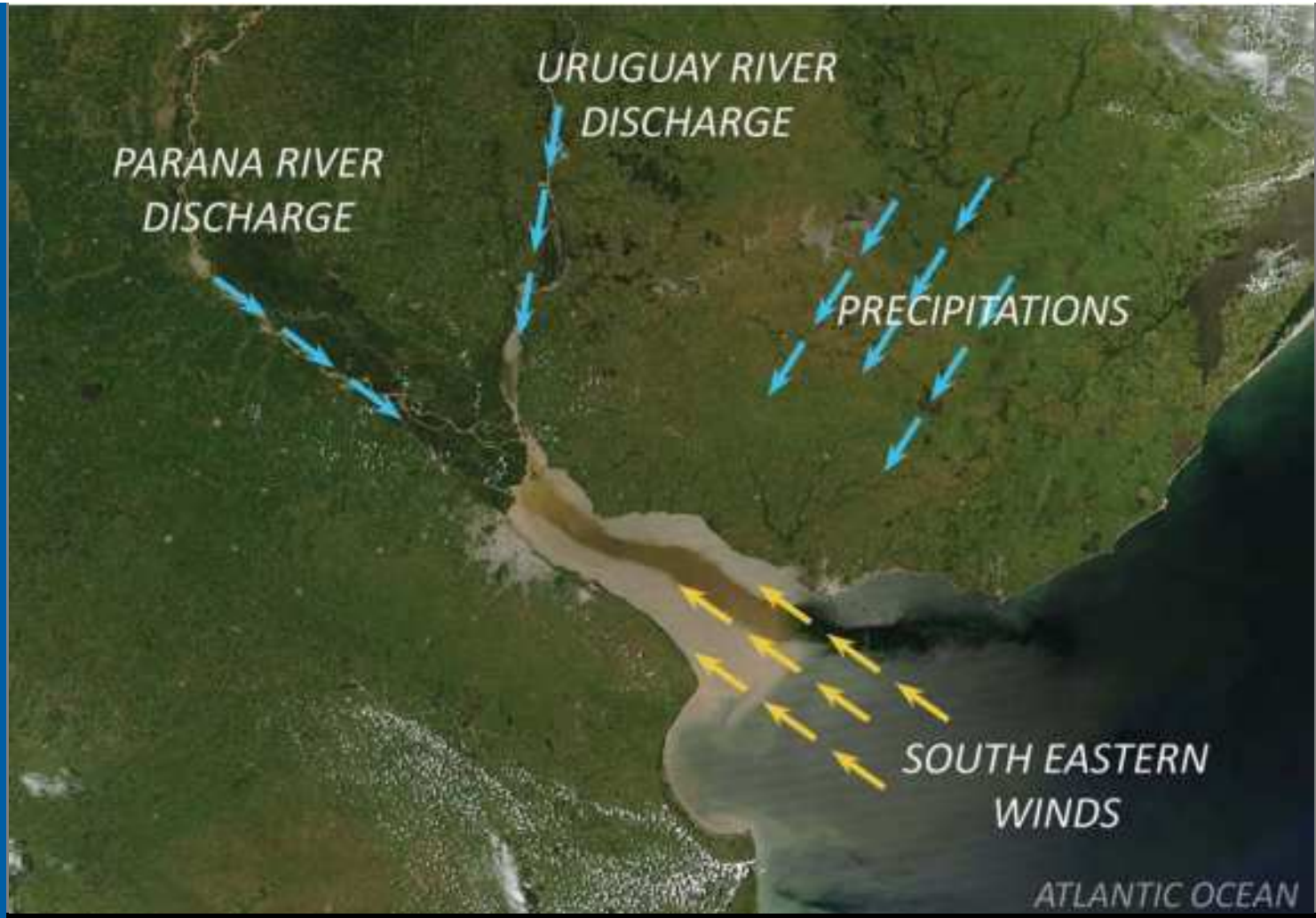
Urban pressures of the BAMA

Lower Delta with over 5.300.000 visitors in 2016

- Connected by a highway (route 9 and Tigre Access)
- 50 minutes by train (Retiro- Tigre center)
- Fluvial public and private transportation available.

Lower Paraná Delta faces spatial pressures of the most important metropolitan region of the country, the Buenos Aires Metropolitan Area (BAMA) – with a population of around 14 million inhabitants.

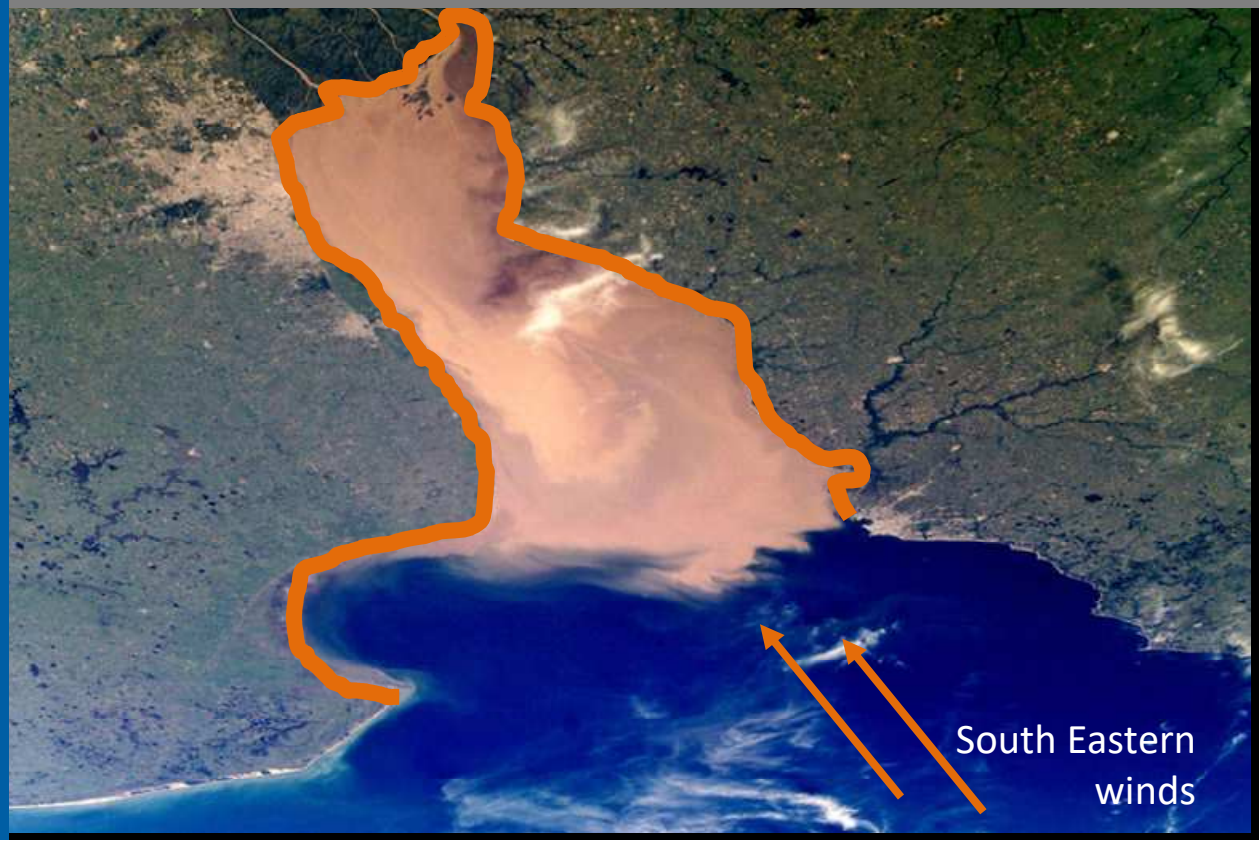
Climatic Trends- Buenos Aires and Lower Delta



Climate variability taking place on the Delta has increase due to **Climate Change**. This variability is related to longer periods of droughts and floods, caused by the rise and fall of the rivers´ water level and changes in precipitations.

South eastern winds- SUDESTADAS

Waves caused by South Eastern winds “SUDESTADAS”



The presence of low-pressure center creates an increase in south-eastern winds, which could reach a speed of 60 to 90 kilometres

Climatic Trends- Buenos Aires and Lower Delta

Increase of frequency and intensity of Extreme Hydrological Events (Sudestadas and El niño-ENSO).

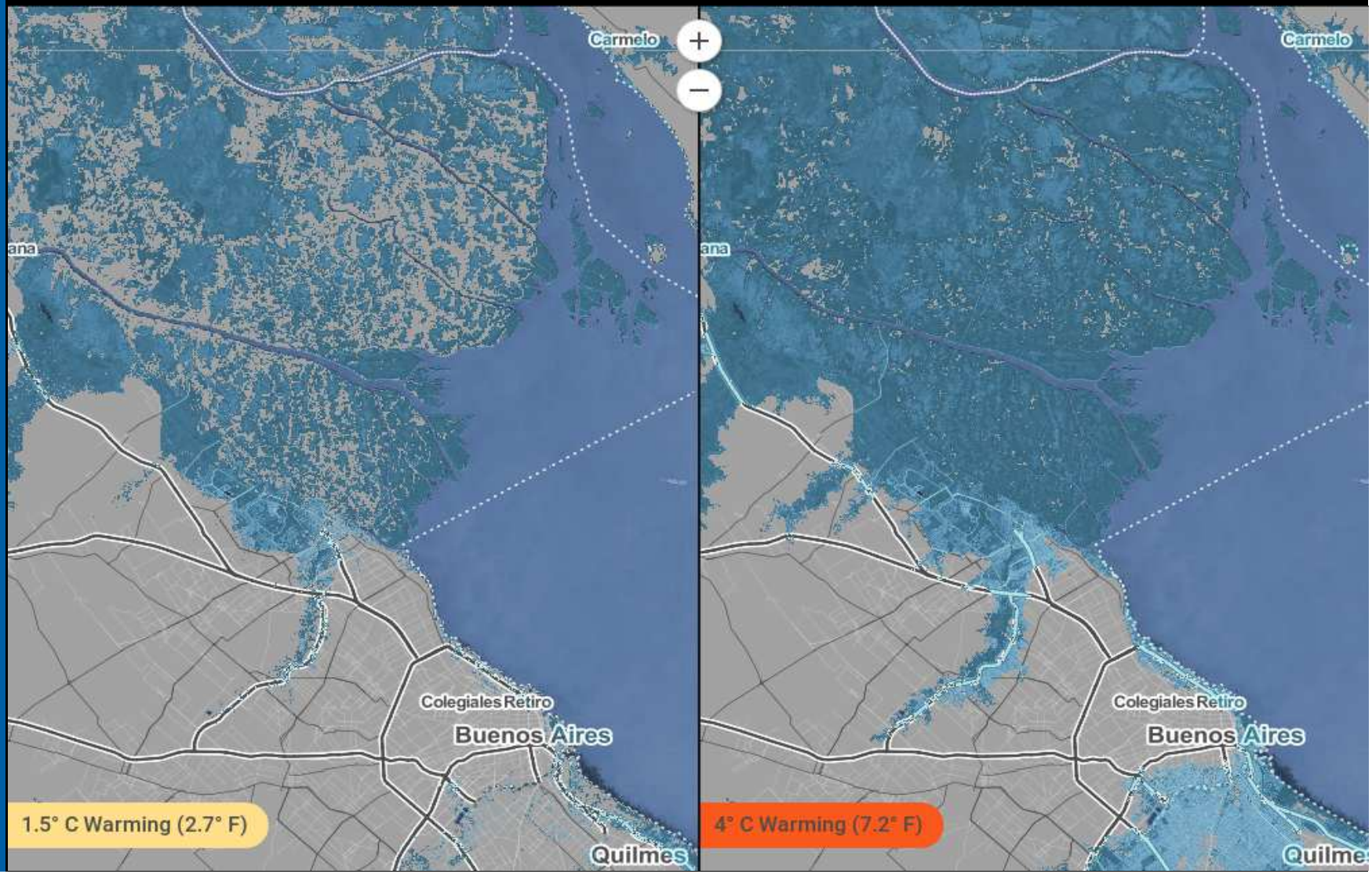
An increase of precipitations. In La Plata Basin, precipitation increased 16% comparing he periods of 1951-1970 and 1980-1999.

Climate Trends- Buenos Aires and Lower Delta

An increase of river discharges -from every one percent change in precipitations there is a two percent change in streamflow for the area.

Climate Trends- Buenos Aires and Lower Delta

A possible temperature raise from 0.4°C to 1.8°C by in the next ten years, and up to 7.5°C in the next eighty years (Magrin et al., 2007, IPCC).

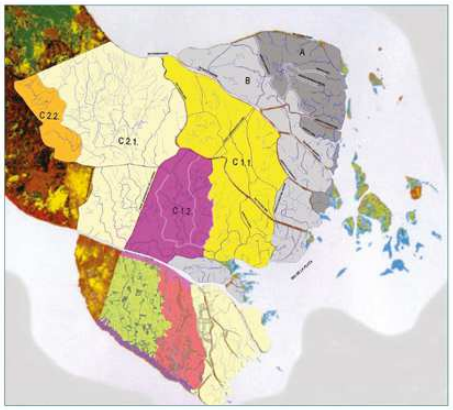


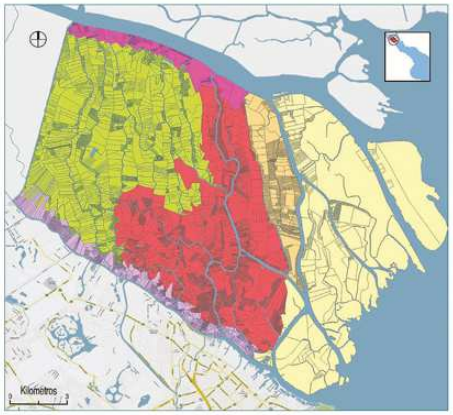
Projects and Initiatives

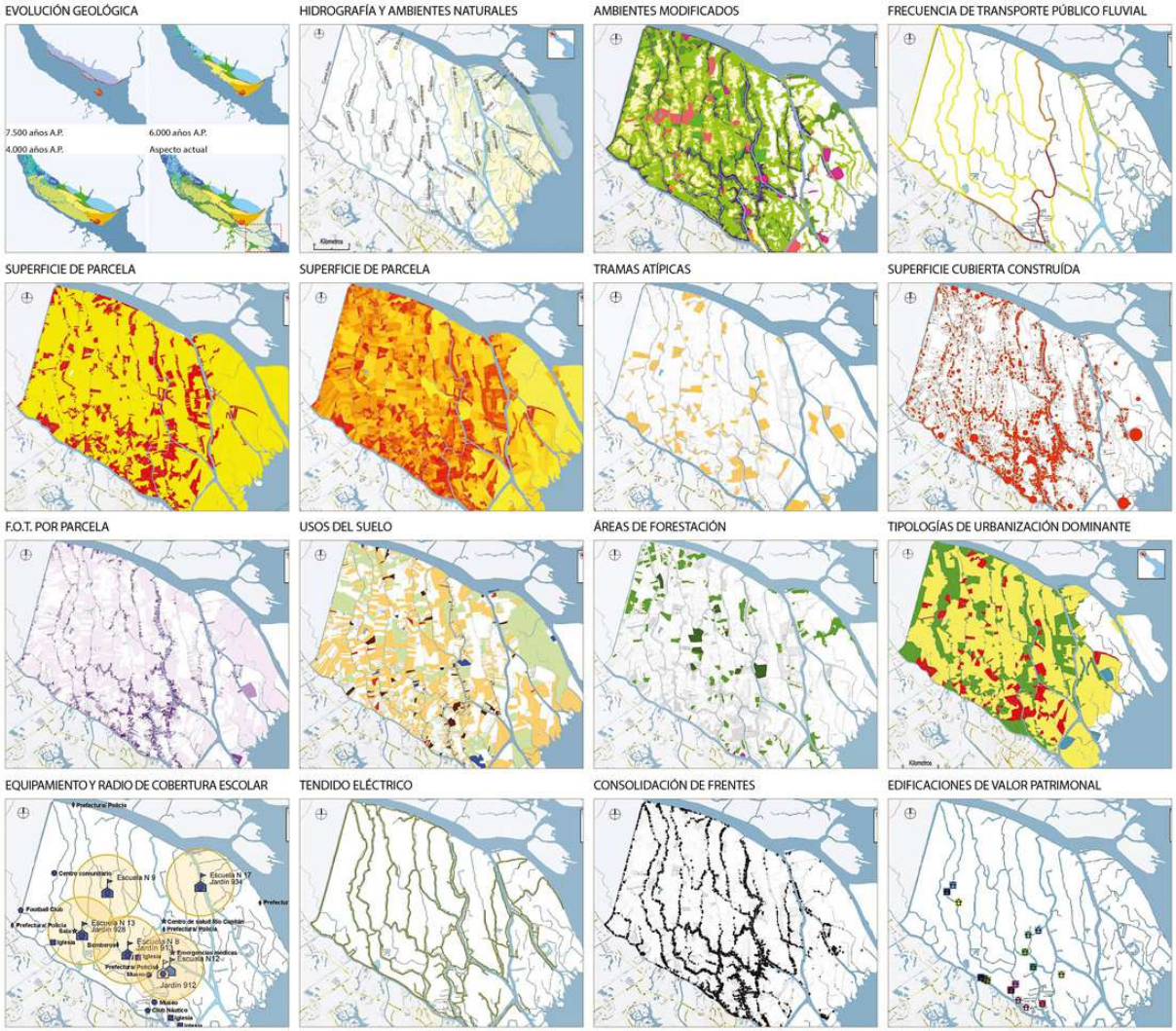
"Improving Resilience to Climate Change in the Luján River Basin: Citizen Participation to Solve the Flood Problem"

Project: Integrated Management Plan for the Lujan River Basin

Projects and Initiatives







Management plan for Lower Parana Delta- Tigre

The plan describes comprehensive policies, goals, strategies and recommendations for the territory.

Grazie