

Pressures and Challenges of the Paraná Delta in the Face of Climate Change

Team

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Parque Nacional Ciervo de los Pantanos National Park (APN 2021).



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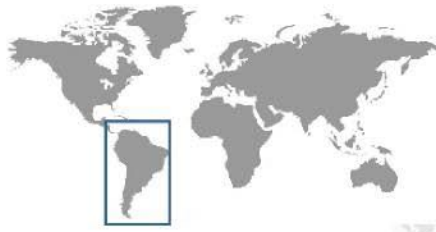


deltamed

Paraná River

3rd largest river in America

Paraná river catchment area represents 50% of the entire La Plata basin (1.500.000 Km²)



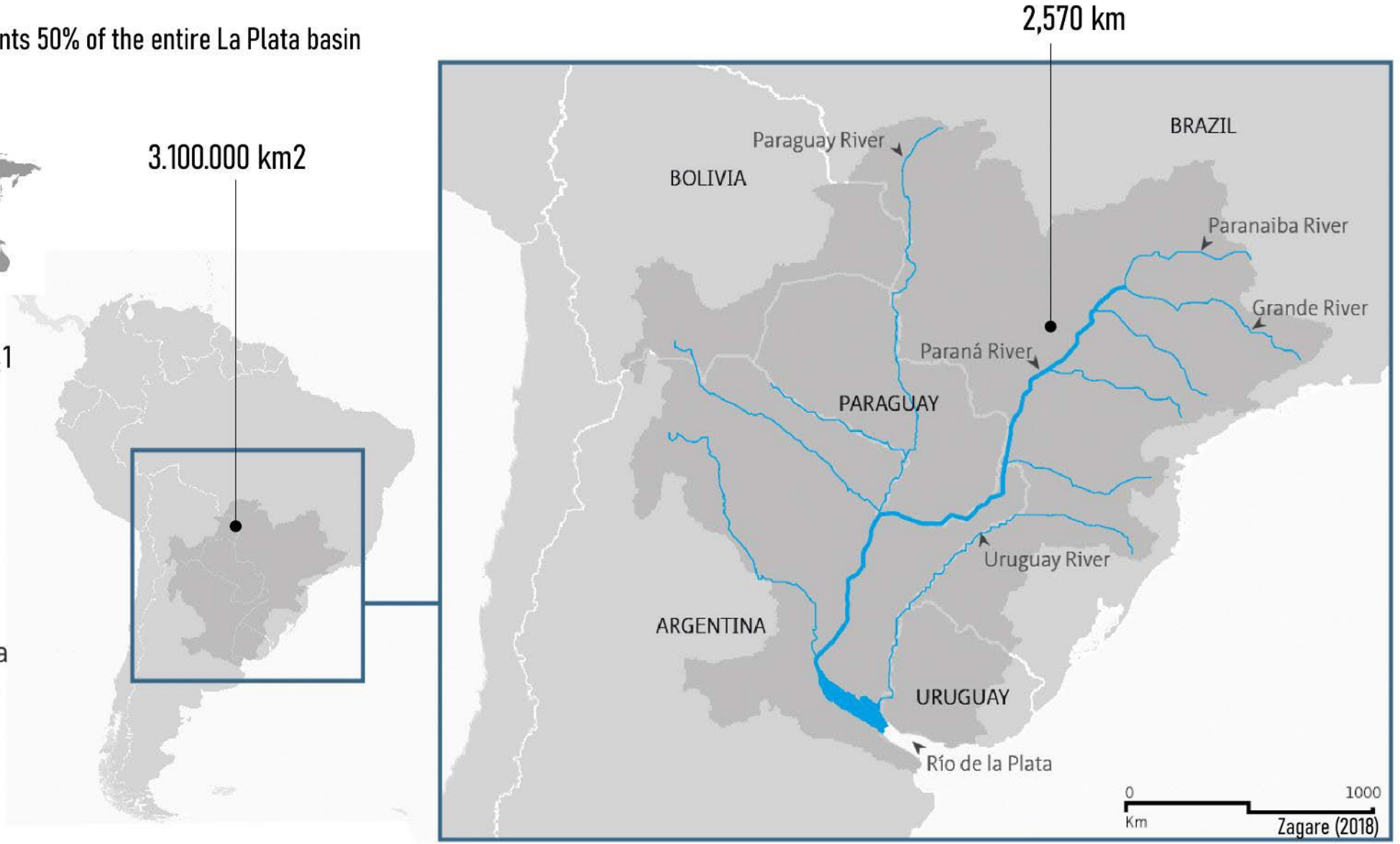
3.100.000 km²

Medium discharge: 18.000 m³/sec¹

Sediment: 160 mt/year²
(28% clay, 56% mud, 16% sand)

- South America
- La Plata Basin
- Rivers
- Paraná River
- Paraná Delta

1. Pittau et al. (2004).
2. Sarubbi et al. (2006).

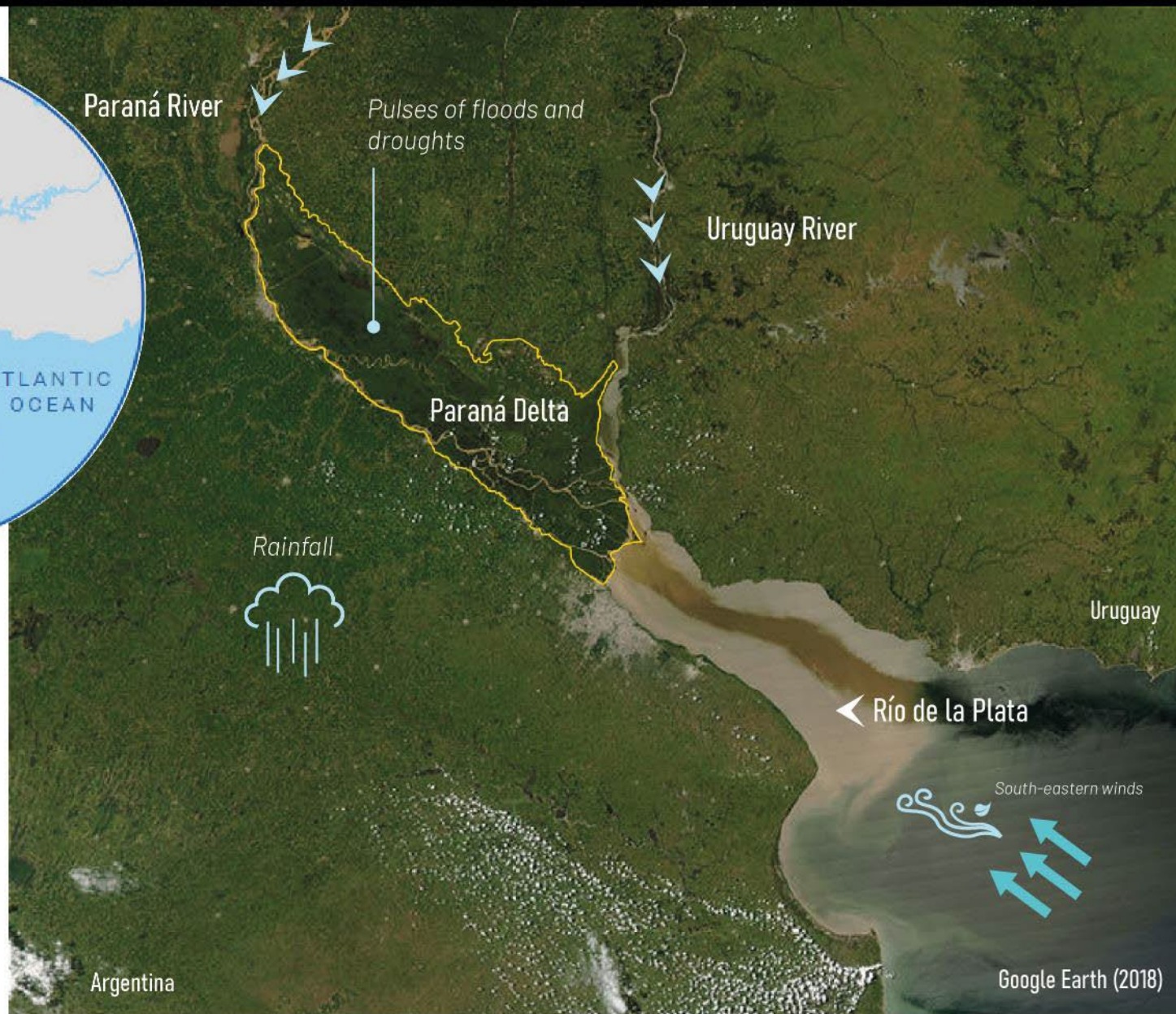


Paraná Delta

Location

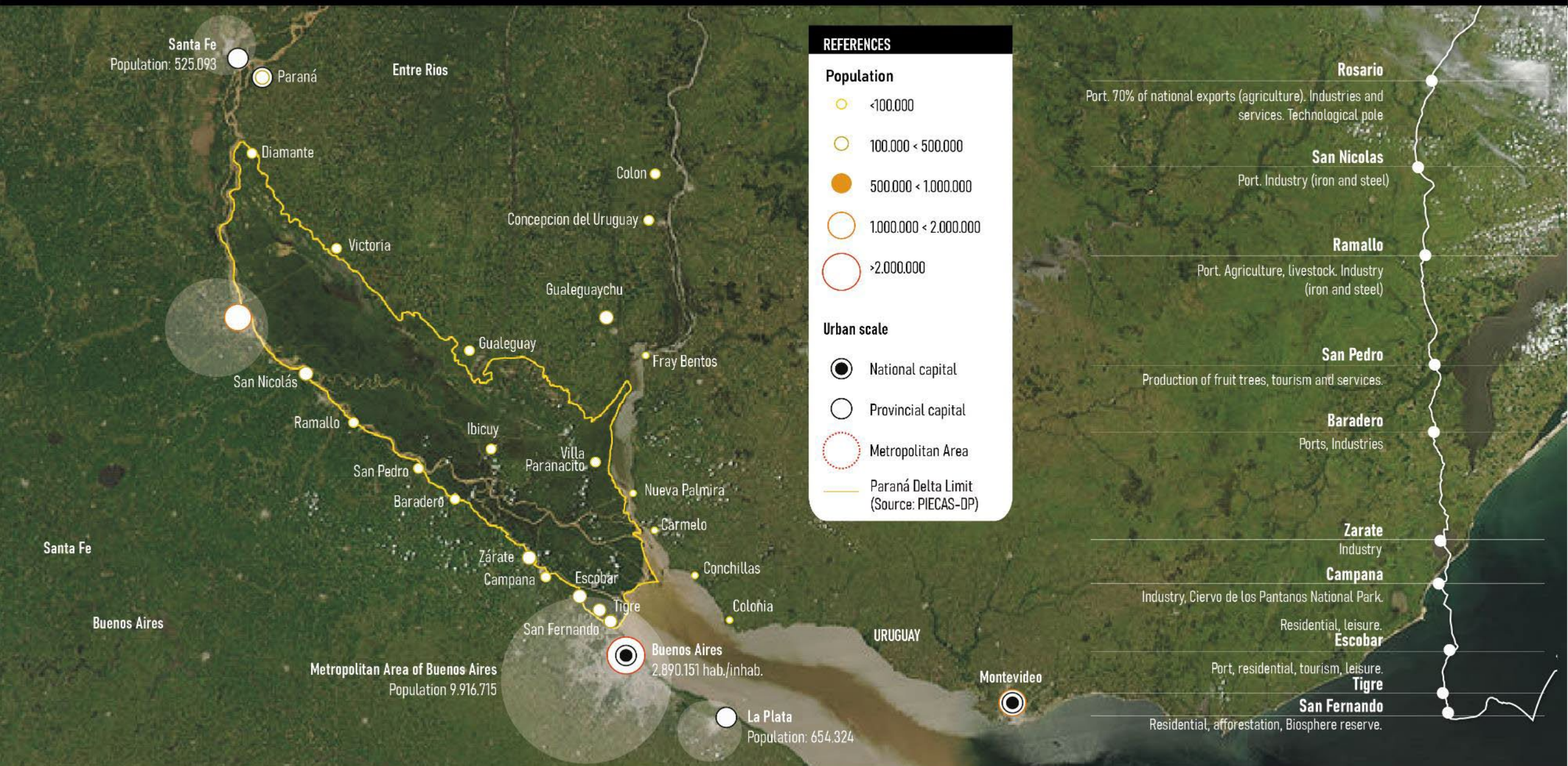


Zagare, Carlino (2021)



Google Earth (2018)

Urban Network



LAND USES / PRODUCTIVE ACTIVITIES

- Modification of the soil and hydrological cycles for productive purposes
- Expansion of the agriculture and livestock frontier towards the wetland.
- Introduction of practices and technologies from the Pampas into the wetland.

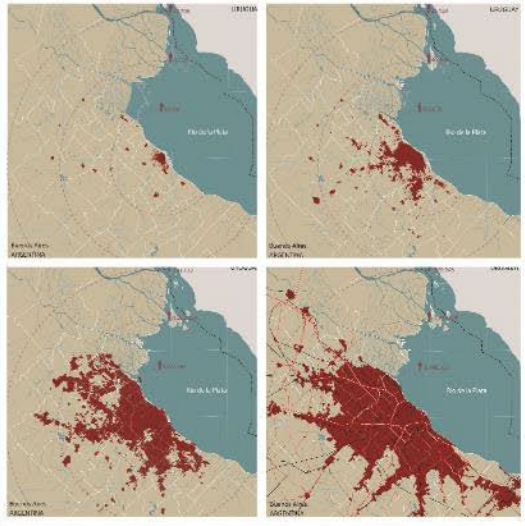


Islas de Victoria. Zagare (2019)



LAND USES / URBAN EXPANSION

- Increase of urban population (international trend)
- Increased demand for soil and safe water
- Lack of waste treatment and control, increase of pollution
- Unplanned urban expansion, social and spatial polarization
- Increase of private developments (gated neighbourhoods)-
New patterns in the islands.



Delta de Tigre. Zagare (2018)

CLIMATE CHANGE

- Regional: increase in temperature, precipitation, global warming...
- Local: climate variability, pulses of floods and droughts.
- Land-use changes, deforestation and unsustainable practices > changes in the natural dynamics.



Bajante del Río Paraná. NEA Hoy (2021)

Effects of the combination of unsustainable practices and climate change impacts

FIRES ON THE WETLAND

Severe droughts and water shortage.

Increase in temperature.

Unsustainable practices for agriculture and livestock purposes (removal of the vegetation that has no forage value).

Affected surface of the Delta:

2008: 11%

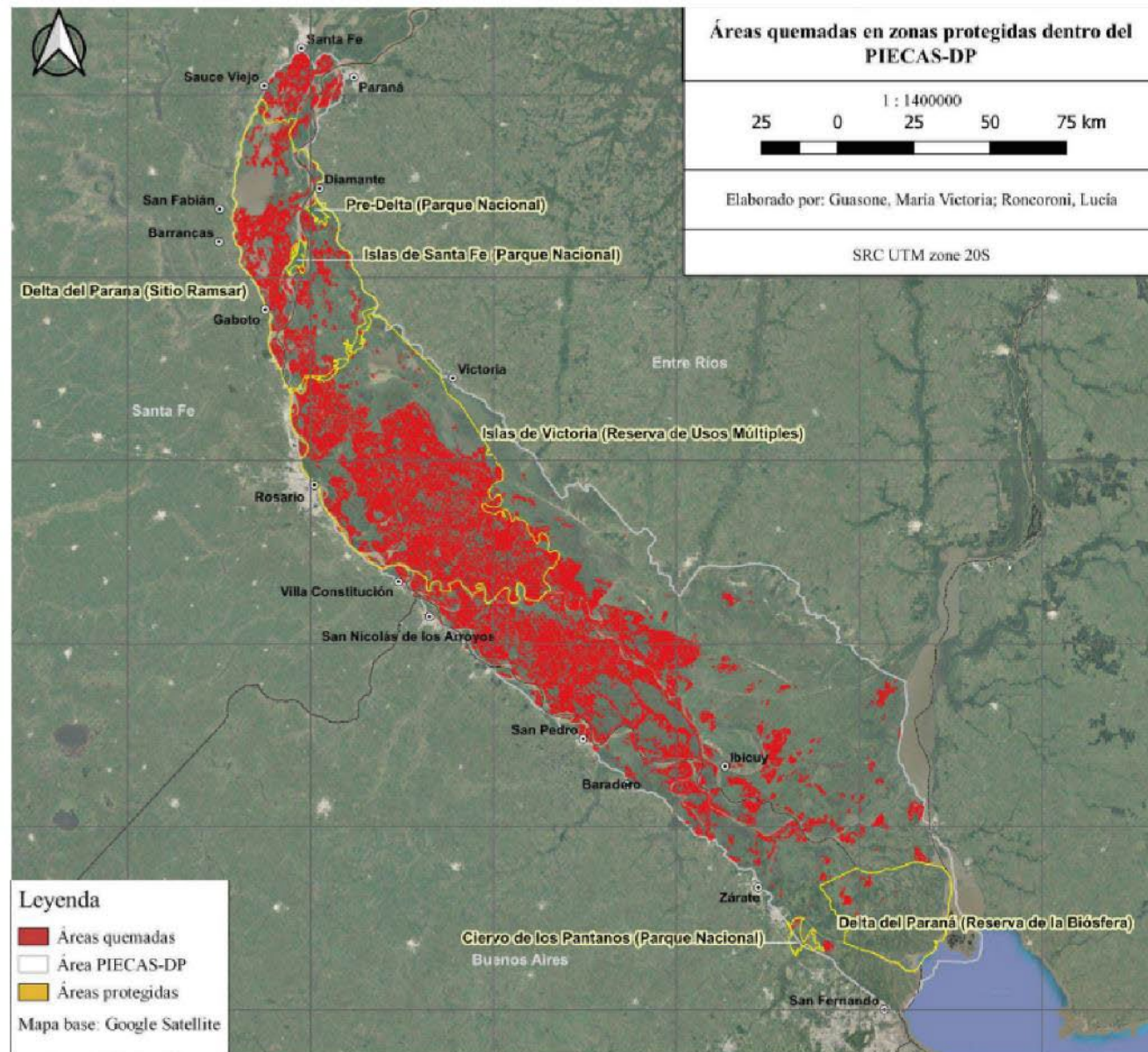
2020: 21%

2022: 16%*

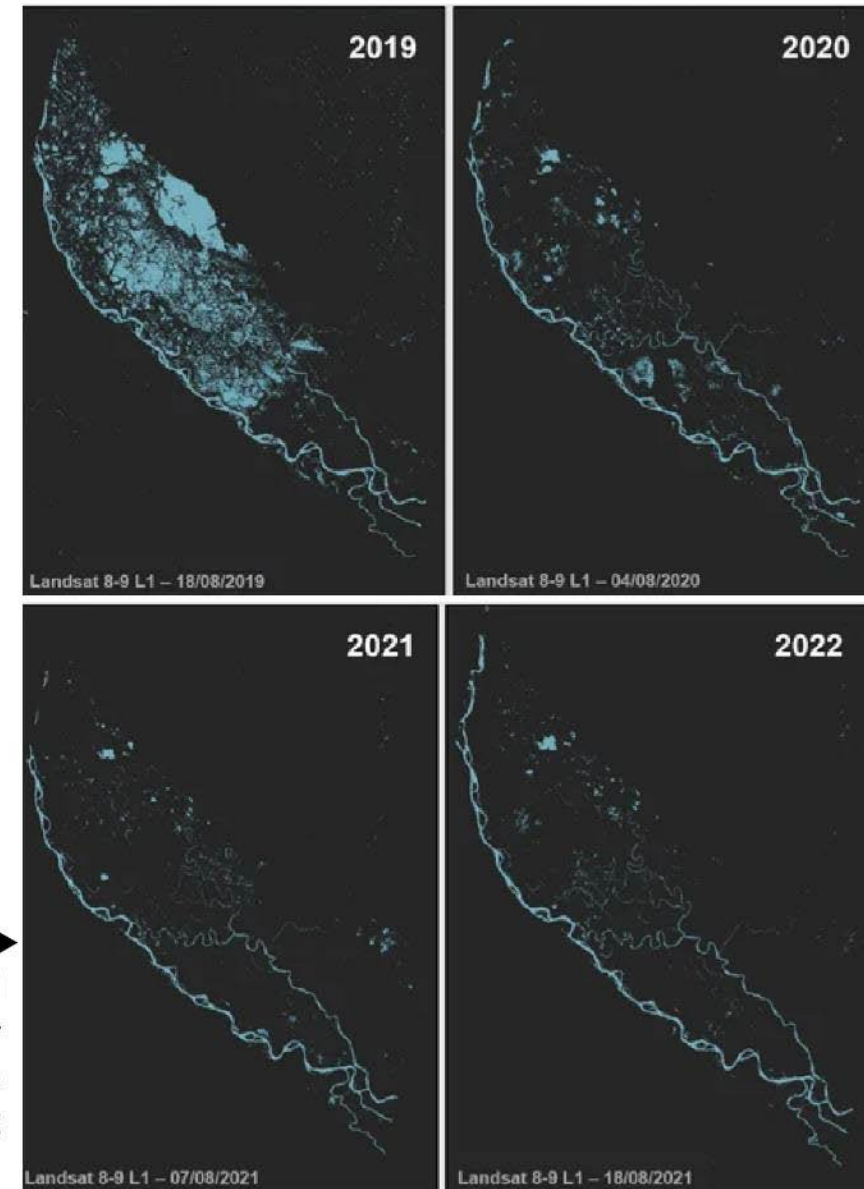
*not official data



Effects of the combination of unsustainable practices and climate change impacts



◀ Fires and protected areas in the Paraná Delta 2022



MARKET / INFRASTRUCTURE AND TRANSPORTATION

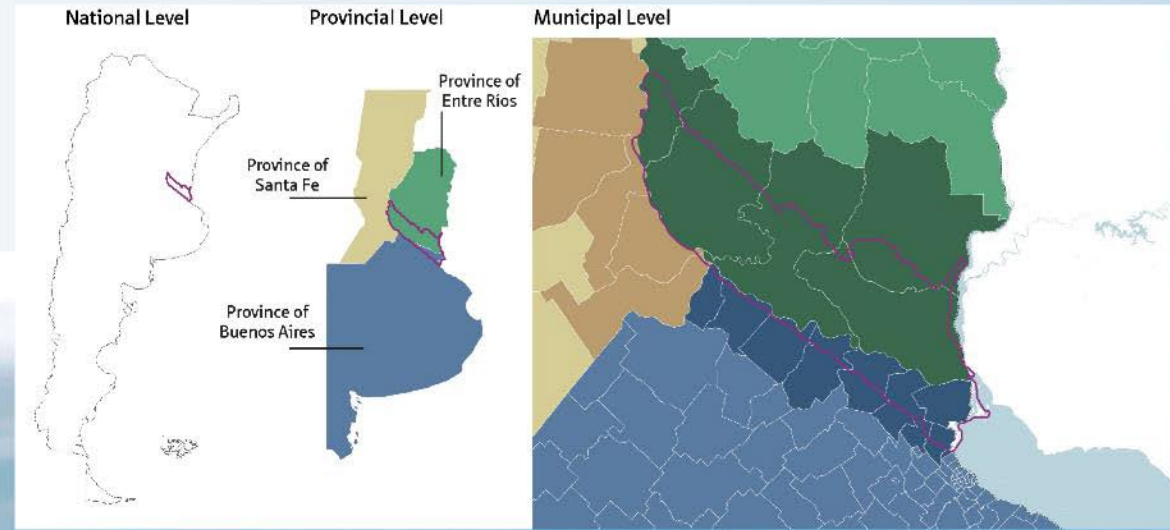
- Increased demand for commodities
- Paraná-Paraguay Waterway (connects the Delta with other areas of South America)
- Construction of highways and routes to connect bi-oceanic corridors.



Hidrovia. Radio Gráfica (2021)

GOVERNANCE

- A great number of actors, sectors and levels.
- Legal voids, excess of legislation, overlapping of legislation at different levels.
- Lack of agreements, and public participation.



Zagare (2019)

IDENTIFICATION OF GAPS

The challenges that we can identify from the previous pressures are mainly related to the need for knowledge development, integration and a participative approach. It will also be important to have a public database of all the processes that take place in the Delta, including geologic, geographic, urban and environmental information.

GOVERNANCE

The need for coordination between scales of governments and sectors, as well as public participation is crucial for reaching environmental and spatial planning in the area, as well as revising the parameters for sustainable development and climate adaptation in the future.

LAND USE CHANGE

The Delta is challenged by the rapid advance of the activities that take place in the continent towards the islands. Given that it is a very large territory, maybe an integral plan is not enough, and would make necessary the development of coordinated plans according to the different landscape regions and associated problematics. In fact, the unique plan that was developed for the Delta in 2008 has not been fully implemented yet.

*Recommendations made by a panel of Delta Alliance experts, during the international conference Redesigning Deltas, which took place in The Netherlands, in 2021.

Thank you!

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Parque Nacional Cervo de los Pantanos National Park (ANH 2021)



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