



Isotopes help understand groundwater discharge in the Esteros del Iberá Wetland Area

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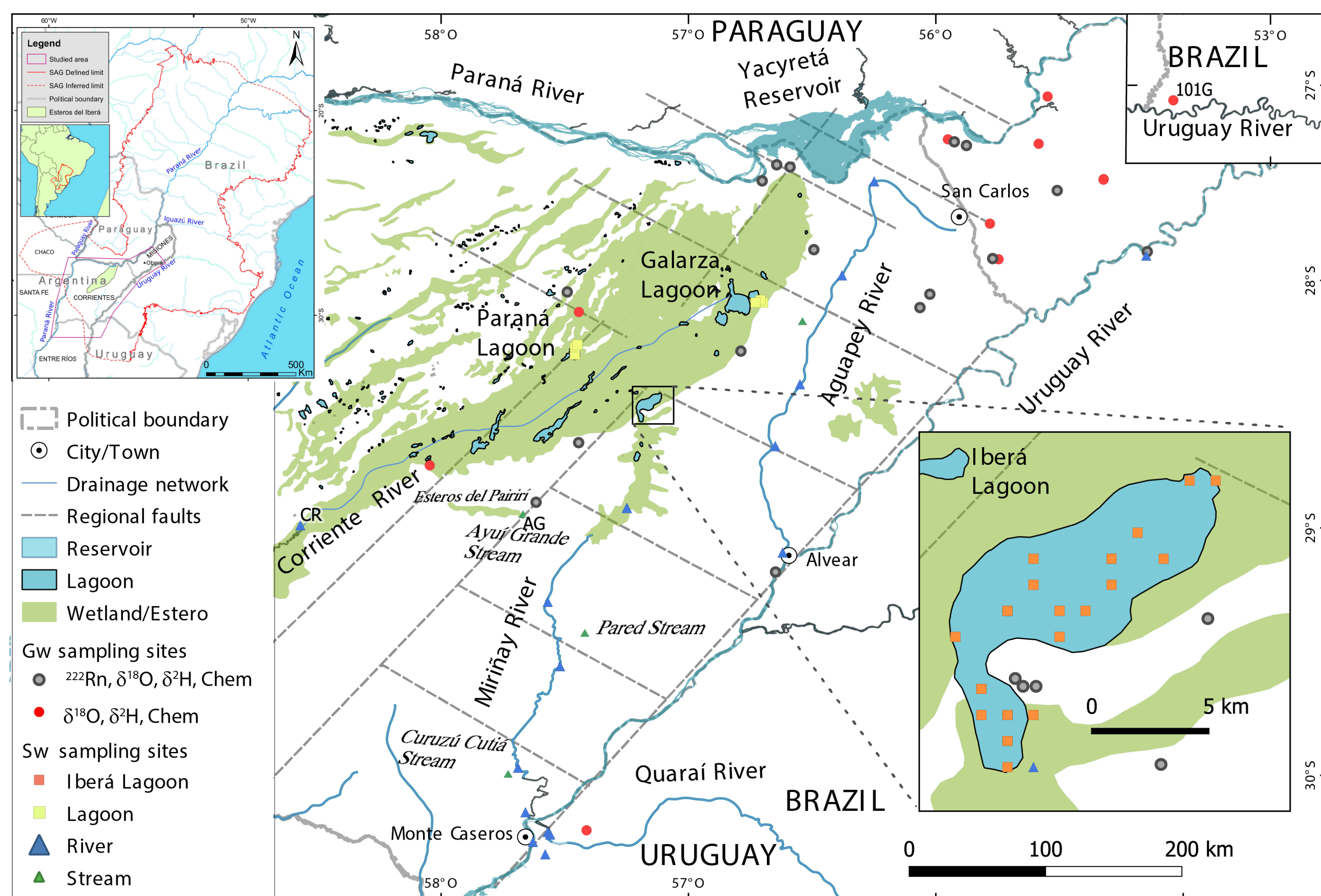
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Esteros del Iberá Wetland Area (EIWA)

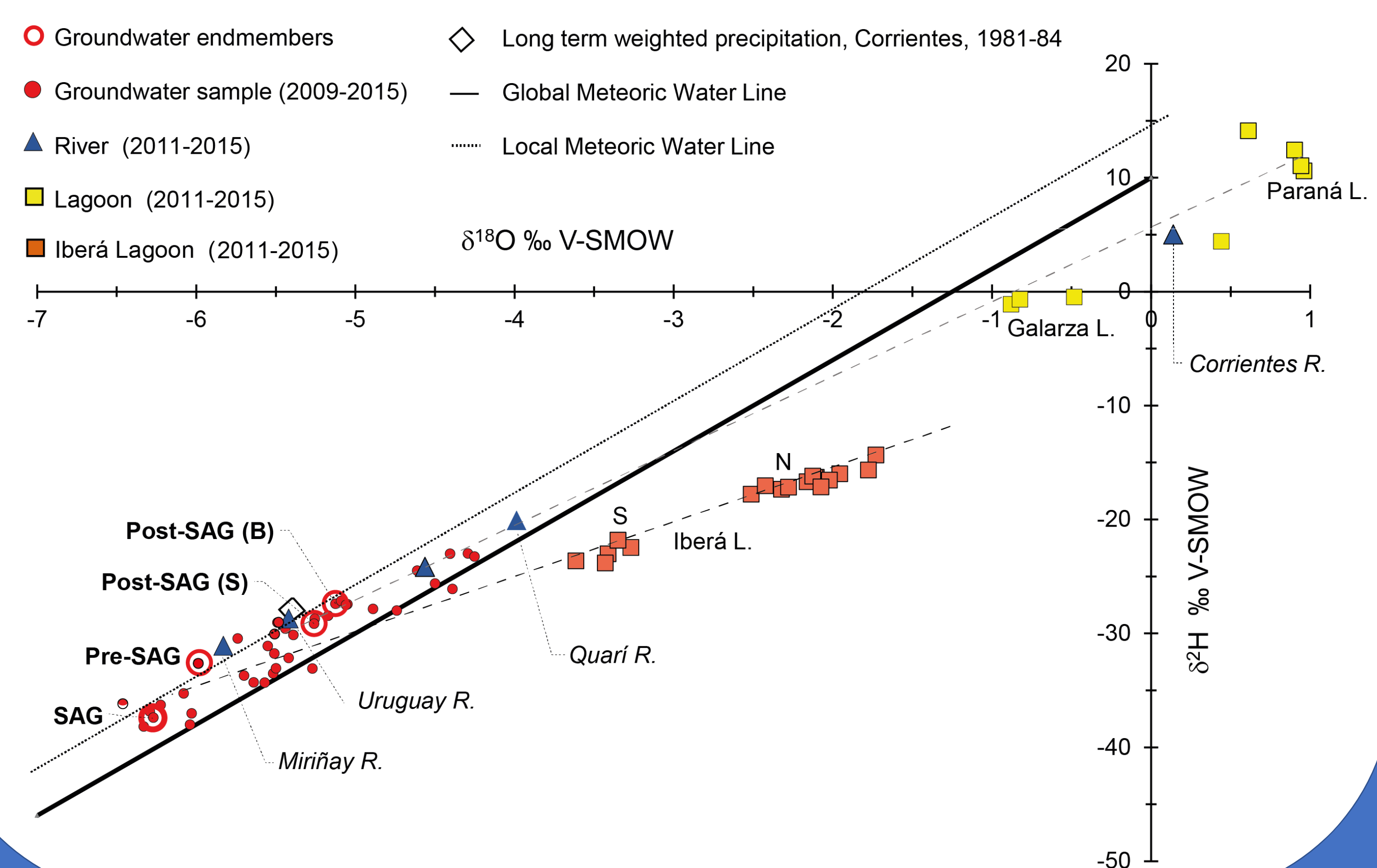
- EIWA the largest and most important wetland in Argentina, South America.
- Vulnerable ecosystem in need for an improved wetland management strategy.
- Mostly rainfed, partly sustained by groundwater, but exact location of groundwater discharge remained uncertain.
- Range of isotope tracers analysed in water samples taken from lagoons, rivers, wells, and boreholes to understand groundwater-wetland interconnection.



Location of EIWA and sampling sites.

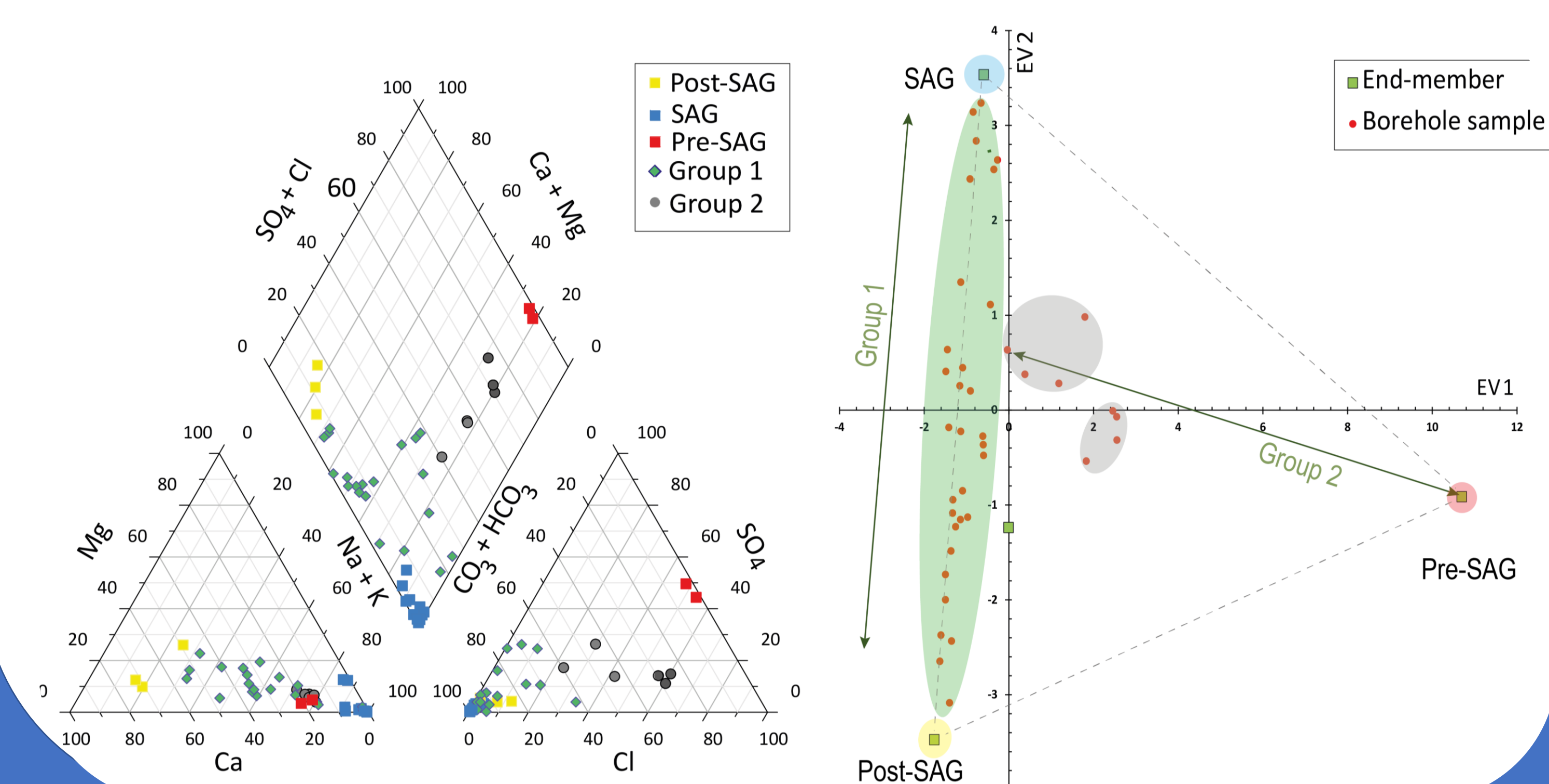
$\delta^{18}\text{O}$ and $\delta^2\text{H}$

- Iberá Lagoon is distinctly different, clearly an area of concentrated groundwater discharge in the SE of the wetland.



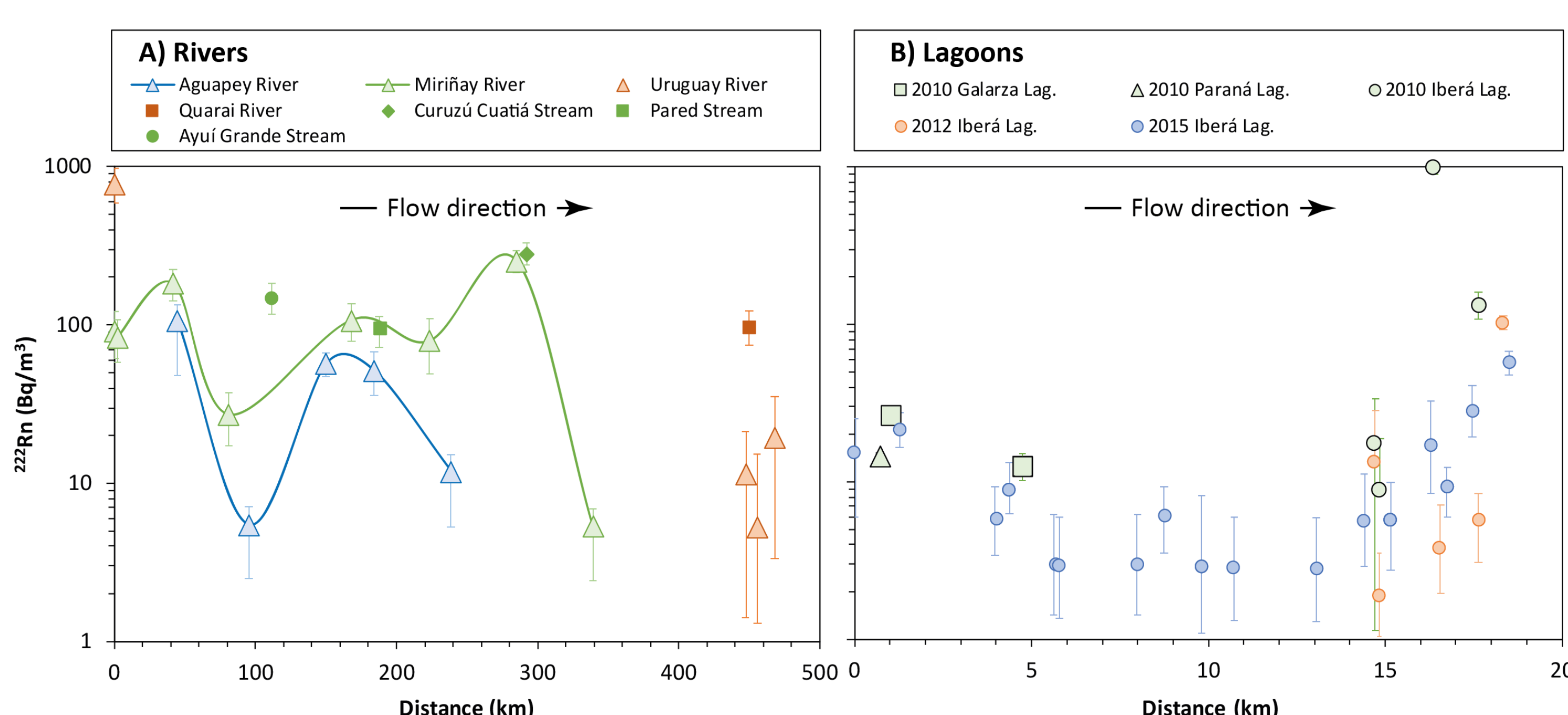
Groundwater sources and mixing patterns (EMMA)

- Hydrochemical groundwater modelling confirmed the existence of four groundwater end-members and a widespread groundwater mixing.



Radon (^{222}Rn)

- Detailed radon survey at EIWA.
- Key to identifying areas of groundwater interconnections with major rivers and lagoons.



Conclusions

- Suite of isotopes identified the sources of groundwater discharge to the EIWA.
- Identification of groundwater discharge from two distinct deep regional aquifers and their relative contribution by estimation of mixing proportions.
- Consolidation of key knowledge aspects and generation of new information of the hydrodynamics in EIWA.