

## Supporting information

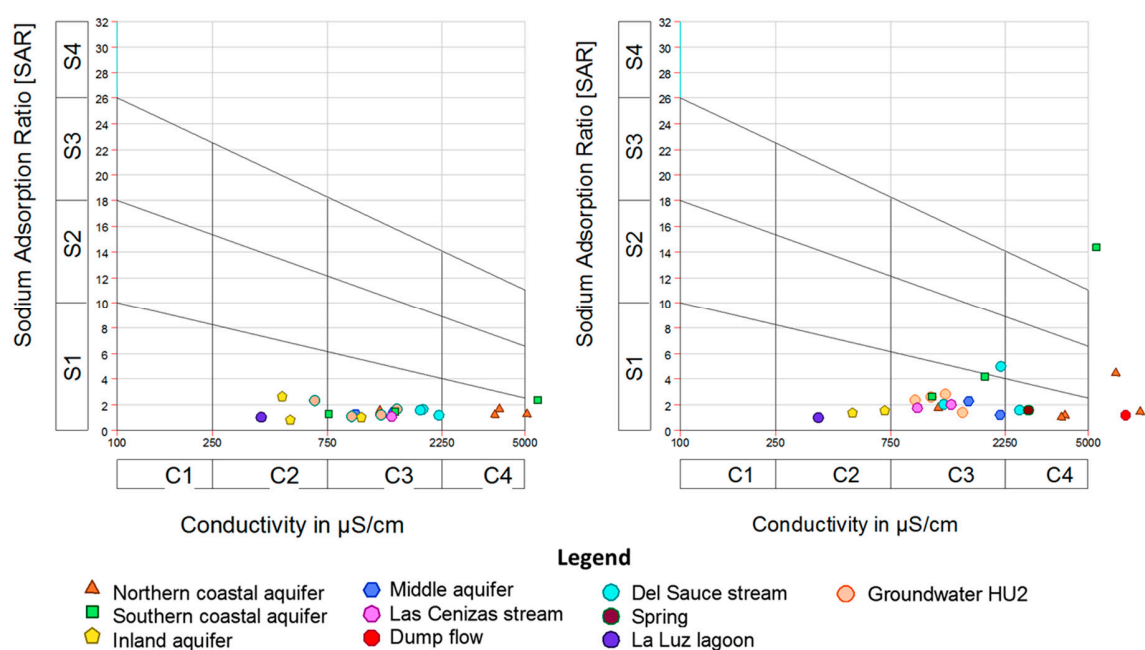
### Additional methods

**Table S 1.** Detailed list of methods used for physiochemical parameter measurements. Detection limit and accuracy are given.

General objective	Parameter details	Reference documents / Analysis methods	Unit	Detection limit	Accuracy (%)
Major ions and recommended	Cl <sup>-</sup>	St. Methods 4500 Cl <sup>-</sup> B	mg/L	0.5	0.7
	SO <sub>4</sub> <sup>2-</sup>	St. Methods 4500 SO42 D	mg/L	1.5	4.5
	HCO <sub>3</sub> <sup>-</sup>	St. Methods 2320-B	mg/L	2.5	1.3
	CO <sub>3</sub> <sup>2-</sup>	St. Methods 2320-B	mg/L	0.0004	5.0
	NO <sub>2</sub> <sup>-</sup>	St. Methods 4500 NO2- B	mg/L	0.04	3.0
	NO <sub>3</sub> <sup>-</sup>	St. Methods 4500 NO3- B	mg/L	0.05	3.0
	Na <sup>+</sup>	St. Methods 3111 B	mg/L	0.01	2.0
	K <sup>+</sup>	St. Methods 3111 B	mg/L	0.01	1.2
	Mg <sup>2+</sup>	St. Methods 3111 B	mg/L	0.01	1.5
	Ca <sup>2+</sup>	St. Methods 3111 B	mg/L	0.01	1.5
	NH <sub>4</sub> <sup>+</sup>	St. Methods 4500-NH3- D	mg/L	0.01	2.0
	PO <sub>4</sub> <sup>2-</sup>	St. Methods 4500 P/C	mg/L	0.01	2.5
	F <sup>-</sup>	St. Methods 4500-F C	mg/L	0.01	2.5
Microelements	Al	St. Methods 3111 D	mg/L	0.01	1.5
	Ba	St. Methods 3111 D	mg/L	0.01	1.5
	Br	St. Methods 4500	mg/L	0.01	2.2
	Co	St. Methods 3111 B	mg/L	0.01	1.2
	Cu	St. Methods 3111 B	mg/L	0.01	1.2
	Fe	St. Methods 3111 B	mg/L	0.01	1.5
	V	St. Methods 3111 B	mg/L	0.01	2.5
	Zn	St. Methods 3111 B	mg/L	0.01	2.5
Physicochemical parameters measured in laboratory	Total dissolved solids (TDS)	St. Methods 2540 C	mg/L	10.0	5.0
	Chemical oxygen demand (COD)	St. Methods 5220 D	mg/L	5.0	2.0
	pH at 25°C	St. Methods 4500-H B	-	0.0	0.1
	Turbidity	St. Methods 2130 B	NTU	0.2	10.0
	Color	St. Methods 2120 B	Pt-Co	0.0	0.0
	Electric conductivity	St. Methods 2510 B	μS/cm	0.0	1.2
Microbiology parameters	Total coliforms	St. Methods 9221 B	MPN/100 mL	0.0	0.0
	Fecal coliforms	St. Methods 9221 E	MPN/100 mL	1.8	0.2

### Additional results – Water quality for irrigation

From the analysis of the Riverside diagrams (Figure 8), it is recognized that the stream in all its extension (*Del Sauce* and Las Cenizas) corresponds to a high salinity water (C3 to C4), which should only be used in well-drained soils, using very salinity-tolerant crops. On the other hand, sodicity (S1 to S2), indicates waters with low to medium sodium content, which generates a certain danger of sodium accumulation in the soil, especially in those of fine texture and low permeability. The aquifer waters in its inland zone (C2-S1) are waters of medium salinity and low sodium content, suitable for irrigation. In the middle zone (C3-S1), the groundwaters are of high salinity and can be used for irrigation in well-drained soils, in salinity-tolerant crops and with proper management methods; it should be noted that there is some danger of sodium accumulation in the soil. Finally, the waters from the coastal zone of the aquifer (C4-S1) correspond to very high salinity waters, not suitable for irrigation in general.



**Figure S1.** Riverside diagrams (USDA, 1975) for all samples of the hydric system in summer 2022 (left) and winter 2022 (right).