Supplementary Materials

Influence of land use/land cover on surface-water quality of Santa Lucía river, Uruguay

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Contents:

SM-1: Primary land use (PLU) and secondary land use (SLU) in Santa Lucía Chico watershed.

Primary land use (PLU)	Secondary land use (SLU)
Urbanization	Urban and semi-urban areas
Mine	Quarries, sand pits, open-pit mines
	Beaches, fixed and semi-fixed sand dunes
Water bodies	Natural water bodies
	Artificial water bodies
	Reservoirs for irrigation
Wetlands	Wetland
Forest	Native forest
	Forest plantation
	New planted forest, harvest, regrowth
Grassland	Natural grassland
	Regenerated grassland
	Mix of natural field, pasture and old stubble
Agriculture	Extensive cultivation in dairy farms
	Extensive rainfed cultivation
	Rainfed cultivation stubble
	Extensive cultivation with pivot irrigation
	Citrus

SM-2: Shannon's diversity index (SHDI) calculation.

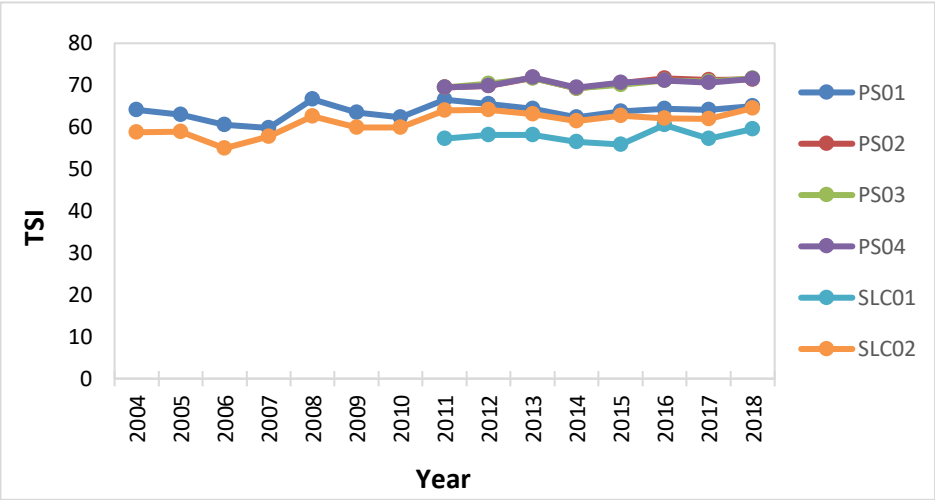
The SHDI parameter was calculated using the following equation (Eq. (3) reported in the main manuscript):

$$SHDI = -\sum_{i=1}^{m}(p_i Lnp_i)$$

We report here the calculation of SHDI for agricultural (AGR) land-use.

As shown in the table shown in SM-1, AGR includes five land patches and their areas are known as well. Therefore, the proportion of each land patch area accounting for the total area of the primary land use (AGR in the case) can be calculated (P_i). *Ln* is the natural logarithm. *m* is the number of land patches within the primary land use (five for AGR).

SM-3: Temporal variation of the annual averaged *TSI* values at the six monitoring stations.



SM-4: Statistical description of the normalized water-quality variables.

	TP	TN	NO_3^-	NO_2^-	NH_4^+	Turbidity	T	DO	BOD_5	Q
mean	-1.08E-16	2.00E-16	6.32E-17	-2.40E-16	-9.35E-17	3.98E-17	3.96E-17	-1.73E-17	-1.47E-17	1.95E-16
std	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
min	-2.24E+00	-2.37E+00	-2.29E+00	-1.06E+00	-8.96E-01	-1.46E+00	-2.04E+00	-6.20E-01	-1.07E+00	-4.02E-01
25%	-6.34E-01	-6.85E-01	-7.01E-01	-7.54E-01	-6.62E-01	-7.69E-01	-9.20E-01	-2.46E-01	-4.16E-01	-3.85E-01
50%	-1.65E-01	-2.87E-02	-1.20E-01	-1.66E-01	-4.03E-01	-2.06E-01	9.70E-02	-1.51E-01	-1.99E-01	-3.44E-01
75%	5.71E-01	6.95E-01	5.41E-01	2.76E-01	2.16E-01	4.24E-01	9.33E-01	-6.71E-02	1.05E-01	-1.89E-01
max	5.78E+00	2.26E+00	4.28E+00	4.90E+00	4.88E+00	4.11E+00	1.74E+00	7.42E+00	6.66E+00	5.30E+00