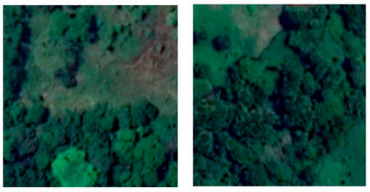
CLASS	COLOR	TEXTURE	SHAPE	EXAMPLE OF IMAGE
Buildings/ households	Pinkish Brown Light gray Dark grey	Rough	Regular	
Vegetation	Dark green Light green Pinkish	Rough Smooth	Irregular	
Commercial building	Grey Pinkish	Rough	Regular Irregular	
Watercourses	Black Dark green	Smooth	Regular Irregular	

Figure S1. Interpretation key for the evaluation of the basin of the Cereja River.

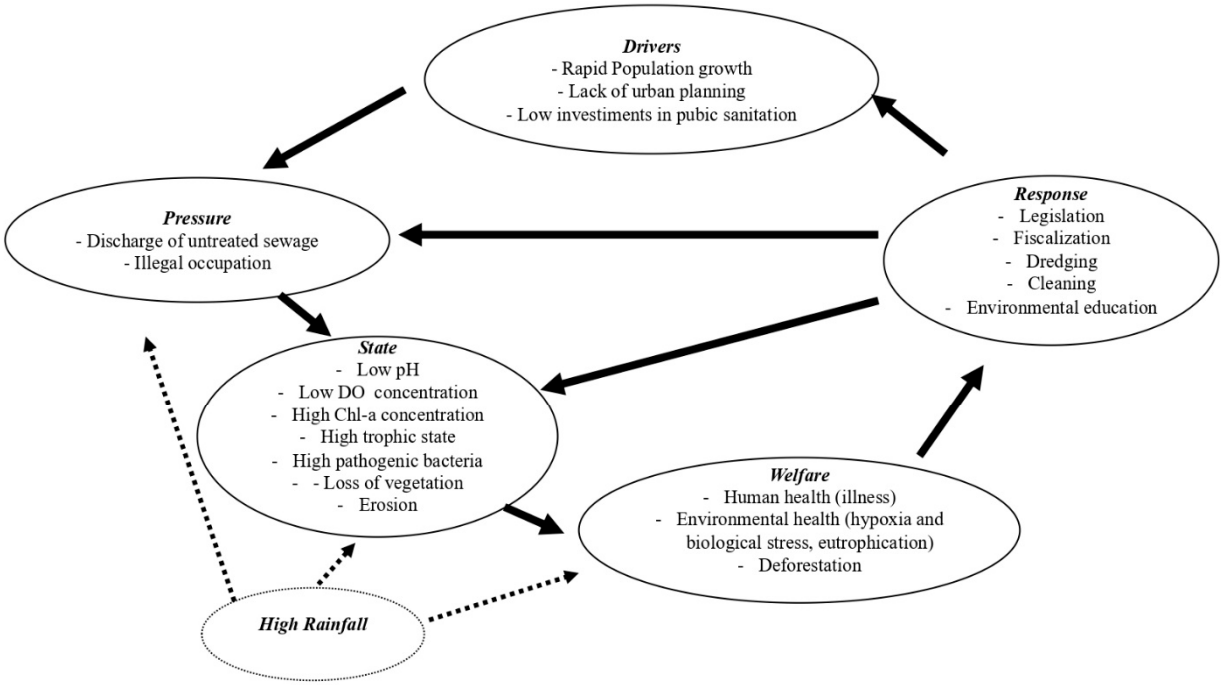


Figure S2. Summary of the DPSWR management model for the Cereja River.

Table S1. Localization of the sample stations.

Sample Station	Location	Coordinates (S)	Coordinates (W)
P1	Vila Nova	01°03’521”S	46°47’227”W
P2	Vila Sinhá	01°03’327”S	46°46’581”W
P3	Taíra	01°03’148”S	46°46’185”W
P4	Padre Luiz	01°03’560”S	46°45’586”W
P5	Aldeia	01° 03’23”S	46° 45’480”W
P6	Aldeia	01° 03’551”S	46° 45’423”W

Table S2. Types of freshwater use, according to Brazilian National Environment Council (CONAMA).

CLASSES	TYPES OF USE
Special class	Water that can be used for (a) human consumption following disinfection; b) the preservation of the natural balance of aquatic communities; and (c) the preservation of aquatic environments in strictly-protected conservation units.
Class 1	Water that can be used for (a) human consumption, after simple treatment; (b) the protection of aquatic communities; (c) recreational activities involving primary contact, such as swimming, water skiing, and diving (CONAMA resolution 274/2000); (d) irrigation of fruit and vegetables that are consumed raw without removing the skin or harvested close to the soil, and (e) the protection of aquatic communities on indigenous lands.
Class 2	Water that can be used for (a) human consumption, after conventional treatment; (b) the protection of aquatic communities; (c) recreational activities involving primary contact, such as swimming, water skiing, and diving (CONAMA resolution 274/2000); (d) the irrigation of vegetables, fruit, and parks, gardens, and sports fields, with which the public may come into direct contact, and (e) aquaculture and fisheries.
Class 3	Water that can be used for (a) human consumption, after conventional or advanced treatment; (b) the irrigation of tree, cereal, and forage crops; (c) amateur angling; (d) recreational activities with secondary contact, and (e) the watering of animals.
Class 4	Water that can be used for (a) navigation, and b) landscaping.

Table S3. Percentage of limits of hydrological variables, considering national resolution and international classification.

VARIABLES	LIMITS	SAMPLES (%)
pH	[a]60-90 (ideal Class 1, 2, 3, 4)	88%
Turbidity	[a]Up to 40 NTU observed (ideal, Class 1)	98%
	[a]Up to 100 NTU observed (ideal, Class 2, 3)	98%
Dissolved Oxygen	[a]More than 6 mg L^{-1} (ideal, Class 1)	0%
	[a]More than 5 mg L^{-1} (ideal, Class 2)	17%
	[a]More than 4 mg L^{-1} (ideal, Class 3)	43%
	[a]More than 2 mg L^{-1} (ideal, Class 4)	79%
	[b]Anoxia 0 mg L^{-1}	0%
	[b]Hypoxia >0 < 2 mg L^{-1}	21%
	[b]Biol Stress> 2< 5 mg L^{-1}	60%
	[b]> 5 mgL^{-1} (ideal)	17%
Chlorophyll-a	[a]Up to 10 mg m^{-3} (ideal, Class 1)	57%
	[a]Up to 30 mg m^{-3} (ideal, Class 2)	98%
	[a]Up to 60 mg m^{-3} (ideal, Class 3)	100%
	[b]Hypereutrophic > 60 mg m^{-3}	0%
	[b]High > 20, < 60 mg m^{-3}	12%
	[b]Medium > 5, < 20 mg m^{-3}	74%
	[b]Low > 0 and 5 mg m^{-3}	14%
TSI	[c]Ultra-oligotrophic ≤ 47	0%
	[c]Oligotrophic 47≤IET≤52	2%
	[c]Mesotrophic 52≤IET≤59	10%
	[c]Eutrophic 59≤IET≤63	19%
	[c]Super-eutrophic 63≤IET≤67	26%
	[c]Hyperthophic > 67	43%

[37,38][a], [39] [b], [35] [c].

Table S4. Temporal and spatial *Enterococcus* sp and thermotolerant coliform data in Cereja River.

Points/ Neighborhood		*Enterococcus* sp (MPN 100 mL^{-1})[1] and Thermotolerant coliforms (MPN 100 mL^{-1})[2]						
		Nov13	Apr14	Aug14	Jun18	Nov18	Apr19	Jul19
P1 – Vila Nova	1	-	-	-	12	2	101	0
	2	240	93	36	>1,100	75	1,100	1,100
P2 – Vila Sinhá	1	-	-	-	207	146	258	153
	2	>1,100	1,100	>1,100	>1,100	>1,100	>1,100	>1,100
P3 – Taíra	1	-	-	-	261	161	369	213
	2	>1,100	>1,100	>1,100	>1,100	>1,100	>1,100	>1,100
P4 – Padre Luiz	1	-	-	-	371	541	541	235
	2	>1,100	>1,100	>1,100	>1,100	>1,100	>1,100	>1,100
P5 – Aldeia	1	-	-	-	501	541	541	250
	2	>1,100	>1,100	1,100	>1,100	>1,100	>1,100	>1,100
P6 – Aldeia	1	-	-	-	541	486	541	270
	2	>1,100	1,100	1,100	>1,100	>1,100	>1,100	>1,100

Table S5. Limits of thermotolerant coliforms and *Enterococcus* sp per type of uses and the unappropriated samples (%), according to national and international classification.

	Use types and limits	Samples (%)
	Thermotolerant coliforms (CONAMA resolutions)	
Class 1	Recreation of primary contact (CONAMA resolution 274/2000)*	90.5% (Unappropriated)
	For the other uses, a limit of 200 MPN 100 mL^{-1} (CONAMA resolution 357/2005) **	92.9% (Unappropriated)
Class 2	Recreation of primary contact [(CONAMA resolution 274/2000)*	90.5% (Unappropriated)
	For the other uses, a limit of 1000 MPN 100 mL^{-1} (CONAMA resolution 357/2005)**	90.5% (Unappropriated)
Class 3	Recreation of secondary contact, a limit of 2500 MPN 100 mL^{-1} (CONAMA resolution 357/2005) **	***
	For the watering of confined animals, a limit of 1000 MPN 100 mL^{-1} (CONAMA resolution 357/2005)**	90.5% (Unappropriated)
	For the other uses, a limit of 4000 MPN 100 mL^{-1} (CONAMA resolution 357/2005)**	***
	Enterococcus sp [47]	Samples (%)
Bathing	Recreation contact, a limit of 33 MPN 100 mL^{-1}	93.0% (Unappropriated)

*More than 80% of the samples with a maximal number of fecal coliforms per 100 mL: 250 (Excellent), 500 (Very Good), 1000 (Satisfactory) Unappropriated: More than 20% of the samples with a maximal number of 1000 fecal coliforms per 100 mL

**Should not be exceeded in 80% or more, from at least 6 samples collected during the period of one year

***Our values reached > 1100 MNP 100 mL^{-1}

Table S6. Number of inhabitants, growth rate, effluents and thermotolerant coliform levels within the Cereja River PPA.

Neighborhoods	Nº of inhabitants		Growth rate (%)	Effluents ($m^3\ day^{-1}$)		Thermotolerant coliforms NMP 100 mL^{-1} ($x10^{14}$)			
						2012		2019	
	2012	2019	2012-2019	2012	2019	Min	Max	Min	max
Vila Nova (P1)	52	112	54%	7.7	16.8	0.05	0.21	0.11	0.45
Vila Sinhá (P2)	60	95	37%	9.0	14.2	0.06	0.24	0.09	0.38
Taíra (P3)	129	172	25%	19.4	25.8	0.13	0.52	0.17	0.69
Padre Luís (P4)	348	404	14%	52.2	60.6	0.35	1.39	0.4	1.62
Aldeia (P5, P6)	237	237	0%	35.5	35.5	0.24	0.95	0.24	0.95
Alegre	56	86	35%	8.4	12.9	0.06	0.22	0.09	0.34
Centro	60	65	8%	9.0	9.7	0.06	0.24	0.06	0.26
Cereja	181	198	9%	27.1	29.7	0.18	0.72	0.2	0.79
Total	1,123	1,369	18%	168	205	1.12	4.49	1.37	5.47

Table S7. Land cover area in PPA of Cereja River in 2012 and 2019.

Land cover	PPA area (km²) in 2012	Total area (%) PPA in 2012	PPA area (km²) in 2019	Total area (%) PPA in 2019
Vegetation	0.37	61.3%	0.34	57.4%
Building and road	0.07	12.2%	0.10	17.2%
Other covers	0.16	26.5%	0.15	25.5%
Total area	0.60	100.0%	0.60	100.0%