

**TABLE S14** | Water column variables measured in beaches of Ubatuba, Brazil, during summer (January/2021) and winter (July/2021). Different letters indicate significant difference in the values of the same variable ( $p < 0.05$ ).

Site	Temperature °C	pH	Redox m/V	Conductivity $\mu\text{S/cm}$	Turbidity NTU	Oxygen mg/L (%)	Solids g/L	Salinity ppt	
<b>Summer</b>									
Barra Seca	P1	29.4	8.6	58	21300	5.8	4.4 (61.9)	13.2	12.8
	P2	28.9	8.6	87	18400	3.3	4.6 (63.8)	11.4	10.9
	P3	29.3	8.6	97	23600	6.8	5.3 (76.1)	14.6	14.3
	P4	29.8	8.7	99	32500	8.0	4.7 (70.0)	19.8	20.3
	P5	29.7	8.7	99	30300	9.2	3.5 (52.0)	18.5	18.7
Mean values (Standard deviation)	29.4 <sup>a</sup> (0.36)	8.6 <sup>a</sup> (0.05)	88 <sup>a</sup> (17.5)	25220 <sup>a</sup> (5985.6)	6,6 (2.25)	4.5mg/L (0.65)	15.5 <sup>a</sup> (3.55)	15.4 <sup>a</sup> (3.97)	
Perequê Brava	P1	30.2	8.3	177	42600	8	5.2 (82.0)	26.0	27.4
	P2	30.3	8.5	170	43000	15.9	4.1 (64,8)	26.2	27.7
	P3	30.1	8.7	140	43200	15.2	4.4 (69.1)	26.4	27.8
	P4	30.4	8.7	117	43000	22.8	4.3 (67.9)	26.2	27.6
	P5	30.5	8.8	114	39100	5.2	5.7 (89.2)	23.9	24.9
Mean values (Standard deviation)	30.3 <sup>b</sup> (0.16)	8.6 <sup>b</sup> (0.20)	143.6 <sup>b</sup> (29.19)	42180 <sup>b</sup> (1735.51)	13.4 (6.97)	4,7 mg/L (0.68)	25.7 <sup>b</sup> (1.04)	27.1 <sup>b</sup> (1.23)	
Perequê Calma	P1	31.2	8.8	99	33000	7.4	4.9 (74.9)	20.1	20.6
	P2	32.2	8.7	120	32300	16.6	4.8 (74.6)	19.7	20.1
	P3	31.9	8.9	84	33500	12.7	5.6 (86.9)	20.4	20.9
	P4	31.6	8.9	78	33600	8.4	4.7 (71.8)	20.5	21.0
	P5	31.4	8.9	72	34700	7.4	4.0 (62.6)	21.2	21.8
Mean values (Standard deviation)	31.7 <sup>c</sup> (0.4)	8.8 <sup>a</sup> (0.09)	90.6 <sup>a</sup> (19.26)	33420 <sup>a</sup> (881.48)	10.51 (4.05)	4.8 mg/L (0.57)	20.4 <sup>a</sup> (0.55)	20.8 <sup>a</sup> (0.62)	
<b>Winter</b>									
Barra Seca	P1	20.8	8.4	231	38000	10.2	6.8 (89.7)	23.2	24.1
	P2	20.7	8.6	227	35000	8.2	6.3 (82,5)	21.4	22.0
	P3	21.1	8.6	227	38200	9.5	6.8 (90.3)	23.3	24.2
	P4	21.9	8.7	227	39800	9.4	6.6 (88.9)	24.3	25.3
	P5	21.3	8.7	230	38600	9.2	6.3 (84.6)	23.6	24.5
Mean values (Standard deviation)	21.2 <sup>a</sup> (0.48)	8.6 <sup>a</sup> (0.12)	228.4 <sup>a</sup> (1.95)	37920 <sup>a</sup> (1775.39)	9.3 (0.72)	6,6 mg/L (0.25)	23.1 <sup>a</sup> (1.07)	24 <sup>a</sup> (1.22)	
Perequê Brava	P1	23.5	8.6	262	40400	9.3	6.0 (83.8)	24.7	25.8
	P2	23.5	8.7	245	40100	7.3	5.8 (80.7)	24.5	25.6
	P3	23.6	8.7	247	40400	6.7	4.5 (63.8)	24.6	25.8
	P4	23.5	8.8	240	39700	9.4	5.6 (78.3)	24.2	25.3
	P5	23.4	8.8	240	40100	9.5	6.9 (96.0)	24.4	25.5
Mean values (Standard deviation)	23.5 <sup>b</sup> (0.07)	8.7 <sup>b</sup> (0.08)	246.8 <sup>b</sup> (9.04)	40140 <sup>b</sup> (288.1)	8.4 (1.33)	5.8 mg/L (0,86)	24.4 <sup>b</sup> (0.19)	25.6 <sup>b</sup> (0.21)	
Perequê Calma	P1	23.5	8.8	243	39900	12.3	6.9 (96.3)	24.3	25.4
	P2	23.5	8.8	242	39600	16.3	5.9 (82.9)	24.1	25.2
	P3	23.4	8.8	239	39700	16.1	6.5 (90.0)	24.2	25.3
	P4	23.3	8.8	234	40300	7.7	6.5 (90.5)	24.6	25.7
	P5	23.3	8.8	232	40300	7.5	6.6 (91.8)	24.6	25.7
Mean values (Standard deviation)	23.4 <sup>a</sup> (0.1)	8.8 <sup>a</sup> (0.0)	238 <sup>c</sup> (4.85)	39960 <sup>a</sup> (328.63)	11,9 (4.30)	6.5 mg/L (0.36)	24.3 <sup>a</sup> (0.23)	25.4 <sup>a</sup> (0.23)	



This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

Distributed under  
Creative Commons CC-BY 4.0

© 2024 The Authors.  
Diversity and Distributions Published by SBI



Official Journal of the  
Sociedade Brasileira de Ictiologia

#### HOW TO CITE THIS ARTICLE

- **Nogueira EJ, Fernandes E, Nogueira MG, Cetra M, Mattox GMT.** Microplastics contamination in fish, water, and sediment surrounding Ubatuba beaches, Southeastern Brazil. *Neotrop Ichthyol.* 2024; 22(2):e230092. <https://doi.org/10.1590/1982-0224-2023-0092>