



**Figure S1.** Study area and sampling stations in the Babitonga Bay estuary.

**Table S1.** Phytoplankton taxa found in Babitonga Bay estuary. RA: relative abundance. FO: frequency of occurrence. Species list according to the most abundant groups.

TAXA	Flood tide		Ebb tide	
	RA%	FO%	RA%	FO%
<b>Centric diatoms</b>				
<i>Actinocyclus normanii</i> (W. Gregory ex Greville) Hustedt 1957	++	90	++	100
<i>Actinoptychus senarius</i> (Ehrenberg) Ehrenberg 1843	++	90	++	77
<i>Aulacoseira granulata</i> (Ehrenberg) Simonsen 1979	-	10	-	0
<i>Bacteriastrum hyalinum</i> Lauder 1864	-	20	-	11
<i>Chaetoceros</i> cf. <i>concavicornis</i> L.A. Mangin 1917	-	10	-	11
<i>Chaetoceros</i> cf. <i>decipiens</i> Cleve 1873	-	40	+	22
<i>Chaetoceros coarctatus</i> Lauder 1864	+	20	+	44
<i>Chaetoceros compressus</i> Lauder 1864	-	10	-	11
<b>Centric diatom not identified</b>	++	100	++	100
<i>Corethron hystrix</i> Hensen 1887	-	0	-	22
<i>Coscinodiscus asteromphalus</i> Ehrenberg 1844	-	0	-	22
<i>Coscinodiscus centralis</i> Ehrenberg 1839	-	20	-	22
<i>Coscinodiscus oculus-iridis</i> (Ehrenberg) Ehrenberg 1840	-	30	-	33
<i>Coscinodiscus</i> sp.	-	0	-	11
<i>Coscinodiscus wailesii</i> Gran & Angst 1931	-	40	-	33
<i>Cyclotella stylorum</i> Brightwell 1860	+	80	+	33
<i>Dactyliosolen fragilissimus</i> (Begon) Hasle in Hasle & Syvertsen 1996	+	20	+	88
<i>Delphineis surirella</i> (Ehrenberg) G.W. Andrews 1981	++	60	++	33
<i>Delphineis</i> sp.	+	30	+	33
<i>Diploneis</i> cf. <i>bombus</i> (Ehrenberg) Ehrenberg 1853	+++	100	+++	11
<i>Ditylum brightwelli</i> (T. West) Grunow in Van Heurck 1885	-	30	-	88
<i>Guinardia delicatula</i> (Cleve) Hasle in Hasle & Syversten 1997	+	20	+	33
<i>Leptocylindrus danicus</i> Cleve 1889	++	20	++	11
<i>Leptocylindrus minimus</i> Gran 1915	-	0	+	22
<i>Odontella aurita</i> (Lyngbye) C. Agardh 1832	+	30	+	22
<i>Odontella mobiliensis</i> (Bailey) Grunow 1884	-	0	-	11
<i>Odontella chinensis</i> (Greville) Grunow 1884	-	70	-	44
<i>Paralia sulcata</i> (Ehrenberg) Cleve 1873	++	90	++	88
<i>Podosira stelligera</i> (Bailey) A. Mann 1907	-	20	-	44
<i>Rhizosolenia pungens</i> A. Cleve-Euler 1937	-	30	+	44

Table S1. Continuation

<i>Rhizosolenia robusta</i> G. Norman ex Ralfs in Pritchard 1861	-	10	-	11
<i>Rhizosolenia</i> sp.	-	20	-	11
<i>Skeletonema costatum</i> (Greville) Cleve 1873	++	80	++	55
<i>Triceratium</i> cf. <i>favus</i> Ehrenberg 1839	-	10	-	11
<b>Pennate diatoms</b>				
<i>Amphora decussata</i> Grunow 1877	-	0	+	44
<i>Amphora</i> spp.	+	40	-	22
<i>Bacillaria paxillifera</i> (O.F. Müller) T. Marsson 1901	-	10	-	11
<i>Entomoneis alata</i> (Ehrenberg) Ehrenberg 1845	-	40	-	11
<i>Eucampia zodiacus</i> Ehrenberg 1839	++	50	+	33
<i>Fallacia</i> spp.	++	100	++	77
<i>Fragilariopsis doliolus</i> (Wallich) Madlin & Sims 1993	-	10	-	0
<i>Gomphonema</i> sp.	-	0	-	11
<i>Gyrosigma</i> sp.	-	10	-	0
<i>Mastogloia</i> sp.	-	0	-	11
<i>Meuniera membranaceae</i> (Cleve) P.C. Silva in Hasle & Syversten 1996	-	0	+	11
<i>Navicula</i> cf. <i>distans</i> (William Smith) Ralfs in Pritchard 1861	+	90	+	66
<i>Navicula</i> spp.	+	30	+	11
<i>Nitzschia</i> cf. <i>longissima</i> (Brébisson) Ralfs in Pritchard 1861	+	40	+	11
<i>Nitzschia</i> cf. <i>lorenziana</i> var <i>subtilis</i> Grunow in Cleve & Möller 1879	-	10	+	44
<i>Plagiotropis</i> cf. <i>lepidoptera</i> (W. Gregory) Kuntze 1898	-	0	-	33
<i>Pleurosigma</i> cf. <i>angulatum</i> (J.T. Quekett) W. Smith 1852	++	70	-	11
<i>Pleurosigma</i> cf. <i>formosum</i> W. Smith 1852	-	20	-	22
<i>Pleurosigma</i> spp.	+	90	+	88
<b>Pennate diatom not identified</b>				
<i>Pseudo-nitzschia</i> spp.	+	20	+	11
<i>Surirella</i> cf. <i>fastuosa</i> (Ehrenberg) Ehrenberg 1843	-	40	+	66
<i>Thalassionema nitzschioides</i> (Grunow) Mereschkowsky 1902	++	100	++	100
<i>Thalassiosira</i> cf. <i>mala</i> Takano 1965	+	80	++	77
<i>Thalassiosira</i> cf. <i>punctigera</i> (Castracane) Hasle 1983	+	40	-	33
<i>Thalassiosira</i> spp.	++	100	++	100
<i>Thalassiothrix</i> sp.	++	60	+	55
<i>Tryblionella coarctata</i> (Grunow) D.G. Mann in Round, R.M.Crawford & D.G.Mann 1990	+	90	++	100
<b>Flagellates</b>				
<i>Ceratium furca</i> (Ehrenberg) Claparède & Lachmann 1859	+	100	+	88
<i>Ceratium</i> cf. <i>azoricum</i> Cleve 1900	-	20	-	11
<i>Ceratium</i> cf. <i>fuscus</i> (Ehrenberg) Dujardin 1841	-	30	-	11
<i>Ceratium</i> cf. <i>gibberum</i> Gourret 1883	-	0	-	33
<i>Ceratium</i> cf. <i>horridum</i> (Cleve) Gran 1902	-	20	-	22
<i>Ceratium</i> cf. <i>trichoceros</i> (Ehrenberg) Kofoid 1881	-	30	-	22

**Table SI. Continuation.**

<i>Ceratium cf. tripos</i> (O.F.Müller) Nitzsch 1817	-	30	-	22
<i>Ceratium</i> sp.	-	0	-	22
<i>Corythodinium constrictum</i> (F. Stein) F.J.R. Taylor 1976	-	10	-	0
<b>Dynoflagellate not identified</b>	+	60	+	100
<i>Dinophysis acuminata</i> Claparède & Lachmann 1859	++	100	++	100
<i>Dinophysis caudata</i> W.S. Kent 1881	-	50	-	22
<i>Dinophysis</i> spp.	-	50	+	100
<i>Gonyaulax cf. spinifera</i> (Claparède & Lachmann) Diesing 1866	-	30	-	55
<i>Gymnodinium</i> spp.	++	80	++	100
<i>Gyrodinium</i> sp.	-	10	-	0
<i>Katodinium</i> sp.	-	10	-	0
<i>Noctilica scintilans</i> (Macartney) Kofoid & Swezy 1921	-	10	-	22
<i>Oxytoxum</i> sp.	-	10	-	22
<i>Oxytoxum cf. scolopax</i> F. Stein 1883	-	40	-	44
<i>Phalacroma</i> spp.	+	70	+	55
<i>Podolampas</i> sp.	-	50	-	11
<i>Prorocentrum micans</i> Ehrenberg 1834	+	80	++	88
<i>Prorocentrum</i> spp.	++	90	+	100
<i>Protoberidinium cf. divergens</i> (Ehrenberg) Balech 1974	+	70	+	55
<i>Protoberidinium</i> spp.	+	50	+	100
<i>Scrippsiella</i> sp.	+	50	-	11
<i>Dictyocha fibula</i> (Ehrenberg) Balech 1974	+	40	+	44
<i>Distephanus speculum</i> (Ehrenberg) Haeckel 1887	+	40	-	11

(-): Rare or absent (<0.1%); (+): Average (0.1-1.0%); (++): Abundant (1.0-10.0%); (+++): Very abundant (>10%)

**Table SII. Summary of the Redundancy Analysis (RDA) performed between the 21 most abundant phytoplankton taxa and six environmental explanatory variables from Babitonga Bay, Brazil.**

<b>RDA Summary</b>	<b>Axis 1</b>	<b>Axis 2</b>	<b>Axis 3</b>	<b>Axis 4</b>
<b>Phytoplankton</b>				
Eigenvalue	0.378	0.121	0.071	0.045
Species-environment correlations	0.895	0.864	0.875	0.851
% of variance explained (species data)				
Accumulated variance (%)	37.8	12.1	7.1	4.5
Of species data	37.8	49.9	57.0	61.5
Of species-environment relationship	48.1	76.6	87.5	94.3
<b>Correlations of explanatory variables</b>				
Temperature	-0.4677	-0.3413	-0.6487	-0.2235
Dissolved oxygen	0.3613	0.0538	0.6803	0.2753
pH	0.1376	-0.1785	0.7936	0.1039
Salinity	0.3217	-0.0569	0.4612	0.2952
Total dissolved solids	-0.4956	-0.7628	-0.2334	0.1398
Zooplankton abundance	-0.3153	-0.7173	0.4598	0.2030

**Table III.** Zooplankton taxa found in Babitonga Bay estuary. RA: relative abundance. FO: frequency of occurrence.

TAXA	Flood tide		Ebb tide	
	RA %	FO %	RA %	FO %
<b>Amphipoda</b>				
<b>Caprellidae</b>	-	0	-	11
<b>Gammaridae</b>	-	0	-	44
<b>Hyperidea</b>	-	20	-	0
<b>Annelida</b>				
<i>Loimia</i> sp. (larvae)	++	40	++	22
<i>Magelona</i> sp. (adults)	-	20	-	0
<i>Myrianida</i> sp. (epitoke)	-	10	-	22
<i>Procerastea</i> spp. (epitoke)	+	60	-	55
<b>Polychaete</b> sp. 1 (larvae)	-	10	-	0
<b>Bryozoa</b> (larvae)	-	0	-	22
<b>Cephalochordata</b>				
<i>Branchiostoma</i> sp.	-	0	-	11
<b>Chaetognata</b>				
<i>Flaccisagitta enflata</i> (Grassi, 1881)	-	10	-	22
<i>Parasagitta friderici</i> (Ritter-Záhony, 1911)	-	70	-	100
<b>Cladocera</b>				
<i>Penilia avirostris</i> Dana, 1849	+	70	+	55
<i>Pleopis polyphemoides</i> (Leuckart, 1859)	+	60	+	44
<i>Pseudevadne tergestina</i> Claus, 1877	+	50	-	22
<b>Cnidaria</b>				
<i>Abylopsis tetragona</i> (Otto, 1823)	-	20	-	11
<b>Actinula larvae</b>				
<i>Blackfordia virginica</i> Mayer, 1910	-	10	-	22
<i>Clytia</i> spp.	-	20	-	0
<i>Corymorpha gracilis</i> (Brooks, 1883)	-	0	-	55
<i>Diphyes bojani</i> (Eschscholtz, 1825)	-	20	-	0
<i>Liriope tetraphylla</i> (Chamisso & Eysenhardt, 1821)	-	20	-	77
<i>Muggiaea kochii</i> (Will, 1844)	-	30	-	22
<i>Nanomia bijuga</i> (Delle Chiaje, 1844)	-	10	-	0
<i>Obelia</i> spp.	-	20	-	0
<i>Stauridiosarsia reesi</i> (Vannucci, 1956)	-	40	+	55
<b>Copepoda</b>				
<i>Acartia lilljerborgi</i> Giesbrecht, 1889	++	100	++	100
<i>Acartia tonsa</i> Dana, 1884	+++	100	+++	100
<i>Corycaeus</i> spp.	++	70	+	55
<i>Euterpina acutifrons</i> (Dana, 1884)	++	80	+	55
<b>Nauplii</b>	+	50	-	66

**Table SIII. Continuation.**

<i>Paracalanus crassirostris</i> Dahl F., 1824)	+++	100	+++	100
<i>Paracalanus quasimodo</i> Bowman, 1971	+	20	++	33
<i>Oncaea</i> spp.	-	20	-	11
<i>Oithona hebes</i> Giesbrecht, 1891	+++	100	++	100
<i>Oithona plumifera</i> Baird, 1843	-	40	+	55
<i>Temora turbinata</i> (Dana, 1849)	+++	90	+++	100
<i>Sapphirina</i> spp.	-	10	-	11
<b>Ctenophora</b>				
<i>Beroe ovata</i> Bruguère, 1789	-	20	-	0
<i>Mnemiopsis leidyi</i> A. Agassiz, 1865	-	20	-	0
<b>Decapoda</b>				
Anomura (zoea)	-	0	-	11
<b>Brachyura</b> sp. 1 (zoea)	-	0	-	44
<b>Brachyura</b> sp. 2 (zoea)	-	40	+	88
<b>Brachyura</b> sp. 3 (zoea)	-	0	-	11
<b>Brachyura</b> sp. 4 (zoea)	+	90	+	100
<b>Brachyura</b> sp. 5 (zoea)	-	40	-	0
<b>Brachyura</b> sp. 6 (zoea)	-	20	-	0
<b>Caridea</b> (zoeae)	-	0	-	33
<b>Megalopa</b>	-	10	-	0
<b>Paguridae</b> (zoeae)	-	30	-	44
<b>Mollusca</b>				
<b>Bivalve</b>	+	40	+	33
<i>Creseis</i> sp. (veliger)	-	40	-	22
<b>Gastropoda</b> sp. 1 (veliger)	+	70	+	66
<b>Gastropoda</b> sp. 2 (veliger)	-	0	-	33
<i>Limacina</i> sp. 1	-	70	+	66
<i>Limacina</i> sp. 2	-	0	-	33
<b>Mysida</b>	-	20	-	88
<b>Nemertea</b>	-	20	-	0
<b>Ostracoda</b> sp. 1	-	30	+	44
<b>Ostracoda</b> sp. 2	-	0	-	11
<b>Tunicata</b>				
<i>Oikopleura (Vexillaria) dioica</i> Fol, 1872	++	90	+	88
<i>Oikopleura (Coecaria) longicauda</i> (Vogt, 1854)	-	0	-	11
<b>Vertebrata</b>				
<b>Fish eggs</b>	-	30	-	22
<b>Fish larvae</b>	-	20	-	0

(-): Rare or absent (<0.1%); (+): Average (0.1-1.0%); (++): Abundant (1.0-10.0%); (+++): Very abundant (>10%)

**Table SIV. Summary of the Redundancy Analysis (RDA) performed between the 17 most abundant zooplankton taxa and six environmental explanatory variables from Babitonga Bay, Brazil.**

<b>RDA Summary</b>	<b>Axis 1</b>	<b>Axis 2</b>	<b>Axis 3</b>	<b>Axis 4</b>
<b>Zooplankton</b>				
Eigenvalue	0.529	0.203	0.063	0.045
Species-environment correlations	0.988	0.963	0.865	0.918
% of variance explained (species data)	52.9	20.3	6.3	4.5
Accumulated variance (%)				
Of species data	52.9	73.1	79.4	84.0
Of species-environment relationship	61.3	84.8	92.0	97.3
<b>Correlations of explanatory variables</b>				
Temperature	-0.8682	-0.3552	-0.2222	0.1990
pH	0.9091	-0.1172	0.1268	-0.0454
Dissolved oxygen	0.9675	0.1710	0.0884	-0.0842
Salinity	0.9464	0.1943	-0.0338	0.2002
Total dissolved solids	-0.0363	-0.6130	-0.2160	0.6044
Chlorophyll	-0.5747	-0.2089	-0.1014	0.3816
Phytoplankton abundance	-0.4380	0.7315	0.3351	0.3679