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Supplementary Material

The role of environmental factors on beta diversity of periphytic algae in a tropical reservoir

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Table S1. Mean and standard deviation (\pm s.d.) of environmental variables from the Jazigo reservoir, Pernambuco, north-eastern Brazil.

Environmental variables	2017		2018	
	August	November	March	June
Precipitation (mm)	0.70	3.60	118	0.80
Water temperature ($^{\circ}$ C)	23.98 \pm 0.44	28.21 \pm 0.68	30.36 \pm 0.19	24.96 \pm 0.11
pH	8.10 \pm 0.51	7.98 \pm 0.12	8.04 \pm 0.06	8.05 \pm 0.10
Conductivity (μ S cm $^{-1}$)	84.71 \pm 40.82	218.14 \pm 1.09	256.63 \pm 19.62	165.00 \pm 4.37
Dissolved oxygen (mg L $^{-1}$)	5.85 \pm 1.46	4.58 \pm 0.24	3.74 \pm 0.56	8.64 \pm 1.11
Total dissolved solids (mg L $^{-1}$)	33.33 \pm 13.11	109.16 \pm 0.75	132.41 \pm 4.27	86.30 \pm 2.51
Salinity (ppt)	0.10	0.10	0.10	0.12
Light intensity (μ mol photons m $^{-2}$ s $^{-1}$)	748.80 \pm 458.50	548.23 \pm 272.21	426.35 \pm 312.66	1081.61 \pm 415.63
Nitrate (μ g L $^{-1}$)	125.49 \pm 16.16	14.09 \pm 4.14	2.60 \pm 1.94	12.22 \pm 2.82
Nitrite (μ g L $^{-1}$)	9.66 \pm 1.02	10.96 \pm 1.22	0.43 \pm 0.20	10.43 \pm 1.03
Ammonia (μ g L $^{-1}$)	37.66 \pm 8.02	18.06 \pm 0.72	20.12 \pm 0.72	17.81 \pm 0.62
Dissolved inorganic nitrogen (μ g L $^{-1}$)	172.82 \pm 9.15	43.11 \pm 6.09	23.16 \pm 1.41	32.76 \pm 4.73
Total phosphorus (μ g L $^{-1}$)	51.39 \pm 4.27	33.25 \pm 8.55	46.85 \pm 2.13	38.27 \pm 5.63
Secchi (m)	1.00 \pm 0.36	1.06 \pm 0.30	1.54 \pm 0.65	1.33 \pm 0.60

Table S2. Composition of periphytic algae found in aquatic macrophytes in the Jazigo reservoir, north-eastern Brazil.

	<i>Pontederia crassipes</i>	<i>Nymphaea pulchella</i>	<i>Cyperus articulatus</i>	<i>Ludwigia helminthorrhiza</i>
Cyanophyceae				
<i>Anabaena</i> sp.	X	-	-	-
<i>Aphanocapsa</i> sp.	X	X	X	-
<i>Chroococcus minutus</i> (Kützing) Nägeli	X	X	X	X
<i>Raphidiopsis raciborskii</i> (Woloszynska) Aguilera, Berrendero, Gómez, Kaštovský, Echenique & Salerno	-	X	X	-
<i>Geitlerinema amphibium</i> (C. Agardh) Anagnostidis	X	X	X	X
<i>Geitlerinema splendidum</i> (Greville ex Gomont) Anagnostidis	X	-	X	X
<i>Merismopedia tenuissima</i> Lemmermann	X	X	X	X
<i>Microcystis aeruginosa</i> (Kützing) Kützing	X	X	X	X
<i>Oscillatoria limosa</i> C.Agardh ex Gomont	X	X	X	X
<i>Phormidium hamelii</i> (Frémy) Anagnostidis & Komárek	X	-	X	X
<i>Plankothrix agardhii</i> (Gomont) Anagnostidis & Komárek	-	X	-	-
<i>Pseudanabaena</i> sp.	X	X	-	-
<i>Spirulina</i> sp.	X	X	X	X
Chlorophyceae				
<i>Actinastrum hantzschii</i> Lagerheim	X	X	X	-
<i>Ankistrodesmus falcatus</i> (Corda) Ralfs	X	X	-	-
<i>Ankistrodesmus fusiformes</i> Corda sensu Korshikov	X	X	X	-
<i>Ankistrodesmus gracilis</i> (Reinsch) Korshikov	X	X	-	-
<i>Botryococcus braunii</i> Kützing	X	X	-	X
<i>Characium angustum</i> A.Braun	X	X	X	X
<i>Chlorotetraedron incus</i> (Teiling) Komárek & Kovácik	X	X	X	X
<i>Coelastrum microporum</i> Nägeli	X	X	X	X
<i>Crucigenia fenestrata</i> (Schmidle) Schmidle	X	X	-	-
<i>Crucigenia tetrapedia</i> (Kirchner) Kuntze	X	X	X	X
<i>Desmodesmus communis</i> (E.Hegewald) E.Hegewald	X	-	-	X
<i>Kirchneriella obesa</i> (West) West & G.S.West	X	X	-	X
<i>Micractinium pusillum</i> Fresenius	-	X	-	-
<i>Monoraphidium arcuatum</i> (Korshikov) Hindák	X	X	X	X
<i>Oedogonium</i> sp.	X	-	-	X
<i>Pediastrum duplex</i> Meyen	X	-	-	-
<i>Pediastrum tetras</i> (Ehrenberg) Ralfs	X	X	-	X
<i>Scenedesmus acuminatus</i> (Lagerheim) Chodat	X	X	-	X
<i>Scenedesmus acutus</i> Meyen	-	X	-	-
<i>Scenedesmus bernardii</i> G.M.Smith	X	-	-	-
<i>Scenedesmus bicaudatus</i> Dedusenko	X	-	-	X
<i>Scenedesmus ecornis</i> (Ehrenberg) Chodat	X	X	-	-
<i>Selenastrum gracile</i> Reinsch	X	X	X	X
<i>Spirogyra</i> sp.	X	X	X	X
<i>Tetraedron trigonum</i> (Nägeli) Hansgirg	-	-	-	X
Trebouxiophyceae				
<i>Coccomyxa lacustris</i> (Chodat) Chodat	X	X	-	-
<i>Dyctyosphaerium pulchellum</i> H.C.Wood	X	-	-	X
<i>Oocystis borgei</i> J. W. Snow	X	X	-	-
Zygnematophyceae				
<i>Closterium arcuatum</i> Brébisson ex Ralfs	-	-	-	X
<i>Closterium closterioides</i> (Ralfs) A.Louis & Peeters	X	-	-	X
<i>Closterium incurvum</i> Brébisson	X	X	-	-
<i>Closterium moniliferum</i> Ehrenberg ex Ralfs	X	X	X	X
<i>Cosmarium circulare</i> Reinsch, nom. illeg.	X	X	-	-
<i>Cosmarium moniliforme</i> Ralfs	X	X	-	-
<i>Cosmarium punctulatum</i> var. <i>subpunctulatum</i> (Nordstedt) Børgesen	X	-	X	-
<i>Cosmarium subcrenatum</i> Hantzsch	-	X	-	-
<i>Cosmarium</i> sp.	X	X	-	X
<i>Micrasterias laticeps</i> Nordstedt	X	-	-	-
<i>Micrasterias</i> sp.	X	-	-	-
<i>Staurastrum leptocladum</i> var. <i>insigne</i> West & G.S.West	X	-	X	X

	<i>Pontederia crassipes</i>	<i>Nymphaea pulchella</i>	<i>Cyperus articulatus</i>	<i>Ludwigia helminthorrhiza</i>
Xanthophyceae				
<i>Centritractus belenophorus</i> (Schmidle) Lemmermann	X	-	X	-
<i>Tribonema viride</i> Pascher	X	X	X	X
Bacillariophyceae				
<i>Achnantheidium minutissimum</i> (Kützing) Czarnecki	X	X	-	-
<i>Amphora</i> sp.	X	X	-	X
<i>Aulacoseira granulata</i> (Ehrenberg) Simonsen	X	X	X	X
<i>Aulacoseira granulata</i> var. <i>angustissima</i> (Otto Müller) Simonsen	X	X	X	X
<i>Cocconeis placentula</i> Ehrenberg	X	X	-	X
<i>Cyclotella meneghiniana</i> Kützing	X	X	X	X
<i>Cymbella</i> sp.	-	-	X	X
<i>Diatoma</i> sp.	X	-	-	X
<i>Encyonema</i> sp.	X	-	-	X
<i>Epithemia adnata</i> (Kützing) Brébisson	X	-	-	X
<i>Eunotia pectinalis</i> (Kützing) Rabenhorst	X	-	X	X
<i>Eunotia soleirolii</i> (Kützing) Rabenhorst	X	X	X	-
<i>Fragilaria capucina</i> Desmazières	X	-	-	X
<i>Gomphonema augur</i> Ehrenberg	X	-	X	X
<i>Gomphonema gracile</i> Ehrenberg	X	X	X	X
<i>Gomphonema lagenula</i> Kützing	X	-	-	X
<i>Gomphonema parvulum</i> (Kützing) Kützing	X	X	X	X
<i>Gyrosigma balticum</i> (Ehrenberg) Rabenhorst	X	X	-	X
<i>Nitzschia palea</i> (Kützing) W.Smith	-	-	X	-
<i>Pinnularia major</i> (Kützing) Rabenhorst	X	X	X	X
<i>Surirella robusta</i> Ehrenberg	X	X	X	X
<i>Synedra ulna</i> (Nitzsch) Ehrenberg	X		X	
Euglenophyceae				
<i>Phacus curvicauda</i> Svirenko	X	X	-	
<i>Phacus longicauda</i> (Ehrenberg) Dujardin	X	-	-	-
<i>Trachelomonas hispida</i> (Perty) F.Stein	X	X	X	X
Dinophyceae				
<i>Ceratium furcoides</i> (Levander) Langhans	X	X	X	X
<i>Peridinium gatunense</i> Nygaard	X	-	X	-