

Supplementary file for: Borghini F., Colacevich A., Caruso T. & Bargagli R. 2016. Algal biomass and pigments along a latitudinal gradient in Victoria Land lakes, East Antarctica. *Polar Research* 35.  
 Correspondence: Francesca Borghini, Department of Physical, Earth and Environmental Sciences, University of Siena, Via P.A. Mattioli, 4, IT-53100 Siena, Italy. E-mail: borghini@unisi.it

**Supplementary Table S1.** Location of sampled lakes, their catchment lithology, distance from the sea, altitude, estimated lake surface (from Borghini et al. 2011).

Site	Lake/pond	Latitude (S)	Longitude (E)	Catchment lithology	Distance from the sea (m)	Altitude (m a.s.l.)	Estimated surface area (m <sup>2</sup> )
Kar Plateau	Lake	76.91065	162.54123	granitic	500	160	2900
Depot Island	Lake	76.70270	162.96872	granitic	150	10	2000
Mt. Murray	Lake A	76.16020	162.00270	granitic	300	250	5800
	Lake B	76.16120	161.99807	granitic	500	256	4600
	Lake C	76.16327	161.99303	granitic	700	262	6200
	Lake D	76.17053	161.96810	granitic	1000	270	4100
	Lake E	76.16238	161.99727	granitic	500	125	3900
	Lake F	76.16433	161.99595	granitic	500	125	2100
Tarn Flat	Lago Gardo	74.96837	162.51650	granitic	35000	-40	17700
	Lago Tonolli	74.96790	162.51640	granitic	35000	-70	3100
	Lake 1	74.99332	162.53232	granitic	29000	110	3800
	Lake 2	74.97862	162.55693	granitic	27000	100	4700
	Lake 3	74.97220	162.55772	granitic	26000	90	2900
Inexpressible Island	Lake 4	74.95342	162.52882	granitic	24000	130	6200
	Lake A	74.89842	163.64420	metamorphic	6000	154	7200
	Lake C	74.91038	163.68525	granitic	2100	21	4200
	Penguin lagoon	74.89927	163.71910	granitic	10	0	26700
	Lake F	74.90998	163.68042	granitic	2000	154	1900
	Lake G	74.89305	163.71738	granitic	1500	110	2000
	Lake H	74.89605	163.73362	granitic	100	115	1700
	Lake I	74.90417	163.63627	granitic	4000	161	1900
	Lake L	74.89268	163.69843	granitic	4000	100	4000
	Lagoon	74.89444	163.68333	marine sediment	0	0	8000
Vegetation Island	Lake	74.77553	163.65377	metamorphic	13000	190	2500
Adelie Cove	Lake	74.73312	163.94987	metamorphic	50	1	1800
Andersson Ridge	Lake 5	74.71378	162.66815	granitic	55000	1000	2200
	Lake 6	74.71340	162.67000	granitic	55000	1000	2400
	Lake 7	74.72317	162.69383	granitic	55000	1000	2300
Rhodes Head	Lake	74.70416	163.04371	granitic	35000	350	800
Northern Foothills	Skua Lake	74.70000	164.08333	granitic	2000	117	2200
	Pond Eneide	74.69722	164.09861	granitic	800	55	400
	Lake Enigma	74.72498	164.03316	granitic	4000	195	28630
	Lake Carezza	74.71000	164.05833	granitic	2000	167	7900
Snowy Point	Lake	74.61532	163.76125	metamorphic	30000	200	2400
Gondwana	Lake Gondwana	74.61268	164.21378	metamorphic	8000	86	3000

	Lake B	74.63277	164.22692	metamorphic	900	60	2000
Edmonson Point	Lake 13	74.33275	165.13817	volcanic	100	0	17800
	Lake 14	74.32942	165.13292	volcanic	500	20	4000
	Lake 15	74.32595	165.12563	volcanic	100	3	3600
	Pond C	74.33020	165.10807	volcanic	500	3	150
	Pond D	74.32918	165.10892	volcanic	700	3	80
	Pond E	74.33137	165.14013	volcanic	0	18	30
Edmonson Point North	Lake Pantano	74.31293	165.06942	volcanic	500	3	4600
Baker Rocks	Lake	74.23333	164.75000	volcanic	100	10	1000
Crater Cirque	Lake	72.60000	169.35000	granitic	30000	150	15300
Luther Peak	Lake	72.37057	169.88800	granitic	8000	390	1500
	Lake North	72.34563	169.92427	granitic	100	1	2500
Helm Point	Lake	72.13712	170.15825	granitic	50	200	400

---

**Supplementary Table S2.** Bird presence, ice cover and nutrients (TNw and TPw) in lacustrine waters (expressed in mg l<sup>-1</sup>) and sediments (TNsed, TCsed and TOCsed expressed in %). – no birds, + few, ++ several, +++ many, ++++very many. \*no official name.

Site	Lake/pond	Birds	Ice cover	TNw	TPw	TNsed	TCsed	TOCsed
Kar Plateau	Lake*	+	absent	2.73	0.06	0.13	0.50	0.30
Depot Island	Lake*	+	partial	6.54	1.12	0.13	1.10	0.98
Mount Murray	Lake A*	-	absent	1.54	0.04	0.15	0.36	0.28
	Lake B*	-	absent	0.28	0.10	0.20	1.26	0.56
	Lake C*	-	absent	0.80	0.03	<0.10	0.50	0.16
	Lake D*	-	absent	0.27	0.04	<0.10	0.30	<0.10
	Lake E*	-	absent	3.24	0.02	0.10	0.61	0.39
	Lake F*	-	absent	0.94	0.01	0.10	0.67	0.5
Tarn Flat	Lake Gardo	-	absent	1.54	0.02	<0.10	0.32	0.14
	Lake Tonolli	-	partial	2.96	0.01	0.23	1.02	0.31
	Lake 1*	-	partial	0.24	0.05	0.11	0.17	0.10
	Lake 2*	-	partial	1.83	0.03	0.10	0.14	<0.10
	Lake 3*	-	partial	11.86	0.03	<0.10	1.09	<0.10
	Lake 4*	-	absent	1.09	0.04	<0.10	0.80	0.64
Inexpressible Island	Lake A*	-	absent	0.36	0.05	0.18	0.52	0.31
	Lake C*	++	partial	0.30	0.04	0.10	0.22	<0.10
	Penguin Lagoon	+++	partial	6.52	0.13	0.30	0.44	0.13
	Lake F*	+	partial	1.89	0.02	0.13	0.26	0.30
	Lake G*	+	perennial	4.11	0.29	0.13	0.64	0.54
	Lake H*	+	partial	3.46	0.02	0.13	0.26	<0.10
	Lake I*	+++	partial	4.06	0.01	0.13	0.35	<0.10
	Lake L*	-	absent	0.89	<0.004	0.13	0.20	<0.10
	Lagoon*	+++	absent	9.62	0.08	0.13	1.30	1.05
Vegetation Island	Lake*	+	partial	1.59	0.01	0.13	0.30	<0.10
Adelie Cove	Lake *	+	absent	5.70	0.24	0.13	0.22	0.14
Andersson Ridge	Lake 5*	-	absent	1.33	0.18	0.10	0.40	<0.10
	Lake 6*	-	absent	0.52	0.01	0.10	0.61	<0.10
	Lake 7*	-	partial	1.99	0.01	0.10	0.70	0.04
Rhodes Head	Lake*	-	partial	1.64	0.01	0.14	0.58	0.24
Northern Foothills	Lake Skua	++	absent	2.02	0.05	0.13	1.10	0.6
	Pond Eneide	++	absent	1.95	0.07	0.12	0.90	0.55
	Enigma Lake	-	perennial	2.56	0.26	0.15	0.55	0.12
	Carezza Lake	+	absent	1.65	0.11	0.13	0.60	0.19
Snowy Point	Lake*	-	partial	1.83	0.02	0.16	0.66	0.44
Gondwana	Lake Gondwana	++	partial	1.07	0.02	0.25	1.53	1.3
	Lake B*	+++	partial	4.28	0.10	0.25	2.13	1.95
Edmonson Point	Lake 13	++++	partial	9.02	0.96	0.24	1.78	0.11
	Lake 14	+	partial	2.92	0.12	0.25	3.20	3.12
	Lake 15	+	partial	3.42	0.10	0.28	1.30	0.58
	Pond C*	+	perennial	3.48	0.05	0.20	0.83	0.17
	Pond D*	+	absent	0.34	0.04	0.24	1.22	<0.1
	Pond E*	+++	partial	17.80	0.11	0.24	1.22	0.47
Edmonson Point North	Lake Pantano	++	absent	1.76	0.02	0.15	0.20	0.12
Baker Rocks	Lake*	+	absent	0.67	0.07	0.24	1.22	0.16
Crater Cirque	Lake*	+++	perennial	1.53	0.07	0.25	0.15	<0.10
Luther Peak	Lake*	-	partial	1.67	0.05	0.25	1.40	1.06
	Lake North*	+	partial	1.17	0.03	0.25	0.45	0.20
Helm Point	Lake*	-	partial	1.65	0.01	0.30	0.35	0.23

**Supplementary Table S3.** Lake identification codes for Fig. 6.

Code	Site	Lake/pond
1	Kar Plateau	Lake
2	Depot Island	Lake
3	Mount Murray	Lake A
4	Mount Murray	Lake B
5	Mount Murray	Lake C
6	Mount Murray	Lake D
7	Mount Murray	Lake E
8	Mount Murray	Lake F
9	Tarn Flat	Lago Gardo
10	Tarn Flat	Lago Tonolli
11	Tarn Flat	Lake 1
12	Tarn Flat	Lake 2
13	Tarn Flat	Lake 3
14	Tarn Flat	Lake 4
15	Inexpressible Island	Lake A
17	Inexpressible Island	Lake C
19	Inexpressible Island	Penguin Lagoon
20	Inexpressible Island	Lake F
21	Inexpressible Island	Lake G
22	Inexpressible Island	Lake H
23	Inexpressible Island	Lake I
24	Inexpressible Island	Lake L
25	Inexpressible Island	Lagoon
26	Vegetation Island	Lake
27	Adelie Cove	Lake B
28	Andersson Ridge	Lake 5
29	Andersson Ridge	Lake 6
30	Andersson Ridge	Lake 7
31	Rhodes Head	Lake
32	Northern Foothills	Lago degli Skua
33	Northern Foothills	Pozza Eneide
34	Northern Foothills	Enigma Lake
35	Northern Foothills	Lago Carezza
36	Snowy Point	Lake
37	Gondwana	Lago Gondwana
38	Gondwana	Lake B
39	Edmonson Point	Lake 13
40	Edmonson Point	Lake 14
41	Edmonson Point	Lake 15
42	Edmonson Point	Pond C
43	Edmonson Point	Pond D
44	Edmonson Point	Pond E
45	Edmonson Point North	Lago Pantano
46	Baker Rocks	Lake
47	Crater Cirque	Lake
48	Luther Peak	Lake
49	Luther Peak	Lake North
50	Helm Point	Lake