

The following supplement accompanies the article

Seasonal succession of phytoplankton community structure from autonomous sampling at the Australian Southern Ocean Time Series (SOTS) observatory

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Marine Ecology Progress Series 589: 13–31 (2018)

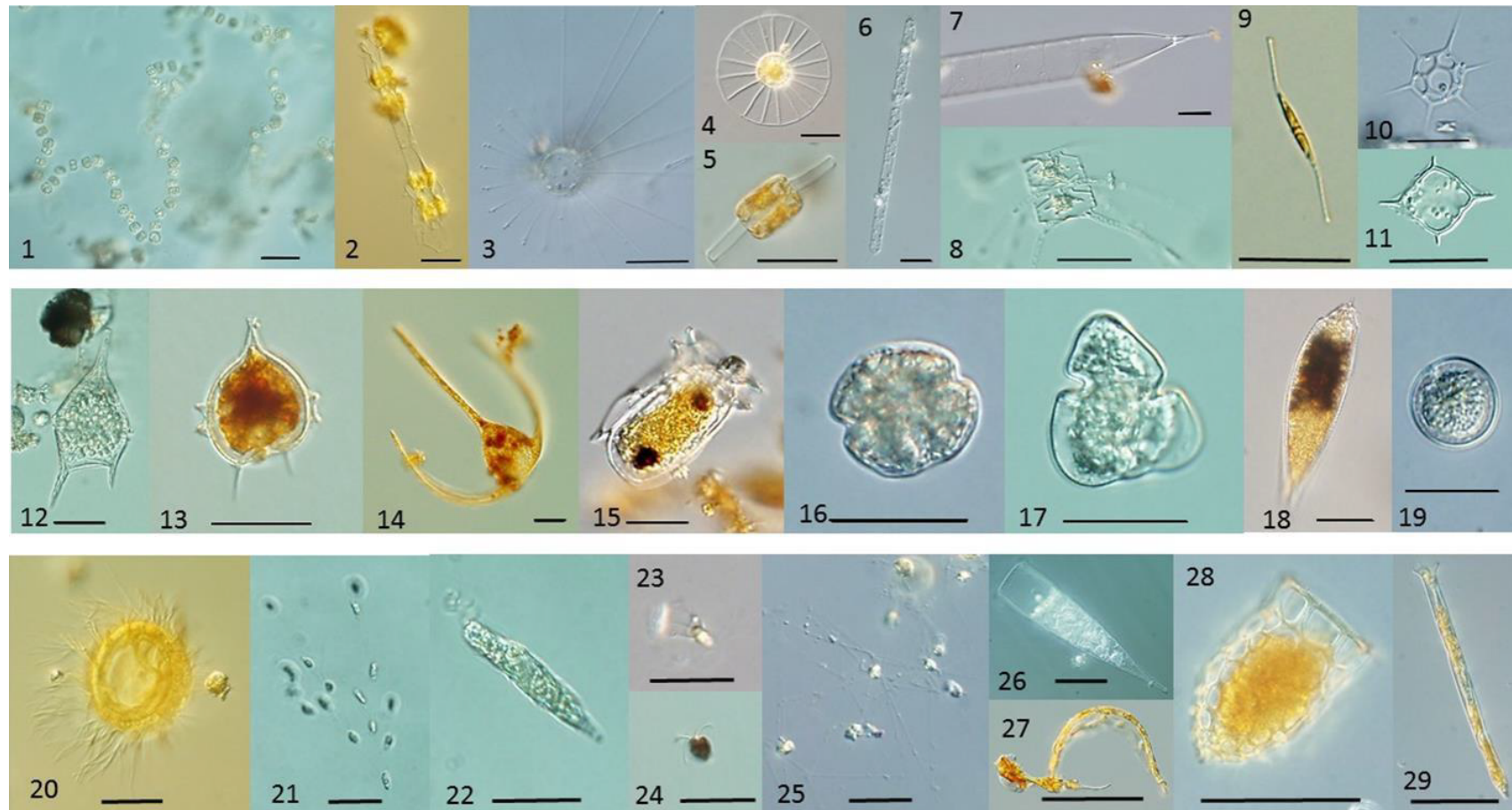


Figure S1 Pulse 7 light microscopy images. Top row diatoms and silicoflagellates: 1) *Thalassiosira* sp. chain 2) *Leptocylinthus mediterraneus* (with symbiont *Solenicola setigera*) 3) *Corethron pennatum* 4, 5) *Planktoniella sol* (valve and girdle view) 6) *Guinardia cylindrus* 7) *Rhizosolenia* sp 8) *Chaetoceros* sp.

9) *Ceratoneis closterium* 10) *Stephanocha speculum* 11) *Dictyocha cf stapedia*. Middle row; dinoflagellates: 12) *Triplos pentagonus/lineatus* complex 13) *Protoperidinium* sp 14) *Triplos symmetricus* 15) *Dinophysis* sp. 16) Gymnodinioid sp. 17) *Karenia* sp. 18) *Oxytoxum* sp. 19) *Prorocentrum balticum*. Bottom row; ciliates, appendicularia and flagellates: 20) Ciliate 21) *Dinobryon* colony 22) *Eutreptiella* sp 23) *Parvicorbicula* sp 24) *Pyramimonas* sp. 25) *Phaeocystis antarctica* 26) *Rhabdonella* sp. 27) *Oikopleura* 28) *Dictyocysta mitra* 29) *Salpingella* sp. Scale bars 2-25 are 20 μm ; 1, 26-29 are 50 μm .

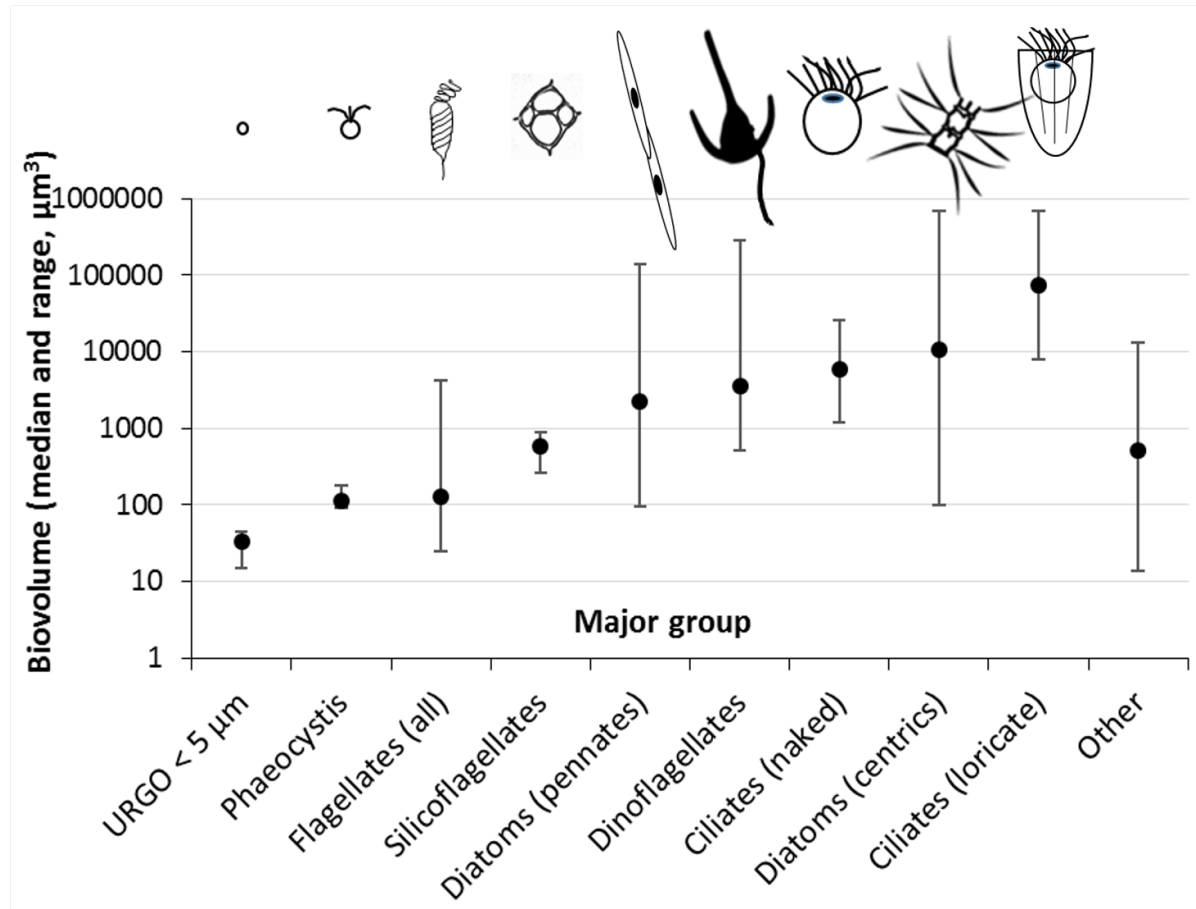


Figure S2 Biovolumes (μm^3) of major groups from Pulse-7 deployment (all samples combined). Ranges of observed volumes are shown by the vertical bars; average values are not weighted by cell abundances. The Other category includes pollen, radiolarians, appendicularians, and unidentifiable autotrophs and heterotrophs (see Methods for further discussion).

Table S1 Sampling sequence and dates for phytoplankton community structure (even numbers are glutaraldehyde preserved replicate), Pulse 7 deployment. Paired, odd numbered bags were preserved with HgCl₂ (final concentration 80 μM) for analysis of alkalinity, DIC and nutrients (see Methods). Season groupings, MLD (m) and temperature (°C) also shown.

Bag number	Sample date, and time (UTC)	Season grouping	Mixed layer depth (m)	Water temperature (°C)
2	12/09/10, 03:00	Early spring	463	9.41
4	21/09/10, 03:00	Early spring	620	9.12
6	30/09/10, 03:00	Early spring	616	9.07
8	9/10/10, 03:00	Early spring	616	9.00
10	18/10/10, 03:00	Late spring	484	9.44
12	27/10/10, 03:00	Late spring	348	9.45
14	5/11/10, 03:00	Late spring	122	9.52
16	14/11/10, 03:00	Late spring	486	10.32
18	23/11/10, 03:00	Late spring	55	10.17
20	2/12/10, 03:00	Summer/autumn	50	10.18
22	11/12/10, 03:00	Summer/autumn	57	10.43
24	20/12/10, 03:00	Summer/autumn	52	10.90
26	29/12/10, 03:00	Summer/autumn	72	10.78
28	7/01/11, 03:00	Summer/autumn	52	10.97
30	16/01/11, 03:00	Summer/autumn	52	10.62
32	25/01/11, 03:00	Summer/autumn	48	11.84
34	3/02/11, 03:00	Summer/autumn	59	11.73
36	12/02/11, 03:00	Summer/autumn	67	11.44
38	21/02/11, 03:00	Summer/autumn	93	11.17
40	2/03/11, 03:00	Summer/autumn	181	11.09
42	11/03/11, 03:00	Summer/autumn	128	11.48
44	20/03/11, 03:00	Summer/autumn	92	11.46
46	29/03/11, 03:00	Summer/autumn	88	11.57
48	7/04/11, 03:00	Summer/autumn	146	11.20