**Supplementary table 1 :** Full list of microplankton species/group enumerated and their corresponding carbon content. Carbon content was taken either from Cornet-Barthaux et al. (2007) or calculated from the biovolume (Hillebrand et al., 1999) and group-specific carbon:volume relationships (Menden-Deuer and Lessard, 2007).

|  |  |  |
| --- | --- | --- |
| **Microplankton species/group** | **Carbon content (pgC cell-1)** | **Reference** |
| **Diatoms** |  |  |
| *Asteromphalus* group | 365 | Cornet-Barthaux et al., 2007 |
| *Bacteriastrum* spp.group | 122 | Calculated from Hillebrand et al., 1999 and Menden-Deuer and Lessard, 2000. |
| *Chaetoceros aequatorialis*Cleve | 346 |
| *Chaetoceros atlanticus*Cleve | 217 |
| *Chaetoceros atlanticus* var. *neapolitana*(Schröder) Hustedt | 217 |
| *Chaetoceros bulbosus*(Ehrenberg) Heiden | 222 | Cornet-Barthaux et al., 2007 |
| *Chaetoceros concavicorni*sMangin | 198 | Calculated from Hillebrand et al., 1999 and Menden-Deuer and Lessard, 2000. |
| *Chaetoceros decipiens*Cleve | 783 |
| *Chaetoceros densus*Cleve | 415 |
| *Chaetoceros diadema*(Ehrenberg) Gran | 94 |
| *Chaetoceros dichaeta*Ehrenberg | 303 |
| *Chaetoceros Hyalochaete* (vegetative)group | 52 | Cornet-Barthaux et al., 2007 |
| *Chaetoceros Hyalochaete* (spore)group | 227 | Rembauville et al., 2015 |
| *Chaetoceros peruvianus*Brighwell | 356 | Cornet-Barthaux et al., 2007 |
| *Corethron inerme*Karsten | 1097 |
| *Corethron pennatum*(Grunow) Ostenfeld | 1097 |
| *Coscinodiscus* sp.group | 244 |
| *Cylindrotheca closterium*(Ehrenberg) Reimann & Lewin | 17 |
| *Dactyliosolen antarcticus*Castracane | 700 |
| *Eucampia antarctica* var. *antarctica*(Castracane) Mangin | 416 |
| *Fragilariopsis kerguelensis*(O’Meara) Hustedt | 158 |
| *Fragilariopsis separanda/rhombica*group | 128 |
| *Guinardia cylindrus*(Cleve) Hasle | 495 |
| *Membraneis*group | 3225 |
| *Navicula* sp. | 126 |
| *Nitzschia directa*Pantocsek | 15 |
| *Odontella weissflogii*(Grunow) Grunow | 1939 |
| *Pleurosigma*group | 469 |
| *Proboscia alata*(Brightwell) Sundström | 3686 |
| *Proboscia inermis*(Castracane) Jordan & Ligowski | 2898 |
| *Proboscia truncata*(Karsten) Nöthig & Ligowski | 2898 |
| *Pseudo-nitzschia* spp.group | 127 |
| *Rhizosolenia chunii*Karsten | 1382 |
| *Rhizosolenia pugens*Cleve-Euler | 1382 |
| *Rhizosolenia simplex*Karsten | 1382 |
| *Rhizosolenia antennata f. semispina*Sundström | 1382 |
| *Thalassionema nitzschioides*(Grunow) Mereschkowsky | 30 |
| *Thalassiosira lentiginosa*(Janisch) Fryxell | 3119 |
| *Thalassiothrix antarctica*Schimper | 3556 |
| *Small centric (< 20µm)*group | 93 |
| *Med centric (20 - 50 µm)*group | 365 |
|  |  |  |
| **Dinoflagellates** |  |  |
| *Brachidinium capitatum*Taylor | 426 | Calculated from Hillebrand et al., 1999 and Menden-Deuer and Lessard, 2000. |
| *Ceratium lineatum*(Ehrenberg) Cleve | 1051 |
| *Ceratium longipes*(Bailey) Gran | 1585 |
| *Ceratium fusus*(Ehrenberg) Dujardin | 987 |
| *Dinophysis*group | 1724 |
| *Gymnodinium spp.*group | 368 |
| *Gyrodinium spp.*group | 396 |
| *Oxytoxum sp.*group | 498 |
| *Podolampas palmipes*Stein | 527 |
| *Prorocentrum spp.*group | 463 |
| *Protoperidinium spp.*group | 536 |
|  |  |  |
| **Ciliates** |  |  |
| *Naked ciliates* | 1249 | Calculated from Hillebrand et al., 1999 and Menden-Deuer and Lessard, 2000. |
| *Tintinnids* | 3996 |

**Supplementary Table 2:** Microplankton full cells abundance (× 103 cell L-1).

|  |  |
| --- | --- |
|  | **Samples** |
| **Species/taxa group** | **5M** | **5T** | **5D** | **6M** | **6T** | **6D** | **7M** | **7T** | **7D** | **8M** | **8T** | **8D** | **9M** | **9T** | **9D** | **10M** | **10T** | **10D** | **11M** | **11T** | **11D** | **12M** | **12T** | **12D** | **13M** | **13T** | **13D** | **14M** | **14T** | **14D** | **A3M** | **A3T** | **A3D** |
| **Diatoms** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Asteromphalus hookeri* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Asteromphalus hyalinus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Bacteriastrum* | 361.3 | 10.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Chaetoceros aequatorialis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 |
| *Chaetoceros atlanticus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.6 | 29.8 | 1.0 | 0.8 | 3.1 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0 | 1.6 | 0 |
| *Chaetoceros atlanticus var. neopolitana* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 |
| *Chaetoceros bulbosum* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.0 | 0 | 0.1 | 0.7 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 |
| *Chaetoceros concavicornis* | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Chaetoceros decipiens* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.3 | 0.1 | 0 |
| *Chaetoceros densus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.7 | 0.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Chaetoceros diadema* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 |
| *Chaetoceros dichaeta* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 0.1 | 0 | 5.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0 | 0.4 | 0.4 | 0 | 3.9 | 1.2 | 0.3 |
| *Chaetoceros Hyalochaete* | 2.7 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0.5 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 3.8 | 8.3 | 0 | 3.9 | 15.7 | 0 | 7.9 | 43.5 | 25.0 |
| *Chaetoceros Hyalochaete (spore)* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16.6 | 36.1 |
| *Chaetoceros peruvianus* | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0.4 | 0.2 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.1 | 0 | 0.2 | 0 | 0 | 0.1 | 0 | 0 |
| *Corethron inerme* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0.5 | 0 | 0 | 0.2 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.7 | 6.3 | 0 |
| *Corethron pennatum* | 0.3 | 0.2 | 0 | 0 | 0.1 | 0 | 0.1 | 0 | 0 | 0.1 | 0 | 0 | 1.3 | 0.9 | 0 | 1.9 | 1.2 | 0 | 0.2 | 0.1 | 0 | 1.0 | 0.1 | 0 | 0.3 | 0 | 0 | 1.5 | 2.4 | 0 | 1.6 | 4.7 | 0 |
| *Coscinodiscus sp.* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.1 | 0 |
| *Dactyliosolen antarcticus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 1.2 | 0.3 | 0 | 1.6 | 1.2 | 0 | 1.3 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.3 | 0 |
| *Eucampia antarctica* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0.1 | 0 | 0 | 0.5 | 0 | 0.3 | 0.8 | 0.1 | 0.8 | 0.7 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 4.2 | 14.2 | 0.3 |
| *Fragilariopsis kerguelensis* | 0 | 0 | 0 | 1.7 | 2.1 | 0 | 0 | 0.1 | 0 | 0 | 0.2 | 0 | 6.1 | 0.8 | 0 | 20.1 | 2.7 | 0 | 41.7 | 6.2 | 0 | 0.1 | 0.2 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 4.8 | 2.7 | 0 |
| *Fragilariopsis separanda/rhombica* | 0 | 0 | 0 | 1.4 | 2.6 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 1.8 | 0.3 | 0 | 7.3 | 0.3 | 0 | 6.8 | 1.9 | 0 | 0.5 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.0 | 0.4 | 0 |
| *Guinardia cylindrus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.3 | 0 |
| *Membraneis sp.* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.2 | 0 | 1.1 | 0.2 | 0 | 0.7 | 0.2 | 0 | 1.2 | 0.5 | 0 | 0.7 | 0.6 | 0 | 0.5 | 0.8 | 0 | 1.2 | 0.8 | 0 |
| *Navicula sp.* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Nitzschia directa* | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0.1 | 0.4 | 0 | 0.2 | 0.9 | 0 | 0 | 0.1 | 0 | 0.3 | 0.5 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 |
| *Nitzschia longissima* | 2.8 | 0.1 | 0 | 0.6 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 6.9 | 0.5 | 0 | 2.4 | 1.0 | 0 | 1.4 | 0.8 | 0 | 0.4 | 0.5 | 0 | 6.2 | 2.4 | 0 | 4.8 | 5.3 | 0 | 0.2 | 0.1 | 0 |
| *Odontella weissflogii* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 2.1 | 0 |
| *Plagiotropis* | 0.2 | 0 | 0 | 0.4 | 0.3 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0.4 | 0.2 | 0 | 1.2 | 0.7 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.1 | 1.4 | 0 |
| *Proboscia alata* | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0 | 0 | 0.1 | 0 | 0 | 0.9 | 0.1 | 0 |
| *Proboscia inermis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.3 | 0 | 0.1 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.2 | 0.2 |
| *Proboscia truncata* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 |
| *Pseudo-nitzschia spp.* | 21.1 | 1.2 | 0 | 2.8 | 0.3 | 0.1 | 0.8 | 1.1 | 0 | 1.5 | 0.9 | 0 | 11.9 | 5.9 | 0.4 | 32.2 | 11.0 | 0 | 5.8 | 7.2 | 0.1 | 1.9 | 1.2 | 0.1 | 17.8 | 18.7 | 0 | 8.8 | 15.0 | 0.1 | 16.2 | 55.8 | 7.3 |
| *Rhizosolenia chunii* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.9 | 0.3 | 0 | 2.2 | 0.4 | 0 | 0.3 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.2 | 0.8 | 0 |
| *Rhizosolenia pugens* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Rhizosolenia simplex* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 |
| *Rhizosolenia styliformis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0.2 | 0 |
| *Thalassionema nitzschioides* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0 | 1.9 | 0.4 | 0 | 0.8 | 0.3 | 0 | 1.2 | 0.2 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 1.2 | 0.5 | 0.8 |
| *Thalassiosira lentiginosa* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.4 | 0 | 0.8 | 0.4 | 0 | 0.9 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.2 | 0 |
| *Thalassiothrix antarctica* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 | 0.5 | 0 | 1.1 | 0.6 | 0 | 0.2 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0.1 | 0 | 4.3 | 5.0 | 0 |
| *Small centric (< 20µm)* | 4.3 | 0.1 | 0 | 0.8 | 1.7 | 0 | 0.1 | 0.1 | 0 | 0.1 | 0.3 | 0 | 2.3 | 0.1 | 0 | 5.7 | 0.3 | 0 | 7.8 | 1.7 | 0 | 2.0 | 0.8 | 0.1 | 1.0 | 0.8 | 0 | 1.6 | 0 | 0 | 1.5 | 0.4 | 0 |
| *Med centric (20 - 50 µm)* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.2 | 0 | 0 | 0 | 0 |
| **Dinoflagellates** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Brachidinium capitatum* | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ceratium lineatum* | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0.3 | 0.2 | 0 | 0 | 0 | 0 |
| *Ceratium longipes* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ceratium fusus* | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.1 | 0 | 0.2 | 0.1 | 0 | 0 | 0 | 0 |
| *Dinophysis* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gymnodinium sp.* | 4.1 | 0.5 | 0.1 | 2.9 | 1.5 | 0.1 | 0.4 | 0.3 | 0.1 | 2.1 | 0.2 | 0.2 | 1.3 | 0.6 | 0.4 | 1.3 | 0.1 | 0 | 0.7 | 0.4 | 0.3 | 0.6 | 0 | 0 | 21.7 | 3.0 | 0 | 7.2 | 3.4 | 0.4 | 0.6 | 0.1 | 0.5 |
| *Gyrodinium spp.* | 0.4 | 0.3 | 0 | 0.6 | 0.5 | 0.1 | 0.2 | 0.1 | 0.1 | 0.3 | 0.2 | 0.1 | 3.8 | 3.2 | 0.9 | 3.2 | 3.3 | 1.5 | 1.3 | 2.5 | 1.2 | 0.4 | 0.4 | 0.1 | 4.7 | 2.9 | 0.1 | 3.5 | 2.6 | 0.2 | 2.3 | 2.3 | 1.5 |
| *Oxytoxum sp.* | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Podolampas palmipes* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.2 | 0 | 0.4 | 0 | 0 | 0 | 0 | 0 |
| *Prorocentrum sp.* | 19.7 | 5.2 | 1.5 | 15.8 | 13.5 | 1.5 | 1.6 | 2.3 | 1.8 | 2.4 | 2.3 | 2.9 | 4.9 | 5.2 | 1.6 | 3.1 | 3.6 | 1.7 | 1.4 | 2.8 | 1.4 | 5.7 | 4.3 | 1.9 | 47.7 | 16.7 | 0.6 | 36.2 | 9.0 | 2.3 | 2.7 | 3.0 | 2.0 |
| *Protoperidinium sp.* | 1.0 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0 | 0 | 0.1 | 0.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 1.7 | 0 | 4.6 | 0.1 | 0 | 0.5 | 0.3 | 0.1 |
| **Ciliates** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Naked ciliates* | 10.2 | 0.8 | 0.8 | 11.4 | 7.6 | 0.5 | 1.1 | 1.0 | 0.8 | 3.2 | 1.2 | 1.0 | 2.1 | 2.1 | 0.3 | 1.5 | 1.5 | 2.5 | 2.2 | 1.3 | 0 | 0.9 | 2.1 | 0.6 | 10.8 | 5.2 | 0 | 9.4 | 0.2 | 0 | 1.7 | 2.9 | 1.0 |
| *Tintinid* | 0.1 | 0.1 | 0 | 0.3 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.2 | 0.1 | 0 | 0 | 0.1 | 0 | 0.2 | 0 | 0 | 0.3 | 0.2 | 0 | 0.6 | 0 | 0 | 0.3 | 0.8 | 0 |

**Supplementary Table 3:** Empty diatom cells abundance (× 103 cell L-1).

|  |  |
| --- | --- |
|  | **Samples** |
| **Species/taxa group** | **5M** | **5T** | **5D** | **6M** | **6T** | **6D** | **7M** | **7T** | **7D** | **8M** | **8T** | **8D** | **9M** | **9T** | **9D** | **10M** | **10T** | **10D** | **11M** | **11T** | **11D** | **12M** | **12T** | **12D** | **13M** | **13T** | **13D** | **14M** | **14T** | **14D** | **A3M** | **A3T** | **A3D** |
| **Diatoms** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Asteromphalus hookeri* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Asteromphalus hyalinus* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Bacteriastrum* | 5.8 | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros aequatorialis* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros atlanticus* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 2.5 | 0.4 | 0.0 | 0.9 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros atlanticus var. neopolitana* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros bulbosum* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros concavicornis* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros decipiens* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 |
| *Chaetoceros densus* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros diadema* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros dichaeta* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 |
| *Chaetoceros Hyalochaete* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.0 | 0.0 | 0.2 | 0.7 | 0.0 | 0.5 | 5.2 | 2.7 |
| *Chaetoceros Hyalochaete (spore)* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Chaetoceros peruvianus* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Corethron inerme* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 0.9 | 0.0 |
| *Corethron pennatum* | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.6 | 0.1 | 0.3 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.2 | 0.4 | 0.3 |
| *Coscinodiscus sp.* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| *Dactyliosolen antarcticus* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.0 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| *Eucampia antarctica* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.6 | 3.6 | 0.4 |
| *Fragilariopsis kerguelensis* | 0.0 | 0.0 | 0.0 | 1.3 | 0.8 | 1.5 | 0.3 | 1.1 | 2.6 | 0.6 | 2.1 | 0.5 | 9.0 | 16.8 | 4.0 | 13.2 | 13.4 | 3.2 | 10.2 | 15.5 | 8.9 | 0.1 | 1.0 | 5.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 2.0 | 0.7 |
| *Fragilariopsis separanda/rhombica* | 0.0 | 0.0 | 0.0 | 0.3 | 0.5 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 1.1 | 1.5 | 0.0 | 1.7 | 1.0 | 0.1 | 2.0 | 4.2 | 0.8 | 0.2 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.5 | 0.5 |
| *Guinardia cylindrus* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Membraneis sp.* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| *Navicula sp.* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Nitzschia directa* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Nitzschia longissima* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Odontella weissflogii* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| *Plagiotropis* | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.0 | 0.3 | 0.4 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.3 | 0.3 |
| *Proboscia alata* | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.1 | 0.0 |
| *Proboscia inermis* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| *Proboscia truncata* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Pseudo-nitzschia spp.* | 1.9 | 0.0 | 0.0 | 0.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.7 | 5.5 | 0.7 | 3.2 | 10.3 | 0.0 | 0.8 | 4.4 | 2.4 | 0.0 | 0.0 | 0.1 | 3.7 | 0.9 | 0.0 | 0.0 | 0.7 | 0.0 | 2.6 | 12.8 | 7.6 |
| *Rhizosolenia chunii* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.3 | 0.6 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| *Rhizosolenia pugens* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Rhizosolenia simplex* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Rhizosolenia styliformis* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Thalassionema nitzschioides* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.4 | 0.0 | 0.1 | 0.8 | 0.5 | 0.4 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 2.3 |
| *Thalassiosira lentiginosa* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| *Thalassiothrix antarctica* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| *Small centric (< 20µm)* | 0.3 | 0.0 | 0.0 | 0.2 | 0.5 | 0.2 | 0.1 | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.9 | 0.9 | 0.0 | 1.5 | 1.3 | 0.2 | 2.4 | 5.9 | 2.0 | 2.0 | 0.6 | 0.4 | 0.7 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 1.2 | 0.1 | 0.0 |
| *Med centric (20 - 50 µm)* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |

**Supplementary Figure 1**: Mean (bold line) ± 1 standard deviation (dashed lines) of Kz calculated from all the stations of this study.



**Supplementary animation 1:** <http://mathieurembauville.free.fr/EXPLAIN/MODIS%20animation.gif>.

Animation of surface chlorophyll *a* concentration (MODIS level 3 product) over an annual cycle (July 2013 to July 2014) in the study area. The sampling was performed between the 11 January 2014 and the 8 February 2014.