**Supplementary Material Tables**

**Table S.1** Information on sampling location sampled in May 2018 in False Bay, South Africa. Z(eu) = depth of the euphotic zone, Kd (PAR) = diffuse attenuation coefficient of photosynthetically active radiation.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Kind of sampling** | **Sampling date** | **Site name & number** | **Transect** | **Latitude** | **Longitude** | **Distance from the shore (m)** | **Bottom Depth (m)** | **Secchi depth (m)** | **Kd (PAR)** |
| Rocky shore | 18-05-18 | 1- Millers Point |  | -34.23696004 | 18.47542001 |  |  |  |  |
| Rocky shore | 18-05-18 | 2- Simons Town |  | -34.17300613 | 18.42846072 |  |  |  |  |
| Rocky shore | 18-05-18 | 3- Muizenberg |  | -34.11051339 | 18.46787403 |  |  |  |  |
| Rocky shore | 14-05-18 | 4- Monwabisi |  | -34.0755806 | 18.62142222 |  |  |  |  |
| Rocky shore | 16-05-18 | 5- Strand |  | -34.1176972 | 18.82482778 |  |  |  |  |
| Rocky shore | 16-05-18 | 6- Bikini Beach |  | -34.1659861 | 18.85844167 |  |  |  |  |
| Rocky shore | 16-05-18 | 7- Kogel Bay |  | -34.244225 | 18.85188056 |  |  |  |  |
| Rocky shore | 16-05-18 | 8- Rooi-Els |  | -34.2974028 | 18.81365556 |  |  |  |  |
| Boat | 18-05-18 | 1- Millers Point | A | -34.2368 | 18.4763 | 83 | 5 | 5 | 0.34 |
| Boat | 18-05-18 | 1- Millers Point | B | -34.17439012 | 18.43226594 | 294 | 14 | 14 | 0.12 |
| Boat | 18-05-18 | 1- Millers Point | C | -34.23466667 | 18.48441667 | 866 | 22 | 22 | 0.19 |
| Boat | 18-05-18 | 2- Simons Town | A | -34.17361667 | 18.4311 | 252 | 5 | 5 | 0.34 |
| Boat | 18-05-18 | 2- Simons Town | B | -34.17439012 | 18.43226594 | 365 | 10 | 10 | 0.20 |
| Boat | 18-05-18 | 2- Simons Town | C | -34.17501667 | 18.43748333 | 860 | 19 | 19 | 0.17 |
| Boat | 18-05-18 | 3- Muizenberg | A | -34.11358333 | 18.47273333 | 563 | 3 | 3 | 0.43 |
| Boat | 18-05-18 | 3- Muizenberg | B | -34.11525 | 18.47555 | 881 | 6 | 6 | 0.28 |
| Boat | 14-05-18 | 4- Monwabisi | A | -34.07821667 | 18.61818333 | 418 | 5 | 4 | 1.00 |
| Boat | 14-05-18 | 4- Monwabisi | B | -34.08248333 | 18.61738333 | 853 | 8 | 5 | 0.89 |
| Boat | 14-05-18 | 4- Monwabisi | C | -34.090725 | 18.61831667 | 1710 | 15 | 13 | 0.35 |
| Boat | 16-05-18 | 5- Strand | A | -34.12085 | 18.81938333 | 447 | 2 | 2 | 0.94 |
| Boat | 16-05-18 | 5- Strand | B | -34.12303333 | 18.81636667 | 708 | 7 | 7 | 0.44 |
| Boat | 16-05-18 | 5- Strand | C | -34.1267 | 18.81216667 | 1536 | 10 | 7 | 0.68 |
| Boat | 16-05-18 | 6- Bikini Beach | A | -34.16538333 | 18.85725 | 129 | 2 | 1 | 0.77 |
| Boat | 16-05-18 | 6- Bikini Beach | B | -34.16418333 | 18.8548 | 390 | 6 | 6 | 0.40 |
| Boat | 16-05-18 | 6- Bikini Beach | C | -34.16023333 | 18.84841667 | 1122 | 8 | 8 | 0.39 |
| Boat | 16-05-18 | 8- Rooi-Els | A | -34.29811667 | 18.8107 | 283 | 15 | 7 | 0.25 |
| Boat | 16-05-18 | 8- Rooi-Els | B | -34.29873333 | 18.80663333 | 662 | 33 | 11 | 0.40 |

**Table S.2** Concentrations of dissolved inorganic carbon (DIC), total alkalinity (AT), pH, carbon trioxide (CO3), collected at selected intertidal and nearshore sites/stations in False Bay, South Africa, in May 2018. ΩCa = calcium carbonate saturation state, ΩAr = aragonite saturation state.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Kind of sampling** | **Site name & number** | **Station** | **Sample depth** | **Bottom depth** | **[DIC] (μM)** | **[AT] (μM)** | **pH (mol/kg-SW)** | **[CO3]2-computed (mmol/kgSW)** | **ΩCa** | **ΩAr** |
| Rocky shore | 1- Millers Point |  | surface |  | 2250.79 | 2350.20 |  |  |  |  |
| Rocky shore | 2- Simons Town |  | surface |  |  |  |  |  |  |  |
| Rocky shore | 3- Muizenberg |  | surface |  | 2126.85 | 2238.98 |  |  |  |  |
| Rocky shore | 4- Monwabisi |  | surface |  | 2101.66 | 2245.91 |  |  |  |  |
| Rocky shore | 5- Strand |  | surface |  |  |  |  |  |  |  |
| Rocky shore | 6- Bikini Beach |  | surface |  | 2190.62 | 2203.06 |  |  |  |  |
| Rocky shore | 7- Kogel Bay |  | surface |  | 2072.84 | 2254.91 |  |  |  |  |
| Rocky shore | 8- Rooi-Els |  | surface |  | 2158.59 | 2256.47 |  |  |  |  |
| Boat | 1- Millers Point | A | surface | 4 m | 2090.47 | 2306.95 | 8.01 | 154.49 | 3.68 | 2.37 |
| Boat | 1- Millers Point | A | 4 m | 4 m | 2090.41 | 2301.90 | 8.00 | 151.29 | 3.60 | 2.32 |
| Boat | 1- Millers Point | B | surface | 8 m | 2086.65 | 2307.55 | 8.02 | 157.45 | 3.75 | 2.42 |
| Boat | 1- Millers Point | B | 4 m | 8 m | 2083.50 | 2301.11 | 8.02 | 155.39 | 3.70 | 2.38 |
| Boat | 1- Millers Point | B | 8 m | 8 m | 2073.75 | 2298.55 | 8.03 | 159.54 | 3.80 | 2.44 |
| Boat | 1- Millers Point | C | surface | 20 m | 2067.83 | 2300.58 | 8.04 | 164.89 | 3.93 | 2.53 |
| Boat | 1- Millers Point | C | 6 m | 20 m |  |  |  |  |  |  |
| Boat | 1- Millers Point | C | 13 m | 20 m | 2086.27 | 2289.18 | 7.99 | 145.70 | 3.46 | 2.23 |
| Boat | 1- Millers Point | C | 20 m | 20 m | 2083.65 | 2297.24 |  |  |  |  |
| Boat | 2- Simons Town | A | surface | 4 m |  |  |  |  |  |  |
| Boat | 2- Simons Town | A | 4 m | 4 m | 2082.85 | 2308.50 | 8.03 | 160.46 | 3.82 | 2.46 |
| Boat | 2- Simons Town | B | surface | 9 m | 2136.39 | 2311.17 | 7.92 | 129.91 | 3.10 | 1.99 |
| Boat | 2- Simons Town | B | 5 m | 9 m | 2105.39 | 2307.17 | 7.98 | 145.58 | 3.47 | 2.23 |
| Boat | 2- Simons Town | B | 9 m | 9 m | 2113.02 | 2301.17 | 7.96 | 137.46 | 3.27 | 2.11 |
| Boat | 2- Simons Town | C | surface | 18 m | 2110.97 | 2305.61 | 7.97 | 141.31 | 3.36 | 2.17 |
| Boat | 2- Simons Town | C | 6 m | 18 m | 2100.05 | 2312.03 | 8.01 | 152.19 | 3.62 | 2.33 |
| Boat | 2- Simons Town | C | 12 m | 18 m | 2060.44 | 2303.28 | 8.07 | 170.87 | 4.06 | 2.62 |
| Boat | 2- Simons Town | C | 18 m | 18 m | 2037.37 | 2314.96 | 8.13 | 192.50 | 4.57 | 2.94 |
| Boat | 3- Muizenberg | A | surface | 1 m | 2096.35 | 2293.93 | 7.97 | 143.08 | 3.41 | 2.20 |
| Boat | 3- Muizenberg | B | surface | 4 m | 2105.10 | 2312.64 | 7.98 | 149.76 | 3.57 | 2.30 |
| Boat | 3- Muizenberg | B | 4 m | 4 m | 2094.51 | 2304.64 | 8.00 | 150.87 | 3.59 | 2.31 |
| Boat | 4- Monwabisi | A | surface | 4 m | 2145.61 | 2280.16 | 7.84 | 105.64 | 2.52 | 1.62 |
| Boat | 4- Monwabisi | A | 4 m | 4 m | 2128.39 | 2300.27 | 7.93 | 127.43 | 3.04 | 1.95 |
| Boat | 4- Monwabisi | B | surface | 7 m | 2005.32 | 2241.67 | 8.07 | 164.33 | 3.92 | 2.52 |
| Boat | 4- Monwabisi | B | 4 m | 7 m | 2167.99 | 2230.49 | 7.64 | 67.74 | 1.61 | 1.04 |
| Boat | 4- Monwabisi | B | 7 m | 7 m | 2116.31 | 2297.39 | 7.95 | 132.84 | 3.16 | 2.03 |
| Boat | 4- Monwabisi | C | surface | 14 m | 2019.87 | 2294.97 | 8.13 | 190.66 | 4.54 | 2.92 |
| Boat | 4- Monwabisi | C | 4 m | 14 m | 2156.28 | 2250.21 | 7.73 | 83.42 | 1.99 | 1.28 |
| Boat | 4- Monwabisi | C | 8 m | 14 m | 2044.46 | 2264.48 | 8.04 | 155.43 | 3.70 | 2.38 |
| Boat | 4- Monwabisi | C | 14 m | 14 m | 2044.13 | 2291.86 | 8.09 | 172.99 | 4.11 | 2.65 |
| Boat | 5- Strand | A | surface | 1 m | 2179.28 | 2306.65 | 7.80 | 102.83 | 2.45 | 1.58 |
| Boat | 5- Strand | B | surface | 6 m | 2200.41 | 2307.62 | 7.75 | 91.98 | 2.20 | 1.41 |
| Boat | 5- Strand | B | 6 m | 6 m | 2216.61 | 2291.11 | 7.67 | 75.06 | 1.79 | 1.15 |
| Boat | 5- Strand | C | surface | 9 m | 2204.37 | 2287.44 | 7.68 | 79.28 | 1.89 | 1.22 |
| Boat | 5- Strand | C | 5 m | 9 m | 2164.14 | 2298.90 | 7.84 | 106.31 | 2.54 | 1.63 |
| Boat | 5- Strand | C | 9 m | 9 m | 2148.64 | 2303.69 | 7.89 | 118.05 | 2.81 | 1.81 |
| Boat | 6- Bikini Beach | A | surface | 1 m | 2134.82 | 2301.30 | 7.91 | 124.63 | 2.97 | 1.91 |
| Boat | 6- Bikini Beach | B | surface | 5 m | 2174.24 | 2297.91 | 7.80 | 100.48 | 2.40 | 1.54 |
| Boat | 6- Bikini Beach | B | 5 m | 5 m | 2179.24 | 2280.13 | 7.74 | 87.71 | 2.09 | 1.35 |
| Boat | 6- Bikini Beach | C | surface | 7 m | 2207.72 | 2285.90 | 7.67 | 76.69 | 1.83 | 1.18 |
| Boat | 6- Bikini Beach | C | 4 m | 7 m | 2217.78 | 2292.30 | 7.66 | 75.11 | 1.79 | 1.15 |
| Boat | 6- Bikini Beach | C | 7 m | 7 m | 2144.91 | 2285.73 | 7.84 | 109.57 | 2.61 | 1.68 |
| Boat | 8- Rooi-Els | A | surface | 12 m | 2155.11 | 2276.92 | 7.81 | 98.68 | 2.35 | 1.51 |
| Boat | 8- Rooi-Els | A | 4 m | 12 m | 2157.73 | 2270.43 | 7.78 | 93.63 | 2.23 | 1.43 |
| Boat | 8- Rooi-Els | A | 8 m | 12 m | 2140.10 | 2288.78 | 7.87 | 113.73 | 2.71 | 1.74 |
| Boat | 8- Rooi-Els | A | 12 m | 12 m |  |  |  |  |  |  |
| Boat | 8- Rooi-Els | B | surface | 25 m | 2142.65 | 2287.49 | 7.86 | 111.99 | 2.67 | 1.72 |
| Boat | 8- Rooi-Els | B | 4 m | 25 m | 2192.69 | 2275.32 | 7.69 | 78.40 | 1.87 | 1.20 |
| Boat | 8- Rooi-Els | B | 12 m | 25 m | 2133.97 | 2281.86 | 7.87 | 113.36 | 2.70 | 1.73 |
| Boat | 8- Rooi-Els | B | 25 m | 25 m | 2163.76 | 2303.90 | 7.88 | 108.49 | 2.57 | 1.65 |

**Table S.3** Phytoplankton community composition (cells/mL and %) by a) major taxonomic group and b) species of samples collected at rocky shore sites (RS) and offshore stations (A, B, C) in False Bay in May 2018. Note samples are not available for transect 4 (Monwabisi) and rocky shore site 7 (Kogel Bay).

a)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Kind of sampling** | **Site name** | **Station** | **Sample depth** | **[Chl a] (µg/L)** | **Dinoflagellates (cells/mL)** | **Silicoflagellates (cells/mL)** | **Diatoms (cells/mL)** | **Total (cells/mL)** | **Dinoflagellates (%)** | **Silicoflagellates (%)** | **Diatoms (%)** |
| Rocky shore | 1- Millers Point |  | surface | 2.46 | 0.00 | 0.00 | 0.95 | 0.95 | 0.00 | 0.00 | 100.00 |
| Rocky shore | 2- Simons Town |  | surface | 1.66 | 1.81 | 0.00 | 3.62 | 5.42 | 33.31 | 0.00 | 66.69 |
| Rocky shore | 3- Muizenberg |  | surface | 1.11 | 0.00 | 0.00 | 1.14 | 1.14 | 0.00 | 0.00 | 100.00 |
| Rocky shore | 5- Strand |  | surface | 0.44 | 0.00 | 0.00 | 5.19 | 5.19 | 0.00 | 0.00 | 100.00 |
| Rocky shore | 6- Bikini Beach |  | surface | 0.62 | 0.00 | 0.00 | 2.36 | 2.36 | 0.00 | 0.00 | 100.00 |
| Rocky shore | 8- Rooi-Els |  | surface | 0.54 | 0.20 | 0.00 | 0.48 | 0.67 | 29.18 | 0.00 | 70.82 |
| Boat | 1- Millers Point | A | Surface | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Boat | 1- Millers Point | A | 4 m | 0.34 | 1.02 | 0.00 | 0.24 | 1.26 | 81.21 | 0.00 | 18.79 |
| Boat | 1- Millers Point | B | Surface | 0.31 | 6.97 | 0.00 | 0.49 | 7.46 | 93.42 | 0.00 | 6.58 |
| Boat | 1- Millers Point | B | 4 m | 0.29 | 16.68 | 0.00 | 0.69 | 17.37 | 96.02 | 0.00 | 3.98 |
| Boat | 1- Millers Point | B | 8 m | 0.41 | 17.38 | 0.00 | 2.55 | 19.93 | 87.19 | 0.00 | 12.81 |
| Boat | 1- Millers Point | C | Surface | 2.15 | 69.87 | 0.00 | 0.79 | 70.65 | 98.89 | 0.00 | 1.11 |
| Boat | 1- Millers Point | C | 6 m | 3.79 | 47.97 | 0.00 | 0.39 | 48.36 | 99.19 | 0.00 | 0.81 |
| Boat | 1- Millers Point | C | 13 m | 4.34 | 116.50 | 0.04 | 1.57 | 118.11 | 98.64 | 0.03 | 1.33 |
| Boat | 1- Millers Point | C | 20 m | 3.56 | 142.77 | 2.94 | 4.91 | 150.62 | 94.79 | 1.95 | 3.26 |
| Boat | 2- Simons Town | A | Surface | 0.86 | 42.78 | 0.00 | 5.40 | 48.18 | 88.80 | 0.00 | 11.20 |
| Boat | 2- Simons Town | A | 4 m | 0.93 | 17.55 | 0.39 | 1.37 | 19.31 | 90.85 | 2.03 | 7.11 |
| Boat | 2- Simons Town | B | Surface | 0.95 | 19.16 | 0.00 | 0.87 | 20.02 | 95.68 | 0.00 | 4.32 |
| Boat | 2- Simons Town | B | 5 m | 0.98 | 62.41 | 0.00 | 0.00 | 62.41 | 100.00 | 0.00 | 0.00 |
| Boat | 2- Simons Town | B | 9 m | 1.17 | 69.91 | 0.00 | 0.79 | 70.69 | 98.89 | 0.00 | 1.11 |
| Boat | 2- Simons Town | C | Surface | 0.88 | 14.53 | 1.47 | 1.08 | 17.08 | 85.05 | 8.62 | 6.33 |
| Boat | 2- Simons Town | C | 6 m | 1.22 | 28.66 | 0.49 | 2.94 | 32.09 | 89.30 | 1.53 | 9.17 |
| Boat | 2- Simons Town | C | 12 m | 1.76 | 38.77 | 0.98 | 1.96 | 41.71 | 92.94 | 2.35 | 4.70 |
| Boat | 2- Simons Town | C | 18 m | 0.76 | 21.20 | 0.10 | 0.10 | 21.40 | 99.07 | 0.47 | 0.47 |
| Boat | 3- Muizenberg | A | Surface | 1.65 | 27.64 | 0.00 | 0.43 | 28.07 | 98.46 | 0.00 | 1.54 |
| Boat | 3- Muizenberg | B | Surface | 1.05 | 24.73 | 0.00 | 1.96 | 26.69 | 92.65 | 0.00 | 7.35 |
| Boat | 3- Muizenberg | B | 4 m | 1.84 | 31.20 | 0.00 | 2.09 | 33.29 | 93.73 | 0.00 | 6.27 |
| Boat | 5- Strand | A | Surface | 0.79 | 0.39 | 0.00 | 1.02 | 1.41 | 27.76 | 0.00 | 72.24 |
| Boat | 5- Strand | B | Surface | 1.98 | 6.40 | 0.00 | 1.77 | 8.17 | 78.37 | 0.00 | 21.63 |
| Boat | 5- Strand | B | 6 m | 4.11 | 0.00 | 0.00 | 5.89 | 5.89 | 0.00 | 0.00 | 100.00 |
| Boat | 5- Strand | C | Surface | 1.87 | 0.89 | 0.00 | 4.91 | 5.80 | 15.36 | 0.00 | 84.64 |
| Boat | 5- Strand | C | 5 m | 3.52 | 5.70 | 0.00 | 2.59 | 8.29 | 68.73 | 0.00 | 31.27 |
| Boat | 5- Strand | C | 9 m | 2.26 | 1.65 | 0.00 | 3.81 | 5.46 | 30.23 | 0.00 | 69.77 |
| Boat | 6- Bikini Beach | A | surface | 0.85 | 2.16 | 0.00 | 3.43 | 5.60 | 38.64 | 0.00 | 61.36 |
| Boat | 6- Bikini Beach | B | surface | 3.31 | 11.28 | 0.00 | 15.70 | 26.98 | 41.82 | 0.00 | 58.18 |
| Boat | 6- Bikini Beach | B | 5 m | 1.74 | 11.98 | 0.00 | 13.25 | 25.22 | 47.48 | 0.00 | 52.52 |
| Boat | 6- Bikini Beach | C | surface | 2.66 | 3.77 | 0.00 | 3.77 | 7.54 | 50.00 | 0.00 | 50.00 |
| Boat | 6- Bikini Beach | C | 4 m | 14.69 | 122.62 | 0.20 | 4.59 | 127.41 | 96.24 | 0.15 | 3.61 |
| Boat | 6- Bikini Beach | C | 7 m | 5.66 | 69.97 | 0.00 | 1.00 | 70.97 | 98.59 | 0.00 | 1.41 |
| Boat | 8- Rooi-Els | A | Surface | 2.64 | 95.48 | 0.00 | 0.98 | 96.46 | 98.98 | 0.00 | 1.02 |
| Boat | 8- Rooi-Els | A | 4 m | 2.39 | 47.69 | 0.00 | 1.47 | 49.16 | 97.01 | 0.00 | 2.99 |
| Boat | 8- Rooi-Els | A | 8 m | 1.29 | 4.51 | 0.00 | 0.39 | 4.91 | 92.00 | 0.00 | 8.00 |
| Boat | 8- Rooi-Els | A | 12 m | 1.01 | 19.43 | 0.00 | 0.20 | 19.63 | 98.98 | 0.00 | 1.02 |
| Boat | 8- Rooi-Els | B | Surface | 6.65 | 147.58 | 0.39 | 2.16 | 150.13 | 98.30 | 0.26 | 1.44 |
| Boat | 8- Rooi-Els | B | 5 m | 9.97 | 175.40 | 0.00 | 0.24 | 175.64 | 99.86 | 0.00 | 0.14 |
| Boat | 8- Rooi-Els | B | 12 m | 2.67 | 104.99 | 0.00 | 1.57 | 106.57 | 98.52 | 0.00 | 1.48 |
| Boat | 8- Rooi-Els | B | 25 m |  | 0.20 | 0.00 | 0.56 | 0.76 | 26.32 | 0.00 | 73.68 |

**b)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Species/ Site name** | | **1- Millers Point** | | | | **2- Simons Town** | | | | **3- Muizenberg** | | | **5- Strand** | | | | **6- Bikini Beach** | | | | **8- Rooi-Els** | | |
| **RS** | **A** | **B** | **C** | **RS** | **A** | **B** | **C** | **RS** | **A** | **B** | **RS** | **A** | **B** | **C** | **RS** | **A** | **B** | **C** | **RS** | **A** | **B** |
| **Dinoflagellates** | *Alexandrium spp.* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Dinophysis spp.* | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.03 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.74 | 0.85 | 0.00 | 0.12 | 0.08 |
| *Gonyaulax spinifera* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 |
| *Lepidodinium chlorophorum* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Noctiluca scintillans* | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| *Prorocentrum lima* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.11 |
| *Prorocentrum micans* | 0.00 | 0.02 | 0.03 | 0.37 | 0.00 | 0.02 | 0.18 | 0.15 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.02 | 0.20 | 0.00 | 0.98 | 2.45 | 0.69 | 0.00 | 0.32 | 0.66 |
| *Protoceratium reticulatum* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Protoperidinium conicoides* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Protoperidinium depressum* | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.01 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Protoperidinium diabolum* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 |
| *Protoperidinium pentagonum* | 0.00 | 0.00 | 0.16 | 0.54 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.25 | 0.28 | 0.00 | 0.64 | 0.70 |
| *Protoperidinium pyriforme* | 0.00 | 0.00 | 0.10 | 0.47 | 0.00 | 0.00 | 0.16 | 0.12 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 | 1.23 | 0.08 | 0.00 | 0.05 | 0.31 |
| *Protoperidinium spp.* | 0.00 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.13 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.05 | 0.01 | 0.00 | 0.00 | 0.00 |
| *Scrippsiella acuminata* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.37 | 0.00 | 0.00 | 0.49 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.05 | 0.26 | 0.00 | 0.00 | 0.01 |
| *Tripos dens* | 0.00 | 0.00 | 0.33 | 0.66 | 0.00 | 0.00 | 0.23 | 0.10 | 0.00 | 0.39 | 0.00 | 0.00 | 0.00 | 0.02 | 0.03 | 0.00 | 0.00 | 0.00 | 0.11 | 0.00 | 0.30 | 0.66 |
| *Tripos furca* | 0.00 | 0.10 | 0.46 | 2.70 | 0.04 | 0.05 | 0.92 | 0.88 | 0.00 | 0.04 | 0.39 | 0.00 | 0.00 | 0.10 | 0.11 | 0.00 | 0.20 | 1.23 | 0.85 | 0.00 | 2.72 | 3.67 |
| *Tripos fusus* | 0.00 | 0.39 | 12.59 | 89.24 | 1.77 | 29.98 | 48.51 | 23.55 | 0.00 | 27.08 | 26.89 | 0.00 | 0.39 | 2.94 | 2.09 | 0.00 | 0.49 | 4.91 | 62.15 | 0.20 | 37.36 | 100.57 |
| *Tripos lineatus* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.15 |
| *Tripos longipes* | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.12 |
| **Silicoflagellates** | *Octactis octonaria* | 0.00 | 0.00 | 0.00 | 0.75 | 0.00 | 0.20 | 0.00 | 0.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.00 | 0.00 | 0.10 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Diatoms** | *Actinoptychus splendens* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 |
| *Cocconeis spp.* | 0.08 | 0.10 | 0.00 | 0.00 | 0.04 | 0.69 | 0.03 | 0.25 | 0.20 | 0.00 | 0.29 | 4.32 | 0.59 | 1.28 | 0.69 | 0.20 | 0.49 | 0.98 | 0.26 | 0.00 | 0.05 | 0.03 |
| *Coscinodiscus spp.* | 0.08 | 0.02 | 1.05 | 1.79 | 0.12 | 0.54 | 0.52 | 0.91 | 0.00 | 0.39 | 1.57 | 0.39 | 0.04 | 2.06 | 2.75 | 0.39 | 1.47 | 8.59 | 2.10 | 0.12 | 0.32 | 1.05 |
| *Diploneis didyma* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 |
| *Entomoneis spp.* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| *Grammatophora spp.* | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.39 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.08 | 0.59 | 0.49 | 1.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Melosira spp.* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Navicula spp.* | 0.20 | 0.00 | 0.00 | 0.00 | 0.79 | 0.00 | 0.00 | 0.12 | 0.20 | 0.04 | 0.02 | 0.16 | 0.00 | 0.20 | 0.18 | 0.39 | 0.00 | 0.74 | 0.03 | 0.04 | 0.25 | 0.00 |
| *Nitzschia spp.* | 0.20 | 0.00 | 0.16 | 0.00 | 0.04 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.49 | 0.25 | 0.01 | 0.20 | 0.00 | 0.00 |
| *Other Pennates* | 0.39 | 0.00 | 0.03 | 0.00 | 0.04 | 0.10 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.12 | 0.00 | 0.03 |
| *Paralia sulcata* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.72 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Pleurosigma spp.* | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.10 | 0.00 | 0.12 | 0.00 | 0.00 | 0.02 | 0.00 | 0.20 | 0.29 | 0.08 | 0.20 | 0.49 | 1.96 | 0.65 | 0.00 | 0.12 | 0.00 |
| *Striatella unipunctata* | 0.00 | 0.00 | 0.00 | 0.00 | 2.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

**Table S.4** Abundance (% ± standard deviation) of species associated to mussel beds, collected via destructive sampling at seven rocky shore sites in False Bay, South Africa in May 2018. Mussels were not present at site 5.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Site** | **1- Millers Point** | | | **2- Simons Town** | | | **3- Muizenberg** | | | **4- Monwabisi** | | | **6- Bikini Beach** | | | **7- Kogel Bay** | | | **8- Rooi-Els** | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Acanthochitona garnoti* | 0.19 | ± | 0.47 | 0.00 | ± | 0.00 | 0.49 | ± | 0.49 | 0.00 | ± | 0.00 | 1.77 | ± | 2.77 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Afrolittorina knysnaensis* | 0.93 | ± | 2.27 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.67 | ± | 4.08 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Amphibalanus amphitrite* | 0.00 | ± | 0.00 | 2.35 | ± | 3.53 | 0.44 | ± | 1.07 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Amphipholis squamata* | 0.72 | ± | 1.77 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.69 | ± | 1.70 | 0.00 | ± | 0.00 | 0.40 | ± | 0.97 |
| *Apohyale grandicornis* | 0.00 | ± | 0.00 | 4.82 | ± | 10.11 | 7.92 | ± | 10.98 | 12.24 | ± | 8.27 | 1.30 | ± | 3.18 | 7.15 | ± | 8.84 | 43.52 | ± | 30.20 |
| *Arabella iricolor* | 1.85 | ± | 4.54 | 1.07 | ± | 2.83 | 0.00 | ± | 0.00 | 0.57 | ± | 1.41 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.72 | ± | 1.77 |
| *Assimenea globulus* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.22 | ± | 0.53 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Austromegabalanus cylindricus* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 2.19 | ± | 4.22 | 1.35 | ± | 3.31 | 0.98 | ± | 2.40 | 5.34 | ± | 8.95 | 0.00 | ± | 0.00 |
| *Balanus glandula* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.66 | ± | 1.03 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 2.46 | ± | 4.48 | 0.00 | ± | 0.00 |
| *Burnupena lagenaria* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.71 | ± | 1.74 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Burnupena pubescens* | 0.00 | ± | 0.00 | 0.14 | ± | 0.36 | 0.64 | ± | 0.99 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Capeorchestia capensis* | 0.00 | ± | 0.00 | 0.23 | ± | 0.62 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Carditella capensis* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 5.11 | ± | 6.65 | 0.79 | ± | 1.94 |
| *Chthalamus dentatus* | 0.00 | ± | 0.00 | 1.79 | ± | 1.85 | 16.58 | ± | 15.31 | 3.73 | ± | 6.31 | 1.99 | ± | 2.65 | 12.21 | ± | 12.98 | 0.00 | ± | 0.00 |
| *Cinysca dunkeri* | 0.72 | ± | 1.77 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Cirriformia capensis* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.69 | ± | 1.70 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Corynactis annulata* | 0.00 | ± | 0.00 | 23.82 | ± | 13.11 | 5.66 | ± | 8.01 | 1.03 | ± | 1.61 | 5.62 | ± | 7.67 | 2.93 | ± | 3.51 | 0.40 | ± | 0.97 |
| *Cymbula granatina* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.48 | ± | 1.17 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.40 | ± | 0.97 |
| *Cymbula miniata* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.98 | ± | 2.40 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Cymbula oculus* | 0.72 | ± | 1.77 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.22 | ± | 0.53 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Dendrofissurella scutellum* | 0.00 | ± | 0.00 | 0.87 | ± | 1.62 | 0.00 | ± | 0.00 | 1.19 | ± | 2.92 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Desis formidabilis* | 0.72 | ± | 1.77 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.25 | ± | 0.62 | 0.00 | ± | 0.00 |
| *Dynamenella sp* | 0.00 | ± | 0.00 | 1.30 | ± | 2.23 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Exosphaeroma truncatitelson* | 0.19 | ± | 0.47 | 1.06 | ± | 1.85 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.72 | ± | 1.77 |
| *Fissurella mutabilis* | 1.65 | ± | 2.59 | 1.40 | ± | 1.78 | 0.20 | ± | 0.49 | 5.59 | ± | 3.77 | 1.61 | ± | 3.34 | 1.11 | ± | 1.73 | 1.52 | ± | 2.36 |
| *Fissurella natalensis* | 0.00 | ± | 0.00 | 0.36 | ± | 0.94 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Gibbula capensis* | 1.11 | ± | 2.72 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Gibbula cicer* | 6.48 | ± | 15.88 | 0.16 | ± | 0.41 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.39 | ± | 3.40 | 0.61 | ± | 1.48 | 0.40 | ± | 0.97 |
| *Gibbula multicolor* | 0.00 | ± | 0.00 | 0.36 | ± | 0.94 | 0.14 | ± | 0.35 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Glycera tridactyla* | 34.10 | ± | 31.17 | 25.51 | ± | 15.59 | 2.56 | ± | 5.19 | 2.66 | ± | 4.42 | 2.73 | ± | 5.03 | 0.61 | ± | 1.48 | 2.33 | ± | 3.95 |
| *Golfingia capensis* | 1.65 | ± | 2.59 | 0.00 | ± | 0.00 | 0.35 | ± | 0.87 | 0.57 | ± | 1.41 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.72 | ± | 1.77 |
| *Gunnarea gaimardi* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.75 | ± | 4.30 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 2.58 | ± | 4.47 | 0.00 | ± | 0.00 |
| *Helcion dunkeri* | 0.00 | ± | 0.00 | 1.89 | ± | 4.69 | 1.25 | ± | 1.12 | 2.09 | ± | 3.29 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.12 | ± | 1.85 |
| *Helcion pectunculus* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.35 | ± | 0.87 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Helcion pruinosus* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 5.16 | ± | 4.27 | 2.88 | ± | 3.56 | 0.00 | ± | 0.00 | 3.12 | ± | 2.87 | 0.72 | ± | 1.77 |
| *Ischyromene australis* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.14 | ± | 0.35 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Ischyromene huttoni* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.60 | ± | 2.01 |
| *Ischyromene ovalis* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.20 | ± | 0.49 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Ischyromene spp.* | 0.00 | ± | 0.00 | 0.60 | ± | 1.57 | 0.44 | ± | 1.07 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Jassa spp.* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.40 | ± | 0.97 |
| *Joeropsis stebbingi* | 0.72 | ± | 1.77 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.45 | ± | 3.55 |
| *Kraussina spp.* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.40 | ± | 0.97 |
| *Lasaea adansoni* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 17.65 | ± | 30.39 | 22.67 | ± | 27.10 | 5.31 | ± | 9.27 | 8.47 | ± | 13.27 | 16.06 | ± | 24.46 |
| *Lepidonotus semitectus* | 2.78 | ± | 4.65 | 0.00 | ± | 0.00 | 0.20 | ± | 0.49 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Lineus ornatus* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 2.38 | ± | 5.83 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Listriolobus capensis* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.22 | ± | 0.53 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Lugubrilaria lugubris* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.30 | ± | 0.74 | 0.00 | ± | 0.00 |
| *Nassarius capensis* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.19 | ± | 2.92 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Nephtys spp.* | 2.91 | ± | 3.50 | 0.11 | ± | 0.29 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Notomastus latericeus* | 0.00 | ± | 0.00 | 0.11 | ± | 0.29 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Notomegabalanus algicola* | 1.21 | ± | 2.45 | 0.90 | ± | 1.16 | 2.82 | ± | 2.77 | 3.02 | ± | 3.37 | 0.00 | ± | 0.00 | 2.18 | ± | 2.72 | 2.98 | ± | 4.63 |
| *Nucella dubia* | 0.00 | ± | 0.00 | 6.45 | ± | 6.20 | 3.19 | ± | 2.66 | 1.35 | ± | 2.23 | 0.69 | ± | 1.70 | 0.46 | ± | 1.13 | 0.83 | ± | 2.04 |
| *Nucella squamosa* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.77 | ± | 2.77 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Octomeris angulosa* | 0.00 | ± | 0.00 | 0.23 | ± | 0.62 | 2.57 | ± | 5.11 | 1.78 | ± | 2.75 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 2.96 | ± | 7.26 |
| *Orbinia angrapequensis* | 0.00 | ± | 0.00 | 0.39 | ± | 1.02 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Oxystele impervia* | 0.00 | ± | 0.00 | 1.30 | ± | 3.03 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 25.96 | ± | 26.09 | 4.41 | ± | 4.58 | 0.00 | ± | 0.00 |
| *Parechinus angulosus* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.39 | ± | 3.40 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Parisocladus perforatus* | 1.85 | ± | 4.54 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Parvulastra dyscrita* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.31 | ± | 0.76 | 0.00 | ± | 0.00 | 4.61 | ± | 5.65 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Parvulastra dyscrita* | 0.00 | ± | 0.00 | 0.99 | ± | 1.91 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Planocera spp.* | 0.00 | ± | 0.00 | 1.14 | ± | 1.67 | 0.33 | ± | 0.80 | 0.00 | ± | 0.00 | 2.43 | ± | 4.24 | 3.11 | ± | 2.76 | 0.00 | ± | 0.00 |
| *Pseudonereis variegata* | 6.20 | ± | 10.71 | 16.75 | ± | 10.68 | 6.75 | ± | 5.48 | 22.42 | ± | 19.16 | 12.79 | ± | 5.98 | 10.03 | ± | 7.97 | 12.09 | ± | 10.54 |
| *Scolelepis squamata* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.35 | ± | 0.87 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Scutellastra granularis* | 6.69 | ± | 13.83 | 2.15 | ± | 2.30 | 5.85 | ± | 10.18 | 12.00 | ± | 6.58 | 5.77 | ± | 11.77 | 6.09 | ± | 4.72 | 7.47 | ± | 13.01 |
| *Siphonaria capensis* | 0.00 | ± | 0.00 | 0.14 | ± | 0.36 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Siphonaria concinna* | 0.19 | ± | 0.47 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Siphonaria serrata* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.98 | ± | 2.40 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Sphaeramene polytylotos* | 0.00 | ± | 0.00 | 0.14 | ± | 0.36 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Syllidae spp.* | 22.12 | ± | 27.48 | 0.36 | ± | 0.94 | 0.00 | ± | 0.00 | 1.19 | ± | 2.92 | 4.57 | ± | 5.03 | 12.61 | ± | 8.94 | 0.00 | ± | 0.00 |
| *Tetraclita serrata* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 1.52 | ± | 1.48 | 0.00 | ± | 0.00 | 0.98 | ± | 2.40 | 8.42 | ± | 6.05 | 0.00 | ± | 0.00 |
| *Thelepus spp.* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.46 | ± | 1.13 | 0.00 | ± | 0.00 |
| *Tricolia capensis* | 2.41 | ± | 4.47 | 0.11 | ± | 0.29 | 8.64 | ± | 13.73 | 0.00 | ± | 0.00 | 8.08 | ± | 15.81 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Tricolia neritina* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.56 | ± | 0.91 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Turritella capensis* | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.22 | ± | 0.53 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
| *Vaughtia fenestrata* | 1.85 | ± | 4.54 | 1.02 | ± | 1.93 | 1.71 | ± | 1.92 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |

**Table S.5** Larvae abundance (individual/L) expressed as mean ± standard error (n =2) from rocky shore sites and offshore stations collected in False Bay, South Africa in May 2018.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Site name & number** | **Transect** | **Distance from the shore (m)** | **unidentified bivalve D-larvae** | | | ***M. galloprovincialis*** | | | **Nauplii** | | | **Other bivalve** | | | **Cyprids** | | | **Total Larvae** | | |
| ***Rocky shore*** | 1- Millers Point |  |  | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
|  | 2- Simons Town |  |  | 0.00 | ± | 0.00 | 0.02 | ± | 0.00 | 0.00 | ± | 0.00 | 0.03 | ± | 0.01 | 0.00 | ± | 0.00 | 0.05 | ± | 0.02 |
|  | 3- Muizenberg |  |  | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.02 | ± | 0.02 | 0.00 | ± | 0.00 | 0.03 | ± | 0.03 |
|  | 4- Monwabisi |  |  | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 |
|  | 5- Strand |  |  | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
|  | 6- Bikini Beach |  |  | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.00 |
|  | 7- Kogel Bay |  |  | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.00 |
|  | 8- Rooi-Els |  |  | 0.02 | ± | 0.02 | 0.02 | ± | 0.01 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 | 4.00 | ± | 0.02 | 0.07 | ± | 0.06 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ***Boat*** | 1- Millers Point | A | 83 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 |
|  | 1- Millers Point | B | 294 | 0.01 | ± | 0.01 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.02 | ± | 0.02 |
|  | 1- Millers Point | C | 866 | 0.35 | ± | 0.23 | 0.76 | ± | 0.16 | 0.00 | ± | 0.00 | 0.13 | ± | 0.01 | 0.00 | ± | 0.00 | 1.24 | ± | 0.38 |
|  | 2- Simons Town | A | 252 | 0.01 | ± | 0.01 | 0.02 | ± | 0.01 | 0.01 | ± | 0.01 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.04 | ± | 0.03 |
|  | 2- Simons Town | B | 365 | 0.01 | ± | 0.01 | 0.03 | ± | 0.02 | 0.15 | ± | 0.15 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.20 | ± | 0.17 |
|  | 2- Simons Town | C | 860 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 |
|  | 3- Muizenberg | A | 563 | 0.00 | ± | 0.00 | 0.02 | ± | 0.02 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.02 | ± | 0.02 |
|  | 3- Muizenberg | B | 881 | 0.00 | ± | 0.00 | 0.02 | ± | 0.02 | 0.34 | ± | 0.34 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.36 | ± | 0.36 |
|  | 4- Monwabisi | A | 418 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 |
|  | 4- Monwabisi | B | 853 | 0.08 | ± | 0.08 | 0.13 | ± | 0.13 | 0.67 | ± | 0.63 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.89 | ± | 0.43 |
|  | 4- Monwabisi | C | 1710 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 |
|  | 5- Strand | A | 447 | 0.00 | ± | 0.00 | 0.09 | ± | 0.09 | 0.29 | ± | 0.29 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.39 | ± | 0.38 |
|  | 5- Strand | B | 708 | 0.08 | ± | 0.07 | 0.10 | ± | 0.02 | 0.05 | ± | 0.05 | 0.11 | ± | 0.07 | 0.00 | ± | 0.00 | 0.33 | ± | 0.20 |
|  | 5- Strand | C | 1536 | 0.26 | ± | 0.19 | 0.36 | ± | 0.05 | 0.00 | ± | 0.00 | 0.23 | ± | 0.07 | 0.00 | ± | 0.00 | 0.85 | ± | 0.31 |
|  | 6- Bikini Beach | A | 129 | 0.00 | ± | 0.00 | 0.13 | ± | 0.11 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.13 | ± | 0.11 |
|  | 6- Bikini Beach | B | 390 | 0.05 | ± | 0.05 | 0.13 | ± | 0.12 | 0.00 | ± | 0.00 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.18 | ± | 0.16 |
|  | 6- Bikini Beach | C | 1122 | 0.06 | ± | 0.06 | 10.30 | ± | 9.02 | 0.00 | ± | 0.00 | 0.38 | ± | 0.34 | 0.00 | ± | 0.00 | 10.74 | ± | 9.30 |
|  | 8- Rooi-Els | A | 283 | 0.21 | ± | 0.17 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.03 | ± | 0.02 | 0.00 | ± | 0.00 | 0.25 | ± | 0.18 |
|  | 8- Rooi-Els | B | 662 | 0.01 | ± | 0.01 | 0.01 | ± | 0.01 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.00 | ± | 0.00 | 0.02 | ± | 0.01 |

**Table S.6** Metal concentrations in samples of a) the mussel *Mytilus galloprovincialis,* b) sediment collected at rocky shore sites and c) sediment collected at offshore stations A in False Bay, in May 2018. d)Contamination Factors (CF) and Pollution Load Index (PLI) based on rocky shore sediment samples. Values are mean ± standard error (n=5). Data are expressed in mg/Kg. Red colour indicates values that overpassed the maximum permissible level of metals in shellfish based on permissible legal limits for South Africa (DOH, 1994) and recommended sediment quality guidelines for southern Africa (Taljaard, 2006). BioSediment Accumulation Factors (BSAF) are reported in 4a. To note that sediment samples are not available at site 8 (Rooi-Els) and thus the BSAF could not be calculated for this site. \* = below detection limit.

a)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Element** | **1- Millers Point** | | | **3- Muizenberg** | | | **6- Bikini Beach** | | | **7- Kogel Bay** | | | **8- Rooi-Els** | | | **Limit (mg/kg)** | **BSAF** | | | | |
| **1- Millers Point** | **3- Muizenberg** | **6- Bikini Beach** | **7- Kogel Bay** | **All Sites** |
| Al- Aluminum | 142.4 | ± | 11.6 | 24.6 | ± | 6.5 | 133.4 | ± | 14.0 | 47.8 | ± | 16.0 | 17.4 | ± | 2.9 |  | 5.6 | 15.1 | 11.5 | 4.8 | 6.6 |
| As- Arsenic | 14.7 | ± | 0.3 | 7.4 | ± | 0.2 | 11.0 | ± | 0.5 | 5.2 | ± | 0.5 | 9.3 | ± | 0.8 | 3 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 |
| B- Boron | 54.8 | ± | 1.5 | 49.3 | ± | 1.3 | 44.7 | ± | 3.7 | 41.4 | ± | 1.6 | 29.7 | ± | 1.4 |  | 0.4 | 0.4 | 0.1 | 0.2 | 0.1 |
| Ba- Barium | 1.1 | ± | 0.1 | 0.5 | ± | 0.1 | 0.9 | ± | 0.1 | 0.5 | ± | 0.1 | 0.2 | ± | 0.0 |  | 0.2 | 0.2 | 0.1 | 0.0 | 0.1 |
| Cd- Cadmium | 3.6 | ± | 0.4 | 0.9 | ± | 0.1 | 2.9 | ± | 0.7 | 5.2 | ± | 2.2 | 6.7 | ± | 1.2 | 3 | 0.2 | 2.6 | 0.0 | 1.5 | 0.1 |
| Co- Cobalt | 0.2 | ± | 0.0 | 0.1 | ± | 0.0 | 0.2 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  | 0.3 | 0.2 | 0.0 | 0.1 | 0.1 |
| Cr- Chromium | 0.7 | ± | 0.0 | 0.4 | ± | 0.1 | 0.9 | ± | 0.1 | 0.2 | ± | 0.1 | 0.3 | ± | 0.0 |  | 1.2 | 3.1 | 0.1 | 1.4 | 0.3 |
| Cu- Copper | 3.6 | ± | 0.3 | 4.0 | ± | 0.2 | 19.0 | ± | 5.6 | 2.9 | ± | 0.5 | 2.9 | ± | 1.0 | 50 | 0.7 | 2.3 | 0.2 | 1.1 | 0.5 |
| Fe- Iron | 227.6 | ± | 11.1 | 50.4 | ± | 3.8 | 165.4 | ± | 23.5 | 66.5 | ± | 16.1 | 42.2 | ± | 2.9 |  | 2.3 | 5.5 | 8.9 | 3.1 | 4.7 |
| Hg- Mercury | 0.0 | ± | 0.0 | 0.1 | ± | 0.0 | 0.3 | ± | 0.1 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 1 | 61.4 | 71.9 | 48.2 | 22.4 | 38.3 |
| Mn- Manganese | 2.8 | ± | 0.1 | 10.0 | ± | 1.2 | 2.7 | ± | 0.4 | 9.9 | ± | 0.8 | 1.6 | ± | 0.2 |  | 20.4 | 26.7 | 5.4 | 5.8 | 8.4 |
| Mo- Molybdenum | 1.0 | ± | 0.1 | 1.6 | ± | 0.1 | 0.8 | ± | 0.1 | 1.3 | ± | 0.2 | 0.6 | ± | 0.1 |  | 21.0 | 41.0 | 12.3 | 21.5 | 22.1 |
| Ni- Nickel | 0.8 | ± | 0.0 | 0.7 | ± | 0.1 | 0.5 | ± | 0.1 | 0.9 | ± | 0.2 | 0.5 | ± | 0.1 |  | 0.1 | 0.4 | 0.6 | 0.0 | 0.1 |
| Pb- Lead | 1.1 | ± | 0.1 | 0.5 | ± | 0.0 | 5.7 | ± | 4.1 | 0.2 | ± | 0.0 | 0.2 | ± | 0.1 | 4 | 11.6 | 38.0 | 8.3 | 27.0 | 13.3 |
| Sb- Antimony | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 1 | 63.0 | 92.7 | 179.1 | 78.8 | 105.3 |
| Se- Selenium | 2.4 | ± | 0.1 | 1.2 | ± | 0.1 | 1.6 | ± | 0.2 | 1.1 | ± | 0.2 | 1.3 | ± | 0.1 |  | 0.1 | 0.4 | 11.1 | 0.1 | 2.1 |
| Sn- Tin | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 2.5 | ± | 0.5 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 40 | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 |
| Sr- Strontium | 84.1 | ± | 5.0 | 65.3 | ± | 5.0 | 60.5 | ± | 6.4 | 39.3 | ± | 2.8 | 21.8 | ± | 1.5 |  | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| V- Vanadium | 0.6 | ± | 0.0 | 0.3 | ± | 0.0 | 0.5 | ± | 0.1 | 0.4 | ± | 0.1 | 0.2 | ± | 0.0 |  | 2.1 | \* | 22.1 | \* | 5.6 |
| Zn- Zinc | 186.6 | ± | 36.1 | 79.3 | ± | 7.9 | 263.3 | ± | 73.6 | 56.2 | ± | 6.1 | 74.5 | ± | 25.4 | 300 | 0.5 | 0.4 | 0.7 | 0.1 | 0.5 |

b)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Element** | **1- Millers Point** | | | **2- Simons Town** | | | **3- Muizenberg** | | | **4- Monwabisi** | | | **5- Strand** | | | **6- Bikini Beach** | | | **7- Kogel Bay** | | | **Recommended sediment quality guideline value, (mg/kg)** |
| Al- Aluminum | 1286.6 | ± | 30.1 | 716.7 | ± | 24.6 | 264.3 | ± | 10.5 | 1975.7 | ± | 108.9 | 980.4 | ± | 19.1 | 3999.9 | ± | 46.6 | 566.4 | ± | 6.6 |  |
| As- Arsenic | 0.7 | ± | 0.0 | 0.8 | ± | 0.0 | 0.3 | ± | 0.0 | 1.8 | ± | 0.0 | 1.5 | ± | 0.0 | 2.0 | ± | 0.0 | 0.9 | ± | 0.0 | 7.2 |
| B- Boron | 9.8 | ± | 0.5 | 4.3 | ± | 0.3 | 3.3 | ± | 0.1 | 6.5 | ± | 0.3 | 10.4 | ± | 0.3 | 3.9 | ± | 0.3 | 8.7 | ± | 0.5 |  |
| Ba- Barium | 17.3 | ± | 0.1 | 10.3 | ± | 0.1 | 4.4 | ± | 0.2 | 23.9 | ± | 0.5 | 15.0 | ± | 0.2 | 53.8 | ± | 1.2 | 14.3 | ± | 0.2 |  |
| Cd- Cadmium | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 0.1 | ± | 0.0 | 0.7 |
| Co- Cobalt | 0.2 | ± | 0.0 | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 0.5 | ± | 0.0 | 0.2 | ± | 0.0 | 2.7 | ± | 0.1 | 0.1 | ± | 0.0 |  |
| Cr- Chromium | 2.9 | ± | 0.1 | 2.1 | ± | 0.2 | 1.5 | ± | 0.1 | 4.2 | ± | 0.1 | 4.3 | ± | 0.1 | 7.4 | ± | 0.3 | 5.5 | ± | 0.3 | 52.3 |
| Cu- Copper | 1.6 | ± | 0.0 | 1.4 | ± | 0.1 | 0.7 | ± | 0.0 | 1.4 | ± | 0.1 | 1.4 | ± | 0.1 | 2.1 | ± | 0.0 | 0.9 | ± | 0.0 | 18.7 |
| Fe- Iron | 745.2 | ± | 27.0 | 588.3 | ± | 11.2 | 277.2 | ± | 25.6 | 3219.7 | ± | 0.0 | 1626.6 | ± | 23.8 | 6330.7 | ± | 56.0 | 786.1 | ± | 11.4 |  |
| Hg- Mercury | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.1 |
| Mn- Manganese | 14.1 | ± | 0.4 | 5.4 | ± | 0.3 | 3.9 | ± | 0.1 | 103.9 | ± | 9.3 | 10.1 | ± | 0.1 | 181.9 | ± | 5.6 | 6.7 | ± | 0.2 |  |
| Mo- Molybdenum | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  |
| Ni- Nickel | 1.1 | ± | 0.1 | 0.7 | ± | 0.1 | 0.3 | ± | 0.0 | 1.5 | ± | 0.1 | 1.4 | ± | 0.4 | 3.3 | ± | 0.5 | 0.8 | ± | 0.1 | 15.9 |
| Pb- Lead | 2.1 | ± | 0.0 | 3.2 | ± | 0.0 | 1.2 | ± | 0.0 | 2.6 | ± | 0.1 | 2.7 | ± | 0.1 | 8.3 | ± | 0.3 | 2.5 | ± | 0.1 | 30.2 |
| Sb- Antimony | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 0.3 | ± | 0.0 | 0.2 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  |
| Se- Selenium | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  |
| Sn- Tin | 0.5 | ± | 0.0 | 0.3 | ± | 0.0 | 0.1 | ± | 0.0 | 0.3 | ± | 0.1 | 0.3 | ± | 0.0 | 0.2 | ± | 0.0 | 0.1 | ± | 0.0 | 0.005 (as Tributyltin-Sn) |
| Sr- Strontium | 1007.3 | ± | 9.1 | 272.5 | ± | 1.8 | 174.1 | ± | 2.7 | 961.3 | ± | 22.1 | 971.8 | ± | 10.3 | 102.1 | ± | 1.0 | 999.3 | ± | 10.9 |  |
| V- Vanadium | 1.6 | ± | 0.0 | 1.8 | ± | 0.0 | 0.7 | ± | 0.0 | 5.4 | ± | 0.1 | 3.5 | ± | 0.1 | 9.5 | ± | 0.1 | 1.7 | ± | 0.0 |  |
| Zn- Zinc | 3.0 | ± | 0.1 | 1.9 | ± | 0.1 | 1.1 | ± | 0.1 | 4.4 | ± | 0.1 | 5.8 | ± | 0.7 | 5.5 | ± | 0.1 | 2.5 | ± | 0.0 | 124.0 |

c)

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| **Element** | **2- Simons Town** | | | **3- Muizenberg** | | | **4- Monwabisi** | | | **6- Bikini Beach** | | | **Recommended sediment quality guideline value, (mg/kg)** |
| Al- Aluminum | 750.1 | ± | 41.7 | 691.1 | ± | 17.6 | 689.1 | ± | 9.9 | 728.7 | ± | 11.1 |  |
| As- Arsenic | 0.9 | ± | 0.0 | 0.5 | ± | 0.0 | 0.7 | ± | 0.0 | 1.0 | ± | 0.0 | 7.2 |
| B- Boron | 4.5 | ± | 0.3 | 21.4 | ± | 0.7 | 23.7 | ± | 0.6 | 20.9 | ± | 1.1 |  |
| Ba- Barium | 10.7 | ± | 0.3 | 15.7 | ± | 0.3 | 15.3 | ± | 0.2 | 17.6 | ± | 0.3 |  |
| Cd- Cadmium | 0.0 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.7 |
| Co- Cobalt | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  |
| Cr- Chromium | 2.1 | ± | 0.1 | 10.1 | ± | 0.1 | 9.2 | ± | 0.1 | 5.3 | ± | 0.1 | 52.3 |
| Cu- Copper | 1.0 | ± | 0.0 | 0.9 | ± | 0.1 | 0.9 | ± | 0.0 | 0.8 | ± | 0.1 | 18.7 |
| Fe- Iron | 613.0 | ± | 7.3 | 608.7 | ± | 12.7 | 677.7 | ± | 0.0 | 1159.5 | ± | 29.0 |  |
| Hg- Mercury | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.0 | ± | 0.0 | 0.0 | ± | 0.0 | 0.1 |
| Mn- Manganese | 7.4 | ± | 0.4 | 7.4 | ± | 0.3 | 7.8 | ± | 0.0 | 12.6 | ± | 1.2 |  |
| Mo- Molybdenum | 0.2 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  |
| Ni- Nickel | 0.6 | ± | 0.0 | 0.8 | ± | 0.0 | 0.8 | ± | 0.0 | 0.9 | ± | 0.0 | 15.9 |
| Pb- Lead | 3.1 | ± | 0.1 | 2.1 | ± | 0.0 | 2.3 | ± | 0.0 | 2.1 | ± | 0.1 | 30.2 |
| Sb- Antimony | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  |
| Se- Selenium | 0.0 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 | 0.1 | ± | 0.0 |  |
| Sn- Tin | 0.3 | ± | 0.1 | 0.1 | ± | 0.0 | 0.2 | ± | 0.0 | 0.1 | ± | 0.0 | 0.005 (as Tributyltin-Sn) |
| Sr- Strontium | 271.9 | ± | 5.5 | 1388.1 | ± | 18.2 | 1307.2 | ± | 9.6 | 1668.0 | ± | 28.5 |  |
| V- Vanadium | 1.9 | ± | 0.0 | 1.7 | ± | 0.0 | 1.8 | ± | 0.0 | 1.9 | ± | 0.0 |  |
| Zn- Zinc | 2.1 | ± | 0.2 | 2.4 | ± | 0.3 | 2.5 | ± | 0.1 | 3.0 | ± | 0.1 | 124.0 |

d)

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| --- | --- | --- | --- | --- | --- |
| **Site** | **1- Millers Point** | **3- Muizenberg** | **5- Strand** | **6- Gordons Bay** | **All Sites** |
| Cd- Cadmium | 0.0 | 0.0 | 0.0 | 0.0 |  |
| Cu- Copper | 0.1 | 0.1 | 1.1 | 2.2 |  |
| Pb- Lead | 0.1 | 0.0 | 0.2 | 0.2 |  |
| Zn- Zinc | 0.1 | 0.0 | 0.1 | 0.1 |  |
| PLI | 0.7 | 0.6 | 0.8 | 0.8 | 0.8 |

**Table S.7** The total nitrate concentration (NO3-, nmol m-3), δ15N (‰ vs. air), and δ18O (‰ vs. vsmow) for aerosol samples collected at the Cape Point Global Atmosphere Watch station on the southwest coast of False Bay.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date deployed** | **Date collected** | **[NO3- ]** | **δ15N-NO3-** | **δ18O-NO3-** |
| 7 May 2018 | 13 May 2018 | 17.98 | 3.4 | 70.8 |
| 13 May 2018 | 14 May 2018 | 27.19 | 6.9 | 69.8 |
| 14 May 2018 | 15 May 2018 | 21.65 | 3.1 | 74.0 |