**Appendix 1.** GPS locations of the study sites and qualitative estimates of environmental characteristics (where available) for the 10 study sites (based on a scale of 1-5, where 5 is high, 1 is low).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Site** | **Flow** | **Settled sediment** | **Turbidity** | **Light quality** | **Proximity to location population** | **Exploitation history** | **GPS location** |
| Buoy 1 (B1) | **4** | **2** | **2** | **3** | **2** | **3** | **5°28’35’’S 123°45’32’’E** |
| Buoy 3 (B3) | **4** | **2** | **2** | **3** | **2** | **3** | **5°28’22’’S 123°45’26’’E** |
| Kaledupa 1 (K1) | **4** | **1** | **1** | **3** | **3** | **5** | **5°27’53’’S 123°42’14’’E** |
| Kaledupa Double Spur (KDS) | **5** | **1** | **1** | **4** | **2** | **4** | **5°27’44’’S 123°41’48’’E** |
| Kerang Gurita (KG) | **5** | **1** | **1** | **5** | **1** | **3** | **5°23’46’’S 123°40’33’’E** |
| Pak Kasims (PK) | **3** | **2** | **2** | **3** | **2** | **4** | **5°27’39’’S 123°45’20’’E** |
| Ridge 1 (R1) | **4** | **2** | **2** | **4** | **2** | **4** | **5°26’49’’S 123°45’18’’E** |
| Sampela 1 (S1) | **3** | **5** | **5** | **1** | **5** | **5** | **5°29’01’’S 123°45’02’’E** |
| Tomia 1 (T1) | **3** | **3** | **3** | **4** | **2** | **?** | **5°42’52’’S 123°54’35’’E** |
| Tomia 2 (T2) | **3** | **3** | **3** | **4** | **3** | **?** | **5°45’44’’S 123°53’26’’E** |
| Wanci (WA) | **2** | **5** | **5** | **2** | **5** | **5** | **5°18’31’’S 123°28’53’’E** |

**Appendix 2.** UnivariatePERMANOVA pairwise test results for hard coral abundance among sites. Significant results are in bold

|  |  |  |
| --- | --- | --- |
| **Sites** | **t** | **P(perm)** |
| **B3, T1** | **4.4108** | **0.003** |
| B3, KG | 1.4482 | 0.154 |
| **B3, K1** | **4.7668** | **0.001** |
| B3, R1 | 1.1087 | 0.289 |
| **B3, PK** | **2.6074** | **0.021** |
| **B3, KDS** | **3.1511** | **0.007** |
| B3, S1 | 1.6755 | 0.119 |
| B3, T2 | 0.45918 | 0.677 |
| B3, WA | 0.85575 | 0.402 |
| **T1, KG** | **5.9098** | **0.001** |
| **T1, K1** | **17.754** | **0.001** |
| **T1, R1** | **8.0437** | **0.001** |
| **T1, PK** | **12.098** | **0.001** |
| **T1, KDS** | **13.983** | **0.001** |
| **T1, S1** | **9.1185** | **0.001** |
| **T1, T2** | **4.9415** | **0.001** |
| **T1, WA** | **8.4334** | **0.001** |
| **KG, K1** | **2.494** | **0.026** |
| KG, R1 | 0.68259 | 0.502 |
| KG, PK | 0.58722 | 0.578 |
| KG, KDS | 1.0381 | 0.334 |
| KG, S1 | 1.2282 | 0.231 |
| KG, T2 | 0.99906 | 0.298 |
| KG, WA | 0.46507 | 0.683 |
| **K1, R1** | **5.5422** | **0.001** |
| **K1, PK** | **4.2419** | **0.006** |
| **K1, KDS** | **3.7421** | **0.001** |
| **K1, S1** | **4.0402** | **0.001** |
| **K1, T2** | **4.0803** | **0.001** |
| **K1, WA** | **6.3465** | **0.001** |
| R1, PK | 2.0988 | 0.051 |
| **R1, KDS** | **2.9572** | **0.013** |
| R1, S1 | 1.2745 | 0.214 |
| R1, T2 | 0.54184 | 0.587 |
| R1, WA | 0.16552 | 0.848 |
| PK, KDS | 0.92949 | 0.376 |
| PK, S1 | 0.96307 | 0.376 |
| PK, T2 | 1.9793 | 0.078 |
| PK, WA | 0.37564 | 0.701 |
| KDS, S1 | 0.048325 | 0.951 |
| KDS, T2 | 2.4983 | 0.031 |
| KDS, WA | 1.6266 | 0.136 |
| S1, T2 | 1.426 | 0.174 |
| S1, WA | 1.1778 | 0.274 |
| T2, WA | 0.61977 | 0.547 |

**Appendix 3.** UnivariatePERMANOVA pairwise test results of differences in coralline algae (CCA) %cover among sites. Significant results are in bold.

|  |  |  |
| --- | --- | --- |
| **Sites** | **t** | **P(perm)** |
| **B3, T1** | **8.9806** | **0.001** |
| **B3, KG** | **7.905** | **0.001** |
| **B3, K1** | **5.0527** | **0.001** |
| **B3, R1** | **7.0314** | **0.001** |
| **B3, PK** | **2.801** | **0.01** |
| **B3, KDS** | **4.0983** | **0.004** |
| **B3, S1** | **9.3538** | **0.001** |
| **B3, T2** | **5.8152** | **0.001** |
| B3, WA | 1.4284 | 0.196 |
| T1, KG | 1.3382 | 0.226 |
| **T1, K1** | **5.4559** | **0.001** |
| **T1, R1** | **4.0411** | **0.001** |
| **T1, PK** | **3.9495** | **0.004** |
| **T1, KDS** | **2.9176** | **0.019** |
| **T1, S1** | **3.4174** | **0.006** |
| **T1, T2** | **4.4971** | **0.001** |
| **T1, WA** | **8.8408** | **0.001** |
| **KG, K1** | **4.6464** | **0.001** |
| **KG, R1** | **3.5034** | **0.002** |
| **KG, PK** | **4.1683** | **0.002** |
| **KG, KDS** | **3.3016** | **0.006** |
| KG, S1 | 1.2539 | 0.223 |
| **KG, T2** | **4.013** | **0.001** |
| **KG, WA** | **6.261** | **0.001** |
| **K1, R1** | **2.4062** | **0.04** |
| K1, PK | 0.95065 | 0.348 |
| K1, KDS | 0.30325 | 0.761 |
| **K1, S1** | **6.3892** | **0.001** |
| K1, T2 | 0.99916 | 0.354 |
| **K1, WA** | **4.4409** | **0.003** |
| **R1, PK** | **2.258** | **0.041** |
| R1, KDS | 1.0505 | 0.323 |
| **R1, S1** | **6.1109** | **0.001** |
| R1, T2 | 1.2877 | 0.213 |
| **R1, WA** | **6.7841** | **0.001** |
| PK, KDS | 1.0035 | 0.338 |
| **PK, S1** | **5.3517** | **0.001** |
| PK, T2 | 1.5378 | 0.174 |
| PK, WA | 1.1798 | 0.276 |
| **KDS, S1** | **3.5056** | **0.005** |
| KDS, T2 | 0.32271 | 0.731 |
| **KDS, WA** | **3.4609** | **0.011** |
| **S1, T2** | **5.9733** | **0.001** |
| **S1, WA** | **10.048** | **0.001** |
| **T2, WA** | **5.1237** | **0.001** |

**Appendix 4.** UnivariatePERMANOVA pairwise test results of differences in soft coral %cover among sites. Significant results are in bold.

|  |  |  |
| --- | --- | --- |
| **Sites** | **t** | **P(perm)** |
| B3, T1 | 0.53872 | 0.588 |
| **B3, KG** | **5.8878** | **0.001** |
| **B3, K1** | **8.6421** | **0.001** |
| **B3, R1** | **3.4351** | **0.005** |
| **B3, PK** | **4.4915** | **0.002** |
| **B3, KDS** | **4.6845** | **0.003** |
| **B3, S1** | **2.9979** | **0.011** |
| B3, T2 | 0.27336 | 0.81 |
| B3, WA | 1.5435 | 0.141 |
| **T1, KG** | **6.239** | **0.001** |
| **T1, K1** | **8.9503** | **0.001** |
| **T1, R1** | **3.8496** | **0.004** |
| **T1, PK** | **4.8825** | **0.001** |
| **T1, KDS** | **4.9512** | **0.004** |
| **T1, S1** | **3.1022** | **0.009** |
| T1, T2 | 0.32448 | 0.765 |
| T1, WA | 1.2989 | 0.224 |
| KG, K1 | 1.6592 | 0.125 |
| **KG, R1** | **2.4055** | **0.034** |
| KG, PK | 1.4639 | 0.162 |
| KG, KDS | 0.84401 | 0.415 |
| **KG, S1** | **2.648** | **0.025** |
| **KG, T2** | **6.543** | **0.001** |
| **KG, WA** | **6.1851** | **0.001** |
| **K1, R1** | **4.4235** | **0.002** |
| **K1, PK** | **3.3678** | **0.007** |
| K1, KDS | 0.19036 | 0.838 |
| **K1, S1** | **5.2199** | **0.005** |
| **K1, T2** | **9.7552** | **0.001** |
| **K1, WA** | **9.3374** | **0.001** |
| R1, PK | 0.97503 | 0.381 |
| **R1, KDS** | **2.478** | **0.029** |
| R1, S1 | 0.93162 | 0.382 |
| **R1, T2** | **3.9504** | **0.003** |
| **R1, WA** | **4.7644** | **0.001** |
| PK, KDS | 1.8438 | 0.097 |
| **PK, S1** | **2.805** | **0.013** |
| **PK, T2** | **5.0896** | **0.002** |
| **PK, WA** | **6.5359** | **0.001** |
| **KDS, S1** | **2.3856** | **0.046** |
| **KDS, T2** | **4.9593** | **0.003** |
| **KDS, WA** | **4.4603** | **0.002** |
| **S1, T2** | **3.962** | **0.005** |
| **S1, WA** | **4.9465** | **0.002** |
| T2, WA | 1.1893 | 0.26 |

**Appendix 5.** UnivariatePERMANOVA pairwise test results of differences in sponge %cover among sites. Significant results are in bold.

|  |  |  |
| --- | --- | --- |
| **Groups** | **t** | **P(perm)** |
| B3, T1 | 1.8251 | 0.083 |
| **B3, KG** | **12.722** | **0.001** |
| **B3, K1** | **6.8666** | **0.001** |
| **B3, R1** | **6.9109** | **0.001** |
| **B3, PK** | **2.9543** | **0.012** |
| B3, KDS | 0.82991 | 0.452 |
| B3, S1 | 0.97748 | 0.357 |
| **B3, T2** | **2.4904** | **0.03** |
| **B3, WA** | **4.73** | **0.003** |
| **T1, KG** | **8.1747** | **0.001** |
| **T1, K1** | **3.9885** | **0.005** |
| **T1, R1** | **4.7578** | **0.001** |
| T1, PK | 1.1024 | 0.264 |
| T1, KDS | 0.80673 | 0.428 |
| T1, S1 | 1.1655 | 0.295 |
| T1, T2 | 0.98822 | 0.351 |
| T1, WA | 1.4571 | 0.17 |
| **KG, K1** | **4.4049** | **0.004** |
| KG, R1 | 1.4729 | 0.157 |
| **KG, PK** | **6.2588** | **0.001** |
| **KG, KDS** | **8.7731** | **0.001** |
| **KG, S1** | **4.8525** | **0.004** |
| **KG, T2** | **5.0463** | **0.004** |
| **KG, WA** | **2.5696** | **0.033** |
| K1, R1 | 1.6355 | 0.128 |
| **K1, PK** | **2.5388** | **0.026** |
| **K1, KDS** | **4.7232** | **0.001** |
| **K1, S1** | **2.3523** | **0.041** |
| K1, T2 | 2.0793 | 0.064 |
| K1, WA | 0.38066 | 0.707 |
| **R1, PK** | **3.5573** | **0.005** |
| **R1, KDS** | **5.3663** | **0.002** |
| **R1, S1** | **4.2472** | **0.004** |
| **R1, T2** | **3.086** | **0.017** |
| R1, WA | 2.2492 | 0.061 |
| PK, KDS | 1.839 | 0.079 |
| PK, S1 | 1.309 | 0.18 |
| PK, T2 | 4.09E-02 | 0.963 |
| PK, WA | 1.1286 | 0.272 |
| KDS, S1 | 1.222 | 0.247 |
| KDS, T2 | 1.6311 | 0.129 |
| **KDS, WA** | **4.0624** | **0.006** |
| S1, T2 | 1.6275 | 0.142 |
| **S1, WA** | **2.6047** | **0.042** |
| T2, WA | 0.3972 | 0.663 |

**Appendix 6.** UnivariatePERMANOVA pairwise test results of differences in total abiotic %cover among sites. Significant results are in bold.

|  |  |  |
| --- | --- | --- |
| **Sites** | **t** | **P(perm)** |
| B3, T1 | 1.0921 | 0.274 |
| **B3, KG** | **3.6913** | **0.006** |
| **B3, K1** | **3.5691** | **0.002** |
| **B3, R1** | **3.7358** | **0.005** |
| **B3, PK** | **3.2312** | **0.007** |
| **B3, KDS** | **3.0741** | **0.01** |
| **B3, S1** | **9.6584** | **0.001** |
| **B3, T2** | **4.4646** | **0.002** |
| **B3, WA** | **3.7036** | **0.01** |
| **T1, KG** | **2.8123** | **0.013** |
| **T1, K1** | **2.2452** | **0.046** |
| **T1, R1** | **2.7627** | **0.018** |
| **T1, PK** | **2.4806** | **0.025** |
| **T1, KDS** | **2.3518** | **0.034** |
| **T1, S1** | **9.1683** | **0.001** |
| **T1, T2** | **3.3077** | **0.005** |
| **T1, WA** | **3.5671** | **0.005** |
| KG, K1 | 1.3067 | 0.213 |
| KG, R1 | 0.2536 | 0.795 |
| KG, PK | 0.012217 | 0.991 |
| KG, KDS | 0.033087 | 0.973 |
| **KG, S1** | **3.282** | **0.017** |
| KG, T2 | 0.14806 | 0.885 |
| KG, WA | 0.52034 | 0.632 |
| K1, R1 | 1.1123 | 0.304 |
| K1, PK | 1.1491 | 0.274 |
| K1, KDS | 1.0579 | 0.302 |
| **K1, S1** | **5.1953** | **0.001** |
| K1, T2 | 1.4617 | 0.184 |
| K1, WA | 0.83327 | 0.424 |
| R1, PK | 0.24096 | 0.819 |
| R1, KDS | 0.18753 | 0.863 |
| **R1, S1** | **3.7442** | **0.005** |
| R1, T2 | 0.13777 | 0.908 |
| R1, WA | 0.48771 | 0.626 |
| PK, KDS | 0.041711 | 0.953 |
| **PK, S1** | **3.5007** | **0.006** |
| PK, T2 | 0.1447 | 0.908 |
| PK, WA | 0.18414 | 0.844 |
| KDS, S1 | 2.1941 | 0.061 |
| KDS, T2 | 9.03E-02 | 0.932 |
| KDS, WA | 0.93132 | 0.359 |
| **S1, T2** | **3.7454** | **0.007** |
| **S1, WA** | **6.3279** | **0.002** |
| T2, WA | 1.1889 | 0.257 |

**Appendix 7.** UnivariatePERMANOVA pairwise test results of differences in settled sediment %cover among sites. Significant results are in bold.

|  |  |  |
| --- | --- | --- |
| **Sites** | **t** | **P(perm)** |
| **B3, T1** | **2.9951** | **0.008** |
| B3, KG | 0.89761 | 0.391 |
| **B3, K1** | **2.2391** | **0.044** |
| B3, R1 | 1.9197 | 0.096 |
| B3, PK | 0.62378 | 0.538 |
| B3, KDS | 0.41299 | 0.683 |
| **B3, S1** | **3.5951** | **0.001** |
| B3, T2 | 1.3033 | 0.216 |
| B3, WA | 1.0541 | 0.312 |
| T1, KG | 2.1373 | 0.054 |
| **T1, K1** | **5.5851** | **0.001** |
| **T1, R1** | **5.3524** | **0.001** |
| **T1, PK** | **4.5969** | **0.001** |
| T1, KDS | 1.8545 | 0.102 |
| **T1, S1** | **5.6063** | **0.001** |
| **T1, T2** | **3.4459** | **0.007** |
| **T1, WA** | **4.3874** | **0.001** |
| **KG, K1** | **3.28** | **0.006** |
| **KG, R1** | **2.9838** | **0.019** |
| KG, PK | 1.8362 | 0.093 |
| KG, KDS | 0.26117 | 0.801 |
| **KG, S1** | **5.1334** | **0.001** |
| KG, T2 | 1.9516 | 0.089 |
| **KG, WA** | **3.6123** | **0.003** |
| K1, R1 | 0.4339 | 0.668 |
| **K1, PK** | **2.4745** | **0.022** |
| K1, KDS | 2.062 | 0.079 |
| K1, S1 | 2.0553 | 0.068 |
| K1, T2 | 0.15076 | 0.873 |
| K1, WA | 1.8698 | 0.087 |
| R1, PK | 2.0534 | 0.064 |
| R1, KDS | 1.819 | 0.093 |
| **R1, S1** | **3.4123** | **0.006** |
| R1, T2 | 0.10066 | 0.919 |
| R1, WA | 0.57376 | 0.554 |
| PK, KDS | 0.88932 | 0.376 |
| **PK, S1** | **3.903** | **0.006** |
| PK, T2 | 1.0895 | 0.306 |
| PK, WA | 1.4633 | 0.178 |
| **KDS, S1** | **3.5521** | **0.004** |
| KDS, T2 | 1.4433 | 0.173 |
| KDS, WA | 1.2934 | 0.232 |
| S1, T2 | 2.0964 | 0.061 |
| **S1, WA** | **2.8247** | **0.033** |
| T2, WA | 0.5263 | 0.615 |

**Appendix 8.** UnivariatePERMANOVA pairwise test results of differences in coral rubble %cover among sites. Significant results are in bold.

|  |  |  |
| --- | --- | --- |
| **Sites** | **t** | **P(perm)** |
| **B3, T1** | **3.3978** | **0.007** |
| **B3, KG** | **4.7875** | **0.002** |
| B3, K1 | 1.1662 | 0.252 |
| **B3, R1** | **3.4192** | **0.009** |
| **B3, PK** | **3.4881** | **0.007** |
| **B3, KDS** | **5.0896** | **0.001** |
| **B3, S1** | **2.9914** | **0.02** |
| **B3, T2** | **5.7803** | **0.001** |
| B3, WA | 1.7839 | 0.096 |
| T1, KG | 2.1661 | 0.062 |
| T1, K1 | 1.5507 | 0.147 |
| T1, R1 | 1.112 | 0.273 |
| T1, PK | 1.7656 | 0.106 |
| **T1, KDS** | **2.6983** | **0.022** |
| T1, S1 | 0.39012 | 0.702 |
| **T1, T2** | **2.4451** | **0.025** |
| T1, WA | 0.77405 | 0.462 |
| **KG, K1** | **3.1101** | **0.012** |
| KG, R1 | 0.63462 | 0.557 |
| KG, PK | 0.39145 | 0.671 |
| KG, KDS | 0.63307 | 0.551 |
| **KG, S1** | **3.6788** | **0.005** |
| KG, T2 | 0.38247 | 0.72 |
| **KG, WA** | **4.2273** | **0.002** |
| **K1, R1** | **2.1394** | **0.047** |
| **K1, PK** | **2.5451** | **0.026** |
| **K1, KDS** | **3.5274** | **0.008** |
| K1, S1 | 0.1109 | 0.917 |
| **K1, T2** | **3.3801** | **0.013** |
| K1, WA | 0.66811 | 0.535 |
| R1, PK | 0.8294 | 0.423 |
| R1, KDS | 1.1666 | 0.265 |
| R1, S1 | 1.9851 | 0.093 |
| R1, T2 | 0.41628 | 0.68 |
| **R1, WA** | **2.5025** | **0.036** |
| PK, KDS | 6.99E-02 | 0.952 |
| PK, S1 | 1.2205 | 0.237 |
| PK, T2 | 0.65803 | 0.513 |
| PK, WA | 1.599 | 0.152 |
| **KDS, S1** | **3.4815** | **0.006** |
| KDS, T2 | 1.0956 | 0.307 |
| **KDS, WA** | **3.9515** | **0.006** |
| **S1, T2** | **4.1543** | **0.004** |
| S1, WA | 1.5319 | 0.149 |
| **T2, WA** | **5.1301** | **0.001** |

**Appendix 9.** Results of SIMPER analysis of inter-site differences in the assemblage composition. Av.Abund, average abundance; Av.Diss, average dissimilarity; Diss/SD, average dissimilarity/standard deviation; Contrib%, contribution to dissimilarities; Cum% , cumulative contribution to dissimilarities.

*Sites B3 & T1*

Average dissimilarity = 39.95

Site B3 Site T1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 26.11 48.40 11.97 1.79 29.97 29.97

Coralline Algae 32.09 9.94 11.07 2.78 27.72 57.68

Rubble 3.59 10.17 3.39 1.17 8.49 66.17

Other 13.65 6.99 3.33 2.47 8.34 74.51

Settled Sediment 12.24 6.63 3.13 1.41 7.83 82.34

Turf Algae 5.06 2.68 1.43 1.01 3.59 85.93

Macroalgae 0.00 2.47 1.24 2.16 3.10 89.02

Sponges 2.75 4.32 1.09 0.91 2.73 91.75

*Sites B3 & KG*

Average dissimilarity = 54.84

Site B3 Site KG

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 32.09 8.07 12.01 2.92 21.90 21.90

Hard Coral 26.11 16.93 8.33 1.61 15.19 37.08

Rubble 3.59 16.81 7.03 1.02 12.82 49.90

Soft Coral 2.82 15.51 6.35 1.93 11.57 61.48

Sponges 2.75 14.94 6.19 1.50 11.29 72.77

Other 13.65 3.48 5.09 3.35 9.27 82.04

Sand 0.00 7.77 3.88 1.06 7.08 89.13

Settled Sediment 12.24 11.07 3.61 1.59 6.57 95.70

*Sites T1 & KG*

Average dissimilarity = 49.05

Site T1 Site KG

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 16.93 15.74 2.05 32.09 32.09

Rubble 10.17 16.81 6.83 1.02 13.93 46.02

Soft Coral 2.29 15.51 6.61 1.94 13.48 59.49

Sponges 4.32 14.94 6.24 1.65 12.71 72.21

Sand 1.82 7.77 3.19 0.86 6.50 78.70

Settled Sediment 6.63 11.07 3.12 1.30 6.37 85.07

Other 6.99 3.48 1.90 1.32 3.88 88.95

Coralline Algae 9.94 8.07 1.55 1.24 3.16 92.11

*Sites B3 & K1*

Average dissimilarity = 44.02

Site B3 Site K1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 26.11 7.38 9.36 1.68 21.27 21.27

Soft Coral 2.82 20.75 8.97 2.96 20.38 41.64

Coralline Algae 32.09 17.75 7.58 1.60 17.21 58.86

Other 13.65 7.27 3.78 1.57 8.58 67.44

Settled Sediment 12.24 17.51 3.53 1.00 8.02 75.46

Sponges 2.75 9.31 3.49 1.42 7.92 83.38

Rubble 3.59 6.09 2.87 1.15 6.52 89.90

Sand 0.00 4.00 2.00 0.95 4.54 94.44

*Sites T1 & K1*

Average dissimilarity = 58.06

Site T1 Site K1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 7.38 20.51 2.88 35.33 35.33

Soft Coral 2.29 20.75 9.23 3.08 15.90 51.23

Settled Sediment 6.63 17.51 5.52 1.21 9.51 60.74

Rubble 10.17 6.09 4.59 1.45 7.90 68.64

Coralline Algae 9.94 17.75 4.06 1.51 6.99 75.63

Sponges 4.32 9.31 3.63 1.63 6.25 81.88

Other 6.99 7.27 2.90 1.60 4.99 86.87

Turf Algae 2.68 7.45 2.80 1.13 4.82 91.68

*Sites KG & K1*

Average dissimilarity = 38.98

Site KG Site K1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 16.93 7.38 6.17 0.97 15.83 15.83

Settled Sediment 11.07 17.51 6.06 1.74 15.55 31.38

Rubble 16.81 6.09 5.89 1.09 15.11 46.49

Coralline Algae 8.07 17.75 5.13 1.85 13.17 59.66

Soft Coral 15.51 20.75 3.91 1.24 10.03 69.69

Sand 7.77 4.00 3.02 1.25 7.75 77.44

Sponges 14.94 9.31 2.87 1.29 7.35 84.79

Turf Algae 3.03 7.45 2.37 1.17 6.08 90.88

*Sites B3 & R1*

Average dissimilarity = 38.50

Site B3 Site R1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 32.09 13.94 9.07 2.27 23.56 23.56

Rubble 3.59 13.68 5.77 1.58 14.99 38.55

Hard Coral 26.11 17.94 5.54 1.17 14.39 52.95

Sponges 2.75 11.62 4.44 1.43 11.52 64.47

Other 13.65 6.36 3.70 2.14 9.60 74.07

Settled Sediment 12.24 16.68 3.38 1.40 8.77 82.83

Soft Coral 2.82 9.16 3.34 0.93 8.66 91.50

*Sites T1 & R1*

Average dissimilarity = 42.74

Site T1 Site R1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 17.94 15.23 2.41 35.63 35.63

Rubble 10.17 13.68 5.26 1.52 12.30 47.93

Settled Sediment 6.63 16.68 5.04 1.86 11.80 59.73

Sponges 4.32 11.62 4.19 1.50 9.79 69.52

Soft Coral 2.29 9.16 3.54 1.06 8.27 77.79

Coralline Algae 9.94 13.94 2.09 2.06 4.89 82.69

Turf Algae 2.68 5.13 1.57 1.78 3.68 86.37

Sand 1.82 2.67 1.56 1.45 3.65 90.02

*Sites KG & R1*

Average dissimilarity = 34.03

Site KG Site R1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 16.93 17.94 6.43 1.74 18.89 18.89

Rubble 16.81 13.68 5.05 1.36 14.85 33.74

Soft Coral 15.51 9.16 4.90 1.44 14.39 48.13

Settled Sediment 11.07 16.68 3.62 1.32 10.63 58.76

Sand 7.77 2.67 3.38 1.03 9.94 68.70

Coralline Algae 8.07 13.94 3.09 2.10 9.08 77.78

Sponges 14.94 11.62 3.04 1.20 8.94 86.72

Other 3.48 6.36 1.68 1.50 4.95 91.67

*Sites K1 & R1*

Average dissimilarity = 33.42

Site K1 Site R1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 20.75 9.16 6.53 2.13 19.55 19.55

Hard Coral 7.38 17.94 5.30 1.54 15.85 35.39

Settled Sediment 17.51 16.68 4.94 1.43 14.79 50.18

Rubble 6.09 13.68 4.66 1.46 13.93 64.11

Coralline Algae 17.75 13.94 2.71 1.27 8.11 72.23

Sponges 9.31 11.62 2.40 1.36 7.19 79.42

Other 7.27 6.36 2.03 1.31 6.08 85.50

Sand 4.00 2.67 1.88 1.22 5.64 91.14

*Sites B3 & PK*

Average dissimilarity = 38.29

Site B3 Site PK

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 3.59 20.64 8.86 1.24 23.13 23.13

Hard Coral 26.11 12.88 6.99 1.22 18.24 41.38

Coralline Algae 32.09 20.74 6.30 1.47 16.46 57.84

Soft Coral 2.82 11.86 4.72 1.33 12.34 70.18

Other 13.65 5.28 4.25 2.09 11.11 81.29

Settled Sediment 12.24 13.05 1.96 1.65 5.11 86.40

Sand 0.00 3.67 1.84 0.94 4.79 91.19

*Sites T1 & PK*

Average dissimilarity = 48.28

Site T1 Site PK

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 12.88 17.76 3.78 36.80 36.80

Rubble 10.17 20.64 7.21 1.45 14.94 51.74

Coralline Algae 9.94 20.74 5.41 1.38 11.20 62.93

Soft Coral 2.29 11.86 4.89 1.43 10.13 73.06

Settled Sediment 6.63 13.05 3.26 2.03 6.76 79.82

Other 6.99 5.28 1.89 1.39 3.92 83.74

Turf Algae 2.68 4.98 1.78 1.64 3.68 87.42

Sponges 4.32 5.60 1.68 1.48 3.47 90.89

*Sites KG & PK*

Average dissimilarity = 41.01

Site KG Site PK

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 16.81 20.64 9.78 1.56 23.86 23.86

Coralline Algae 8.07 20.74 6.39 1.60 15.57 39.43

Sponges 14.94 5.60 5.15 1.61 12.57 52.00

Hard Coral 16.93 12.88 4.91 1.16 11.96 63.96

Soft Coral 15.51 11.86 4.32 1.44 10.54 74.50

Sand 7.77 3.67 3.42 1.00 8.33 82.83

Settled Sediment 11.07 13.05 2.95 1.77 7.18 90.01

*Sites K1 & PK*

Average dissimilarity = 36.58

Site K1 Site PK

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 6.09 20.64 8.69 1.16 23.76 23.76

Soft Coral 20.75 11.86 5.42 2.15 14.82 38.57

Coralline Algae 17.75 20.74 4.27 1.40 11.66 50.24

Hard Coral 7.38 12.88 4.25 1.63 11.61 61.85

Settled Sediment 17.51 13.05 3.34 1.04 9.13 70.97

Sand 4.00 3.67 2.94 1.64 8.03 79.00

Other 7.27 5.28 2.59 1.38 7.09 86.09

Sponges 9.31 5.60 2.46 1.33 6.73 92.82

*Sites R1 & PK*

Average dissimilarity = 30.84

Site R1 Site PK

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 13.68 20.64 7.98 1.37 25.89 25.89

Coralline Algae 13.94 20.74 3.95 1.17 12.80 38.70

Hard Coral 17.94 12.88 3.55 1.14 11.53 50.23

Soft Coral 9.16 11.86 3.35 1.51 10.87 61.10

Sponges 11.62 5.60 3.30 1.42 10.69 71.79

Settled Sediment 16.68 13.05 2.81 1.46 9.13 80.92

Sand 2.67 3.67 2.18 1.32 7.08 88.00

Other 6.36 5.28 1.83 1.35 5.94 93.93

*Sites B3 & KDS*

Average dissimilarity = 46.98

Site B3 Site KDS

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 2.82 21.52 9.35 1.42 19.90 19.90

Coralline Algae 32.09 17.71 8.35 1.62 17.76 37.67

Rubble 3.59 19.15 8.02 1.42 17.07 54.73

Hard Coral 26.11 11.60 7.63 1.30 16.23 70.97

Other 13.65 3.98 4.83 2.25 10.29 81.26

Settled Sediment 12.24 11.54 3.01 1.48 6.41 87.66

Exposed Reef Substrate 0.96 4.23 1.75 0.82 3.72 91.38

*Sites T1 & KDS*

Average dissimilarity = 53.55

Site T1 Site KDS

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 11.60 18.40 4.28 34.36 34.36

Soft Coral 2.29 21.52 9.61 1.44 17.95 52.31

Rubble 10.17 19.15 7.02 1.41 13.12 65.43

Coralline Algae 9.94 17.71 4.45 1.10 8.31 73.74

Settled Sediment 6.63 11.54 3.23 1.30 6.04 79.78

Other 6.99 3.98 2.35 1.75 4.38 84.16

Sand 1.82 2.42 2.06 0.65 3.84 88.00

Sponges 4.32 3.79 1.69 1.01 3.15 91.15

*Sites KG & KDS*

Average dissimilarity = 40.05

Site KG Site KDS

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 15.51 21.52 6.10 1.32 15.23 15.23

Hard Coral 16.93 11.60 6.00 1.36 14.99 30.22

Sponges 14.94 3.79 5.58 1.57 13.94 44.16

Coralline Algae 8.07 17.71 5.46 1.32 13.64 57.80

Rubble 16.81 19.15 4.89 1.20 12.22 70.02

Sand 7.77 2.42 3.86 1.09 9.65 79.67

Settled Sediment 11.07 11.54 3.46 1.42 8.63 88.30

Exposed Reef Substrate 1.07 4.23 1.74 0.82 4.34 92.64

*Sites K1 & KDS*

Average dissimilarity = 34.97

Site K1 Site KDS

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 6.09 19.15 6.74 1.35 19.28 19.28

Soft Coral 20.75 21.52 5.87 1.51 16.78 36.06

Settled Sediment 17.51 11.54 4.58 1.22 13.09 49.15

Hard Coral 7.38 11.60 3.60 0.99 10.28 59.43

Coralline Algae 17.75 17.71 2.95 1.15 8.43 67.87

Sponges 9.31 3.79 2.85 1.31 8.16 76.02

Turf Algae 7.45 3.40 2.15 0.98 6.14 82.17

Sand 4.00 2.42 2.14 0.92 6.11 88.28

Other 7.27 3.98 1.93 0.90 5.52 93.79

*Sites R1 & KDS*

Average dissimilarity = 37.14

Site R1 Site KDS

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 9.16 21.52 8.59 1.63 23.13 23.13

Rubble 13.68 19.15 4.89 1.26 13.15 36.28

Sponges 11.62 3.79 4.13 1.42 11.13 47.41

Hard Coral 17.94 11.60 4.03 1.27 10.86 58.27

Settled Sediment 16.68 11.54 3.84 1.44 10.33 68.60

Coralline Algae 13.94 17.71 3.78 1.19 10.17 78.77

Sand 2.67 2.42 2.13 0.74 5.74 84.51

Reef Substrate 0.97 4.23 1.89 0.94 5.10 89.61

Other 6.36 3.98 1.86 1.42 5.01 94.62

*Sites PK & KDS*

Average dissimilarity = 36.08

Site PK Site KDS

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 20.64 19.15 8.20 1.42 22.74 22.74

Soft Coral 11.86 21.52 7.67 1.60 21.25 43.99

Coralline Algae 20.74 17.71 5.37 1.41 14.89 58.88

Sand 3.67 2.42 2.95 0.89 8.19 67.07

Settled Sediment 13.05 11.54 2.39 1.17 6.63 73.69

Hard Coral 12.88 11.60 2.22 1.22 6.16 79.85

Other 5.28 3.98 2.06 1.42 5.70 85.55

Reef Substrate 0.52 4.23 1.94 0.92 5.39 90.94

*Sites B3 & S1*

Average dissimilarity = 56.45

Site B3 Site S1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 32.09 5.47 13.96 3.40 24.73 24.73

Settled Sediment 12.24 34.32 10.98 1.43 19.45 44.17

Sand 0.00 21.65 10.82 1.00 19.17 63.34

Hard Coral 26.11 12.80 7.59 1.42 13.45 76.79

Other 13.65 4.77 4.63 3.36 8.20 84.99

Rubble 3.59 6.32 3.00 1.41 5.32 90.31

*Sites T1 & S1*

Average dissimilarity = 61.24

Site T1 Site S1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 12.80 19.53 4.19 31.89 31.89

Settled Sediment 6.63 34.32 14.31 1.84 23.37 55.26

Sand 1.82 21.65 10.42 1.01 17.01 72.28

Rubble 10.17 6.32 4.40 2.10 7.19 79.46

Coralline Algae 9.94 5.47 3.02 1.61 4.93 84.39

Soft Coral 2.29 7.45 2.52 1.42 4.11 88.50

Other 6.99 4.77 1.55 1.59 2.53 91.04

*Sites KG & S1*

Average dissimilarity = 57.17

Site KG Site S1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Settled Sediment 11.07 34.32 13.81 1.80 24.15 24.15

Sand 7.77 21.65 12.28 1.49 21.48 45.63

Hard Coral 16.93 12.80 8.58 2.03 15.01 60.64

Rubble 16.81 6.32 6.04 1.14 10.57 71.21

Sponges 14.94 3.58 4.75 1.29 8.31 79.53

Soft Coral 15.51 7.45 4.57 1.17 8.00 87.52

Coralline Algae 8.07 5.47 2.98 2.20 5.21 92.73

*Sites K1 & S1*

Average dissimilarity = 49.17

Site K1 Site S1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Sand 4.00 21.65 12.79 1.48 26.01 26.01

Settled Sediment 17.51 34.32 7.76 1.04 15.79 41.81

Soft Coral 20.75 7.45 7.47 2.18 15.18 56.99

Coralline Algae 17.75 5.47 6.27 1.24 12.76 69.75

Hard Coral 7.38 12.80 4.11 0.78 8.36 78.11

Turf Algae 7.45 2.09 3.27 2.33 6.65 84.76

Sponges 9.31 3.58 2.78 1.25 5.66 90.43

*Sites R1 & S1*

Average dissimilarity = 45.08

Site R1 Site S1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Settled Sediment 16.68 34.32 10.56 1.50 23.42 23.42

Sand 2.67 21.65 10.53 1.13 23.35 46.77

Sponges 11.62 3.58 4.55 1.27 10.10 56.87

Hard Coral 17.94 12.80 4.45 1.36 9.87 66.74

Coralline Algae 13.94 5.47 4.34 1.72 9.62 76.36

Rubble 13.68 6.32 4.00 1.52 8.87 85.23

Soft Coral 9.16 7.45 2.91 1.00 6.45 91.68

*Sites PK & S1*

Average dissimilarity = 48.56

Site PK Site S1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Settled Sediment 13.05 34.32 10.95 1.45 22.54 22.54

Sand 3.67 21.65 9.89 1.00 20.36 42.90

Coralline Algae 20.74 5.47 8.40 1.99 17.31 60.21

Rubble 20.64 6.32 5.91 1.37 12.18 72.39

Soft Coral 11.86 7.45 4.08 1.39 8.40 80.79

Hard Coral 12.88 12.80 3.68 1.34 7.58 88.37

Turf Algae 4.98 2.09 1.85 1.93 3.80 92.17

*Sites KDS & S1*

Average dissimilarity = 54.38

Site KDS Site S1

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Sand 2.42 21.65 12.38 1.26 22.76 22.76

Settled Sediment 11.54 34.32 11.77 1.52 21.65 44.41

Soft Coral 21.52 7.45 8.24 1.19 15.15 59.56

Coralline Algae 17.71 5.47 6.27 1.28 11.53 71.09

Rubble 19.15 6.32 6.17 2.07 11.35 82.45

Reef Substrate 4.23 1.08 2.73 1.40 5.01 87.46

Hard Coral 11.60 12.80 2.17 0.79 3.98 91.44

*Sites B3 & T2*

Average dissimilarity = 33.93

Site B3 Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 32.09 15.66 8.21 1.98 24.20 24.20

Hard Coral 26.11 21.66 6.30 1.31 18.58 42.78

Rubble 3.59 13.88 5.19 1.89 15.31 58.08

Settled Sediment 12.24 17.41 4.49 1.49 13.24 71.33

Other 13.65 8.75 2.69 1.58 7.92 79.25

Turf Algae 5.06 8.83 2.01 1.68 5.94 85.19

Sponges 2.75 5.79 1.70 1.07 5.01 90.20

*Sites T1 & T2*

Average dissimilarity = 36.89

Site T1 Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 21.66 13.49 1.60 36.57 36.57

Settled Sediment 6.63 17.41 5.74 1.30 15.56 52.14

Rubble 10.17 13.88 3.74 1.45 10.12 62.26

Turf Algae 2.68 8.83 3.07 2.78 8.33 70.59

Coralline Algae 9.94 15.66 2.86 1.58 7.75 78.34

Other 6.99 8.75 1.80 1.24 4.89 83.23

Sponges 4.32 5.79 1.56 1.29 4.23 87.46

Soft Coral 2.29 2.58 1.05 1.26 2.86 90.32

*Sites KG & T2*

Average dissimilarity = 45.90

Site KG Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 16.93 21.66 7.48 1.85 16.31 16.31

Soft Coral 15.51 2.58 6.47 1.83 14.09 30.39

Sponges 14.94 5.79 5.93 1.70 12.91 43.31

Settled Sediment 11.07 17.41 5.49 1.43 11.97 55.28

Rubble 16.81 13.88 5.25 1.15 11.43 66.71

Sand 7.77 0.37 3.82 1.11 8.33 75.04

Coralline Algae 8.07 15.66 3.81 1.72 8.30 83.34

Turf Algae 3.03 8.83 2.91 1.97 6.33 89.67

Other 3.48 8.75 2.66 1.77 5.80 95.47

*Sites K1 & T2*

Average dissimilarity = 39.29

Site K1 Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 20.75 2.58 9.09 2.81 23.13 23.13

Hard Coral 7.38 21.66 7.33 1.40 18.65 41.78

Rubble 6.09 13.88 4.54 1.77 11.54 53.32

Settled Sediment 17.51 17.41 3.94 1.35 10.02 63.34

Sponges 9.31 5.79 3.63 2.08 9.23 72.57

Coralline Algae 17.75 15.66 3.06 1.49 7.79 80.37

Turf Algae 7.45 8.83 2.29 1.70 5.82 86.19

Other 7.27 8.75 1.94 1.28 4.93 91.12

*Sites R1 & T2*

Average dissimilarity = 29.81

Site R1 Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Settled Sediment 16.68 17.41 5.29 2.29 17.75 17.75

Hard Coral 17.94 21.66 5.02 1.15 16.83 34.58

Rubble 13.68 13.88 3.68 1.44 12.33 46.91

Soft Coral 9.16 2.58 3.56 1.18 11.95 58.86

Sponges 11.62 5.79 3.50 1.13 11.75 70.61

Turf Algae 5.13 8.83 1.99 1.73 6.68 77.29

Other 6.36 8.75 1.67 1.16 5.60 82.90

Coralline Algae 13.94 15.66 1.65 1.53 5.52 88.42

Sand 2.67 0.37 1.27 0.96 4.27 92.69

*Sites PK & T2*

Average dissimilarity = 36.28

Site PK Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 20.64 13.88 7.04 1.25 19.41 19.41

Hard Coral 12.88 21.66 5.68 1.11 15.65 35.07

Soft Coral 11.86 2.58 5.00 1.48 13.77 48.84

Settled Sediment 13.05 17.41 4.18 1.58 11.53 60.37

Coralline Algae 20.74 15.66 4.01 1.45 11.05 71.42

Other 5.28 8.75 2.32 1.42 6.39 77.81

Turf Algae 4.98 8.83 2.14 1.49 5.89 83.70

Sponges 5.60 5.79 1.92 1.77 5.29 88.99

Sand 3.67 0.37 1.85 0.95 5.09 94.08

*Sites KDS & T2*

Average dissimilarity = 41.65

Site KDS Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 21.52 2.58 9.47 1.38 22.74 22.74

Hard Coral 11.60 21.66 6.26 1.03 15.03 37.77

Rubble 19.15 13.88 5.07 1.29 12.18 49.95

Settled Sediment 11.54 17.41 4.85 1.31 11.65 61.60

Coralline Algae 17.71 15.66 4.26 1.55 10.23 71.83

Turf Algae 3.40 8.83 2.84 1.85 6.81 78.63

Other 3.98 8.75 2.58 1.47 6.20 84.84

Sponges 3.79 5.79 2.22 1.32 5.32 90.16

*Sites S1 & T2*

Average dissimilarity = 48.45

Site S1 Site T2

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Sand 21.65 0.37 11.06 1.05 22.83 22.83

Settled Sediment 34.32 17.41 9.42 1.32 19.45 42.28

Hard Coral 12.80 21.66 7.59 1.09 15.67 57.95

Coralline Algae 5.47 15.66 4.70 2.04 9.71 67.65

Rubble 6.32 13.88 4.53 1.49 9.34 77.00

Turf Algae 2.09 8.83 2.84 2.37 5.85 82.85

Soft Coral 7.45 2.58 2.77 1.57 5.72 88.57

Sponges 3.58 5.79 1.97 1.16 4.06 92.63

*Sites B3 & WA*

Average dissimilarity = 27.89

Site B3 Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 26.11 17.38 5.26 1.23 18.86 18.86

Coralline Algae 32.09 27.25 4.48 1.48 16.07 34.93

Reef Substrate 0.96 9.31 4.12 1.07 14.75 49.68

Settled Sediment 12.24 15.80 3.01 1.33 10.78 60.46

Sponges 2.75 7.45 2.62 1.11 9.38 69.84

Other 13.65 10.57 2.40 1.81 8.59 78.43

Rubble 3.59 4.28 1.72 1.56 6.16 84.58

Soft Coral 2.82 1.72 1.52 1.36 5.44 90.03

*Sites T1 & WA*

Average dissimilarity = 46.77

Site T1 Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 48.40 17.38 17.70 3.83 37.85 37.85

Coralline Algae 9.94 27.25 8.76 3.57 18.73 56.58

Settled Sediment 6.63 15.80 5.24 1.79 11.20 67.78

Reef Substrate 2.45 9.31 3.63 0.99 7.76 75.54

Rubble 10.17 4.28 2.73 1.22 5.84 81.38

Sponges 4.32 7.45 2.60 1.30 5.55 86.93

Other 6.99 10.57 1.88 1.26 4.01 90.94

*Sites KG & WA*

Average dissimilarity = 51.96

Site KG Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 8.07 27.25 9.57 3.37 18.42 18.42

Rubble 16.81 4.28 7.83 1.13 15.07 33.49

Soft Coral 15.51 1.72 7.03 1.62 13.53 47.03

Hard Coral 16.93 17.38 6.59 1.58 12.69 59.72

Settled Sediment 11.07 15.80 5.15 1.83 9.92 69.63

Reef Substrate 1.07 9.31 4.16 1.06 8.00 77.63

Other 3.48 10.57 3.87 1.99 7.44 85.07

Sand 7.77 0.63 3.70 0.96 7.11 92.18

*Sites K1 & WA*

Average dissimilarity = 43.45

Site K1 Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 20.75 1.72 10.31 2.88 23.72 23.72

Hard Coral 7.38 17.38 6.11 1.81 14.05 37.77

Coralline Algae 17.75 27.25 5.53 1.66 12.72 50.49

Settled Sediment 17.51 15.80 4.71 1.17 10.84 61.33

Reef Substrate 1.75 9.31 3.53 1.03 8.12 69.45

Other 7.27 10.57 3.30 1.56 7.60 77.06

Turf Algae 7.45 3.02 3.07 1.55 7.06 84.12

Sand 4.00 0.63 2.23 1.02 5.13 89.24

Rubble 6.09 4.28 2.19 0.97 5.04 94.28

*Sites R1 & WA*

Average dissimilarity = 35.37

Site R1 Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 13.94 27.25 6.79 2.82 19.21 19.21

Rubble 13.68 4.28 5.35 1.67 15.12 34.33

Soft Coral 9.16 1.72 4.38 1.37 12.39 46.72

Reef Substrate 0.97 9.31 4.03 1.14 11.40 58.12

Hard Coral 17.94 17.38 2.97 1.54 8.41 66.52

Other 6.36 10.57 2.54 1.39 7.18 73.70

Settled Sediment 16.68 15.80 2.41 1.68 6.80 80.50

Sponges 11.62 7.45 2.36 1.21 6.68 87.18

Sand 2.67 0.63 1.74 1.34 4.91 92.09

*Sites PK & WA*

Average dissimilarity = 35.19

Site PK Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 11.86 1.72 6.88 2.50 19.55 19.55

Rubble 20.64 4.28 5.68 1.25 16.13 35.68

Reef Substrate 0.52 9.31 4.27 1.14 12.13 47.81

Coralline Algae 20.74 27.25 4.02 1.40 11.43 59.23

Settled Sediment 13.05 15.80 3.17 2.00 9.01 68.25

Other 5.28 10.57 3.04 1.43 8.64 76.89

Hard Coral 12.88 17.38 2.53 1.79 7.18 84.07

Sponges 5.60 7.45 1.75 1.34 4.97 89.04

Turf Algae 4.98 3.02 1.44 1.67 4.08 93.12

*Sites KDS & WA*

Average dissimilarity = 46.22

Site KDS Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Soft Coral 21.52 1.72 10.30 1.31 22.29 22.29

Rubble 19.15 4.28 7.74 1.77 16.74 39.03

Coralline Algae 17.71 27.25 6.48 1.67 14.02 53.05

Settled Sediment 11.54 15.80 3.80 2.13 8.23 61.28

Other 3.98 10.57 3.78 1.84 8.19 69.47

Reef Substrate 4.23 9.31 3.64 1.11 7.89 77.36

Hard Coral 11.60 17.38 3.44 2.39 7.45 84.81

Sponges 3.79 7.45 2.61 1.23 5.65 90.46

*Sites S1 & WA*

Average dissimilarity = 52.44

Site S1 Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 5.47 27.25 10.97 3.19 20.93 20.93

Sand 21.65 0.63 10.95 1.04 20.88 41.80

Settled Sediment 34.32 15.80 10.03 1.49 19.12 60.93

Hard Coral 12.80 17.38 4.28 1.90 8.17 69.10

Reef Substrate 1.08 9.31 3.64 1.11 6.93 76.03

Soft Coral 7.45 1.72 3.08 1.66 5.87 81.90

Other 4.77 10.57 2.92 1.58 5.57 87.47

Sponges 3.58 7.45 2.72 1.24 5.18 92.65

*Sites T2 & WA*

Average dissimilarity = 35.48

Site T2 Site WA

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Coralline Algae 15.66 27.25 6.16 2.25 17.35 17.35

Hard Coral 21.66 17.38 6.08 1.44 17.15 34.50

Settled Sediment 17.41 15.80 5.45 2.42 15.37 49.87

Rubble 13.88 4.28 5.08 1.91 14.32 64.18

Reef Substrate 3.07 9.31 3.09 1.00 8.70 72.88

Sponges 5.79 7.45 2.87 1.65 8.09 80.97

Turf Algae 8.83 3.02 2.42 2.21 6.83 87.80

Other 8.75 10.57 2.09 1.39 5.88 93.68

**Appendix 10.** Results of SIMPER analysis of inter-depth differences in the assemblage composition. Av.Abund, average abundance; Av.Diss, average dissimilarity; Diss/SD, average dissimilarity/standard deviation; Contrib%, contribution to dissimilarities; Cum% , cumulative contribution to dissimilarities.

*Sites 5 & 10*

Average dissimilarity = 33.47

Site 5 Site 10

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 21.32 19.01 5.41 1.37 16.15 16.15

Rubble 13.23 8.51 4.62 1.09 13.81 29.97

Sand 3.57 6.22 4.24 0.63 12.66 42.62

Settled Sediment 14.29 16.55 4.04 1.14 12.08 54.70

Coralline Algae 15.39 17.53 3.58 1.34 10.70 65.40

Soft Coral 10.51 10.01 3.39 0.93 10.12 75.52

Sponges 4.17 8.31 2.96 1.16 8.86 84.38

Reef Substrate 4.10 1.63 1.63 0.78 4.86 89.23

Other 6.18 6.79 1.43 1.36 4.27 93.51

*Sites 5 & 15*

Average dissimilarity = 34.94

Site 5 Site 15

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Rubble 13.23 14.40 6.48 1.21 18.55 18.55

Hard Coral 21.32 17.97 5.49 1.19 15.70 34.25

Settled Sediment 14.29 14.52 4.29 1.41 12.27 46.52

Soft Coral 10.51 8.97 3.81 1.04 10.90 57.42

Coralline Algae 15.39 17.50 3.50 1.06 10.01 67.43

Sponges 4.17 8.77 3.26 1.07 9.34 76.77

Sand 3.57 2.49 2.37 0.83 6.78 83.55

Other 6.18 8.45 2.37 1.19 6.78 90.32

*Sites 10 & 15*

Average dissimilarity = 25.22

Site 10 Site 15

Species Av.Abund Av.Abund Av.Diss Diss/SD Contrib% Cum.%

Hard Coral 19.01 17.97 4.78 1.19 18.94 18.94

Rubble 8.51 14.40 4.37 0.98 17.32 36.26

Settled Sediment 16.55 14.52 3.31 1.21 13.12 49.38

Soft Coral 10.01 8.97 2.76 0.98 10.95 60.33

Coralline Algae 17.53 17.50 2.67 1.00 10.59 70.92

Other 6.79 8.45 1.98 1.38 7.86 78.78

Sponges 8.31 8.77 1.74 1.05 6.88 85.66

Turf Algae 3.74 4.61 1.14 1.40 4.54 90.20