Supplementary Information for

**Measuring multi-year changes in the Symbiodiniaceae algae in Caribbean corals on coral-depleted reefs**

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**Supplementary Figures and Tables**

A map of land with blue water

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Map data ©2024 Google

**Figure S1.** Aerial image of the south shore of St. John showing the three study sites, White point, East Tektite, and Cabritte Horn. Dashed lines show latitude and longitude of the laboratory dock from which the fieldwork was staged. Map data ©2024 Google.

**Table S1.** Pairwise PERMANOVA tests for differences in composition of *Breviolum* sequence variants between host species. P-values were adjusted using the Benjamini-Hochberg method.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **pairs** | **Df** | **SumsOfSqs** | **F.Model** | **R2** | **p.value** | **p.adjusted** | **sig** |
| franksi vs cavernosa | 1 | 0.79942217 | 2.95139717 | 0.37117969 | 0.028 | 0.042 | . |
| franksi vs siderea | 1 | 0.35606032 | 0.96830393 | 0.24400952 | 0.4 | 0.4 |  |
| franksi vs strigosa | 1 | 0.45989451 | 2.24477147 | 0.11088154 | 0.053 | 0.07227273 |  |
| franksi vs natans | 1 | 0.77125938 | 3.84385387 | 0.17596958 | 0.023 | 0.03833333 | . |
| franksi vs labrynthiformis | 1 | 0.75766371 | 4.64417294 | 0.17430351 | 0.003 | 0.00642857 | \* |
| cavernosa vs siderea | 1 | 1.04683163 | 6.92700342 | 0.63393441 | 0.06666667 | 0.08333333 |  |
| cavernosa vs strigosa | 1 | 2.22491103 | 13.2556755 | 0.41095638 | 0.001 | 0.0025 | \* |
| cavernosa vs natans | 1 | 2.28688118 | 13.9578335 | 0.4235058 | 0.001 | 0.0025 | \* |
| cavernosa vs labrynthiformis | 1 | 2.46808419 | 18.3679404 | 0.4440139 | 0.001 | 0.0025 | \* |
| siderea vs strigosa | 1 | 0.21500379 | 1.2441047 | 0.06819215 | 0.235 | 0.27115385 |  |
| siderea vs natans | 1 | 1.24926158 | 7.4209182 | 0.30387548 | 0.013 | 0.024375 | . |
| siderea vs labrynthiformis | 1 | 0.14720085 | 1.08871576 | 0.04928832 | 0.318 | 0.34071429 |  |
| strigosa vs natans | 1 | 5.13199301 | 30.1526391 | 0.48513852 | 0.001 | 0.0025 | \* |
| strigosa vs labrynthiformis | 1 | 1.15190092 | 7.6454951 | 0.17517261 | 0.001 | 0.0025 | \* |
| natans vs labrynthiformis | 1 | 5.8302681 | 39.2476131 | 0.52157951 | 0.001 | 0.0025 | \* |

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**Figure S2.** Heatmap showing pairwise comparisons (by PERMANOVA) in the composition of *Breviolum* sequences variants hosted by different coral species. Asterisks indicate adjusted p < 0.01, while periods indicate p < 0.05.

**Table S2.** Pairwise PERMANOVA tests for differences in composition of *Cladocopium* sequences between host species. P-values were adjusted by the Benjamini-Hochberg method.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **pairs** | **Df** | **SumsOfSqs** | **F.Model** | **R2** | **p.value** | **p.adjusted** | **sig** |
| siderea vs faveolata | 1 | 5.92672023 | 111.698332 | 0.7827585 | 0.001 | 0.002 | \* |
| siderea vs annularis | 1 | 5.33999542 | 75.4650298 | 0.71554552 | 0.001 | 0.002 | \* |
| siderea vs franksi | 1 | 6.07694524 | 116.890054 | 0.79038482 | 0.001 | 0.002 | \* |
| siderea vs cavernosa | 1 | 2.31164792 | 22.9082051 | 0.34757744 | 0.001 | 0.002 | \* |
| siderea vs natans | 1 | 2.98742604 | 52.6742832 | 0.66112026 | 0.001 | 0.002 | \* |
| siderea vs strigosa | 1 | 2.55418658 | 47.1185759 | 0.64441321 | 0.001 | 0.002 | \* |
| siderea vs furcata | 1 | 2.54616633 | 31.2672399 | 0.55569173 | 0.001 | 0.002 | \* |
| siderea vs labrynthiformis | 1 | 1.44960441 | 25.2604256 | 0.52341904 | 0.008 | 0.01107692 | . |
| faveolata vs annularis | 1 | 0.12498733 | 1.73426136 | 0.09257164 | 0.123 | 0.12651429 |  |
| faveolata vs franksi | 1 | 0.10239761 | 2.58148565 | 0.12542757 | 0.053 | 0.06154839 |  |
| faveolata vs cavernosa | 1 | 5.15598562 | 44.9461791 | 0.59971275 | 0.001 | 0.002 | \* |
| faveolata vs natans | 1 | 3.2346539 | 71.4668459 | 0.83619379 | 0.001 | 0.002 | \* |
| faveolata vs strigosa | 1 | 2.91788559 | 74.1239913 | 0.85078737 | 0.001 | 0.002 | \* |
| faveolata vs furcata | 1 | 2.18935012 | 23.0831389 | 0.65795535 | 0.002 | 0.0036 | \* |
| faveolata vs labrynthiformis | 1 | 1.47909556 | 35.030374 | 0.77792767 | 0.016 | 0.02057143 | . |
| annularis vs franksi | 1 | 0.16965587 | 2.41966046 | 0.12459849 | 0.072 | 0.07623529 |  |
| annularis vs cavernosa | 1 | 4.66602369 | 34.5242168 | 0.54348119 | 0.001 | 0.002 | \* |
| annularis vs natans | 1 | 3.01660007 | 35.277857 | 0.73072541 | 0.001 | 0.002 | \* |
| annularis vs strigosa | 1 | 2.73986567 | 33.2199575 | 0.73463045 | 0.002 | 0.0036 | \* |
| annularis vs furcata | 1 | 1.96416325 | 13.3688528 | 0.54860411 | 0.003 | 0.00469565 | \* |
| annularis vs labrynthiformis | 1 | 1.40746282 | 14.0714045 | 0.60990671 | 0.026 | 0.03227586 | . |
| franksi vs cavernosa | 1 | 5.32226769 | 46.8478799 | 0.60961838 | 0.001 | 0.002 | \* |
| franksi vs natans | 1 | 3.31599964 | 77.3171377 | 0.84668814 | 0.001 | 0.002 | \* |
| franksi vs strigosa | 1 | 2.9932166 | 81.3157417 | 0.86216511 | 0.001 | 0.002 | \* |
| franksi vs furcata | 1 | 2.19757974 | 23.8664391 | 0.66542539 | 0.003 | 0.00469565 | \* |
| franksi vs labrynthiformis | 1 | 1.51369187 | 38.9108162 | 0.79554625 | 0.012 | 0.016 | . |
| cavernosa vs natans | 1 | 1.96410687 | 15.3451152 | 0.37114699 | 0.001 | 0.002 | \* |
| cavernosa vs strigosa | 1 | 1.56090309 | 12.1718228 | 0.32744756 | 0.001 | 0.002 | \* |
| cavernosa vs furcata | 1 | 2.24407663 | 14.0533372 | 0.3693063 | 0.001 | 0.002 | \* |
| cavernosa vs labrynthiformis | 1 | 1.19463765 | 8.4332829 | 0.27710724 | 0.003 | 0.00469565 | \* |
| natans vs strigosa | 1 | 0.01516977 | 0.342872 | 0.03669878 | 0.861 | 0.861 |  |
| natans vs furcata | 1 | 1.82540253 | 14.2525961 | 0.64049139 | 0.008 | 0.01107692 | . |
| natans vs labrynthiformis | 1 | 1.17584219 | 22.8557396 | 0.7920691 | 0.044 | 0.0528 |  |
| strigosa vs furcata | 1 | 1.72451471 | 13.3728901 | 0.65640614 | 0.005 | 0.0075 | \* |
| strigosa vs labrynthiformis | 1 | 1.11663765 | 29.893555 | 0.85670706 | 0.057 | 0.064125 |  |
| furcata vs labrynthiformis | 1 | 1.04038217 | 5.11759592 | 0.56128786 | 0.06666667 | 0.07272727 |  |

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**Figure S3.** Heatmap showing pairwise comparisons (by PERMANOVA) in the composition of *Cladocopium* sequences variants hosted by different coral species. Asterisks indicate adjusted p < 0.01, while periods indicate p < 0.05.