Supplementary Material

Seasonal bleaching and partial mortality of *Pocillopora verrucosa* corals of the coast of central Vietnam.

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## Supplementary Figures



**Supplementary Figure 1.** Southern Vietnam, 5 km Regional Bleaching Heat Stress Maps and Gauges (Version 3.1). https://coralreefwatch.noaa.gov/product/vs/gauges/southern\_vietnam.php

|  |  |  |  |
| --- | --- | --- | --- |
|  | Water temperature | Precipitation | Eastern wind speed\* |
| Month | Monthly average,˚C | Daily minimum/maximum,˚C | Monthly average,mm | Daily maximum,mm/day | Accumulated precipitation,mm/month | Number of rainy days | Monthly average,m/s | Daily maximumm/s | Number of windy days |
| June 2020 | 28.16 | 26.69-29.54 | 0.07 | 1.75 | 2.0 | 2 | 1.01 | 2.00 | 22 |
| July 2020 | 28.02 | 26.39-29.84 | 0.45 | 5.25 | 14.0 | 5 | 1.12 | 1.90 | 25 |
| August 2020 | 29.24 | 27.33-30.31 | 1.74 | 39.25 | 54.0 | 9 | 1.23 | 2.21 | 25 |
| September 2020 | 30.60 | 29.50-31.28 | 3.88 | 48.75 | 116.3 | 9 | 1.51 | 2.22 | 26 |
| October 2020 | 29.37 | 27.41-31.18 | 10.22 | 72.25 | 316.8 | 20 | 1.23 | 1.92 | 27 |
| November 2020 | 27.04 | 26.11-28.30 | 19.68 | 165.5 | 590.5 | 12 | 1.56 | 2.12 | 28 |
| December 2020 | 25.35 | 24.24-26.23 | 8.10 | 71.5 | 251.0 | 14 | 1.77 | 3.27 | 27 |
| January 2021 | 23.47 | 22.92-24.04 | 0.21 | 2 | 6.5 | 7 | 1.74 | 2.62 | 29 |
| February 2021 | 24.10 | 23.34-25.78 | 0.00 | 0 | 0.0 | 0 | 1.64 | 2.20 | 27 |
| March 2021 | 26.43 | 24.99-28.27 | 0.85 | 12.75 | 26.5 | 7 | 1.31 | 2.14 | 26 |
| April 2021 | 28.15 | 26.33-29.79 | 4.10 | 48 | 123.0 | 5 | 1.24 | 1.88 | 24 |

## Supplementary Tables

**Supplementary Table 1.** Seasonal variation of the environmental factors at the Dam Bay station. \*winds, blowing from east and south-east directions (80-190°).

**Supplementary Table 2.** Impact of environmental factors on bleaching. Significant impacts are highlighted in bold.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Effect | Sum of squares | df | Mean square | F | p | ηp2 |
| **Intercept** | **397.224** | **1** | **397.224** | **4.199** | **0.045** | **0.070** |
| **Water temperature** | **1122.967** | **1** | **1122.967** | **11.870** | **0.001** | **0.175** |
| Precipitation | 265.307 | 1 | 265.307 | 2.804 | 0.100 | 0.048 |
| Eastern wind speed | 228.846 | 1 | 228.846 | 2.419 | 0.126 | 0.041 |
| Colony density | 318.834 | 4 | 79.708 | 0.843 | 0.504 | 0.057 |
| **PM in the previous survey** | **712.714** | **1** | **712.714** | **7.533** | **0.008** | **0.119** |
| Error | 5298.093 | 56 | 94.609 |  |  |  |

**Supplementary Table 3.** Impact of environmental factors on partial mortality. Significant impacts are highlighted in bold.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Effect | Sum of squares | df | Mean square | F | p | ηp2 |
| Intercept | 0.005 | 1 | 0.005 | 0.000 | 0.984 | < 0.001 |
| **Water temperature** | **74.550** | **1** | **74.550** | **6.120** | **0.016** | **0.099** |
| Precipitation | 18.051 | 1 | 18.051 | 1.482 | 0.229 | 0.026 |
| **Eastern wind speed** | **159.212** | **1** | **159.212** | **13.069** | **0.001** | **0.189** |
| Colony density | 49.253 | 4 | 12.313 | 1.011 | 0.410 | 0.067 |
| **Bleaching in the previous survey** | **75.094** | **1** | **75.094** | **6.164** | **0.016** | **0.099** |
| Error | 682.192 | 56 | 12.182 |  |  |  |