**Table S6 (A- G).** Linear mixed effect model (LME) selection for morphological responses of *P. oceanica* to condition (high or low impacted site) and treatment (fertilization and control). df = degrees of freedom. AICc = Akaike Information Criterion corrected for small sample sizes. ΔAICc = difference AICc values between each model and the best fitting model with the lowest AICc. AICcWt = Akaike weights. LL= Likelihood. The significance of each independent variable (or interaction) in each model was assessed using the likelihood ratio (LR) test by comparing models with the variable of interest against the null or reduced model (Winter 2013). Significant parameters are in bold.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model ranking | Model | df | AICc | ΔAICc | AICcWt | LL | χ2 | p value | R² |
| 1. **Number of leaves per shoot**
 |
| June 2019 |
| **1** | **Number ~ condition** | **4** | **179.8** | **0.0** | **0.653** | **-85.60** | **9.62** | **0.0032** | **0.261** |
| 2 | Number ~ condition + treatment | 5 | 182.0 | 2.2 | 0.215 | -85.55 |  |  |  |
| 3 | Number ~ condition + treatment + interaction | 6 | 183.6 | 3.8 | 0.097 | -85.15 | 1.29 | 0.7666 |  |
| 4 | Intercept only (Number ~ 1) | 3 | 186.2 | 6.5 | 0.026 | -89.95 |  |  |  |
| 5 | Number ~ treatment | 4 | 188.4 | 8.6 | 0.009 | -89.90 | 0.09 | 0.7666 |  |
| September 2019 |
| **1** | **Number ~ condition** | **4** | **188.5** | **0.0** | **0.419** | **-89.95** | **8.70** | **0.0019** | **0.196** |
| 2 | Number ~ condition + treatment | 5 | 188.8 | 0.3 | 0.355 | -88.96 |  |  |  |
| 3 | Number ~ condition + treatment + interaction | 6 | 189.9 | 1.4 | 0.206 | -88.31 | 0.80 | 0.2552 |  |
| 4 | Intercept only (Number ~ 1) | 3 | 195.8 | 7.3 | 0.011 | -94.71 |  |  |  |
| 5 | Number ~ treatment | 4 | 196.1 | 7.6 | 0.009 | -93.77 | 1.98 | 0.1597 |  |
| 1. **Leaf length**
 |
| June 2019 |
| **1** | **height ~ condition** | **4** | **3417.3** | **0.0** | **0.661** | **-1704.60** | **10.83** | **0.001** | **0.082** |
| 2 | height ~ condition + treatment | 5 | 3419.4 | 2.1 | 0.237 | -1704.60 |  |  |  |
| 3 | height ~ condition + treatment + interaction | 6 | 3421.3 | 4.0 | 0.091 | -1704.52 | 0.16 | 0.2117 |  |
| 4 | Intercept only (height ~ 1) | 3 | 3426.1 | 8.8 | 0.008 | -1710.02 |  |  |  |
| 5 | height ~ treatment | 4 | 3428.1 | 10.8 | 0.003 | -1710.01 | 0.00 | 0.8973 |  |
| September 2019 |
| **1** | **height ~ condition** | **4** | **2767.4** | **0.0** | **0.491** | **-1379.64** | **9.12** | **0.0025** | **0.054** |
| 2 | height ~ condition + treatment | 5 | 2768.4 | 1.0 | 0.300 | -1379.10 |  |  |  |
| 3 | height ~ condition + treatment + interaction | 6 | 2769.4 | 2.0 | 0.185 | -1378.54 | 1.12 | 0.2908 |  |
| 4 | Intercept only (height ~ 1) | 3 | 2774.5 | 7.0 | 0.015 | -1384.20 |  |  |  |
| 5 | height ~ treatment | 4 | 2775.5 | 8.0 | 0.009 | -1383.66 | 1.09 | 0.2971 |  |
| 1. **Maximum leaf canopy height**
 |
| June 2019 |
| **1** | **c\_height ~ condition** | **4** | **592.7** | **0.0** | **592.708** | **0.00** | **7.55** | **0.0060** | **0.192** |
| 2 | c\_height ~ condition + treatment | 5 | 595.0 | 2.3 | 595.004 | 2.30 |  |  |  |
| 3 | c\_height ~ condition + treatment + interaction | 6 | 595.8 | 3.1 | 595.827 | 3.12 | 1.56 | 0.2117 |  |
| 4 | Intercept only (c\_height ~ 1) | 3 | 598.0 | 5.3 | 598.009 | 5.30 |  |  |  |
| 5 | c\_height ~ treatment | 4 | 600.2 | 7.5 | 600.236 | 7.53 | 0.02 | 0.8973 |  |
| September 2019 |
| **1** | **c\_height ~ condition + treatment + interaction** | **6** | **600.3** | **0.0** | **0.648** | **-293.52** | **11.39** | **0.0256** | **0.481** |
| 2 | c\_height ~ condition + treatment | 5 | 602.9 | 2.6 | 0.176 | -296.01 |  |  |  |
| 3 | **c\_height ~ condition**  | **4** | **603.0** | **2.7** | **0.172** | **-297.19** | **4.99** | **0.0001** |  |
| 4 | c\_height ~ treatment | 4 | 612.0 | 11.7 | 0.002 | -301.71 | 2.36 | 0.1246 |  |
| 5 | Intercept only (c\_height ~ 1) | 3 | 612.1 | 11.8 | 0.002 | -302.87 |  |  |  |
| 1. **Leaf width**
 |
| June 2019 |
| **1** | **width ~ condition** | **4** | **-234.7** | **0.0** | **0.581** | **121.67** | **5.14** | **0.0234** | **0.617** |
| 2 | width ~ condition + treatment | 5 | -232.4 | 2.3 | 0.183 | 121.67 |  |  |  |
| 3 | Intercept only (width ~ 1) | 3 | -231.8 | 2.9 | 0.137 | 119.10 |  |  |  |
| 4 | width ~ condition + treatment + interaction | 6 | -230.1 | 4.7 | 0.056 | 121.67 | 0.00 | 1.0000 |  |
| 5 | width ~ treatment | 4 | -229.6 | 5.1 | 0.045 | 119.10 | 0.00 | 1.0000 |  |
| September 2019 |
| **1** | **width ~ condition** | **4** | **-139.3** | **0.0** | **0.606** | **73.96** | **5.96** | **0.0146** | **0.474** |
| 2 | width ~ condition + treatment | 5 | -137.1 | 2.3 | 0.196 | 73.99 |  |  |  |
| 3 | Intercept only (width ~ 1) | 3 | -135.1 | 3.7 | 0.094 | 70.98 |  |  |  |
| 4 | width ~ condition + treatment + interaction | 6 | -135.1 | 4.2 | 0.073 | 74.20 | 0.42 | 0.8216 |  |
| 5 | width ~ treatment | 4 | -133.4 | 5.9 | 0.032 | 71.01 | 0.05 | 0.5160 |  |
| 1. **Leaf area**
 |
| June 2019 |
| **1** | **area ~ condition** | **4** | **3404.8** | **0.0** | **0.533** | **-1698.37** | **4.58** | **0.0324** | **0.044** |
| 2 | area ~ condition + treatment | 5 | 3406.9 | 2.1 | 0.192 | -1698.36 |  |  |  |
| 3 | Intercept only (area ~ 1) | 3 | 3407.4 | 2.6 | 0.149 | -1700.66 |  |  |  |
| 4 | area ~ condition + treatment + interaction | 6 | 3408.8 | 4.0 | 0.072 | -1698.31 | 0.11 | 0.7355 |  |
| 5 | area ~ treatment | 4 | 3409.4 | 4.6 | 0.054 | -1700.65 | 0.01 | 0.9236 |  |
| September 2019 |
| **1** | **area ~ condition** | **4** | **2779.7** | **0.0** | **0.429** | **-1385.78** | **5.24** | **0.022** | **0.022** |
| 2 | area ~ condition + treatment | 5 | 2780.8 | 1.1 | 0.248 | -1385.29 |  |  |  |
| 3 | area ~ condition + treatment + interaction | 6 | 2781.4 | 1.7 | 0.187 | -1384.53 | 1.53 | 0.2157 |  |
| 4 | Intercept only (area ~ 1) | 3 | 2782.9 | 3.2 | 0.085 | -1388.42 |  |  |  |
| 5 | area ~ treatment | 4 | 2784.0 | 4.3 | 0.051 | -1387.91 | 0.97 | 0.3245 |  |
| 1. **Leaf area per shoot**
 |
| June 2019 |
| **1** | **l\_area ~ condition** | **4** | **818.0** | **0.0** | **0.413** | **-404.70** | **3.20** | **0.077** | **0.131** |
| 2 | Intercept only (l\_area ~ 1) | 3 | 819.0 | 1.0 | 0.256 | -406.30 |  |  |  |
| 3 | l\_area ~ condition + treatment | 5 | 819.8 | 1.8 | 0.170 | -404.43 |  |  |  |
| 4 | l\_area ~ treatment | 4 | 820.7 | 2.7 | 0.109 | -406.04 | 0.54 | 0.463 |  |
| 5 | l\_area ~ condition + treatment + interaction | 6 | 822.2 | 4.2 | 0.052 | -404.43 | 0.00 | 0.984 |  |
| September 2019 |
| **1** | **l\_area ~ condition** | **4** | **772.6** | **0** | **0.551** | **-382.00** | **6.13** | **0.0133** | **0.137** |
| 2 | l\_area ~ condition + treatment | 5 | 774.5 | 1.9 | 0.210 | -381.81 |  |  |  |
| 3 | l\_area ~ condition + treatment + interaction | 6 | 775.5 | 2.9 | 0.128 | -381.12 | 1.39 | 0.2382 |  |
| 4 | Intercept only (l\_area ~ 1) | 3 | 776.5 | 3.9 | 0.079 | -385.07 |  |  |  |
| 5 | l\_area ~ treatment | 4 | 778.4 | 5.7 | 0.031 | -384.87 | 0.39 | 0.5336 |  |
| 1. **LAI**
 |
| June 2019 |
| **1** | **LAI ~ condition** | **4** | **323.8** | **0** | **0.567** | **-157.62** | **7.19** | **0.0073** | **0.546** |
| 2 | LAI ~ condition + treatment | 5 | 325.4 | 1.6 | 0.259 | -157.25 |  |  |  |
| 3 | LAI ~ condition + treatment + interaction | 6 | 327.3 | 3.4 | 0.104 | -156.98 | 0.55 | 0.4582 |  |
| 4 | Intercept only (LAI ~ 1) | 3 | 328.8 | 5.0 | 0.048 | -161.22 |  | 0.0073 |  |
| 5 | LAI ~ treatment | 4 | 330.3 | 6.5 | 0.023 | -160.85 | 0.74 | 0.3888 |  |
| September 2019 |
| **1** | **LAI ~ condition** | **4** | **226.9** | **0** | **0.630** | **-109.15** | **12.2** | **0.0001** | **0.456** |
| 2 | LAI ~ condition + treatment | 5 | 229.0 | 2.0 | 0.226 | -109.02 |  |  |  |
| 3 | LAI ~ condition + treatment + interaction | 6 | 229.9 | 3.0 | 0.138 | -108.33 | 1.39 | 0.2377 |  |
| 4 | Intercept only (LAI ~ 1) | 3 | 236.9 | 10.0 | 0.004 | -115.25 |  |  |  |
| 5 | LAI ~ treatment | 4 | 238.8 | 11.9 | 0.002 | -115.12 | 0.26 | 0.6074 |  |