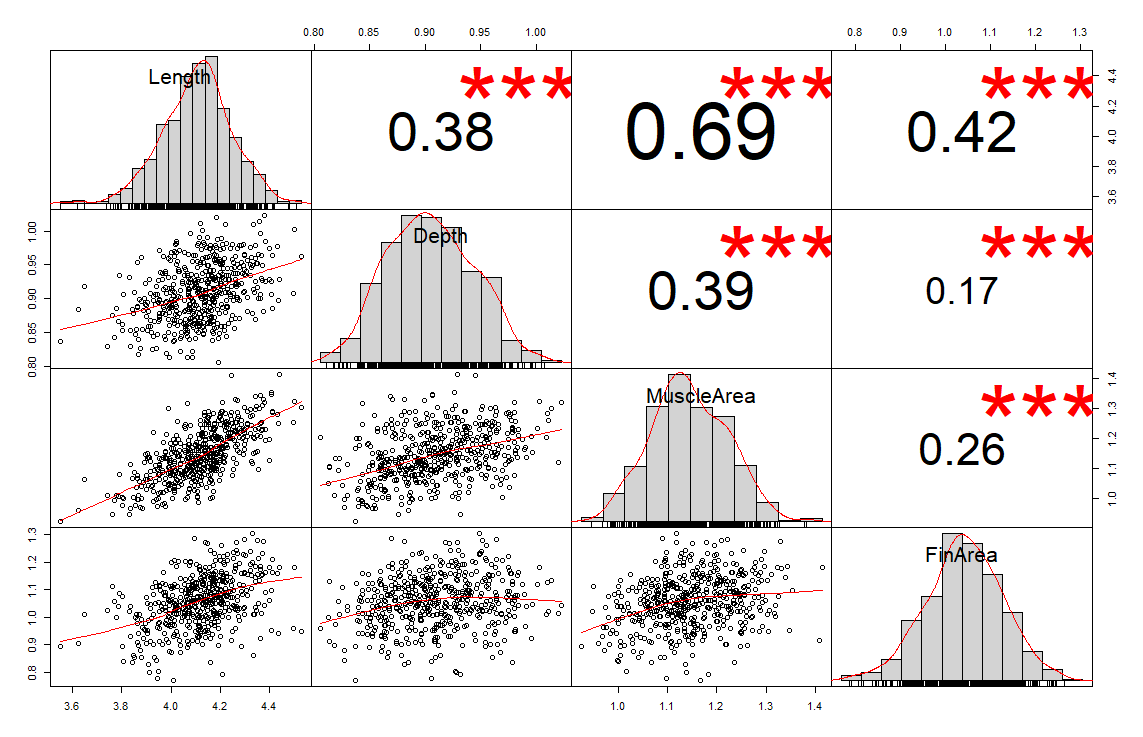
Plasticity of larval dispersal-related traits in the orange anemonefish

**SUPPLEMETAL INFORMATION**

*Larval Body Morphology Metrics*

Larval standard length, body depth, muscle area, and propulsive fin area were all significantly and positively correlated to one another (Supplemental Figure S1).



**Supplemental Figure S1. Correlogram of Larval Morphology.** Each row is a body morphology metric, from the top to bottom: larval standard length (Length), body depth (Depth), muscle area (Muscle Area), and propulsive fin area (Fin Area). The frequency distribution of each variable is shown on the diagonal, with the density curve in red. On the bottom of the diagonal is the bivariate scatterplot with the fitted line in red. On the top of the diagonal is the correlation coefficient and associated significance level (\*\*\*; p-value < 0.001). The font size signifies value of the correlation.

*Effect of Treatment on* *Body Morphology Metrics*

Results from our mixed models show that treatment also had a significant effect on body depth, muscle area, and fin area (Supplemental Table S1). Larvae from parents on a low ration were larger in all metrics of larval morphology (Supplemental Table S1; Supplemental Figure S2). The effect of treatment from our final models for each body morphology metric are reported below (Supplemental Table S1). For larval standard length, which is reported in the paper, neither round nor the interaction between treatment and round were significant predictors and were removed from the final model. For larval body depth, treatment and the interaction between round and treatment were significant predicators, and round was a marginally significant predictor. For larval muscle area, neither round nor the interaction between treatment and round were significant predictors and were removed from the final model. For larval propulsive fin area, the interaction between treatment and round was not a significant predictor and was removed from the final model.

**Supplemental Table S1. Mixed Model Result Summary for Body Morphology Metrics.** Effect of low ration treatment on larval body length, body depth, muscle area, and propulsive fin area.

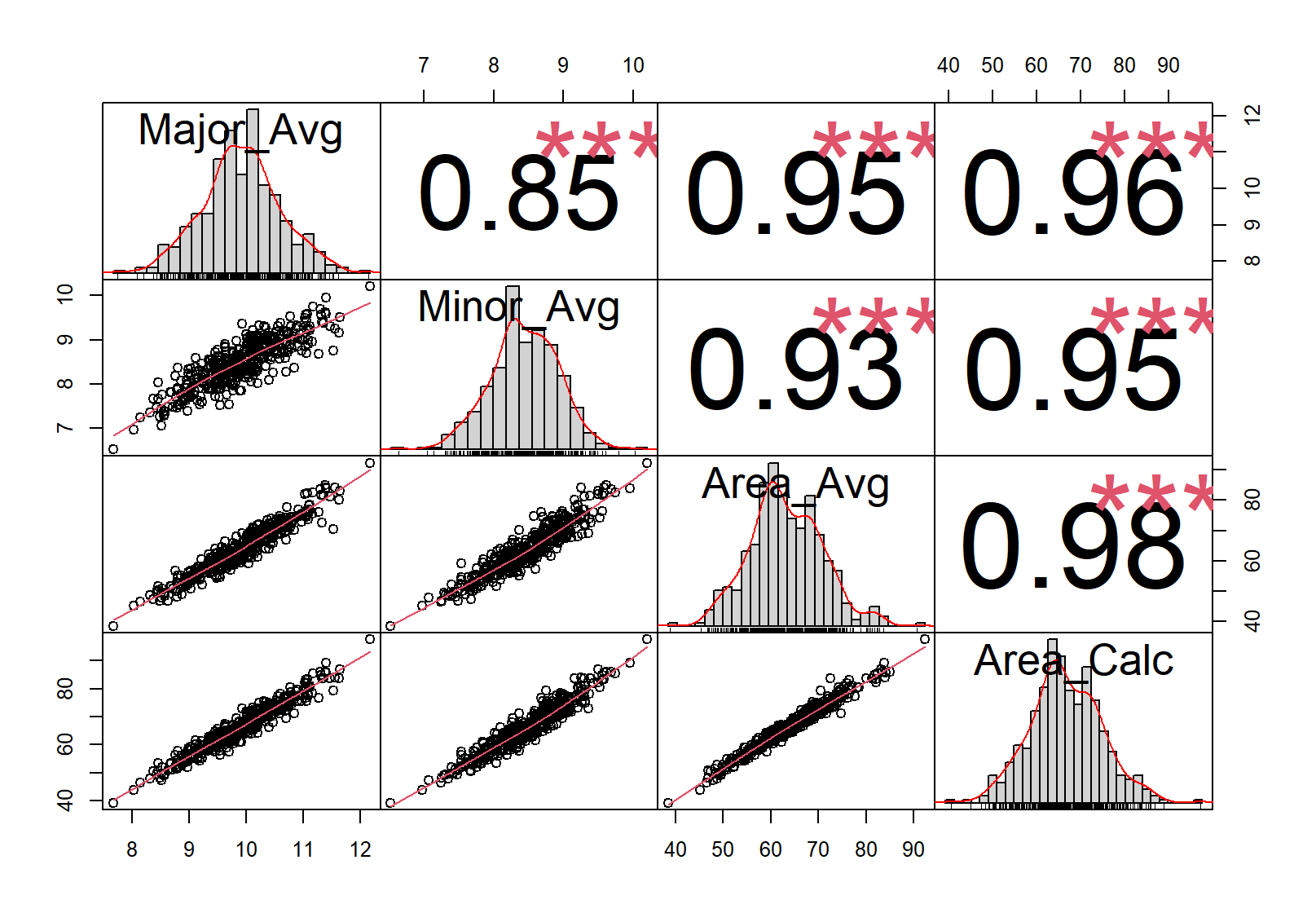
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Regression Coefficient | t-value | Degrees of Freedom | p-value | Adj. R2 |
| Length | 0.117 mm | 11.23 | 492.0 | <0.0001 | 0.164 |
| Body Depth | 0.012 mm | 3.914 | 492.0 | 0.0001 | 0.020 |
| Muscle Area | 0.059 mm2 | 9.066 | 492.0 | <0.0001 | 0.117 |
| Fin Area | 0.026 mm2 | 3.345 | 491.0 | 0.0009 | 0.074 |

|  |  |  |
| --- | --- | --- |
| (a) | (b) | (c) |

**Supplemental Figure S2. Individual Pair Reaction Norms for (a) body depth, (b) muscle area, and (c) fin area.** Each point represents the average metric value for each clutch per pair, per treatment. Points are individually colored by the unique ‘tank ID’ of each parental pair. The fitted line connects the pair’s measured values and represents the response to the two treatments.

Larval Otolith Core Metrics

Larval otolith major diameter, minor diameter, measured area, and calculated area were all significantly and positively correlated to one another (Supplemental Figure S3).



**Supplemental Figure S3.** **Correlogram of Larval Otolith Metrics.** Each row is an otolith metric, from the top to bottom: major diameter (Major Avg), minor diameter (Minor Avg), measured area (Area Avg) and calculated area (Area Calc). The frequency distribution of each variable is shown on the diagonal, with the density curve in red. On the bottom of the diagonal is the bivariate scatterplot with the fitted line in red. On the top of the diagonal is the correlation coefficient and associated significance level (\*\*\*; p-value < 0.001). The font size signifies value of the correlation.

*Effect of Treatment on* *Otolith Metrics*

Results from our mixed models show that treatment had a significant effect on the major and minor diameter and a marginally significant effect on the measured and calculated area (Supplemental Table S2). Otoliths were all-around smaller when parents were on the ‘low ration’ (Supplemental Table S2; Supplemental Figure S4). The effect of treatment from our final models for each otolith metric are reported below (Supplemental Table S1). For major diameter, which is reported in the paper, neither round nor the interaction between treatment and round were significant predictors and were removed from the final model. For minor diameter, the interaction between treatment and round was not a significant predicator, and was removed from the final model. For the measured area, neither round nor the interaction between treatment and round were significant predictors and were removed from the final model. For the calculated area, the interaction between treatment and round was not a significant predictor and was removed from the final model.

**Supplemental Table S2. Mixed Model Result Summary for Otolith Metrics.** Effect of low ration treatment on larval otolith major diameter, minor diameter, measured area, and calculated area.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Regression Coefficient | t-value | Degrees of Freedom | p-value | Adj. R2 |
| Major Diameter | - 1.3009 µm | - 2.22 | 399 | 0.027 | 0.009 |
| Minor Diameter | - 0.9416 µm | - 1.965 | 398 | 0.0371 | 0.019 |
| Measured Area | - 11.467 µm 2 | - 1.705 | 399 | 0.0891 | 0.005 |
| Calculated Area | - 13.132 µm 2 | -1.879 | 398 | 0.0728 | 0.014 |

|  |  |  |
| --- | --- | --- |
| (a) | (b) | (c) |
|  |  |  |

**Supplemental Figure S4. Individual Pair Reaction Norms for otolith (a) minor diameter, (b) measured area, and (c) calculated area.** Each point represents the average metric value for each clutch per pair, per treatment. Points are individually colored by the unique ‘tank ID’ of each parental pair. The fitted line connects the pair’s measured values and represents the response to the two treatments.