**Plasticity of physiological and morphological traits in *Stylophora pistillata* larvae following translocation between shallow and mesophotic reefs in Eilat, Israel**

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**Figure Legends**

**Figure 1. Larval physiology from shallow (yellow) versus deep (blue) colonies.** (A) Closed Circuit Rebreather divers setting planulae traps at 45 meters depth in Eilat, photo by H. Nativ. (B) Planulae from deep (top) and shallow (bottom) colonies taken using a binocular microscope, photo by J. Bellworthy. Note differences in pigmentation and size. (C) Elliptical volume of planulae. (D) Protein concentration per individual planula. (E) Number of symbiont cells per individual planula. (F) Rate of oxygen consumption per individual larva. Horizontal black lines within boxes are median values and box limits represent 1st and 3rd quartiles. Whiskers represent 1.5 times the interquartile range. Round black points are individual sample data. Statistical tests (ANOVA) compare data for shallow versus deep planulae; ns = not significant, \* = p <0.05, \*\*\*\* = p <0.0001.

**Figure 2. Photochemical parameters of settled spat at five time points** where numbers in facet panels refer to days post collection. Horizontal panels are (A)maximal relative electron transport rate, (B) photosynthetic efficiency at light limiting PAR intensity, (C) slope of photoinhibition, (D) saturation irradiance, and (E) maximum quantum yield. Each treatment is represented in all facets on the x-axis. Different lower case letters above the box plots indicate statistically significant differences between treatments within that sampling time point. Deep to shallow (DS) spat were not included in statistical tests on day 14 since n was less than three. Horizontal black lines within boxes are median values and box limits represent 1st and 3rd quartiles. Whiskers represent 1.5 times the interquartile range. Round black points are individual sample data.

**Figure 3. Growth and polyp development of spat in an *ex situ* experiment**. Points are spat diameter (left axis) with increasing age on the x-axis fitted to a linear trend line corresponding to the equation shown in each facet. Grey area around the trend line is 95% confidence interval. Box plots (right y-axis) indicate number of polyps per spat with age, with the central primary polyp post metamorphosis counting as one. Horizontal black lines within boxes are median values and box limits represent 1st and 3rd quartiles. Whiskers represent 1.5 times the interquartile range.

**Figure 4. Skeletal morphology of spats imaged using X-ray µCT.** Left column**:** 3D rendering of the skeleton (top-view); middle column: z-projected thickness distribution (expressed as percentage, each spat’s skeleton was normalized to its own 100%); right column: local thickness distribution (expressed as μm, the thickness was projected onto a cross-sectional slice of the skeleton and normalized to the highest value reached across the 4 experimental conditions). Rows show the skeleton of spats from 5 meters deep grown under experimental light conditions simulating the shallow (SS) or deep reef (SD) and of spats from 45 meters deep grown under experimental light conditions simulating the deep (DD) or shallow reef (DS).

**Supplementary Figures.**

**Kaplan Meier survival (A) and settlement (B) probability curves** for coral planulae from 45 meters deep under experimental light conditions simulating the deep (DD) or shallow reef (DS) and planulae from 5 meters deep under experimental light conditions simulating the deep (SD) or shallow reef (SS). The horizontal axis is time post collection in days. A log rank test used to identify statistical differences between treatments was not significant for neither settlement nor mortality (p = >0.05).

**Measured inner calyx diameter of spat in an *ex situ* experiment**. Points are calyx diameter of individual spat with increasing age on the x-axis fitted to a linear trend line corresponding to the equation shown in each facet. Facets represent different experimental treatments of coral planulae from 5 meters deep under high light (SS) and low light (SD) and planulae from 45 meters depth under high light (DS) or low light (DD). Grey area around the trend line is 95% confidence interval. The trend line slopes were not significantly different from zero, indicating no change in size with increasing age.