Table 1: Coefficients for Time Series Models of Change by Depth

Ordered Beta Regression where proportion ~ centered year \* depth + (1|Subsite)

|  | estimate | std.error | conf.low | conf.high |
| --- | --- | --- | --- | --- |
| Aplidium glabrum, R2 = 0.281 | | | | |
| (Intercept) | -6.565 | 1.016 | -8.606 | -4.469 |
| Aplidium glabrum, R2 = NA | | | | |
| year\_cent | 0.010 | 0.056 | -0.093 | 0.121 |
| depthMid | 0.520 | 1.105 | -1.725 | 2.577 |
| depthShallow | 0.410 | 1.212 | -2.120 | 2.805 |
| year\_cent:depthMid | 0.026 | 0.058 | -0.090 | 0.135 |
| year\_cent:depthShallow | 0.037 | 0.060 | -0.085 | 0.149 |
| sd\_\_(Intercept) | 1.067 | 0.562 | 0.302 | 2.448 |
| Balanus and Amphibalanus spp., R2 = 0.077 | | | | |
| (Intercept) | -4.258 | 0.559 | -5.367 | -3.079 |
| Balanus and Amphibalanus spp., R2 = NA | | | | |
| year\_cent | 0.015 | 0.020 | -0.025 | 0.053 |
| depthMid | -0.363 | 0.674 | -2.047 | 0.830 |
| depthShallow | 0.349 | 0.647 | -1.141 | 1.658 |
| year\_cent:depthMid | -0.011 | 0.025 | -0.059 | 0.039 |
| year\_cent:depthShallow | 0.010 | 0.026 | -0.043 | 0.060 |
| sd\_\_(Intercept) | 0.568 | 0.405 | 0.036 | 1.603 |
| Botrylloides violaceus, R2 = 0.055 | | | | |
| (Intercept) | -4.123 | 0.475 | -5.082 | -3.181 |
| Botrylloides violaceus, R2 = NA | | | | |
| year\_cent | 0.020 | 0.014 | -0.006 | 0.049 |
| depthMid | -0.748 | 0.536 | -1.876 | 0.288 |
| depthShallow | -0.376 | 0.595 | -1.565 | 0.826 |
| year\_cent:depthMid | -0.013 | 0.020 | -0.054 | 0.025 |
| year\_cent:depthShallow | -0.014 | 0.021 | -0.057 | 0.025 |
| sd\_\_(Intercept) | 0.568 | 0.222 | 0.258 | 1.132 |
| Crustose Coralline Algae pink, R2 = 0.149 | | | | |
| (Intercept) | -1.191 | 1.061 | -3.320 | 0.865 |
| Crustose Coralline Algae pink, R2 = NA | | | | |
| year\_cent | 0.019 | 0.016 | -0.012 | 0.051 |
| depthMid | 0.663 | 1.248 | -1.751 | 3.303 |
| depthShallow | 0.289 | 1.400 | -2.515 | 3.125 |
| year\_cent:depthMid | -0.035 | 0.018 | -0.071 | 0.000 |
| year\_cent:depthShallow | 0.010 | 0.018 | -0.026 | 0.046 |
| sd\_\_(Intercept) | 1.477 | 0.476 | 0.843 | 2.609 |
| Didemnum vexillum, R2 = 0.186 | | | | |
| (Intercept) | -3.895 | 0.442 | -4.784 | -3.036 |
| Didemnum vexillum, R2 = NA | | | | |
| year\_cent | 0.038 | 0.029 | -0.018 | 0.098 |
| depthMid | -1.034 | 0.527 | -2.066 | 0.000 |
| depthShallow | -0.833 | 0.561 | -1.962 | 0.260 |
| year\_cent:depthMid | 0.087 | 0.040 | 0.009 | 0.164 |
| year\_cent:depthShallow | 0.133 | 0.041 | 0.051 | 0.212 |
| sd\_\_(Intercept) | 0.287 | 0.229 | 0.012 | 0.845 |
| Diplosoma listerianum, R2 = 0.066 | | | | |
| (Intercept) | -2.699 | 0.746 | -4.274 | -1.243 |
| Diplosoma listerianum, R2 = NA | | | | |
| year\_cent | -0.020 | 0.030 | -0.080 | 0.039 |
| depthMid | -1.068 | 0.866 | -2.941 | 0.538 |
| depthShallow | 0.261 | 0.844 | -1.527 | 1.921 |
| year\_cent:depthMid | -0.018 | 0.043 | -0.106 | 0.066 |
| year\_cent:depthShallow | 0.053 | 0.037 | -0.022 | 0.125 |
| sd\_\_(Intercept) | 0.749 | 0.469 | 0.057 | 1.851 |
| Ectopleura spp., R2 = 0.049 | | | | |
| (Intercept) | -3.091 | 0.348 | -3.798 | -2.418 |
| Ectopleura spp., R2 = NA | | | | |
| year\_cent | -0.017 | 0.028 | -0.071 | 0.038 |
| depthMid | -0.081 | 0.350 | -0.762 | 0.626 |
| depthShallow | 0.803 | 0.360 | 0.120 | 1.546 |
| year\_cent:depthMid | 0.038 | 0.032 | -0.028 | 0.102 |
| year\_cent:depthShallow | 0.018 | 0.032 | -0.045 | 0.079 |
| sd\_\_(Intercept) | 0.183 | 0.153 | 0.006 | 0.576 |
| Halichondria panicea, R2 = 0.254 | | | | |
| (Intercept) | -5.024 | 2.128 | -9.706 | -0.947 |
| Halichondria panicea, R2 = NA | | | | |
| year\_cent | 0.004 | 0.052 | -0.097 | 0.109 |
| depthMid | -3.795 | 2.998 | -10.935 | 1.144 |
| depthShallow | -1.673 | 2.726 | -7.924 | 3.318 |
| year\_cent:depthMid | 0.053 | 0.108 | -0.148 | 0.270 |
| year\_cent:depthShallow | 0.007 | 0.076 | -0.144 | 0.155 |
| sd\_\_(Intercept) | 2.612 | 1.499 | 0.571 | 6.432 |
| Hydrozoa-Bryozoa complex, R2 = 0.19 | | | | |
| (Intercept) | -0.601 | 0.706 | -2.018 | 0.786 |
| Hydrozoa-Bryozoa complex, R2 = NA | | | | |
| year\_cent | 0.051 | 0.021 | 0.010 | 0.092 |
| depthMid | 0.027 | 0.834 | -1.659 | 1.664 |
| depthShallow | -0.775 | 0.942 | -2.689 | 1.108 |
| year\_cent:depthMid | -0.008 | 0.023 | -0.053 | 0.036 |
| year\_cent:depthShallow | -0.071 | 0.024 | -0.118 | -0.027 |
| sd\_\_(Intercept) | 0.952 | 0.327 | 0.508 | 1.777 |
| Isodictya spp., R2 = 0.055 | | | | |
| (Intercept) | -4.490 | 0.221 | -4.934 | -4.060 |
| Isodictya spp., R2 = NA | | | | |
| year\_cent | -0.029 | 0.014 | -0.057 | 0.000 |
| depthMid | -0.423 | 0.247 | -0.904 | 0.039 |
| depthShallow | -0.664 | 0.269 | -1.190 | -0.154 |
| year\_cent:depthMid | 0.038 | 0.017 | 0.004 | 0.072 |
| year\_cent:depthShallow | 0.036 | 0.019 | -0.001 | 0.074 |
| sd\_\_(Intercept) | 0.151 | 0.123 | 0.006 | 0.458 |
| Metridium senile, R2 = 0.207 | | | | |
| (Intercept) | -3.678 | 0.920 | -5.561 | -1.826 |
| Metridium senile, R2 = NA | | | | |
| year\_cent | -0.071 | 0.017 | -0.102 | -0.037 |
| depthMid | -1.097 | 1.083 | -3.288 | 1.141 |
| depthShallow | -0.025 | 1.164 | -2.391 | 2.311 |
| year\_cent:depthMid | -0.011 | 0.021 | -0.053 | 0.032 |
| year\_cent:depthShallow | -0.022 | 0.019 | -0.061 | 0.013 |
| sd\_\_(Intercept) | 1.249 | 0.417 | 0.696 | 2.300 |
| Mytilus edulis, R2 = 0.098 | | | | |
| (Intercept) | -4.649 | 0.581 | -5.881 | -3.515 |
| Mytilus edulis, R2 = NA | | | | |
| year\_cent | 0.026 | 0.020 | -0.011 | 0.066 |
| depthMid | -0.187 | 0.680 | -1.636 | 1.195 |
| depthShallow | -0.399 | 0.758 | -1.890 | 1.200 |
| year\_cent:depthMid | 0.004 | 0.024 | -0.042 | 0.051 |
| year\_cent:depthShallow | -0.016 | 0.027 | -0.068 | 0.037 |
| sd\_\_(Intercept) | 0.699 | 0.290 | 0.291 | 1.430 |
| NA, R2 = 0.315 | | | | |
| (Intercept) | -3.039 | 2.251 | -7.940 | 1.224 |
| NA, R2 = NA | | | | |
| year\_cent | -0.070 | 0.013 | -0.095 | -0.044 |
| depthMid | -3.630 | 2.664 | -9.285 | 1.721 |
| depthShallow | -4.041 | 2.893 | -10.016 | 1.799 |
| year\_cent:depthMid | 0.034 | 0.019 | -0.004 | 0.071 |
| year\_cent:depthShallow | 0.037 | 0.029 | -0.021 | 0.095 |
| sd\_\_(Intercept) | 3.187 | 1.191 | 1.558 | 6.140 |
| Unidentified red fleshy crust, R2 = 0.203 | | | | |
| (Intercept) | -2.274 | 1.389 | -5.129 | 0.537 |
| Unidentified red fleshy crust, R2 = NA | | | | |
| year\_cent | -0.056 | 0.016 | -0.088 | -0.023 |
| depthMid | -1.198 | 1.663 | -4.550 | 2.181 |
| depthShallow | 0.013 | 1.936 | -3.965 | 3.796 |
| year\_cent:depthMid | 0.002 | 0.020 | -0.037 | 0.040 |
| year\_cent:depthShallow | 0.054 | 0.022 | 0.012 | 0.096 |
| sd\_\_(Intercept) | 1.985 | 0.781 | 0.971 | 3.941 |