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 |
| --- | --- | --- | --- | --- |
| Alcyonium siderium, R2 = 0.35 | | | | |
| (Intercept) | -2.885 | 1.637 | -6.462 | 0.262 |
| Alcyonium siderium, R2 = NA | | | | |
| year\_cent | -0.061 | 0.014 | -0.087 | -0.034 |
| depthMid | -2.944 | 1.987 | -6.915 | 1.169 |
| depthShallow | -8.191 | 2.914 | -14.484 | -2.974 |
| year\_cent:depthMid | -0.005 | 0.020 | -0.045 | 0.034 |
| year\_cent:depthShallow | 0.317 | 0.162 | 0.068 | 0.702 |
| sd\_\_(Intercept) | 2.350 | 0.973 | 1.102 | 4.925 |
| Aplidium glabrum, R2 = 0.128 | | | | |
| (Intercept) | -5.749 | 0.530 | -6.805 | -4.680 |
| Aplidium glabrum, R2 = NA | | | | |
| year\_cent | 0.011 | 0.030 | -0.048 | 0.070 |
| depthMid | 0.971 | 0.590 | -0.273 | 2.144 |
| depthShallow | 1.423 | 0.636 | 0.157 | 2.729 |
| year\_cent:depthMid | 0.003 | 0.032 | -0.059 | 0.064 |
| year\_cent:depthShallow | -0.025 | 0.032 | -0.089 | 0.037 |
| sd\_\_(Intercept) | 0.591 | 0.225 | 0.281 | 1.144 |
| Balanus and Amphibalanus spp., R2 = 0.079 | | | | |
| (Intercept) | -4.465 | 0.648 | -5.784 | -3.226 |
| Balanus and Amphibalanus spp., R2 = NA | | | | |
| year\_cent | -0.014 | 0.025 | -0.063 | 0.034 |
| depthMid | 0.958 | 0.757 | -0.494 | 2.440 |
| depthShallow | 1.592 | 0.805 | 0.069 | 3.244 |
| year\_cent:depthMid | -0.010 | 0.027 | -0.062 | 0.042 |
| year\_cent:depthShallow | 0.002 | 0.027 | -0.050 | 0.056 |
| sd\_\_(Intercept) | 0.770 | 0.303 | 0.376 | 1.508 |
| Botrylloides violaceus, R2 = 0.103 | | | | |
| (Intercept) | -4.021 | 0.588 | -5.224 | -2.877 |
| Botrylloides violaceus, R2 = NA | | | | |
| year\_cent | 0.020 | 0.016 | -0.010 | 0.052 |
| depthMid | -1.095 | 0.681 | -2.536 | 0.246 |
| depthShallow | -1.705 | 0.813 | -3.451 | -0.210 |
| year\_cent:depthMid | 0.026 | 0.023 | -0.020 | 0.071 |
| year\_cent:depthShallow | 0.102 | 0.043 | 0.023 | 0.191 |
| sd\_\_(Intercept) | 0.677 | 0.312 | 0.256 | 1.476 |
| Crustose Coralline Algae pink, R2 = 0.166 | | | | |
| (Intercept) | -1.025 | 1.155 | -3.355 | 1.321 |
| Crustose Coralline Algae pink, R2 = NA | | | | |
| year\_cent | 0.011 | 0.016 | -0.019 | 0.043 |
| depthMid | 0.679 | 1.335 | -2.057 | 3.266 |
| depthShallow | 0.250 | 1.448 | -2.628 | 3.167 |
| year\_cent:depthMid | -0.033 | 0.018 | -0.069 | 0.002 |
| year\_cent:depthShallow | 0.037 | 0.019 | 0.001 | 0.075 |
| sd\_\_(Intercept) | 1.599 | 0.492 | 0.935 | 2.785 |
| Didemnum vexillum, R2 = 0.165 | | | | |
| (Intercept) | -3.891 | 0.527 | -4.976 | -2.843 |
| Didemnum vexillum, R2 = NA | | | | |
| year\_cent | -0.018 | 0.017 | -0.050 | 0.017 |
| depthMid | -1.392 | 0.644 | -2.707 | -0.122 |
| depthShallow | -1.885 | 0.747 | -3.425 | -0.424 |
| year\_cent:depthMid | 0.097 | 0.026 | 0.046 | 0.148 |
| year\_cent:depthShallow | 0.234 | 0.041 | 0.156 | 0.318 |
| sd\_\_(Intercept) | 0.642 | 0.289 | 0.226 | 1.372 |
| Diplosoma listerianum, R2 = 0.135 | | | | |
| (Intercept) | -2.981 | 0.441 | -3.859 | -2.071 |
| Diplosoma listerianum, R2 = NA | | | | |
| year\_cent | -0.010 | 0.025 | -0.060 | 0.038 |
| depthMid | -0.751 | 0.510 | -1.917 | 0.140 |
| depthShallow | -0.590 | 0.585 | -1.808 | 0.571 |
| year\_cent:depthMid | 0.077 | 0.037 | 0.002 | 0.149 |
| year\_cent:depthShallow | 0.162 | 0.043 | 0.080 | 0.248 |
| sd\_\_(Intercept) | 0.328 | 0.317 | 0.011 | 1.139 |
| Ectopleura spp., R2 = 0.104 | | | | |
| (Intercept) | -2.867 | 0.365 | -3.599 | -2.156 |
| Ectopleura spp., R2 = NA | | | | |
| year\_cent | -0.015 | 0.023 | -0.057 | 0.031 |
| depthMid | -0.023 | 0.400 | -0.894 | 0.737 |
| depthShallow | 0.929 | 0.425 | 0.100 | 1.821 |
| year\_cent:depthMid | 0.002 | 0.027 | -0.053 | 0.052 |
| year\_cent:depthShallow | -0.004 | 0.026 | -0.056 | 0.048 |
| sd\_\_(Intercept) | 0.305 | 0.227 | 0.016 | 0.856 |
| Halichondria panicea, R2 = 0.081 | | | | |
| (Intercept) | -4.557 | 0.478 | -5.615 | -3.667 |
| Halichondria panicea, R2 = NA | | | | |
| year\_cent | 0.001 | 0.021 | -0.040 | 0.042 |
| depthMid | -0.350 | 0.541 | -1.540 | 0.676 |
| depthShallow | 0.713 | 0.555 | -0.383 | 1.982 |
| year\_cent:depthMid | 0.040 | 0.029 | -0.016 | 0.096 |
| year\_cent:depthShallow | 0.019 | 0.027 | -0.033 | 0.073 |
| sd\_\_(Intercept) | 0.474 | 0.347 | 0.027 | 1.353 |
| Hydrozoa-Bryozoa complex, R2 = 0.254 | | | | |
| (Intercept) | -0.288 | 0.858 | -1.973 | 1.402 |
| Hydrozoa-Bryozoa complex, R2 = NA | | | | |
| year\_cent | 0.039 | 0.018 | 0.006 | 0.076 |
| depthMid | -1.118 | 0.974 | -3.013 | 0.834 |
| depthShallow | -1.701 | 1.079 | -3.892 | 0.434 |
| year\_cent:depthMid | -0.049 | 0.020 | -0.089 | -0.011 |
| year\_cent:depthShallow | -0.049 | 0.021 | -0.091 | -0.009 |
| sd\_\_(Intercept) | 1.087 | 0.367 | 0.594 | 1.996 |
| Isodictya spp., R2 = 0.25 | | | | |
| (Intercept) | -4.219 | 0.741 | -5.731 | -2.704 |
| Isodictya spp., R2 = NA | | | | |
| year\_cent | 0.002 | 0.014 | -0.025 | 0.028 |
| depthMid | -0.900 | 0.887 | -2.756 | 0.871 |
| depthShallow | -2.984 | 1.098 | -5.409 | -0.984 |
| year\_cent:depthMid | 0.015 | 0.019 | -0.021 | 0.051 |
| year\_cent:depthShallow | 0.093 | 0.049 | 0.004 | 0.196 |
| sd\_\_(Intercept) | 0.996 | 0.473 | 0.369 | 2.130 |
| Metridium senile, R2 = 0.241 | | | | |
| (Intercept) | -3.717 | 1.602 | -7.043 | -0.579 |
| Metridium senile, R2 = NA | | | | |
| year\_cent | -0.075 | 0.017 | -0.108 | -0.040 |
| depthMid | -1.205 | 1.918 | -4.996 | 2.702 |
| depthShallow | 0.068 | 2.090 | -3.964 | 4.441 |
| year\_cent:depthMid | -0.017 | 0.020 | -0.058 | 0.022 |
| year\_cent:depthShallow | -0.070 | 0.019 | -0.109 | -0.033 |
| sd\_\_(Intercept) | 2.271 | 0.758 | 1.190 | 4.206 |
| Mussel, R2 = 0.07 | | | | |
| (Intercept) | -3.382 | 0.696 | -4.743 | -1.935 |
| Mussel, R2 = NA | | | | |
| year\_cent | 0.004 | 0.017 | -0.030 | 0.038 |
| depthMid | -0.542 | 0.812 | -2.325 | 1.072 |
| depthShallow | -0.161 | 0.877 | -1.953 | 1.583 |
| year\_cent:depthMid | 0.013 | 0.022 | -0.031 | 0.055 |
| year\_cent:depthShallow | -0.024 | 0.021 | -0.068 | 0.016 |
| sd\_\_(Intercept) | 0.871 | 0.314 | 0.450 | 1.624 |