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 = 0.345 | | | | |
| (Intercept) | -2.795 | 2.024 | -6.870 | 1.260 |
| Alcyonium siderium, R2 = NA | | | | |
| year\_cent | -0.062 | 0.014 | -0.089 | -0.032 |
| depthMid | -3.680 | 2.534 | -9.194 | 1.353 |
| depthShallow | -4.427 | 2.705 | -10.347 | 0.877 |
| year\_cent:depthMid | 0.029 | 0.021 | -0.012 | 0.070 |
| year\_cent:depthShallow | 0.047 | 0.046 | -0.043 | 0.137 |
| sd\_\_(Intercept) | 2.744 | 1.107 | 1.248 | 5.543 |
| Aplidium glabrum, R2 = 0.152 | | | | |
| (Intercept) | -5.831 | 0.678 | -7.250 | -4.500 |
| Aplidium glabrum, R2 = NA | | | | |
| year\_cent | 0.008 | 0.029 | -0.048 | 0.066 |
| depthMid | 0.319 | 0.803 | -1.402 | 1.874 |
| depthShallow | 0.361 | 0.826 | -1.459 | 2.012 |
| year\_cent:depthMid | -0.015 | 0.034 | -0.081 | 0.050 |
| year\_cent:depthShallow | -0.003 | 0.036 | -0.075 | 0.067 |
| sd\_\_(Intercept) | 0.712 | 0.429 | 0.106 | 1.818 |
| Balanus and Amphibalanus spp., R2 = 0.121 | | | | |
| (Intercept) | -4.568 | 0.365 | -5.315 | -3.847 |
| Balanus and Amphibalanus spp., R2 = NA | | | | |
| year\_cent | 0.002 | 0.022 | -0.040 | 0.045 |
| depthMid | -0.222 | 0.372 | -0.978 | 0.495 |
| depthShallow | 0.027 | 0.424 | -0.850 | 0.871 |
| year\_cent:depthMid | 0.020 | 0.028 | -0.036 | 0.077 |
| year\_cent:depthShallow | 0.065 | 0.033 | 0.000 | 0.129 |
| sd\_\_(Intercept) | 0.268 | 0.215 | 0.010 | 0.815 |
| Botrylloides violaceus, R2 = 0.081 | | | | |
| (Intercept) | -4.106 | 0.642 | -5.449 | -2.794 |
| Botrylloides violaceus, R2 = NA | | | | |
| year\_cent | 0.020 | 0.017 | -0.012 | 0.053 |
| depthMid | -1.031 | 0.752 | -2.610 | 0.413 |
| depthShallow | -0.695 | 0.819 | -2.374 | 0.930 |
| year\_cent:depthMid | -0.009 | 0.024 | -0.057 | 0.038 |
| year\_cent:depthShallow | 0.006 | 0.027 | -0.046 | 0.059 |
| sd\_\_(Intercept) | 0.780 | 0.332 | 0.329 | 1.571 |
| Crustose Coralline Algae pink, R2 = 0.161 | | | | |
| (Intercept) | -1.065 | 1.111 | -3.279 | 1.154 |
| Crustose Coralline Algae pink, R2 = NA | | | | |
| year\_cent | 0.012 | 0.015 | -0.019 | 0.042 |
| depthMid | 0.604 | 1.328 | -2.100 | 3.162 |
| depthShallow | 0.205 | 1.431 | -2.676 | 2.966 |
| year\_cent:depthMid | -0.030 | 0.019 | -0.067 | 0.007 |
| year\_cent:depthShallow | 0.019 | 0.020 | -0.019 | 0.058 |
| sd\_\_(Intercept) | 1.473 | 0.490 | 0.826 | 2.640 |
| Didemnum vexillum, R2 = 0.048 | | | | |
| (Intercept) | -3.608 | 0.342 | -4.304 | -2.911 |
| Didemnum vexillum, R2 = NA | | | | |
| year\_cent | -0.018 | 0.017 | -0.051 | 0.017 |
| depthMid | -0.601 | 0.419 | -1.526 | 0.192 |
| depthShallow | -0.060 | 0.426 | -0.945 | 0.752 |
| year\_cent:depthMid | 0.001 | 0.025 | -0.046 | 0.048 |
| year\_cent:depthShallow | 0.026 | 0.025 | -0.023 | 0.075 |
| sd\_\_(Intercept) | 0.362 | 0.234 | 0.031 | 0.916 |
| Diplosoma listerianum, R2 = 0.063 | | | | |
| (Intercept) | -2.666 | 0.412 | -3.488 | -1.843 |
| Diplosoma listerianum, R2 = NA | | | | |
| year\_cent | -0.018 | 0.026 | -0.068 | 0.033 |
| depthMid | -1.047 | 0.470 | -1.992 | -0.152 |
| depthShallow | 0.442 | 0.395 | -0.378 | 1.209 |
| year\_cent:depthMid | -0.062 | 0.037 | -0.135 | 0.012 |
| year\_cent:depthShallow | 0.017 | 0.034 | -0.047 | 0.087 |
| sd\_\_(Intercept) | 0.208 | 0.179 | 0.009 | 0.674 |
| Ectopleura spp., R2 = 0.046 | | | | |
| (Intercept) | -2.816 | 0.391 | -3.618 | -2.060 |
| Ectopleura spp., R2 = NA | | | | |
| year\_cent | -0.017 | 0.023 | -0.061 | 0.030 |
| depthMid | -0.182 | 0.408 | -0.999 | 0.644 |
| depthShallow | 0.559 | 0.421 | -0.239 | 1.468 |
| year\_cent:depthMid | 0.012 | 0.028 | -0.044 | 0.068 |
| year\_cent:depthShallow | 0.006 | 0.028 | -0.051 | 0.060 |
| sd\_\_(Intercept) | 0.314 | 0.202 | 0.019 | 0.778 |
| Halichondria panicea, R2 = 0.228 | | | | |
| (Intercept) | -4.887 | 0.631 | -6.137 | -3.639 |
| Halichondria panicea, R2 = NA | | | | |
| year\_cent | -0.001 | 0.021 | -0.041 | 0.042 |
| depthMid | -1.081 | 0.673 | -2.546 | 0.276 |
| depthShallow | -0.955 | 0.785 | -2.706 | 0.561 |
| year\_cent:depthMid | -0.018 | 0.036 | -0.088 | 0.051 |
| year\_cent:depthShallow | -0.051 | 0.042 | -0.137 | 0.026 |
| sd\_\_(Intercept) | 0.577 | 0.454 | 0.024 | 1.707 |
| Hydrozoa-Bryozoa complex, R2 = 0.209 | | | | |
| (Intercept) | -0.308 | 0.804 | -1.895 | 1.269 |
| Hydrozoa-Bryozoa complex, R2 = NA | | | | |
| year\_cent | 0.039 | 0.019 | 0.002 | 0.076 |
| depthMid | 0.009 | 0.939 | -1.834 | 1.891 |
| depthShallow | -0.874 | 0.982 | -2.833 | 1.105 |
| year\_cent:depthMid | -0.014 | 0.022 | -0.059 | 0.030 |
| year\_cent:depthShallow | -0.059 | 0.024 | -0.105 | -0.014 |
| sd\_\_(Intercept) | 1.050 | 0.365 | 0.557 | 1.976 |
| Isodictya spp., R2 = 0.078 | | | | |
| (Intercept) | -4.361 | 0.305 | -4.913 | -3.657 |
| Isodictya spp., R2 = NA | | | | |
| year\_cent | -0.008 | 0.016 | -0.039 | 0.023 |
| depthMid | -0.392 | 0.346 | -1.161 | 0.249 |
| depthShallow | -0.802 | 0.401 | -1.733 | -0.093 |
| year\_cent:depthMid | 0.001 | 0.019 | -0.036 | 0.039 |
| year\_cent:depthShallow | 0.015 | 0.024 | -0.033 | 0.063 |
| sd\_\_(Intercept) | 0.281 | 0.188 | 0.015 | 0.764 |
| Metridium senile, R2 = 0.208 | | | | |
| (Intercept) | -3.675 | 0.874 | -5.392 | -1.877 |
| Metridium senile, R2 = NA | | | | |
| year\_cent | -0.078 | 0.018 | -0.112 | -0.041 |
| depthMid | -1.051 | 1.070 | -3.308 | 0.968 |
| depthShallow | -0.135 | 1.094 | -2.369 | 2.052 |
| year\_cent:depthMid | 0.000 | 0.022 | -0.045 | 0.043 |
| year\_cent:depthShallow | -0.018 | 0.021 | -0.059 | 0.022 |
| sd\_\_(Intercept) | 1.191 | 0.414 | 0.634 | 2.217 |
| Mussel, R2 = 0.153 | | | | |
| (Intercept) | -4.112 | 0.809 | -5.855 | -2.467 |
| Mussel, R2 = NA | | | | |
| year\_cent | 0.006 | 0.016 | -0.026 | 0.039 |
| depthMid | -0.770 | 0.984 | -2.916 | 1.137 |
| depthShallow | -0.552 | 1.088 | -2.809 | 1.654 |
| year\_cent:depthMid | 0.032 | 0.023 | -0.014 | 0.078 |
| year\_cent:depthShallow | -0.024 | 0.025 | -0.073 | 0.025 |
| sd\_\_(Intercept) | 1.020 | 0.508 | 0.348 | 2.363 |
| Unidentified red fleshy crust, R2 = 0.115 | | | | |
| (Intercept) | -2.177 | 0.791 | -3.843 | -0.582 |
| Unidentified red fleshy crust, R2 = NA | | | | |
| year\_cent | -0.035 | 0.016 | -0.066 | -0.002 |
| depthMid | -0.636 | 0.926 | -2.641 | 1.230 |
| depthShallow | -0.053 | 1.007 | -2.134 | 2.042 |
| year\_cent:depthMid | -0.005 | 0.022 | -0.048 | 0.037 |
| year\_cent:depthShallow | 0.037 | 0.025 | -0.011 | 0.086 |
| sd\_\_(Intercept) | 0.991 | 0.412 | 0.383 | 2.023 |