## Fig S1

| formula | Growth | | | CI | | Len | | AFDW | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| df | AIC | BIC | AIC | BIC | AIC | BIC | AIC | BIC |
| No interaction | 8 | 65.0 | 42.8 | 33.7 | 17.8 | 46.2 | 28.8 | 114.5 | 97.4 |
| T:M | 10 | 49.3 | 34.4 | 36.2 | 27.6 | 41.9 | 31.8 | 113.1 | 103.2 |
| T:S | 10 | 64.4 | 49.6 | 32.7 | 24.1 | 46.5 | 36.5 | 115.9 | 106.1 |
| M:S | 12 | 8.6 | **1.0** | **1.2** | **0.0** | 2.7 | **0.0** | 2.5 | **0.0** |
| T:M + M:S | 14 | **0.2** | **0.0** | 4.5 | 10.6 | **0.0** | 4.6 | **0.0** | 4.8 |
| T:M + T:S | 12 | 48.9 | 41.3 | 34.1 | 32.8 | 41.9 | 39.2 | 114.6 | 112.1 |
| M:S + T:S | 14 | 8.9 | 8.7 | **0.0** | 6.1 | 4.1 | 8.7 | 5.9 | 10.7 |
| T:M + T:S + M:S | 16 | **0.0** | 7.1 | 3.2 | 16.5 | **1.3** | 13.2 | 3.7 | 15.8 |
| T X M X S | 20 | **0.8** | 22.5 | 2.4 | 30.5 | 4.7 | 31.2 | 9.1 | 35.9 |
| n: 9 | | | | | | | | | |

## Fig S2

| formula | Growth | | | CI | | Len | | AFDW | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| df | AIC | BIC | AIC | BIC | AIC | BIC | AIC | BIC |
| No interaction | 7 | 28.0 | 17.5 | 15.8 | 6.8 | 12.8 | 5.4 | 63.4 | 56.3 |
| T:M | 9 | 26.8 | 23.3 | 18.0 | 15.9 | 15.2 | 14.9 | 66.2 | 66.1 |
| T:S | 8 | 17.9 | 10.8 | 11.1 | 5.6 | 14.2 | 10.4 | 62.4 | 58.8 |
| M:S | 9 | 6.2 | 2.7 | 2.0 | **0.0** | **0.3** | **0.0** | **0.1** | **0.0** |
| T:M + M:S | 11 | 5.2 | 8.7 | 2.7 | 7.7 | **1.3** | 8.0 | **0.0** | 7.0 |
| T:M + T:S | 10 | 17.7 | 17.7 | 13.7 | 15.2 | 16.8 | 20.0 | 65.9 | 69.4 |
| M:S + T:S | 10 | **0.0** | **0.0** | **0.0** | **1.5** | **0.2** | 3.4 | **1.9** | 5.4 |
| T:M + T:S + M:S | 12 | **1.1** | 8.1 | **1.9** | 10.4 | **1.5** | 11.7 | **2.0** | 12.5 |
| T X M X S | 14 | 2.4 | 16.4 | 2.0 | 17.5 | **0.0** | 17.3 | 5.6 | 23.1 |
| n: 9 | | | | | | | | | |

## Fig S3

| Summer Growth (mm/day) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 6.369 | 0.212 | 249 | 30.109 | 0.0000 |
|  | TreatS | -0.137 | 0.207 | 249 | -0.665 | 0.5066 |
|  | MonthAug | -1.531 | 0.320 | 249 | -4.785 | 0.0000 |
|  | MonthSep | -0.761 | 0.305 | 249 | -2.498 | 0.0131 |
|  | SiteEel Pond | 1.728 | 0.237 | 249 | 7.303 | 0.0000 |
|  | SiteDennis | -0.608 | 0.286 | 249 | -2.129 | 0.0342 |
|  | TreatS:MonthAug | 0.944 | 0.376 | 249 | 2.508 | 0.0128 |
|  | TreatS:MonthSep | -0.736 | 0.364 | 249 | -2.023 | 0.0441 |
|  | MonthAug:SiteEel Pond | -0.178 | 0.514 | 249 | -0.345 | 0.7302 |
|  | MonthSep:SiteEel Pond | -1.384 | 0.534 | 249 | -2.590 | 0.0102 |
|  | MonthAug:SiteDennis | 2.042 | 0.488 | 249 | 4.183 | 0.0000 |
|  | MonthSep:SiteDennis | 2.614 | 0.461 | 249 | 5.673 | 0.0000 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 0.457 |  |  |  |  |
| Residual | sd\_Observation | 0.977 |  |  |  |  |
| square root of the estimated residual variance: 1.0 | | | | | | |
| data's log-likelihood under the model: -415.2 | | | | | | |
| Akaike Information Criterion: 858.4 | | | | | | |
| Bayesian Information Criterion: 909.0 | | | | | | |

## Fig S4

| Fall Growth (mm/day) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 4.652 | 0.103 | 212 | 45.344 | 0.0000 |
|  | TreatS | 0.039 | 0.089 | 212 | 0.439 | 0.6611 |
|  | MonthApr | -0.832 | 0.113 | 212 | -7.363 | 0.0000 |
|  | MonthJun | -0.618 | 0.117 | 212 | -5.278 | 0.0000 |
|  | SiteEel Pond | -1.797 | 0.135 | 212 | -13.311 | 0.0000 |
|  | TreatS:SiteEel Pond | -0.444 | 0.156 | 212 | -2.843 | 0.0049 |
|  | MonthApr:SiteEel Pond | 0.713 | 0.169 | 212 | 4.220 | 0.0000 |
|  | MonthJun:SiteEel Pond | 0.766 | 0.245 | 212 | 3.125 | 0.0020 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 0.179 |  |  |  |  |
| Residual | sd\_Observation | 0.431 |  |  |  |  |
| square root of the estimated residual variance: 0.4 | | | | | | |
| data's log-likelihood under the model: -163.1 | | | | | | |
| Akaike Information Criterion: 346.3 | | | | | | |
| Bayesian Information Criterion: 381.1 | | | | | | |

## Fig S5

| Summer CI (cm/mm^3) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 5.270 | 0.103 | 251 | 50.942 | 0.0000 |
|  | TreatS | 0.015 | 0.090 | 251 | 0.162 | 0.8713 |
|  | MonthAug | -0.040 | 0.160 | 251 | -0.252 | 0.8014 |
|  | MonthSep | 0.024 | 0.143 | 251 | 0.166 | 0.8686 |
|  | SiteEel Pond | 1.450 | 0.130 | 251 | 11.131 | 0.0000 |
|  | SiteDennis | 2.215 | 0.163 | 251 | 13.599 | 0.0000 |
|  | MonthAug:SiteEel Pond | -1.273 | 0.294 | 251 | -4.323 | 0.0000 |
|  | MonthSep:SiteEel Pond | -1.491 | 0.308 | 251 | -4.840 | 0.0000 |
|  | MonthAug:SiteDennis | 0.309 | 0.280 | 251 | 1.106 | 0.2697 |
|  | MonthSep:SiteDennis | -0.257 | 0.265 | 251 | -0.972 | 0.3322 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 0.094 |  |  |  |  |
| Residual | sd\_Observation | 0.696 |  |  |  |  |
| square root of the estimated residual variance: 0.7 | | | | | | |
| data's log-likelihood under the model: -311.0 | | | | | | |
| Akaike Information Criterion: 646.0 | | | | | | |
| Bayesian Information Criterion: 689.5 | | | | | | |

## Fig S6

| Fall CI (cm/mm^3) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 8.651 | 0.198 | 213 | 43.647 | 0.0000 |
|  | TreatS | -0.184 | 0.151 | 213 | -1.214 | 0.2260 |
|  | MonthApr | 4.047 | 0.225 | 213 | 18.018 | 0.0000 |
|  | MonthJun | 3.081 | 0.232 | 213 | 13.252 | 0.0000 |
|  | SiteEel Pond | -2.324 | 0.227 | 213 | -10.220 | 0.0000 |
|  | MonthApr:SiteEel Pond | -0.451 | 0.366 | 213 | -1.233 | 0.2188 |
|  | MonthJun:SiteEel Pond | -2.301 | 0.537 | 213 | -4.286 | 0.0000 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 0.266 |  |  |  |  |
| Residual | sd\_Observation | 0.997 |  |  |  |  |
| square root of the estimated residual variance: 1.0 | | | | | | |
| data's log-likelihood under the model: -359.3 | | | | | | |
| Akaike Information Criterion: 736.6 | | | | | | |
| Bayesian Information Criterion: 768.0 | | | | | | |

## Fig S7

| Summer length (mm) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 24.465 | 0.559 | 251 | 43.748 | 0.0000 |
|  | TreatS | -0.018 | 0.480 | 251 | -0.037 | 0.9705 |
|  | MonthAug | 4.054 | 0.823 | 251 | 4.926 | 0.0000 |
|  | MonthSep | 10.313 | 0.749 | 251 | 13.773 | 0.0000 |
|  | SiteEel Pond | -2.921 | 0.675 | 251 | -4.326 | 0.0000 |
|  | SiteDennis | -1.982 | 0.823 | 251 | -2.409 | 0.0167 |
|  | MonthAug:SiteEel Pond | 3.540 | 1.473 | 251 | 2.404 | 0.0170 |
|  | MonthSep:SiteEel Pond | 0.962 | 1.539 | 251 | 0.625 | 0.5327 |
|  | MonthAug:SiteDennis | 6.087 | 1.410 | 251 | 4.317 | 0.0000 |
|  | MonthSep:SiteDennis | 9.263 | 1.335 | 251 | 6.940 | 0.0000 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 1.019 |  |  |  |  |
| Residual | sd\_Observation | 3.083 |  |  |  |  |
| square root of the estimated residual variance: 3.1 | | | | | | |
| data's log-likelihood under the model: -729.7 | | | | | | |
| Akaike Information Criterion: 1,483.3 | | | | | | |
| Bayesian Information Criterion: 1,526.8 | | | | | | |

## Fig S8

| Fall length (mm) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 22.258 | 0.562 | 213 | 39.575 | 0.0000 |
|  | TreatS | -0.497 | 0.429 | 213 | -1.158 | 0.2482 |
|  | MonthApr | 14.774 | 0.642 | 213 | 23.026 | 0.0000 |
|  | MonthJun | 23.878 | 0.665 | 213 | 35.894 | 0.0000 |
|  | SiteEel Pond | -4.188 | 0.622 | 213 | -6.732 | 0.0000 |
|  | MonthApr:SiteEel Pond | -3.734 | 1.004 | 213 | -3.719 | 0.0003 |
|  | MonthJun:SiteEel Pond | -3.686 | 1.459 | 213 | -2.526 | 0.0123 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 0.891 |  |  |  |  |
| Residual | sd\_Observation | 2.658 |  |  |  |  |
| square root of the estimated residual variance: 2.7 | | | | | | |
| data's log-likelihood under the model: -598.2 | | | | | | |
| Akaike Information Criterion: 1,214.3 | | | | | | |
| Bayesian Information Criterion: 1,245.7 | | | | | | |

## Fig S9

| Summer AFDW (g) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 2.352 | 0.293 | 251 | 8.034 | 0.0000 |
|  | TreatS | -0.137 | 0.255 | 251 | -0.539 | 0.5905 |
|  | MonthAug | 1.546 | 0.458 | 251 | 3.373 | 0.0009 |
|  | MonthSep | 4.705 | 0.407 | 251 | 11.550 | 0.0000 |
|  | SiteEel Pond | -0.171 | 0.371 | 251 | -0.462 | 0.6447 |
|  | SiteDennis | 0.438 | 0.467 | 251 | 0.937 | 0.3498 |
|  | MonthAug:SiteEel Pond | 0.642 | 0.849 | 251 | 0.757 | 0.4500 |
|  | MonthSep:SiteEel Pond | -0.581 | 0.891 | 251 | -0.652 | 0.5151 |
|  | MonthAug:SiteDennis | 3.842 | 0.805 | 251 | 4.774 | 0.0000 |
|  | MonthSep:SiteDennis | 9.031 | 0.758 | 251 | 11.908 | 0.0000 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 0.066 |  |  |  |  |
| Residual | sd\_Observation | 2.089 |  |  |  |  |
| square root of the estimated residual variance: 2.1 | | | | | | |
| data's log-likelihood under the model: -613.8 | | | | | | |
| Akaike Information Criterion: 1,251.6 | | | | | | |
| Bayesian Information Criterion: 1,295.0 | | | | | | |

## Fig S10

| Fall AFDW (g) | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| group |  | Estimate | Standard Error | df | statistic | p-value |
| Fixed effects | | | | | | |
|  | (Intercept) | 0.090 | 0.036 | 213 | 2.489 | 0.0136 |
|  | TreatS | -0.006 | 0.028 | 213 | -0.212 | 0.8325 |
|  | MonthApr | 0.559 | 0.042 | 213 | 13.363 | 0.0000 |
|  | MonthJun | 1.061 | 0.044 | 213 | 24.374 | 0.0000 |
|  | SiteEel Pond | -0.074 | 0.038 | 213 | -1.964 | 0.0509 |
|  | MonthApr:SiteEel Pond | -0.321 | 0.062 | 213 | -5.205 | 0.0000 |
|  | MonthJun:SiteEel Pond | -0.714 | 0.088 | 213 | -8.092 | 0.0000 |
| Random effects | | | | | | |
| Enclosure | sd\_(Intercept) | 0.069 |  |  |  |  |
| Residual | sd\_Observation | 0.157 |  |  |  |  |
| square root of the estimated residual variance: 0.2 | | | | | | |
| data's log-likelihood under the model: 80.5 | | | | | | |
| Akaike Information Criterion: -143.0 | | | | | | |
| Bayesian Information Criterion: -111.7 | | | | | | |