**Table S1.** Total number of trees removed from the data set for respective analyses in each year due to the lack of presence of: *D. platanoidis* or *P. testudinaceus* (by the end of June); and parasitised aphids (at any time during the year)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Removed trees (/52)** | | |
| **Year** | ***D. platanoidis*** | ***P. testudinaceus*** | **Parasitised aphids** |
| 1993 | 8 | 1 | 2 |
| 1994 | 1 | 3 | 16 |
| 1995 | 0 | 1 | 3 |
| 1996 | 0 | 4 | 2 |
| 1997 | 0 | 0 | 8 |
| 1998 | 1 | 0 | 17 |
| 1999 | 2 | 2 | 16 |
| 2000 | 0 | 0 | 12 |
| 2001 | 14 | 4 | 38 |
| 2002 | 0 | 0 | 6 |
| 2003 | 1 | 12 | 41 |
| 2004 | 1 | 0 | 6 |
| 2005 | 7 | 17 | 37 |
| 2006 | 0 | 0 | 16 |
| 2007 | 16 | 12 | 26 |
| 2008 | 2 | 0 | 12 |
| 2009 | 0 | 0 | 7 |
| 2010 | 1 | 1 | 6 |
| 2011 | 3 | 10 | 2 |
| 2012 | 5 | 4 | 1 |
| **Total removed (/1040)** | 62 | 71 | 274 |
| **Total Percentage Removed** | 5.96% | 6.83% | 26.35% |

**Table S2.** Total number of missing weeks in each year for which values were calculated for i) Sycamore leaf burst stage; ii*) D. platanoidis* abundance; iii) *P. testudinaceus* abundance and iv) Parasitised aphid abundance by taking the mean of the recoded values in the week immediately either side of the missing data point.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **Start Day** | **End Day** | **Total Collection Period (Weeks)** | **Missing Weeks** | **Percentage of weeks missing** |
| 1993 | 85 | 330 | 35 | 4 | 11.43% |
| 1994 | 69 | 342 | 39 | 3 | 7.69% |
| 1995 | 54 | 334 | 40 | 0 | 0.00% |
| 1996 | 66 | 353 | 41 | 2 | 4.88% |
| 1997 | 65 | 332 | 38 | 5 | 13.11% |
| 1998 | 71 | 348 | 40 | 2 | 5.05% |
| 1999 | 56 | 315 | 37 | 2 | 5.41% |
| 2000 | 41 | 334 | 42 | 2 | 4.78% |
| 2001 | 60 | 347 | 41 | 3 | 7.32% |
| 2002 | 59 | 332 | 39 | 1 | 2.56% |
| 2003 | 37 | 331 | 42 | 2 | 4.76% |
| 2004 | 36 | 336 | 43 | 2 | 4.67% |
| 2005 | 41 | 342 | 43 | 3 | 6.98% |
| 2006 | 75 | 348 | 39 | 1 | 2.56% |
| 2007 | 60 | 333 | 39 | 0 | 0.00% |
| 2008 | 52 | 331 | 40 | 0 | 0.00% |
| 2009 | 71 | 330 | 37 | 0 | 0.00% |
| 2010 | 70 | 336 | 38 | 0 | 0.00% |
| 2011 | 69 | 335 | 38 | 0 | 0.00% |
| 2012 | 68 | 326 | 37 | 1 | 2.71% |
| **Total** | | | 787 | 33 | 4.19% |

**Table S3.** The relative strength of intra- and inter-specific density dependence effects on population growth on *D. platanoidis* and *P. testudinaceus.* Population growth modelled as a function of i) intra-specific density dependence – the size of the same aphid species in the previous year, ii) inter-specific density dependence – the size of the other aphid species in the previous years’ population, and iii) inter and intra specific density dependence – the combined population size of both aphid species in the previous year. ΔAICc given relative to model containing tree and year only. The model containing only intra-specific density gave the strongest reduction in AICc for both species.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Δ**AICc Relative to random effects only** | | |
| **Species** | Intra specific | Inter Specific | Intra and inter specific |
| ***D. platanoidis*** | -308.867 | 6.818 | 6.942 |
| ***P. testudinaceus*** | -398.61 | 4.533 | -152.528 |

**Table S4.** Linear models were used to evaluate the relationship between log population size and inter-annual variation in population size. If detection of density dependence is spurious due to cenus error, then this relationship is strictly linear (Freckleton et al., 2006). Models containing a quadratic term were found to be better supported by AICc supporting an interpretation of genuine density dependence.

|  |  |  |
| --- | --- | --- |
|  | **AICc (R2)** | |
| **Species** | Linear | Linear + quadratic |
| ***D. platanoidis*** | 2602.18 (0.50) | 2592.89 (0.51) |
| ***P. testudinaceus*** | 2824.10 (0.47) | 2823.67 (0.48) |

**Table S5.** A post-hoc test was conducted to evaluate whether variation in inter-annual abundance was better explained by mismatch with parasitoids, or by earlier phenology. Models containing either mismatch or phenology along with the random effects of tree and year, density dependence and weather windows were compared against a null model containing only the random effects of tree and year, density dependence and weather.

|  |  |  |
| --- | --- | --- |
|  | Δ**AICc relative to null model (R2(c))** | |
| **Species** | Phenology | Mismatch |
| ***D. platanoidis*** | 1.767 (0.897) | -3.993 (0.899) |
| ***P. testudinaceus*** | -18.02 (0.788) | -28.13 (0.796) |

## Phenology sliding window models

**Sycamore tree phenology**

**Table S6a.** Sycamore bud burst phenology as a function of temperatures advancing budburst, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and April 29th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative best fitting model. Random effects only model AICc = 6804.856. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk11towk16\*** | **1036** | **6780.018** | **0.000** | **-4.821** | **0.668** | **0.153** | **0.713** |
| wk11towk17 | 1036 | 6780.766 | 0.749 | -5.047 | 0.722 | 0.151 | 0.713 |
| wk11towk15 | 1036 | 6782.757 | 2.739 | -3.935 | 0.597 | 0.146 | 0.713 |
| wk10towk16 | 1036 | 6782.869 | 2.851 | -4.925 | 0.764 | 0.144 | 0.713 |
| wk10towk17 | 1036 | 6783.819 | 3.802 | -5.036 | 0.814 | 0.140 | 0.713 |
| wk10towk15 | 1036 | 6783.935 | 3.918 | -4.253 | 0.681 | 0.141 | 0.713 |
| wk11towk14 | 1036 | 6784.348 | 4.331 | -3.316 | 0.529 | 0.142 | 0.713 |
| wk4towk17 | 1036 | 6785.534 | 5.517 | -4.097 | 0.700 | 0.135 | 0.713 |
| wk4towk16 | 1036 | 6785.724 | 5.707 | -3.948 | 0.678 | 0.134 | 0.713 |
| wk5towk17 | 1036 | 6786.108 | 6.090 | -4.073 | 0.714 | 0.132 | 0.713 |
| wk5towk16 | 1036 | 6786.381 | 6.364 | -3.906 | 0.690 | 0.132 | 0.714 |
| wk9towk17 | 1036 | 6786.603 | 6.585 | -4.603 | 0.834 | 0.130 | 0.714 |
| wk9towk16 | 1036 | 6786.659 | 6.642 | -4.413 | 0.798 | 0.130 | 0.714 |
| wk10towk14 | 1036 | 6786.856 | 6.839 | -3.549 | 0.635 | 0.131 | 0.714 |
| wk6towk17 | 1036 | 6786.991 | 6.973 | -4.287 | 0.785 | 0.128 | 0.714 |
| wk3towk16 | 1036 | 6786.994 | 6.977 | -3.900 | 0.708 | 0.129 | 0.714 |
| wk3towk17 | 1036 | 6787.170 | 7.153 | -3.990 | 0.732 | 0.128 | 0.714 |
| wk4towk15 | 1036 | 6787.227 | 7.210 | -3.540 | 0.644 | 0.129 | 0.714 |
| wk3towk15 | 1036 | 6787.377 | 7.360 | -3.635 | 0.667 | 0.128 | 0.714 |
| wk6towk16 | 1036 | 6787.755 | 7.738 | -4.045 | 0.764 | 0.125 | 0.714 |
| wk5towk15 | 1036 | 6787.905 | 7.888 | -3.473 | 0.651 | 0.126 | 0.714 |
| wk9towk15 | 1036 | 6788.190 | 8.172 | -3.784 | 0.725 | 0.124 | 0.714 |
| wk3towk14 | 1036 | 6788.959 | 8.941 | -3.292 | 0.646 | 0.122 | 0.714 |
| wk4towk14 | 1036 | 6789.076 | 9.059 | -3.162 | 0.621 | 0.121 | 0.714 |
| wk8towk17 | 1036 | 6789.320 | 9.302 | -4.033 | 0.822 | 0.118 | 0.714 |
| wk6towk15 | 1036 | 6789.320 | 9.303 | -3.550 | 0.714 | 0.119 | 0.714 |
| wk5towk14 | 1036 | 6789.536 | 9.519 | -3.102 | 0.622 | 0.119 | 0.714 |
| wk7towk17 | 1036 | 6789.912 | 9.895 | -4.091 | 0.861 | 0.114 | 0.714 |
| wk12towk17 | 1036 | 6789.971 | 9.953 | -4.557 | 0.973 | 0.113 | 0.714 |
| wk2towk16 | 1036 | 6790.181 | 10.163 | -3.770 | 0.798 | 0.114 | 0.714 |
| wk8towk16 | 1036 | 6790.193 | 10.175 | -3.747 | 0.792 | 0.114 | 0.714 |
| wk2towk15 | 1036 | 6790.198 | 10.181 | -3.577 | 0.753 | 0.114 | 0.714 |
| wk12towk16 | 1036 | 6790.262 | 10.245 | -4.292 | 0.924 | 0.112 | 0.714 |
| wk2towk17 | 1036 | 6790.396 | 10.378 | -3.822 | 0.819 | 0.112 | 0.714 |
| wk9towk14 | 1036 | 6790.652 | 10.635 | -3.169 | 0.675 | 0.113 | 0.714 |
| wk12towk15 | 1036 | 6790.709 | 10.691 | -3.570 | 0.772 | 0.112 | 0.714 |
| wk7towk16 | 1036 | 6790.843 | 10.826 | -3.806 | 0.835 | 0.110 | 0.714 |
| wk6towk14 | 1036 | 6790.883 | 10.865 | -3.147 | 0.678 | 0.112 | 0.714 |
| wk8towk15 | 1036 | 6791.295 | 11.277 | -3.264 | 0.722 | 0.110 | 0.714 |
| wk3towk13 | 1036 | 6791.298 | 11.280 | -3.217 | 0.710 | 0.109 | 0.714 |
| wk2towk14 | 1036 | 6791.557 | 11.540 | -3.242 | 0.727 | 0.108 | 0.714 |
| wk4towk13 | 1036 | 6791.694 | 11.676 | -3.050 | 0.684 | 0.108 | 0.714 |
| wk7towk15 | 1036 | 6791.929 | 11.912 | -3.341 | 0.768 | 0.105 | 0.715 |
| wk3towk12 | 1036 | 6792.000 | 11.982 | -2.960 | 0.673 | 0.106 | 0.714 |
| wk5towk13 | 1036 | 6792.351 | 12.334 | -2.973 | 0.690 | 0.104 | 0.714 |
| wk4towk12 | 1036 | 6792.450 | 12.433 | -2.778 | 0.644 | 0.104 | 0.714 |
| wk8towk14 | 1036 | 6792.472 | 12.455 | -2.874 | 0.669 | 0.104 | 0.715 |
| wk11towk13 | 1036 | 6792.635 | 12.618 | -3.023 | 0.715 | 0.103 | 0.715 |
| wk7towk14 | 1036 | 6792.819 | 12.802 | -3.011 | 0.720 | 0.101 | 0.715 |
| wk12towk14 | 1036 | 6793.045 | 13.028 | -2.748 | 0.659 | 0.101 | 0.715 |
| wk5towk12 | 1036 | 6793.112 | 13.094 | -2.683 | 0.644 | 0.101 | 0.715 |
| wk11towk12 | 1036 | 6793.378 | 13.361 | -2.329 | 0.558 | 0.101 | 0.715 |
| wk1towk16 | 1036 | 6793.519 | 13.501 | -3.526 | 0.898 | 0.094 | 0.715 |
| wk1towk17 | 1036 | 6793.586 | 13.569 | -3.571 | 0.915 | 0.094 | 0.715 |
| wk1towk15 | 1036 | 6793.659 | 13.642 | -3.340 | 0.852 | 0.094 | 0.715 |
| wk2towk13 | 1036 | 6793.818 | 13.800 | -3.113 | 0.795 | 0.094 | 0.715 |
| wk6towk13 | 1036 | 6794.259 | 14.242 | -2.934 | 0.765 | 0.092 | 0.715 |
| wk6towk12 | 1036 | 6794.462 | 14.445 | -2.718 | 0.711 | 0.092 | 0.715 |
| wk2towk12 | 1036 | 6794.573 | 14.556 | -2.852 | 0.757 | 0.090 | 0.715 |
| wk3towk11 | 1036 | 6794.693 | 14.676 | -2.483 | 0.652 | 0.091 | 0.715 |
| wk4towk9 | 1036 | 6794.725 | 14.708 | -2.326 | 0.607 | 0.092 | 0.715 |
| wk11towk11 | 1036 | 6794.795 | 14.777 | -1.620 | 0.405 | 0.097 | 0.715 |
| wk1towk14 | 1036 | 6794.850 | 14.833 | -3.002 | 0.818 | 0.088 | 0.715 |
| wk14towk14 | 1036 | 6794.903 | 14.886 | -1.427 | 0.354 | 0.097 | 0.715 |
| wk3towk9 | 1036 | 6794.957 | 14.940 | -2.436 | 0.650 | 0.090 | 0.715 |
| wk4towk11 | 1036 | 6794.960 | 14.942 | -2.330 | 0.618 | 0.091 | 0.715 |
| wk5towk11 | 1036 | 6795.822 | 15.804 | -2.187 | 0.610 | 0.085 | 0.715 |
| wk13towk15 | 1036 | 6796.058 | 16.040 | -2.507 | 0.727 | 0.082 | 0.715 |
| wk10towk13 | 1036 | 6796.251 | 16.233 | -2.741 | 0.818 | 0.079 | 0.715 |
| wk4towk8 | 1036 | 6796.287 | 16.270 | -2.009 | 0.573 | 0.083 | 0.715 |
| wk3towk10 | 1036 | 6796.288 | 16.271 | -2.373 | 0.694 | 0.080 | 0.715 |
| wk3towk8 | 1036 | 6796.338 | 16.321 | -2.154 | 0.623 | 0.081 | 0.715 |
| wk5towk9 | 1036 | 6796.392 | 16.374 | -2.053 | 0.592 | 0.082 | 0.715 |
| wk13towk14 | 1036 | 6796.432 | 16.415 | -1.983 | 0.571 | 0.082 | 0.715 |
| wk4towk10 | 1036 | 6796.570 | 16.553 | -2.218 | 0.656 | 0.079 | 0.715 |
| wk2towk11 | 1036 | 6796.846 | 16.829 | -2.375 | 0.726 | 0.076 | 0.715 |
| wk10towk12 | 1036 | 6796.899 | 16.882 | -2.292 | 0.700 | 0.076 | 0.715 |
| wk1towk13 | 1036 | 6796.956 | 16.938 | -2.782 | 0.882 | 0.073 | 0.715 |
| wk7towk13 | 1036 | 6797.076 | 17.058 | -2.563 | 0.809 | 0.073 | 0.715 |
| wk13towk17 | 1036 | 6797.081 | 17.063 | -2.930 | 0.948 | 0.071 | 0.715 |
| wk14towk15 | 1036 | 6797.284 | 17.266 | -1.855 | 0.565 | 0.077 | 0.715 |
| wk7towk12 | 1036 | 6797.339 | 17.321 | -2.349 | 0.747 | 0.072 | 0.715 |
| wk13towk16 | 1036 | 6797.523 | 17.505 | -2.673 | 0.885 | 0.069 | 0.716 |
| wk1towk12 | 1036 | 6797.548 | 17.531 | -2.555 | 0.841 | 0.069 | 0.716 |
| wk8towk13 | 1036 | 6797.646 | 17.629 | -2.293 | 0.747 | 0.070 | 0.716 |
| wk6towk11 | 1036 | 6797.751 | 17.734 | -2.048 | 0.660 | 0.071 | 0.716 |
| wk5towk10 | 1036 | 6797.777 | 17.760 | -2.010 | 0.647 | 0.071 | 0.715 |
| wk2towk9 | 1036 | 6797.803 | 17.785 | -2.239 | 0.737 | 0.069 | 0.716 |
| wk9towk13 | 1036 | 6797.848 | 17.831 | -2.349 | 0.783 | 0.068 | 0.716 |
| wk8towk12 | 1036 | 6798.018 | 18.001 | -2.043 | 0.674 | 0.069 | 0.716 |
| wk9towk12 | 1036 | 6798.272 | 18.255 | -2.052 | 0.694 | 0.067 | 0.716 |
| wk2towk10 | 1036 | 6798.428 | 18.410 | -2.210 | 0.770 | 0.064 | 0.716 |
| wk5towk8 | 1036 | 6798.443 | 18.426 | -1.639 | 0.540 | 0.069 | 0.716 |
| wk3towk7 | 1036 | 6798.527 | 18.509 | -1.780 | 0.600 | 0.067 | 0.716 |
| wk3towk6 | 1036 | 6798.679 | 18.662 | -1.574 | 0.526 | 0.068 | 0.716 |
| wk14towk17 | 1036 | 6798.779 | 18.761 | -2.277 | 0.828 | 0.060 | 0.716 |
| wk4towk7 | 1036 | 6798.893 | 18.875 | -1.575 | 0.537 | 0.066 | 0.716 |
| wk1towk11 | 1036 | 6799.221 | 19.203 | -2.124 | 0.799 | 0.057 | 0.716 |
| wk4towk6 | 1036 | 6799.260 | 19.242 | -1.306 | 0.445 | 0.066 | 0.716 |
| wk6towk9 | 1036 | 6799.267 | 19.249 | -1.781 | 0.647 | 0.061 | 0.716 |
| wk2towk8 | 1036 | 6799.288 | 19.271 | -1.903 | 0.704 | 0.059 | 0.716 |
| wk14towk16 | 1036 | 6799.521 | 19.504 | -1.928 | 0.734 | 0.056 | 0.716 |
| wk4towk5 | 1036 | 6799.857 | 19.839 | -1.226 | 0.438 | 0.062 | 0.716 |
| wk3towk5 | 1036 | 6800.134 | 20.116 | -1.401 | 0.532 | 0.057 | 0.716 |
| wk6towk10 | 1036 | 6800.163 | 20.146 | -1.747 | 0.703 | 0.052 | 0.716 |
| wk7towk11 | 1036 | 6800.354 | 20.337 | -1.634 | 0.662 | 0.052 | 0.716 |
| wk1towk9 | 1036 | 6800.442 | 20.424 | -1.900 | 0.813 | 0.047 | 0.716 |
| wk10towk11 | 1036 | 6800.585 | 20.567 | -1.427 | 0.576 | 0.052 | 0.716 |
| wk1towk10 | 1036 | 6800.662 | 20.644 | -1.895 | 0.837 | 0.045 | 0.716 |
| wk6towk8 | 1036 | 6800.720 | 20.703 | -1.438 | 0.591 | 0.050 | 0.716 |
| wk8towk11 | 1036 | 6800.963 | 20.946 | -1.376 | 0.578 | 0.049 | 0.716 |
| wk2towk6 | 1036 | 6800.967 | 20.950 | -1.463 | 0.626 | 0.047 | 0.716 |
| wk2towk7 | 1036 | 6801.028 | 21.010 | -1.540 | 0.675 | 0.046 | 0.716 |
| wk5towk6 | 1036 | 6801.089 | 21.071 | -0.961 | 0.374 | 0.054 | 0.716 |
| wk5towk7 | 1036 | 6801.131 | 21.114 | -1.166 | 0.479 | 0.050 | 0.716 |
| wk9towk11 | 1036 | 6801.406 | 21.389 | -1.311 | 0.580 | 0.045 | 0.716 |
| wk1towk8 | 1036 | 6801.619 | 21.602 | -1.578 | 0.773 | 0.038 | 0.717 |
| wk5towk5 | 1036 | 6801.629 | 21.611 | -0.827 | 0.331 | 0.052 | 0.716 |
| wk12towk13 | 1036 | 6802.012 | 21.995 | -1.594 | 0.853 | 0.033 | 0.717 |
| wk7towk9 | 1036 | 6802.611 | 22.594 | -1.176 | 0.628 | 0.033 | 0.717 |
| wk2towk5 | 1036 | 6802.675 | 22.657 | -1.168 | 0.631 | 0.033 | 0.717 |
| wk7towk10 | 1036 | 6802.779 | 22.762 | -1.219 | 0.692 | 0.030 | 0.717 |
| wk8towk8 | 1036 | 6802.907 | 22.889 | -0.923 | 0.472 | 0.036 | 0.717 |
| wk17to17 | 1036 | 6802.973 | 22.956 | -1.336 | 0.859 | 0.024 | 0.717 |
| wk3towk4 | 1036 | 6802.975 | 22.957 | -1.067 | 0.594 | 0.031 | 0.717 |
| wk1towk7 | 1036 | 6802.982 | 22.964 | -1.216 | 0.732 | 0.027 | 0.717 |
| wk1towk6 | 1036 | 6803.170 | 23.153 | -1.131 | 0.691 | 0.026 | 0.717 |
| wk4towk4 | 1036 | 6803.253 | 23.235 | -0.873 | 0.471 | 0.033 | 0.717 |
| wk6towk7 | 1036 | 6803.256 | 23.238 | -0.930 | 0.518 | 0.031 | 0.717 |
| wk6towk6 | 1036 | 6803.293 | 23.275 | -0.727 | 0.365 | 0.037 | 0.717 |
| wk7towk8 | 1036 | 6803.362 | 23.344 | -1.000 | 0.600 | 0.027 | 0.717 |
| wk12towk12 | 1036 | 6803.440 | 23.422 | -0.985 | 0.601 | 0.026 | 0.717 |
| wk8towk9 | 1036 | 6803.529 | 23.511 | -0.853 | 0.489 | 0.029 | 0.717 |
| wk8towk10 | 1036 | 6803.536 | 23.518 | -0.949 | 0.584 | 0.026 | 0.717 |
| wk15to17 | 1036 | 6804.180 | 24.163 | -0.929 | 0.883 | 0.012 | 0.717 |
| wk1towk5 | 1036 | 6804.589 | 24.571 | -0.748 | 0.666 | 0.013 | 0.717 |
| wk9towk10 | 1036 | 6804.768 | 24.751 | -0.673 | 0.567 | 0.015 | 0.717 |
| wk2towk4 | 1036 | 6804.905 | 24.888 | -0.648 | 0.658 | 0.010 | 0.717 |
| wk13towk13 | 1036 | 6804.919 | 24.901 | -0.641 | 0.686 | 0.009 | 0.717 |
| wk16to17 | 1036 | 6804.922 | 24.905 | -0.621 | 0.759 | 0.007 | 0.718 |
| wk15to15 | 1036 | 6805.002 | 24.985 | -0.612 | 0.674 | 0.009 | 0.717 |
| wk15to16 | 1036 | 6805.188 | 25.171 | -0.500 | 0.742 | 0.005 | 0.718 |
| wk9towk9 | 1036 | 6805.215 | 25.197 | -0.528 | 0.426 | 0.016 | 0.717 |
| wk7towk7 | 1036 | 6805.512 | 25.494 | -0.462 | 0.565 | 0.007 | 0.718 |
| wk1towk4 | 1036 | 6805.759 | 25.741 | -0.248 | 0.656 | 0.002 | 0.718 |
| wk3towk3 | 1036 | 6805.770 | 25.752 | -0.416 | 0.467 | 0.009 | 0.717 |
| wk10towk10 | 1036 | 6805.774 | 25.756 | -0.374 | 0.552 | 0.005 | 0.718 |
| wk16to16 | 1036 | 6806.175 | 26.157 | -0.148 | 0.553 | 0.001 | 0.718 |
| wk2towk3 | 1036 | 6806.368 | 26.351 | -0.122 | 0.505 | 0.001 | 0.718 |

**Table 6b**. Sycamore bud burst phenology as a function of temperatures delaying budburst, weather variables selected as those with a positive coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and April 29th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to random effects only model AICc = 6804.856. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk1towk3\*** | **1036** | **6806.355** | **0.000** | **0.090** | **0.516** | **0.000** | **0.718** |
| wk1towk2 | 1036 | 6806.413 | 0.059 | 0.255 | 0.420 | 0.004 | 0.718 |
| wk1towk1 | 1036 | 6806.608 | 0.253 | 0.253 | 0.354 | 0.006 | 0.718 |
| wk2towk2 | 1036 | 6806.812 | 0.457 | 0.135 | 0.392 | 0.001 | 0.718 |

**Table 6c.** Sycamore bud burst phenology as a function of precipitation advancing budburst, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and April 29th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to random effects only model. Random effects only model AICc = 6804.856. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk1toWk9\*** | **1036** | **6802.922** | **0.000** | **-1.714** | **1.494** | **0.014** | **0.717** |
| Wk1toWk6 | 1036 | 6802.971 | 0.049 | -1.541 | 1.145 | 0.019 | 0.717 |
| Wk2toWk4 | 1036 | 6803.015 | 0.093 | -1.356 | 0.898 | 0.023 | 0.717 |
| Wk1toWk4 | 1036 | 6803.038 | 0.116 | -1.463 | 1.060 | 0.020 | 0.717 |
| Wk3toWk3 | 1036 | 6803.147 | 0.225 | -1.024 | 0.585 | 0.030 | 0.717 |
| Wk3toWk4 | 1036 | 6803.158 | 0.237 | -1.070 | 0.629 | 0.028 | 0.717 |
| Wk1toWk5 | 1036 | 6803.173 | 0.251 | -1.434 | 1.111 | 0.017 | 0.717 |
| Wk1toWk7 | 1036 | 6803.232 | 0.310 | -1.487 | 1.378 | 0.012 | 0.717 |
| Wk1toWk8 | 1036 | 6803.234 | 0.312 | -1.494 | 1.508 | 0.011 | 0.717 |
| Wk2toWk6 | 1036 | 6803.264 | 0.342 | -1.332 | 0.990 | 0.019 | 0.717 |
| Wk2toWk9 | 1036 | 6803.322 | 0.401 | -1.421 | 1.312 | 0.012 | 0.717 |
| Wk2toWk5 | 1036 | 6803.396 | 0.474 | -1.260 | 0.951 | 0.018 | 0.717 |
| Wk1toWk10 | 1036 | 6803.477 | 0.555 | -1.255 | 1.619 | 0.007 | 0.718 |
| Wk3toWk5 | 1036 | 6803.584 | 0.662 | -1.067 | 0.738 | 0.021 | 0.717 |
| Wk2toWk7 | 1036 | 6803.592 | 0.671 | -1.247 | 1.198 | 0.012 | 0.717 |
| Wk2toWk8 | 1036 | 6803.655 | 0.733 | -1.204 | 1.301 | 0.009 | 0.717 |
| Wk1toWk11 | 1036 | 6803.694 | 0.772 | -1.022 | 1.607 | 0.004 | 0.718 |
| Wk3toWk9 | 1036 | 6803.705 | 0.783 | -1.176 | 1.101 | 0.012 | 0.717 |
| Wk2toWk10 | 1036 | 6803.725 | 0.803 | -1.088 | 1.469 | 0.006 | 0.718 |
| Wk3toWk6 | 1036 | 6803.755 | 0.834 | -1.040 | 0.770 | 0.019 | 0.717 |
| Wk1toWk14 | 1036 | 6803.797 | 0.875 | -0.036 | 1.885 | 0.000 | 0.718 |
| Wk1toWk12 | 1036 | 6803.836 | 0.915 | -0.729 | 1.673 | 0.002 | 0.718 |
| Wk2toWk11 | 1036 | 6803.912 | 0.990 | -0.888 | 1.471 | 0.004 | 0.718 |
| Wk1toWk13 | 1036 | 6803.916 | 0.994 | -0.249 | 1.757 | 0.000 | 0.718 |
| Wk2toWk12 | 1036 | 6804.017 | 1.095 | -0.629 | 1.548 | 0.002 | 0.718 |
| Wk3toWk8 | 1036 | 6804.036 | 1.115 | -0.995 | 1.074 | 0.009 | 0.717 |
| Wk3toWk7 | 1036 | 6804.042 | 1.120 | -0.996 | 0.960 | 0.012 | 0.717 |
| Wk9toWk9 | 1036 | 6804.054 | 1.132 | -0.950 | 0.779 | 0.015 | 0.717 |
| Wk2toWk13 | 1036 | 6804.069 | 1.147 | -0.182 | 1.634 | 0.000 | 0.718 |
| Wk3toWk14 | 1036 | 6804.075 | 1.153 | -0.022 | 1.640 | 0.000 | 0.718 |
| Wk3toWk10 | 1036 | 6804.084 | 1.162 | -0.904 | 1.237 | 0.006 | 0.718 |
| Wk3toWk11 | 1036 | 6804.220 | 1.298 | -0.760 | 1.262 | 0.004 | 0.718 |
| Wk3toWk12 | 1036 | 6804.277 | 1.355 | -0.564 | 1.354 | 0.002 | 0.718 |
| Wk3toWk13 | 1036 | 6804.279 | 1.357 | -0.197 | 1.468 | 0.000 | 0.718 |
| Wk4toWk9 | 1036 | 6804.368 | 1.446 | -0.776 | 1.087 | 0.006 | 0.718 |
| Wk1toWk3 | 1036 | 6804.421 | 1.499 | -0.808 | 0.946 | 0.008 | 0.718 |
| Wk2toWk3 | 1036 | 6804.434 | 1.512 | -0.820 | 0.809 | 0.011 | 0.717 |
| Wk5toWk9 | 1036 | 6804.485 | 1.563 | -0.516 | 1.216 | 0.002 | 0.718 |
| Wk4toWk10 | 1036 | 6804.488 | 1.566 | -0.453 | 1.245 | 0.001 | 0.718 |
| Wk4toWk12 | 1036 | 6804.493 | 1.571 | -0.095 | 1.327 | 0.000 | 0.718 |
| Wk4toWk11 | 1036 | 6804.547 | 1.625 | -0.324 | 1.250 | 0.001 | 0.718 |
| Wk5toWk8 | 1036 | 6804.654 | 1.732 | -0.104 | 1.223 | 0.000 | 0.718 |
| Wk5toWk7 | 1036 | 6804.731 | 1.809 | -0.199 | 1.164 | 0.000 | 0.718 |
| Wk4toWk8 | 1036 | 6804.731 | 1.809 | -0.519 | 1.036 | 0.003 | 0.718 |
| Wk5toWk6 | 1036 | 6804.800 | 1.878 | -0.639 | 0.853 | 0.006 | 0.718 |
| Wk6toWk9 | 1036 | 6804.807 | 1.885 | -0.331 | 1.083 | 0.001 | 0.718 |
| Wk4toWk7 | 1036 | 6804.898 | 1.976 | -0.534 | 0.907 | 0.004 | 0.718 |
| Wk4toWk6 | 1036 | 6804.938 | 2.017 | -0.633 | 0.690 | 0.009 | 0.717 |
| Wk8toWk9 | 1036 | 6805.018 | 2.096 | -0.490 | 0.865 | 0.004 | 0.718 |
| Wk4toWk5 | 1036 | 6805.167 | 2.245 | -0.562 | 0.630 | 0.009 | 0.717 |
| Wk7toWk9 | 1036 | 6805.203 | 2.282 | -0.008 | 0.933 | 0.000 | 0.718 |
| Wk5toWk5 | 1036 | 6805.310 | 2.388 | -0.376 | 0.784 | 0.003 | 0.718 |
| Wk4toWk4 | 1036 | 6805.523 | 2.601 | -0.475 | 0.462 | 0.011 | 0.717 |
| Wk1toWk2 | 1036 | 6805.597 | 2.675 | -0.013 | 0.766 | 0.000 | 0.718 |
| Wk6toWk6 | 1036 | 6805.618 | 2.696 | -0.403 | 0.599 | 0.005 | 0.718 |
| Wk1toWk1 | 1036 | 6806.315 | 3.393 | -0.066 | 0.531 | 0.000 | 0.718 |

**Table 6d.** Sycamore bud burst phenology as a function of precipitation delaying budburst, weather variables selected as those with a positive coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and April 29th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to random effects only model AICc = 6804.856. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk7toWk17\*** | **1036** | **6799.918** | **0.000** | **3.685** | **1.802** | **0.038** | **0.717** |
| Wk7toWk16 | 1036 | 6800.746 | 0.828 | 3.229 | 1.791 | 0.031 | 0.717 |
| Wk6toWk17 | 1036 | 6800.912 | 0.994 | 3.302 | 1.945 | 0.028 | 0.717 |
| Wk8toWk17 | 1036 | 6800.998 | 1.080 | 2.977 | 1.693 | 0.030 | 0.717 |
| Wk10toWk17 | 1036 | 6801.283 | 1.364 | 2.301 | 1.232 | 0.033 | 0.717 |
| Wk7toWk15 | 1036 | 6801.433 | 1.514 | 2.771 | 1.728 | 0.025 | 0.717 |
| Wk10toWk16 | 1036 | 6801.495 | 1.577 | 2.238 | 1.247 | 0.031 | 0.717 |
| Wk8toWk16 | 1036 | 6801.557 | 1.639 | 2.682 | 1.710 | 0.025 | 0.717 |
| Wk6toWk16 | 1036 | 6801.574 | 1.655 | 2.865 | 1.946 | 0.022 | 0.717 |
| Wk5toWk17 | 1036 | 6801.700 | 1.781 | 2.789 | 1.967 | 0.020 | 0.717 |
| Wk9toWk17 | 1036 | 6801.730 | 1.811 | 2.361 | 1.460 | 0.026 | 0.717 |
| Wk10toWk15 | 1036 | 6801.857 | 1.939 | 2.046 | 1.200 | 0.028 | 0.717 |
| Wk10toWk13 | 1036 | 6801.962 | 2.044 | 1.899 | 1.100 | 0.029 | 0.717 |
| Wk7toWk14 | 1036 | 6802.014 | 2.095 | 2.358 | 1.643 | 0.021 | 0.717 |
| Wk8toWk15 | 1036 | 6802.017 | 2.099 | 2.383 | 1.684 | 0.020 | 0.717 |
| Wk10toWk14 | 1036 | 6802.026 | 2.108 | 1.931 | 1.152 | 0.028 | 0.717 |
| Wk12toWk17 | 1036 | 6802.073 | 2.154 | 1.858 | 1.098 | 0.028 | 0.717 |
| Wk9toWk16 | 1036 | 6802.107 | 2.189 | 2.188 | 1.483 | 0.022 | 0.717 |
| Wk12toWk13 | 1036 | 6802.156 | 2.237 | 1.657 | 0.938 | 0.030 | 0.717 |
| Wk5toWk16 | 1036 | 6802.221 | 2.302 | 2.385 | 1.970 | 0.015 | 0.717 |
| Wk6toWk15 | 1036 | 6802.235 | 2.316 | 2.329 | 1.856 | 0.016 | 0.717 |
| Wk10toWk10 | 1036 | 6802.413 | 2.495 | 1.467 | 0.834 | 0.030 | 0.717 |
| Wk9toWk15 | 1036 | 6802.454 | 2.535 | 1.985 | 1.463 | 0.019 | 0.717 |
| Wk8toWk14 | 1036 | 6802.473 | 2.554 | 2.057 | 1.625 | 0.017 | 0.717 |
| Wk11toWk17 | 1036 | 6802.513 | 2.594 | 1.724 | 1.131 | 0.023 | 0.717 |
| Wk7toWk13 | 1036 | 6802.568 | 2.649 | 1.953 | 1.529 | 0.017 | 0.717 |
| Wk13toWk13 | 1036 | 6802.659 | 2.740 | 1.295 | 0.735 | 0.030 | 0.717 |
| Wk12toWk16 | 1036 | 6802.691 | 2.773 | 1.591 | 1.053 | 0.023 | 0.717 |
| Wk5toWk15 | 1036 | 6802.751 | 2.833 | 1.902 | 1.878 | 0.011 | 0.717 |
| Wk6toWk14 | 1036 | 6802.774 | 2.856 | 1.872 | 1.750 | 0.012 | 0.717 |
| Wk13toWk17 | 1036 | 6802.780 | 2.861 | 1.509 | 0.991 | 0.023 | 0.717 |
| Wk9toWk14 | 1036 | 6802.800 | 2.881 | 1.764 | 1.418 | 0.016 | 0.717 |
| Wk8toWk13 | 1036 | 6802.842 | 2.924 | 1.784 | 1.560 | 0.014 | 0.717 |
| Wk11toWk16 | 1036 | 6802.908 | 2.990 | 1.551 | 1.116 | 0.020 | 0.717 |
| Wk9toWk13 | 1036 | 6802.969 | 3.051 | 1.655 | 1.396 | 0.015 | 0.717 |
| Wk4toWk17 | 1036 | 6803.081 | 3.162 | 1.583 | 1.835 | 0.008 | 0.718 |
| Wk12toWk12 | 1036 | 6803.103 | 3.185 | 1.434 | 1.057 | 0.019 | 0.717 |
| Wk12toWk15 | 1036 | 6803.139 | 3.220 | 1.373 | 0.980 | 0.020 | 0.717 |
| Wk12toWk14 | 1036 | 6803.169 | 3.250 | 1.331 | 0.934 | 0.021 | 0.717 |
| Wk2toWk17 | 1036 | 6803.220 | 3.302 | 1.168 | 2.157 | 0.003 | 0.718 |
| Wk5toWk14 | 1036 | 6803.227 | 3.309 | 1.456 | 1.752 | 0.007 | 0.718 |
| Wk10toWk12 | 1036 | 6803.246 | 3.328 | 1.378 | 1.064 | 0.017 | 0.717 |
| Wk1toWk17 | 1036 | 6803.280 | 3.361 | 1.037 | 2.164 | 0.003 | 0.718 |
| Wk6toWk13 | 1036 | 6803.332 | 3.414 | 1.403 | 1.589 | 0.008 | 0.717 |
| Wk11toWk15 | 1036 | 6803.363 | 3.445 | 1.321 | 1.047 | 0.017 | 0.717 |
| Wk4toWk16 | 1036 | 6803.375 | 3.456 | 1.244 | 1.829 | 0.005 | 0.718 |
| Wk3toWk17 | 1036 | 6803.431 | 3.513 | 0.998 | 1.981 | 0.003 | 0.718 |
| Wk2toWk16 | 1036 | 6803.469 | 3.551 | 0.692 | 2.097 | 0.001 | 0.718 |
| Wk1toWk16 | 1036 | 6803.473 | 3.554 | 0.599 | 2.125 | 0.001 | 0.718 |
| Wk7toWk12 | 1036 | 6803.500 | 3.581 | 1.283 | 1.493 | 0.008 | 0.718 |
| Wk15to17 | 1036 | 6803.523 | 3.604 | 1.199 | 0.923 | 0.017 | 0.717 |
| Wk13toWk16 | 1036 | 6803.523 | 3.604 | 1.195 | 0.916 | 0.018 | 0.717 |
| Wk3toWk16 | 1036 | 6803.635 | 3.716 | 0.588 | 1.948 | 0.001 | 0.718 |
| Wk5toWk13 | 1036 | 6803.642 | 3.723 | 1.081 | 1.610 | 0.005 | 0.718 |
| Wk1toWk15 | 1036 | 6803.677 | 3.758 | 0.237 | 1.987 | 0.000 | 0.718 |
| Wk11toWk14 | 1036 | 6803.710 | 3.791 | 1.146 | 0.973 | 0.015 | 0.717 |
| Wk2toWk15 | 1036 | 6803.723 | 3.804 | 0.302 | 1.931 | 0.000 | 0.718 |
| Wk4toWk15 | 1036 | 6803.737 | 3.818 | 0.857 | 1.701 | 0.003 | 0.718 |
| Wk8toWk12 | 1036 | 6803.771 | 3.852 | 0.993 | 1.535 | 0.005 | 0.718 |
| Wk11toWk13 | 1036 | 6803.790 | 3.871 | 1.097 | 0.922 | 0.015 | 0.717 |
| Wk3toWk15 | 1036 | 6803.873 | 3.954 | 0.236 | 1.798 | 0.000 | 0.718 |
| Wk2toWk14 | 1036 | 6803.905 | 3.987 | 0.022 | 1.785 | 0.000 | 0.718 |
| Wk13toWk15 | 1036 | 6803.935 | 4.017 | 1.013 | 0.839 | 0.015 | 0.717 |
| Wk9toWk12 | 1036 | 6803.955 | 4.036 | 0.923 | 1.379 | 0.005 | 0.718 |
| Wk6toWk12 | 1036 | 6804.004 | 4.085 | 0.727 | 1.504 | 0.003 | 0.718 |
| Wk14toWk17 | 1036 | 6804.009 | 4.091 | 0.999 | 0.885 | 0.013 | 0.717 |
| Wk4toWk14 | 1036 | 6804.027 | 4.109 | 0.557 | 1.572 | 0.001 | 0.718 |
| Wk7toWk11 | 1036 | 6804.040 | 4.121 | 0.835 | 1.378 | 0.004 | 0.718 |
| Wk10toWk11 | 1036 | 6804.117 | 4.199 | 0.958 | 0.910 | 0.012 | 0.717 |
| Wk5toWk12 | 1036 | 6804.127 | 4.208 | 0.469 | 1.520 | 0.001 | 0.718 |
| Wk13toWk14 | 1036 | 6804.149 | 4.230 | 0.911 | 0.756 | 0.015 | 0.717 |
| Wk7toWk7 | 1036 | 6804.176 | 4.258 | 0.922 | 0.827 | 0.013 | 0.717 |
| Wk15to16 | 1036 | 6804.248 | 4.329 | 0.899 | 0.867 | 0.011 | 0.717 |
| Wk8toWk11 | 1036 | 6804.259 | 4.340 | 0.452 | 1.418 | 0.001 | 0.718 |
| Wk4toWk13 | 1036 | 6804.299 | 4.381 | 0.318 | 1.428 | 0.001 | 0.718 |
| Wk16to17 | 1036 | 6804.324 | 4.406 | 0.852 | 0.751 | 0.013 | 0.717 |
| Wk6toWk11 | 1036 | 6804.329 | 4.411 | 0.346 | 1.399 | 0.001 | 0.718 |
| Wk5toWk11 | 1036 | 6804.330 | 4.411 | 0.134 | 1.437 | 0.000 | 0.718 |
| Wk5toWk10 | 1036 | 6804.394 | 4.475 | 0.024 | 1.398 | 0.000 | 0.718 |
| Wk7toWk10 | 1036 | 6804.474 | 4.555 | 0.610 | 1.164 | 0.003 | 0.718 |
| Wk17to17 | 1036 | 6804.506 | 4.588 | 0.774 | 0.670 | 0.014 | 0.717 |
| Wk9toWk11 | 1036 | 6804.511 | 4.592 | 0.386 | 1.255 | 0.001 | 0.718 |
| Wk6toWk10 | 1036 | 6804.558 | 4.639 | 0.219 | 1.269 | 0.000 | 0.718 |
| Wk8toWk10 | 1036 | 6804.624 | 4.706 | 0.255 | 1.218 | 0.000 | 0.718 |
| Wk9toWk10 | 1036 | 6804.645 | 4.726 | 0.257 | 1.205 | 0.001 | 0.718 |
| Wk15to15 | 1036 | 6804.720 | 4.801 | 0.699 | 0.802 | 0.008 | 0.718 |
| Wk14toWk16 | 1036 | 6804.758 | 4.840 | 0.685 | 0.790 | 0.008 | 0.718 |
| Wk6toWk8 | 1036 | 6804.921 | 5.003 | 0.123 | 1.067 | 0.000 | 0.718 |
| Wk11toWk12 | 1036 | 6804.983 | 5.064 | 0.547 | 0.832 | 0.005 | 0.718 |
| Wk7toWk8 | 1036 | 6805.028 | 5.109 | 0.511 | 0.839 | 0.004 | 0.718 |
| Wk6toWk7 | 1036 | 6805.106 | 5.188 | 0.078 | 0.976 | 0.000 | 0.718 |
| Wk14toWk15 | 1036 | 6805.152 | 5.233 | 0.529 | 0.726 | 0.006 | 0.718 |
| Wk16to16 | 1036 | 6805.356 | 5.438 | 0.493 | 0.627 | 0.007 | 0.718 |
| Wk8toWk8 | 1036 | 6805.621 | 5.703 | 0.092 | 0.751 | 0.000 | 0.718 |
| Wk14toWk14 | 1036 | 6805.930 | 6.012 | 0.292 | 0.563 | 0.003 | 0.718 |
| Wk11toWk11 | 1036 | 6806.042 | 6.123 | 0.135 | 0.597 | 0.001 | 0.718 |
| Wk2toWk2 | 1036 | 6806.159 | 6.241 | 0.062 | 0.575 | 0.000 | 0.718 |

***Drepanosiphum platanoidis* – Sycamore aphid**

Table S7a. *D. platanoidis* emergence phenology as a function of temperature advancing emergence, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and June 17th Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 8759.12. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk22to22\*** | **979** | **8749.333** | **0.000** | **-8.024** | **2.596** | **0.189** | **0.588** |
| wk21to22 | 979 | 8750.835 | 1.502 | -9.357 | 3.653 | 0.145 | 0.589 |
| wk3towk4 | 979 | 8753.794 | 4.461 | -5.299 | 2.781 | 0.089 | 0.591 |
| wk4towk4 | 979 | 8754.254 | 4.920 | -4.220 | 2.217 | 0.092 | 0.592 |
| wk20to22 | 979 | 8754.445 | 5.112 | -6.415 | 4.985 | 0.046 | 0.593 |
| wk21to24 | 979 | 8754.616 | 5.282 | -6.289 | 5.866 | 0.032 | 0.593 |
| wk12towk22 | 979 | 8754.802 | 5.469 | -5.585 | 6.748 | 0.020 | 0.594 |
| wk9towk22 | 979 | 8754.813 | 5.480 | -5.686 | 6.200 | 0.024 | 0.594 |
| wk9to23 | 979 | 8754.847 | 5.514 | -5.382 | 6.789 | 0.018 | 0.594 |
| wk12to23 | 979 | 8754.855 | 5.521 | -4.888 | 7.517 | 0.012 | 0.594 |
| wk11towk22 | 979 | 8754.882 | 5.548 | -5.415 | 6.339 | 0.021 | 0.594 |
| wk17to22 | 979 | 8754.891 | 5.558 | -5.489 | 5.186 | 0.032 | 0.594 |
| wk11to23 | 979 | 8754.927 | 5.593 | -4.908 | 6.998 | 0.014 | 0.594 |
| we9to24 | 979 | 8754.989 | 5.655 | -4.786 | 6.744 | 0.014 | 0.594 |
| wk10towk22 | 979 | 8755.035 | 5.702 | -4.794 | 6.394 | 0.016 | 0.594 |
| wk12to24 | 979 | 8755.046 | 5.712 | -3.981 | 7.286 | 0.009 | 0.594 |
| wk10to23 | 979 | 8755.060 | 5.727 | -4.231 | 6.978 | 0.011 | 0.594 |
| wk17to23 | 979 | 8755.077 | 5.743 | -4.776 | 6.107 | 0.017 | 0.594 |
| wk11to24 | 979 | 8755.078 | 5.744 | -4.213 | 6.900 | 0.011 | 0.594 |
| wk16to22 | 979 | 8755.100 | 5.766 | -4.868 | 5.638 | 0.021 | 0.594 |
| wk13towk22 | 979 | 8755.124 | 5.790 | -4.653 | 5.988 | 0.017 | 0.594 |
| wk9towk18 | 979 | 8755.150 | 5.817 | -4.564 | 5.965 | 0.016 | 0.594 |
| wk13to23 | 979 | 8755.157 | 5.823 | -4.007 | 6.675 | 0.010 | 0.594 |
| wk8to23 | 979 | 8755.164 | 5.831 | -4.193 | 6.432 | 0.012 | 0.594 |
| wk15to22 | 979 | 8755.174 | 5.841 | -4.326 | 6.198 | 0.014 | 0.594 |
| wk9towk17 | 979 | 8755.176 | 5.843 | -4.167 | 6.395 | 0.012 | 0.594 |
| wk8towk22 | 979 | 8755.181 | 5.848 | -4.479 | 5.900 | 0.017 | 0.594 |
| wk10to24 | 979 | 8755.193 | 5.860 | -3.604 | 6.842 | 0.008 | 0.594 |
| wk18to22 | 979 | 8755.224 | 5.890 | -4.658 | 4.507 | 0.031 | 0.594 |
| wk8to24 | 979 | 8755.231 | 5.898 | -3.829 | 6.461 | 0.010 | 0.594 |
| wk9towk16 | 979 | 8755.267 | 5.934 | -3.967 | 6.129 | 0.012 | 0.594 |
| wk18to23 | 979 | 8755.281 | 5.948 | -4.276 | 5.585 | 0.017 | 0.594 |
| wk15to23 | 979 | 8755.288 | 5.955 | -3.057 | 6.783 | 0.006 | 0.594 |
| wk16to23 | 979 | 8755.292 | 5.958 | -3.719 | 6.265 | 0.010 | 0.594 |
| wk13to24 | 979 | 8755.304 | 5.971 | -3.312 | 6.545 | 0.007 | 0.594 |
| wk9towk19 | 979 | 8755.311 | 5.978 | -4.015 | 5.822 | 0.013 | 0.594 |
| wk14towk22 | 979 | 8755.361 | 6.027 | -3.872 | 5.741 | 0.013 | 0.594 |
| wk11towk17 | 979 | 8755.365 | 6.031 | -2.917 | 6.543 | 0.006 | 0.595 |
| wk14to23 | 979 | 8755.370 | 6.036 | -3.100 | 6.408 | 0.007 | 0.594 |
| wk11towk18 | 979 | 8755.371 | 6.038 | -3.668 | 5.925 | 0.011 | 0.594 |
| wk17to24 | 979 | 8755.376 | 6.043 | -3.642 | 5.929 | 0.011 | 0.594 |
| wk10towk17 | 979 | 8755.381 | 6.047 | -2.291 | 6.785 | 0.003 | 0.595 |
| wk9towk15 | 979 | 8755.394 | 6.061 | -4.002 | 5.350 | 0.016 | 0.594 |
| wk10towk18 | 979 | 8755.401 | 6.067 | -3.213 | 6.196 | 0.008 | 0.594 |
| wk9towk21 | 979 | 8755.412 | 6.078 | -3.389 | 6.005 | 0.009 | 0.594 |
| wk12towk17 | 979 | 8755.420 | 6.086 | -1.701 | 6.839 | 0.002 | 0.595 |
| wk12towk18 | 979 | 8755.424 | 6.091 | -3.111 | 6.170 | 0.007 | 0.594 |
| wk9towk14 | 979 | 8755.432 | 6.098 | -4.154 | 4.656 | 0.023 | 0.594 |
| wk1towk4 | 979 | 8755.462 | 6.129 | -3.847 | 2.976 | 0.045 | 0.593 |
| wk11towk19 | 979 | 8755.468 | 6.135 | -3.274 | 5.854 | 0.009 | 0.594 |
| wk10towk16 | 979 | 8755.472 | 6.138 | -2.007 | 6.553 | 0.003 | 0.595 |
| wk15to24 | 979 | 8755.472 | 6.139 | -2.250 | 6.455 | 0.003 | 0.595 |
| wk12towk19 | 979 | 8755.474 | 6.140 | -2.830 | 6.155 | 0.006 | 0.595 |
| wk14to24 | 979 | 8755.487 | 6.154 | -2.502 | 6.285 | 0.004 | 0.595 |
| wk12towk21 | 979 | 8755.495 | 6.161 | -2.159 | 6.412 | 0.003 | 0.595 |
| wk8towk18 | 979 | 8755.496 | 6.163 | -3.361 | 5.654 | 0.010 | 0.594 |
| wk11towk16 | 979 | 8755.496 | 6.163 | -2.597 | 6.201 | 0.005 | 0.595 |
| wk7to23 | 979 | 8755.498 | 6.165 | -1.747 | 6.543 | 0.002 | 0.595 |
| wk11towk13 | 979 | 8755.499 | 6.166 | -3.968 | 4.679 | 0.021 | 0.594 |
| wk7to24 | 979 | 8755.508 | 6.174 | -1.530 | 6.570 | 0.002 | 0.595 |
| wk16to24 | 979 | 8755.516 | 6.183 | -2.796 | 6.009 | 0.006 | 0.594 |
| wk10towk19 | 979 | 8755.519 | 6.185 | -2.800 | 5.998 | 0.006 | 0.595 |
| wk11towk21 | 979 | 8755.528 | 6.194 | -2.624 | 6.067 | 0.005 | 0.595 |
| wk1to23 | 979 | 8755.529 | 6.196 | -2.472 | 6.144 | 0.005 | 0.595 |
| wk1to24 | 979 | 8755.534 | 6.201 | -2.319 | 6.198 | 0.004 | 0.595 |
| we18to24 | 979 | 8755.536 | 6.202 | -3.307 | 5.532 | 0.010 | 0.594 |
| wk8towk17 | 979 | 8755.546 | 6.212 | -2.781 | 5.905 | 0.006 | 0.594 |
| wk9towk13 | 979 | 8755.556 | 6.222 | -3.889 | 4.438 | 0.022 | 0.594 |
| wk12towk16 | 979 | 8755.557 | 6.223 | -1.235 | 6.472 | 0.001 | 0.595 |
| wk1towk22 | 979 | 8755.559 | 6.226 | -2.796 | 5.844 | 0.007 | 0.595 |
| wk10towk21 | 979 | 8755.570 | 6.237 | -2.202 | 6.122 | 0.004 | 0.595 |
| wk7towk22 | 979 | 8755.581 | 6.248 | -2.258 | 6.058 | 0.004 | 0.595 |
| wk6to24 | 979 | 8755.585 | 6.252 | -0.111 | 6.504 | 0.000 | 0.595 |
| wk20to24 | 979 | 8755.591 | 6.258 | -2.563 | 5.866 | 0.006 | 0.595 |
| wk8towk19 | 979 | 8755.596 | 6.263 | -3.017 | 5.539 | 0.008 | 0.594 |
| wk6to23 | 979 | 8755.597 | 6.263 | -0.243 | 6.462 | 0.000 | 0.595 |
| wk8towk21 | 979 | 8755.627 | 6.294 | -2.584 | 5.723 | 0.006 | 0.595 |
| wk17to18 | 979 | 8755.634 | 6.301 | -3.765 | 4.156 | 0.022 | 0.593 |
| wk3to23 | 979 | 8755.641 | 6.308 | -1.815 | 6.029 | 0.003 | 0.595 |
| wk22to24 | 979 | 8755.642 | 6.309 | -3.481 | 4.818 | 0.015 | 0.594 |
| wk3to24 | 979 | 8755.644 | 6.311 | -1.662 | 6.071 | 0.002 | 0.595 |
| wk10towk15 | 979 | 8755.654 | 6.321 | -2.455 | 5.700 | 0.006 | 0.595 |
| wk2to24 | 979 | 8755.662 | 6.329 | -1.031 | 6.168 | 0.001 | 0.595 |
| wk9towk20 | 979 | 8755.663 | 6.329 | -2.535 | 5.625 | 0.006 | 0.595 |
| wk2to23 | 979 | 8755.671 | 6.338 | -1.153 | 6.115 | 0.001 | 0.595 |
| wk4to24 | 979 | 8755.671 | 6.338 | -1.013 | 6.143 | 0.001 | 0.595 |
| wk4to23 | 979 | 8755.677 | 6.344 | -1.150 | 6.096 | 0.001 | 0.595 |
| wk8towk16 | 979 | 8755.680 | 6.346 | -2.509 | 5.579 | 0.006 | 0.595 |
| wk3towk22 | 979 | 8755.693 | 6.359 | -2.182 | 5.707 | 0.004 | 0.595 |
| wk21to21 | 979 | 8755.701 | 6.368 | -3.672 | 3.735 | 0.027 | 0.594 |
| wk1towk18 | 979 | 8755.710 | 6.376 | -1.933 | 5.760 | 0.003 | 0.595 |
| wk6towk22 | 979 | 8755.719 | 6.386 | -0.834 | 6.022 | 0.001 | 0.595 |
| wk11towk15 | 979 | 8755.726 | 6.392 | -2.853 | 5.170 | 0.009 | 0.595 |
| wk1towk17 | 979 | 8755.730 | 6.397 | -1.414 | 5.867 | 0.002 | 0.595 |
| wk2towk22 | 979 | 8755.732 | 6.398 | -1.560 | 5.821 | 0.002 | 0.595 |
| wk12towk20 | 979 | 8755.749 | 6.416 | -1.051 | 5.892 | 0.001 | 0.595 |
| wk19to23 | 979 | 8755.753 | 6.419 | -2.555 | 5.294 | 0.007 | 0.595 |
| wk11towk14 | 979 | 8755.760 | 6.427 | -3.368 | 4.390 | 0.017 | 0.594 |
| wk4towk22 | 979 | 8755.761 | 6.427 | -1.567 | 5.728 | 0.002 | 0.595 |
| wk10towk14 | 979 | 8755.766 | 6.433 | -2.962 | 4.915 | 0.011 | 0.595 |
| wk1towk16 | 979 | 8755.769 | 6.436 | -1.308 | 5.775 | 0.001 | 0.595 |
| wk7towk18 | 979 | 8755.774 | 6.441 | -0.693 | 5.875 | 0.000 | 0.595 |
| wk11towk20 | 979 | 8755.774 | 6.441 | -1.686 | 5.646 | 0.003 | 0.595 |
| wk10towk20 | 979 | 8755.788 | 6.454 | -1.339 | 5.710 | 0.002 | 0.595 |
| wk13towk18 | 979 | 8755.794 | 6.460 | -2.411 | 5.245 | 0.006 | 0.594 |
| wk1towk21 | 979 | 8755.794 | 6.461 | -1.521 | 5.638 | 0.002 | 0.595 |
| wk7towk21 | 979 | 8755.798 | 6.465 | -0.451 | 5.829 | 0.000 | 0.595 |
| wk13towk21 | 979 | 8755.800 | 6.467 | -1.658 | 5.576 | 0.003 | 0.595 |
| wk1towk19 | 979 | 8755.808 | 6.475 | -1.727 | 5.526 | 0.003 | 0.595 |
| wk5towk22 | 979 | 8755.820 | 6.487 | -0.350 | 5.772 | 0.000 | 0.595 |
| wk12towk15 | 979 | 8755.824 | 6.490 | -1.971 | 5.379 | 0.004 | 0.595 |
| wk8towk20 | 979 | 8755.828 | 6.495 | -1.899 | 5.396 | 0.004 | 0.595 |
| wk10towk13 | 979 | 8755.836 | 6.502 | -2.710 | 4.884 | 0.009 | 0.595 |
| wk7towk19 | 979 | 8755.837 | 6.504 | -0.668 | 5.693 | 0.000 | 0.595 |
| wk8towk15 | 979 | 8755.840 | 6.507 | -2.613 | 4.948 | 0.008 | 0.595 |
| wk1towk15 | 979 | 8755.851 | 6.518 | -1.502 | 5.473 | 0.002 | 0.595 |
| wk19to22 | 979 | 8755.852 | 6.519 | -3.247 | 4.131 | 0.018 | 0.594 |
| wk2towk18 | 979 | 8755.860 | 6.526 | -0.427 | 5.653 | 0.000 | 0.595 |
| wk3towk17 | 979 | 8755.864 | 6.531 | -0.522 | 5.633 | 0.000 | 0.595 |
| wk19to24 | 979 | 8755.865 | 6.531 | -1.863 | 5.300 | 0.004 | 0.595 |
| wk13towk17 | 979 | 8755.867 | 6.534 | -1.065 | 5.540 | 0.001 | 0.595 |
| wk3towk18 | 979 | 8755.871 | 6.538 | -1.130 | 5.514 | 0.001 | 0.595 |
| wk2towk21 | 979 | 8755.886 | 6.553 | -0.289 | 5.588 | 0.000 | 0.595 |
| wk13towk19 | 979 | 8755.892 | 6.558 | -2.067 | 5.123 | 0.005 | 0.595 |
| wk3towk21 | 979 | 8755.897 | 6.563 | -0.876 | 5.492 | 0.001 | 0.595 |
| wk15to21 | 979 | 8755.900 | 6.566 | -0.435 | 5.540 | 0.000 | 0.595 |
| wk4towk18 | 979 | 8755.903 | 6.570 | -0.343 | 5.537 | 0.000 | 0.595 |
| wk8towk14 | 979 | 8755.909 | 6.576 | -2.874 | 4.450 | 0.012 | 0.594 |
| wk1towk20 | 979 | 8755.910 | 6.576 | -1.101 | 5.410 | 0.001 | 0.595 |
| wk4towk21 | 979 | 8755.920 | 6.587 | -0.211 | 5.498 | 0.000 | 0.595 |
| wk3towk16 | 979 | 8755.921 | 6.588 | -0.379 | 5.485 | 0.000 | 0.595 |
| wk2towk19 | 979 | 8755.930 | 6.597 | -0.420 | 5.456 | 0.000 | 0.595 |
| wk3towk19 | 979 | 8755.934 | 6.601 | -1.047 | 5.353 | 0.001 | 0.595 |
| wk1towk13 | 979 | 8755.946 | 6.612 | -1.551 | 5.182 | 0.003 | 0.595 |
| wk1towk14 | 979 | 8755.958 | 6.625 | -1.682 | 5.096 | 0.003 | 0.595 |
| wk4towk19 | 979 | 8755.964 | 6.631 | -0.350 | 5.370 | 0.000 | 0.595 |
| wk14towk21 | 979 | 8755.973 | 6.640 | -0.883 | 5.278 | 0.001 | 0.595 |
| wk12towk14 | 979 | 8755.999 | 6.666 | -2.687 | 4.321 | 0.011 | 0.594 |
| wk12towk13 | 979 | 8756.010 | 6.677 | -2.607 | 4.363 | 0.010 | 0.594 |
| wk3towk20 | 979 | 8756.011 | 6.678 | -0.459 | 5.236 | 0.000 | 0.595 |
| wk8towk13 | 979 | 8756.012 | 6.678 | -2.654 | 4.312 | 0.011 | 0.594 |
| wk9towk12 | 979 | 8756.030 | 6.697 | -2.886 | 3.938 | 0.016 | 0.594 |
| wk13towk16 | 979 | 8756.040 | 6.706 | -0.679 | 5.134 | 0.000 | 0.595 |
| wk3towk15 | 979 | 8756.045 | 6.711 | -0.607 | 5.131 | 0.000 | 0.595 |
| wk13towk20 | 979 | 8756.074 | 6.741 | -0.724 | 5.039 | 0.001 | 0.595 |
| wk16to21 | 979 | 8756.082 | 6.749 | -1.032 | 4.958 | 0.001 | 0.595 |
| wk1towk12 | 979 | 8756.110 | 6.777 | -1.042 | 4.884 | 0.001 | 0.595 |
| wk2towk14 | 979 | 8756.117 | 6.783 | -0.164 | 4.984 | 0.000 | 0.595 |
| wk3towk13 | 979 | 8756.130 | 6.797 | -0.653 | 4.908 | 0.001 | 0.595 |
| wk1towk5 | 979 | 8756.133 | 6.799 | -2.944 | 3.182 | 0.024 | 0.594 |
| wk14towk18 | 979 | 8756.156 | 6.823 | -1.307 | 4.693 | 0.002 | 0.595 |
| wk15to19 | 979 | 8756.170 | 6.836 | -0.772 | 4.790 | 0.001 | 0.595 |
| wk3towk14 | 979 | 8756.173 | 6.840 | -0.857 | 4.766 | 0.001 | 0.595 |
| wk14towk19 | 979 | 8756.181 | 6.847 | -1.175 | 4.670 | 0.002 | 0.595 |
| wk17to21 | 979 | 8756.191 | 6.858 | -1.541 | 4.520 | 0.003 | 0.595 |
| wk7towk14 | 979 | 8756.199 | 6.865 | -0.284 | 4.777 | 0.000 | 0.595 |
| wk16to18 | 979 | 8756.216 | 6.883 | -1.837 | 4.312 | 0.005 | 0.594 |
| wk15to18 | 979 | 8756.222 | 6.889 | -0.769 | 4.663 | 0.001 | 0.595 |
| wk14towk20 | 979 | 8756.242 | 6.909 | -0.011 | 4.683 | 0.000 | 0.595 |
| wk13towk15 | 979 | 8756.243 | 6.910 | -1.478 | 4.413 | 0.003 | 0.595 |
| wk1towk1 | 979 | 8756.245 | 6.912 | -2.351 | 1.605 | 0.057 | 0.592 |
| wk3towk5 | 979 | 8756.283 | 6.950 | -2.738 | 2.887 | 0.025 | 0.594 |
| wk4towk14 | 979 | 8756.284 | 6.951 | -0.051 | 4.585 | 0.000 | 0.595 |
| wk3towk12 | 979 | 8756.284 | 6.951 | -0.154 | 4.583 | 0.000 | 0.595 |
| wk18to18 | 979 | 8756.302 | 6.968 | -2.720 | 2.727 | 0.028 | 0.594 |
| wk1towk11 | 979 | 8756.303 | 6.970 | -0.865 | 4.454 | 0.001 | 0.595 |
| wk17to19 | 979 | 8756.304 | 6.971 | -2.196 | 3.819 | 0.010 | 0.594 |
| wk17to17 | 979 | 8756.308 | 6.974 | -1.316 | 4.315 | 0.003 | 0.595 |
| wk2towk4 | 979 | 8756.314 | 6.981 | -2.634 | 3.134 | 0.020 | 0.594 |
| wk1towk10 | 979 | 8756.318 | 6.985 | -0.451 | 4.484 | 0.000 | 0.595 |
| wk16to19 | 979 | 8756.333 | 7.000 | -1.429 | 4.212 | 0.003 | 0.595 |
| wk1towk9 | 979 | 8756.351 | 7.018 | -0.642 | 4.385 | 0.001 | 0.595 |
| wk8towk12 | 979 | 8756.368 | 7.034 | -1.883 | 3.889 | 0.007 | 0.595 |
| wk13towk13 | 979 | 8756.368 | 7.035 | -2.470 | 3.267 | 0.017 | 0.594 |
| wk10towk12 | 979 | 8756.374 | 7.040 | -1.295 | 4.168 | 0.003 | 0.595 |
| wk13towk14 | 979 | 8756.392 | 7.059 | -2.300 | 3.444 | 0.013 | 0.594 |
| wk11towk12 | 979 | 8756.405 | 7.072 | -2.045 | 3.670 | 0.009 | 0.595 |
| wk3towk11 | 979 | 8756.488 | 7.155 | -0.056 | 4.141 | 0.000 | 0.595 |
| wk16to20 | 979 | 8756.492 | 7.159 | -0.005 | 4.132 | 0.000 | 0.595 |
| wk18to21 | 979 | 8756.529 | 7.196 | -1.147 | 3.873 | 0.003 | 0.595 |
| wk9towk11 | 979 | 8756.562 | 7.228 | -2.184 | 3.064 | 0.015 | 0.594 |
| wk1towk6 | 979 | 8756.603 | 7.270 | -1.638 | 3.480 | 0.007 | 0.595 |
| wk9towk9 | 979 | 8756.711 | 7.377 | -2.203 | 2.033 | 0.032 | 0.593 |
| wk17to20 | 979 | 8756.712 | 7.378 | -0.423 | 3.678 | 0.000 | 0.595 |
| wk2towk5 | 979 | 8756.750 | 7.417 | -1.517 | 3.237 | 0.006 | 0.595 |
| wk3towk3 | 979 | 8756.757 | 7.423 | -2.166 | 2.197 | 0.025 | 0.593 |
| wk8towk11 | 979 | 8756.844 | 7.511 | -1.401 | 3.117 | 0.006 | 0.595 |
| wk18to19 | 979 | 8756.875 | 7.542 | -1.607 | 2.910 | 0.009 | 0.595 |
| wk14towk15 | 979 | 8756.897 | 7.564 | -0.011 | 3.375 | 0.000 | 0.595 |
| wk9towk10 | 979 | 8756.929 | 7.596 | -1.645 | 2.758 | 0.010 | 0.594 |
| wk11towk11 | 979 | 8756.942 | 7.609 | -1.760 | 2.598 | 0.014 | 0.594 |
| wk10towk11 | 979 | 8756.955 | 7.622 | -0.885 | 3.144 | 0.002 | 0.595 |
| wk1towk3 | 979 | 8757.028 | 7.695 | -1.741 | 2.409 | 0.015 | 0.594 |
| wk3towk6 | 979 | 8757.034 | 7.700 | -0.815 | 3.035 | 0.002 | 0.595 |
| wk8towk10 | 979 | 8757.066 | 7.733 | -0.919 | 2.947 | 0.003 | 0.595 |
| wk12towk12 | 979 | 8757.082 | 7.749 | -0.412 | 3.047 | 0.001 | 0.595 |
| wk4towk5 | 979 | 8757.104 | 7.770 | -1.578 | 2.453 | 0.012 | 0.595 |
| wk18to20 | 979 | 8757.128 | 7.795 | -0.164 | 3.003 | 0.000 | 0.595 |
| wk8towk9 | 979 | 8757.254 | 7.921 | -1.227 | 2.485 | 0.007 | 0.594 |
| wk14towk14 | 979 | 8757.531 | 8.198 | -0.820 | 2.299 | 0.004 | 0.595 |
| wk2towk3 | 979 | 8757.579 | 8.246 | -0.170 | 2.394 | 0.000 | 0.595 |
| wk1towk2 | 979 | 8757.734 | 8.401 | -0.904 | 1.994 | 0.006 | 0.595 |
| wk19to19 | 979 | 8758.012 | 8.679 | -0.100 | 1.930 | 0.000 | 0.595 |

**Table S7b**. *D. platanoidis* emergence phenology as a function of temperature delaying emergence, weather variables selected as those with a positive coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and June 17th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 8759.12. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk7towk7\*** | **979** | **8750.173** | **0.000** | **6.610** | **2.230** | **0.180** | **0.589** |
| wk6towk7 | 979 | 8753.014 | 2.841 | 5.234 | 2.356 | 0.118 | 0.591 |
| wk6towk8 | 979 | 8753.821 | 3.648 | 5.492 | 2.950 | 0.089 | 0.592 |
| wk7towk8 | 979 | 8754.607 | 4.434 | 4.651 | 2.844 | 0.069 | 0.592 |
| wk5towk8 | 979 | 8754.960 | 4.786 | 4.400 | 2.960 | 0.060 | 0.593 |
| wk5towk7 | 979 | 8755.133 | 4.960 | 3.818 | 2.450 | 0.065 | 0.593 |
| wk6towk17 | 979 | 8755.608 | 5.435 | 2.110 | 6.030 | 0.004 | 0.595 |
| wk6towk16 | 979 | 8755.662 | 5.489 | 2.310 | 5.749 | 0.005 | 0.595 |
| wk5to24 | 979 | 8755.686 | 5.513 | 0.290 | 6.177 | 0.000 | 0.595 |
| wk5to23 | 979 | 8755.698 | 5.524 | 0.193 | 6.145 | 0.000 | 0.595 |
| wk7towk17 | 979 | 8755.706 | 5.533 | 0.359 | 6.111 | 0.000 | 0.595 |
| wk5towk17 | 979 | 8755.714 | 5.540 | 2.197 | 5.631 | 0.004 | 0.595 |
| wk6towk9 | 979 | 8755.731 | 5.558 | 3.616 | 3.546 | 0.030 | 0.594 |
| wk5towk16 | 979 | 8755.752 | 5.578 | 2.375 | 5.409 | 0.006 | 0.595 |
| wk6towk18 | 979 | 8755.770 | 5.597 | 0.912 | 5.854 | 0.001 | 0.595 |
| wk7towk16 | 979 | 8755.806 | 5.633 | 0.590 | 5.792 | 0.000 | 0.595 |
| wk6towk21 | 979 | 8755.811 | 5.638 | 0.801 | 5.749 | 0.001 | 0.595 |
| wk6towk10 | 979 | 8755.812 | 5.639 | 3.451 | 3.764 | 0.024 | 0.594 |
| wk2towk17 | 979 | 8755.828 | 5.655 | 0.247 | 5.755 | 0.000 | 0.595 |
| wk6towk19 | 979 | 8755.858 | 5.685 | 0.721 | 5.626 | 0.000 | 0.595 |
| wk5towk18 | 979 | 8755.862 | 5.689 | 1.195 | 5.524 | 0.001 | 0.595 |
| wk2towk16 | 979 | 8755.864 | 5.690 | 0.403 | 5.644 | 0.000 | 0.595 |
| wk4towk17 | 979 | 8755.866 | 5.692 | 0.406 | 5.638 | 0.000 | 0.595 |
| wk5towk9 | 979 | 8755.872 | 5.698 | 3.366 | 3.525 | 0.026 | 0.594 |
| wk5towk21 | 979 | 8755.887 | 5.713 | 1.046 | 5.488 | 0.001 | 0.595 |
| wk6towk20 | 979 | 8755.900 | 5.727 | 1.244 | 5.403 | 0.002 | 0.595 |
| wk5towk10 | 979 | 8755.906 | 5.733 | 3.268 | 3.711 | 0.022 | 0.594 |
| wk7towk20 | 979 | 8755.921 | 5.747 | 0.110 | 5.499 | 0.000 | 0.595 |
| wk6towk15 | 979 | 8755.922 | 5.749 | 1.727 | 5.184 | 0.003 | 0.595 |
| wk4towk16 | 979 | 8755.931 | 5.758 | 0.568 | 5.440 | 0.000 | 0.595 |
| wk5towk19 | 979 | 8755.938 | 5.765 | 0.996 | 5.353 | 0.001 | 0.595 |
| wk5towk20 | 979 | 8755.965 | 5.791 | 1.409 | 5.174 | 0.002 | 0.595 |
| wk2towk15 | 979 | 8755.978 | 5.804 | 0.135 | 5.343 | 0.000 | 0.595 |
| wk2towk20 | 979 | 8755.981 | 5.807 | 0.097 | 5.336 | 0.000 | 0.595 |
| wk5towk15 | 979 | 8755.991 | 5.818 | 1.866 | 4.923 | 0.004 | 0.595 |
| wk6towk12 | 979 | 8755.996 | 5.822 | 2.529 | 4.485 | 0.010 | 0.595 |
| wk6towk13 | 979 | 8756.009 | 5.835 | 1.903 | 4.854 | 0.005 | 0.595 |
| wk4towk20 | 979 | 8756.023 | 5.849 | 0.199 | 5.222 | 0.000 | 0.595 |
| wk7towk15 | 979 | 8756.032 | 5.859 | 0.158 | 5.199 | 0.000 | 0.595 |
| wk2towk13 | 979 | 8756.065 | 5.892 | 0.149 | 5.114 | 0.000 | 0.595 |
| wk5towk13 | 979 | 8756.067 | 5.893 | 2.022 | 4.624 | 0.006 | 0.595 |
| wk5towk12 | 979 | 8756.103 | 5.929 | 2.425 | 4.227 | 0.010 | 0.595 |
| wk4towk15 | 979 | 8756.116 | 5.942 | 0.260 | 4.981 | 0.000 | 0.595 |
| wk6towk14 | 979 | 8756.148 | 5.975 | 1.219 | 4.741 | 0.002 | 0.595 |
| wk2towk12 | 979 | 8756.183 | 6.009 | 0.609 | 4.783 | 0.000 | 0.595 |
| wk15to20 | 979 | 8756.184 | 6.010 | 0.575 | 4.785 | 0.000 | 0.595 |
| wk7towk13 | 979 | 8756.202 | 6.029 | 0.177 | 4.774 | 0.000 | 0.595 |
| wk5towk14 | 979 | 8756.207 | 6.034 | 1.417 | 4.526 | 0.003 | 0.595 |
| wk4towk13 | 979 | 8756.235 | 6.062 | 0.281 | 4.691 | 0.000 | 0.595 |
| wk4towk8 | 979 | 8756.238 | 6.065 | 2.652 | 3.456 | 0.017 | 0.594 |
| wk14towk17 | 979 | 8756.246 | 6.072 | 0.278 | 4.666 | 0.000 | 0.595 |
| wk2towk8 | 979 | 8756.256 | 6.082 | 2.256 | 3.908 | 0.010 | 0.594 |
| wk6towk11 | 979 | 8756.281 | 6.107 | 2.262 | 3.827 | 0.010 | 0.595 |
| wk2towk10 | 979 | 8756.286 | 6.112 | 1.269 | 4.385 | 0.002 | 0.595 |
| wk5towk11 | 979 | 8756.310 | 6.136 | 2.263 | 3.739 | 0.011 | 0.595 |
| wk15to17 | 979 | 8756.323 | 6.150 | 1.268 | 4.295 | 0.002 | 0.595 |
| wk7towk12 | 979 | 8756.327 | 6.153 | 0.898 | 4.392 | 0.001 | 0.595 |
| wk2towk9 | 979 | 8756.344 | 6.171 | 1.182 | 4.275 | 0.002 | 0.595 |
| wk4towk12 | 979 | 8756.366 | 6.193 | 0.736 | 4.335 | 0.001 | 0.595 |
| wk2towk11 | 979 | 8756.375 | 6.202 | 0.633 | 4.333 | 0.001 | 0.595 |
| wk20to21 | 979 | 8756.435 | 6.261 | 0.609 | 4.206 | 0.001 | 0.595 |
| wk4towk10 | 979 | 8756.439 | 6.266 | 1.461 | 3.950 | 0.004 | 0.595 |
| wk3towk10 | 979 | 8756.439 | 6.266 | 0.500 | 4.212 | 0.000 | 0.595 |
| wk2towk7 | 979 | 8756.453 | 6.279 | 1.985 | 3.593 | 0.009 | 0.595 |
| wk4towk9 | 979 | 8756.488 | 6.315 | 1.431 | 3.851 | 0.004 | 0.595 |
| wk14towk16 | 979 | 8756.489 | 6.316 | 0.675 | 4.080 | 0.001 | 0.595 |
| wk3towk8 | 979 | 8756.492 | 6.318 | 1.561 | 3.780 | 0.005 | 0.595 |
| wk3towk9 | 979 | 8756.502 | 6.328 | 0.358 | 4.096 | 0.000 | 0.595 |
| wk4towk7 | 979 | 8756.511 | 6.337 | 2.302 | 3.039 | 0.017 | 0.594 |
| wk1towk8 | 979 | 8756.521 | 6.347 | 0.411 | 4.052 | 0.000 | 0.595 |
| wk7towk10 | 979 | 8756.538 | 6.364 | 1.810 | 3.516 | 0.008 | 0.594 |
| wk15to16 | 979 | 8756.551 | 6.378 | 1.742 | 3.532 | 0.007 | 0.594 |
| wk4towk11 | 979 | 8756.567 | 6.394 | 0.756 | 3.902 | 0.001 | 0.595 |
| wk7towk9 | 979 | 8756.680 | 6.506 | 1.759 | 3.218 | 0.009 | 0.594 |
| wk23to24 | 979 | 8756.698 | 6.524 | 1.753 | 3.181 | 0.009 | 0.594 |
| wk7towk11 | 979 | 8756.701 | 6.527 | 0.848 | 3.618 | 0.002 | 0.595 |
| wk1towk7 | 979 | 8756.702 | 6.528 | 0.181 | 3.717 | 0.000 | 0.595 |
| wk3towk7 | 979 | 8756.706 | 6.533 | 1.296 | 3.448 | 0.004 | 0.595 |
| wk15to15 | 979 | 8756.717 | 6.543 | 1.620 | 3.240 | 0.007 | 0.594 |
| wk16to17 | 979 | 8756.728 | 6.554 | 0.355 | 3.656 | 0.000 | 0.595 |
| wk6towk6 | 979 | 8756.746 | 6.572 | 2.130 | 1.839 | 0.037 | 0.593 |
| wk2towk6 | 979 | 8756.896 | 6.723 | 0.032 | 3.377 | 0.000 | 0.595 |
| wk19to21 | 979 | 8756.940 | 6.766 | 0.153 | 3.301 | 0.000 | 0.595 |
| we20to20 | 979 | 8757.111 | 6.937 | 1.695 | 2.272 | 0.017 | 0.594 |
| wk24to24 | 979 | 8757.184 | 7.011 | 0.457 | 2.885 | 0.001 | 0.595 |
| wk5towk6 | 979 | 8757.207 | 7.033 | 1.679 | 2.026 | 0.020 | 0.594 |
| wk16to16 | 979 | 8757.300 | 7.126 | 0.847 | 2.612 | 0.003 | 0.595 |
| wk10towk10 | 979 | 8757.345 | 7.172 | 0.531 | 2.641 | 0.001 | 0.595 |
| wk4towk6 | 979 | 8757.448 | 7.274 | 0.160 | 2.558 | 0.000 | 0.595 |
| wk8towk8 | 979 | 8757.460 | 7.287 | 0.654 | 2.454 | 0.002 | 0.595 |
| wk19to20 | 979 | 8757.570 | 7.396 | 0.759 | 2.274 | 0.003 | 0.595 |
| wk2towk2 | 979 | 8757.619 | 7.446 | 1.267 | 1.836 | 0.014 | 0.594 |
| wk5towk5 | 979 | 8758.002 | 7.828 | 0.665 | 1.810 | 0.004 | 0.595 |

**Table S7c**. *D. platanoidis* emergence phenology as a function of precipitation advancing emergence, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and June 17th Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc 8759.12. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk17to23\*** | **979** | **8753.583** | **0.000** | **-9.727** | **7.382** | **0.047** | **0.593** |
| Wk17to24 | 979 | 8754.241 | 0.658 | -7.568 | 6.951 | 0.033 | 0.593 |
| Wk16to23 | 979 | 8754.286 | 0.704 | -7.433 | 7.069 | 0.031 | 0.594 |
| Wk18to23 | 979 | 8754.390 | 0.807 | -7.073 | 6.985 | 0.028 | 0.593 |
| Wk17to20 | 979 | 8754.497 | 0.914 | -6.619 | 5.910 | 0.033 | 0.593 |
| Wk8to23 | 979 | 8754.549 | 0.967 | -0.910 | 10.877 | 0.000 | 0.595 |
| Wk15to23 | 979 | 8754.550 | 0.968 | -6.349 | 7.612 | 0.020 | 0.594 |
| Wk9to23 | 979 | 8754.572 | 0.989 | -4.321 | 9.734 | 0.006 | 0.595 |
| Wk10to23 | 979 | 8754.619 | 1.036 | -5.148 | 8.828 | 0.010 | 0.594 |
| Wk8to24 | 979 | 8754.620 | 1.038 | -1.028 | 10.483 | 0.000 | 0.595 |
| Wk16to24 | 979 | 8754.626 | 1.043 | -6.244 | 6.812 | 0.024 | 0.594 |
| we9to24 | 979 | 8754.669 | 1.086 | -3.948 | 9.368 | 0.005 | 0.595 |
| we18to24 | 979 | 8754.686 | 1.103 | -6.010 | 6.854 | 0.021 | 0.594 |
| Wk23to23 | 979 | 8754.705 | 1.122 | -4.187 | 2.468 | 0.073 | 0.591 |
| Wk12to23 | 979 | 8754.740 | 1.158 | -4.429 | 8.650 | 0.008 | 0.595 |
| Wk10to24 | 979 | 8754.743 | 1.160 | -4.613 | 8.494 | 0.008 | 0.594 |
| Wk20to23 | 979 | 8754.748 | 1.166 | -5.885 | 6.329 | 0.025 | 0.594 |
| Wk17to21 | 979 | 8754.762 | 1.179 | -5.747 | 6.738 | 0.021 | 0.594 |
| Wk11to23 | 979 | 8754.767 | 1.184 | -4.425 | 8.496 | 0.008 | 0.595 |
| Wk17to22 | 979 | 8754.768 | 1.185 | -5.334 | 7.546 | 0.014 | 0.594 |
| Wk13to23 | 979 | 8754.797 | 1.214 | -4.711 | 8.076 | 0.010 | 0.595 |
| Wk15to24 | 979 | 8754.807 | 1.225 | -5.327 | 7.244 | 0.016 | 0.594 |
| Wk20to24 | 979 | 8754.845 | 1.263 | -5.453 | 6.636 | 0.019 | 0.594 |
| Wk12to24 | 979 | 8754.862 | 1.279 | -3.944 | 8.294 | 0.007 | 0.595 |
| Wk9toWk21 | 979 | 8754.863 | 1.280 | -0.964 | 9.281 | 0.000 | 0.595 |
| Wk11to24 | 979 | 8754.868 | 1.285 | -4.013 | 8.217 | 0.007 | 0.595 |
| Wk16to20 | 979 | 8754.885 | 1.302 | -5.453 | 6.153 | 0.022 | 0.594 |
| Wk9toWk20 | 979 | 8754.893 | 1.311 | -1.673 | 9.027 | 0.001 | 0.595 |
| Wk16to21 | 979 | 8754.897 | 1.314 | -5.019 | 7.047 | 0.015 | 0.594 |
| Wk13to24 | 979 | 8754.930 | 1.348 | -4.162 | 7.763 | 0.008 | 0.595 |
| Wk9toWk22 | 979 | 8754.936 | 1.353 | -0.485 | 8.986 | 0.000 | 0.595 |
| Wk19to23 | 979 | 8754.939 | 1.356 | -5.051 | 6.670 | 0.016 | 0.594 |
| Wk19to24 | 979 | 8755.003 | 1.421 | -4.663 | 6.821 | 0.013 | 0.594 |
| Wk9toWk19 | 979 | 8755.016 | 1.434 | -0.781 | 8.607 | 0.000 | 0.595 |
| Wk10toWk21 | 979 | 8755.051 | 1.468 | -2.119 | 8.203 | 0.002 | 0.595 |
| Wk10toWk20 | 979 | 8755.052 | 1.469 | -2.772 | 7.969 | 0.003 | 0.595 |
| Wk14to23 | 979 | 8755.058 | 1.475 | -3.679 | 7.451 | 0.007 | 0.595 |
| Wk15to20 | 979 | 8755.071 | 1.488 | -4.229 | 6.922 | 0.011 | 0.594 |
| Wk10toWk22 | 979 | 8755.080 | 1.497 | -1.634 | 8.200 | 0.001 | 0.595 |
| Wk15to21 | 979 | 8755.090 | 1.508 | -3.384 | 7.482 | 0.006 | 0.595 |
| Wk16to22 | 979 | 8755.121 | 1.539 | -3.802 | 7.041 | 0.009 | 0.595 |
| Wk1toWk3 | 979 | 8755.132 | 1.550 | -4.840 | 4.415 | 0.034 | 0.594 |
| Wk12toWk21 | 979 | 8755.149 | 1.567 | -1.085 | 8.011 | 0.001 | 0.595 |
| Wk12toWk20 | 979 | 8755.155 | 1.573 | -1.841 | 7.833 | 0.002 | 0.595 |
| Wk14to24 | 979 | 8755.167 | 1.584 | -3.279 | 7.190 | 0.006 | 0.595 |
| Wk11toWk21 | 979 | 8755.181 | 1.598 | -1.416 | 7.825 | 0.001 | 0.595 |
| Wk18to20 | 979 | 8755.181 | 1.598 | -4.534 | 5.793 | 0.017 | 0.594 |
| Wk12toWk22 | 979 | 8755.192 | 1.610 | -0.609 | 7.892 | 0.000 | 0.595 |
| Wk11toWk22 | 979 | 8755.193 | 1.610 | -0.989 | 7.849 | 0.000 | 0.595 |
| Wk11toWk20 | 979 | 8755.198 | 1.615 | -2.053 | 7.596 | 0.002 | 0.595 |
| Wk15to22 | 979 | 8755.218 | 1.635 | -2.444 | 7.377 | 0.003 | 0.595 |
| Wk13toWk20 | 979 | 8755.219 | 1.636 | -2.397 | 7.392 | 0.003 | 0.595 |
| Wk10toWk19 | 979 | 8755.221 | 1.638 | -1.974 | 7.527 | 0.002 | 0.595 |
| Wk13toWk21 | 979 | 8755.223 | 1.641 | -1.605 | 7.614 | 0.001 | 0.595 |
| Wk17to19 | 979 | 8755.225 | 1.642 | -4.657 | 4.789 | 0.026 | 0.593 |
| Wk9toWk18 | 979 | 8755.262 | 1.679 | -0.733 | 7.607 | 0.000 | 0.595 |
| Wk13toWk22 | 979 | 8755.309 | 1.727 | -1.024 | 7.391 | 0.001 | 0.595 |
| Wk14toWk21 | 979 | 8755.382 | 1.800 | -0.785 | 7.154 | 0.000 | 0.595 |
| Wk12toWk19 | 979 | 8755.403 | 1.820 | -0.871 | 7.069 | 0.000 | 0.595 |
| Wk11toWk19 | 979 | 8755.404 | 1.821 | -1.227 | 7.008 | 0.001 | 0.595 |
| Wk18to22 | 979 | 8755.414 | 1.831 | -2.098 | 6.733 | 0.003 | 0.595 |
| Wk22to23 | 979 | 8755.424 | 1.842 | -4.187 | 3.846 | 0.033 | 0.593 |
| Wk14toWk20 | 979 | 8755.455 | 1.873 | -1.465 | 6.772 | 0.001 | 0.595 |
| Wk14toWk22 | 979 | 8755.469 | 1.887 | -0.323 | 6.884 | 0.000 | 0.595 |
| Wk9toWk13 | 979 | 8755.478 | 1.896 | -0.215 | 6.857 | 0.000 | 0.595 |
| Wk18to21 | 979 | 8755.492 | 1.909 | -2.765 | 6.125 | 0.006 | 0.595 |
| Wk10toWk18 | 979 | 8755.499 | 1.916 | -1.712 | 6.551 | 0.002 | 0.595 |
| Wk13toWk19 | 979 | 8755.538 | 1.956 | -1.331 | 6.513 | 0.001 | 0.595 |
| Wk21to24 | 979 | 8755.556 | 1.973 | -3.403 | 5.340 | 0.012 | 0.594 |
| Wk15to19 | 979 | 8755.559 | 1.976 | -2.729 | 5.888 | 0.006 | 0.595 |
| Wk16to19 | 979 | 8755.597 | 2.014 | -3.542 | 4.959 | 0.014 | 0.594 |
| Wk21to23 | 979 | 8755.604 | 2.021 | -3.554 | 4.904 | 0.015 | 0.594 |
| Wk10toWk17 | 979 | 8755.623 | 2.040 | -0.431 | 6.368 | 0.000 | 0.595 |
| Wk2toWk3 | 979 | 8755.708 | 2.125 | -3.652 | 3.836 | 0.025 | 0.594 |
| Wk11toWk18 | 979 | 8755.735 | 2.152 | -1.039 | 5.940 | 0.001 | 0.595 |
| Wk17to18 | 979 | 8755.739 | 2.157 | -3.591 | 3.386 | 0.030 | 0.593 |
| Wk22to24 | 979 | 8755.748 | 2.166 | -3.478 | 4.210 | 0.019 | 0.594 |
| Wk10toWk13 | 979 | 8755.750 | 2.167 | -2.004 | 5.600 | 0.003 | 0.594 |
| Wk12toWk18 | 979 | 8755.757 | 2.174 | -0.752 | 5.919 | 0.000 | 0.595 |
| Wk1toWk4 | 979 | 8755.787 | 2.205 | -2.460 | 5.236 | 0.007 | 0.595 |
| Wk14toWk19 | 979 | 8755.807 | 2.224 | -0.522 | 5.797 | 0.000 | 0.595 |
| Wk17to17 | 979 | 8755.836 | 2.253 | -3.416 | 3.184 | 0.030 | 0.592 |
| Wk1toWk5 | 979 | 8755.891 | 2.309 | -0.993 | 5.485 | 0.001 | 0.595 |
| Wk13toWk18 | 979 | 8755.925 | 2.343 | -1.105 | 5.366 | 0.001 | 0.595 |
| Wk19to20 | 979 | 8755.936 | 2.353 | -1.613 | 5.188 | 0.003 | 0.595 |
| Wk10toWk12 | 979 | 8755.958 | 2.376 | -1.181 | 5.255 | 0.001 | 0.595 |
| Wk3toWk3 | 979 | 8755.980 | 2.397 | -3.169 | 2.896 | 0.034 | 0.594 |
| Wk15to18 | 979 | 8755.987 | 2.404 | -2.255 | 4.721 | 0.006 | 0.594 |
| Wk19to21 | 979 | 8755.996 | 2.414 | -0.176 | 5.293 | 0.000 | 0.595 |
| Wk18to19 | 979 | 8756.081 | 2.499 | -2.443 | 4.280 | 0.009 | 0.594 |
| Wk16to18 | 979 | 8756.092 | 2.509 | -2.816 | 3.789 | 0.015 | 0.594 |
| we20to20 | 979 | 8756.134 | 2.552 | -2.336 | 4.205 | 0.009 | 0.594 |
| Wk10toWk11 | 979 | 8756.137 | 2.554 | -2.044 | 4.411 | 0.006 | 0.594 |
| Wk23to24 | 979 | 8756.144 | 2.561 | -2.943 | 2.980 | 0.027 | 0.594 |
| Wk10toWk10 | 979 | 8756.152 | 2.569 | -2.233 | 4.235 | 0.008 | 0.594 |
| Wk12toWk13 | 979 | 8756.177 | 2.595 | -0.535 | 4.806 | 0.000 | 0.595 |
| Wk14toWk18 | 979 | 8756.217 | 2.635 | -0.462 | 4.718 | 0.000 | 0.595 |
| Wk15to17 | 979 | 8756.257 | 2.674 | -0.881 | 4.558 | 0.001 | 0.595 |
| Wk11toWk13 | 979 | 8756.268 | 2.686 | -0.899 | 4.527 | 0.001 | 0.595 |
| Wk2toWk4 | 979 | 8756.282 | 2.700 | -0.872 | 4.500 | 0.001 | 0.595 |
| Wk1toWk2 | 979 | 8756.365 | 2.782 | -2.254 | 3.582 | 0.012 | 0.594 |
| Wk20to21 | 979 | 8756.394 | 2.811 | -0.277 | 4.332 | 0.000 | 0.595 |
| Wk16to17 | 979 | 8756.423 | 2.840 | -2.016 | 3.646 | 0.009 | 0.594 |
| Wk13toWk13 | 979 | 8756.453 | 2.870 | -1.785 | 3.741 | 0.006 | 0.594 |
| Wk11toWk12 | 979 | 8756.566 | 2.983 | -0.042 | 3.983 | 0.000 | 0.595 |
| Wk18to18 | 979 | 8756.676 | 3.094 | -2.141 | 2.756 | 0.017 | 0.594 |
| Wk3toWk4 | 979 | 8757.003 | 3.420 | -0.055 | 3.201 | 0.000 | 0.595 |
| Wk1toWk1 | 979 | 8757.165 | 3.582 | -1.422 | 2.488 | 0.010 | 0.594 |
| Wk11toWk11 | 979 | 8757.192 | 3.609 | -0.681 | 2.825 | 0.002 | 0.595 |
| Wk2toWk2 | 979 | 8757.226 | 3.643 | -0.874 | 2.711 | 0.003 | 0.595 |
| Wk24to24 | 979 | 8757.479 | 3.897 | -0.227 | 2.512 | 0.000 | 0.595 |

**Table S7d**. *D. platanoidis* emergence phenology as a function of precipitation delaying emergence, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and June 17th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 8759.12. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk5toWk8\*** | **979** | **8751.115** | **0.000** | **11.772** | **5.077** | **0.122** | **0.589** |
| Wk6toWk8 | 979 | 8751.322 | 0.207 | 10.332 | 4.420 | 0.122 | 0.588 |
| Wk5toWk9 | 979 | 8751.830 | 0.714 | 10.933 | 5.171 | 0.104 | 0.589 |
| Wk6toWk9 | 979 | 8752.220 | 1.105 | 9.548 | 4.616 | 0.099 | 0.589 |
| Wk5toWk16 | 979 | 8752.351 | 1.236 | 14.630 | 9.054 | 0.063 | 0.590 |
| Wk5toWk15 | 979 | 8752.371 | 1.256 | 14.048 | 8.514 | 0.064 | 0.589 |
| Wk6toWk16 | 979 | 8752.413 | 1.298 | 14.502 | 9.124 | 0.061 | 0.590 |
| Wk6toWk15 | 979 | 8752.422 | 1.306 | 13.940 | 8.549 | 0.062 | 0.589 |
| Wk8toWk8 | 979 | 8752.438 | 1.323 | 6.989 | 3.148 | 0.114 | 0.589 |
| Wk5toWk10 | 979 | 8752.521 | 1.405 | 11.048 | 6.080 | 0.078 | 0.589 |
| Wk4toWk16 | 979 | 8752.614 | 1.499 | 13.071 | 8.201 | 0.061 | 0.590 |
| Wk7toWk8 | 979 | 8752.755 | 1.640 | 7.418 | 3.607 | 0.100 | 0.590 |
| Wk4toWk9 | 979 | 8752.794 | 1.678 | 8.967 | 4.763 | 0.087 | 0.591 |
| Wk4toWk15 | 979 | 8752.803 | 1.688 | 12.009 | 7.591 | 0.059 | 0.589 |
| Wk4toWk8 | 979 | 8752.879 | 1.764 | 8.517 | 4.505 | 0.088 | 0.591 |
| Wk6toWk14 | 979 | 8752.921 | 1.805 | 12.079 | 8.052 | 0.053 | 0.590 |
| Wk5toWk14 | 979 | 8752.927 | 1.811 | 11.989 | 7.960 | 0.055 | 0.590 |
| Wk6toWk10 | 979 | 8753.012 | 1.897 | 9.564 | 5.567 | 0.070 | 0.589 |
| Wk4toWk10 | 979 | 8753.132 | 2.016 | 9.267 | 5.489 | 0.071 | 0.591 |
| Wk7toWk15 | 979 | 8753.140 | 2.025 | 11.599 | 8.297 | 0.049 | 0.591 |
| Wk7toWk16 | 979 | 8753.185 | 2.069 | 11.744 | 8.778 | 0.047 | 0.592 |
| Wk7toWk9 | 979 | 8753.221 | 2.106 | 7.490 | 4.043 | 0.082 | 0.590 |
| Wk5toWk7 | 979 | 8753.282 | 2.167 | 8.623 | 5.118 | 0.070 | 0.591 |
| Wk3toWk16 | 979 | 8753.311 | 2.196 | 11.335 | 8.844 | 0.042 | 0.592 |
| Wk4toWk14 | 979 | 8753.318 | 2.203 | 10.250 | 7.062 | 0.051 | 0.590 |
| Wk5toWk17 | 979 | 8753.333 | 2.218 | 11.505 | 9.430 | 0.037 | 0.592 |
| Wk2toWk16 | 979 | 8753.352 | 2.236 | 11.480 | 9.571 | 0.037 | 0.592 |
| Wk5toWk12 | 979 | 8753.425 | 2.310 | 9.811 | 6.828 | 0.050 | 0.590 |
| Wk6toWk17 | 979 | 8753.429 | 2.314 | 11.155 | 9.553 | 0.034 | 0.592 |
| Wk5toWk11 | 979 | 8753.454 | 2.339 | 9.450 | 6.425 | 0.053 | 0.591 |
| Wk4toWk17 | 979 | 8753.466 | 2.351 | 10.632 | 8.496 | 0.039 | 0.591 |
| Wk6toWk12 | 979 | 8753.469 | 2.354 | 9.674 | 6.788 | 0.048 | 0.590 |
| Wk3toWk15 | 979 | 8753.534 | 2.419 | 10.255 | 8.160 | 0.040 | 0.592 |
| Wk7toWk14 | 979 | 8753.548 | 2.433 | 10.069 | 7.854 | 0.042 | 0.592 |
| Wk6toWk11 | 979 | 8753.564 | 2.449 | 9.084 | 6.273 | 0.051 | 0.590 |
| Wk2toWk15 | 979 | 8753.595 | 2.480 | 10.273 | 8.811 | 0.035 | 0.592 |
| Wk4toWk19 | 979 | 8753.622 | 2.507 | 10.350 | 9.764 | 0.028 | 0.592 |
| Wk5toWk19 | 979 | 8753.631 | 2.516 | 10.326 | 10.679 | 0.024 | 0.593 |
| Wk8toWk9 | 979 | 8753.658 | 2.542 | 6.689 | 3.816 | 0.075 | 0.590 |
| Wk7toWk10 | 979 | 8753.731 | 2.616 | 7.936 | 5.222 | 0.056 | 0.590 |
| Wk6toWk19 | 979 | 8753.742 | 2.627 | 9.665 | 10.848 | 0.021 | 0.593 |
| Wk4toWk22 | 979 | 8753.744 | 2.629 | 9.743 | 10.286 | 0.024 | 0.593 |
| Wk4toWk21 | 979 | 8753.751 | 2.636 | 9.717 | 10.184 | 0.024 | 0.593 |
| Wk6toWk7 | 979 | 8753.758 | 2.643 | 7.071 | 4.306 | 0.067 | 0.591 |
| Wk5toWk21 | 979 | 8753.767 | 2.652 | 9.456 | 11.067 | 0.019 | 0.593 |
| Wk1toWk16 | 979 | 8753.776 | 2.661 | 9.613 | 9.817 | 0.025 | 0.593 |
| Wk5toWk13 | 979 | 8753.780 | 2.664 | 9.149 | 7.405 | 0.038 | 0.591 |
| Wk7toWk12 | 979 | 8753.793 | 2.677 | 8.884 | 6.895 | 0.041 | 0.591 |
| Wk2toWk17 | 979 | 8753.810 | 2.695 | 9.418 | 10.044 | 0.023 | 0.593 |
| Wk5toWk18 | 979 | 8753.827 | 2.711 | 9.351 | 9.868 | 0.023 | 0.593 |
| Wk2toWk19 | 979 | 8753.837 | 2.722 | 8.802 | 11.491 | 0.016 | 0.594 |
| Wk6toWk21 | 979 | 8753.850 | 2.735 | 8.814 | 11.282 | 0.016 | 0.594 |
| Wk4toWk18 | 979 | 8753.859 | 2.744 | 9.219 | 8.967 | 0.027 | 0.592 |
| Wk5toWk22 | 979 | 8753.866 | 2.750 | 8.909 | 10.809 | 0.018 | 0.594 |
| Wk3toWk17 | 979 | 8753.874 | 2.759 | 9.156 | 9.186 | 0.026 | 0.593 |
| Wk5toWk20 | 979 | 8753.878 | 2.763 | 8.822 | 10.828 | 0.017 | 0.593 |
| Wk6toWk13 | 979 | 8753.890 | 2.774 | 8.800 | 7.392 | 0.035 | 0.591 |
| Wk6toWk18 | 979 | 8753.900 | 2.784 | 8.918 | 10.094 | 0.020 | 0.593 |
| Wk4toWk20 | 979 | 8753.901 | 2.786 | 8.963 | 9.838 | 0.021 | 0.593 |
| Wk4toWk12 | 979 | 8753.901 | 2.786 | 8.119 | 5.979 | 0.046 | 0.591 |
| Wk2toWk21 | 979 | 8753.910 | 2.795 | 8.057 | 11.776 | 0.013 | 0.594 |
| Wk3toWk19 | 979 | 8753.917 | 2.802 | 8.680 | 10.539 | 0.018 | 0.593 |
| Wk7toWk11 | 979 | 8753.933 | 2.818 | 8.215 | 6.295 | 0.042 | 0.591 |
| Wk2toWk22 | 979 | 8753.938 | 2.823 | 7.915 | 11.652 | 0.013 | 0.594 |
| Wk8toWk15 | 979 | 8753.943 | 2.827 | 8.794 | 8.136 | 0.031 | 0.593 |
| Wk1toWk15 | 979 | 8753.947 | 2.832 | 8.816 | 9.167 | 0.024 | 0.593 |
| Wk4toWk11 | 979 | 8753.957 | 2.842 | 7.785 | 5.634 | 0.048 | 0.591 |
| Wk6toWk20 | 979 | 8753.962 | 2.847 | 8.136 | 11.044 | 0.014 | 0.594 |
| Wk3toWk22 | 979 | 8753.967 | 2.852 | 8.138 | 10.972 | 0.015 | 0.594 |
| Wk7toWk17 | 979 | 8753.969 | 2.854 | 8.704 | 9.236 | 0.024 | 0.593 |
| Wk6toWk22 | 979 | 8753.972 | 2.857 | 8.152 | 10.892 | 0.015 | 0.594 |
| Wk3toWk21 | 979 | 8753.973 | 2.857 | 8.120 | 10.940 | 0.015 | 0.594 |
| Wk2toWk14 | 979 | 8754.019 | 2.904 | 8.503 | 8.201 | 0.028 | 0.593 |
| Wk2toWk20 | 979 | 8754.021 | 2.905 | 7.341 | 11.495 | 0.011 | 0.594 |
| Wk3toWk14 | 979 | 8754.028 | 2.913 | 8.374 | 7.504 | 0.032 | 0.592 |
| Wk2toWk18 | 979 | 8754.043 | 2.928 | 7.823 | 10.588 | 0.015 | 0.594 |
| Wk8toWk16 | 979 | 8754.048 | 2.932 | 8.395 | 8.390 | 0.027 | 0.593 |
| Wk4to23 | 979 | 8754.059 | 2.944 | 7.105 | 11.382 | 0.011 | 0.594 |
| Wk4toWk13 | 979 | 8754.086 | 2.970 | 7.908 | 6.503 | 0.037 | 0.592 |
| Wk2toWk9 | 979 | 8754.100 | 2.984 | 7.721 | 6.135 | 0.043 | 0.593 |
| Wk1toWk19 | 979 | 8754.102 | 2.986 | 6.615 | 11.480 | 0.009 | 0.594 |
| Wk2to23 | 979 | 8754.116 | 3.001 | 4.446 | 12.713 | 0.003 | 0.595 |
| Wk5to23 | 979 | 8754.116 | 3.001 | 5.671 | 12.075 | 0.006 | 0.594 |
| Wk3toWk18 | 979 | 8754.123 | 3.008 | 7.749 | 9.712 | 0.017 | 0.593 |
| Wk8toWk10 | 979 | 8754.126 | 3.011 | 7.347 | 5.503 | 0.044 | 0.591 |
| Wk2to24 | 979 | 8754.127 | 3.012 | 4.043 | 12.793 | 0.003 | 0.595 |
| Wk4to24 | 979 | 8754.128 | 3.013 | 6.495 | 11.361 | 0.009 | 0.594 |
| Wk3toWk20 | 979 | 8754.130 | 3.015 | 7.246 | 10.510 | 0.012 | 0.594 |
| Wk1toWk17 | 979 | 8754.131 | 3.015 | 7.479 | 10.148 | 0.014 | 0.594 |
| Wk1toWk21 | 979 | 8754.134 | 3.018 | 6.007 | 11.709 | 0.007 | 0.594 |
| Wk7toWk7 | 979 | 8754.148 | 3.033 | 6.049 | 3.786 | 0.065 | 0.591 |
| Wk1toWk22 | 979 | 8754.153 | 3.037 | 5.982 | 11.574 | 0.007 | 0.594 |
| Wk5to24 | 979 | 8754.184 | 3.069 | 5.006 | 11.953 | 0.005 | 0.595 |
| Wk6to23 | 979 | 8754.189 | 3.074 | 4.482 | 12.174 | 0.004 | 0.595 |
| Wk7toWk19 | 979 | 8754.190 | 3.075 | 6.880 | 10.399 | 0.012 | 0.594 |
| Wk3to23 | 979 | 8754.193 | 3.078 | 4.923 | 11.932 | 0.005 | 0.595 |
| Wk7toWk21 | 979 | 8754.198 | 3.083 | 6.313 | 10.932 | 0.009 | 0.594 |
| Wk2toWk10 | 979 | 8754.204 | 3.088 | 7.659 | 6.817 | 0.034 | 0.593 |
| Wk3to24 | 979 | 8754.217 | 3.102 | 4.487 | 11.972 | 0.004 | 0.595 |
| Wk1toWk9 | 979 | 8754.226 | 3.111 | 7.637 | 7.094 | 0.032 | 0.593 |
| Wk1toWk14 | 979 | 8754.228 | 3.113 | 7.524 | 8.737 | 0.020 | 0.593 |
| Wk1to23 | 979 | 8754.229 | 3.114 | 2.570 | 12.532 | 0.001 | 0.595 |
| Wk1toWk20 | 979 | 8754.239 | 3.124 | 5.287 | 11.383 | 0.006 | 0.594 |
| Wk8toWk14 | 979 | 8754.246 | 3.131 | 7.597 | 7.818 | 0.025 | 0.593 |
| Wk1to24 | 979 | 8754.252 | 3.137 | 2.200 | 12.461 | 0.001 | 0.595 |
| Wk1toWk18 | 979 | 8754.261 | 3.145 | 5.995 | 10.704 | 0.008 | 0.594 |
| Wk7toWk20 | 979 | 8754.273 | 3.158 | 5.745 | 10.811 | 0.008 | 0.594 |
| Wk2toWk8 | 979 | 8754.281 | 3.165 | 7.230 | 6.059 | 0.039 | 0.593 |
| Wk6to24 | 979 | 8754.287 | 3.172 | 3.725 | 11.814 | 0.003 | 0.595 |
| Wk7toWk13 | 979 | 8754.316 | 3.201 | 7.339 | 7.352 | 0.026 | 0.593 |
| Wk7toWk22 | 979 | 8754.331 | 3.215 | 5.742 | 10.375 | 0.009 | 0.594 |
| Wk3toWk9 | 979 | 8754.344 | 3.229 | 6.690 | 5.128 | 0.046 | 0.593 |
| Wk7toWk18 | 979 | 8754.352 | 3.237 | 6.308 | 9.633 | 0.012 | 0.594 |
| Wk8toWk12 | 979 | 8754.385 | 3.269 | 7.093 | 7.155 | 0.025 | 0.593 |
| Wk7to23 | 979 | 8754.386 | 3.271 | 1.979 | 11.669 | 0.001 | 0.595 |
| Wk1toWk10 | 979 | 8754.392 | 3.276 | 7.029 | 7.604 | 0.023 | 0.593 |
| Wk1toWk8 | 979 | 8754.398 | 3.282 | 7.046 | 7.129 | 0.027 | 0.594 |
| Wk7to24 | 979 | 8754.458 | 3.343 | 1.501 | 11.320 | 0.001 | 0.595 |
| Wk2toWk12 | 979 | 8754.466 | 3.351 | 6.791 | 7.179 | 0.024 | 0.593 |
| Wk3toWk10 | 979 | 8754.478 | 3.363 | 6.623 | 5.725 | 0.036 | 0.593 |
| Wk3toWk8 | 979 | 8754.510 | 3.395 | 6.282 | 4.981 | 0.043 | 0.593 |
| Wk8toWk11 | 979 | 8754.549 | 3.434 | 6.534 | 6.551 | 0.026 | 0.593 |
| Wk8toWk21 | 979 | 8754.551 | 3.436 | 3.162 | 10.387 | 0.003 | 0.595 |
| Wk2toWk13 | 979 | 8754.574 | 3.459 | 6.251 | 7.589 | 0.018 | 0.594 |
| Wk2toWk11 | 979 | 8754.576 | 3.461 | 6.421 | 6.860 | 0.024 | 0.594 |
| Wk1toWk12 | 979 | 8754.587 | 3.472 | 6.090 | 7.823 | 0.016 | 0.594 |
| Wk8toWk20 | 979 | 8754.612 | 3.497 | 2.498 | 10.253 | 0.002 | 0.595 |
| Wk8toWk19 | 979 | 8754.629 | 3.514 | 3.529 | 9.800 | 0.004 | 0.595 |
| Wk4toWk7 | 979 | 8754.637 | 3.521 | 5.611 | 4.124 | 0.048 | 0.592 |
| Wk8toWk17 | 979 | 8754.640 | 3.525 | 5.255 | 8.576 | 0.010 | 0.594 |
| Wk8toWk22 | 979 | 8754.647 | 3.531 | 3.074 | 9.883 | 0.003 | 0.595 |
| Wk3toWk12 | 979 | 8754.653 | 3.538 | 6.203 | 6.264 | 0.026 | 0.593 |
| Wk1toWk13 | 979 | 8754.655 | 3.539 | 5.476 | 8.216 | 0.012 | 0.594 |
| Wk1toWk11 | 979 | 8754.677 | 3.562 | 5.776 | 7.564 | 0.016 | 0.594 |
| Wk3toWk13 | 979 | 8754.687 | 3.571 | 6.020 | 6.798 | 0.021 | 0.593 |
| Wk8toWk13 | 979 | 8754.799 | 3.684 | 5.169 | 7.545 | 0.012 | 0.594 |
| Wk3toWk11 | 979 | 8754.810 | 3.694 | 5.732 | 5.875 | 0.026 | 0.593 |
| Wk8toWk18 | 979 | 8754.847 | 3.731 | 3.052 | 8.837 | 0.003 | 0.595 |
| Wk9toWk16 | 979 | 8755.135 | 4.020 | 3.189 | 7.387 | 0.005 | 0.594 |
| Wk9toWk15 | 979 | 8755.150 | 4.034 | 3.351 | 7.223 | 0.006 | 0.594 |
| Wk1toWk7 | 979 | 8755.289 | 4.174 | 3.218 | 6.679 | 0.007 | 0.595 |
| Wk2toWk7 | 979 | 8755.301 | 4.186 | 4.104 | 5.751 | 0.015 | 0.594 |
| Wk9toWk17 | 979 | 8755.316 | 4.200 | 0.886 | 7.386 | 0.000 | 0.595 |
| Wk9toWk14 | 979 | 8755.340 | 4.224 | 2.223 | 6.971 | 0.003 | 0.595 |
| Wk5toWk6 | 979 | 8755.501 | 4.386 | 4.058 | 3.984 | 0.028 | 0.593 |
| Wk9toWk12 | 979 | 8755.525 | 4.410 | 1.125 | 6.600 | 0.001 | 0.595 |
| Wk10toWk16 | 979 | 8755.572 | 4.457 | 1.357 | 6.394 | 0.001 | 0.595 |
| Wk3toWk7 | 979 | 8755.618 | 4.503 | 3.674 | 4.589 | 0.018 | 0.594 |
| Wk10toWk15 | 979 | 8755.660 | 4.545 | 1.331 | 6.111 | 0.001 | 0.595 |
| Wk9toWk10 | 979 | 8755.750 | 4.635 | 1.767 | 5.692 | 0.003 | 0.595 |
| Wk9toWk11 | 979 | 8755.760 | 4.644 | 0.277 | 5.954 | 0.000 | 0.595 |
| Wk12toWk16 | 979 | 8755.784 | 4.668 | 2.454 | 5.253 | 0.006 | 0.595 |
| Wk10toWk14 | 979 | 8755.792 | 4.676 | 0.288 | 5.859 | 0.000 | 0.595 |
| Wk11toWk16 | 979 | 8755.793 | 4.678 | 1.822 | 5.538 | 0.003 | 0.595 |
| Wk19to22 | 979 | 8755.835 | 4.720 | 0.349 | 5.728 | 0.000 | 0.595 |
| Wk12toWk12 | 979 | 8755.837 | 4.722 | 2.198 | 5.225 | 0.005 | 0.594 |
| Wk1toWk6 | 979 | 8755.842 | 4.727 | 0.692 | 5.676 | 0.000 | 0.595 |
| Wk9toWk9 | 979 | 8755.843 | 4.727 | 3.391 | 3.747 | 0.022 | 0.594 |
| Wk11toWk17 | 979 | 8755.853 | 4.738 | 0.173 | 5.685 | 0.000 | 0.595 |
| Wk12toWk17 | 979 | 8755.874 | 4.759 | 0.639 | 5.590 | 0.000 | 0.595 |
| Wk12toWk15 | 979 | 8755.894 | 4.779 | 2.505 | 4.844 | 0.007 | 0.594 |
| Wk11toWk15 | 979 | 8755.925 | 4.809 | 1.793 | 5.149 | 0.003 | 0.595 |
| Wk2toWk6 | 979 | 8756.027 | 4.912 | 1.708 | 4.891 | 0.004 | 0.595 |
| Wk20to22 | 979 | 8756.031 | 4.916 | 0.287 | 5.196 | 0.000 | 0.595 |
| Wk4toWk6 | 979 | 8756.049 | 4.934 | 3.076 | 3.261 | 0.024 | 0.593 |
| Wk12toWk14 | 979 | 8756.101 | 4.986 | 1.806 | 4.640 | 0.004 | 0.595 |
| Wk13toWk17 | 979 | 8756.119 | 5.003 | 0.213 | 4.977 | 0.000 | 0.595 |
| Wk13toWk16 | 979 | 8756.142 | 5.026 | 1.846 | 4.510 | 0.005 | 0.595 |
| Wk14toWk15 | 979 | 8756.159 | 5.044 | 2.835 | 3.419 | 0.019 | 0.594 |
| Wk11toWk14 | 979 | 8756.163 | 5.048 | 0.939 | 4.773 | 0.001 | 0.595 |
| Wk15to15 | 979 | 8756.177 | 5.062 | 2.568 | 3.824 | 0.013 | 0.594 |
| Wk5toWk5 | 979 | 8756.189 | 5.074 | 2.640 | 3.678 | 0.015 | 0.594 |
| Wk2toWk5 | 979 | 8756.226 | 5.111 | 0.337 | 4.708 | 0.000 | 0.595 |
| Wk14toWk16 | 979 | 8756.269 | 5.154 | 2.352 | 3.771 | 0.011 | 0.594 |
| Wk13toWk15 | 979 | 8756.274 | 5.159 | 1.936 | 4.101 | 0.006 | 0.595 |
| Wk15to16 | 979 | 8756.289 | 5.174 | 1.691 | 4.202 | 0.005 | 0.595 |
| Wk14toWk17 | 979 | 8756.366 | 5.251 | 0.791 | 4.324 | 0.001 | 0.595 |
| Wk4toWk5 | 979 | 8756.431 | 5.316 | 2.473 | 2.989 | 0.019 | 0.594 |
| Wk3toWk6 | 979 | 8756.444 | 5.329 | 1.725 | 3.799 | 0.006 | 0.595 |
| Wk6toWk6 | 979 | 8756.501 | 5.386 | 2.412 | 2.809 | 0.021 | 0.594 |
| Wk13toWk14 | 979 | 8756.605 | 5.489 | 1.173 | 3.706 | 0.003 | 0.595 |
| Wk21to22 | 979 | 8756.615 | 5.499 | 1.116 | 3.706 | 0.003 | 0.595 |
| Wk3toWk5 | 979 | 8756.673 | 5.558 | 0.810 | 3.680 | 0.001 | 0.595 |
| Wk14toWk14 | 979 | 8756.715 | 5.599 | 2.130 | 2.636 | 0.019 | 0.594 |
| Wk19to19 | 979 | 8756.733 | 5.618 | 0.144 | 3.661 | 0.000 | 0.595 |
| Wk21to21 | 979 | 8756.978 | 5.863 | 0.958 | 3.080 | 0.003 | 0.595 |
| Wk4toWk4 | 979 | 8757.104 | 5.989 | 1.736 | 2.210 | 0.017 | 0.594 |
| Wk16to16 | 979 | 8757.120 | 6.005 | 0.169 | 3.014 | 0.000 | 0.595 |
| Wk22to22 | 979 | 8757.587 | 6.472 | 0.343 | 2.364 | 0.001 | 0.595 |

***Periphylus testudinaceus* phenology**

**Table S8a**. *P. testudinaceus* emergence phenology as a function of temperature advancing emergence, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and June 10th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 8334.614. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk13towk17\*** | **968** | **8327.925** | **0.000** | **-5.144** | **2.119** | **0.058** | **0.270** |
| wk13towk18 | 968 | 8328.565 | 0.640 | -4.661 | 2.045 | 0.053 | 0.271 |
| wk15to18 | 968 | 8328.566 | 0.641 | -4.218 | 1.797 | 0.055 | 0.270 |
| wk16to18 | 968 | 8328.983 | 1.058 | -3.819 | 1.681 | 0.053 | 0.270 |
| wk17to17 | 968 | 8329.093 | 1.168 | -3.772 | 1.682 | 0.052 | 0.271 |
| wk15to17 | 968 | 8329.123 | 1.198 | -3.750 | 1.677 | 0.050 | 0.270 |
| wk13towk16 | 968 | 8329.381 | 1.456 | -4.184 | 2.034 | 0.046 | 0.272 |
| wk12towk17 | 968 | 8329.605 | 1.680 | -5.015 | 2.773 | 0.037 | 0.273 |
| wk12towk18 | 968 | 8329.915 | 1.990 | -4.469 | 2.523 | 0.035 | 0.273 |
| wk14towk18 | 968 | 8329.996 | 2.071 | -3.626 | 1.884 | 0.041 | 0.272 |
| wk17to18 | 968 | 8330.043 | 2.118 | -3.343 | 1.694 | 0.042 | 0.272 |
| wk13towk19 | 968 | 8330.117 | 2.192 | -3.800 | 2.078 | 0.038 | 0.273 |
| wk14towk17 | 968 | 8330.120 | 2.195 | -3.545 | 1.875 | 0.039 | 0.272 |
| wk16to17 | 968 | 8330.134 | 2.209 | -2.954 | 1.451 | 0.044 | 0.271 |
| wk11towk17 | 968 | 8330.186 | 2.261 | -4.428 | 2.698 | 0.031 | 0.273 |
| wk15to19 | 968 | 8330.221 | 2.296 | -3.560 | 1.933 | 0.038 | 0.272 |
| wk11towk18 | 968 | 8330.458 | 2.533 | -3.967 | 2.462 | 0.030 | 0.273 |
| wk12towk19 | 968 | 8330.663 | 2.738 | -3.880 | 2.563 | 0.027 | 0.274 |
| wk13to23 | 968 | 8330.870 | 2.945 | -3.858 | 2.820 | 0.023 | 0.274 |
| wk12towk16 | 968 | 8330.968 | 3.044 | -3.689 | 2.713 | 0.022 | 0.274 |
| wk15to16 | 968 | 8331.030 | 3.105 | -2.558 | 1.443 | 0.035 | 0.273 |
| wk9towk17 | 968 | 8331.075 | 3.150 | -3.578 | 2.715 | 0.021 | 0.275 |
| wk11towk19 | 968 | 8331.079 | 3.154 | -3.429 | 2.466 | 0.023 | 0.274 |
| wk15to23 | 968 | 8331.091 | 3.166 | -3.639 | 2.872 | 0.020 | 0.275 |
| wk13towk22 | 968 | 8331.100 | 3.175 | -3.460 | 2.548 | 0.023 | 0.275 |
| wk9towk18 | 968 | 8331.108 | 3.183 | -3.445 | 2.536 | 0.023 | 0.275 |
| wk14towk19 | 968 | 8331.131 | 3.206 | -2.990 | 1.932 | 0.028 | 0.274 |
| wk15to22 | 968 | 8331.138 | 3.213 | -3.471 | 2.636 | 0.021 | 0.275 |
| wk10towk17 | 968 | 8331.233 | 3.308 | -3.471 | 2.878 | 0.018 | 0.275 |
| wk12to23 | 968 | 8331.239 | 3.314 | -3.560 | 3.234 | 0.015 | 0.275 |
| wk13towk21 | 968 | 8331.261 | 3.336 | -3.185 | 2.339 | 0.023 | 0.274 |
| wk11towk16 | 968 | 8331.266 | 3.341 | -3.330 | 2.624 | 0.020 | 0.275 |
| wk10towk18 | 968 | 8331.272 | 3.347 | -3.325 | 2.630 | 0.020 | 0.275 |
| wk16to19 | 968 | 8331.296 | 3.371 | -2.722 | 1.742 | 0.029 | 0.274 |
| wk15to21 | 968 | 8331.440 | 3.515 | -3.016 | 2.329 | 0.020 | 0.274 |
| wk12towk22 | 968 | 8331.474 | 3.549 | -3.174 | 2.926 | 0.015 | 0.275 |
| wk14to23 | 968 | 8331.491 | 3.566 | -3.113 | 2.736 | 0.016 | 0.275 |
| wk11to23 | 968 | 8331.500 | 3.575 | -3.149 | 3.026 | 0.014 | 0.275 |
| wk8towk18 | 968 | 8331.505 | 3.580 | -2.989 | 2.407 | 0.019 | 0.275 |
| wk9towk19 | 968 | 8331.558 | 3.633 | -2.967 | 2.495 | 0.018 | 0.275 |
| wk8towk17 | 968 | 8331.564 | 3.639 | -2.967 | 2.515 | 0.017 | 0.275 |
| wk12towk21 | 968 | 8331.592 | 3.667 | -2.988 | 2.737 | 0.015 | 0.275 |
| wk14towk16 | 968 | 8331.607 | 3.682 | -2.496 | 1.696 | 0.026 | 0.274 |
| wk13towk15 | 968 | 8331.646 | 3.721 | -2.577 | 1.848 | 0.024 | 0.274 |
| wk14towk22 | 968 | 8331.695 | 3.770 | -2.810 | 2.466 | 0.016 | 0.275 |
| wk11towk22 | 968 | 8331.711 | 3.786 | -2.836 | 2.761 | 0.014 | 0.275 |
| wk10towk19 | 968 | 8331.725 | 3.800 | -2.797 | 2.568 | 0.015 | 0.275 |
| wk9to23 | 968 | 8331.758 | 3.833 | -2.759 | 2.963 | 0.011 | 0.275 |
| wk9towk16 | 968 | 8331.788 | 3.863 | -2.727 | 2.646 | 0.014 | 0.275 |
| wk13towk20 | 968 | 8331.794 | 3.869 | -2.605 | 2.129 | 0.019 | 0.275 |
| wk11towk21 | 968 | 8331.810 | 3.885 | -2.697 | 2.603 | 0.014 | 0.275 |
| wk16to23 | 968 | 8331.813 | 3.888 | -2.696 | 2.704 | 0.013 | 0.275 |
| wk8towk19 | 968 | 8331.848 | 3.923 | -2.623 | 2.374 | 0.016 | 0.275 |
| wk14towk21 | 968 | 8331.886 | 3.961 | -2.554 | 2.242 | 0.016 | 0.275 |
| wk10to23 | 968 | 8331.914 | 3.989 | -2.474 | 3.041 | 0.009 | 0.276 |
| wk16to22 | 968 | 8331.923 | 3.998 | -2.549 | 2.454 | 0.014 | 0.275 |
| wk8to23 | 968 | 8331.952 | 4.027 | -2.485 | 2.798 | 0.010 | 0.276 |
| wk9towk22 | 968 | 8331.956 | 4.031 | -2.493 | 2.723 | 0.011 | 0.276 |
| wk10towk16 | 968 | 8331.967 | 4.042 | -2.453 | 2.828 | 0.010 | 0.276 |
| wk13towk13 | 968 | 8332.006 | 4.081 | -2.034 | 1.376 | 0.027 | 0.275 |
| wk12towk20 | 968 | 8332.030 | 4.105 | -2.414 | 2.528 | 0.012 | 0.276 |
| wk9towk21 | 968 | 8332.033 | 4.108 | -2.402 | 2.600 | 0.011 | 0.276 |
| wk3towk3 | 968 | 8332.034 | 4.109 | -1.596 | 0.915 | 0.036 | 0.274 |
| wk10towk22 | 968 | 8332.089 | 4.164 | -2.261 | 2.802 | 0.009 | 0.276 |
| wk7towk18 | 968 | 8332.103 | 4.178 | -2.317 | 2.523 | 0.011 | 0.276 |
| wk8towk22 | 968 | 8332.144 | 4.219 | -2.248 | 2.579 | 0.010 | 0.276 |
| wk15to20 | 968 | 8332.151 | 4.226 | -2.253 | 2.035 | 0.015 | 0.275 |
| wk11towk20 | 968 | 8332.170 | 4.245 | -2.242 | 2.429 | 0.011 | 0.276 |
| wk8towk16 | 968 | 8332.179 | 4.254 | -2.235 | 2.407 | 0.011 | 0.276 |
| wk7towk17 | 968 | 8332.189 | 4.264 | -2.162 | 2.636 | 0.009 | 0.276 |
| wk10towk21 | 968 | 8332.198 | 4.273 | -2.142 | 2.651 | 0.009 | 0.276 |
| wk8towk21 | 968 | 8332.208 | 4.283 | -2.183 | 2.475 | 0.010 | 0.276 |
| wk16to21 | 968 | 8332.269 | 4.344 | -2.146 | 2.121 | 0.013 | 0.275 |
| wk7to23 | 968 | 8332.288 | 4.363 | -1.858 | 2.846 | 0.006 | 0.276 |
| wk7towk19 | 968 | 8332.333 | 4.408 | -2.010 | 2.456 | 0.009 | 0.276 |
| wk9towk20 | 968 | 8332.338 | 4.414 | -2.009 | 2.439 | 0.009 | 0.276 |
| wk16to16 | 968 | 8332.370 | 4.445 | -1.647 | 1.085 | 0.027 | 0.274 |
| wk14towk20 | 968 | 8332.422 | 4.497 | -1.989 | 2.003 | 0.013 | 0.275 |
| wk17to23 | 968 | 8332.449 | 4.524 | -1.649 | 2.698 | 0.005 | 0.276 |
| wk7towk22 | 968 | 8332.451 | 4.526 | -1.699 | 2.640 | 0.006 | 0.276 |
| wk8towk20 | 968 | 8332.470 | 4.545 | -1.860 | 2.337 | 0.008 | 0.276 |
| wk10towk20 | 968 | 8332.500 | 4.575 | -1.734 | 2.478 | 0.006 | 0.276 |
| wk7towk21 | 968 | 8332.535 | 4.610 | -1.628 | 2.532 | 0.005 | 0.276 |
| wk15to15 | 968 | 8332.544 | 4.619 | -1.752 | 1.373 | 0.020 | 0.274 |
| wk21to23 | 968 | 8332.549 | 4.624 | -1.440 | 2.683 | 0.004 | 0.276 |
| wk17to19 | 968 | 8332.559 | 4.634 | -1.832 | 1.636 | 0.016 | 0.275 |
| wk6to23 | 968 | 8332.615 | 4.690 | -0.997 | 2.827 | 0.002 | 0.276 |
| wk1towk18 | 968 | 8332.615 | 4.690 | -1.488 | 2.513 | 0.005 | 0.276 |
| wk7towk16 | 968 | 8332.624 | 4.699 | -1.461 | 2.521 | 0.005 | 0.276 |
| wk1to23 | 968 | 8332.630 | 4.705 | -1.212 | 2.694 | 0.003 | 0.276 |
| wk6towk18 | 968 | 8332.670 | 4.745 | -1.320 | 2.553 | 0.004 | 0.276 |
| wk1towk17 | 968 | 8332.679 | 4.754 | -1.288 | 2.562 | 0.003 | 0.276 |
| wk2to23 | 968 | 8332.694 | 4.769 | -1.052 | 2.676 | 0.002 | 0.276 |
| wk12towk15 | 968 | 8332.715 | 4.790 | -1.457 | 2.348 | 0.005 | 0.276 |
| wk6towk17 | 968 | 8332.725 | 4.800 | -1.012 | 2.645 | 0.002 | 0.276 |
| wk1towk22 | 968 | 8332.728 | 4.803 | -1.150 | 2.567 | 0.003 | 0.276 |
| wk2towk18 | 968 | 8332.733 | 4.808 | -1.294 | 2.463 | 0.004 | 0.276 |
| wk11towk15 | 968 | 8332.735 | 4.810 | -1.496 | 2.264 | 0.006 | 0.276 |
| wk17to22 | 968 | 8332.746 | 4.821 | -1.425 | 2.322 | 0.005 | 0.276 |
| wk9towk15 | 968 | 8332.747 | 4.822 | -1.383 | 2.362 | 0.005 | 0.276 |
| wk7towk20 | 968 | 8332.750 | 4.825 | -1.341 | 2.394 | 0.004 | 0.276 |
| wk6towk22 | 968 | 8332.758 | 4.833 | -0.918 | 2.636 | 0.002 | 0.276 |
| wk1towk19 | 968 | 8332.761 | 4.836 | -1.297 | 2.413 | 0.004 | 0.276 |
| wk3to23 | 968 | 8332.774 | 4.849 | -0.835 | 2.646 | 0.001 | 0.276 |
| wk2towk17 | 968 | 8332.789 | 4.864 | -1.076 | 2.513 | 0.002 | 0.276 |
| wk2towk22 | 968 | 8332.791 | 4.866 | -1.001 | 2.549 | 0.002 | 0.276 |
| wk6towk19 | 968 | 8332.804 | 4.879 | -1.133 | 2.457 | 0.003 | 0.276 |
| wk1towk21 | 968 | 8332.815 | 4.890 | -1.088 | 2.467 | 0.003 | 0.276 |
| wk5to23 | 968 | 8332.826 | 4.901 | -0.321 | 2.696 | 0.000 | 0.276 |
| wk1towk16 | 968 | 8332.834 | 4.909 | -0.904 | 2.530 | 0.002 | 0.276 |
| wk4to23 | 968 | 8332.841 | 4.916 | -0.309 | 2.677 | 0.000 | 0.276 |
| wk2towk19 | 968 | 8332.850 | 4.925 | -1.139 | 2.380 | 0.003 | 0.276 |
| wk6towk21 | 968 | 8332.857 | 4.932 | -0.855 | 2.518 | 0.002 | 0.276 |
| wk10towk15 | 968 | 8332.861 | 4.936 | -0.865 | 2.508 | 0.002 | 0.276 |
| wk3towk18 | 968 | 8332.866 | 4.941 | -1.049 | 2.411 | 0.003 | 0.276 |
| wk3towk22 | 968 | 8332.881 | 4.956 | -0.788 | 2.509 | 0.001 | 0.276 |
| wk2towk21 | 968 | 8332.883 | 4.958 | -0.939 | 2.443 | 0.002 | 0.276 |
| wk2towk4 | 968 | 8332.883 | 4.958 | -1.550 | 1.353 | 0.017 | 0.275 |
| wk3towk17 | 968 | 8332.907 | 4.982 | -0.809 | 2.466 | 0.001 | 0.276 |
| wk8towk15 | 968 | 8332.934 | 5.009 | -1.241 | 2.169 | 0.004 | 0.276 |
| wk2towk16 | 968 | 8332.936 | 5.011 | -0.676 | 2.472 | 0.001 | 0.276 |
| wk6towk16 | 968 | 8332.940 | 5.015 | -0.395 | 2.533 | 0.000 | 0.276 |
| wk1towk20 | 968 | 8332.946 | 5.021 | -0.907 | 2.368 | 0.002 | 0.276 |
| wk5towk22 | 968 | 8332.951 | 5.026 | -0.299 | 2.533 | 0.000 | 0.276 |
| wk18to23 | 968 | 8332.954 | 5.029 | -0.525 | 2.488 | 0.001 | 0.276 |
| wk3towk19 | 968 | 8332.957 | 5.032 | -0.931 | 2.342 | 0.002 | 0.276 |
| wk4towk22 | 968 | 8332.963 | 5.038 | -0.288 | 2.519 | 0.000 | 0.276 |
| wk3towk21 | 968 | 8332.970 | 5.045 | -0.737 | 2.406 | 0.001 | 0.276 |
| wk3towk4 | 968 | 8332.977 | 5.052 | -1.478 | 1.291 | 0.017 | 0.275 |
| wk16to20 | 968 | 8332.981 | 5.056 | -1.452 | 1.782 | 0.009 | 0.276 |
| wk5towk17 | 968 | 8333.003 | 5.078 | -0.157 | 2.481 | 0.000 | 0.276 |
| wk5towk18 | 968 | 8333.007 | 5.082 | -0.508 | 2.425 | 0.001 | 0.276 |
| wk4towk17 | 968 | 8333.009 | 5.084 | -0.155 | 2.474 | 0.000 | 0.276 |
| wk4towk18 | 968 | 8333.009 | 5.084 | -0.484 | 2.428 | 0.001 | 0.276 |
| wk2towk20 | 968 | 8333.018 | 5.093 | -0.755 | 2.335 | 0.001 | 0.276 |
| wk6towk20 | 968 | 8333.027 | 5.102 | -0.616 | 2.371 | 0.001 | 0.276 |
| wk3towk16 | 968 | 8333.041 | 5.116 | -0.389 | 2.406 | 0.000 | 0.276 |
| wk1towk15 | 968 | 8333.042 | 5.117 | -0.387 | 2.406 | 0.000 | 0.276 |
| wk21to21 | 968 | 8333.044 | 5.119 | -1.432 | 1.649 | 0.010 | 0.275 |
| wk4towk21 | 968 | 8333.052 | 5.127 | -0.251 | 2.412 | 0.000 | 0.276 |
| wk5towk21 | 968 | 8333.053 | 5.128 | -0.258 | 2.411 | 0.000 | 0.276 |
| wk4towk19 | 968 | 8333.077 | 5.152 | -0.427 | 2.355 | 0.000 | 0.276 |
| wk5towk19 | 968 | 8333.078 | 5.153 | -0.445 | 2.350 | 0.000 | 0.276 |
| wk3towk20 | 968 | 8333.101 | 5.176 | -0.558 | 2.295 | 0.001 | 0.276 |
| wk17to21 | 968 | 8333.103 | 5.178 | -1.164 | 1.972 | 0.005 | 0.276 |
| wk7towk15 | 968 | 8333.108 | 5.183 | -0.588 | 2.278 | 0.001 | 0.276 |
| wk2towk15 | 968 | 8333.115 | 5.190 | -0.161 | 2.344 | 0.000 | 0.276 |
| wk13towk14 | 968 | 8333.120 | 5.195 | -1.397 | 1.495 | 0.011 | 0.276 |
| wk2towk3 | 968 | 8333.140 | 5.215 | -1.294 | 1.005 | 0.021 | 0.275 |
| wk1towk4 | 968 | 8333.151 | 5.226 | -1.379 | 1.326 | 0.014 | 0.275 |
| wk4towk20 | 968 | 8333.165 | 5.240 | -0.084 | 2.292 | 0.000 | 0.276 |
| wk5towk20 | 968 | 8333.179 | 5.254 | -0.080 | 2.275 | 0.000 | 0.276 |
| wk22to23 | 968 | 8333.204 | 5.279 | -0.212 | 2.237 | 0.000 | 0.276 |
| wk1towk14 | 968 | 8333.208 | 5.283 | -0.053 | 2.243 | 0.000 | 0.276 |
| wk18to18 | 968 | 8333.212 | 5.287 | -1.324 | 1.191 | 0.016 | 0.275 |
| wk21to22 | 968 | 8333.260 | 5.335 | -1.037 | 1.857 | 0.004 | 0.276 |
| wk9towk14 | 968 | 8333.265 | 5.340 | -0.618 | 2.083 | 0.001 | 0.276 |
| wk11towk13 | 968 | 8333.287 | 5.362 | -0.497 | 2.094 | 0.001 | 0.276 |
| wk7towk14 | 968 | 8333.342 | 5.418 | -0.089 | 2.096 | 0.000 | 0.276 |
| wk8towk14 | 968 | 8333.344 | 5.419 | -0.680 | 1.969 | 0.002 | 0.276 |
| wk18to22 | 968 | 8333.360 | 5.435 | -0.421 | 2.033 | 0.001 | 0.276 |
| wk14towk15 | 968 | 8333.377 | 5.452 | -1.193 | 1.456 | 0.009 | 0.276 |
| wk9towk13 | 968 | 8333.389 | 5.464 | -0.488 | 1.986 | 0.001 | 0.276 |
| wk11towk14 | 968 | 8333.400 | 5.475 | -0.550 | 1.956 | 0.001 | 0.276 |
| wk8towk13 | 968 | 8333.429 | 5.504 | -0.601 | 1.907 | 0.001 | 0.276 |
| wk12towk14 | 968 | 8333.507 | 5.582 | -0.223 | 1.919 | 0.000 | 0.276 |
| wk1towk9 | 968 | 8333.513 | 5.588 | -0.075 | 1.925 | 0.000 | 0.276 |
| wk1towk3 | 968 | 8333.546 | 5.621 | -1.126 | 1.039 | 0.015 | 0.275 |
| wk17to20 | 968 | 8333.715 | 5.790 | -0.628 | 1.608 | 0.002 | 0.276 |
| wk18to21 | 968 | 8333.726 | 5.801 | -0.307 | 1.703 | 0.000 | 0.276 |
| wk8towk12 | 968 | 8333.742 | 5.817 | -0.016 | 1.718 | 0.000 | 0.276 |
| wk1towk5 | 968 | 8333.908 | 5.983 | -0.641 | 1.421 | 0.003 | 0.276 |
| wk2towk5 | 968 | 8333.989 | 6.064 | -0.499 | 1.424 | 0.002 | 0.276 |
| wk18to19 | 968 | 8333.998 | 6.073 | -0.726 | 1.276 | 0.004 | 0.276 |
| wk8towk11 | 968 | 8334.057 | 6.132 | -0.492 | 1.372 | 0.002 | 0.276 |
| wk7towk9 | 968 | 8334.107 | 6.182 | -0.133 | 1.425 | 0.000 | 0.276 |
| wk9towk11 | 968 | 8334.110 | 6.185 | -0.415 | 1.361 | 0.001 | 0.276 |
| wk22to22 | 968 | 8334.122 | 6.197 | -0.169 | 1.410 | 0.000 | 0.276 |
| wk8towk9 | 968 | 8334.155 | 6.230 | -0.757 | 1.084 | 0.006 | 0.276 |
| wk8towk10 | 968 | 8334.223 | 6.298 | -0.364 | 1.296 | 0.001 | 0.276 |
| wk3towk5 | 968 | 8334.290 | 6.365 | -0.147 | 1.297 | 0.000 | 0.276 |
| wk9towk9 | 968 | 8334.311 | 6.386 | -0.751 | 0.905 | 0.009 | 0.275 |
| wk11towk11 | 968 | 8334.333 | 6.408 | -0.520 | 1.148 | 0.003 | 0.276 |
| wk9towk10 | 968 | 8334.390 | 6.465 | -0.208 | 1.223 | 0.000 | 0.276 |
| wk8towk8 | 968 | 8334.510 | 6.585 | -0.432 | 1.075 | 0.002 | 0.276 |
| wk4towk4 | 968 | 8334.695 | 6.770 | -0.026 | 1.067 | 0.000 | 0.276 |
| wk14towk14 | 968 | 8334.743 | 6.818 | -0.240 | 1.011 | 0.001 | 0.276 |
| wk1towk2 | 968 | 8334.745 | 6.820 | -0.507 | 0.872 | 0.005 | 0.276 |
| wk2towk2 | 968 | 8334.884 | 6.959 | -0.477 | 0.809 | 0.005 | 0.276 |
| wk19to19 | 968 | 8335.156 | 7.231 | -0.001 | 0.847 | 0.000 | 0.276 |
| wk1towk1 | 968 | 8335.217 | 7.292 | -0.328 | 0.741 | 0.003 | 0.276 |

**Table S8b**. *P. testudinaceus* emergence phenology as a function of temperature delaying emergence, weather variables selected as those with a positive coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and June 10th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 8334.614. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk6towk7\*** | **968** | **8331.964** | **0.000** | **1.799** | **1.086** | **0.033** | **0.274** |
| wk5towk7 | 968 | 8332.009 | 0.045 | 1.763 | 1.066 | 0.033 | 0.274 |
| wk4towk7 | 968 | 8332.274 | 0.310 | 1.838 | 1.282 | 0.026 | 0.275 |
| wk12towk12 | 968 | 8332.287 | 0.323 | 1.825 | 1.272 | 0.023 | 0.273 |
| wk5towk8 | 968 | 8332.522 | 0.558 | 1.734 | 1.313 | 0.022 | 0.275 |
| wk4towk8 | 968 | 8332.655 | 0.691 | 1.728 | 1.485 | 0.018 | 0.275 |
| wk20to23 | 968 | 8332.662 | 0.698 | 0.747 | 2.842 | 0.001 | 0.276 |
| wk5towk12 | 968 | 8332.672 | 0.707 | 1.753 | 1.824 | 0.012 | 0.276 |
| wk7towk7 | 968 | 8332.795 | 0.831 | 1.510 | 1.139 | 0.022 | 0.274 |
| wk4towk12 | 968 | 8332.813 | 0.849 | 1.603 | 1.865 | 0.010 | 0.276 |
| wk6towk12 | 968 | 8332.895 | 0.931 | 1.471 | 1.953 | 0.008 | 0.276 |
| wk5towk10 | 968 | 8332.904 | 0.940 | 1.560 | 1.621 | 0.012 | 0.275 |
| wk5towk13 | 968 | 8332.917 | 0.952 | 1.407 | 2.011 | 0.007 | 0.276 |
| wk6towk8 | 968 | 8332.947 | 0.983 | 1.513 | 1.367 | 0.016 | 0.275 |
| wk4towk13 | 968 | 8332.990 | 1.025 | 1.281 | 2.035 | 0.005 | 0.276 |
| wk4towk10 | 968 | 8333.005 | 1.040 | 1.454 | 1.705 | 0.010 | 0.276 |
| wk10towk12 | 968 | 8333.040 | 1.075 | 1.376 | 1.805 | 0.008 | 0.276 |
| wk5towk16 | 968 | 8333.065 | 1.100 | 0.339 | 2.385 | 0.000 | 0.276 |
| wk4towk16 | 968 | 8333.068 | 1.103 | 0.304 | 2.387 | 0.000 | 0.276 |
| wk20to22 | 968 | 8333.091 | 1.126 | 0.642 | 2.282 | 0.001 | 0.276 |
| wk19to23 | 968 | 8333.096 | 1.131 | 0.401 | 2.337 | 0.000 | 0.276 |
| wk6towk13 | 968 | 8333.107 | 1.143 | 0.946 | 2.127 | 0.003 | 0.276 |
| wk5towk6 | 968 | 8333.109 | 1.145 | 1.220 | 0.858 | 0.026 | 0.275 |
| wk5towk9 | 968 | 8333.109 | 1.145 | 1.397 | 1.550 | 0.011 | 0.276 |
| wk5towk15 | 968 | 8333.127 | 1.162 | 0.837 | 2.159 | 0.002 | 0.276 |
| wk5towk14 | 968 | 8333.131 | 1.166 | 1.115 | 1.973 | 0.004 | 0.276 |
| wk4towk15 | 968 | 8333.136 | 1.171 | 0.771 | 2.178 | 0.002 | 0.276 |
| wk4towk9 | 968 | 8333.150 | 1.186 | 1.321 | 1.667 | 0.009 | 0.276 |
| wk6towk15 | 968 | 8333.158 | 1.194 | 0.295 | 2.280 | 0.000 | 0.276 |
| wk4towk14 | 968 | 8333.165 | 1.200 | 1.026 | 1.997 | 0.004 | 0.276 |
| wk1towk13 | 968 | 8333.176 | 1.212 | 0.034 | 2.279 | 0.000 | 0.276 |
| wk2towk13 | 968 | 8333.192 | 1.228 | 0.284 | 2.243 | 0.000 | 0.276 |
| wk3towk15 | 968 | 8333.198 | 1.233 | 0.119 | 2.252 | 0.000 | 0.276 |
| wk3towk12 | 968 | 8333.203 | 1.238 | 0.951 | 1.998 | 0.003 | 0.276 |
| wk3towk13 | 968 | 8333.215 | 1.251 | 0.587 | 2.150 | 0.001 | 0.276 |
| wk2towk12 | 968 | 8333.244 | 1.279 | 0.656 | 2.093 | 0.001 | 0.276 |
| wk6towk14 | 968 | 8333.248 | 1.283 | 0.686 | 2.077 | 0.002 | 0.276 |
| wk2towk14 | 968 | 8333.254 | 1.290 | 0.163 | 2.186 | 0.000 | 0.276 |
| wk10towk13 | 968 | 8333.261 | 1.296 | 0.312 | 2.161 | 0.000 | 0.276 |
| wk1towk12 | 968 | 8333.263 | 1.298 | 0.401 | 2.144 | 0.000 | 0.276 |
| wk10towk14 | 968 | 8333.266 | 1.301 | 0.032 | 2.180 | 0.000 | 0.276 |
| wk5towk11 | 968 | 8333.305 | 1.340 | 1.175 | 1.633 | 0.007 | 0.276 |
| wk3towk14 | 968 | 8333.307 | 1.342 | 0.423 | 2.090 | 0.001 | 0.276 |
| wk6towk10 | 968 | 8333.314 | 1.350 | 1.140 | 1.668 | 0.006 | 0.276 |
| wk4towk6 | 968 | 8333.331 | 1.367 | 1.239 | 1.083 | 0.017 | 0.275 |
| wk6towk6 | 968 | 8333.333 | 1.369 | 1.108 | 0.794 | 0.024 | 0.274 |
| wk4towk11 | 968 | 8333.337 | 1.372 | 1.091 | 1.694 | 0.006 | 0.276 |
| wk7towk13 | 968 | 8333.345 | 1.381 | 0.044 | 2.095 | 0.000 | 0.276 |
| wk7towk12 | 968 | 8333.400 | 1.435 | 0.640 | 1.923 | 0.002 | 0.276 |
| wk20to21 | 968 | 8333.420 | 1.456 | 0.774 | 1.838 | 0.002 | 0.276 |
| wk3towk10 | 968 | 8333.434 | 1.470 | 0.740 | 1.841 | 0.002 | 0.276 |
| wk3towk7 | 968 | 8333.460 | 1.496 | 1.097 | 1.496 | 0.007 | 0.276 |
| wk1towk10 | 968 | 8333.464 | 1.499 | 0.164 | 1.967 | 0.000 | 0.276 |
| wk2towk10 | 968 | 8333.464 | 1.499 | 0.419 | 1.925 | 0.001 | 0.276 |
| wk1towk11 | 968 | 8333.482 | 1.518 | 0.012 | 1.956 | 0.000 | 0.276 |
| wk3towk8 | 968 | 8333.490 | 1.525 | 0.929 | 1.651 | 0.004 | 0.276 |
| wk12towk13 | 968 | 8333.498 | 1.534 | 0.097 | 1.938 | 0.000 | 0.276 |
| wk2towk11 | 968 | 8333.524 | 1.560 | 0.226 | 1.901 | 0.000 | 0.276 |
| wk2towk9 | 968 | 8333.554 | 1.589 | 0.181 | 1.879 | 0.000 | 0.276 |
| wk3towk11 | 968 | 8333.557 | 1.592 | 0.492 | 1.813 | 0.001 | 0.276 |
| wk6towk11 | 968 | 8333.562 | 1.597 | 0.768 | 1.686 | 0.003 | 0.276 |
| wk3towk9 | 968 | 8333.568 | 1.603 | 0.519 | 1.793 | 0.001 | 0.276 |
| wk6towk9 | 968 | 8333.572 | 1.608 | 0.889 | 1.587 | 0.004 | 0.276 |
| wk19to22 | 968 | 8333.572 | 1.608 | 0.312 | 1.842 | 0.000 | 0.276 |
| wk11towk12 | 968 | 8333.596 | 1.631 | 0.821 | 1.614 | 0.003 | 0.276 |
| wk2towk8 | 968 | 8333.626 | 1.661 | 0.553 | 1.725 | 0.001 | 0.276 |
| wk1towk8 | 968 | 8333.649 | 1.684 | 0.277 | 1.777 | 0.000 | 0.276 |
| wk9towk12 | 968 | 8333.678 | 1.714 | 0.264 | 1.753 | 0.000 | 0.276 |
| wk2towk7 | 968 | 8333.702 | 1.738 | 0.700 | 1.581 | 0.003 | 0.276 |
| wk1towk7 | 968 | 8333.784 | 1.819 | 0.407 | 1.628 | 0.001 | 0.276 |
| we20to20 | 968 | 8333.833 | 1.869 | 0.982 | 0.985 | 0.013 | 0.276 |
| wk7towk11 | 968 | 8333.896 | 1.931 | 0.010 | 1.591 | 0.000 | 0.276 |
| wk7towk10 | 968 | 8333.915 | 1.950 | 0.248 | 1.555 | 0.000 | 0.276 |
| wk1towk6 | 968 | 8333.966 | 2.001 | 0.005 | 1.536 | 0.000 | 0.276 |
| wk5towk5 | 968 | 8334.004 | 2.039 | 0.884 | 0.769 | 0.017 | 0.275 |
| wk2towk6 | 968 | 8334.007 | 2.042 | 0.266 | 1.480 | 0.000 | 0.276 |
| wk10towk10 | 968 | 8334.023 | 2.058 | 0.817 | 1.145 | 0.007 | 0.276 |
| wk7towk8 | 968 | 8334.028 | 2.064 | 0.616 | 1.330 | 0.003 | 0.276 |
| wk19to21 | 968 | 8334.035 | 2.071 | 0.316 | 1.447 | 0.001 | 0.276 |
| wk3towk6 | 968 | 8334.053 | 2.088 | 0.588 | 1.327 | 0.003 | 0.276 |
| wk4towk5 | 968 | 8334.093 | 2.128 | 0.810 | 1.071 | 0.008 | 0.276 |
| wk10towk11 | 968 | 8334.154 | 2.189 | 0.206 | 1.382 | 0.000 | 0.276 |
| wk18to20 | 968 | 8334.271 | 2.307 | 0.048 | 1.318 | 0.000 | 0.276 |
| wk23to23 | 968 | 8334.462 | 2.497 | 0.000 | 1.199 | 0.000 | 0.276 |
| wk19to20 | 968 | 8334.591 | 2.627 | 0.480 | 0.995 | 0.003 | 0.276 |

**Table S8c.** *P. testudinaceus* emergence phenology as a function of precipitation advancing emergence, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and June 10th. Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 8334.614. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk19to19\*** | **968** | **8328.686** | **0.000** | **-3.419** | **1.396** | **0.056** | **0.267** |
| Wk2toWk3 | 968 | 8328.915 | 0.230 | -3.545 | 1.508 | 0.059 | 0.272 |
| Wk1toWk3 | 968 | 8329.616 | 0.930 | -3.714 | 1.800 | 0.047 | 0.273 |
| Wk18to23 | 968 | 8330.399 | 1.713 | -4.467 | 2.971 | 0.028 | 0.274 |
| Wk19to23 | 968 | 8330.644 | 1.958 | -4.092 | 2.814 | 0.026 | 0.274 |
| Wk18to19 | 968 | 8330.731 | 2.045 | -3.060 | 1.753 | 0.035 | 0.273 |
| Wk3toWk3 | 968 | 8331.142 | 2.456 | -2.227 | 1.203 | 0.040 | 0.274 |
| Wk23to23 | 968 | 8331.271 | 2.586 | -2.010 | 1.066 | 0.041 | 0.273 |
| Wk18to20 | 968 | 8331.527 | 2.841 | -2.999 | 2.489 | 0.018 | 0.274 |
| Wk17to23 | 968 | 8331.529 | 2.844 | -3.095 | 3.312 | 0.012 | 0.276 |
| Wk19to20 | 968 | 8331.925 | 3.240 | -2.508 | 2.209 | 0.016 | 0.274 |
| Wk22to23 | 968 | 8331.950 | 3.264 | -2.258 | 1.658 | 0.024 | 0.275 |
| Wk18to22 | 968 | 8332.118 | 3.432 | -2.147 | 2.923 | 0.007 | 0.276 |
| Wk18to21 | 968 | 8332.156 | 3.470 | -2.207 | 2.654 | 0.009 | 0.276 |
| Wk20to23 | 968 | 8332.229 | 3.544 | -2.008 | 2.802 | 0.007 | 0.276 |
| Wk16to23 | 968 | 8332.239 | 3.553 | -1.631 | 3.172 | 0.004 | 0.276 |
| Wk21to23 | 968 | 8332.269 | 3.583 | -2.147 | 2.122 | 0.014 | 0.276 |
| Wk17to22 | 968 | 8332.349 | 3.663 | -0.764 | 3.354 | 0.001 | 0.276 |
| Wk15to23 | 968 | 8332.355 | 3.669 | -0.484 | 3.402 | 0.000 | 0.276 |
| Wk1toWk2 | 968 | 8332.447 | 3.761 | -1.876 | 1.526 | 0.020 | 0.275 |
| Wk17to21 | 968 | 8332.560 | 3.874 | -0.716 | 3.012 | 0.001 | 0.276 |
| Wk9toWk10 | 968 | 8332.644 | 3.958 | -1.459 | 2.485 | 0.004 | 0.276 |
| Wk2toWk2 | 968 | 8332.696 | 4.010 | -1.551 | 1.135 | 0.024 | 0.275 |
| Wk19to22 | 968 | 8332.699 | 4.013 | -1.325 | 2.498 | 0.004 | 0.276 |
| Wk17to20 | 968 | 8332.724 | 4.038 | -0.953 | 2.673 | 0.002 | 0.276 |
| Wk19to21 | 968 | 8332.726 | 4.040 | -1.483 | 2.298 | 0.006 | 0.276 |
| Wk8toWk10 | 968 | 8332.772 | 4.087 | -1.108 | 2.521 | 0.003 | 0.276 |
| Wk7toWk10 | 968 | 8332.873 | 4.187 | -1.005 | 2.425 | 0.002 | 0.276 |
| Wk17to19 | 968 | 8332.875 | 4.190 | -1.377 | 2.131 | 0.006 | 0.276 |
| Wk10toWk10 | 968 | 8332.990 | 4.304 | -1.414 | 1.844 | 0.008 | 0.276 |
| Wk1toWk4 | 968 | 8332.993 | 4.308 | -0.905 | 2.303 | 0.002 | 0.276 |
| Wk16to19 | 968 | 8333.217 | 4.531 | -0.345 | 2.205 | 0.000 | 0.276 |
| Wk2toWk4 | 968 | 8333.427 | 4.742 | -0.365 | 1.975 | 0.000 | 0.276 |
| Wk7toWk9 | 968 | 8333.471 | 4.785 | -0.344 | 1.935 | 0.000 | 0.276 |
| Wk7toWk7 | 968 | 8333.596 | 4.910 | -0.504 | 1.772 | 0.001 | 0.276 |
| Wk8toWk9 | 968 | 8333.625 | 4.939 | -0.189 | 1.812 | 0.000 | 0.276 |
| Wk7toWk8 | 968 | 8333.659 | 4.973 | -0.331 | 1.758 | 0.000 | 0.276 |
| Wk9toWk9 | 968 | 8333.774 | 5.089 | -0.174 | 1.681 | 0.000 | 0.276 |
| Wk13toWk13 | 968 | 8333.819 | 5.134 | -0.056 | 1.652 | 0.000 | 0.276 |
| Wk8toWk8 | 968 | 8333.929 | 5.244 | -0.131 | 1.559 | 0.000 | 0.276 |
| Wk18to18 | 968 | 8334.187 | 5.501 | -0.580 | 1.222 | 0.003 | 0.276 |
| Wk1toWk1 | 968 | 8334.439 | 5.753 | -0.481 | 1.096 | 0.003 | 0.276 |
| Wk22to22 | 968 | 8334.750 | 6.064 | -0.014 | 1.038 | 0.000 | 0.276 |

**Table S8d.** *P. testudinaceus* emergence phenology as a function of precipitation delaying emergence, weather variables selected as those with a positive coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and, June 10th Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 8334.614. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk4toWk17\*** | **968** | **8325.684** | **0.000** | **9.031** | **3.253** | **0.073** | **0.270** |
| Wk4toWk16 | 968 | 8326.270 | 0.586 | 8.597 | 3.268 | 0.068 | 0.270 |
| Wk4toWk18 | 968 | 8326.646 | 0.962 | 8.731 | 3.490 | 0.063 | 0.271 |
| Wk5toWk17 | 968 | 8326.971 | 1.288 | 8.942 | 3.756 | 0.058 | 0.271 |
| Wk4toWk15 | 968 | 8327.439 | 1.756 | 7.328 | 3.107 | 0.057 | 0.271 |
| Wk3toWk17 | 968 | 8327.688 | 2.005 | 8.090 | 3.676 | 0.052 | 0.272 |
| Wk5toWk16 | 968 | 8327.733 | 2.049 | 8.227 | 3.785 | 0.050 | 0.272 |
| Wk6toWk17 | 968 | 8327.847 | 2.163 | 8.269 | 3.889 | 0.049 | 0.272 |
| Wk5toWk18 | 968 | 8327.973 | 2.289 | 8.281 | 3.988 | 0.047 | 0.272 |
| Wk4toWk19 | 968 | 8328.091 | 2.407 | 8.139 | 3.980 | 0.046 | 0.272 |
| Wk4toWk21 | 968 | 8328.098 | 2.414 | 8.361 | 4.138 | 0.045 | 0.272 |
| Wk4toWk20 | 968 | 8328.161 | 2.478 | 8.068 | 3.987 | 0.045 | 0.272 |
| Wk3toWk18 | 968 | 8328.250 | 2.566 | 7.871 | 3.922 | 0.045 | 0.272 |
| Wk3toWk16 | 968 | 8328.383 | 2.699 | 7.361 | 3.665 | 0.045 | 0.272 |
| Wk4toWk22 | 968 | 8328.431 | 2.747 | 8.068 | 4.220 | 0.041 | 0.272 |
| Wk5toWk15 | 968 | 8328.606 | 2.922 | 7.095 | 3.644 | 0.042 | 0.272 |
| Wk6toWk16 | 968 | 8328.665 | 2.982 | 7.378 | 3.908 | 0.040 | 0.272 |
| Wk6toWk18 | 968 | 8328.681 | 2.998 | 7.663 | 4.152 | 0.039 | 0.273 |
| Wk2toWk17 | 968 | 8328.697 | 3.014 | 7.631 | 4.142 | 0.039 | 0.273 |
| Wk4toWk14 | 968 | 8328.867 | 3.183 | 5.903 | 2.964 | 0.044 | 0.272 |
| Wk8toWk17 | 968 | 8328.970 | 3.286 | 6.493 | 3.483 | 0.040 | 0.273 |
| Wk7toWk17 | 968 | 8329.080 | 3.397 | 6.790 | 3.833 | 0.036 | 0.273 |
| Wk2toWk18 | 968 | 8329.120 | 3.437 | 7.341 | 4.391 | 0.033 | 0.274 |
| Wk3toWk21 | 968 | 8329.225 | 3.541 | 7.351 | 4.558 | 0.031 | 0.273 |
| Wk4toWk5 | 968 | 8329.255 | 3.571 | 2.787 | 1.163 | 0.061 | 0.272 |
| Wk5toWk20 | 968 | 8329.297 | 3.613 | 7.217 | 4.532 | 0.030 | 0.273 |
| Wk5toWk21 | 968 | 8329.298 | 3.614 | 7.318 | 4.647 | 0.029 | 0.274 |
| Wk3toWk15 | 968 | 8329.324 | 3.640 | 6.077 | 3.449 | 0.036 | 0.273 |
| Wk3toWk19 | 968 | 8329.349 | 3.665 | 7.029 | 4.412 | 0.030 | 0.274 |
| Wk3toWk20 | 968 | 8329.369 | 3.686 | 6.965 | 4.376 | 0.030 | 0.273 |
| Wk5toWk19 | 968 | 8329.398 | 3.714 | 7.045 | 4.514 | 0.029 | 0.274 |
| Wk4to23 | 968 | 8329.401 | 3.717 | 7.243 | 4.754 | 0.028 | 0.274 |
| Wk1toWk17 | 968 | 8329.444 | 3.760 | 6.726 | 4.234 | 0.030 | 0.274 |
| Wk2toWk16 | 968 | 8329.446 | 3.763 | 6.583 | 4.082 | 0.031 | 0.274 |
| Wk3toWk22 | 968 | 8329.465 | 3.781 | 7.015 | 4.604 | 0.027 | 0.274 |
| Wk11toWk17 | 968 | 8329.490 | 3.806 | 4.452 | 2.266 | 0.043 | 0.273 |
| Wk6toWk15 | 968 | 8329.497 | 3.813 | 6.193 | 3.746 | 0.032 | 0.273 |
| Wk9toWk17 | 968 | 8329.569 | 3.886 | 5.307 | 2.993 | 0.037 | 0.274 |
| Wk8toWk16 | 968 | 8329.596 | 3.912 | 5.851 | 3.525 | 0.033 | 0.274 |
| Wk4toWk6 | 968 | 8329.675 | 3.991 | 2.888 | 1.296 | 0.055 | 0.273 |
| Wk1toWk18 | 968 | 8329.722 | 4.039 | 6.505 | 4.486 | 0.025 | 0.274 |
| Wk5toWk22 | 968 | 8329.728 | 4.044 | 6.564 | 4.582 | 0.025 | 0.274 |
| Wk4toWk7 | 968 | 8329.776 | 4.092 | 3.499 | 1.710 | 0.048 | 0.273 |
| Wk7toWk18 | 968 | 8329.816 | 4.133 | 6.024 | 4.038 | 0.027 | 0.274 |
| Wk8toWk18 | 968 | 8329.859 | 4.175 | 5.656 | 3.659 | 0.029 | 0.274 |
| Wk2toWk21 | 968 | 8329.868 | 4.184 | 6.566 | 5.006 | 0.021 | 0.274 |
| Wk11toWk16 | 968 | 8329.875 | 4.191 | 4.153 | 2.234 | 0.040 | 0.273 |
| Wk7toWk16 | 968 | 8329.885 | 4.202 | 5.746 | 3.807 | 0.027 | 0.274 |
| Wk6toWk21 | 968 | 8329.894 | 4.211 | 6.408 | 4.806 | 0.022 | 0.274 |
| Wk6toWk20 | 968 | 8329.915 | 4.232 | 6.306 | 4.692 | 0.022 | 0.274 |
| Wk5toWk14 | 968 | 8329.917 | 4.233 | 5.431 | 3.478 | 0.029 | 0.274 |
| Wk2toWk20 | 968 | 8329.932 | 4.248 | 6.375 | 4.879 | 0.021 | 0.274 |
| Wk4toWk4 | 968 | 8329.950 | 4.266 | 2.041 | 0.860 | 0.060 | 0.273 |
| Wk10toWk17 | 968 | 8329.974 | 4.291 | 4.495 | 2.588 | 0.035 | 0.274 |
| Wk9toWk16 | 968 | 8329.990 | 4.306 | 4.950 | 3.043 | 0.032 | 0.274 |
| Wk2toWk19 | 968 | 8329.996 | 4.312 | 6.267 | 4.911 | 0.020 | 0.274 |
| Wk1toWk16 | 968 | 8330.010 | 4.327 | 5.850 | 4.204 | 0.023 | 0.274 |
| Wk6toWk19 | 968 | 8330.071 | 4.387 | 6.001 | 4.658 | 0.020 | 0.274 |
| Wk2toWk22 | 968 | 8330.088 | 4.405 | 6.108 | 4.981 | 0.018 | 0.274 |
| Wk8toWk15 | 968 | 8330.089 | 4.405 | 5.219 | 3.474 | 0.027 | 0.274 |
| Wk4toWk12 | 968 | 8330.210 | 4.526 | 4.275 | 2.562 | 0.033 | 0.274 |
| Wk2toWk15 | 968 | 8330.240 | 4.556 | 5.258 | 3.816 | 0.023 | 0.274 |
| Wk4toWk13 | 968 | 8330.248 | 4.564 | 4.448 | 2.775 | 0.031 | 0.274 |
| Wk3to23 | 968 | 8330.251 | 4.568 | 5.787 | 5.084 | 0.016 | 0.275 |
| Wk10toWk16 | 968 | 8330.279 | 4.595 | 4.274 | 2.624 | 0.032 | 0.274 |
| Wk6toWk22 | 968 | 8330.286 | 4.602 | 5.593 | 4.676 | 0.018 | 0.275 |
| Wk4toWk8 | 968 | 8330.303 | 4.619 | 3.583 | 1.991 | 0.038 | 0.274 |
| Wk11toWk15 | 968 | 8330.320 | 4.637 | 3.690 | 2.095 | 0.036 | 0.274 |
| Wk1toWk21 | 968 | 8330.322 | 4.638 | 5.609 | 5.009 | 0.016 | 0.275 |
| Wk5toWk6 | 968 | 8330.331 | 4.647 | 3.128 | 1.638 | 0.043 | 0.274 |
| Wk9toWk15 | 968 | 8330.352 | 4.668 | 4.541 | 3.004 | 0.028 | 0.274 |
| Wk9toWk18 | 968 | 8330.369 | 4.686 | 4.640 | 3.157 | 0.026 | 0.274 |
| Wk12toWk17 | 968 | 8330.384 | 4.701 | 3.848 | 2.283 | 0.034 | 0.274 |
| Wk1toWk20 | 968 | 8330.412 | 4.729 | 5.377 | 4.866 | 0.015 | 0.275 |
| Wk5to23 | 968 | 8330.439 | 4.755 | 5.355 | 5.183 | 0.014 | 0.275 |
| Wk3toWk14 | 968 | 8330.449 | 4.765 | 4.600 | 3.227 | 0.025 | 0.274 |
| Wk1toWk19 | 968 | 8330.449 | 4.765 | 5.306 | 4.932 | 0.014 | 0.275 |
| Wk11toWk18 | 968 | 8330.474 | 4.790 | 3.935 | 2.441 | 0.031 | 0.274 |
| Wk1toWk22 | 968 | 8330.487 | 4.803 | 5.220 | 4.973 | 0.014 | 0.275 |
| Wk7toWk15 | 968 | 8330.522 | 4.838 | 4.765 | 3.667 | 0.021 | 0.274 |
| Wk8toWk20 | 968 | 8330.578 | 4.894 | 4.924 | 4.357 | 0.016 | 0.275 |
| Wk4toWk11 | 968 | 8330.592 | 4.909 | 3.836 | 2.436 | 0.030 | 0.274 |
| Wk8toWk21 | 968 | 8330.595 | 4.911 | 4.905 | 4.424 | 0.016 | 0.275 |
| Wk1toWk15 | 968 | 8330.616 | 4.932 | 4.745 | 3.973 | 0.018 | 0.275 |
| Wk7toWk20 | 968 | 8330.618 | 4.935 | 4.887 | 4.643 | 0.014 | 0.275 |
| Wk7toWk21 | 968 | 8330.619 | 4.936 | 4.891 | 4.705 | 0.014 | 0.275 |
| Wk6toWk14 | 968 | 8330.628 | 4.944 | 4.573 | 3.590 | 0.020 | 0.274 |
| Wk2to23 | 968 | 8330.659 | 4.975 | 4.703 | 5.492 | 0.009 | 0.275 |
| Wk10toWk15 | 968 | 8330.690 | 5.006 | 3.828 | 2.529 | 0.028 | 0.274 |
| Wk10toWk18 | 968 | 8330.782 | 5.099 | 3.892 | 2.732 | 0.025 | 0.275 |
| Wk5toWk5 | 968 | 8330.788 | 5.105 | 2.740 | 1.504 | 0.039 | 0.274 |
| Wk11toWk20 | 968 | 8330.846 | 5.162 | 4.090 | 3.199 | 0.020 | 0.275 |
| Wk8toWk19 | 968 | 8330.861 | 5.177 | 4.335 | 4.195 | 0.014 | 0.275 |
| Wk15to17 | 968 | 8330.862 | 5.178 | 3.101 | 1.866 | 0.033 | 0.274 |
| Wk14toWk17 | 968 | 8330.863 | 5.179 | 2.996 | 1.764 | 0.034 | 0.274 |
| Wk7toWk19 | 968 | 8330.866 | 5.182 | 4.323 | 4.507 | 0.012 | 0.275 |
| Wk6to23 | 968 | 8330.876 | 5.192 | 4.083 | 5.279 | 0.008 | 0.276 |
| Wk5toWk7 | 968 | 8330.882 | 5.198 | 3.460 | 2.272 | 0.029 | 0.274 |
| Wk9toWk21 | 968 | 8330.884 | 5.201 | 4.265 | 3.950 | 0.015 | 0.275 |
| Wk11toWk21 | 968 | 8330.885 | 5.201 | 4.083 | 3.301 | 0.019 | 0.275 |
| Wk9toWk20 | 968 | 8330.912 | 5.228 | 4.198 | 3.841 | 0.015 | 0.275 |
| Wk1to23 | 968 | 8330.921 | 5.237 | 3.830 | 5.437 | 0.006 | 0.276 |
| Wk7toWk22 | 968 | 8330.956 | 5.273 | 4.109 | 4.492 | 0.011 | 0.275 |
| Wk8toWk22 | 968 | 8330.959 | 5.275 | 4.131 | 4.241 | 0.012 | 0.275 |
| Wk4toWk9 | 968 | 8330.982 | 5.299 | 3.281 | 2.150 | 0.029 | 0.274 |
| Wk13toWk17 | 968 | 8331.051 | 5.367 | 3.150 | 2.056 | 0.029 | 0.274 |
| Wk12toWk16 | 968 | 8331.064 | 5.380 | 3.248 | 2.190 | 0.027 | 0.275 |
| Wk8toWk14 | 968 | 8331.072 | 5.388 | 3.846 | 3.401 | 0.016 | 0.275 |
| Wk2toWk14 | 968 | 8331.074 | 5.390 | 3.879 | 3.591 | 0.015 | 0.275 |
| Wk5toWk12 | 968 | 8331.086 | 5.402 | 3.715 | 3.039 | 0.019 | 0.275 |
| Wk5toWk13 | 968 | 8331.113 | 5.429 | 3.751 | 3.266 | 0.017 | 0.275 |
| Wk11toWk22 | 968 | 8331.125 | 5.441 | 3.750 | 3.332 | 0.016 | 0.275 |
| Wk9toWk22 | 968 | 8331.179 | 5.495 | 3.698 | 3.848 | 0.012 | 0.276 |
| Wk10toWk21 | 968 | 8331.183 | 5.499 | 3.686 | 3.501 | 0.014 | 0.275 |
| Wk9toWk19 | 968 | 8331.185 | 5.501 | 3.692 | 3.678 | 0.013 | 0.275 |
| Wk12toWk18 | 968 | 8331.191 | 5.508 | 3.331 | 2.480 | 0.022 | 0.275 |
| Wk10toWk20 | 968 | 8331.195 | 5.511 | 3.654 | 3.402 | 0.015 | 0.275 |
| Wk1toWk14 | 968 | 8331.236 | 5.552 | 3.585 | 3.821 | 0.011 | 0.275 |
| Wk9toWk14 | 968 | 8331.239 | 5.555 | 3.490 | 2.954 | 0.018 | 0.275 |
| Wk11toWk14 | 968 | 8331.239 | 5.556 | 2.953 | 1.978 | 0.027 | 0.274 |
| Wk11toWk19 | 968 | 8331.248 | 5.564 | 3.482 | 2.968 | 0.018 | 0.275 |
| Wk15to15 | 968 | 8331.251 | 5.567 | 2.602 | 1.586 | 0.033 | 0.274 |
| Wk4toWk10 | 968 | 8331.295 | 5.611 | 3.230 | 2.477 | 0.021 | 0.275 |
| Wk7to23 | 968 | 8331.310 | 5.626 | 2.533 | 5.092 | 0.003 | 0.276 |
| Wk11toWk12 | 968 | 8331.337 | 5.654 | 2.603 | 1.635 | 0.031 | 0.274 |
| Wk10toWk22 | 968 | 8331.357 | 5.673 | 3.383 | 3.514 | 0.012 | 0.276 |
| Wk8to23 | 968 | 8331.407 | 5.724 | 2.562 | 4.737 | 0.004 | 0.276 |
| Wk12toWk20 | 968 | 8331.419 | 5.735 | 3.283 | 3.356 | 0.012 | 0.276 |
| Wk7toWk14 | 968 | 8331.420 | 5.736 | 3.266 | 3.518 | 0.011 | 0.275 |
| Wk12toWk21 | 968 | 8331.433 | 5.749 | 3.252 | 3.434 | 0.012 | 0.276 |
| Wk3toWk13 | 968 | 8331.479 | 5.795 | 3.171 | 2.953 | 0.015 | 0.275 |
| Wk10toWk19 | 968 | 8331.481 | 5.798 | 3.183 | 3.224 | 0.013 | 0.276 |
| Wk10toWk14 | 968 | 8331.498 | 5.814 | 3.021 | 2.470 | 0.019 | 0.275 |
| Wk5toWk11 | 968 | 8331.523 | 5.840 | 3.102 | 2.893 | 0.015 | 0.275 |
| Wk15to16 | 968 | 8331.534 | 5.850 | 2.582 | 1.750 | 0.027 | 0.275 |
| Wk12toWk15 | 968 | 8331.546 | 5.862 | 2.769 | 2.040 | 0.023 | 0.275 |
| Wk3toWk12 | 968 | 8331.574 | 5.890 | 3.010 | 2.731 | 0.016 | 0.275 |
| Wk12toWk12 | 968 | 8331.586 | 5.902 | 2.824 | 2.205 | 0.021 | 0.275 |
| Wk9to23 | 968 | 8331.627 | 5.943 | 2.277 | 4.261 | 0.004 | 0.276 |
| Wk12toWk22 | 968 | 8331.648 | 5.964 | 2.854 | 3.399 | 0.009 | 0.276 |
| Wk5toWk8 | 968 | 8331.721 | 6.037 | 2.779 | 2.451 | 0.017 | 0.275 |
| Wk14toWk15 | 968 | 8331.722 | 6.038 | 2.224 | 1.436 | 0.030 | 0.275 |
| Wk11to23 | 968 | 8331.725 | 6.041 | 2.512 | 3.709 | 0.006 | 0.276 |
| Wk14toWk16 | 968 | 8331.725 | 6.041 | 2.338 | 1.579 | 0.027 | 0.275 |
| Wk6toWk13 | 968 | 8331.726 | 6.042 | 2.731 | 3.307 | 0.009 | 0.275 |
| Wk13toWk18 | 968 | 8331.742 | 6.058 | 2.705 | 2.272 | 0.018 | 0.275 |
| Wk6toWk12 | 968 | 8331.754 | 6.070 | 2.746 | 3.075 | 0.010 | 0.275 |
| Wk13toWk21 | 968 | 8331.791 | 6.108 | 2.607 | 3.290 | 0.008 | 0.276 |
| Wk2toWk13 | 968 | 8331.803 | 6.119 | 2.559 | 3.338 | 0.008 | 0.276 |
| Wk10to23 | 968 | 8331.810 | 6.126 | 2.089 | 3.879 | 0.004 | 0.276 |
| Wk13toWk20 | 968 | 8331.818 | 6.134 | 2.594 | 3.197 | 0.009 | 0.276 |
| Wk14toWk18 | 968 | 8331.820 | 6.136 | 2.523 | 1.985 | 0.020 | 0.275 |
| Wk1toWk13 | 968 | 8331.823 | 6.139 | 2.329 | 3.608 | 0.006 | 0.276 |
| Wk14toWk21 | 968 | 8331.830 | 6.147 | 2.611 | 3.081 | 0.010 | 0.276 |
| Wk2toWk12 | 968 | 8331.847 | 6.163 | 2.548 | 3.171 | 0.008 | 0.276 |
| Wk13toWk16 | 968 | 8331.851 | 6.167 | 2.459 | 1.903 | 0.021 | 0.275 |
| Wk12toWk19 | 968 | 8331.860 | 6.177 | 2.569 | 3.045 | 0.009 | 0.276 |
| Wk9toWk12 | 968 | 8331.865 | 6.182 | 2.611 | 2.831 | 0.011 | 0.275 |
| Wk1toWk12 | 968 | 8331.872 | 6.189 | 2.330 | 3.448 | 0.006 | 0.276 |
| Wk8toWk12 | 968 | 8331.883 | 6.200 | 2.476 | 3.171 | 0.008 | 0.276 |
| Wk14toWk20 | 968 | 8331.919 | 6.235 | 2.507 | 2.918 | 0.010 | 0.276 |
| Wk3toWk11 | 968 | 8331.944 | 6.260 | 2.525 | 2.577 | 0.013 | 0.275 |
| Wk8toWk13 | 968 | 8331.972 | 6.288 | 2.193 | 3.313 | 0.006 | 0.276 |
| Wk13toWk22 | 968 | 8332.007 | 6.323 | 2.195 | 3.205 | 0.006 | 0.276 |
| Wk12to23 | 968 | 8332.010 | 6.326 | 1.389 | 3.809 | 0.002 | 0.276 |
| Wk9toWk13 | 968 | 8332.072 | 6.389 | 2.213 | 2.962 | 0.007 | 0.276 |
| Wk1toWk11 | 968 | 8332.097 | 6.413 | 1.824 | 3.348 | 0.004 | 0.276 |
| Wk14toWk22 | 968 | 8332.106 | 6.423 | 2.135 | 2.980 | 0.007 | 0.276 |
| Wk10toWk12 | 968 | 8332.115 | 6.431 | 2.316 | 2.242 | 0.014 | 0.275 |
| Wk2toWk11 | 968 | 8332.124 | 6.440 | 2.051 | 3.045 | 0.006 | 0.276 |
| Wk11toWk11 | 968 | 8332.132 | 6.449 | 1.808 | 1.165 | 0.029 | 0.274 |
| Wk11toWk13 | 968 | 8332.156 | 6.473 | 2.221 | 1.918 | 0.017 | 0.275 |
| Wk15to21 | 968 | 8332.157 | 6.473 | 1.735 | 3.278 | 0.004 | 0.276 |
| Wk7toWk13 | 968 | 8332.197 | 6.514 | 1.586 | 3.293 | 0.003 | 0.276 |
| Wk6toWk11 | 968 | 8332.212 | 6.528 | 1.994 | 2.871 | 0.006 | 0.276 |
| Wk7toWk12 | 968 | 8332.223 | 6.540 | 1.719 | 3.137 | 0.004 | 0.276 |
| Wk3toWk8 | 968 | 8332.224 | 6.540 | 2.196 | 2.220 | 0.013 | 0.275 |
| Wk3toWk7 | 968 | 8332.228 | 6.544 | 2.173 | 1.983 | 0.016 | 0.275 |
| Wk13to23 | 968 | 8332.237 | 6.553 | 0.707 | 3.573 | 0.001 | 0.276 |
| Wk5toWk9 | 968 | 8332.238 | 6.554 | 2.139 | 2.484 | 0.010 | 0.275 |
| Wk15to22 | 968 | 8332.267 | 6.584 | 1.452 | 3.231 | 0.003 | 0.276 |
| Wk13toWk19 | 968 | 8332.288 | 6.604 | 1.874 | 2.828 | 0.006 | 0.276 |
| Wk12toWk14 | 968 | 8332.295 | 6.611 | 2.111 | 1.983 | 0.015 | 0.275 |
| Wk13toWk15 | 968 | 8332.296 | 6.612 | 2.058 | 1.745 | 0.018 | 0.275 |
| Wk15to18 | 968 | 8332.304 | 6.620 | 2.107 | 2.027 | 0.014 | 0.275 |
| Wk1toWk8 | 968 | 8332.310 | 6.626 | 1.355 | 3.199 | 0.002 | 0.276 |
| Wk5toWk10 | 968 | 8332.316 | 6.632 | 1.772 | 2.873 | 0.005 | 0.276 |
| Wk1toWk10 | 968 | 8332.326 | 6.642 | 0.683 | 3.415 | 0.001 | 0.276 |
| Wk15to20 | 968 | 8332.329 | 6.646 | 1.535 | 3.049 | 0.003 | 0.276 |
| Wk1toWk9 | 968 | 8332.364 | 6.680 | 1.133 | 3.203 | 0.002 | 0.276 |
| Wk10toWk13 | 968 | 8332.384 | 6.700 | 1.949 | 2.421 | 0.009 | 0.276 |
| Wk14to23 | 968 | 8332.399 | 6.715 | 0.681 | 3.288 | 0.001 | 0.276 |
| Wk3toWk9 | 968 | 8332.406 | 6.723 | 1.958 | 2.308 | 0.010 | 0.276 |
| Wk3toWk6 | 968 | 8332.414 | 6.730 | 1.930 | 1.613 | 0.019 | 0.275 |
| Wk8toWk11 | 968 | 8332.420 | 6.736 | 1.436 | 2.935 | 0.003 | 0.276 |
| Wk1toWk7 | 968 | 8332.442 | 6.758 | 1.372 | 2.934 | 0.003 | 0.276 |
| Wk3toWk10 | 968 | 8332.449 | 6.766 | 1.756 | 2.571 | 0.006 | 0.276 |
| Wk2toWk10 | 968 | 8332.450 | 6.766 | 1.045 | 3.086 | 0.002 | 0.276 |
| Wk2toWk8 | 968 | 8332.464 | 6.780 | 1.575 | 2.737 | 0.004 | 0.276 |
| Wk14toWk19 | 968 | 8332.476 | 6.793 | 1.751 | 2.512 | 0.007 | 0.276 |
| Wk16to17 | 968 | 8332.507 | 6.823 | 1.847 | 1.555 | 0.018 | 0.275 |
| Wk9toWk11 | 968 | 8332.515 | 6.831 | 1.620 | 2.585 | 0.005 | 0.276 |
| Wk2toWk9 | 968 | 8332.521 | 6.838 | 1.364 | 2.790 | 0.003 | 0.276 |
| Wk16to21 | 968 | 8332.526 | 6.842 | 0.347 | 3.135 | 0.000 | 0.276 |
| Wk2toWk7 | 968 | 8332.532 | 6.848 | 1.636 | 2.530 | 0.006 | 0.276 |
| Wk16to22 | 968 | 8332.544 | 6.860 | 0.276 | 3.115 | 0.000 | 0.276 |
| Wk7toWk11 | 968 | 8332.617 | 6.933 | 0.833 | 2.885 | 0.001 | 0.276 |
| Wk17to17 | 968 | 8332.660 | 6.976 | 1.692 | 1.386 | 0.018 | 0.275 |
| Wk1toWk6 | 968 | 8332.720 | 7.037 | 1.307 | 2.474 | 0.004 | 0.276 |
| Wk2toWk6 | 968 | 8332.773 | 7.089 | 1.538 | 2.123 | 0.007 | 0.276 |
| Wk16to20 | 968 | 8332.793 | 7.109 | 0.115 | 2.759 | 0.000 | 0.276 |
| Wk15to19 | 968 | 8332.810 | 7.126 | 0.836 | 2.592 | 0.001 | 0.276 |
| Wk6toWk7 | 968 | 8332.818 | 7.135 | 1.548 | 1.992 | 0.008 | 0.276 |
| Wk3toWk5 | 968 | 8332.859 | 7.175 | 1.598 | 1.572 | 0.014 | 0.276 |
| Wk6toWk10 | 968 | 8332.869 | 7.185 | 0.329 | 2.636 | 0.000 | 0.276 |
| Wk10toWk11 | 968 | 8332.918 | 7.235 | 1.463 | 1.915 | 0.008 | 0.276 |
| Wk6toWk8 | 968 | 8332.964 | 7.281 | 1.146 | 2.198 | 0.004 | 0.276 |
| Wk6toWk6 | 968 | 8332.997 | 7.313 | 1.443 | 1.209 | 0.019 | 0.275 |
| Wk1toWk5 | 968 | 8333.037 | 7.353 | 0.404 | 2.409 | 0.000 | 0.276 |
| Wk12toWk13 | 968 | 8333.037 | 7.354 | 1.139 | 2.093 | 0.004 | 0.276 |
| Wk20to22 | 968 | 8333.040 | 7.356 | 0.837 | 2.273 | 0.002 | 0.276 |
| Wk14toWk14 | 968 | 8333.046 | 7.362 | 1.390 | 1.131 | 0.020 | 0.276 |
| Wk6toWk9 | 968 | 8333.068 | 7.385 | 0.812 | 2.246 | 0.002 | 0.276 |
| we20to20 | 968 | 8333.128 | 7.444 | 1.245 | 1.839 | 0.006 | 0.276 |
| Wk13toWk14 | 968 | 8333.193 | 7.509 | 1.307 | 1.601 | 0.009 | 0.276 |
| Wk2toWk5 | 968 | 8333.225 | 7.541 | 0.794 | 2.058 | 0.002 | 0.276 |
| Wk20to21 | 968 | 8333.317 | 7.633 | 0.895 | 1.889 | 0.003 | 0.276 |
| Wk16to18 | 968 | 8333.434 | 7.750 | 0.984 | 1.673 | 0.005 | 0.276 |
| Wk16to16 | 968 | 8333.615 | 7.931 | 1.057 | 1.299 | 0.009 | 0.276 |
| Wk3toWk4 | 968 | 8333.819 | 8.135 | 0.799 | 1.392 | 0.005 | 0.276 |
| Wk21to22 | 968 | 8333.837 | 8.153 | 0.164 | 1.630 | 0.000 | 0.276 |
| Wk17to18 | 968 | 8333.862 | 8.178 | 0.506 | 1.528 | 0.001 | 0.276 |
| Wk21to21 | 968 | 8334.184 | 8.500 | 0.250 | 1.353 | 0.000 | 0.276 |

**Parasitoid attack phenology**

**Table S9a.** Parasitoid attack occurrence phenology as a function of temperature advancing emergence, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and July 8th Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 7100.307. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk4towk5\*** | **765** | **7091.652** | **0.000** | **-4.231** | **1.350** | **0.115** | **0.348** |
| wk3towk5 | 765 | 7092.739 | 1.087 | -4.664 | 1.679 | 0.094 | 0.345 |
| wk5towk5 | 765 | 7093.327 | 1.675 | -2.928 | 1.019 | 0.101 | 0.347 |
| wk3towk6 | 765 | 7093.329 | 1.677 | -4.566 | 1.754 | 0.092 | 0.350 |
| wk4towk6 | 765 | 7093.642 | 1.990 | -3.849 | 1.474 | 0.092 | 0.350 |
| wk11towk12 | 765 | 7094.272 | 2.620 | -5.007 | 2.249 | 0.061 | 0.341 |
| wk3towk12 | 765 | 7094.579 | 2.927 | -5.670 | 2.802 | 0.059 | 0.346 |
| wk4towk12 | 765 | 7094.939 | 3.287 | -5.194 | 2.669 | 0.056 | 0.347 |
| wk3towk7 | 765 | 7094.976 | 3.323 | -4.356 | 2.102 | 0.066 | 0.349 |
| wk3towk13 | 765 | 7095.264 | 3.612 | -5.412 | 3.074 | 0.047 | 0.346 |
| wk3towk14 | 765 | 7095.288 | 3.636 | -5.283 | 2.982 | 0.049 | 0.347 |
| wk4towk7 | 765 | 7095.310 | 3.658 | -3.838 | 1.881 | 0.064 | 0.349 |
| wk3towk9 | 765 | 7095.333 | 3.681 | -4.725 | 2.541 | 0.051 | 0.345 |
| wk1towk12 | 765 | 7095.409 | 3.757 | -5.273 | 3.077 | 0.043 | 0.345 |
| wk3towk15 | 765 | 7095.445 | 3.793 | -5.400 | 3.237 | 0.044 | 0.347 |
| wk2towk12 | 765 | 7095.501 | 3.848 | -5.117 | 3.013 | 0.043 | 0.345 |
| wk4towk14 | 765 | 7095.561 | 3.909 | -4.913 | 2.880 | 0.046 | 0.348 |
| wk4towk9 | 765 | 7095.574 | 3.922 | -4.372 | 2.404 | 0.050 | 0.346 |
| wk2towk6 | 765 | 7095.597 | 3.945 | -3.960 | 2.090 | 0.054 | 0.347 |
| wk4towk13 | 765 | 7095.598 | 3.946 | -4.957 | 2.954 | 0.044 | 0.347 |
| wk5towk6 | 765 | 7095.615 | 3.962 | -2.716 | 1.242 | 0.070 | 0.349 |
| wk3towk8 | 765 | 7095.637 | 3.985 | -4.273 | 2.362 | 0.051 | 0.347 |
| wk4towk15 | 765 | 7095.683 | 4.030 | -5.066 | 3.154 | 0.042 | 0.347 |
| wk3towk11 | 765 | 7095.688 | 4.036 | -4.504 | 2.597 | 0.045 | 0.345 |
| wk1towk14 | 765 | 7095.730 | 4.078 | -5.106 | 3.254 | 0.038 | 0.345 |
| wk5towk12 | 765 | 7095.761 | 4.109 | -4.531 | 2.684 | 0.044 | 0.346 |
| wk1towk15 | 765 | 7095.794 | 4.142 | -5.245 | 3.513 | 0.034 | 0.345 |
| wk1towk6 | 765 | 7095.814 | 4.162 | -3.939 | 2.189 | 0.048 | 0.346 |
| wk3towk17 | 765 | 7095.822 | 4.170 | -5.289 | 3.616 | 0.033 | 0.346 |
| wk3towk16 | 765 | 7095.839 | 4.187 | -5.191 | 3.515 | 0.035 | 0.346 |
| wk1towk13 | 765 | 7095.863 | 4.210 | -5.012 | 3.323 | 0.035 | 0.345 |
| wk3towk18 | 765 | 7095.863 | 4.211 | -5.183 | 3.546 | 0.033 | 0.346 |
| wk3towk10 | 765 | 7095.880 | 4.228 | -4.406 | 2.660 | 0.042 | 0.345 |
| wk2towk14 | 765 | 7095.890 | 4.238 | -4.864 | 3.180 | 0.037 | 0.346 |
| wk4towk17 | 765 | 7095.905 | 4.253 | -5.181 | 3.622 | 0.033 | 0.346 |
| wk4towk18 | 765 | 7095.922 | 4.270 | -5.113 | 3.557 | 0.033 | 0.346 |
| wk4towk8 | 765 | 7095.926 | 4.274 | -3.870 | 2.193 | 0.050 | 0.348 |
| wk2towk13 | 765 | 7095.967 | 4.315 | -4.854 | 3.277 | 0.034 | 0.345 |
| wk4towk16 | 765 | 7095.969 | 4.317 | -5.007 | 3.493 | 0.033 | 0.347 |
| wk2towk15 | 765 | 7095.986 | 4.334 | -4.945 | 3.433 | 0.033 | 0.346 |
| wk4towk11 | 765 | 7096.005 | 4.353 | -4.101 | 2.462 | 0.043 | 0.346 |
| wk10towk12 | 765 | 7096.017 | 4.365 | -4.274 | 2.659 | 0.039 | 0.346 |
| wk4towk4 | 765 | 7096.041 | 4.389 | -2.946 | 1.504 | 0.053 | 0.344 |
| wk2towk5 | 765 | 7096.102 | 4.450 | -3.588 | 2.046 | 0.044 | 0.344 |
| wk3to23 | 765 | 7096.116 | 4.464 | -5.053 | 3.924 | 0.027 | 0.346 |
| wk1towk18 | 765 | 7096.130 | 4.478 | -4.945 | 3.753 | 0.027 | 0.345 |
| wk3to24 | 765 | 7096.135 | 4.483 | -5.037 | 3.954 | 0.026 | 0.346 |
| wk1towk16 | 765 | 7096.137 | 4.485 | -4.934 | 3.753 | 0.027 | 0.345 |
| wk1towk17 | 765 | 7096.140 | 4.488 | -4.964 | 3.819 | 0.026 | 0.345 |
| wk4to23 | 765 | 7096.157 | 4.505 | -5.006 | 3.964 | 0.027 | 0.346 |
| wk3to25 | 765 | 7096.162 | 4.510 | -5.016 | 4.007 | 0.026 | 0.346 |
| wk3to26 | 765 | 7096.166 | 4.514 | -5.109 | 4.269 | 0.024 | 0.346 |
| wk4to24 | 765 | 7096.170 | 4.518 | -4.999 | 3.998 | 0.026 | 0.346 |
| wk4to25 | 765 | 7096.195 | 4.543 | -4.980 | 4.053 | 0.025 | 0.346 |
| wk4to26 | 765 | 7096.206 | 4.554 | -5.053 | 4.325 | 0.023 | 0.347 |
| wk4towk10 | 765 | 7096.213 | 4.561 | -3.978 | 2.516 | 0.039 | 0.346 |
| wk5towk14 | 765 | 7096.221 | 4.569 | -4.286 | 2.903 | 0.036 | 0.347 |
| wk3to27 | 765 | 7096.259 | 4.607 | -4.970 | 4.402 | 0.022 | 0.347 |
| wk3towk22 | 765 | 7096.260 | 4.608 | -4.735 | 3.722 | 0.027 | 0.346 |
| wk2towk18 | 765 | 7096.300 | 4.648 | -4.657 | 3.683 | 0.025 | 0.345 |
| wk1towk11 | 765 | 7096.309 | 4.657 | -4.166 | 2.861 | 0.032 | 0.345 |
| wk2towk17 | 765 | 7096.313 | 4.661 | -4.667 | 3.752 | 0.024 | 0.345 |
| wk4to27 | 765 | 7096.314 | 4.662 | -4.869 | 4.450 | 0.021 | 0.347 |
| wk3towk4 | 765 | 7096.327 | 4.675 | -3.317 | 1.929 | 0.041 | 0.343 |
| wk2towk16 | 765 | 7096.328 | 4.676 | -4.611 | 3.675 | 0.025 | 0.345 |
| wk5towk13 | 765 | 7096.330 | 4.678 | -4.229 | 2.988 | 0.032 | 0.346 |
| wk4towk22 | 765 | 7096.331 | 4.679 | -4.630 | 3.733 | 0.026 | 0.347 |
| wk5towk15 | 765 | 7096.332 | 4.680 | -4.353 | 3.188 | 0.031 | 0.347 |
| wk3towk19 | 765 | 7096.333 | 4.681 | -4.511 | 3.476 | 0.027 | 0.346 |
| wk1to24 | 765 | 7096.339 | 4.687 | -4.737 | 4.075 | 0.022 | 0.345 |
| wk1to23 | 765 | 7096.345 | 4.692 | -4.717 | 4.041 | 0.022 | 0.345 |
| wk1towk9 | 765 | 7096.349 | 4.697 | -4.092 | 2.818 | 0.032 | 0.345 |
| wk1to26 | 765 | 7096.360 | 4.708 | -4.761 | 4.362 | 0.019 | 0.346 |
| wk1to25 | 765 | 7096.378 | 4.726 | -4.673 | 4.101 | 0.021 | 0.345 |
| wk4towk19 | 765 | 7096.398 | 4.746 | -4.425 | 3.487 | 0.027 | 0.346 |
| wk1to27 | 765 | 7096.404 | 4.752 | -4.686 | 4.514 | 0.018 | 0.346 |
| wk11towk14 | 765 | 7096.414 | 4.761 | -4.068 | 2.891 | 0.031 | 0.346 |
| wk2towk9 | 765 | 7096.435 | 4.783 | -3.960 | 2.753 | 0.032 | 0.345 |
| wk2towk11 | 765 | 7096.437 | 4.784 | -3.982 | 2.786 | 0.032 | 0.345 |
| wk2to24 | 765 | 7096.438 | 4.786 | -4.552 | 4.051 | 0.021 | 0.346 |
| wk2to26 | 765 | 7096.439 | 4.787 | -4.598 | 4.360 | 0.019 | 0.346 |
| wk2to23 | 765 | 7096.446 | 4.794 | -4.529 | 4.016 | 0.021 | 0.346 |
| wk5towk18 | 765 | 7096.454 | 4.802 | -4.392 | 3.609 | 0.024 | 0.346 |
| wk2to25 | 765 | 7096.456 | 4.804 | -4.527 | 4.093 | 0.020 | 0.346 |
| wk12towk12 | 765 | 7096.459 | 4.807 | -3.266 | 1.967 | 0.031 | 0.339 |
| wk5towk17 | 765 | 7096.469 | 4.816 | -4.400 | 3.693 | 0.023 | 0.346 |
| wk1towk22 | 765 | 7096.469 | 4.817 | -4.447 | 3.852 | 0.022 | 0.346 |
| wk2to27 | 765 | 7096.486 | 4.834 | -4.504 | 4.511 | 0.017 | 0.346 |
| wk3towk20 | 765 | 7096.507 | 4.855 | -4.236 | 3.407 | 0.026 | 0.346 |
| wk3towk21 | 765 | 7096.532 | 4.880 | -4.266 | 3.588 | 0.024 | 0.346 |
| wk5to23 | 765 | 7096.537 | 4.885 | -4.365 | 4.038 | 0.020 | 0.346 |
| wk5to26 | 765 | 7096.537 | 4.885 | -4.390 | 4.413 | 0.017 | 0.346 |
| wk5to24 | 765 | 7096.541 | 4.889 | -4.360 | 4.062 | 0.019 | 0.346 |
| wk5to25 | 765 | 7096.555 | 4.903 | -4.339 | 4.110 | 0.019 | 0.346 |
| wk5towk16 | 765 | 7096.564 | 4.912 | -4.205 | 3.551 | 0.023 | 0.346 |
| wk1towk19 | 765 | 7096.566 | 4.913 | -4.226 | 3.629 | 0.022 | 0.345 |
| wk2towk22 | 765 | 7096.566 | 4.914 | -4.275 | 3.826 | 0.021 | 0.346 |
| wk10towk14 | 765 | 7096.572 | 4.920 | -4.071 | 3.237 | 0.026 | 0.347 |
| wk4towk20 | 765 | 7096.590 | 4.938 | -4.116 | 3.402 | 0.025 | 0.346 |
| wk9towk12 | 765 | 7096.599 | 4.947 | -3.675 | 2.580 | 0.030 | 0.345 |
| wk1towk10 | 765 | 7096.605 | 4.952 | -3.871 | 2.903 | 0.028 | 0.345 |
| wk4towk21 | 765 | 7096.609 | 4.957 | -4.147 | 3.594 | 0.023 | 0.346 |
| wk5to27 | 765 | 7096.615 | 4.963 | -4.197 | 4.546 | 0.015 | 0.347 |
| wk1towk5 | 765 | 7096.617 | 4.965 | -3.267 | 2.078 | 0.036 | 0.344 |
| wk2towk7 | 765 | 7096.622 | 4.970 | -3.463 | 2.317 | 0.036 | 0.346 |
| wk1towk7 | 765 | 7096.638 | 4.986 | -3.501 | 2.385 | 0.034 | 0.346 |
| wk2towk19 | 765 | 7096.690 | 5.038 | -4.014 | 3.582 | 0.021 | 0.346 |
| wk1towk20 | 765 | 7096.696 | 5.044 | -3.999 | 3.554 | 0.021 | 0.346 |
| wk5towk22 | 765 | 7096.700 | 5.048 | -4.032 | 3.796 | 0.019 | 0.346 |
| wk2towk10 | 765 | 7096.705 | 5.053 | -3.729 | 2.848 | 0.027 | 0.345 |
| wk1towk21 | 765 | 7096.715 | 5.063 | -3.996 | 3.718 | 0.019 | 0.346 |
| wk9towk14 | 765 | 7096.734 | 5.082 | -3.806 | 3.108 | 0.024 | 0.346 |
| wk1towk8 | 765 | 7096.754 | 5.102 | -3.550 | 2.621 | 0.029 | 0.345 |
| wk11towk13 | 765 | 7096.777 | 5.125 | -3.762 | 3.144 | 0.022 | 0.346 |
| wk10towk15 | 765 | 7096.799 | 5.147 | -3.850 | 3.788 | 0.017 | 0.347 |
| wk2towk20 | 765 | 7096.813 | 5.161 | -3.801 | 3.508 | 0.019 | 0.346 |
| wk5towk11 | 765 | 7096.817 | 5.165 | -3.376 | 2.432 | 0.031 | 0.345 |
| wk2towk21 | 765 | 7096.819 | 5.167 | -3.810 | 3.684 | 0.018 | 0.346 |
| wk11to23 | 765 | 7096.819 | 5.167 | -3.574 | 4.745 | 0.010 | 0.346 |
| wk5towk9 | 765 | 7096.820 | 5.168 | -3.301 | 2.321 | 0.032 | 0.345 |
| wk11towk15 | 765 | 7096.822 | 5.170 | -3.775 | 3.443 | 0.019 | 0.346 |
| we9to26 | 765 | 7096.828 | 5.176 | -3.369 | 5.014 | 0.008 | 0.346 |
| wk9to23 | 765 | 7096.840 | 5.188 | -3.573 | 4.626 | 0.010 | 0.346 |
| wk5towk19 | 765 | 7096.840 | 5.188 | -3.758 | 3.523 | 0.019 | 0.346 |
| wk11to25 | 765 | 7096.842 | 5.190 | -3.521 | 4.715 | 0.009 | 0.346 |
| wk2towk8 | 765 | 7096.844 | 5.192 | -3.419 | 2.550 | 0.029 | 0.346 |
| we9to25 | 765 | 7096.845 | 5.193 | -3.555 | 4.632 | 0.010 | 0.346 |
| wk11to26 | 765 | 7096.848 | 5.196 | -3.217 | 5.108 | 0.007 | 0.346 |
| wk11to24 | 765 | 7096.853 | 5.201 | -3.513 | 4.666 | 0.010 | 0.346 |
| we9to24 | 765 | 7096.857 | 5.205 | -3.544 | 4.582 | 0.010 | 0.346 |
| wk9towk15 | 765 | 7096.858 | 5.206 | -3.734 | 3.586 | 0.018 | 0.346 |
| wk10to23 | 765 | 7096.901 | 5.249 | -3.327 | 4.726 | 0.009 | 0.346 |
| wk10to26 | 765 | 7096.921 | 5.268 | -2.988 | 5.042 | 0.006 | 0.346 |
| we9to27 | 765 | 7096.924 | 5.272 | -2.927 | 5.084 | 0.006 | 0.346 |
| wk10to25 | 765 | 7096.941 | 5.289 | -3.245 | 4.655 | 0.008 | 0.346 |
| wk10to24 | 765 | 7096.945 | 5.293 | -3.252 | 4.625 | 0.008 | 0.346 |
| wk11to27 | 765 | 7096.968 | 5.316 | -2.666 | 5.140 | 0.005 | 0.346 |
| wk9towk17 | 765 | 7096.972 | 5.320 | -3.334 | 4.350 | 0.009 | 0.345 |
| wk9towk18 | 765 | 7096.973 | 5.321 | -3.449 | 4.061 | 0.011 | 0.345 |
| wk12to23 | 765 | 7096.978 | 5.326 | -2.622 | 5.134 | 0.005 | 0.346 |
| wk5towk21 | 765 | 7096.982 | 5.329 | -3.512 | 3.631 | 0.016 | 0.346 |
| wk12to26 | 765 | 7096.982 | 5.330 | -2.169 | 5.396 | 0.003 | 0.346 |
| wk6to26 | 765 | 7096.983 | 5.331 | -3.034 | 4.740 | 0.007 | 0.346 |
| wk5towk20 | 765 | 7096.998 | 5.346 | -3.485 | 3.417 | 0.018 | 0.346 |
| wk11towk17 | 765 | 7097.004 | 5.352 | -3.202 | 4.426 | 0.008 | 0.346 |
| wk10towk17 | 765 | 7097.009 | 5.357 | -3.073 | 4.584 | 0.007 | 0.346 |
| wk10to27 | 765 | 7097.014 | 5.362 | -2.509 | 5.090 | 0.004 | 0.346 |
| wk12to25 | 765 | 7097.015 | 5.363 | -2.660 | 4.976 | 0.005 | 0.346 |
| wk8to26 | 765 | 7097.024 | 5.372 | -2.806 | 4.817 | 0.006 | 0.346 |
| wk6to27 | 765 | 7097.024 | 5.372 | -2.763 | 4.856 | 0.006 | 0.346 |
| wk6to25 | 765 | 7097.026 | 5.374 | -3.146 | 4.409 | 0.009 | 0.346 |
| wk12to24 | 765 | 7097.027 | 5.375 | -2.625 | 4.960 | 0.005 | 0.346 |
| wk10towk18 | 765 | 7097.029 | 5.377 | -3.261 | 4.191 | 0.010 | 0.346 |
| wk11towk18 | 765 | 7097.033 | 5.381 | -3.323 | 4.017 | 0.011 | 0.346 |
| wk11towk22 | 765 | 7097.040 | 5.388 | -3.157 | 4.326 | 0.009 | 0.347 |
| wk11towk11 | 765 | 7097.047 | 5.395 | -2.634 | 1.676 | 0.038 | 0.346 |
| wk6to24 | 765 | 7097.048 | 5.395 | -3.114 | 4.355 | 0.009 | 0.346 |
| wk9towk22 | 765 | 7097.050 | 5.398 | -3.174 | 4.247 | 0.009 | 0.346 |
| wk8to25 | 765 | 7097.063 | 5.411 | -2.987 | 4.467 | 0.007 | 0.346 |
| wk12to27 | 765 | 7097.074 | 5.422 | -1.568 | 5.365 | 0.002 | 0.346 |
| wk6to23 | 765 | 7097.079 | 5.427 | -3.040 | 4.328 | 0.009 | 0.346 |
| wk8to27 | 765 | 7097.080 | 5.428 | -2.456 | 4.904 | 0.004 | 0.346 |
| wk10towk22 | 765 | 7097.092 | 5.440 | -2.984 | 4.352 | 0.008 | 0.346 |
| wk8to24 | 765 | 7097.102 | 5.450 | -2.921 | 4.389 | 0.007 | 0.346 |
| wk9towk16 | 765 | 7097.113 | 5.461 | -3.043 | 4.168 | 0.008 | 0.346 |
| wk8to23 | 765 | 7097.127 | 5.475 | -2.852 | 4.378 | 0.007 | 0.346 |
| wk7to26 | 765 | 7097.129 | 5.477 | -2.290 | 4.857 | 0.004 | 0.346 |
| wk6towk12 | 765 | 7097.131 | 5.479 | -3.238 | 2.973 | 0.019 | 0.346 |
| wk10towk16 | 765 | 7097.140 | 5.488 | -2.767 | 4.427 | 0.007 | 0.346 |
| wk22to25 | 765 | 7097.147 | 5.495 | -3.083 | 3.927 | 0.008 | 0.344 |
| wk7to27 | 765 | 7097.155 | 5.503 | -1.978 | 4.955 | 0.003 | 0.346 |
| wk5towk10 | 765 | 7097.163 | 5.510 | -3.058 | 2.466 | 0.025 | 0.345 |
| wk5towk7 | 765 | 7097.168 | 5.515 | -2.555 | 1.663 | 0.039 | 0.347 |
| wk11towk16 | 765 | 7097.184 | 5.532 | -2.821 | 4.195 | 0.007 | 0.346 |
| wk20to26 | 765 | 7097.185 | 5.533 | -1.585 | 5.037 | 0.002 | 0.346 |
| wk7to25 | 765 | 7097.190 | 5.538 | -2.495 | 4.509 | 0.005 | 0.346 |
| wk21to25 | 765 | 7097.191 | 5.539 | -2.401 | 4.581 | 0.004 | 0.345 |
| wk22to26 | 765 | 7097.194 | 5.542 | -1.913 | 4.871 | 0.002 | 0.346 |
| wk6towk18 | 765 | 7097.198 | 5.546 | -2.962 | 3.918 | 0.010 | 0.346 |
| wk17to26 | 765 | 7097.202 | 5.550 | -2.204 | 4.685 | 0.004 | 0.346 |
| wk12towk22 | 765 | 7097.205 | 5.553 | -2.266 | 4.638 | 0.004 | 0.346 |
| wk7to24 | 765 | 7097.229 | 5.577 | -2.425 | 4.440 | 0.005 | 0.346 |
| wk17to23 | 765 | 7097.232 | 5.580 | -2.696 | 4.167 | 0.007 | 0.346 |
| wk6towk17 | 765 | 7097.242 | 5.590 | -2.751 | 4.058 | 0.008 | 0.346 |
| wk20to23 | 765 | 7097.244 | 5.592 | -2.449 | 4.371 | 0.006 | 0.346 |
| wk6towk22 | 765 | 7097.245 | 5.593 | -2.762 | 4.035 | 0.008 | 0.346 |
| wk9towk19 | 765 | 7097.245 | 5.593 | -2.812 | 3.960 | 0.008 | 0.346 |
| wk21to26 | 765 | 7097.247 | 5.595 | -0.820 | 5.074 | 0.000 | 0.346 |
| wk10towk13 | 765 | 7097.249 | 5.597 | -3.063 | 3.276 | 0.015 | 0.346 |
| wk14to26 | 765 | 7097.254 | 5.602 | -1.581 | 4.848 | 0.002 | 0.346 |
| wk7to23 | 765 | 7097.259 | 5.607 | -2.325 | 4.424 | 0.005 | 0.346 |
| wk15to26 | 765 | 7097.266 | 5.614 | -0.362 | 5.083 | 0.000 | 0.346 |
| wk17to25 | 765 | 7097.280 | 5.628 | -2.605 | 4.098 | 0.007 | 0.346 |
| wk20to25 | 765 | 7097.281 | 5.629 | -2.464 | 4.238 | 0.006 | 0.346 |
| wk13to26 | 765 | 7097.290 | 5.638 | -0.661 | 4.989 | 0.000 | 0.346 |
| wk11towk19 | 765 | 7097.293 | 5.640 | -2.679 | 3.965 | 0.008 | 0.346 |
| wk6towk14 | 765 | 7097.294 | 5.642 | -3.001 | 3.141 | 0.016 | 0.346 |
| wk17to24 | 765 | 7097.305 | 5.653 | -2.592 | 4.024 | 0.007 | 0.346 |
| wk10towk19 | 765 | 7097.305 | 5.653 | -2.565 | 4.056 | 0.007 | 0.346 |
| wk9towk21 | 765 | 7097.306 | 5.654 | -2.548 | 4.072 | 0.007 | 0.346 |
| wk6towk15 | 765 | 7097.310 | 5.658 | -2.907 | 3.458 | 0.012 | 0.346 |
| wk13to27 | 765 | 7097.318 | 5.665 | -0.216 | 4.962 | 0.000 | 0.346 |
| wk14to27 | 765 | 7097.319 | 5.667 | -1.057 | 4.841 | 0.001 | 0.346 |
| wk8towk22 | 765 | 7097.322 | 5.670 | -2.536 | 4.030 | 0.007 | 0.346 |
| wk14to25 | 765 | 7097.329 | 5.677 | -2.041 | 4.413 | 0.004 | 0.346 |
| wk22to23 | 765 | 7097.330 | 5.678 | -2.873 | 3.434 | 0.010 | 0.345 |
| wk8towk18 | 765 | 7097.339 | 5.686 | -2.638 | 3.845 | 0.007 | 0.346 |
| wk9towk20 | 765 | 7097.342 | 5.690 | -2.665 | 3.792 | 0.008 | 0.346 |
| wk11towk21 | 765 | 7097.347 | 5.695 | -2.385 | 4.101 | 0.006 | 0.346 |
| wk17to27 | 765 | 7097.351 | 5.699 | -1.475 | 4.631 | 0.002 | 0.346 |
| wk16to26 | 765 | 7097.356 | 5.704 | -0.904 | 4.781 | 0.001 | 0.346 |
| wk10towk21 | 765 | 7097.371 | 5.719 | -2.261 | 4.135 | 0.005 | 0.346 |
| wk20to27 | 765 | 7097.372 | 5.720 | -0.562 | 4.799 | 0.000 | 0.346 |
| wk11towk20 | 765 | 7097.379 | 5.727 | -2.569 | 3.793 | 0.008 | 0.346 |
| wk8towk17 | 765 | 7097.380 | 5.728 | -2.361 | 4.016 | 0.005 | 0.346 |
| wk5towk8 | 765 | 7097.382 | 5.730 | -2.657 | 2.031 | 0.029 | 0.346 |
| wk6towk16 | 765 | 7097.384 | 5.731 | -2.487 | 3.875 | 0.007 | 0.346 |
| wk12towk17 | 765 | 7097.386 | 5.734 | -1.055 | 4.672 | 0.001 | 0.346 |
| wk16to27 | 765 | 7097.391 | 5.739 | -0.369 | 4.773 | 0.000 | 0.346 |
| wk14to23 | 765 | 7097.397 | 5.745 | -1.803 | 4.362 | 0.003 | 0.346 |
| we18to26 | 765 | 7097.402 | 5.750 | -1.757 | 4.376 | 0.003 | 0.346 |
| wk9towk13 | 765 | 7097.408 | 5.756 | -2.829 | 3.015 | 0.014 | 0.346 |
| wk13to25 | 765 | 7097.409 | 5.757 | -1.203 | 4.575 | 0.001 | 0.346 |
| wk12towk18 | 765 | 7097.411 | 5.759 | -1.975 | 4.227 | 0.003 | 0.346 |
| wk14to24 | 765 | 7097.414 | 5.762 | -1.889 | 4.270 | 0.003 | 0.346 |
| wk10towk20 | 765 | 7097.417 | 5.765 | -2.423 | 3.838 | 0.007 | 0.346 |
| wk7towk22 | 765 | 7097.429 | 5.777 | -2.085 | 4.102 | 0.004 | 0.346 |
| wk20to24 | 765 | 7097.430 | 5.778 | -2.234 | 3.980 | 0.005 | 0.346 |
| wk6towk19 | 765 | 7097.430 | 5.778 | -2.437 | 3.776 | 0.007 | 0.346 |
| wk15to23 | 765 | 7097.435 | 5.783 | -0.568 | 4.646 | 0.000 | 0.346 |
| wk15to25 | 765 | 7097.436 | 5.784 | -1.025 | 4.558 | 0.001 | 0.346 |
| wk8towk14 | 765 | 7097.437 | 5.785 | -2.787 | 2.986 | 0.015 | 0.346 |
| wk13to23 | 765 | 7097.444 | 5.792 | -0.841 | 4.580 | 0.001 | 0.346 |
| wk12towk14 | 765 | 7097.444 | 5.792 | -2.784 | 2.915 | 0.014 | 0.346 |
| wk22to27 | 765 | 7097.455 | 5.803 | -0.564 | 4.599 | 0.000 | 0.346 |
| wk6towk21 | 765 | 7097.461 | 5.809 | -2.260 | 3.866 | 0.006 | 0.346 |
| wk21to24 | 765 | 7097.462 | 5.809 | -1.926 | 4.120 | 0.003 | 0.346 |
| wk17to18 | 765 | 7097.462 | 5.810 | -2.763 | 2.842 | 0.013 | 0.344 |
| wk13to24 | 765 | 7097.466 | 5.814 | -1.055 | 4.479 | 0.001 | 0.346 |
| wk7towk18 | 765 | 7097.470 | 5.818 | -2.104 | 3.972 | 0.005 | 0.346 |
| we18to25 | 765 | 7097.473 | 5.820 | -2.246 | 3.846 | 0.006 | 0.346 |
| wk8towk15 | 765 | 7097.479 | 5.827 | -2.610 | 3.331 | 0.010 | 0.346 |
| wk12towk21 | 765 | 7097.480 | 5.828 | -1.350 | 4.354 | 0.002 | 0.346 |
| wk7towk17 | 765 | 7097.495 | 5.843 | -1.733 | 4.144 | 0.003 | 0.346 |
| wk6towk13 | 765 | 7097.500 | 5.848 | -2.604 | 3.250 | 0.011 | 0.346 |
| wk18to23 | 765 | 7097.500 | 5.848 | -2.192 | 3.813 | 0.006 | 0.346 |
| we18to24 | 765 | 7097.513 | 5.861 | -2.213 | 3.756 | 0.006 | 0.346 |
| wk15to24 | 765 | 7097.516 | 5.864 | -0.830 | 4.412 | 0.001 | 0.346 |
| wk21to23 | 765 | 7097.516 | 5.864 | -1.530 | 4.192 | 0.002 | 0.346 |
| wk8towk19 | 765 | 7097.517 | 5.865 | -2.191 | 3.765 | 0.006 | 0.346 |
| wk16to25 | 765 | 7097.517 | 5.865 | -1.450 | 4.224 | 0.002 | 0.346 |
| wk6towk20 | 765 | 7097.518 | 5.865 | -2.321 | 3.630 | 0.007 | 0.346 |
| wk19to26 | 765 | 7097.520 | 5.868 | -0.834 | 4.406 | 0.001 | 0.346 |
| wk12towk19 | 765 | 7097.523 | 5.871 | -1.490 | 4.195 | 0.002 | 0.346 |
| wk8towk21 | 765 | 7097.524 | 5.871 | -2.029 | 3.883 | 0.005 | 0.346 |
| wk8towk12 | 765 | 7097.524 | 5.872 | -2.677 | 2.588 | 0.017 | 0.345 |
| wk16to23 | 765 | 7097.527 | 5.874 | -1.169 | 4.302 | 0.001 | 0.346 |
| wk12towk15 | 765 | 7097.527 | 5.875 | -2.283 | 3.647 | 0.006 | 0.346 |
| wk12towk16 | 765 | 7097.541 | 5.889 | -0.452 | 4.418 | 0.000 | 0.346 |
| we18to27 | 765 | 7097.551 | 5.898 | -1.064 | 4.280 | 0.001 | 0.346 |
| wk8towk16 | 765 | 7097.551 | 5.899 | -2.050 | 3.792 | 0.005 | 0.346 |
| wk22to24 | 765 | 7097.552 | 5.900 | -2.469 | 3.303 | 0.008 | 0.345 |
| wk17to22 | 765 | 7097.557 | 5.905 | -2.252 | 3.586 | 0.007 | 0.346 |
| wk8towk20 | 765 | 7097.571 | 5.919 | -2.152 | 3.645 | 0.006 | 0.346 |
| wk12towk20 | 765 | 7097.582 | 5.930 | -1.632 | 3.984 | 0.003 | 0.346 |
| wk16to24 | 765 | 7097.588 | 5.936 | -1.307 | 4.111 | 0.002 | 0.346 |
| wk15to22 | 765 | 7097.607 | 5.955 | -0.466 | 4.271 | 0.000 | 0.346 |
| wk7towk21 | 765 | 7097.608 | 5.956 | -1.589 | 3.944 | 0.003 | 0.346 |
| wk19to27 | 765 | 7097.617 | 5.965 | -0.210 | 4.271 | 0.000 | 0.346 |
| wk7towk19 | 765 | 7097.618 | 5.966 | -1.712 | 3.852 | 0.003 | 0.346 |
| wk14towk22 | 765 | 7097.620 | 5.967 | -1.567 | 3.928 | 0.003 | 0.346 |
| wk7towk16 | 765 | 7097.645 | 5.993 | -1.439 | 3.928 | 0.002 | 0.346 |
| wk13towk22 | 765 | 7097.657 | 6.005 | -0.696 | 4.130 | 0.001 | 0.346 |
| wk7towk15 | 765 | 7097.658 | 6.005 | -2.056 | 3.497 | 0.006 | 0.346 |
| wk7towk14 | 765 | 7097.659 | 6.007 | -2.301 | 3.197 | 0.009 | 0.346 |
| wk7towk20 | 765 | 7097.672 | 6.020 | -1.724 | 3.715 | 0.004 | 0.346 |
| wk20to22 | 765 | 7097.681 | 6.029 | -1.971 | 3.513 | 0.006 | 0.346 |
| wk19to25 | 765 | 7097.693 | 6.041 | -1.487 | 3.797 | 0.003 | 0.346 |
| wk16to22 | 765 | 7097.725 | 6.073 | -1.029 | 3.905 | 0.001 | 0.346 |
| wk7towk12 | 765 | 7097.727 | 6.075 | -2.307 | 2.939 | 0.010 | 0.346 |
| wk19to24 | 765 | 7097.822 | 6.170 | -1.308 | 3.600 | 0.002 | 0.346 |
| wk19to23 | 765 | 7097.861 | 6.209 | -1.079 | 3.610 | 0.002 | 0.346 |
| wk8towk13 | 765 | 7097.874 | 6.221 | -2.031 | 2.927 | 0.008 | 0.346 |
| wk14towk21 | 765 | 7097.925 | 6.273 | -0.755 | 3.581 | 0.001 | 0.346 |
| wk7towk13 | 765 | 7097.930 | 6.278 | -1.578 | 3.224 | 0.004 | 0.346 |
| wk18to22 | 765 | 7097.940 | 6.288 | -1.691 | 3.120 | 0.005 | 0.346 |
| wk13towk18 | 765 | 7097.962 | 6.309 | -0.061 | 3.598 | 0.000 | 0.346 |
| wk22to22 | 765 | 7097.992 | 6.340 | -2.121 | 2.153 | 0.014 | 0.345 |
| wk6towk11 | 765 | 7098.051 | 6.399 | -1.917 | 2.586 | 0.009 | 0.345 |
| wk13towk20 | 765 | 7098.057 | 6.405 | -0.264 | 3.421 | 0.000 | 0.346 |
| wk14towk18 | 765 | 7098.079 | 6.426 | -1.082 | 3.196 | 0.002 | 0.346 |
| wk17to17 | 765 | 7098.086 | 6.434 | -1.520 | 2.937 | 0.004 | 0.345 |
| wk16to21 | 765 | 7098.091 | 6.438 | -0.065 | 3.374 | 0.000 | 0.346 |
| wk14towk20 | 765 | 7098.115 | 6.463 | -0.980 | 3.170 | 0.002 | 0.346 |
| wk17to21 | 765 | 7098.143 | 6.491 | -1.121 | 3.064 | 0.002 | 0.346 |
| wk10towk11 | 765 | 7098.145 | 6.493 | -1.957 | 2.090 | 0.014 | 0.346 |
| wk14towk19 | 765 | 7098.158 | 6.506 | -0.731 | 3.173 | 0.001 | 0.346 |
| wk12towk13 | 765 | 7098.175 | 6.523 | -1.094 | 3.020 | 0.002 | 0.346 |
| wk14towk17 | 765 | 7098.209 | 6.557 | -0.127 | 3.177 | 0.000 | 0.346 |
| wk9towk11 | 765 | 7098.224 | 6.572 | -1.871 | 2.073 | 0.012 | 0.345 |
| wk21to22 | 765 | 7098.275 | 6.623 | -0.963 | 2.905 | 0.002 | 0.346 |
| wk23to25 | 765 | 7098.316 | 6.664 | -0.919 | 2.853 | 0.002 | 0.346 |
| wk16to18 | 765 | 7098.328 | 6.676 | -0.270 | 2.982 | 0.000 | 0.346 |
| wk19to22 | 765 | 7098.350 | 6.698 | -0.774 | 2.851 | 0.001 | 0.346 |
| wk17to19 | 765 | 7098.362 | 6.710 | -1.271 | 2.598 | 0.004 | 0.346 |
| wk18to18 | 765 | 7098.370 | 6.718 | -1.748 | 1.874 | 0.013 | 0.345 |
| wk14towk14 | 765 | 7098.379 | 6.727 | -1.719 | 1.514 | 0.022 | 0.347 |
| wk6towk10 | 765 | 7098.399 | 6.747 | -1.156 | 2.607 | 0.003 | 0.346 |
| wk20to21 | 765 | 7098.421 | 6.769 | -0.144 | 2.857 | 0.000 | 0.346 |
| wk16to20 | 765 | 7098.439 | 6.787 | -0.384 | 2.807 | 0.000 | 0.346 |
| wk17to20 | 765 | 7098.442 | 6.790 | -1.249 | 2.478 | 0.005 | 0.346 |
| wk2towk4 | 765 | 7098.444 | 6.792 | -1.563 | 2.145 | 0.008 | 0.346 |
| wk6towk9 | 765 | 7098.448 | 6.796 | -1.252 | 2.464 | 0.004 | 0.346 |
| wk1towk4 | 765 | 7098.468 | 6.816 | -1.565 | 2.085 | 0.009 | 0.346 |
| wk24to25 | 765 | 7098.476 | 6.824 | -1.009 | 2.565 | 0.002 | 0.346 |
| wk18to21 | 765 | 7098.511 | 6.859 | -0.727 | 2.627 | 0.001 | 0.346 |
| wk7towk11 | 765 | 7098.553 | 6.901 | -0.989 | 2.458 | 0.003 | 0.346 |
| wk14towk15 | 765 | 7098.609 | 6.957 | -1.148 | 2.281 | 0.004 | 0.346 |
| wk8towk11 | 765 | 7098.621 | 6.969 | -1.313 | 2.116 | 0.006 | 0.345 |
| wk13towk14 | 765 | 7098.744 | 7.092 | -0.569 | 2.361 | 0.001 | 0.346 |
| wk6towk6 | 765 | 7098.746 | 7.094 | -1.428 | 1.249 | 0.022 | 0.347 |
| wk6towk8 | 765 | 7098.861 | 7.208 | -0.670 | 2.185 | 0.002 | 0.346 |
| wk23to24 | 765 | 7098.896 | 7.244 | -0.530 | 2.186 | 0.001 | 0.346 |
| wk18to20 | 765 | 7098.918 | 7.266 | -0.869 | 2.026 | 0.003 | 0.346 |
| wk18to19 | 765 | 7099.001 | 7.349 | -0.760 | 1.981 | 0.003 | 0.346 |
| wk24to24 | 765 | 7099.029 | 7.377 | -0.732 | 1.961 | 0.002 | 0.346 |
| wk9towk10 | 765 | 7099.062 | 7.410 | -0.771 | 1.903 | 0.002 | 0.345 |
| wk8towk10 | 765 | 7099.065 | 7.413 | -0.440 | 2.021 | 0.001 | 0.346 |
| wk25to25 | 765 | 7099.101 | 7.449 | -0.454 | 1.980 | 0.001 | 0.346 |
| wk6towk7 | 765 | 7099.118 | 7.466 | -0.846 | 1.797 | 0.004 | 0.346 |
| wk3towk3 | 765 | 7099.136 | 7.484 | -1.096 | 1.532 | 0.007 | 0.344 |
| wk23to23 | 765 | 7099.273 | 7.621 | -0.112 | 1.864 | 0.000 | 0.346 |
| wk10towk10 | 765 | 7099.331 | 7.679 | -0.094 | 1.812 | 0.000 | 0.346 |
| wk8towk9 | 765 | 7099.382 | 7.730 | -0.431 | 1.710 | 0.001 | 0.346 |
| wk9towk9 | 765 | 7099.466 | 7.814 | -0.817 | 1.428 | 0.005 | 0.345 |
| wk1towk3 | 765 | 7099.468 | 7.816 | -0.301 | 1.666 | 0.001 | 0.346 |
| we20to20 | 765 | 7099.479 | 7.827 | -0.599 | 1.559 | 0.003 | 0.346 |
| wk19to20 | 765 | 7099.629 | 7.977 | -0.184 | 1.552 | 0.000 | 0.346 |
| wk1towk1 | 765 | 7100.008 | 8.356 | -0.546 | 1.150 | 0.004 | 0.346 |

**Table S9b.** Parasitoid attack occurrence phenology as a function of temperature delaying emergence, weather variables selected as those with a positive coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and July 8th Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 7100.307. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **wk15to27\*** | **765** | **7097.292** | **0.000** | **0.140** | **5.029** | **0.000** | **0.346** |
| wk21to27 | 765 | 7097.408 | 0.116 | 0.158 | 4.743 | 0.000 | 0.346 |
| wk23to26 | 765 | 7097.729 | 0.437 | 0.148 | 4.039 | 0.000 | 0.346 |
| wk23to27 | 765 | 7097.723 | 0.431 | 0.866 | 3.954 | 0.001 | 0.346 |
| wk24to26 | 765 | 7098.001 | 0.709 | 0.283 | 3.515 | 0.000 | 0.346 |
| wk24to27 | 765 | 7098.138 | 0.846 | 0.788 | 3.190 | 0.001 | 0.346 |
| wk25to26 | 765 | 7098.383 | 1.091 | 0.966 | 2.726 | 0.002 | 0.345 |
| wk25to27 | 765 | 7098.361 | 1.069 | 1.183 | 2.654 | 0.003 | 0.346 |
| wk26to26 | 765 | 7098.471 | 1.180 | 1.589 | 2.025 | 0.009 | 0.345 |
| wk26to27 | 765 | 7098.659 | 1.367 | 1.315 | 2.046 | 0.006 | 0.345 |
| wk27to27 | 765 | 7099.254 | 1.962 | 0.718 | 1.721 | 0.003 | 0.346 |
| wk1towk2 | 765 | 7099.890 | 2.598 | 0.119 | 1.367 | 0.000 | 0.346 |
| wk2towk3 | 765 | 7099.528 | 2.236 | 0.111 | 1.640 | 0.000 | 0.346 |
| wk2towk2 | 765 | 7099.568 | 2.276 | 0.868 | 1.257 | 0.007 | 0.346 |
| wk7towk10 | 765 | 7098.755 | 1.463 | 0.021 | 2.420 | 0.000 | 0.346 |
| wk7towk9 | 765 | 7098.927 | 1.635 | 0.071 | 2.220 | 0.000 | 0.346 |
| wk7towk8 | 765 | 7098.848 | 1.556 | 0.944 | 2.073 | 0.003 | 0.346 |
| wk7towk7 | 765 | 7098.880 | 1.588 | 1.168 | 1.845 | 0.006 | 0.346 |
| wk8towk8 | 765 | 7099.460 | 2.168 | 0.278 | 1.677 | 0.000 | 0.346 |
| wk13towk21 | 765 | 7097.856 | 0.564 | 0.045 | 3.795 | 0.000 | 0.346 |
| wk13towk19 | 765 | 7098.019 | 0.727 | 0.111 | 3.496 | 0.000 | 0.346 |
| wk13towk17 | 765 | 7097.750 | 0.458 | 1.278 | 3.766 | 0.002 | 0.346 |
| wk13towk16 | 765 | 7097.725 | 0.433 | 1.894 | 3.465 | 0.005 | 0.346 |
| wk13towk15 | 765 | 7098.319 | 1.027 | 0.189 | 3.005 | 0.000 | 0.346 |
| wk13towk13 | 765 | 7097.577 | 0.286 | 2.545 | 2.175 | 0.022 | 0.345 |
| wk14towk16 | 765 | 7098.469 | 1.177 | 0.315 | 2.774 | 0.000 | 0.346 |
| wk15to21 | 765 | 7097.854 | 0.562 | 0.470 | 3.768 | 0.000 | 0.346 |
| wk15to20 | 765 | 7098.162 | 0.870 | 0.040 | 3.256 | 0.000 | 0.346 |
| wk15to19 | 765 | 7098.126 | 0.834 | 0.569 | 3.263 | 0.000 | 0.346 |
| wk15to18 | 765 | 7098.178 | 0.886 | 0.448 | 3.196 | 0.000 | 0.346 |
| wk15to17 | 765 | 7097.947 | 0.655 | 1.885 | 2.915 | 0.006 | 0.345 |
| wk15to16 | 765 | 7097.718 | 0.426 | 2.430 | 2.362 | 0.015 | 0.345 |
| wk15to15 | 765 | 7098.565 | 1.273 | 1.322 | 2.207 | 0.005 | 0.346 |
| wk16to19 | 765 | 7098.409 | 1.117 | 0.002 | 2.878 | 0.000 | 0.346 |
| wk16to17 | 765 | 7098.444 | 1.152 | 1.216 | 2.498 | 0.003 | 0.346 |
| wk16to16 | 765 | 7098.307 | 1.015 | 1.810 | 1.750 | 0.015 | 0.344 |
| wk19to21 | 765 | 7098.903 | 1.611 | 0.095 | 2.246 | 0.000 | 0.346 |
| wk19to19 | 765 | 7099.959 | 2.667 | 0.159 | 1.316 | 0.000 | 0.346 |
| wk21to21 | 765 | 7098.312 | 1.021 | 1.415 | 2.580 | 0.005 | 0.346 |

**Table S9c.** Parasitoid attack occurrence phenology as a function of precipitation advancing emergence, weather variables selected as those with a negative coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and July 8th Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 7100.307. Wk = Week.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk2toWk18\*** | **765** | **7098.942** | **0.000** | **-0.062** | **7.466** | **0.000** | **0.345** |
| Wk2toWk17 | 765 | 7098.989 | 0.047 | -1.399 | 7.144 | 0.000 | 0.345 |
| Wk1toWk17 | 765 | 7099.020 | 0.078 | -0.407 | 7.167 | 0.000 | 0.345 |
| Wk2toWk16 | 765 | 7099.083 | 0.141 | -0.904 | 6.895 | 0.000 | 0.345 |
| Wk3toWk17 | 765 | 7099.192 | 0.250 | -0.533 | 6.565 | 0.000 | 0.345 |
| Wk1toWk15 | 765 | 7099.211 | 0.269 | -0.032 | 6.527 | 0.000 | 0.345 |
| Wk3toWk16 | 765 | 7099.245 | 0.303 | -0.096 | 6.416 | 0.000 | 0.345 |
| Wk2toWk15 | 765 | 7099.251 | 0.309 | -0.899 | 6.328 | 0.000 | 0.345 |
| Wk4toWk17 | 765 | 7099.313 | 0.371 | -0.429 | 6.184 | 0.000 | 0.345 |
| Wk1toWk14 | 765 | 7099.319 | 0.377 | -0.224 | 6.179 | 0.000 | 0.345 |
| Wk4toWk16 | 765 | 7099.343 | 0.401 | -0.013 | 6.108 | 0.000 | 0.345 |
| Wk8toWk17 | 765 | 7099.359 | 0.418 | -0.728 | 6.013 | 0.000 | 0.345 |
| Wk8toWk16 | 765 | 7099.386 | 0.445 | -0.193 | 5.975 | 0.000 | 0.345 |
| Wk2toWk14 | 765 | 7099.405 | 0.464 | -1.007 | 5.829 | 0.000 | 0.345 |
| Wk3toWk15 | 765 | 7099.410 | 0.468 | -0.166 | 5.907 | 0.000 | 0.345 |
| Wk11to23 | 765 | 7099.418 | 0.477 | -0.482 | 5.866 | 0.000 | 0.345 |
| Wk8toWk15 | 765 | 7099.433 | 0.491 | -0.331 | 5.831 | 0.000 | 0.345 |
| Wk1toWk13 | 765 | 7099.463 | 0.521 | -0.185 | 5.751 | 0.000 | 0.345 |
| Wk4toWk15 | 765 | 7099.499 | 0.558 | -0.089 | 5.647 | 0.000 | 0.345 |
| Wk8toWk14 | 765 | 7099.515 | 0.574 | -0.658 | 5.563 | 0.000 | 0.345 |
| Wk1toWk12 | 765 | 7099.555 | 0.613 | -0.150 | 5.494 | 0.000 | 0.345 |
| Wk11toWk22 | 765 | 7099.585 | 0.644 | -0.491 | 5.391 | 0.000 | 0.345 |
| Wk2toWk13 | 765 | 7099.589 | 0.647 | -0.888 | 5.325 | 0.000 | 0.345 |
| Wk3toWk14 | 765 | 7099.598 | 0.656 | -0.319 | 5.369 | 0.000 | 0.345 |
| Wk8toWk13 | 765 | 7099.613 | 0.671 | -0.652 | 5.295 | 0.000 | 0.345 |
| Wk1toWk11 | 765 | 7099.628 | 0.686 | -0.084 | 5.299 | 0.000 | 0.345 |
| Wk9toWk17 | 765 | 7099.665 | 0.723 | -0.871 | 5.122 | 0.000 | 0.345 |
| Wk4toWk14 | 765 | 7099.667 | 0.725 | -0.255 | 5.189 | 0.000 | 0.345 |
| Wk9toWk16 | 765 | 7099.678 | 0.736 | -0.482 | 5.143 | 0.000 | 0.345 |
| Wk2toWk12 | 765 | 7099.692 | 0.750 | -0.843 | 5.058 | 0.000 | 0.345 |
| Wk8toWk12 | 765 | 7099.697 | 0.755 | -0.650 | 5.074 | 0.000 | 0.345 |
| Wk9toWk15 | 765 | 7099.707 | 0.765 | -0.638 | 5.050 | 0.000 | 0.345 |
| Wk20to23 | 765 | 7099.738 | 0.797 | -2.208 | 4.394 | 0.004 | 0.345 |
| Wk9toWk14 | 765 | 7099.758 | 0.817 | -0.970 | 4.859 | 0.000 | 0.345 |
| Wk9toWk13 | 765 | 7099.781 | 0.839 | -1.083 | 4.776 | 0.001 | 0.344 |
| Wk2toWk11 | 765 | 7099.790 | 0.848 | -0.781 | 4.821 | 0.000 | 0.345 |
| Wk3toWk13 | 765 | 7099.827 | 0.885 | -0.257 | 4.791 | 0.000 | 0.345 |
| Wk9toWk12 | 765 | 7099.844 | 0.902 | -1.182 | 4.592 | 0.001 | 0.344 |
| Wk4toWk13 | 765 | 7099.870 | 0.929 | -0.209 | 4.689 | 0.000 | 0.345 |
| Wk8toWk11 | 765 | 7099.887 | 0.945 | -0.532 | 4.623 | 0.000 | 0.345 |
| Wk3toWk12 | 765 | 7099.985 | 1.043 | -0.216 | 4.428 | 0.000 | 0.345 |
| Wk10toWk17 | 765 | 7099.986 | 1.044 | -0.354 | 4.415 | 0.000 | 0.345 |
| Wk2toWk5 | 765 | 7099.987 | 1.045 | -2.554 | 3.156 | 0.011 | 0.345 |
| Wk2toWk9 | 765 | 7099.987 | 1.046 | -0.698 | 4.370 | 0.000 | 0.345 |
| Wk4toWk12 | 765 | 7100.026 | 1.084 | -0.171 | 4.340 | 0.000 | 0.345 |
| Wk2toWk8 | 765 | 7100.037 | 1.095 | -0.368 | 4.305 | 0.000 | 0.345 |
| Wk1toWk5 | 765 | 7100.043 | 1.101 | -1.946 | 3.737 | 0.004 | 0.345 |
| Wk9toWk11 | 765 | 7100.057 | 1.115 | -1.114 | 4.112 | 0.001 | 0.345 |
| Wk10toWk15 | 765 | 7100.067 | 1.125 | -0.066 | 4.253 | 0.000 | 0.345 |
| Wk11toWk17 | 765 | 7100.088 | 1.146 | -1.430 | 3.927 | 0.002 | 0.344 |
| Wk20to22 | 765 | 7100.117 | 1.175 | -1.980 | 3.515 | 0.005 | 0.344 |
| Wk3toWk11 | 765 | 7100.121 | 1.179 | -0.159 | 4.140 | 0.000 | 0.345 |
| Wk11toWk18 | 765 | 7100.126 | 1.185 | -0.475 | 4.102 | 0.000 | 0.345 |
| Wk21to23 | 765 | 7100.130 | 1.189 | -2.089 | 3.374 | 0.006 | 0.344 |
| Wk10toWk14 | 765 | 7100.144 | 1.202 | -0.308 | 4.081 | 0.000 | 0.345 |
| Wk4toWk11 | 765 | 7100.148 | 1.207 | -0.115 | 4.084 | 0.000 | 0.345 |
| Wk2toWk7 | 765 | 7100.169 | 1.227 | -0.627 | 3.992 | 0.000 | 0.345 |
| Wk11toWk16 | 765 | 7100.169 | 1.227 | -1.213 | 3.835 | 0.001 | 0.345 |
| Wk1toWk6 | 765 | 7100.200 | 1.259 | -0.772 | 3.900 | 0.001 | 0.345 |
| Wk10toWk13 | 765 | 7100.219 | 1.277 | -0.322 | 3.928 | 0.000 | 0.345 |
| Wk2toWk4 | 765 | 7100.230 | 1.288 | -2.132 | 3.033 | 0.008 | 0.345 |
| Wk12toWk17 | 765 | 7100.262 | 1.321 | -0.251 | 3.851 | 0.000 | 0.345 |
| Wk11toWk15 | 765 | 7100.268 | 1.326 | -1.341 | 3.572 | 0.002 | 0.344 |
| Wk11toWk12 | 765 | 7100.268 | 1.327 | -2.218 | 2.737 | 0.007 | 0.341 |
| Wk11toWk13 | 765 | 7100.271 | 1.329 | -1.955 | 3.136 | 0.004 | 0.343 |
| Wk1toWk4 | 765 | 7100.280 | 1.338 | -1.220 | 3.602 | 0.002 | 0.345 |
| Wk11toWk14 | 765 | 7100.317 | 1.375 | -1.635 | 3.300 | 0.003 | 0.344 |
| Wk10toWk12 | 765 | 7100.349 | 1.407 | -0.316 | 3.678 | 0.000 | 0.345 |
| Wk12toWk12 | 765 | 7100.355 | 1.414 | -0.355 | 3.663 | 0.000 | 0.345 |
| Wk3toWk9 | 765 | 7100.366 | 1.424 | -0.077 | 3.665 | 0.000 | 0.345 |
| Wk2toWk6 | 765 | 7100.374 | 1.432 | -1.368 | 3.343 | 0.003 | 0.345 |
| Wk11toWk11 | 765 | 7100.416 | 1.474 | -2.118 | 1.906 | 0.014 | 0.339 |
| Wk4toWk9 | 765 | 7100.420 | 1.478 | -0.025 | 3.568 | 0.000 | 0.345 |
| Wk5toWk5 | 765 | 7100.451 | 1.509 | -2.025 | 2.502 | 0.011 | 0.345 |
| Wk13toWk17 | 765 | 7100.506 | 1.564 | -0.175 | 3.414 | 0.000 | 0.345 |
| Wk22to23 | 765 | 7100.522 | 1.581 | -1.795 | 2.685 | 0.007 | 0.345 |
| Wk12toWk13 | 765 | 7100.549 | 1.608 | -0.221 | 3.335 | 0.000 | 0.345 |
| Wk21to22 | 765 | 7100.581 | 1.640 | -1.813 | 2.506 | 0.008 | 0.344 |
| Wk26to27 | 765 | 7100.602 | 1.660 | -0.089 | 3.257 | 0.000 | 0.345 |
| Wk12toWk14 | 765 | 7100.628 | 1.686 | -0.168 | 3.210 | 0.000 | 0.345 |
| Wk15to17 | 765 | 7100.686 | 1.744 | -0.171 | 3.119 | 0.000 | 0.345 |
| Wk10toWk11 | 765 | 7100.705 | 1.763 | -0.207 | 3.084 | 0.000 | 0.345 |
| Wk3toWk5 | 765 | 7100.729 | 1.787 | -1.559 | 2.493 | 0.007 | 0.345 |
| Wk14toWk17 | 765 | 7100.792 | 1.850 | -0.135 | 2.960 | 0.000 | 0.345 |
| Wk2toWk3 | 765 | 7100.840 | 1.898 | -1.016 | 2.681 | 0.002 | 0.345 |
| Wk9toWk9 | 765 | 7100.881 | 1.940 | -1.045 | 2.602 | 0.003 | 0.345 |
| Wk8toWk9 | 765 | 7100.882 | 1.941 | -0.223 | 2.822 | 0.000 | 0.345 |
| Wk4toWk5 | 765 | 7100.930 | 1.989 | -1.550 | 2.059 | 0.009 | 0.344 |
| Wk3toWk6 | 765 | 7100.985 | 2.043 | -0.607 | 2.614 | 0.001 | 0.345 |
| Wk13toWk13 | 765 | 7101.058 | 2.117 | -0.090 | 2.591 | 0.000 | 0.345 |
| Wk13toWk14 | 765 | 7101.096 | 2.154 | -0.073 | 2.544 | 0.000 | 0.345 |
| Wk16to17 | 765 | 7101.100 | 2.158 | -0.388 | 2.509 | 0.000 | 0.345 |
| Wk3toWk4 | 765 | 7101.181 | 2.240 | -1.015 | 2.175 | 0.004 | 0.345 |
| Wk17to17 | 765 | 7101.217 | 2.275 | -0.776 | 2.251 | 0.002 | 0.345 |
| Wk4toWk6 | 765 | 7101.237 | 2.295 | -0.574 | 2.294 | 0.001 | 0.345 |
| Wk22to22 | 765 | 7101.312 | 2.371 | -1.330 | 1.587 | 0.010 | 0.344 |
| Wk26to26 | 765 | 7101.374 | 2.432 | -0.138 | 2.210 | 0.000 | 0.345 |
| Wk21to21 | 765 | 7101.458 | 2.516 | -0.234 | 2.110 | 0.000 | 0.345 |
| Wk2toWk2 | 765 | 7101.501 | 2.560 | -0.872 | 1.848 | 0.004 | 0.345 |
| Wk3toWk3 | 765 | 7101.529 | 2.588 | -0.119 | 2.046 | 0.000 | 0.345 |
| Wk4toWk4 | 765 | 7101.711 | 2.769 | -0.948 | 1.531 | 0.006 | 0.344 |
| Wk14toWk14 | 765 | 7101.755 | 2.814 | -0.030 | 1.830 | 0.000 | 0.345 |

**Table S9d.** Parasitoid attack occurrence phenology as a function of precipitation delaying emergence, weather variables selected as those with a positive coefficient from sliding window approach which considered all consecutive weekly windows between Jan 1st and July 8th Models are mixed effects models with year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 7100.307. Wk = Week.

**\*Denotes best model used in stage two modelling.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Time window (Week 1 = Jan 1st) | | | | N | AICc | ΔAICc | Slope | ± standard error | R2GLMM(m) | R2GLMM(c) |
| **Wk6to26\*** | | | | **765** | **7097.670** | **0.000** | **8.420** | **8.904** | **0.012** | **0.344** |
| Wk6to25 | | | | 765 | 7097.726 | 0.056 | 8.201 | 8.511 | 0.013 | 0.344 |
| Wk6to27 | | | | 765 | 7097.747 | 0.077 | 8.052 | 8.908 | 0.011 | 0.344 |
| Wk5to26 | | | | 765 | 7097.881 | 0.210 | 7.248 | 9.219 | 0.009 | 0.344 |
| Wk5to27 | | | | 765 | 7097.923 | 0.252 | 6.991 | 9.241 | 0.008 | 0.344 |
| Wk5to25 | | | | 765 | 7097.991 | 0.320 | 6.871 | 8.700 | 0.009 | 0.344 |
| Wk7to26 | | | | 765 | 7098.050 | 0.379 | 6.615 | 8.571 | 0.009 | 0.345 |
| Wk7to27 | | | | 765 | 7098.063 | 0.393 | 6.484 | 8.676 | 0.008 | 0.345 |
| Wk2to26 | | | | 765 | 7098.082 | 0.412 | 4.820 | 10.218 | 0.003 | 0.345 |
| Wk2to27 | | | | 765 | 7098.086 | 0.416 | 4.716 | 10.260 | 0.003 | 0.345 |
| Wk6to24 | | | | 765 | 7098.112 | 0.442 | 6.522 | 8.055 | 0.009 | 0.344 |
| Wk1to27 | | | | 765 | 7098.114 | 0.443 | 5.192 | 9.744 | 0.004 | 0.345 |
| Wk7to25 | | | | 765 | 7098.119 | 0.449 | 6.439 | 8.170 | 0.009 | 0.345 |
| Wk1to26 | | | | 765 | 7098.124 | 0.453 | 5.236 | 9.638 | 0.004 | 0.345 |
| Wk3to26 | | | | 765 | 7098.152 | 0.482 | 5.247 | 9.431 | 0.004 | 0.345 |
| Wk3to27 | | | | 765 | 7098.166 | 0.496 | 5.101 | 9.457 | 0.004 | 0.345 |
| Wk6toWk20 | | | | 765 | 7098.187 | 0.516 | 6.316 | 7.670 | 0.008 | 0.343 |
| Wk6toWk19 | | | | 765 | 7098.209 | 0.539 | 6.244 | 7.586 | 0.008 | 0.343 |
| Wk4to26 | | | | 765 | 7098.212 | 0.542 | 5.179 | 9.075 | 0.004 | 0.344 |
| Wk4to27 | | | | 765 | 7098.229 | 0.558 | 5.023 | 9.100 | 0.004 | 0.345 |
| Wk1to25 | | | | 765 | 7098.229 | 0.559 | 4.984 | 9.130 | 0.004 | 0.344 |
| Wk2to25 | | | | 765 | 7098.234 | 0.564 | 4.437 | 9.489 | 0.003 | 0.345 |
| Wk6toWk21 | | | | 765 | 7098.249 | 0.579 | 5.940 | 7.843 | 0.007 | 0.344 |
| Wk18to20 | | | | 765 | 7098.283 | 0.612 | 5.404 | 3.825 | 0.030 | 0.345 |
| Wk3to25 | | | | 765 | 7098.285 | 0.615 | 4.899 | 8.832 | 0.004 | 0.345 |
| Wk5to24 | | | | 765 | 7098.318 | 0.648 | 5.294 | 8.221 | 0.006 | 0.344 |
| Wk24to25 | | | | 765 | 7098.330 | 0.660 | 4.269 | 2.541 | 0.045 | 0.347 |
| Wk4to25 | | | | 765 | 7098.358 | 0.688 | 4.792 | 8.455 | 0.004 | 0.344 |
| Wk8to27 | | | | 765 | 7098.409 | 0.738 | 4.738 | 8.193 | 0.005 | 0.345 |
| Wk8to26 | | | | 765 | 7098.426 | 0.756 | 4.776 | 8.046 | 0.006 | 0.345 |
| Wk7to24 | | | | 765 | 7098.448 | 0.778 | 4.949 | 7.721 | 0.006 | 0.345 |
| Wk6to23 | | | | 765 | 7098.470 | 0.800 | 4.009 | 8.392 | 0.003 | 0.345 |
| Wk1to24 | | | | 765 | 7098.473 | 0.803 | 3.615 | 8.609 | 0.002 | 0.345 |
| Wk2to24 | | | | 765 | 7098.482 | 0.811 | 2.950 | 8.871 | 0.001 | 0.345 |
| Wk8to25 | | | | 765 | 7098.515 | 0.845 | 4.632 | 7.631 | 0.006 | 0.345 |
| Wk7toWk20 | | | | 765 | 7098.517 | 0.846 | 4.766 | 7.472 | 0.005 | 0.344 |
| Wk5toWk20 | | | | 765 | 7098.531 | 0.860 | 4.561 | 7.599 | 0.004 | 0.344 |
| Wk3to24 | | | | 765 | 7098.546 | 0.876 | 3.500 | 8.292 | 0.002 | 0.345 |
| Wk5toWk21 | | | | 765 | 7098.547 | 0.876 | 4.278 | 7.767 | 0.004 | 0.344 |
| Wk10toWk10 | | | | 765 | 7098.551 | 0.880 | 4.274 | 2.752 | 0.032 | 0.342 |
| Wk5toWk19 | | | | 765 | 7098.555 | 0.885 | 4.461 | 7.550 | 0.004 | 0.344 |
| Wk7toWk21 | | | | 765 | 7098.577 | 0.907 | 4.323 | 7.557 | 0.005 | 0.345 |
| Wk2to23 | | | | 765 | 7098.608 | 0.938 | 0.088 | 8.823 | 0.000 | 0.345 |
| Wk5to23 | | | | 765 | 7098.613 | 0.943 | 2.595 | 8.370 | 0.001 | 0.345 |
| Wk7toWk19 | | | | 765 | 7098.618 | 0.948 | 4.425 | 7.219 | 0.005 | 0.344 |
| Wk1to23 | | | | 765 | 7098.625 | 0.954 | 1.073 | 8.682 | 0.000 | 0.345 |
| Wk4to24 | | | | 765 | 7098.628 | 0.957 | 3.432 | 7.920 | 0.002 | 0.345 |
| Wk1toWk21 | | | | 765 | 7098.656 | 0.986 | 2.598 | 8.171 | 0.001 | 0.345 |
| we9to27 | | | | 765 | 7098.663 | 0.993 | 3.850 | 7.476 | 0.004 | 0.345 |
| Wk1toWk19 | | | | 765 | 7098.678 | 1.008 | 2.665 | 8.043 | 0.001 | 0.345 |
| Wk2toWk21 | | | | 765 | 7098.692 | 1.021 | 1.749 | 8.267 | 0.001 | 0.345 |
| Wk1toWk20 | | | | 765 | 7098.692 | 1.021 | 2.751 | 7.946 | 0.001 | 0.345 |
| Wk6toWk22 | | | | 765 | 7098.693 | 1.022 | 3.418 | 7.614 | 0.003 | 0.345 |
| we18to25 | | | | 765 | 7098.697 | 1.027 | 5.047 | 4.879 | 0.018 | 0.346 |
| Wk7to23 | | | | 765 | 7098.707 | 1.037 | 2.395 | 8.018 | 0.001 | 0.345 |
| Wk12to27 | | | | 765 | 7098.711 | 1.040 | 4.346 | 6.766 | 0.007 | 0.346 |
| we9to26 | | | | 765 | 7098.712 | 1.042 | 3.803 | 7.262 | 0.004 | 0.345 |
| Wk3to23 | | | | 765 | 7098.721 | 1.051 | 0.906 | 8.289 | 0.000 | 0.345 |
| Wk2toWk20 | | | | 765 | 7098.725 | 1.054 | 1.938 | 8.074 | 0.001 | 0.345 |
| Wk2toWk19 | | | | 765 | 7098.727 | 1.057 | 1.744 | 8.114 | 0.001 | 0.345 |
| Wk6toWk18 | | | | 765 | 7098.730 | 1.059 | 3.851 | 7.127 | 0.004 | 0.344 |
| Wk2toWk22 | | | | 765 | 7098.762 | 1.092 | 0.013 | 8.170 | 0.000 | 0.345 |
| Wk10to27 | | | | 765 | 7098.768 | 1.097 | 3.890 | 6.907 | 0.005 | 0.345 |
| Wk12to26 | | | | 765 | 7098.770 | 1.100 | 4.266 | 6.511 | 0.008 | 0.346 |
| Wk1toWk22 | | | | 765 | 7098.772 | 1.101 | 0.910 | 8.078 | 0.000 | 0.345 |
| Wk3toWk21 | | | | 765 | 7098.782 | 1.112 | 2.385 | 7.690 | 0.001 | 0.345 |
| Wk4to23 | | | | 765 | 7098.797 | 1.126 | 0.969 | 7.968 | 0.000 | 0.345 |
| Wk8to24 | | | | 765 | 7098.798 | 1.127 | 3.340 | 7.167 | 0.003 | 0.345 |
| we18to26 | | | | 765 | 7098.801 | 1.131 | 4.779 | 5.105 | 0.014 | 0.346 |
| we9to25 | | | | 765 | 7098.808 | 1.137 | 3.689 | 6.873 | 0.005 | 0.345 |
| Wk5toWk22 | | | | 765 | 7098.821 | 1.150 | 2.190 | 7.598 | 0.001 | 0.345 |
| Wk10to26 | | | | 765 | 7098.827 | 1.157 | 3.814 | 6.670 | 0.005 | 0.345 |
| Wk3toWk19 | | | | 765 | 7098.839 | 1.168 | 2.388 | 7.449 | 0.001 | 0.345 |
| Wk13to27 | | | | 765 | 7098.840 | 1.169 | 4.105 | 6.309 | 0.008 | 0.346 |
| Wk3toWk20 | | | | 765 | 7098.845 | 1.174 | 2.485 | 7.385 | 0.001 | 0.345 |
| Wk8toWk20 | | | | 765 | 7098.849 | 1.179 | 3.105 | 7.071 | 0.003 | 0.345 |
| Wk3toWk22 | | | | 765 | 7098.867 | 1.197 | 0.762 | 7.714 | 0.000 | 0.345 |
| Wk8toWk21 | | | | 765 | 7098.874 | 1.203 | 2.748 | 7.153 | 0.002 | 0.345 |
| Wk12to25 | | | | 765 | 7098.882 | 1.212 | 4.084 | 6.093 | 0.008 | 0.346 |
| Wk4toWk21 | | | | 765 | 7098.897 | 1.226 | 2.315 | 7.238 | 0.001 | 0.345 |
| Wk13to26 | | | | 765 | 7098.903 | 1.232 | 4.024 | 6.054 | 0.008 | 0.346 |
| Wk18to19 | | | | 765 | 7098.914 | 1.244 | 3.943 | 2.795 | 0.032 | 0.346 |
| Wk1toWk18 | | | | 765 | 7098.916 | 1.246 | 0.889 | 7.506 | 0.000 | 0.345 |
| we18to27 | | | | 765 | 7098.924 | 1.253 | 4.416 | 5.175 | 0.012 | 0.345 |
| Wk8to23 | | | | 765 | 7098.927 | 1.257 | 0.909 | 7.468 | 0.000 | 0.345 |
| Wk7toWk22 | | | | 765 | 7098.937 | 1.267 | 1.982 | 7.196 | 0.001 | 0.345 |
| Wk6toWk16 | | | | 765 | 7098.939 | 1.268 | 2.959 | 6.766 | 0.002 | 0.344 |
| Wk4toWk20 | | | | 765 | 7098.944 | 1.274 | 2.444 | 6.993 | 0.001 | 0.345 |
| Wk10to25 | | | | 765 | 7098.948 | 1.277 | 3.628 | 6.248 | 0.006 | 0.345 |
| Wk5toWk18 | | | | 765 | 7098.953 | 1.282 | 2.322 | 7.011 | 0.001 | 0.345 |
| Wk4toWk19 | | | | 765 | 7098.955 | 1.284 | 2.329 | 6.999 | 0.001 | 0.345 |
| Wk19to25 | | | | 765 | 7098.958 | 1.287 | 4.372 | 4.977 | 0.012 | 0.345 |
| Wk11to27 | | | | 765 | 7098.961 | 1.290 | 2.631 | 6.852 | 0.003 | 0.345 |
| Wk8toWk19 | | | | 765 | 7098.966 | 1.296 | 2.742 | 6.770 | 0.002 | 0.345 |
| Wk4toWk22 | | | | 765 | 7098.972 | 1.302 | 0.801 | 7.310 | 0.000 | 0.345 |
| Wk6toWk17 | | | | 765 | 7098.989 | 1.319 | 2.207 | 6.909 | 0.001 | 0.344 |
| Wk13to25 | | | | 765 | 7098.998 | 1.328 | 3.902 | 5.687 | 0.008 | 0.346 |
| Wk17to25 | | | | 765 | 7098.999 | 1.328 | 4.239 | 5.030 | 0.013 | 0.346 |
| Wk17to26 | | | | 765 | 7099.007 | 1.336 | 4.111 | 5.287 | 0.011 | 0.346 |
| Wk11to26 | | | | 765 | 7099.033 | 1.363 | 2.560 | 6.596 | 0.003 | 0.345 |
| Wk7toWk18 | | | | 765 | 7099.034 | 1.363 | 2.232 | 6.733 | 0.001 | 0.345 |
| Wk15to26 | | | | 765 | 7099.041 | 1.370 | 3.892 | 5.462 | 0.009 | 0.346 |
| we18to24 | | | | 765 | 7099.043 | 1.373 | 4.209 | 4.676 | 0.014 | 0.346 |
| Wk15to27 | | | | 765 | 7099.051 | 1.380 | 3.769 | 5.583 | 0.008 | 0.346 |
| Wk15to25 | | | | 765 | 7099.055 | 1.384 | 3.979 | 5.230 | 0.011 | 0.346 |
| Wk14to27 | | | | 765 | 7099.060 | 1.389 | 3.628 | 5.709 | 0.007 | 0.346 |
| Wk6toWk15 | | | | 765 | 7099.064 | 1.393 | 2.762 | 6.366 | 0.002 | 0.344 |
| Wk18to21 | | | | 765 | 7099.067 | 1.397 | 4.198 | 4.100 | 0.016 | 0.345 |
| Wk17to27 | | | | 765 | 7099.068 | 1.397 | 3.857 | 5.363 | 0.009 | 0.346 |
| we9to24 | | | | 765 | 7099.069 | 1.399 | 2.601 | 6.436 | 0.003 | 0.345 |
| Wk1toWk16 | | | | 765 | 7099.071 | 1.401 | 0.055 | 6.999 | 0.000 | 0.345 |
| Wk24to27 | | | | 765 | 7099.085 | 1.415 | 4.114 | 3.699 | 0.020 | 0.345 |
| Wk5toWk16 | | | | 765 | 7099.096 | 1.426 | 1.485 | 6.738 | 0.001 | 0.345 |
| Wk3toWk18 | | | | 765 | 7099.099 | 1.428 | 0.687 | 6.867 | 0.000 | 0.345 |
| Wk5toWk17 | | | | 765 | 7099.099 | 1.429 | 0.862 | 6.842 | 0.000 | 0.345 |
| Wk14to26 | | | | 765 | 7099.108 | 1.438 | 3.603 | 5.499 | 0.008 | 0.346 |
| Wk8toWk22 | | | | 765 | 7099.113 | 1.443 | 0.744 | 6.814 | 0.000 | 0.345 |
| Wk19to26 | | | | 765 | 7099.124 | 1.453 | 3.836 | 5.069 | 0.009 | 0.345 |
| Wk24to26 | | | | 765 | 7099.142 | 1.471 | 3.840 | 3.084 | 0.025 | 0.345 |
| Wk6toWk10 | | | | 765 | 7099.148 | 1.477 | 4.034 | 4.006 | 0.015 | 0.345 |
| Wk9toWk21 | | | | 765 | 7099.149 | 1.478 | 2.046 | 6.382 | 0.001 | 0.345 |
| Wk9to23 | | | | 765 | 7099.150 | 1.480 | 0.492 | 6.714 | 0.000 | 0.345 |
| Wk9toWk20 | | | | 765 | 7099.164 | 1.493 | 2.286 | 6.228 | 0.002 | 0.345 |
| Wk16to26 | | | | 765 | 7099.177 | 1.507 | 3.601 | 5.153 | 0.009 | 0.346 |
| Wk14to25 | | | | 765 | 7099.177 | 1.507 | 3.566 | 5.202 | 0.008 | 0.346 |
| Wk6toWk7 | | | | 765 | 7099.178 | 1.507 | 3.779 | 3.046 | 0.022 | 0.343 |
| Wk11to25 | | | | 765 | 7099.181 | 1.510 | 2.414 | 6.109 | 0.003 | 0.345 |
| Wk7toWk17 | | | | 765 | 7099.184 | 1.514 | 0.666 | 6.578 | 0.000 | 0.345 |
| Wk16to27 | | | | 765 | 7099.188 | 1.517 | 3.471 | 5.273 | 0.008 | 0.346 |
| Wk16to25 | | | | 765 | 7099.197 | 1.526 | 3.684 | 4.913 | 0.010 | 0.346 |
| Wk19to27 | | | | 765 | 7099.207 | 1.536 | 3.509 | 5.132 | 0.007 | 0.345 |
| Wk12to24 | | | | 765 | 7099.208 | 1.537 | 2.980 | 5.660 | 0.005 | 0.345 |
| Wk7toWk16 | | | | 765 | 7099.212 | 1.542 | 1.312 | 6.380 | 0.001 | 0.345 |
| Wk5toWk15 | | | | 765 | 7099.217 | 1.546 | 1.336 | 6.358 | 0.001 | 0.345 |
| Wk10to24 | | | | 765 | 7099.219 | 1.549 | 2.643 | 5.842 | 0.003 | 0.345 |
| Wk4toWk18 | | | | 765 | 7099.228 | 1.558 | 0.721 | 6.427 | 0.000 | 0.345 |
| Wk6toWk14 | 765 | | | | 7099.235 | 1.565 | 2.378 | 5.926 | 0.002 | 0.345 |
| Wk15to21 | 765 | | | | 7099.265 | 1.595 | 3.348 | 5.062 | 0.008 | 0.346 |
| Wk15to20 | 765 | | | | 7099.271 | 1.600 | 3.575 | 4.686 | 0.010 | 0.346 |
| Wk9toWk19 | 765 | | | | 7099.287 | 1.616 | 1.976 | 5.929 | 0.002 | 0.345 |
| Wk20to25 | 765 | | | | 7099.301 | 1.630 | 3.129 | 5.154 | 0.006 | 0.346 |
| Wk20to26 | 765 | | | | 7099.302 | 1.631 | 2.825 | 5.414 | 0.005 | 0.345 |
| Wk19to20 | 765 | | | | 7099.302 | 1.632 | 3.717 | 3.468 | 0.015 | 0.343 |
| Wk17to24 | 765 | | | | 7099.303 | 1.633 | 3.396 | 4.817 | 0.009 | 0.346 |
| Wk12toWk20 | 765 | | | | 7099.305 | 1.635 | 2.895 | 5.342 | 0.005 | 0.345 |
| Wk17to20 | 765 | | | | 7099.312 | 1.642 | 3.681 | 4.077 | 0.014 | 0.346 |
| Wk17to21 | 765 | | | | 7099.313 | 1.643 | 3.486 | 4.614 | 0.010 | 0.346 |
| Wk9toWk22 | 765 | | | | 7099.318 | 1.648 | 0.390 | 6.177 | 0.000 | 0.345 |
| Wk7toWk15 | 765 | | | | 7099.318 | 1.648 | 1.197 | 6.062 | 0.001 | 0.345 |
| Wk13to24 | 765 | | | | 7099.320 | 1.650 | 2.889 | 5.294 | 0.005 | 0.346 |
| Wk8toWk18 | 765 | | | | 7099.322 | 1.652 | 0.741 | 6.127 | 0.000 | 0.345 |
| Wk10to23 | 765 | | | | 7099.325 | 1.655 | 0.844 | 6.107 | 0.000 | 0.345 |
| Wk20to27 | 765 | | | | 7099.326 | 1.656 | 2.582 | 5.493 | 0.004 | 0.345 |
| Wk12toWk21 | 765 | | | | 7099.342 | 1.672 | 2.546 | 5.456 | 0.004 | 0.345 |
| Wk10toWk21 | 765 | | | | 7099.353 | 1.683 | 2.142 | 5.638 | 0.002 | 0.345 |
| Wk16to21 | 765 | | | | 7099.353 | 1.683 | 3.238 | 4.800 | 0.008 | 0.346 |
| Wk15to24 | 765 | | | | 7099.356 | 1.685 | 3.104 | 4.951 | 0.007 | 0.346 |
| Wk10toWk20 | 765 | | | | 7099.359 | 1.688 | 2.374 | 5.498 | 0.003 | 0.345 |
| Wk12to23 | 765 | | | | 7099.366 | 1.696 | 1.061 | 5.945 | 0.001 | 0.345 |
| Wk13toWk20 | 765 | | | | 7099.371 | 1.701 | 2.969 | 5.021 | 0.006 | 0.345 |
| Wk19to24 | 765 | | | | 7099.381 | 1.710 | 3.249 | 4.662 | 0.008 | 0.346 |
| Wk5toWk14 | 765 | | | | 7099.394 | 1.724 | 1.005 | 5.865 | 0.000 | 0.345 |
| Wk13toWk21 | 765 | | | | 7099.410 | 1.739 | 2.623 | 5.169 | 0.004 | 0.345 |
| Wk11to24 | 765 | | | | 7099.423 | 1.753 | 1.495 | 5.663 | 0.001 | 0.345 |
| Wk6toWk13 | 765 | | | | 7099.449 | 1.779 | 2.176 | 5.305 | 0.002 | 0.345 |
| Wk7toWk14 | 765 | | | | 7099.461 | 1.791 | 0.898 | 5.684 | 0.000 | 0.345 |
| Wk14to24 | 765 | | | | 7099.469 | 1.799 | 2.715 | 4.886 | 0.006 | 0.346 |
| Wk16to24 | 765 | | | | 7099.470 | 1.800 | 2.918 | 4.690 | 0.007 | 0.346 |
| Wk10toWk22 | 765 | | | | 7099.488 | 1.817 | 0.724 | 5.638 | 0.000 | 0.345 |
| Wk16to20 | 765 | | | | 7099.490 | 1.820 | 3.199 | 4.206 | 0.011 | 0.346 |
| Wk13to23 | 765 | | | | 7099.497 | 1.826 | 1.084 | 5.551 | 0.001 | 0.345 |
| Wk5toWk10 | 765 | | | | 7099.498 | 1.827 | 3.008 | 4.473 | 0.007 | 0.345 |
| Wk14toWk21 | 765 | | | | 7099.502 | 1.832 | 2.630 | 4.840 | 0.005 | 0.346 |
| Wk10toWk19 | 765 | | | | 7099.504 | 1.834 | 2.079 | 5.181 | 0.002 | 0.345 |
| Wk19to19 | 765 | | | | 7099.507 | 1.836 | 3.125 | 2.408 | 0.021 | 0.342 |
| Wk6toWk8 | 765 | | | | 7099.507 | 1.837 | 3.370 | 3.366 | 0.015 | 0.345 |
| Wk14toWk20 | 765 | | | | 7099.514 | 1.844 | 2.863 | 4.575 | 0.007 | 0.346 |
| Wk1toWk10 | 765 | | | | 7099.537 | 1.867 | 1.454 | 5.337 | 0.001 | 0.345 |
| Wk12toWk19 | 765 | | | | 7099.564 | 1.893 | 2.382 | 4.816 | 0.004 | 0.345 |
| Wk12toWk22 | 765 | | | | 7099.565 | 1.894 | 0.899 | 5.394 | 0.000 | 0.345 |
| Wk6toWk12 | 765 | | | | 7099.565 | 1.895 | 2.196 | 4.930 | 0.003 | 0.345 |
| Wk11toWk21 | 765 | | | | 7099.571 | 1.901 | 0.803 | 5.390 | 0.000 | 0.345 |
| Wk15to23 | | | 765 | | 7099.580 | 1.909 | 1.265 | 5.272 | 0.001 | 0.346 |
| Wk5toWk13 | | | 765 | | 7099.580 | 1.910 | 0.954 | 5.338 | 0.000 | 0.345 |
| Wk17to23 | | | 765 | | 7099.590 | 1.920 | 1.222 | 5.254 | 0.001 | 0.346 |
| Wk17to22 | | | 765 | | 7099.598 | 1.927 | 1.309 | 5.209 | 0.001 | 0.346 |
| Wk11toWk20 | | | 765 | | 7099.608 | 1.937 | 0.986 | 5.255 | 0.000 | 0.345 |
| Wk7toWk13 | | | 765 | | 7099.627 | 1.957 | 0.900 | 5.219 | 0.000 | 0.345 |
| Wk18to23 | | | 765 | | 7099.637 | 1.967 | 1.856 | 4.896 | 0.002 | 0.345 |
| Wk9toWk18 | | | 765 | | 7099.640 | 1.970 | 0.332 | 5.257 | 0.000 | 0.345 |
| Wk21to27 | | | 765 | | 7099.659 | 1.989 | 1.946 | 4.787 | 0.003 | 0.345 |
| Wk14to23 | | | 765 | | 7099.661 | 1.990 | 1.043 | 5.104 | 0.001 | 0.345 |
| Wk15to22 | | | 765 | | 7099.669 | 1.999 | 1.233 | 5.035 | 0.001 | 0.346 |
| Wk6toWk11 | | | 765 | | 7099.678 | 2.007 | 2.268 | 4.539 | 0.004 | 0.345 |
| Wk13toWk19 | | | 765 | | 7099.691 | 2.021 | 2.371 | 4.419 | 0.005 | 0.345 |
| Wk13toWk22 | | | 765 | | 7099.693 | 2.023 | 0.931 | 5.042 | 0.001 | 0.345 |
| Wk15to19 | | | 765 | | 7099.694 | 2.023 | 2.785 | 3.973 | 0.009 | 0.346 |
| Wk23to27 | | | 765 | | 7099.695 | 2.025 | 2.995 | 3.543 | 0.013 | 0.346 |
| Wk7toWk10 | | | 765 | | 7099.695 | 2.025 | 2.920 | 3.735 | 0.009 | 0.345 |
| Wk21to26 | | | 765 | | 7099.711 | 2.041 | 2.045 | 4.584 | 0.003 | 0.345 |
| Wk5toWk12 | | | 765 | | 7099.715 | 2.044 | 0.973 | 4.974 | 0.001 | 0.345 |
| Wk7toWk12 | | | 765 | | 7099.716 | 2.045 | 1.006 | 4.965 | 0.001 | 0.345 |
| Wk16to23 | | | 765 | | 7099.721 | 2.050 | 1.036 | 4.948 | 0.001 | 0.346 |
| Wk1toWk8 | | | 765 | | 7099.723 | 2.053 | 0.516 | 5.027 | 0.000 | 0.345 |
| Wk18to22 | | | 765 | | 7099.733 | 2.062 | 1.888 | 4.610 | 0.003 | 0.345 |
| Wk24to24 | | | 765 | | 7099.733 | 2.063 | 2.441 | 1.614 | 0.037 | 0.346 |
| Wk1toWk9 | | | 765 | | 7099.737 | 2.067 | 0.030 | 5.020 | 0.000 | 0.345 |
| Wk16to22 | | | 765 | | 7099.766 | 2.096 | 1.059 | 4.827 | 0.001 | 0.346 |
| Wk23to26 | | | 765 | | 7099.773 | 2.103 | 2.938 | 3.140 | 0.015 | 0.346 |
| Wk9toWk10 | | | 765 | | 7099.775 | 2.105 | 2.641 | 3.863 | 0.007 | 0.345 |
| Wk20to24 | | | 765 | | 7099.785 | 2.114 | 1.621 | 4.595 | 0.002 | 0.346 |
| Wk11toWk19 | | | 765 | | 7099.789 | 2.119 | 0.699 | 4.836 | 0.000 | 0.345 |
| Wk23to25 | | | 765 | | 7099.789 | 2.119 | 2.902 | 2.646 | 0.022 | 0.346 |
| Wk21to25 | | | 765 | | 7099.792 | 2.121 | 2.209 | 4.239 | 0.005 | 0.345 |
| Wk2toWk10 | | | 765 | | 7099.804 | 2.133 | 0.535 | 4.826 | 0.000 | 0.345 |
| Wk5toWk11 | | | 765 | | 7099.825 | 2.155 | 1.065 | 4.675 | 0.001 | 0.345 |
| Wk17to19 | | | 765 | | 7099.828 | 2.158 | 2.816 | 3.268 | 0.014 | 0.346 |
| Wk14toWk22 | | | 765 | | 7099.833 | 2.163 | 0.928 | 4.690 | 0.001 | 0.345 |
| Wk7toWk7 | | | 765 | | 7099.854 | 2.184 | 2.826 | 2.688 | 0.017 | 0.345 |
| Wk8toWk10 | | | 765 | | 7099.878 | 2.207 | 2.295 | 3.912 | 0.005 | 0.345 |
| Wk7toWk11 | | | 765 | | 7099.885 | 2.214 | 1.108 | 4.518 | 0.001 | 0.345 |
| Wk19to23 | | | 765 | | 7099.893 | 2.223 | 0.188 | 4.640 | 0.000 | 0.345 |
| Wk1toWk7 | | | 765 | | 7099.897 | 2.227 | 0.203 | 4.628 | 0.000 | 0.345 |
| Wk14toWk19 | | | 765 | | 7099.901 | 2.231 | 2.210 | 3.917 | 0.006 | 0.346 |
| Wk10toWk18 | | | 765 | | 7099.923 | 2.252 | 0.623 | 4.528 | 0.000 | 0.345 |
| Wk5toWk8 | | | 765 | | 7099.930 | 2.260 | 2.098 | 3.928 | 0.005 | 0.345 |
| Wk22to27 | | | 765 | | 7099.958 | 2.288 | 1.785 | 4.064 | 0.003 | 0.345 |
| Wk19to21 | | | 765 | | 7099.977 | 2.307 | 2.314 | 3.585 | 0.006 | 0.345 |
| Wk10toWk16 | | 765 | | | 7099.984 | 2.313 | 0.020 | 4.435 | 0.000 | 0.345 |
| Wk25to25 | | 765 | | | 7099.989 | 2.318 | 2.636 | 2.835 | 0.012 | 0.343 |
| Wk5toWk7 | | 765 | | | 7099.993 | 2.322 | 2.097 | 3.752 | 0.005 | 0.345 |
| Wk16to19 | | 765 | | | 7100.051 | 2.381 | 2.296 | 3.370 | 0.009 | 0.346 |
| Wk6toWk9 | | 765 | | | 7100.076 | 2.406 | 2.143 | 3.478 | 0.006 | 0.345 |
| Wk4toWk10 | | 765 | | | 7100.087 | 2.416 | 1.141 | 4.043 | 0.001 | 0.345 |
| Wk22to26 | | 765 | | | 7100.103 | 2.432 | 1.763 | 3.717 | 0.004 | 0.345 |
| Wk3toWk10 | | 765 | | | 7100.108 | 2.438 | 0.944 | 4.054 | 0.001 | 0.345 |
| Wk12toWk18 | | 765 | | | 7100.126 | 2.455 | 0.746 | 4.060 | 0.001 | 0.345 |
| Wk5toWk9 | | 765 | | | 7100.127 | 2.457 | 1.195 | 3.938 | 0.002 | 0.345 |
| Wk22to25 | | 765 | | | 7100.149 | 2.478 | 1.979 | 3.436 | 0.006 | 0.345 |
| Wk25to27 | | 765 | | | 7100.158 | 2.487 | 1.416 | 3.779 | 0.002 | 0.345 |
| Wk19to22 | | 765 | | | 7100.227 | 2.557 | 0.090 | 3.928 | 0.000 | 0.345 |
| Wk21to24 | | 765 | | | 7100.280 | 2.610 | 1.001 | 3.682 | 0.001 | 0.345 |
| Wk13toWk18 | | 765 | | | 7100.318 | 2.647 | 0.771 | 3.669 | 0.001 | 0.345 |
| Wk12toWk16 | | 765 | | | 7100.383 | 2.712 | 0.134 | 3.632 | 0.000 | 0.345 |
| Wk3toWk8 | | 765 | | | 7100.424 | 2.753 | 0.237 | 3.553 | 0.000 | 0.345 |
| Wk4toWk8 | | 765 | | | 7100.517 | 2.847 | 0.323 | 3.383 | 0.000 | 0.345 |
| Wk15to18 | | 765 | | | 7100.529 | 2.858 | 0.955 | 3.228 | 0.002 | 0.345 |
| Wk7toWk8 | | 765 | | | 7100.535 | 2.864 | 1.752 | 2.712 | 0.007 | 0.345 |
| Wk25to26 | | 765 | | | 7100.537 | 2.867 | 1.330 | 3.044 | 0.003 | 0.345 |
| Wk12toWk15 | | 765 | | | 7100.541 | 2.871 | 0.062 | 3.357 | 0.000 | 0.345 |
| Wk14toWk18 | | 765 | | | 7100.574 | 2.903 | 0.738 | 3.214 | 0.001 | 0.345 |
| Wk3toWk7 | | 765 | | | 7100.636 | 2.966 | 0.033 | 3.202 | 0.000 | 0.345 |
| Wk7toWk9 | | 765 | | | 7100.657 | 2.987 | 0.952 | 3.009 | 0.002 | 0.345 |
| Wk1toWk3 | | 765 | | | 7100.685 | 3.015 | 0.072 | 3.124 | 0.000 | 0.345 |
| Wk13toWk16 | | 765 | | | 7100.697 | 3.026 | 0.186 | 3.102 | 0.000 | 0.345 |
| Wk23to24 | | 765 | | | 7100.699 | 3.028 | 1.841 | 2.032 | 0.015 | 0.346 |
| Wk22to24 | | 765 | | | 7100.702 | 3.032 | 0.990 | 2.918 | 0.002 | 0.345 |
| Wk27to27 | | 765 | | | 7100.734 | 3.064 | 0.106 | 3.048 | 0.000 | 0.345 |
| we20to20 | | 765 | | | 7100.746 | 3.076 | 0.752 | 2.927 | 0.001 | 0.345 |
| Wk4toWk7 | | 765 | | | 7100.777 | 3.107 | 0.098 | 2.982 | 0.000 | 0.345 |
| Wk20to21 | | 765 | | | 7100.791 | 3.120 | 0.153 | 2.961 | 0.000 | 0.345 |
| Wk15to16 | | 765 | | | 7100.825 | 3.154 | 0.415 | 2.883 | 0.000 | 0.345 |
| Wk13toWk15 | | 765 | | | 7100.885 | 3.215 | 0.128 | 2.825 | 0.000 | 0.345 |
| Wk5toWk6 | | 765 | | | 7100.885 | 3.215 | 0.276 | 2.813 | 0.000 | 0.345 |
| Wk16to18 | | 765 | | | 7100.976 | 3.305 | 0.671 | 2.611 | 0.001 | 0.345 |
| Wk15to15 | | 765 | | | 7100.981 | 3.311 | 0.496 | 2.646 | 0.001 | 0.345 |
| Wk18to18 | | 765 | | | 7101.031 | 3.361 | 1.515 | 1.871 | 0.012 | 0.346 |
| Wk6toWk6 | | 765 | | | 7101.041 | 3.370 | 1.475 | 1.934 | 0.009 | 0.345 |
| Wk14toWk16 | | 765 | | | 7101.044 | 3.374 | 0.205 | 2.604 | 0.000 | 0.345 |
| Wk8toWk8 | | 765 | | | 7101.130 | 3.459 | 0.574 | 2.431 | 0.001 | 0.345 |
| Wk17to18 | | 765 | | | 7101.135 | 3.464 | 0.749 | 2.368 | 0.002 | 0.345 |
| Wk1toWk2 | | 765 | | | 7101.149 | 3.479 | 0.155 | 2.473 | 0.000 | 0.345 |
| Wk14toWk15 | | 765 | | | 7101.225 | 3.555 | 0.174 | 2.380 | 0.000 | 0.345 |
| Wk16to16 | | 765 | | | 7101.520 | 3.849 | 0.122 | 2.056 | 0.000 | 0.345 |
| Wk1toWk1 | | 765 | | | 7101.600 | 3.930 | 0.899 | 1.712 | 0.004 | 0.345 |
| Wk23to23 | | 765 | | | 7101.776 | 4.106 | 0.067 | 1.810 | 0.000 | 0.345 |

## Population growth rate sliding window models

**Table S10a.** *D. platanoidis* growth rates as a function of temperature, weather variables selected are all possible monthly combinations of temperature from November in the previous year to October in the focal year. Models are mixed effects models with density dependence, year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 1038.438

**\*Denotes best model used in stage two modelling**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time window (Months) | n | AICc | ΔAICc | Slope±1SE | R2GLMM(m) | R2GLMM(c) |
| **Mar-Jul\*** | **954** | **1040.1** | **0.0** | **-0.735±3.828** | **0.309** | **0.911** |
| Mar-Jun | 954 | 1040.2 | 0.1 | -0.735±3.16 | 0.312 | 0.911 |
| Mar-May | 954 | 1040.2 | 0.1 | -0.735±2.347 | 0.325 | 0.912 |
| May-Jun | 954 | 1040.3 | 0.2 | -0.736±3.418 | 0.293 | 0.908 |
| Dec-Jul | 954 | 1040.4 | 0.2 | -0.735±2.457 | 0.311 | 0.911 |
| May | 954 | 1040.4 | 0.2 | -0.737±1.974 | 0.313 | 0.907 |
| Dec-Oct | 954 | 1040.4 | 0.3 | -0.735±3.096 | 0.305 | 0.911 |
| Mar-Apr | 954 | 1040.5 | 0.4 | -0.735±4.165 | 0.302 | 0.912 |
| Dec-Jun | 954 | 1040.5 | 0.4 | -0.735±1.999 | 0.313 | 0.911 |
| Mar-Aug | 954 | 1040.5 | 0.4 | -0.735±3.946 | 0.306 | 0.912 |
| Nov-Oct | 954 | 1040.5 | 0.4 | -0.735±3.214 | 0.301 | 0.912 |
| Nov-Jul | 954 | 1040.6 | 0.4 | -0.735±2.604 | 0.304 | 0.911 |
| Dec-Aug | 954 | 1040.6 | 0.4 | -0.735±2.709 | 0.309 | 0.911 |
| Dec-May | 954 | 1040.6 | 0.5 | -0.735±1.564 | 0.319 | 0.911 |
| Apr-Jul | 954 | 1040.6 | 0.5 | -0.735±4.037 | 0.3 | 0.911 |
| Dec-Sep | 954 | 1040.6 | 0.5 | -0.735±2.942 | 0.303 | 0.911 |
| Jan-Jul | 954 | 1040.6 | 0.5 | -0.735±2.894 | 0.304 | 0.912 |
| Apr-Jun | 954 | 1040.6 | 0.5 | -0.735±3.441 | 0.3 | 0.911 |
| Jan-Oct | 954 | 1040.7 | 0.5 | -0.734±3.482 | 0.301 | 0.912 |
| Mar-Sep | 954 | 1040.7 | 0.5 | -0.734±4.093 | 0.3 | 0.912 |
| May-Jul | 954 | 1040.7 | 0.6 | -0.735±3.838 | 0.297 | 0.91 |
| Nov-Aug | 954 | 1040.7 | 0.6 | -0.735±2.821 | 0.303 | 0.912 |
| Nov-Sep | 954 | 1040.7 | 0.6 | -0.735±3.064 | 0.3 | 0.912 |
| Nov-June | 954 | 1040.7 | 0.6 | -0.735±2.161 | 0.305 | 0.911 |
| Dec-Jan | 954 | 1040.7 | 0.6 | -0.735±0.633 | 0.349 | 0.912 |
| Jan-Aug | 954 | 1040.8 | 0.6 | -0.734±3.148 | 0.303 | 0.912 |
| Nov-May | 954 | 1040.8 | 0.7 | -0.735±1.756 | 0.308 | 0.912 |
| Apr-Oct | 954 | 1040.8 | 0.7 | -0.734±4.191 | 0.3 | 0.912 |
| Jan-Sep | 954 | 1040.8 | 0.7 | -0.734±3.35 | 0.3 | 0.912 |
| Apr-Aug | 954 | 1040.8 | 0.7 | -0.734±4.177 | 0.301 | 0.912 |
| Feb-Oct | 954 | 1040.9 | 0.8 | -0.734±3.726 | 0.301 | 0.913 |
| Dec-Apr | 954 | 1040.9 | 0.8 | -0.735±1.357 | 0.318 | 0.912 |
| Feb-Jul | 954 | 1040.9 | 0.8 | -0.734±3.287 | 0.301 | 0.913 |
| Jan-Jun | 954 | 1040.9 | 0.8 | -0.735±2.279 | 0.305 | 0.912 |
| Apr-May | 954 | 1040.9 | 0.8 | -0.735±2.38 | 0.31 | 0.912 |
| Apr-Sep | 954 | 1040.9 | 0.8 | -0.734±4.265 | 0.299 | 0.913 |
| May-Oct | 954 | 1040.9 | 0.8 | -0.734±4.043 | 0.298 | 0.912 |
| Mar-Apr | 954 | 1041.0 | 0.9 | -0.734±2.085 | 0.32 | 0.914 |
| Dec-Mar | 954 | 1041.0 | 0.9 | -0.735±1.025 | 0.32 | 0.912 |
| Feb-Sep | 954 | 1041.0 | 0.9 | -0.734±3.619 | 0.301 | 0.913 |
| Feb-Aug | 954 | 1041.0 | 0.9 | -0.734±3.435 | 0.302 | 0.913 |
| May-Aug | 954 | 1041.0 | 0.9 | -0.734±3.945 | 0.3 | 0.912 |
| Nov-Apr | 954 | 1041.1 | 0.9 | -0.734±1.568 | 0.308 | 0.913 |
| May-Sep | 954 | 1041.1 | 1.0 | -0.734±4.093 | 0.297 | 0.912 |
| Jan-May | 954 | 1041.1 | 1.0 | -0.734±1.726 | 0.309 | 0.912 |
| Dec | 954 | 1041.1 | 1.0 | -0.735±0.549 | 0.346 | 0.912 |
| Feb-Jun | 954 | 1041.1 | 1.0 | -0.734±2.586 | 0.302 | 0.913 |
| Mar | 954 | 1041.3 | 1.1 | -0.734±1.232 | 0.333 | 0.914 |
| Jun-Oct | 954 | 1041.3 | 1.1 | -0.734±4.014 | 0.304 | 0.914 |
| Nov-Mar | 954 | 1041.3 | 1.1 | -0.734±1.252 | 0.308 | 0.912 |
| Jun-Sep | 954 | 1041.4 | 1.3 | -0.733±4.086 | 0.308 | 0.914 |
| Aug-Oct | 954 | 1041.4 | 1.3 | -0.734±3.555 | 0.305 | 0.914 |
| Jan-Apr | 954 | 1041.4 | 1.3 | -0.734±1.479 | 0.308 | 0.913 |
| Jul-Oct | 954 | 1041.4 | 1.3 | -0.734±3.654 | 0.305 | 0.914 |
| Feb-May | 954 | 1041.5 | 1.3 | -0.734±1.903 | 0.304 | 0.913 |
| Jun | 954 | 1041.5 | 1.3 | -0.734±3.726 | 0.307 | 0.914 |
| Dec-Feb | 954 | 1041.5 | 1.4 | -0.735±0.825 | 0.312 | 0.912 |
| Nov-Jan | 954 | 1041.5 | 1.4 | -0.734±0.924 | 0.316 | 0.912 |
| Jan | 954 | 1041.5 | 1.4 | -0.735±0.617 | 0.334 | 0.913 |
| Aug-Sep | 954 | 1041.6 | 1.4 | -0.733±3.667 | 0.314 | 0.915 |
| Jan-Mar | 954 | 1041.6 | 1.4 | -0.734±1.124 | 0.308 | 0.913 |
| Jul-Sep | 954 | 1041.6 | 1.5 | -0.733±3.758 | 0.308 | 0.914 |
| Jun-Aug | 954 | 1041.6 | 1.5 | -0.734±3.771 | 0.306 | 0.914 |
| Feb-Apr | 954 | 1041.6 | 1.5 | -0.733±1.593 | 0.309 | 0.914 |
| Jun-Jul | 954 | 1041.7 | 1.5 | -0.734±3.569 | 0.305 | 0.914 |
| Nov-Feb | 954 | 1041.7 | 1.6 | -0.734±1.066 | 0.304 | 0.913 |
| Sep-Oct | 954 | 1041.8 | 1.6 | -0.734±2.633 | 0.304 | 0.914 |
| Sep | 954 | 1042.0 | 1.9 | -0.733±2.679 | 0.317 | 0.915 |
| Oct | 954 | 1042.0 | 1.9 | -0.734±1.814 | 0.315 | 0.914 |
| Jul-Aug | 954 | 1042.0 | 1.9 | -0.734±3.167 | 0.307 | 0.914 |
| Apr | 954 | 1042.0 | 1.9 | -0.733±1.721 | 0.308 | 0.914 |
| Feb-Mar | 954 | 1042.0 | 1.9 | -0.733±1.117 | 0.308 | 0.914 |
| Nov | 954 | 1042.1 | 2.0 | -0.733±1.064 | 0.332 | 0.916 |
| Feb | 954 | 1042.1 | 2.0 | -0.733±0.706 | 0.34 | 0.916 |
| Jan-Feb | 954 | 1042.1 | 2.0 | -0.734±0.845 | 0.304 | 0.914 |
| Nov-Dec | 954 | 1042.2 | 2.1 | -0.734±0.919 | 0.307 | 0.913 |
| Aug | 954 | 1042.4 | 2.2 | -0.733±2.704 | 0.308 | 0.914 |
| Jul | 954 | 1042.4 | 2.3 | -0.734±2.572 | 0.307 | 0.914 |

**Table S10b.** *D. platanoidis* growth rates as a function of precipitation, weather variables selected are all possible monthly combinations of Precipitation from November in the previous year to October in the focal year. Models are mixed effects models with density dependence, year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 1038.438

**\*Denotes best model used in stage two modelling**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time window (Months) | n | AICc | ΔAICc | Slope±1SE | R2GLMM(m) | R2GLMM(c) |
| **Mar-Jul\*** | **954** | **1040.1** | **0** | **-0.735±3.828** | **0.309** | **0.911** |
| Mar-Jun | 954 | 1040.2 | 0.1 | -0.735±3.16 | 0.312 | 0.911 |
| Mar-May | 954 | 1040.2 | 0.1 | -0.735±2.347 | 0.325 | 0.912 |
| May-Jun | 954 | 1040.3 | 0.2 | -0.736±3.418 | 0.293 | 0.908 |
| Dec-Jul | 954 | 1040.4 | 0.2 | -0.735±2.457 | 0.311 | 0.911 |
| May | 954 | 1040.4 | 0.2 | -0.737±1.974 | 0.313 | 0.907 |
| Dec-Oct | 954 | 1040.4 | 0.3 | -0.735±3.096 | 0.305 | 0.911 |
| Mar-Apr | 954 | 1040.5 | 0.4 | -0.735±4.165 | 0.302 | 0.912 |
| Dec-Jun | 954 | 1040.5 | 0.4 | -0.735±1.999 | 0.313 | 0.911 |
| Mar-Aug | 954 | 1040.5 | 0.4 | -0.735±3.946 | 0.306 | 0.912 |
| Nov-Oct | 954 | 1040.5 | 0.4 | -0.735±3.214 | 0.301 | 0.912 |
| Nov-Jul | 954 | 1040.6 | 0.4 | -0.735±2.604 | 0.304 | 0.911 |
| Dec-Aug | 954 | 1040.6 | 0.4 | -0.735±2.709 | 0.309 | 0.911 |
| Dec-May | 954 | 1040.6 | 0.5 | -0.735±1.564 | 0.319 | 0.911 |
| Apr-Jul | 954 | 1040.6 | 0.5 | -0.735±4.037 | 0.3 | 0.911 |
| Dec-Sep | 954 | 1040.6 | 0.5 | -0.735±2.942 | 0.303 | 0.911 |
| Jan-Jul | 954 | 1040.6 | 0.5 | -0.735±2.894 | 0.304 | 0.912 |
| Apr-Jun | 954 | 1040.6 | 0.5 | -0.735±3.441 | 0.3 | 0.911 |
| Jan-Oct | 954 | 1040.7 | 0.5 | -0.734±3.482 | 0.301 | 0.912 |
| Mar-Sep | 954 | 1040.7 | 0.5 | -0.734±4.093 | 0.3 | 0.912 |
| May-Jul | 954 | 1040.7 | 0.6 | -0.735±3.838 | 0.297 | 0.91 |
| Nov-Aug | 954 | 1040.7 | 0.6 | -0.735±2.821 | 0.303 | 0.912 |
| Nov-Sep | 954 | 1040.7 | 0.6 | -0.735±3.064 | 0.3 | 0.912 |
| Nov-June | 954 | 1040.7 | 0.6 | -0.735±2.161 | 0.305 | 0.911 |
| Dec-Jan | 954 | 1040.7 | 0.6 | -0.735±0.633 | 0.349 | 0.912 |
| Jan-Aug | 954 | 1040.8 | 0.6 | -0.734±3.148 | 0.303 | 0.912 |
| Nov-May | 954 | 1040.8 | 0.7 | -0.735±1.756 | 0.308 | 0.912 |
| Apr-Oct | 954 | 1040.8 | 0.7 | -0.734±4.191 | 0.3 | 0.912 |
| Jan-Sep | 954 | 1040.81 | 0.7 | -0.734±3.35 | 0.3 | 0.912 |
| Apr-Aug | 954 | 1040.8 | 0.7 | -0.734±4.177 | 0.301 | 0.912 |
| Feb-Oct | 954 | 1040.9 | 0.8 | -0.734±3.726 | 0.301 | 0.913 |
| Dec-Apr | 954 | 1040.9 | 0.8 | -0.735±1.357 | 0.318 | 0.912 |
| Feb-Jul | 954 | 1040.9 | 0.8 | -0.734±3.287 | 0.301 | 0.913 |
| Jan-Jun | 954 | 1040.9 | 0.8 | -0.735±2.279 | 0.305 | 0.912 |
| Apr-May | 954 | 1040.9 | 0.8 | -0.735±2.38 | 0.31 | 0.912 |
| Apr-Sep | 954 | 1040.9 | 0.8 | -0.734±4.265 | 0.299 | 0.913 |
| May-Oct | 954 | 1040.9 | 0.8 | -0.734±4.043 | 0.298 | 0.912 |
| Mar-Apr | 954 | 1041.0 | 0.9 | -0.734±2.085 | 0.32 | 0.914 |
| Dec-Mar | 954 | 1041.0 | 0.9 | -0.735±1.025 | 0.32 | 0.912 |
| Feb-Sep | 954 | 1041.0 | 0.9 | -0.734±3.619 | 0.301 | 0.913 |
| Feb-Aug | 954 | 1041.0 | 0.9 | -0.734±3.435 | 0.302 | 0.913 |
| May-Aug | 954 | 1041.0 | 0.9 | -0.734±3.945 | 0.3 | 0.912 |
| Nov-Apr | 954 | 1041.1 | 0.9 | -0.734±1.568 | 0.308 | 0.913 |
| May-Sep | 954 | 1041.1 | 1.0 | -0.734±4.093 | 0.297 | 0.912 |
| Jan-May | 954 | 1041.1 | 1.0 | -0.734±1.726 | 0.309 | 0.912 |
| Dec | 954 | 1041.1 | 1.0 | -0.735±0.549 | 0.346 | 0.912 |
| Feb-Jun | 954 | 1041.1 | 1.0 | -0.734±2.586 | 0.302 | 0.913 |
| Mar | 954 | 1041.3 | 1.1 | -0.734±1.232 | 0.333 | 0.914 |
| Jun-Oct | 954 | 1041.3 | 1.1 | -0.734±4.014 | 0.304 | 0.914 |
| Nov-Mar | 954 | 1041.3 | 1.1 | -0.734±1.252 | 0.308 | 0.912 |
| Jun-Sep | 954 | 1041.4 | 1.3 | -0.733±4.086 | 0.308 | 0.914 |
| Aug-Oct | 954 | 1041.4 | 1.3 | -0.734±3.555 | 0.305 | 0.914 |
| Jan-Apr | 954 | 1041.4 | 1.3 | -0.734±1.479 | 0.308 | 0.913 |
| Jul-Oct | 954 | 1041.4 | 1.3 | -0.734±3.654 | 0.305 | 0.914 |
| Feb-May | 954 | 1041.5 | 1.3 | -0.734±1.903 | 0.304 | 0.913 |
| Jun | 954 | 1041.5 | 1.3 | -0.734±3.726 | 0.307 | 0.914 |
| Dec-Feb | 954 | 1041.5 | 1.4 | -0.735±0.825 | 0.312 | 0.912 |
| Nov-Jan | 954 | 1041.5 | 1.4 | -0.734±0.924 | 0.316 | 0.912 |
| Jan | 954 | 1041.5 | 1.4 | -0.735±0.617 | 0.334 | 0.913 |
| Aug-Sep | 954 | 1041.6 | 1.4 | -0.733±3.667 | 0.314 | 0.915 |
| Jan-Mar | 954 | 1041.6 | 1.4 | -0.734±1.124 | 0.308 | 0.913 |
| Jul-Sep | 954 | 1041.6 | 1.5 | -0.733±3.758 | 0.308 | 0.914 |
| Jun-Aug | 954 | 1041.6 | 1.5 | -0.734±3.771 | 0.306 | 0.914 |
| Feb-Apr | 954 | 1041.6 | 1.5 | -0.733±1.593 | 0.309 | 0.914 |
| Jun-Jul | 954 | 1041.7 | 1.5 | -0.734±3.569 | 0.305 | 0.914 |
| Nov-Feb | 954 | 1041.7 | 1.6 | -0.734±1.066 | 0.304 | 0.913 |
| Sep-Oct | 954 | 1041.8 | 1.6 | -0.734±2.633 | 0.304 | 0.914 |
| Sep | 954 | 1042.0 | 1.9 | -0.733±2.679 | 0.317 | 0.915 |
| Oct | 954 | 1042.0 | 1.9 | -0.734±1.814 | 0.315 | 0.914 |
| Jul-Aug | 954 | 1042.0 | 1.9 | -0.734±3.167 | 0.307 | 0.914 |
| Apr | 954 | 1042.0 | 1.9 | -0.733±1.721 | 0.308 | 0.914 |
| Feb-Mar | 954 | 1042.0 | 1.9 | -0.733±1.117 | 0.308 | 0.914 |
| Nov | 954 | 1042.1 | 2.0 | -0.733±1.064 | 0.332 | 0.916 |
| Feb | 954 | 1042.1 | 2.0 | -0.733±0.706 | 0.34 | 0.916 |
| Jan-Feb | 954 | 1042.1 | 2.0 | -0.734±0.845 | 0.304 | 0.914 |
| Nov-Dec | 954 | 1042.2 | 2.0 | -0.734±0.919 | 0.307 | 0.913 |
| Aug | 954 | 1042.4 | 2.2 | -0.733±2.704 | 0.308 | 0.914 |
| Jul | 954 | 1042.4 | 2.3 | -0.734±2.572 | 0.307 | 0.914 |

**Table S11a**. *P. testudinaceus* growth rates as a function of temperature, weather variables selected are all possible monthly combinations of temperature from November in the previous year to October in the focal year. Models are mixed effects models with density dependence, year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 1250.8.

**\*Denotes best model used in stage two modelling**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time window (Months) | n | AICc | ΔAICc | Slope±1SE | R2GLMM(m) | R2GLMM(c) |
| **Feb-Sep\*** | **945** | **1808.5** | **0** | **-0.853±3.311** | **0.431** | **0.856** |
| Feb-Oct | 945 | 1808.5 | 0.0 | -0.853±3.425 | 0.428 | 0.856 |
| Feb-Jul | 945 | 1808.6 | 0.1 | -0.854±3.031 | 0.423 | 0.855 |
| Mar-Apr | 945 | 1808.8 | 0.3 | -0.853±3.906 | 0.418 | 0.855 |
| Mar-Sep | 945 | 1808.8 | 0.3 | -0.853±3.822 | 0.42 | 0.856 |
| Feb-Aug | 945 | 1808.8 | 0.4 | -0.853±3.177 | 0.422 | 0.856 |
| May-Sep | 945 | 1808.9 | 0.4 | -0.853±3.783 | 0.428 | 0.857 |
| Feb-Mar | 945 | 1808.9 | 0.4 | -0.854±1.006 | 0.443 | 0.857 |
| Sep | 945 | 1808.9 | 0.5 | -0.853±2.414 | 0.444 | 0.857 |
| May-Oct | 945 | 1809.0 | 0.5 | -0.853±3.764 | 0.422 | 0.856 |
| Aug-Sep | 945 | 1809.0 | 0.5 | -0.853±3.358 | 0.438 | 0.858 |
| Apr-Sep | 945 | 1809.0 | 0.6 | -0.853±3.977 | 0.415 | 0.855 |
| Mar-Jul | 945 | 1809.0 | 0.6 | -0.854±3.657 | 0.408 | 0.854 |
| Apr-Oct | 945 | 1809.0 | 0.6 | -0.853±3.925 | 0.413 | 0.855 |
| Jun-Sep | 945 | 1809.1 | 0.6 | -0.853±3.764 | 0.425 | 0.856 |
| Feb-Jun | 945 | 1809.1 | 0.6 | -0.854±2.400 | 0.416 | 0.855 |
| Jan-Oct | 945 | 1809.1 | 0.6 | -0.853±3.283 | 0.413 | 0.855 |
| Jun-Oct | 945 | 1809.1 | 0.7 | -0.853±3.719 | 0.42 | 0.856 |
| Mar-Aug | 945 | 1809.1 | 0.7 | -0.853±3.738 | 0.41 | 0.855 |
| Jul-Sep | 945 | 1809.1 | 0.7 | -0.853±3.451 | 0.432 | 0.857 |
| Jan-Sep | 945 | 1809.2 | 0.7 | -0.853±3.150 | 0.413 | 0.856 |
| Aug-Oct | 945 | 1809.2 | 0.8 | -0.853±3.292 | 0.422 | 0.856 |
| May-Jul | 945 | 1809.3 | 0.8 | -0.853±3.631 | 0.415 | 0.855 |
| Jul-Oct | 945 | 1809.3 | 0.8 | -0.853±3.384 | 0.422 | 0.856 |
| Feb | 945 | 1809.3 | 0.8 | -0.854±0.642 | 0.446 | 0.856 |
| Apr-Jul | 945 | 1809.3 | 0.9 | -0.854±3.836 | 0.403 | 0.854 |
| Apr-Aug | 945 | 1809.3 | 0.9 | -0.853±3.945 | 0.406 | 0.855 |
| Nov-Oct | 945 | 1809.4 | 0.9 | -0.853±3.064 | 0.403 | 0.854 |
| Mar-Jun | 945 | 1809.4 | 0.9 | -0.854±3.044 | 0.403 | 0.854 |
| May-Aug | 945 | 1809.4 | 0.9 | -0.853±3.707 | 0.416 | 0.856 |
| Jan-Aug | 945 | 1809.4 | 1.0 | -0.853±2.985 | 0.407 | 0.855 |
| Jan-Jul | 945 | 1809.4 | 1.0 | -0.853±2.757 | 0.405 | 0.855 |
| Feb-May | 945 | 1809.4 | 1.0 | -0.854±1.770 | 0.416 | 0.855 |
| Dec-Oct | 945 | 1809.5 | 1.0 | -0.853±2.969 | 0.404 | 0.855 |
| Nov-Sep | 945 | 1809.5 | 1.0 | -0.853±2.915 | 0.403 | 0.854 |
| Feb-Apr | 945 | 1809.5 | 1.0 | -0.854±1.474 | 0.414 | 0.854 |
| May-Jun | 945 | 1809.5 | 1.0 | -0.853±3.292 | 0.409 | 0.855 |
| Dec-Sep | 945 | 1809.5 | 1.1 | -0.853±2.815 | 0.404 | 0.855 |
| Apr-Jun | 945 | 1809.6 | 1.1 | -0.853±3.293 | 0.399 | 0.854 |
| Nov-Jul | 945 | 1809.6 | 1.1 | -0.853±2.499 | 0.399 | 0.854 |
| Nov-Aug | 945 | 1809.6 | 1.2 | -0.853±2.696 | 0.4 | 0.854 |
| Sep-Oct | 945 | 1809.7 | 1.2 | -0.853±2.442 | 0.416 | 0.855 |
| Jan | 945 | 1809.7 | 1.2 | -0.855±0.578 | 0.421 | 0.851 |
| Mar-May | 945 | 1809.7 | 1.3 | -0.853±2.282 | 0.402 | 0.854 |
| Dec-Aug | 945 | 1809.7 | 1.3 | -0.853±2.609 | 0.401 | 0.854 |
| Dec-Jul | 945 | 1809.7 | 1.3 | -0.853±2.382 | 0.4 | 0.854 |
| Nov-June | 945 | 1809.7 | 1.3 | -0.853±2.073 | 0.399 | 0.854 |
| Jan-Jun | 945 | 1809.7 | 1.3 | -0.853±2.175 | 0.402 | 0.854 |
| Jun-Aug | 945 | 1809.8 | 1.3 | -0.853±3.526 | 0.41 | 0.855 |
| Nov-Jan | 945 | 1809.8 | 1.3 | -0.854±0.867 | 0.42 | 0.854 |
| Jun | 945 | 1809.8 | 1.3 | -0.854±3.498 | 0.401 | 0.854 |
| Mar-Apr | 945 | 1809.8 | 1.3 | -0.853±1.987 | 0.399 | 0.854 |
| Nov-Apr | 945 | 1809.8 | 1.4 | -0.853±1.492 | 0.401 | 0.854 |
| Jun-Jul | 945 | 1809.8 | 1.4 | -0.853±3.335 | 0.408 | 0.854 |
| Dec-Jan | 945 | 1809.9 | 1.4 | -0.854±0.612 | 0.421 | 0.853 |
| Nov-May | 945 | 1809.9 | 1.4 | -0.853±1.687 | 0.399 | 0.854 |
| Dec-Jun | 945 | 1809.9 | 1.5 | -0.853±1.940 | 0.399 | 0.854 |
| Jan-May | 945 | 1810.0 | 1.6 | -0.853±1.652 | 0.401 | 0.854 |
| Dec-Apr | 945 | 1810.0 | 1.6 | -0.853±1.308 | 0.4 | 0.854 |
| Jan-Apr | 945 | 1810.1 | 1.6 | -0.853±1.404 | 0.4 | 0.854 |
| Mar | 945 | 1810.1 | 1.6 | -0.853±1.176 | 0.414 | 0.855 |
| Apr-May | 945 | 1810.1 | 1.6 | -0.853±2.293 | 0.399 | 0.854 |
| Dec-May | 945 | 1810.1 | 1.6 | -0.853±1.522 | 0.399 | 0.854 |
| Nov-Mar | 945 | 1810.1 | 1.7 | -0.853±1.196 | 0.399 | 0.854 |
| Jul-Aug | 945 | 1810.2 | 1.7 | -0.853±2.965 | 0.411 | 0.856 |
| Apr | 945 | 1810.2 | 1.8 | -0.853±1.612 | 0.411 | 0.856 |
| Jan-Mar | 945 | 1810.2 | 1.8 | -0.853±1.068 | 0.404 | 0.855 |
| Nov-Feb | 945 | 1810.3 | 1.8 | -0.854±1.009 | 0.401 | 0.854 |
| May | 945 | 1810.4 | 1.9 | -0.853±1.951 | 0.41 | 0.855 |
| Dec-Mar | 945 | 1810.4 | 1.9 | -0.853±0.995 | 0.399 | 0.854 |
| Dec-Feb | 945 | 1810.5 | 2.1 | -0.854±0.793 | 0.4 | 0.853 |
| Nov-Dec | 945 | 1810.6 | 2.1 | -0.853±0.865 | 0.41 | 0.855 |
| Jul | 945 | 1810.6 | 2.2 | -0.853±2.407 | 0.409 | 0.855 |
| Jan-Feb | 945 | 1810.7 | 2.2 | -0.853±0.800 | 0.399 | 0.854 |
| Aug | 945 | 1810.7 | 2.3 | -0.853±2.544 | 0.406 | 0.855 |
| Oct | 945 | 1810.7 | 2.3 | -0.853±1.724 | 0.4 | 0.854 |
| Dec | 945 | 1810.9 | 2.4 | -0.854±0.540 | 0.414 | 0.854 |
| Nov | 945 | 1811.0 | 2.5 | -0.853±1.016 | 0.402 | 0.854 |

**Table S11b**. *P. testudinaceus* growth rates as a function of precipitation, weather variables selected are all possible monthly combinations of precipitation from November in the previous year to October in the focal year. Models are mixed effects models with density dependence, year and tree identity included in all models. Slopes reported with ± 1SE, ΔAICc given relative to best fitting model. Random effects only model AICc = 1250.8.

**\*Denotes best model used in stage two modelling**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time window (Months) | n | AICc | ΔAICc | Slope±1SE | R2GLMM(m) | R2GLMM(c) |
| Aug-Oct | 945 | 1806.7 | 0 | -0.853±0.575 | 0.477 | 0.86 |
| Jul-Oct | 945 | 1807.2 | 0.5 | -0.853±0.762 | 0.445 | 0.857 |
| Feb-Oct | 945 | 1807.4 | 0.7 | -0.853±0.872 | 0.432 | 0.857 |
| Jan-Oct | 945 | 1807.6 | 0.9 | -0.853±1.008 | 0.417 | 0.855 |
| Nov-Jul | 945 | 1807.7 | 1 | -0.852±0.931 | 0.433 | 0.859 |
| May-Oct | 945 | 1807.7 | 1 | -0.853±0.822 | 0.432 | 0.857 |
| Feb-Sep | 945 | 1807.7 | 1 | -0.853±0.951 | 0.415 | 0.855 |
| Nov-Sep | 945 | 1807.8 | 1.1 | -0.853±1.158 | 0.409 | 0.856 |
| Feb-Aug | 945 | 1807.8 | 1.1 | -0.853±0.884 | 0.414 | 0.855 |
| Feb-May | 945 | 1807.9 | 1.2 | -0.853±0.646 | 0.428 | 0.856 |
| Jan-Sep | 945 | 1807.9 | 1.2 | -0.853±1.071 | 0.402 | 0.854 |
| Nov-Aug | 945 | 1807.9 | 1.2 | -0.853±1.101 | 0.412 | 0.856 |
| Jan-Aug | 945 | 1807.9 | 1.2 | -0.853±1.037 | 0.402 | 0.854 |
| Dec-Sep | 945 | 1807.9 | 1.2 | -0.853±1.131 | 0.4 | 0.854 |
| Dec-Aug | 945 | 1808 | 1.3 | -0.853±1.118 | 0.4 | 0.854 |
| Nov-Jun | 945 | 1808 | 1.3 | -0.853±0.947 | 0.423 | 0.858 |
| Dec-Oct | 945 | 1808 | 1.3 | -0.854±1.057 | 0.402 | 0.854 |
| Dec-Jul | 945 | 1808 | 1.3 | -0.853±0.918 | 0.414 | 0.856 |
| Aug-Sep | 945 | 1808 | 1.3 | -0.853±0.550 | 0.442 | 0.857 |
| May | 945 | 1808 | 1.3 | -0.853±0.448 | 0.45 | 0.859 |
| Dec-Jan | 945 | 1808 | 1.3 | -0.851±0.569 | 0.472 | 0.864 |
| Feb-Jun | 945 | 1808 | 1.3 | -0.853±0.829 | 0.412 | 0.855 |
| Nov-Oct | 945 | 1808.1 | 1.4 | -0.853±1.118 | 0.398 | 0.854 |
| Dec-Jun | 945 | 1808.2 | 1.5 | -0.853±0.947 | 0.406 | 0.855 |
| Nov-Jan | 945 | 1808.2 | 1.5 | -0.851±0.568 | 0.477 | 0.865 |
| Jan-Jun | 945 | 1808.2 | 1.5 | -0.853±0.925 | 0.399 | 0.854 |
| Mar-Oct | 945 | 1808.2 | 1.5 | -0.853±0.779 | 0.417 | 0.856 |
| Apr-Oct | 945 | 1808.2 | 1.5 | -0.853±0.731 | 0.426 | 0.858 |
| Oct | 945 | 1808.3 | 1.6 | -0.853±0.431 | 0.465 | 0.859 |
| Jun-Oct | 945 | 1808.3 | 1.6 | -0.853±0.805 | 0.417 | 0.856 |
| Feb | 945 | 1808.3 | 1.6 | -0.856±0.415 | 0.423 | 0.85 |
| Jan-Jul | 945 | 1808.3 | 1.6 | -0.853±0.867 | 0.401 | 0.854 |
| Jul-Sep | 945 | 1808.3 | 1.6 | -0.853±0.801 | 0.408 | 0.854 |
| May-Sep | 945 | 1808.4 | 1.7 | -0.853±0.819 | 0.406 | 0.855 |
| Mar-Sep | 945 | 1808.4 | 1.7 | -0.853±0.825 | 0.403 | 0.855 |
| Jan-May | 945 | 1808.5 | 1.8 | -0.854±0.752 | 0.403 | 0.854 |
| Feb-Jul | 945 | 1808.5 | 1.8 | -0.853±0.776 | 0.4 | 0.854 |
| Apr-Sep | 945 | 1808.5 | 1.8 | -0.853±0.768 | 0.408 | 0.856 |
| Mar-Aug | 945 | 1808.6 | 1.9 | -0.853±0.761 | 0.402 | 0.854 |
| Aug | 945 | 1808.6 | 1.9 | -0.854±0.383 | 0.449 | 0.857 |
| Feb-Apr | 945 | 1808.6 | 1.9 | -0.853±0.607 | 0.41 | 0.854 |
| Nov-Apr | 945 | 1808.6 | 1.9 | -0.852±0.732 | 0.425 | 0.858 |
| Nov-May | 945 | 1808.7 | 2 | -0.853±0.803 | 0.41 | 0.856 |
| Jun-Jul | 945 | 1808.7 | 2 | -0.854±0.414 | 0.426 | 0.855 |
| Mar-Jul | 945 | 1808.7 | 2 | -0.854±0.627 | 0.399 | 0.853 |
| Jun-Sep | 945 | 1808.7 | 2 | -0.853±0.749 | 0.399 | 0.854 |
| Apr-Aug | 945 | 1808.8 | 2.1 | -0.853±0.689 | 0.407 | 0.855 |
| Dec-May | 945 | 1808.8 | 2.1 | -0.853±0.766 | 0.399 | 0.854 |
| Dec-Apr | 945 | 1808.9 | 2.2 | -0.853±0.706 | 0.408 | 0.855 |
| May-Aug | 945 | 1808.9 | 2.2 | -0.853±0.652 | 0.404 | 0.855 |
| Nov-Mar | 945 | 1808.9 | 2.2 | -0.852±0.646 | 0.433 | 0.86 |
| Jan-Apr | 945 | 1808.9 | 2.2 | -0.853±0.692 | 0.399 | 0.854 |
| Mar-Jun | 945 | 1808.9 | 2.2 | -0.853±0.617 | 0.398 | 0.854 |
| Feb-Mar | 945 | 1809 | 2.3 | -0.854±0.503 | 0.397 | 0.851 |
| Sep-Oct | 945 | 1809.1 | 2.4 | -0.853±0.481 | 0.432 | 0.857 |
| May-Jul | 945 | 1809.1 | 2.4 | -0.854±0.542 | 0.402 | 0.853 |
| Nov-Dec | 945 | 1809.1 | 2.4 | -0.851±0.499 | 0.462 | 0.864 |
| Dec-Mar | 945 | 1809.1 | 2.4 | -0.853±0.640 | 0.417 | 0.857 |
| Nov-Feb | 945 | 1809.1 | 2.4 | -0.852±0.635 | 0.432 | 0.86 |
| Apr-Jul | 945 | 1809.2 | 2.5 | -0.854±0.557 | 0.397 | 0.853 |
| Mar-May | 945 | 1809.2 | 2.5 | -0.853±0.516 | 0.408 | 0.855 |
| Jan | 945 | 1809.2 | 2.5 | -0.853±0.472 | 0.437 | 0.859 |
| May-Jun | 945 | 1809.2 | 2.5 | -0.853±0.552 | 0.399 | 0.854 |
| Jul-Aug | 945 | 1809.3 | 2.6 | -0.853±0.543 | 0.404 | 0.854 |
| Dec | 945 | 1809.3 | 2.6 | -0.852±0.464 | 0.451 | 0.861 |
| Dec-Feb | 945 | 1809.3 | 2.6 | -0.853±0.640 | 0.413 | 0.857 |
| Jul | 945 | 1809.4 | 2.7 | -0.853±0.375 | 0.425 | 0.856 |
| Jan-March | 945 | 1809.4 | 2.7 | -0.853±0.573 | 0.399 | 0.854 |
| Jun-Aug | 945 | 1809.4 | 2.7 | -0.853±0.552 | 0.399 | 0.854 |
| Apr-May | 945 | 1809.4 | 2.7 | -0.853±0.433 | 0.424 | 0.858 |
| Apr-Jun | 945 | 1809.4 | 2.7 | -0.853±0.516 | 0.401 | 0.854 |
| Jan-Feb | 945 | 1809.6 | 2.9 | -0.854±0.561 | 0.396 | 0.853 |
| Mar | 945 | 1809.6 | 2.9 | -0.853±0.395 | 0.41 | 0.856 |
| Jun | 945 | 1809.7 | 3 | -0.854±0.350 | 0.41 | 0.853 |
| Mar-Apr | 945 | 1809.7 | 3 | -0.854±0.436 | 0.398 | 0.854 |
| Nov | 945 | 1810.1 | 3.4 | -0.852±0.427 | 0.442 | 0.861 |
| Sep | 945 | 1810.4 | 3.7 | -0.853±0.385 | 0.4 | 0.854 |
| Apr | 945 | 1810.7 | 4 | -0.853±0.332 | 0.402 | 0.855 |

**Table. S12**

Table showing the length of the aphid season for *D.platanoidis* and *P.testudinaceus*. Calculated as first week where aphids were present to first week where there had been two consequtive weeks without any aphids, or final date where records were collected if during November or December.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year | *D. platanoidis* | | *P. testudinaceus* | |
|  | Start | Finish | Start | Finish |
| 1993 | 26/03/1993 | 11/11/1993 | 02/04/1993 | 28/11/1993 |
| 1994 | 10/03/1994 | 01/12/1994 | 31/03/1994 | 08/12/1994 |
| 1995 | 16/03/1995 | 30/11/1995 | 06/04/1995 | 30/11/1995 |
| 1996 | 02/04/1996 | 26/11/1996 | 17/04/1996 | 26/11/1996 |
| 1997 | 13/03/1997 | 28/11/1997 | 03/04/1997 | 20/11/1997 |
| 1998 | 19/03/1998 | 14/12/1998 | 02/04/1998 | 14/12/1998 |
| 1999 | 11/03/1999 | 25/11/1999 | 01/04/1999 | 11/11/1999 |
| 2000 | 16/03/2000 | 29/11/2000 | 16/03/2000 | 29/11/2000 |
| 2001 | 29/03/2001 | 13/12/2001 | 12/04/2001 | 06/12/2001 |
| 2002 | 28/02/2002 | 28/11/2002 | 21/03/2002 | 21/11/2002 |
| 2003 | 13/03/2003 | 27/11/2003 | 03/04/2003 | 27/11/2003 |
| 2004 | 11/03/2004 | 01/12/2004 | 01/04/2004 | 24/11/2004 |
| 2005 | 17/03/2005 | 08/12/2005 | 31/03/2005 | 08/12/2005 |
| 2006 | 30/03/2006 | 14/12/2006 | 30/03/2006 | 07/12/2006 |
| 2007 | 01/03/2007 | 29/11/2007 | 08/03/2007 | 29/11/2007 |
| 2008 | 21/02/2008 | 26/11/2008 | 12/03/2008 | 12/11/2008 |
| 2009 | 02/04/2009 | 26/11/2009 | 02/04/2009 | 26/11/2009 |
| 2010 | 25/03/2010 | 02/12/2010 | 18/03/2010 | 02/12/2010 |
| 2011 | 10/03/2011 | 01/12/2011 | 10/03/2011 | 01/12/2011 |
| 2012 | 08/03/2012 | 21/11/2012 | 22/03/2012 | 21/11/2012 |

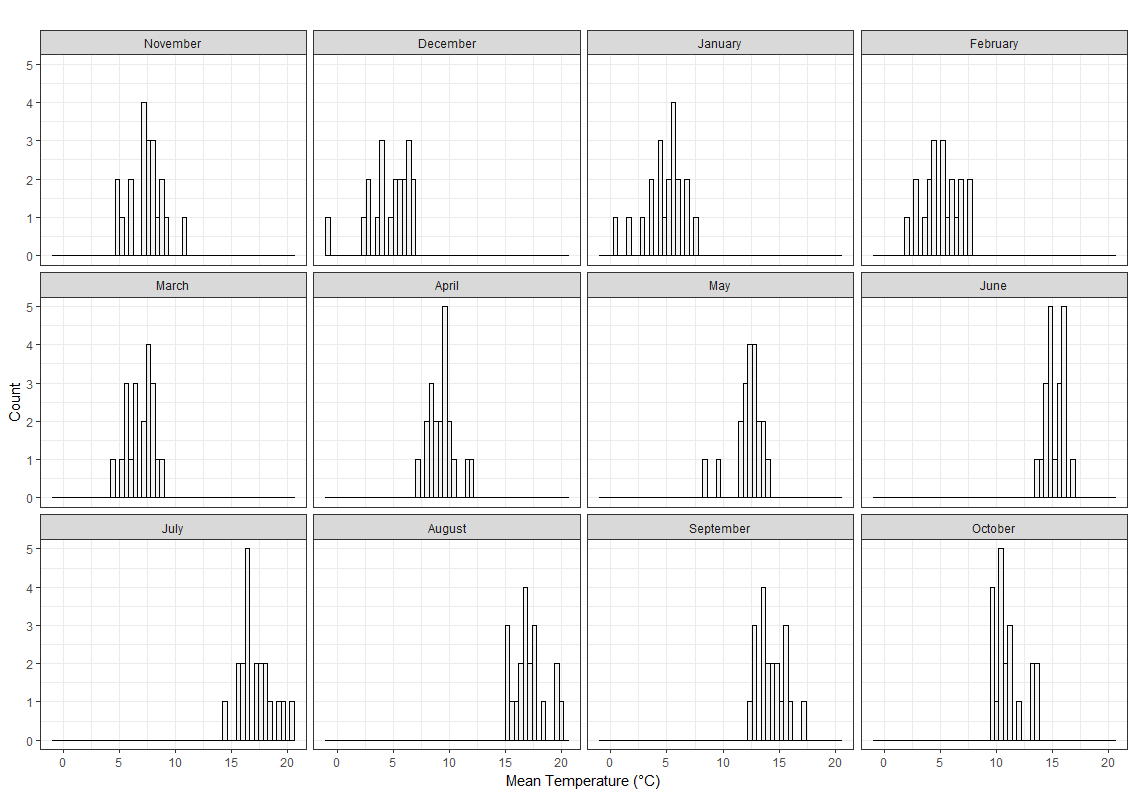


Figure S1. Variation in mean temperatrure in each month °C across the 20 year study period (1993-2012)

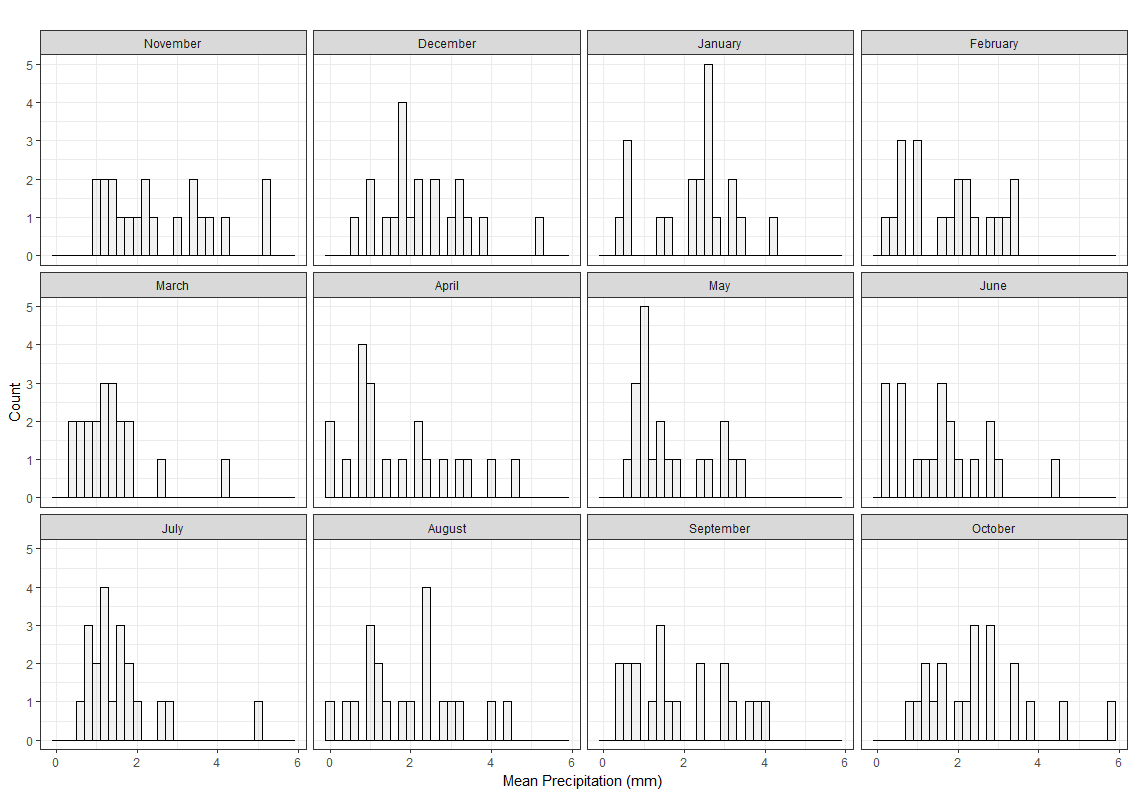


Figure S2. Variation in mean Precipitation in each month °C across the 20 year study period (1993-2012)