Supplemental materials for Phenological sequences: How early-season events define those that follow

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Supplemental Tables

Table S1: Summary of linear models for relationships between later phenophases and earlier phenophases, as shown in Figure 3 in the main text. Two types of linear models were fit: those with the intercept only estimated and a forced slope of one, and those with both the slope and intercept estimated (i.e., a standard regression model). All models were fit with the species-level mean day-of-year of the later phenological stages as the response variable, and mean day-of-year of earlier phenostage as the explanatory variable. Asterisks in Figure 3 correspond to models with r^2 >0.10.

	forced slope model			standard regression model				
previous phenostage model	intercept	r^2	aic	intercept	slope	p	r^2	aic
leafout vs. budburst	8.94	0.10	164.78	65.84	0.53	<0.001	0.44	155.01
flowering vs. budburst	23.83	0.17	225.55	3.18	1.17	0.039	0.17	227.45
fruiting vs. budburst	140.71	0.13	260.44	-32.03	2.42	0.029	0.19	260.48
senescence vs. budburst	158.84	-0.12	210.97	243.88	0.30	0.427	0.03	209.43
flowering vs. leafout	14.90	0.23	223.60	-105.28	1.92	0.005	0.30	223.26
fruiting vs. leafout	131.77	0.08	261.78	-42.56	2.33	0.097	0.12	262.74
senescence vs. leafout	149.90	-0.07	209.74	237.39	0.33	0.484	0.02	209.58
fruiting vs. flowering	116.87	0.29	255.39	109.80	1.05	0.006	0.29	257.37
senescence vs. flowering	135.00	-1.79	233.74	261.65	0.13	0.332	0.04	209.08
senesence vs. fruiting	111.97	-5.43	254.66	235.89	0.17	0.008	0.27	202.28

Table S2: Summary of linear models for relationships between later phenophases and interphase duration, as shown in Figure 4 in the main text. Linear models were fit with the species-level mean day-of-year of the later phenological stages as the response variable, and the number of days in each previous interphase duration as the explanatory variable. The random.slopes column gives the range in which 95 percent of slopes in the randomization occur (betwen 2.5 percent and 97.5 percent). Asterisks in Figure 4 correspond to interphase models with r^2 >0.10.

interphase model	intercept	slope	r^2	p	aic	random.slopes
leafout vs. leafout-budburst	128.98	0.20	0.04	0.374	168.58	0.46-1.52
flowering vs. flowering-budburst	121.18	1.03	0.88	<0.001	180.24	0.84-1.17
fruiting vs. fruiting-budburst	114.31	1.05	0.97	<0.001	178.39	0.92-1.09
senescence vs. senescence-budburst	151.87	0.81	0.74	<0.001	176.81	0.79-1.22
flowering vs. flowering-leafout	129.28	1.10	0.93	<0.001	167.11	0.86-1.14
fruiting vs. fruiting-leafout	126.69	1.03	0.98	<0.001	168.41	0.93-1.06
senescence vs. fruiting-leafout	149.22	0.88	0.82	<0.001	167.30	0.82-1.18
fruiting vs. fruiting-flowering	143.56	1.02	0.74	<0.001	232.15	0.74-1.25
senescence vs. senescence-flowering	247.41	0.25	0.17	0.041	205.51	0.6-1.4
senesence vs. senescence-fruiting	282.11	-0.08	0.05	0.296	208.91	0.5-1.4

Supplemental Figures

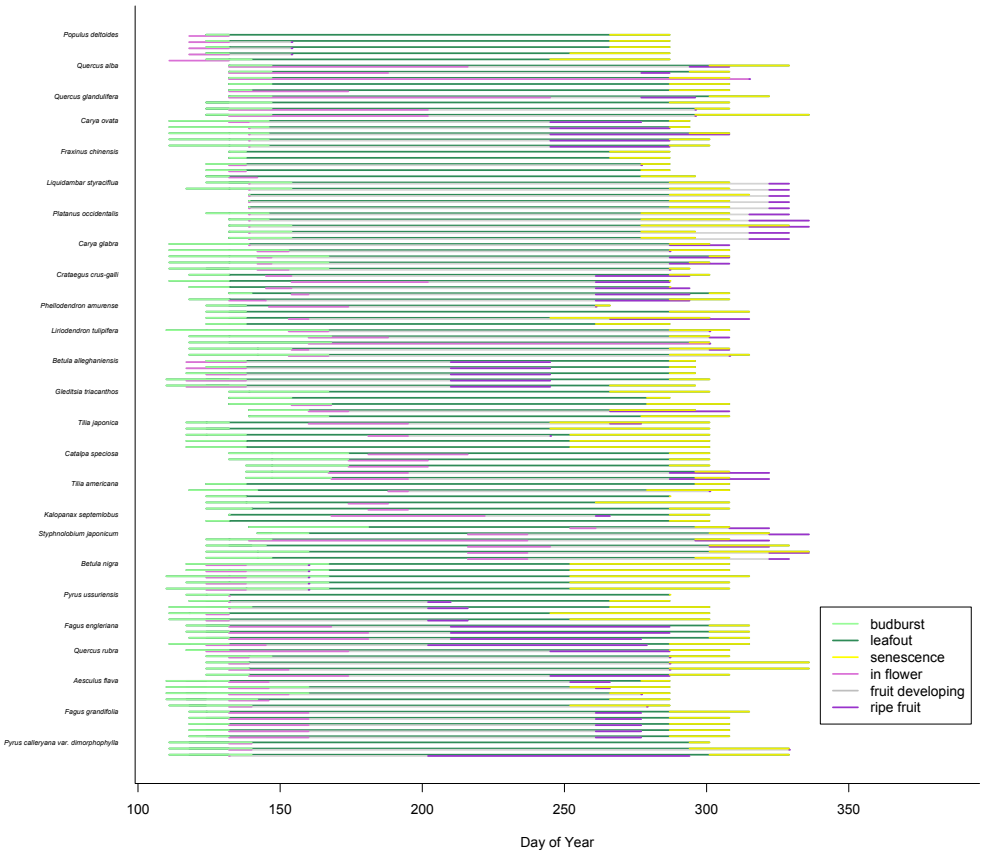

Figure S1: **Individual tree phenology during the 2015 growing season, ordered by species-level mean first-flower dates.** Growth phenology is shown for budburst (from day-of-year it was first observed on the individual to the first day-of-year leafoutwas observed), leafout (from the first day-of-year when fully-expanded leaves were observed through the first day senescence was observed), and senescence (from first day-of-year when leaves began changing color through the day-of-year when more than 95% of leaves on the tree had changed color). Reproductive phenology is shown for flowering (from the first day-of-year when flowers appeared to the day-of-year when fruits first appeared, across all individuals within a species) and fruiting (from the first day-of-year when fruits appeared to the day-of-year when more than 95% of fruits were first observed as ripe).