

Table S1. Model parameter and random effects model output for average plot F_s ($\mu\text{mol C m}^{-2} \text{s}^{-1}$) LMER mixed effects model including season, stand type, 10-day precipitation and air-temperature as fixed effects.

<i>Predictors</i>	Dependent variable		
	<i>Estimates</i>	<i>CI</i>	<i>p</i>
(Intercept)	-0.66	-4.08 – 2.77	0.706
Season [Sp]	-0.32	-3.91 – 3.26	0.860
Season [Su]	2.57	-1.22 – 6.37	0.183
Season [W]	3.04	-0.61 – 6.70	0.103
Stand [MCH]	0.58	-0.04 – 1.21	0.068
Stand [MH]	0.21	-0.36 – 0.78	0.468
Precip	0.01	-0.07 – 0.10	0.723
Temp	0.25	-0.03 – 0.53	0.077
Season [Sp] \times Stand [MCH]	-0.58	-1.17 – 0.00	0.050
Season [Su] \times Stand [MCH]	0.31	-0.37 – 0.98	0.369
Season [W] \times Stand [MCH]	-0.59	-1.30 – 0.12	0.105
Season [Sp] \times Stand [MH]	-0.40	-0.92 – 0.13	0.141
Season [Su] \times Stand [MH]	-0.08	-0.67 – 0.51	0.788
Season [W] \times Stand [MH]	-0.17	-0.79 – 0.46	0.601
Precip \times Temp	-0.00	-0.01 – 0.01	0.788
Season [Sp] \times Precip	0.03	-0.06 – 0.11	0.538
Season [Su] \times Precip	-0.12	-0.22 – -0.02	0.018
Season [W] \times Precip	-0.02	-0.10 – 0.06	0.646
Season [Sp] \times Temp	0.09	-0.22 – 0.40	0.565
Season [Su] \times Temp	-0.14	-0.44 – 0.15	0.340
Season [W] \times Temp	-0.35	-0.71 – -0.00	0.047

(Season [Sp] × Precip) × Temp	-0.00	-0.01 – 0.00	0.404
(Season [Su] × Precip) × Temp	0.01	0.00 – 0.02	0.027
(Season [W] × Precip) × Temp	0.00	-0.01 – 0.01	0.600

Random Effects

σ^2	0.70
τ_{00} Plot	0.16
τ_{00} month	0.53
τ_{00} Year	0.81
ICC	0.68
N _{Year}	8
N _{month}	12
N _{Plot}	29
Observations	408
Marginal R ² / Conditional R ²	0.343 / 0.790

Table S2. Model parameter and random effects model output for a mixed-effects LMER model for a subset of Fs ($\mu\text{mol C m}^{-2} \text{ s}^{-1}$) data where soil moisture and air-temperature were included as fixed effects in addition to season.

<i>Predictors</i>	Dependent variable		
	<i>Estimates</i>	<i>CI</i>	<i>p</i>
(Intercept)	0.56	-3.47 – 4.59	0.783
Moist	-0.04	-0.17 – 0.09	0.580
STemp	0.18	-0.18 – 0.54	0.329
Season2 [Su]	17.99	6.70 – 29.28	0.002
Season2 [W]	1.06	-9.43 – 11.54	0.842
Moist × STemp	0.00	-0.01 – 0.02	0.558
Moist × Season2 [Su]	-0.56	-1.14 – 0.02	0.058

Moist \times Season2 [W]	0.03	-0.27 – 0.33	0.867
STemp \times Season2 [Su]	-1.14	-1.92 – -0.35	0.005
STemp \times Season2 [W]	-0.20	-1.40 – 1.00	0.744
(Moist \times STemp) \times Season2 [Su]	0.04	-0.00 – 0.08	0.055
(Moist \times STemp) \times Season2 [W]	-0.00	-0.04 – 0.03	0.914

Random Effects

σ^2	0.53
τ_{00} Plot2	0.11
τ_{00} Year2	0.46
ICC	0.51
N Year2	4
N Plot2	26
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Observations	141
Marginal R ² / Conditional R ²	0.582 / 0.797