Methods: Data analysis

We estimated the effects of increment depth (i.e., 0-1cm, 1-2cm, 2-3cm, 3-4cm, 4-8cm, 8cm-pith) on total, sugar and starch concentrations for both ring-porous and diffuse-porous species using Bayesian hierarchical models with the brms package (Bürkner, 2017), version 2.3.1, in R (R Development Core Team, 2017), version 3.3.1. Due to missing data for the 8cm-pith increment, we imputed data for the missing months based on actual values measured in January and July (**?**). Seasons are modeled hierarchically, generating an estimate of the overall response across season and estimates of season-level responses—and the distribution from which they are drawn. The intercept in the model is increment 0-1cm since the predictors are discrete groups:

$$y_i = \alpha_{season[i]} + \beta_{increment1-2_{season[i]}} + \beta_{increment2-3_{season[i]}} + \beta_{increment3-4_{season[i]}} + \beta_{increment4-8_{season[i]}} + \beta_{increment8-pith_{season[i]}} + \epsilon_i$$

,

$$\epsilon_i \sim N(0, \sigma_y^2)$$

The α and each of the five β coefficients were modeled at the season level, as follows:

$$\begin{aligned}
\alpha_{season} &\sim N(\mu_\alpha, \sigma_\alpha) \\
\beta_{increment1-2_{season}} &\sim N(\mu_{increment1-2}, \sigma_{increment1-2}) \\
\beta_{increment2-3_{season}} &\sim N(\mu_{increment2-3}, \sigma_{increment2-3}) \\
\beta_{increment3-4_{season}} &\sim N(\mu_{increment3-4}, \sigma_{increment3-4}) \\
\beta_{increment4-8_{season}} &\sim N(\mu_{increment4-8}, \sigma_{increment4-8}) \\
\beta_{increment8-pith_{season}} &\sim N(\mu_{increment8-pith}, \sigma_{increment8-pith})
\end{aligned}$$

where i represents each unique observation, *season* is the season, α represents the intercept, which is again increment 0-1cm, β terms represent slope estimates, and y is the total, sugar or starch concentration.

We additionally estimated the effects of organ on the radiocarbon age using a Bayesian model (Bürkner, 2017; R Development Core Team, 2017), where branch is the intercept since, again, the predictors are discrete groups:

$$y_i = \alpha_{[i]} + \beta_{shoot0-0.5_{[i]}} + \beta_{shoot0.5-1_{[i]}} + \beta_{shoot1-1.5_{[i]}} + \beta_{shoot1.5-2_{[i]}} + \beta_{root0-0.5_{[i]}} + \beta_{root0.5-1_{[i]}} + \beta_{root1-1.5_{[i]}} + +\beta_{root1.5-2_{[i]}} + \beta_{fineroot_{[i]}} + \epsilon_{[i]}$$

,

$$\epsilon_i \sim N(0, \sigma_y^2)$$

We ran four chains, each with 2 500 warm-up iterations and 4 000 sampling iterations for a total of 6 000 posterior samples for each predictor for each model using weakly informative priors. Increasing priors three-fold did not impact our results. We evaluated our model performance based on $\hat{R}$ values that were close to one. We also evaluated high n_{eff} (4000 for most parameters, but as low as 794 for a few parameters in the diffuse-porous sugar concentration model). We additionally assessed chain convergence and posterior predictive checks visually (Gelman *et al.*, 2014).

References

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Gelman A, Carlin JB, Stern HS, Dunson DB, Vehtari A, Rubin DB (2014) *Bayesian Data Analysis*. CRC Press, New York, 3rd edn.

R Development Core Team (2017) R: A language and environment for statistical computing. *R Foundation for Statistical Computing, Vienna, Austria*.

Supplement: Tables

Table S1: **Estimates from ring-porous total concentration (mg/g) model**. Using a model testing the effects of increment depth on total concentration (mg/g) for ring-porous species, results in slightly muted variation in concentration across increments. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	35.79	7.41	31.37	40.35	17.53	53.43
$\mu_{increment1-2}$	-8.66	6.29	-12.88	-4.64	-21.81	7.24
$\mu_{increment2-3}$	-13.59	6.82	-18.18	-9.35	-27.23	3.69
$\mu_{increment3-4}$	-13.53	6.76	-18.14	-9.25	-27.50	3.23
$\mu_{increment4-8}$	-15.45	6.88	-20.16	-11.19	-28.93	1.69
$\mu_{increment8-pith}$	-16.90	7.26	-21.90	-12.36	-31.40	1.52
$\mu_{\alpha(Spring}$	-0.81	7.62	-5.66	3.79	-18.98	18.13
$\mu_{\alpha(Summer)}$	1.79	7.61	-3.11	6.43	-16.29	21.37
$\mu_{\alpha(Autumn)}$	31.14	7.84	26.16	35.90	13.31	50.60
$\mu_{\alpha(Winter)}$	21.18	7.84	16.10	26.12	2.66	39.53
$\mu_{increment1-2(Spring}$	2.44	6.59	-1.61	6.73	-13.55	16.44
$\mu_{increment1-2(Summer)}$	-5.43	6.71	-9.48	-0.97	-21.61	8.25
$\mu_{increment1-2(Autumn)}$	-23.76	7.07	-28.28	-18.83	-41.41	-9.58
$\mu_{increment1-2(Winter)}$	-21.12	7.36	-25.89	-16.10	-38.89	-6.45
$\mu_{increment2-3(Spring}$	-4.11	7.19	-8.47	0.89	-22.94	10.02
$\mu_{increment2-3(Summer)}$	-5.41	7.13	-9.78	-0.36	-24.52	8.38
$\mu_{increment2-3(Autumn)}$	-36.38	7.74	-41.09	-30.90	-55.96	-20.86
$\mu_{increment2-3(Winter)}$	-23.61	7.72	-28.59	-18.27	-42.35	-8.05
$\mu_{increment3-4(Spring}$	-5.82	7.15	-10.21	-0.83	-23.33	8.68
$\mu_{increment3-4(Summer)}$	-3.59	7.02	-8.01	1.28	-20.50	10.61
$\mu_{increment3-4(Autumn)}$	-36.55	7.71	-41.37	-31.46	-54.72	-20.11
$\mu_{increment3-4(Winter)}$	-24.39	7.88	-29.58	-19.05	-42.58	-8.06
$\mu_{increment4-8(Spring}$	-3.12	7.23	-7.67	1.89	-21.41	11.76
$\mu_{increment4-8(Summer)}$	-8.00	7.37	-12.67	-2.94	-25.87	6.59
$\mu_{increment4-8(Autumn)}$	-36.01	7.83	-41.14	-30.55	-54.91	-19.44
$\mu_{increment4-8(Winter)}$	-24.58	7.81	-29.53	-19.33	-43.39	-8.21
$\mu_{increment8-pith(Spring}$	-4.81	7.73	-9.44	0.52	-24.95	10.57
$\mu_{increment8-pith(Summer)}$	-7.14	7.61	-12.02	-1.76	-25.30	7.90
$\mu_{increment8-pith(Autumn)}$	-36.17	8.45	-41.76	-30.47	-56.04	-19.09
$\mu_{increment8-pith(Winter)}$	-26.43	8.42	-32.05	-20.41	-47.81	-9.85

Table S2: **Estimates from diffuse-porous total concentration (mg/g) model**. Using a model testing the effects of increment depth on total concentration (mg/g) for diffuse-porous species, results in slightly greater variation in concentration across increments. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	25.37	6.32	21.35	29.26	9.43	39.99
$\mu_{increment1-2}$	-3.41	5.05	-6.60	-0.18	-15.24	8.92
$\mu_{increment2-3}$	-7.66	5.93	-11.50	-3.90	-21.01	7.15
$\mu_{increment3-4}$	-7.84	5.57	-11.51	-4.20	-20.50	5.66
$\mu_{increment4-8}$	-9.44	5.99	-13.41	-5.62	-22.62	6.41
$\mu_{increment8-pith}$	-13.27	5.91	-17.16	-9.63	-25.73	1.32
$\mu_{\alpha(Spring}$	-4.87	6.59	-9.26	-0.67	-20.01	10.75
$\mu_{\alpha(Summer)}$	-5.05	6.57	-9.23	-1.03	-20.14	11.33
$\mu_{\alpha(Autumn)}$	33.23	6.94	28.74	37.55	17.45	50.10
$\mu_{\alpha(Winter)}$	6.11	6.80	1.73	10.44	-9.03	21.79
$\mu_{increment1-2(Spring}$	1.62	5.55	-2.13	5.51	-11.56	13.24
$\mu_{increment1-2(Summer)}$	0.83	5.59	-2.64	4.44	-12.67	13.69
$\mu_{increment1-2(Autumn)}$	-29.73	6.30	-33.87	-25.36	-44.22	-15.73
$\mu_{increment1-2(Winter)}$	2.37	6.00	-1.50	6.11	-10.99	16.88
$\mu_{increment2-3(Spring}$	1.92	6.59	-2.22	6.23	-14.09	16.40
$\mu_{increment2-3(Summer)}$	-0.72	6.63	-4.90	3.61	-16.64	13.60
$\mu_{increment2-3(Autumn)}$	-40.09	6.96	-44.72	-35.46	-56.59	-24.93
$\mu_{increment2-3(Winter)}$	2.10	6.71	-2.21	6.42	-14.39	16.34
$\mu_{increment3-4(Spring}$	1.37	6.38	-2.85	5.55	-13.42	15.51
$\mu_{increment3-4(Summer)}$	2.12	6.25	-1.98	6.40	-12.42	15.80
$\mu_{increment3-4(Autumn)}$	-40.81	6.83	-45.14	-36.24	-57.33	-26.24
$\mu_{increment3-4(Winter)}$	-1.53	6.75	-5.99	2.94	-17.20	13.81
$\mu_{increment4-8(Spring}$	6.82	6.59	2.54	11.36	-9.71	21.65
$\mu_{increment4-8(Summer)}$	-2.20	6.71	-6.54	2.29	-19.83	11.17
$\mu_{increment4-8(Autumn)}$	-39.93	7.13	-44.22	-35.06	-57.50	-23.88
$\mu_{increment4-8(Winter)}$	-4.04	7.10	-8.51	0.87	-21.32	11.50
$\mu_{increment8-pith(Spring}$	2.07	6.56	-2.09	6.61	-13.76	15.94
$\mu_{increment8-pith(Summer)}$	2.83	6.38	-0.86	6.95	-12.16	16.74
$\mu_{increment8-pith(Autumn)}$	-35.26	7.37	-40.04	-30.05	-52.95	-20.04
$\mu_{increment8-pith(Winter)}$	-8.61	7.05	-13.15	-3.71	-25.42	5.66

Table S3: **Estimates from ring-porous sugar concentration (mg/g) model**. Using a model testing the effects of increment depth on sugar concentration (mg/g) for ring-porous species, results in slightly muted variation in concentration across increments. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	26.83	5.10	23.75	30.13	14.68	37.78
$\mu_{increment1-2}$	-6.98	4.52	-9.94	-4.12	-17.27	3.93
$\mu_{increment2-3}$	-9.07	4.45	-12.10	-6.22	-18.20	2.37
$\mu_{increment3-4}$	-10.25	4.53	-13.22	-7.51	-19.87	1.51
$\mu_{increment4-8}$	-10.81	4.80	-14.03	-7.99	-20.56	1.33
$\mu_{increment8-pith}$	-11.88	5.18	-15.41	-8.61	-22.18	1.51
$\mu_{\alpha(Spring}$	-0.97	5.19	-4.20	2.05	-12.28	11.21
$\mu_{\alpha(Summer)}$	-7.03	5.15	-10.36	-3.86	-18.49	5.56
$\mu_{\alpha(Autumn)}$	5.09	5.18	1.67	8.27	-6.29	17.15
$\mu_{\alpha(Winter)}$	23.76	5.37	20.20	26.94	12.11	36.37
$\mu_{increment1-2(Spring}$	2.41	4.65	-0.58	5.44	-8.53	13.04
$\mu_{increment1-2(Summer)}$	2.27	4.68	-0.67	5.33	-9.25	13.01
$\mu_{increment1-2(Autumn)}$	-3.40	4.73	-6.32	-0.49	-14.79	7.25
$\mu_{increment1-2(Winter)}$	-19.36	5.06	-22.55	-16.10	-31.86	-8.43
$\mu_{increment2-3(Spring}$	0.16	4.61	-2.66	3.19	-11.47	10.05
$\mu_{increment2-3(Summer)}$	5.29	4.56	2.54	8.32	-5.73	15.01
$\mu_{increment2-3(Autumn)}$	-6.28	4.66	-9.10	-3.23	-17.99	3.31
$\mu_{increment2-3(Winter)}$	-21.95	4.93	-25.06	-18.57	-34.47	-12.07
$\mu_{increment3-4(Spring}$	-0.36	4.75	-3.18	2.74	-13.02	10.36
$\mu_{increment3-4(Summer)}$	5.19	4.71	2.46	8.33	-6.60	15.89
$\mu_{increment3-4(Autumn)}$	-5.26	4.70	-8.06	-2.13	-17.10	4.76
$\mu_{increment3-4(Winter)}$	-21.32	5.05	-24.49	-17.90	-33.93	-10.62
$\mu_{increment4-8(Spring}$	1.13	4.96	-1.88	4.42	-11.40	11.34
$\mu_{increment4-8(Summer)}$	4.55	4.98	1.52	7.81	-7.60	15.09
$\mu_{increment4-8(Autumn)}$	-7.11	4.97	-10.12	-3.75	-19.49	3.02
$\mu_{increment4-8(Winter)}$	-23.07	5.31	-26.37	-19.42	-36.30	-12.24
$\mu_{increment8-pith(Spring}$	-0.56	5.37	-4.07	3.18	-14.10	10.18
$\mu_{increment8-pith(Summer)}$	5.40	5.29	2.11	9.09	-7.95	15.98
$\mu_{increment8-pith(Autumn)}$	-7.12	5.41	-10.59	-3.27	-21.67	3.32
$\mu_{increment8-pith(Winter)}$	-25.80	5.68	-29.44	-21.78	-39.75	-14.59

Table S4: **Estimates from diffuse-porous sugar concentration (mg/g) model**. Using a model testing the effects of increment depth on sugar concentration (mg/g) for diffuse-porous species, results in slightly greater variation in concentration across increments. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	14.64	4.21	12.23	16.97	3.37	25.00
$\mu_{increment1-2}$	-1.33	1.26	-2.00	-0.62	-4.69	1.76
$\mu_{increment2-3}$	-1.80	1.20	-2.45	-1.19	-4.82	1.41
$\mu_{increment3-4}$	-2.55	1.52	-3.22	-1.80	-6.90	1.44
$\mu_{increment4-8}$	-2.90	2.62	-4.42	-1.49	-8.60	4.01
$\mu_{increment8-pith}$	-5.15	3.58	-7.32	-3.07	-13.13	4.19
$\mu_{\alpha(Spring}$	-1.08	4.24	-3.47	1.32	-11.89	9.80
$\mu_{\alpha(Summer)}$	-4.96	4.23	-7.25	-2.63	-15.87	6.18
$\mu_{\alpha(Autumn)}$	-1.92	4.23	-4.36	0.45	-12.44	9.16
$\mu_{\alpha(Winter)}$	8.43	4.22	6.12	10.86	-1.80	19.63
$\mu_{increment1-2(Spring}$	-0.33	1.28	-0.93	0.22	-3.73	3.13
$\mu_{increment1-2(Summer)}$	-0.62	1.35	-1.27	0.06	-4.62	2.59
$\mu_{increment1-2(Autumn)}$	0.51	1.31	-0.13	1.01	-2.19	4.61
$\mu_{increment1-2(Winter)}$	0.43	1.40	-0.24	1.00	-2.71	4.66
$\mu_{increment2-3(Spring}$	0.46	1.23	-0.10	0.92	-2.43	4.24
$\mu_{increment2-3(Summer)}$	-0.22	1.23	-0.68	0.28	-3.94	3.03
$\mu_{increment2-3(Autumn)}$	-0.49	1.23	-0.98	0.10	-4.24	2.18
$\mu_{increment2-3(Winter)}$	0.07	1.29	-0.49	0.60	-3.36	3.48
$\mu_{increment3-4(Spring}$	0.89	1.61	0.03	1.56	-2.75	5.64
$\mu_{increment3-4(Summer)}$	0.56	1.56	-0.16	1.20	-3.30	5.05
$\mu_{increment3-4(Autumn)}$	-0.59	1.61	-1.31	0.15	-5.12	3.62
$\mu_{increment3-4(Winter)}$	-1.00	1.71	-1.90	-0.01	-5.60	3.06
$\mu_{increment4-8(Spring}$	3.15	2.71	1.53	4.82	-3.33	9.88
$\mu_{increment4-8(Summer)}$	1.05	2.71	-0.37	2.66	-6.16	6.99
$\mu_{increment4-8(Autumn)}$	-1.62	2.73	-3.14	0.02	-9.08	4.50
$\mu_{increment4-8(Winter)}$	-3.60	2.86	-5.19	-1.80	-11.41	2.58
$\mu_{increment8-pith(Spring}$	0.95	3.67	-1.19	3.29	-8.77	9.36
$\mu_{increment8-pith(Summer)}$	4.79	3.68	2.57	7.10	-4.48	13.30
$\mu_{increment8-pith(Autumn)}$	0.64	3.68	-1.46	2.90	-8.82	8.52
$\mu_{increment8-pith(Winter)}$	-9.26	3.69	-11.42	-6.86	-18.54	-1.13

Table S5: **Estimates from ring-porous starch concentration (mg/g) model**. Using a model testing the effects of increment depth on starch concentration (mg/g) for ring-porous species, results in slightly muted variation in concentration across increments. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	13.17	5.38	10.04	16.26	0.45	26.20
$\mu_{increment1-2}$	-6.00	4.23	-8.66	-3.52	-15.95	4.58
$\mu_{increment2-3}$	-10.59	4.97	-13.89	-7.74	-21.02	2.12
$\mu_{increment3-4}$	-9.76	5.21	-13.43	-6.55	-20.42	3.02
$\mu_{increment4-8}$	-11.11	4.87	-14.32	-8.22	-20.60	1.77
$\mu_{increment8-pith}$	-11.45	4.90	-14.77	-8.61	-21.16	1.29
$\mu_{\alpha(Spring}$	-3.73	5.51	-7.12	-0.47	-16.70	9.11
$\mu_{\alpha(Summer)}$	4.45	5.55	1.04	7.93	-8.72	17.61
$\mu_{\alpha(Autumn)}$	21.33	5.77	17.72	24.73	8.01	34.82
$\mu_{\alpha(Winter)}$	-5.19	5.60	-8.68	-1.84	-18.31	8.31
$\mu_{increment1-2(Spring}$	3.69	4.54	0.99	6.46	-7.59	14.99
$\mu_{increment1-2(Summer)}$	-3.21	4.57	-5.93	-0.28	-14.55	7.22
$\mu_{increment1-2(Autumn)}$	-15.11	5.02	-18.22	-11.80	-27.43	-4.39
$\mu_{increment1-2(Winter)}$	0.64	4.64	-2.17	3.69	-10.90	10.75
$\mu_{increment2-3(Spring}$	1.40	5.33	-1.74	4.79	-11.81	12.67
$\mu_{increment2-3(Summer)}$	-4.60	5.30	-7.82	-1.07	-18.09	6.68
$\mu_{increment2-3(Autumn)}$	-23.39	5.79	-26.99	-19.40	-37.77	-11.63
$\mu_{increment2-3(Winter)}$	2.81	5.39	-0.45	6.37	-10.29	13.75
$\mu_{increment3-4(Spring}$	0.50	5.57	-2.78	4.35	-13.85	12.03
$\mu_{increment3-4(Summer)}$	-2.26	5.56	-5.73	1.63	-16.36	9.38
$\mu_{increment3-4(Autumn)}$	-24.17	5.90	-27.71	-20.14	-38.94	-11.90
$\mu_{increment3-4(Winter)}$	1.91	5.54	-1.76	5.86	-11.80	13.35
$\mu_{increment4-8(Spring}$	1.91	5.19	-1.26	5.39	-11.36	12.96
$\mu_{increment4-8(Summer)}$	-5.99	5.28	-9.11	-2.55	-20.04	4.90
$\mu_{increment4-8(Autumn)}$	-21.80	5.65	-25.26	-18.03	-36.23	-9.98
$\mu_{increment4-8(Winter)}$	3.14	5.36	-0.03	6.70	-9.97	14.41
$\mu_{increment8-pith(Spring}$	1.90	5.16	-1.26	5.37	-11.16	13.19
$\mu_{increment8-pith(Summer)}$	-5.93	5.42	-9.05	-2.30	-20.26	4.77
$\mu_{increment8-pith(Autumn)}$	-22.53	5.84	-26.14	-18.48	-36.41	-10.80
$\mu_{increment8-pith(Winter)}$	3.04	5.41	-0.27	6.68	-10.65	14.13

Table S6: **Estimates from diffuse-porous starch concentration (mg/g) model**. Using a model testing the effects of increment depth on starch concentration (mg/g) for diffuse-porous species, results in slightly greater variation in concentration across increments. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	12.00	5.88	8.32	15.75	-2.48	25.21
$\mu_{increment1-2}$	-3.02	4.88	-6.05	0.02	-14.64	8.16
$\mu_{increment2-3}$	-7.23	5.41	-10.92	-3.87	-18.87	6.41
$\mu_{increment3-4}$	-7.59	5.48	-11.07	-4.22	-19.51	5.95
$\mu_{increment4-8}$	-8.70	5.61	-12.63	-5.05	-20.57	4.36
$\mu_{increment8-pith}$	-9.92	5.38	-13.45	-6.65	-21.52	3.68
$\mu_{\alpha(Spring}$	-4.31	6.07	-8.29	-0.43	-18.27	10.56
$\mu_{\alpha(Summer)}$	-1.83	6.21	-5.77	2.11	-15.07	13.29
$\mu_{\alpha(Autumn)}$	34.18	6.36	30.04	37.98	20.10	50.17
$\mu_{\alpha(Winter)}$	-3.65	6.26	-7.60	0.16	-17.58	12.07
$\mu_{increment1-2(Spring}$	2.18	5.45	-1.21	5.68	-10.62	14.31
$\mu_{increment1-2(Summer)}$	2.98	5.41	-0.52	6.36	-9.12	16.07
$\mu_{increment1-2(Autumn)}$	-30.30	6.15	-34.17	-26.48	-45.08	-16.48
$\mu_{increment1-2(Winter)}$	3.55	5.66	-0.11	7.16	-9.20	17.08
$\mu_{increment2-3(Spring}$	1.64	6.03	-2.11	5.52	-13.25	14.05
$\mu_{increment2-3(Summer)}$	1.27	6.06	-2.54	5.35	-14.21	14.66
$\mu_{increment2-3(Autumn)}$	-38.38	6.39	-42.26	-34.14	-54.46	-24.98
$\mu_{increment2-3(Winter)}$	3.66	6.24	-0.33	7.77	-11.15	17.18
$\mu_{increment3-4(Spring}$	1.65	6.03	-2.19	5.71	-12.43	14.52
$\mu_{increment3-4(Summer)}$	3.94	5.99	-0.01	7.97	-9.77	16.75
$\mu_{increment3-4(Autumn)}$	-38.00	6.60	-42.14	-33.65	-53.22	-23.61
$\mu_{increment3-4(Winter)}$	2.72	6.29	-1.41	6.88	-12.13	16.03
$\mu_{increment4-8(Spring}$	4.88	6.09	0.94	9.02	-9.16	17.85
$\mu_{increment4-8(Summer)}$	-0.94	6.26	-5.03	3.32	-15.49	12.65
$\mu_{increment4-8(Autumn)}$	-36.29	6.57	-40.51	-31.78	-51.79	-22.10
$\mu_{increment4-8(Winter)}$	1.93	6.38	-2.42	6.41	-12.65	15.84
$\mu_{increment8-pith(Spring}$	2.18	5.92	-1.58	6.18	-12.37	15.09
$\mu_{increment8-pith(Summer)}$	-0.12	5.90	-3.75	3.81	-15.40	12.40
$\mu_{increment8-pith(Autumn)}$	-35.42	6.56	-39.71	-30.87	-51.35	-21.76
$\mu_{increment8-pith(Winter)}$	1.60	6.23	-2.38	5.89	-13.60	15.15

Table S7: **Estimates from ring-porous radiocarbon ages**. Using a model testing the effects of organ on radiocarbon age for ring-porous species, results in muted variation in age across organs. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	1.37	2.75	-0.43	3.13	-4.98	7.53
$\mu_{shoot0-0.5}$	-0.42	3.88	-2.95	2.24	-9.57	8.01
$\mu_{shoot0.5-1}$	3.47	3.79	0.99	5.96	-5.27	12.07
$\mu_{shoot1-1.5}$	3.46	3.86	0.90	6.02	-5.44	12.01
$\mu_{shoot1.5-2}$	7.56	3.77	5.03	9.98	-0.86	16.29
$\mu_{root0-0.5}$	1.27	3.85	-1.29	3.86	-7.44	9.75
$\mu_{root0.5-1}$	4.04	3.82	1.53	6.62	-4.56	12.45
$\mu_{root1-1.5}$	7.03	3.79	4.54	9.59	-1.53	15.50
$\mu_{root1.5-2}$	9.40	3.80	6.95	11.93	0.61	17.96
$\mu_{fineroot}$	2.91	3.86	0.36	5.47	-6.04	11.63

Table S8: **Estimates from diffuse-porous radiocarbon ages**. Using a model testing the effects of organ on radiocarbon age for diffuse-porous species, results in slight greater variation in age across organs. We present posterior means, as well as 50 percent and 97.5 percent uncertainty intervals from the model.

	mean	sd	25%	75%	2.5%	97.5%
μ_{α}	2.24	1.92	0.95	3.51	-2.07	6.55
$\mu_{shoot0-0.5}$	-0.62	2.70	-2.42	1.12	-6.63	5.66
$\mu_{shoot0.5-1}$	2.39	2.69	0.59	4.23	-3.73	8.29
$\mu_{shoot1-1.5}$	5.18	2.70	3.37	6.97	-0.88	11.09
$\mu_{shoot1.5-2}$	7.04	2.72	5.27	8.82	0.91	13.17
$\mu_{root0-0.5}$	-1.29	2.68	-3.10	0.52	-7.13	4.83
$\mu_{root0.5-1}$	1.30	2.67	-0.47	3.02	-4.80	7.33
$\mu_{root1-1.5}$	4.15	2.70	2.33	5.93	-1.89	10.34
$\mu_{root1.5-2}$	6.18	2.74	4.38	7.97	-0.21	12.70
$\mu_{fineroot}$	9.07	2.67	7.33	10.89	2.99	14.91