



Fig. S1. Annual productivity ($\pm 95\%$ confidence intervals) in seed energy content collected under American beech, the main masting tree species in southern Québec, Canada (see text for details).

Table S1. Sample size (N), effect size (estimate), standard error (s.e.), and r^2 of the relationship between resting metabolic rate (RMR) and daily energy expenditure (DEE) according to the number of days elapsed between the two measurements (period; ranging from 1 to 108 days; median 29 days)

| Period | N | Whole animal | | | Mass independent | | |
|-----------|-----|--------------|------|-------|------------------|------|-------|
| | | Estimate | s.e. | r^2 | Estimate | s.e. | r^2 |
| <10 days | 8 | 2.9 | 2.55 | 0.177 | 4.57 | 3.29 | 0.244 |
| <20 days | 12 | 2.12 | 1.67 | 0.139 | 2.36 | 1.99 | 0.123 |
| <30 days | 24 | 2.28 | 1.13 | 0.156 | 1.52 | 1.11 | 0.078 |
| <40 days | 30 | 2.14 | 0.98 | 0.146 | 1.52 | 0.94 | 0.086 |
| <50 days | 39 | 3.18 | 0.93 | 0.242 | 2.34 | 0.89 | 0.155 |
| <60 days | 43 | 2.88 | 0.92 | 0.194 | 1.92 | 0.88 | 0.103 |
| <70 days | 44 | 2.84 | 0.89 | 0.194 | 1.86 | 0.90 | 0.100 |
| <80 days | 45 | 2.54 | 0.88 | 0.163 | 1.71 | 0.90 | 0.077 |
| <90 days | 47 | 2.22 | 0.93 | 0.113 | 1.47 | 0.91 | 0.054 |
| <100 days | 48 | 2.07 | 0.92 | 0.099 | 1.39 | 0.90 | 0.049 |
| <110 days | 51 | 1.53 | 0.87 | 0.059 | 1.10 | 0.85 | 0.033 |

Relationships are shown for both whole-animal and mass-independent levels (residuals from the correlation against body mass). RMR and DEE were measured within the same year on 51 occasions on a total of 43 individuals. The effect size (regression estimate) of the relationship between DEE and RMR was maximized when the time elapsed between the two measurements was < 50 days. Of the nine new DEE measurements that were added for the <50 day period, eight were taken during reproduction.