

## Supplementary file S4. Taper curve fitting

### Taper curve equation

$$Y = B_0 + B_1 * X + B_2 * X^2 + B_3 * X^3 + B_4 * X^5 + B_5 * X^8 + B_6 * X^{13} + B_7 * X^{21} + B_8 * X^{34}$$

#### Model Parameters

Parameter	Description	Unit
Y =	dx/d0.2h	cm
X =	1-(x/h)	Meter

Where:

dx = stem diameter at height x

d0.2h = stem diameter at 20% relative height

h = total stem height

#### Estimation Statistics

N	4809
R <sup>2</sup>	0.940542
Bias	0.00000
RMSE	0.99129

#### Parameter Estimates

Coefficient	Estimate	Std.Error	t-value	Pr(> t )
B0	1.43486	0.00589	243.56895	0.00000
B1	-4.84626	0.14997	-32.31483	0.00000
B2	19.18481	1.04721	18.31996	0.00000
B3	-31.75425	2.27563	-13.95402	0.00000
B4	32.85886	3.42690	9.58851	0.00000
B5	-30.15473	4.35436	-6.92518	0.00000
B6	21.84478	4.60663	4.74203	0.00000
B7	-11.67634	3.91587	-2.98180	0.00288
B8	3.17258	1.61086	1.96950	0.04895