Supplementary Materials: Airborne Lidar Estimation of Aboveground Forest Biomass in the Absence of Field Inventory

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Table S1. Metrics derived from the lidar point cloud for the establishment of the aboveground biomass (AGB) regression models [1].

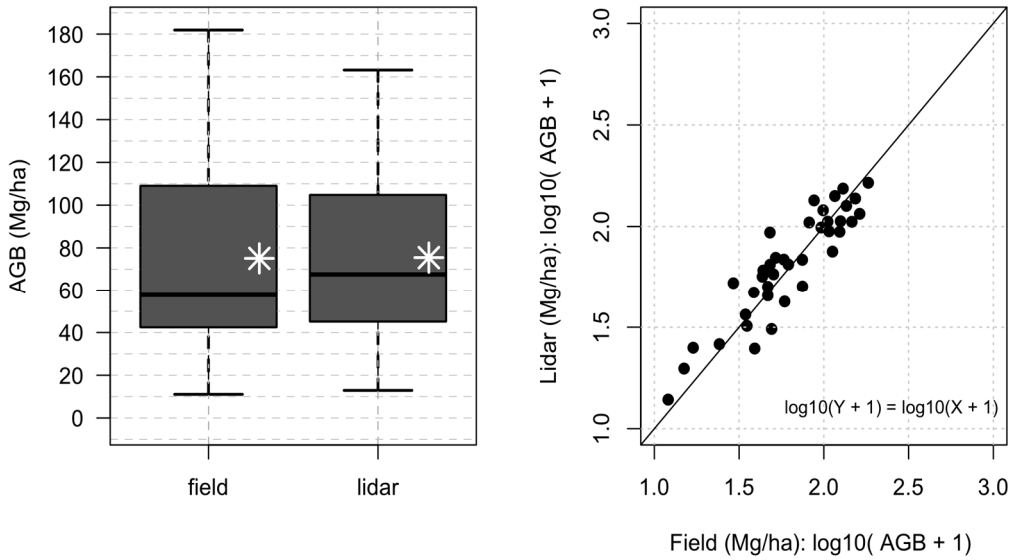
Variable	Description
hmin	Height minimum
hmax	Height maximum
hmean	Height mean
hmad	Height median absolute deviation
hsd	Height standard deviation
hskew	Height skewness
hkurt	Height kurtosis
hcv	Height coefficient of variation
hmode	Height mode
h01	Height 1st percentile
h05	Height 5th percentile
h10	Height 10th percentile
h15	Height 15th percentile
h20	Height 20th percentile
h25	Height 25th percentile
h30	Height 30th percentile
h35	Height 35th percentile
h40	Height 40th percentile
h45	Height 45th percentile
h50	Height 50th percentile
h55	Height 55th percentile
h60	Height 60th percentile
h65	Height 65th percentile
h70	Height 70th percentile
h75	Height 75th percentile
h80	Height 80th percentile
h90	Height 90th percentile
h95	Height 95th percentile
h99	Height 99th percentile
cr	Canopy relief ratio = (hmean − hmin)/(hmax − hmin)
cov	Canopy cover (percentage of returns above 1.30 m)

Table S2. Matrix of Pearson's correlation coefficients (r) or the lidar metrics selected to establish the AGB model. The meanings of the acronyms are provided in Table S1.

	hmode	hcv	hkurt	h05	h99	cr	cov
hmode	1.00						
hcv	−0.31	1.00					
hkurt	0.16	−0.28	1.00				
h05	0.59	−0.5	−0.5	1.00			
h99	0.58	0.3	0.3	0.37	1.00		
cr	0.62	−0.47	−0.47	0.63	0.55	1.00	
cov	0.38	0.1	0.1	0.28	0.55	0.15	1.00

Table S3. Matrix of Pearson's correlation coefficients (r) or the lidar metrics selected to establish the AGB model without taking into account Forest Plot #12 (see the text for more details).

	hmode	hcv	hkurt	h05	h99	cr	cov
hmode	1.00						
hcv	−0.39	1.00					
hkurt	0.22	−0.27	1.00				
h05	0.62	−0.5	−0.15	1.00			
h99	0.51	0.29	−0.12	0.38	1.00		
cr	0.65	−0.48	−0.11	0.63	0.6	1.00	
cov	0.22	0.05	0.24	0.31	0.47	0.13	1.00



(**a**) (**b**)

Figure S1. Result for AGB estimation at the forest plot level using the AGB regression model approach without taking into account Forest Plot #12. (**a**) Box-and-whisker diagram (see Figure 3 for details) and (**b**) a scatter plot of field- versus lidar-derived AGB used to calculate the parameters show in the row denoted by forest plot** of Table 2. A log-log scale is used to compare to Figures 3–5.

References

1. McGaughey, R. *FUSION/LDV: Software for LIDAR Data Analysis and Visualization*; US Department of Agriculture, Forest Service, Pacific Northwest Research Station: Seattle, WA, USA, 2015; p. 182.