

Supplementary material.

Table S.1. Estimates of above-ground biomass, root biomass and carbon stored by biomass fraction in each plot (Mg/ha)

Plot	Ws (Mg/ha)	Wr (Mg/ha)	Wb2-7 (Mg/ha)	Wb 0.5-2 (Mg/ha)	Above-ground biomass (Mg/ha)	Root biomass (Mg/ha)	Above-ground C (Mg/ha)	Root C (Mg/ha)
1	9.20	4.75	1.83	1.15	12.16	4.75	6.08	2.37
2	17.35	9.13	3.40	2.28	23.03	9.13	11.52	4.55
3	31.43	15.38	6.28	2.90	40.61	15.38	20.29	7.69
4	12.67	7.14	2.28	1.99	16.93	7.14	8.47	3.58
5	37.60	18.28	7.36	2.79	47.75	18.28	23.87	9.13
6	20.60	10.32	4.00	2.01	26.64	10.32	13.31	5.17
7	44.87	19.81	9.53	2.25	56.65	19.81	28.32	9.90
8	24.20	11.25	5.44	2.01	31.65	11.25	15.83	5.61
9	54.80	23.21	12.00	2.30	69.08	23.21	34.55	11.61
10	44.41	19.03	9.64	1.97	56.01	19.03	28.01	9.53
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	67.11	30.20	14.06	3.74	84.88	30.20	42.44	15.10
13	16.25	8.73	3.14	2.41	21.77	8.73	10.90	4.35
14	19.19	9.55	3.80	1.72	24.74	9.55	12.36	4.77
15	12.62	6.48	2.72	1.97	17.33	6.48	8.67	3.25
16	3.14	2.01	0.69	1.11	4.93	2.01	2.45	1.02
17	23.98	11.83	4.80	2.30	31.10	11.83	15.54	5.92
18	4.97	3.23	1.48	2.48	8.93	3.23	4.47	1.61
19	12.58	6.39	2.43	1.28	16.31	6.39	8.16	3.18
20	23.19	11.63	4.49	2.17	29.84	11.63	14.92	5.81

Table S.1. Cont. Estimates of above-ground biomass, root biomass and carbon stored by biomass fraction in each plot (Mg/ha)

Plot	Ws (Mg/ha)	Wr (Mg/ha)	Wb2-7 (Mg/ha)	Wb 0.5-2 (Mg/ha)	Above-ground biomass (Mg/ha)	Root biomass (Mg/ha)	Above- ground C (Mg/ha)	Root C (Mg/ha)
21	41.93	19.85	8.47	2.94	53.34	19.85	26.66	9.93
22	18.02	8.05	3.87	1.17	23.06	8.05	11.52	4.02
23	17.90	9.51	3.51	2.54	23.98	9.51	12.00	4.75
24	7.76	4.40	1.53	1.55	10.83	4.40	5.42	2.19
25	16.98	9.39	3.03	2.28	22.28	9.39	11.14	4.69
26	17.60	8.49	3.71	1.72	23.03	8.49	11.52	4.24
27	9.13	5.57	1.88	2.37	13.37	5.57	6.68	2.79
28	12.91	7.38	2.28	2.12	17.31	7.38	8.67	3.69
29	33.64	16.60	6.68	3.03	43.37	16.60	21.68	8.29
30	24.09	13.11	4.33	3.01	31.41	13.11	15.69	6.57
31	21.82	12.05	4.00	3.25	29.09	12.05	14.54	6.03
32	16.62	8.93	3.21	2.41	22.24	8.93	11.12	4.47
33	22.94	12.25	4.33	2.98	30.28	12.25	15.14	6.12
34	19.76	8.55	4.24	0.91	24.91	8.55	12.45	4.27

Description of LiDAR variables used in SOC modeling

Table S.2. Height and forest structure metrics derived from LiDAR point clouds (a).

PLOT	n	zmax	zmin	zmean	zvar	zsd	zcv	zskew	zkurt
1	620.00	12.59	-0.05	2.14	14.71	3.83	179.13	1.36	3.07
2	739.00	12.32	-0.07	3.75	18.16	4.26	113.65	0.43	1.45
3	720.00	14.59	-0.07	4.45	24.15	4.91	110.44	0.36	1.43
4	681.00	11.26	-0.06	3.21	16.58	4.07	126.74	0.60	1.55
5	782.00	12.94	-0.07	4.74	25.14	5.01	105.89	0.20	1.17
6	709.00	13.15	-0.05	4.34	22.65	4.76	109.66	0.29	1.28
7	808.00	14.92	-0.07	5.82	30.23	5.50	94.40	-0.01	1.17
8	709.00	13.90	-0.10	4.12	22.65	4.76	115.52	0.60	1.71
9	725.00	14.80	-0.09	5.31	33.09	5.75	108.23	0.24	1.18
10	694.00	14.43	-0.07	4.61	31.14	5.58	121.13	0.45	1.32
11	526.00	9.28	-0.07	0.16	0.77	0.88	535.21	6.90	55.09
12	775.00	14.32	-0.07	5.81	29.66	5.45	93.73	0.00	1.20
13	694.00	12.13	-0.33	3.64	16.98	4.12	113.26	0.45	1.52
14	699.00	12.83	-0.07	3.87	22.52	4.75	122.48	0.54	1.47
15	691.00	12.84	-0.12	3.28	15.78	3.97	121.21	0.70	1.96
16	604.00	9.61	-0.06	2.28	9.59	3.10	135.76	0.87	2.11
17	764.00	12.90	-0.07	4.39	21.06	4.59	104.43	0.29	1.41
18	727.00	10.00	-0.05	2.79	10.22	3.20	114.66	0.55	1.70
19	678.00	12.52	-0.07	3.50	17.82	4.22	120.63	0.55	1.61
20	783.00	12.81	-0.07	4.29	19.69	4.44	103.51	0.25	1.36
21	834.00	13.98	-0.06	4.92	25.09	5.01	101.90	0.23	1.30

Table S.2. Cont. Height and forest structure metrics derived from LiDAR point clouds (a).

PLOT	n	zmax	zmin	zmean	zvar	zsd	zcv	zskew	zkurt
22	677.00	14.06	-0.05	3.53	20.74	4.55	128.96	0.76	2.01
23	793.00	12.66	-0.05	3.99	18.67	4.32	108.36	0.39	1.46
24	656.00	11.60	-0.08	2.98	14.20	3.77	126.40	0.60	1.58
25	689.00	11.54	-0.06	3.55	17.82	4.22	119.01	0.47	1.39
26	730.00	13.69	-0.27	3.94	19.59	4.43	112.30	0.51	1.64
27	758.00	11.24	-0.09	3.53	14.48	3.81	107.82	0.41	1.47
28	787.00	12.06	-0.06	4.04	17.78	4.22	104.41	0.26	1.29
29	793.00	13.24	-0.06	4.79	21.36	4.62	96.41	0.15	1.31
30	748.00	11.82	-0.09	4.09	19.47	4.41	107.78	0.27	1.22
31	801.00	12.58	-0.07	4.35	16.37	4.05	93.02	0.11	1.41
32	740.00	12.11	-0.04	3.80	16.12	4.02	105.54	0.38	1.57
33	767.00	12.22	-0.19	3.73	18.22	4.27	114.32	0.47	1.49
34	182.00	15.08	-0.07	6.45	32.56	5.71	88.49	-0.12	1.23

*Note: **n**, total number of LiDAR returns within the plot; **zmax**, maximum Z value; **zmin**, minimum Z value; **zmean**, mean of Z values; **zvar**, variance of Z values; **zsd**, standard deviation of Z values; **zcv**, coefficient of variation (zsd/zmean); **zskew**, skewness of Z values; **zkurt**, kurtosis of Z values.

Table S.3. Height and forest structure metrics derived from LiDAR point clouds (b).

PLOT	zq1	zq5	zq10	zq15	zq20	zq25	zq30	zq35	zq40	zq45
1	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.01
2	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.01	0.01	0.02	0.03
3	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.04
4	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	0.01	0.02
5	-0.04	-0.01	-0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.04
6	-0.03	-0.01	-0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.02
7	-0.04	-0.02	-0.01	-0.01	0.00	0.01	0.01	0.02	0.04	0.09
8	-0.05	-0.02	-0.01	-0.01	0.00	0.00	0.01	0.01	0.03	0.07
9	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.04
10	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	0.02	0.02
11	-0.05	-0.03	-0.02	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.00
12	-0.03	-0.02	-0.01	0.00	0.00	0.01	0.02	0.03	0.06	2.86
13	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	0.02	0.03
14	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.01	0.01	0.02	0.03
15	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03
16	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	0.01	0.02
17	-0.05	-0.02	-0.01	0.00	0.00	0.00	0.01	0.02	0.03	0.07
18	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.04
19	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	0.01	0.02
20	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.05
21	-0.03	-0.02	-0.01	0.00	0.00	0.00	0.01	0.02	0.05	0.09
22	-0.03	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	0.01	0.02

Table S.3. Cont Height and forest structure metrics derived from LiDAR point clouds (b).

PLOT	zq1	zq5	zq10	zq15	zq20	zq25	zq30	zq35	zq40	zq45
23	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.01	0.02	0.03	0.06
24	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.00	0.01	0.01
25	-0.05	-0.02	-0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.03
26	-0.03	-0.02	-0.01	0.00	0.00	0.00	0.01	0.01	0.03	0.06
27	-0.04	-0.02	-0.01	0.00	0.00	0.01	0.01	0.02	0.05	0.14
28	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.01	0.02	0.04	0.07
29	-0.03	-0.01	-0.01	0.00	0.00	0.01	0.01	0.02	0.05	2.36
30	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.06
31	-0.04	-0.02	-0.01	0.00	0.00	0.01	0.01	0.04	0.16	3.18
32	-0.04	-0.02	-0.01	0.00	0.00	0.00	0.01	0.01	0.02	0.06
33	-0.04	-0.02	-0.01	-0.01	0.00	0.00	0.00	0.01	0.02	0.03
34	-0.04	-0.01	-0.01	0.00	0.00	0.00	0.01	0.02	0.06	6.85

*Note: variables **zq1** to **zq45** represent the 1st, 5th, 10th, 15th, 20th, 25th, 30th, 35th, 40th and 45th percentiles of height values (Z).

Table S.4. Height and forest structure metrics derived from LiDAR point clouds (c).

PLOT	zq50	zq55	zq60	zq65	zq70	zq75	zq80	zq85	zq90	zq95	zq99
1	0.01	0.01	0.02	0.03	0.06	0.91	7.45	8.34	9.02	10.18	11.63
2	0.07	2.74	5.63	6.66	7.71	8.22	8.68	9.10	9.60	10.60	11.30
3	0.07	6.04	7.35	8.13	8.73	9.11	9.67	10.15	11.07	12.45	13.60
4	0.03	0.06	2.29	5.94	7.04	7.73	8.13	8.76	9.39	9.87	10.62
5	0.07	7.36	8.34	9.03	9.55	9.90	10.21	10.72	11.11	11.64	12.26
6	0.05	6.00	7.51	8.32	8.79	9.10	9.55	10.00	10.52	11.37	12.79
7	8.07	9.17	9.81	10.23	10.52	10.97	11.40	11.79	12.29	13.00	13.95
8	1.65	2.56	4.33	6.62	7.81	8.90	9.77	10.61	11.67	12.28	13.29
9	0.12	8.49	9.60	10.15	10.80	11.28	11.77	12.25	12.63	13.29	14.23
10	0.04	0.06	7.16	9.51	10.22	10.84	11.34	11.82	12.38	13.02	13.78
11	0.00	0.01	0.01	0.01	0.02	0.02	0.03	0.05	0.07	0.14	5.24
12	7.85	8.83	9.44	10.17	10.64	11.04	11.37	11.82	12.47	13.01	13.80
13	0.08	2.92	5.69	6.52	7.30	7.81	8.25	8.67	9.39	10.15	11.74
14	0.06	0.13	4.70	7.07	8.63	9.18	9.58	10.15	10.84	11.38	12.29
15	0.06	1.87	3.83	5.07	5.85	6.84	7.69	8.39	9.51	10.58	11.82
16	0.03	0.05	0.74	2.84	3.88	5.51	6.07	6.56	7.32	7.99	9.04
17	4.01	5.75	7.00	7.45	8.07	8.68	9.36	10.01	10.67	11.53	12.67
18	0.12	2.48	3.77	4.63	5.25	5.76	6.31	6.82	7.70	8.28	9.19
19	0.03	0.08	5.39	6.45	7.14	7.76	8.12	8.66	9.41	10.75	12.01
20	3.52	5.93	7.08	7.64	8.09	8.55	8.90	9.33	10.11	11.14	12.18
21	3.73	6.09	7.89	8.84	9.57	10.00	10.63	11.03	11.48	12.07	13.04
22	0.03	0.05	3.75	5.80	7.05	7.88	8.56	9.01	10.53	12.32	13.46

Table S.4. Cont. Height and forest structure metrics derived from LiDAR point clouds (c).

PLOT	zq50	zq55	zq60	zq65	zq70	zq75	zq80	zq85	zq90	zq95	zq99
23	1.67	4.07	5.78	7.09	7.95	8.45	8.96	9.39	9.95	10.78	11.99
24	0.02	0.04	1.38	5.64	6.50	7.04	7.63	8.07	8.41	8.91	10.70
25	0.07	0.19	5.21	6.94	7.77	8.17	8.60	9.03	9.51	10.17	10.79
26	0.90	3.42	4.95	6.65	7.54	8.43	9.05	9.50	10.36	11.39	12.68
27	1.60	2.94	5.26	6.04	6.92	7.44	8.15	8.53	8.82	9.32	10.89
28	2.11	4.50	6.73	7.61	8.15	8.43	8.75	9.06	9.42	9.99	11.47
29	4.45	6.58	7.59	8.29	8.81	9.36	9.73	10.29	10.91	11.47	12.19
30	0.84	5.37	7.26	7.91	8.38	8.65	9.05	9.47	9.91	10.32	11.10
31	5.16	6.08	6.71	7.23	7.65	8.11	8.44	8.79	9.31	10.34	11.70
32	2.69	4.67	5.59	6.40	7.16	7.59	8.07	8.48	9.22	10.65	11.60
33	0.07	3.02	5.35	6.52	7.29	8.04	8.79	9.38	10.02	10.61	11.27
34	9.34	9.89	10.60	10.97	11.16	11.51	11.78	12.30	12.63	13.84	14.84

*Note: Variables **zq50** to **zq99** represent the 50th, 55th, 60th, 65th, 70th, 75th, 80th, 85th, 90th, 95th and 99th percentiles of height values (Z).

Table S.5. Height and forest structure metrics derived from LiDAR point clouds (d).

PLOT	pzabovemean	pzabove2	pzabove5	ziqr	zMADmean	zMADmedian	CRR	zentropy	zpcum1	zpcum2	zpcum3
1	24.03	24.03	23.39	0.91	3.20	0.02	0.17	0.52	75.69	76.01	76.01
2	43.84	46.14	42.49	8.22	4.04	0.10	0.31	0.78	52.78	54.41	56.17
3	46.94	47.08	46.81	9.11	4.70	0.10	0.31	0.72	52.72	53.00	53.00
4	39.65	40.09	36.71	7.73	3.84	0.05	0.29	0.70	59.94	59.94	60.53
5	47.95	48.34	47.83	9.90	4.89	0.10	0.37	0.70	51.67	51.67	51.92
6	46.83	46.83	46.40	9.10	4.61	0.07	0.33	0.71	53.18	53.18	53.18
7	53.47	54.33	53.71	10.96	5.33	5.08	0.39	0.74	45.53	45.78	46.03
8	40.62	48.10	37.66	8.90	4.34	1.67	0.30	0.87	49.22	55.45	59.26
9	46.48	46.62	46.48	11.28	5.63	0.14	0.36	0.68	53.11	53.53	53.53
10	41.07	41.35	41.07	10.84	5.39	0.05	0.32	0.64	58.67	58.67	58.67
11	4.94	2.85	1.14	0.03	0.30	0.01	0.03	0.16	95.99	97.33	97.52
12	52.77	55.23	53.68	11.04	5.24	5.15	0.41	0.76	44.50	44.89	45.41
13	43.52	46.11	42.51	7.81	3.89	0.12	0.32	0.78	52.02	53.90	56.50
14	40.63	41.77	39.91	9.18	4.50	0.08	0.31	0.72	57.82	58.68	59.40
15	41.53	44.28	35.31	6.84	3.60	0.08	0.26	0.84	53.85	57.18	59.80
16	35.93	36.75	27.15	5.51	2.78	0.04	0.24	0.79	60.07	62.73	64.89
17	49.61	50.79	47.51	8.68	4.32	4.01	0.34	0.80	48.75	49.41	49.67
18	44.29	45.25	32.32	5.76	2.95	0.16	0.28	0.85	51.86	54.62	55.86
19	42.63	42.92	41.00	7.76	3.99	0.05	0.28	0.74	56.95	57.40	57.40
20	48.91	50.70	47.64	8.55	4.23	3.52	0.34	0.80	48.53	49.81	50.45
21	47.72	52.40	47.48	9.99	4.75	3.73	0.35	0.81	47.12	47.84	51.08
22	40.62	40.92	37.37	7.88	4.16	0.04	0.25	0.71	59.11	59.11	61.63

Table S.5. Cont. Height and forest structure metrics derived from LiDAR point clouds (d).

PLOT	pzabovemean	pzabove2	pzabove5	ziqr	zMADmean	zMADmedian	CRR	zentropy	zpcum1	zpcum2	zpcum3
23	45.27	49.31	41.99	8.45	4.04	1.70	0.32	0.82	49.75	51.65	53.92
24	39.79	39.79	36.74	7.04	3.57	0.03	0.26	0.70	59.63	60.24	60.24
25	41.94	42.38	40.35	8.17	4.03	0.09	0.31	0.72	56.48	57.64	57.93
26	42.88	48.63	40.00	8.43	4.08	0.93	0.30	0.82	50.14	52.06	57.01
27	43.27	48.42	40.77	7.44	3.56	1.62	0.32	0.82	47.09	52.12	56.35
28	46.51	50.19	44.22	8.42	4.03	2.14	0.34	0.77	48.15	50.57	52.99
29	49.56	55.99	49.05	9.36	4.37	4.45	0.36	0.83	43.36	45.26	48.80
30	45.32	46.79	45.32	8.65	4.29	0.87	0.35	0.74	50.54	53.62	54.56
31	52.18	56.80	50.81	8.10	3.79	4.40	0.35	0.84	42.30	43.93	46.31
32	47.57	51.35	42.97	7.59	3.73	2.70	0.32	0.83	47.90	48.98	51.70
33	43.55	46.28	41.33	8.04	4.01	0.10	0.32	0.80	52.81	53.99	56.34
34	56.04	58.24	57.14	11.50	5.44	4.04	0.43	0.75	41.67	41.67	42.22

*Note: **pzabovemean**, proportion of returns above the mean height; **pzabove2**, proportion of returns above 2 meters; **pzabove5**, proportion of returns above 5 meters; **ziqr**, interquartile range of height values (Q3 – Q1); **zMADmean**, mean absolute deviation from the mean; **zMADmedian**, mean absolute deviation from the median; **CRR**, canopy return ratio; **zentropy**, Shannon entropy of the height distribution; **zpcum1**, **zpcum2**, **zpcum3**, cumulative percentage of returns above 1 %, 2 %, and 3 % of maximum height, respectively.

Table S.6. Height and forest structure metrics derived from LiDAR point clouds (e).

PLOT	zpcum4	zpcum5	zpcum6	zpcum7	zpcum8	zpcum9	L1	L2	L3	L4	Lskew
1	76.66	77.96	80.55	88.98	94.65	98.38	2.14	1.68	0.95	0.29	0.57
2	57.26	63.36	66.89	78.83	91.45	97.96	3.75	2.26	0.53	-0.27	0.23
3	54.39	59.55	70.01	85.08	92.19	98.19	4.45	2.61	0.55	-0.32	0.21
4	62.30	64.06	68.48	76.29	86.75	96.76	3.21	2.08	0.65	-0.19	0.31
5	52.31	52.95	56.41	65.13	81.15	94.87	4.74	2.65	0.38	-0.46	0.14
6	54.17	55.87	61.39	76.52	89.82	97.03	4.34	2.51	0.47	-0.37	0.19
7	46.65	48.26	53.72	67.87	85.98	97.15	5.82	2.96	0.15	-0.51	0.05
8	62.80	66.05	72.84	79.63	87.55	96.04	4.12	2.55	0.70	-0.21	0.27
9	53.53	53.67	56.02	66.11	80.36	95.16	5.31	3.03	0.49	-0.51	0.16
10	58.96	59.97	61.27	68.35	82.51	94.65	4.61	2.86	0.73	-0.38	0.26
11	98.66	99.05	99.05	99.24	100.00	100.00	0.16	0.17	0.14	0.13	0.87
12	47.09	48.51	53.69	63.13	81.24	93.53	5.81	2.95	0.16	-0.50	0.06
13	57.08	60.98	69.22	81.79	92.34	96.53	3.64	2.19	0.52	-0.24	0.24
14	60.69	62.41	66.86	72.60	85.51	96.13	3.87	2.45	0.70	-0.27	0.28
15	65.02	71.99	79.54	87.52	93.90	98.40	3.28	2.10	0.66	-0.11	0.31
16	69.55	72.05	76.71	86.19	92.35	97.50	2.28	1.57	0.61	-0.02	0.39
17	53.22	57.42	68.33	77.00	86.86	95.27	4.39	2.49	0.44	-0.32	0.18
18	61.10	67.59	77.79	85.93	92.41	98.90	2.79	1.71	0.45	-0.14	0.26
19	59.02	63.17	72.04	85.50	92.31	97.04	3.50	2.20	0.62	-0.19	0.28
20	52.37	57.11	65.04	80.54	91.04	96.80	4.29	2.40	0.38	-0.33	0.16
21	53.97	57.21	62.26	72.00	86.78	97.36	4.92	2.72	0.39	-0.42	0.14
22	64.00	69.93	78.22	88.89	92.15	96.44	3.53	2.34	0.82	-0.08	0.35

Table S.6. Height and forest structure metrics derived from LiDAR point clouds (e).

PLOT	zpcum4	zpcum5	zpcum6	zpcum7	zpcum8	zpcum9	L1	L2	L3	L4	Lskew
23	58.23	63.04	67.22	78.35	91.52	97.97	3.99	2.33	0.48	-0.29	0.21
24	61.62	65.60	74.16	85.47	97.55	98.78	2.98	1.93	0.59	-0.17	0.31
25	59.10	61.43	64.63	73.22	87.92	96.94	3.55	2.20	0.57	-0.27	0.26
26	60.85	65.38	73.08	85.16	92.86	98.21	3.94	2.38	0.59	-0.23	0.25
27	58.33	62.30	68.65	77.51	91.80	98.54	3.53	2.06	0.43	-0.25	0.21
28	55.29	57.58	61.78	74.90	92.10	97.96	4.04	2.27	0.35	-0.36	0.15
29	51.45	54.99	62.33	74.21	86.98	98.36	4.79	2.54	0.28	-0.38	0.11
30	54.69	55.76	58.45	67.83	84.58	97.45	4.09	2.34	0.39	-0.38	0.17
31	49.19	56.70	68.09	84.86	94.49	97.75	4.35	2.24	0.20	-0.28	0.09
32	56.17	62.96	70.83	84.80	92.40	95.52	3.80	2.18	0.43	-0.23	0.20
33	57.91	62.61	69.93	78.17	88.63	97.78	3.73	2.27	0.56	-0.26	0.25
34	43.33	46.67	48.33	60.00	83.33	95.00	6.45	3.10	0.01	-0.50	0.00

*Note: **zpcum4** to **zpcum9**, cumulative percentage of returns above 4 % to 9 % of the maximum height; **L1** to **L4**, first to fourth L-moments of the height distribution (Z); **Lskew**, L-moment-based skewness (L-skewness).

Table S.7. Height and forest structure metrics derived from LiDAR point clouds (f).

PLOT	Lkurt	Lcoefvar	lad_min	lad_max	lad_mean	lad_cv	lad_sum	pz_below_0	pz_0.0.15	pz_0.15.2	pz_2.5
1	0.17	0.78	0.00	0.19	0.05	1.11	0.55	31.13	41.45	3.39	0.65
2	-0.12	0.60	0.00	0.30	0.11	0.78	1.24	24.63	27.06	2.17	3.65
3	-0.12	0.59	0.00	0.26	0.10	0.96	1.27	20.83	31.81	0.28	0.28
4	-0.09	0.65	0.01	0.23	0.10	0.83	1.02	25.40	33.63	0.88	3.38
5	-0.17	0.56	0.00	0.35	0.12	1.03	1.32	22.12	29.54	0.00	0.51
6	-0.15	0.58	0.00	0.35	0.11	1.10	1.26	25.81	27.08	0.28	0.42
7	-0.17	0.51	0.00	0.40	0.12	1.07	1.57	21.04	24.38	0.25	0.62
8	-0.08	0.62	0.03	0.17	0.11	0.39	1.31	24.12	23.55	4.23	10.44
9	-0.17	0.57	0.00	0.28	0.10	1.17	1.26	21.66	29.38	2.34	0.14
10	-0.13	0.62	0.00	0.27	0.08	1.16	1.07	25.50	32.85	0.29	0.29
11	0.80	1.01	0.00	0.03	0.01	1.23	0.06	44.11	50.95	2.09	1.71
12	-0.17	0.51	0.01	0.33	0.12	0.92	1.61	18.84	25.42	0.52	1.55
13	-0.11	0.60	0.01	0.28	0.11	0.82	1.24	23.20	27.95	2.74	3.60
14	-0.11	0.63	0.01	0.28	0.10	0.81	1.08	24.03	31.62	2.58	1.86
15	-0.05	0.64	0.01	0.18	0.11	0.47	1.17	26.34	26.48	2.89	8.97
16	-0.01	0.69	0.02	0.21	0.11	0.55	0.92	27.48	31.95	3.81	9.60
17	-0.13	0.57	0.01	0.30	0.13	0.65	1.42	20.42	27.49	1.31	3.27
18	-0.08	0.61	0.02	0.28	0.15	0.56	1.20	24.90	25.86	3.99	12.93
19	-0.09	0.63	0.01	0.23	0.10	0.86	1.12	26.55	30.24	0.29	1.92
20	-0.14	0.56	0.02	0.32	0.13	0.81	1.41	21.97	26.44	0.89	3.07
21	-0.15	0.55	0.02	0.26	0.12	0.66	1.48	20.50	25.54	1.56	4.92
22	-0.03	0.66	0.00	0.24	0.08	0.78	1.05	24.37	34.56	0.15	3.55
23	-0.12	0.59	0.02	0.27	0.12	0.61	1.36	20.93	26.86	2.90	7.31

Table S.7. Cont. Height and forest structure metrics derived from LiDAR point clouds (f).

PLOT	Lkurt	Lcoefvar	lad_min	lad_max	lad_mean	lad_cv	lad_sum	pz_below_0	pz_0.0.15	pz_0.15.2	pz_2.5
24	-0.09	0.65	0.00	0.26	0.10	1.00	1.01	29.42	30.18	0.61	3.05
25	-0.12	0.62	0.01	0.31	0.11	0.92	1.10	22.79	31.49	3.34	2.03
26	-0.10	0.60	0.01	0.21	0.11	0.52	1.33	21.78	27.12	2.47	8.63
27	-0.12	0.58	0.01	0.32	0.13	0.72	1.32	18.87	26.39	6.33	7.65
28	-0.16	0.56	0.00	0.43	0.13	0.98	1.39	20.46	26.94	2.41	5.97
29	-0.15	0.53	0.00	0.28	0.14	0.64	1.64	18.41	23.96	1.64	6.94
30	-0.16	0.57	0.00	0.39	0.13	1.06	1.26	21.79	27.01	4.41	1.47
31	-0.13	0.51	0.02	0.35	0.15	0.78	1.68	18.85	21.10	3.25	5.99
32	-0.11	0.57	0.01	0.26	0.13	0.62	1.44	22.84	24.73	1.08	8.38
33	-0.11	0.61	0.00	0.19	0.11	0.62	1.24	25.42	26.60	1.69	4.95
34	-0.16	0.48	0.00	0.45	0.12	1.11	1.75	20.88	20.88	0.00	1.10

*Note: **Lkurt**, L-moment-based kurtosis (L-kurtosis); **Lcoefvar**, L-moment-based coefficient of variation; **lad_min**, minimum value of the leaf area density (LAD) profile; **lad_max**, maximum value of the LAD profile; **lad_mean**, mean value of the LAD profile; **lad_cv**, coefficient of variation of the LAD profile; **lad_sum**, total sum of LAD values; **pz_below_0**, proportion of returns with negative height (below ground level); **pz_0.0.15**, proportion of returns between 0 and 0.15 meters; **pz_0.15.2**, proportion of returns between 0.15 and 2 meters; **pz_2.5**, proportion of returns above 2.5 meters.

Table S.8. Height and forest structure metrics derived from LiDAR point clouds (g).

PLOT	pz_5.10	pz_10.20	pz_20.30	pz_above_30	n_first	n_intermediate	n_last	n_single	n_multiple	p_first	p_intermediate
1	17.58	5.81	0.00	0.00	511.00	5.00	104.00	406.00	214.00	82.42	0.81
2	34.10	8.39	0.00	0.00	519.00	10.00	210.00	305.00	434.00	70.23	1.35
3	30.42	16.39	0.00	0.00	479.00	13.00	228.00	261.00	459.00	66.53	1.81
4	32.75	3.96	0.00	0.00	507.00	10.00	164.00	343.00	338.00	74.45	1.47
5	24.94	22.89	0.00	0.00	511.00	15.00	256.00	259.00	523.00	65.35	1.92
6	31.31	15.09	0.00	0.00	510.00	6.00	193.00	319.00	390.00	71.93	0.85
7	15.47	38.24	0.00	0.00	535.00	16.00	257.00	288.00	520.00	66.21	1.98
8	19.32	18.34	0.00	0.00	482.00	16.00	211.00	277.00	432.00	67.98	2.26
9	10.76	35.72	0.00	0.00	503.00	9.00	213.00	284.00	441.00	69.38	1.24
10	8.65	32.42	0.00	0.00	520.00	5.00	169.00	346.00	348.00	74.93	0.72
11	1.14	0.00	0.00	0.00	511.00	3.00	12.00	503.00	23.00	97.15	0.57
12	16.77	36.90	0.00	0.00	530.00	16.00	229.00	301.00	474.00	68.39	2.06
13	37.03	5.48	0.00	0.00	494.00	11.00	189.00	306.00	388.00	71.18	1.59
14	23.46	16.45	0.00	0.00	498.00	11.00	190.00	310.00	389.00	71.24	1.57
15	27.50	7.81	0.00	0.00	517.00	16.00	158.00	358.00	333.00	74.82	2.32
16	27.15	0.00	0.00	0.00	512.00	7.00	85.00	425.00	179.00	84.77	1.16
17	32.07	15.45	0.00	0.00	517.00	19.00	228.00	290.00	474.00	67.67	2.49
18	32.32	0.00	0.00	0.00	504.00	8.00	215.00	288.00	439.00	69.33	1.10
19	33.19	7.82	0.00	0.00	506.00	7.00	165.00	343.00	335.00	74.63	1.03
20	37.55	10.09	0.00	0.00	508.00	20.00	255.00	255.00	528.00	64.88	2.55
21	22.54	24.94	0.00	0.00	521.00	26.00	287.00	229.00	605.00	62.47	3.12
22	26.29	11.08	0.00	0.00	534.00	11.00	132.00	398.00	279.00	78.88	1.62
23	32.79	9.21	0.00	0.00	527.00	10.00	256.00	270.00	523.00	66.46	1.26

Table S.8. Cont. Height and forest structure metrics derived from LiDAR point clouds (h).

PLOT	pz_5.10	pz_10.20	pz_20.30	pz_above_30	n_first	n_intermediate	n_last	n_single	n_multiple	p_first	p_intermediate
24	35.06	1.68	0.00	0.00	498.00	4.00	154.00	343.00	313.00	75.91	0.61
25	33.82	6.53	0.00	0.00	511.00	3.00	175.00	337.00	352.00	74.17	0.44
26	28.22	11.78	0.00	0.00	505.00	17.00	208.00	293.00	437.00	69.18	2.33
27	39.18	1.58	0.00	0.00	517.00	8.00	233.00	281.00	477.00	68.21	1.06
28	39.26	4.96	0.00	0.00	525.00	9.00	253.00	273.00	514.00	66.71	1.14
29	32.16	16.90	0.00	0.00	524.00	22.00	247.00	276.00	517.00	66.08	2.77
30	36.90	8.42	0.00	0.00	499.00	9.00	240.00	262.00	486.00	66.71	1.20
31	44.94	5.87	0.00	0.00	512.00	21.00	268.00	241.00	560.00	63.92	2.62
32	36.35	6.62	0.00	0.00	498.00	26.00	216.00	279.00	461.00	67.30	3.51
33	31.03	10.30	0.00	0.00	537.00	11.00	219.00	318.00	449.00	70.01	1.43
34	13.19	43.96	0.00	0.00	123.00	4.00	55.00	56.00	126.00	67.58	2.20

*Note: **pz_5.10**, proportion of returns between 5 and 10 meters in height; **pz_10.20**, proportion of returns between 10 and 20 meters; **pz_20.30**, proportion of returns between 20 and 30 meters; **pz_above_30**, proportion of returns above 30 meters; **n_first**, number of returns classified as first of each pulse; **n_intermediate**, number of intermediate returns; **n_last**, number of returns classified as last of each pulse; **n_single**, number of single returns per pulse (only one return recorded); **n_multiple**, number of pulses with multiple returns; **p_first**, proportion of returns that were first; **p_intermediate**, proportion of returns that were intermediate.

Table S.9. Height and forest structure metrics derived from LiDAR point clouds (i).

PLOT	p_last	p_single	p_multiple	ratio_last_first	ratio_intermediate_first	ratio_multiple_single	n_return_1	n_return_2	n_return_3
1	16.77	65.48	34.52	0.20	0.01	0.53	511.00	104.00	5.00
2	28.42	41.27	58.73	0.40	0.02	1.42	519.00	210.00	10.00
3	31.67	36.25	63.75	0.48	0.03	1.76	479.00	228.00	13.00
4	24.08	50.37	49.63	0.32	0.02	0.99	507.00	165.00	9.00
5	32.74	33.12	66.88	0.50	0.03	2.02	511.00	256.00	15.00
6	27.22	44.99	55.01	0.38	0.01	1.22	510.00	193.00	6.00
7	31.81	35.64	64.36	0.48	0.03	1.81	535.00	259.00	14.00
8	29.76	39.07	60.93	0.44	0.03	1.56	482.00	209.00	18.00
9	29.38	39.17	60.83	0.42	0.02	1.55	503.00	213.00	9.00
10	24.35	49.86	50.14	0.33	0.01	1.01	520.00	169.00	5.00
11	2.28	95.63	4.37	0.02	0.01	0.05	511.00	12.00	3.00
12	29.55	38.84	61.16	0.43	0.03	1.57	530.00	227.00	18.00
13	27.23	44.09	55.91	0.38	0.02	1.27	494.00	189.00	11.00
14	27.18	44.35	55.65	0.38	0.02	1.25	498.00	190.00	11.00
15	22.87	51.81	48.19	0.31	0.03	0.93	517.00	157.00	17.00
16	14.07	70.36	29.64	0.17	0.01	0.42	512.00	85.00	7.00
17	29.84	37.96	62.04	0.44	0.04	1.63	517.00	229.00	18.00
18	29.57	39.61	60.39	0.43	0.02	1.52	504.00	215.00	8.00
19	24.34	50.59	49.41	0.33	0.01	0.98	506.00	165.00	7.00
20	32.57	32.57	67.43	0.50	0.04	2.07	508.00	255.00	20.00
21	34.41	27.46	72.54	0.55	0.05	2.64	521.00	287.00	26.00
22	19.50	58.79	41.21	0.25	0.02	0.70	534.00	132.00	11.00
23	32.28	34.05	65.95	0.49	0.02	1.94	527.00	255.00	11.00

Table S.9. Cont. Height and forest structure metrics derived from LiDAR point clouds (i).

PLOT	p_last	p_single	p_multiple	ratio_last_first	ratio_intermediate_first	ratio_multiple_single	n_return_1	n_return_2	n_return_3
24	23.48	52.29	47.71	0.31	0.01	0.91	498.00	154.00	4.00
25	25.40	48.91	51.09	0.34	0.01	1.04	511.00	175.00	3.00
26	28.49	40.14	59.86	0.41	0.03	1.49	505.00	208.00	16.00
27	30.74	37.07	62.93	0.45	0.02	1.70	517.00	233.00	8.00
28	32.15	34.69	65.31	0.48	0.02	1.88	525.00	253.00	9.00
29	31.15	34.80	65.20	0.47	0.04	1.87	524.00	247.00	22.00
30	32.09	35.03	64.97	0.48	0.02	1.85	499.00	239.00	10.00
31	33.46	30.09	69.91	0.52	0.04	2.32	512.00	268.00	21.00
32	29.19	37.70	62.30	0.43	0.05	1.65	498.00	214.00	28.00
33	28.55	41.46	58.54	0.41	0.02	1.41	537.00	218.00	12.00
34	30.22	30.77	69.23	0.45	0.03	2.25	123.00	57.00	2.00

*Note: **p_last**, **p_single**, **p_multiple**: proportions of last, single, and multiple returns; **ratio_last_first**, **ratio_intermediate_first**, **ratio_multiple_single**: ratios between return types; **n_return_1**, **n_return_2**, **n_return_3**: count of first-, second-, and third-order returns per pulse.