Table S1. The branch volume table for multi-stemmed shrub of *Caragana korshinskii*.

Basal diameter (mm)	Branch length (cm)														
	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
4	4.2	6.3	8.4	10.5	12.6	14.7	16.8	18.9	21.0	23.0	25.1	27.2	29.3	31.4	33.5
6	9.4	14.1	18.9	23.6	28.3	33.0	37.7	42.4	47.1	51.9	56.6	61.3	66.0	70.7	75.4
8	16.8	25.1	33.5	41.9	50.3	58.7	67.1	75.4	83.8	92.2	100.6	109.0	117.3	125.7	134.1
10	26.2	39.3	52.4	65.5	78.6	91.7	104.8	117.9	131.0	144.1	157.2	170.3	183.3	196.4	209.5
12	29.7	44.6	59.5	74.3	89.2	104.1	118.9	133.8	148.6	163.5	178.4	193.2	208.1	223.0	237.8
14	40.5	60.7	80.9	101.2	121.4	141.6	161.9	182.1	202.3	222.6	242.8	263.0	283.3	303.5	323.7
16	52.9	79.3	105.7	132.1	158.6	185.0	211.4	237.8	264.3	290.7	317.1	343.5	370.0	396.4	422.8
18	66.9	100.3	133.8	167.2	200.7	234.1	267.6	301.0	334.5	367.9	401.3	434.8	468.2	501.7	535.1
20	82.6	123.9	165.2	206.5	247.7	289.0	330.3	371.6	412.9	454.2	495.5	536.8	578.1	619.4	660.7
22	105.9	158.8	211.8	264.7	317.6	370.6	423.5	476.4	529.4	582.3	635.3	688.2	741.1	794.1	847.0
24	126.0	189.0	252.0	315.0	378.0	441.0	504.0	567.0	630.0	693.0	756.0	819.0	882.0	945.0	1008.0
26	147.9	221.8	295.8	369.7	443.6	517.6	591.5	665.4	739.4	813.3	887.3	961.2	1035.1	1109.1	1183.0
28	171.5	257.3	343.0	428.8	514.5	600.3	686.0	771.8	857.5	943.3	1029.0	1114.8	1200.5	1286.3	1372.0
30	196.9	295.3	393.8	492.2	590.6	689.1	787.5	886.0	984.4	1082.8	1181.3	1279.7	1378.1	1476.6	1575.0

Note: The branch volumes are expressed in unit of cm^3.

Table S2. The branch volume table for multi-stemmed shrub of *Salix psammophila*.

Basal diameter (mm)	Branch length (cm)														
	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
4	3.3	5.0	6.6	8.3	9.9	11.6	13.2	14.9	16.5	18.2	19.8	21.5	23.2	24.8	26.5
6	7.4	11.2	14.9	18.6	22.3	26.0	29.8	33.5	37.2	40.9	44.7	48.4	52.1	55.8	59.5
8	13.2	19.8	26.5	33.1	39.7	46.3	52.9	59.5	66.1	72.8	79.4	86.0	92.6	99.2	105.8
10	20.7	31.0	41.3	51.7	62.0	72.4	82.7	93.0	103.4	113.7	124.0	134.4	144.7	155.0	165.4
12	36.6	54.9	73.2	91.5	109.8	128.1	146.3	164.6	182.9	201.2	219.5	237.8	256.1	274.4	292.7
14	49.8	74.7	99.6	124.5	149.4	174.3	199.2	224.1	249.0	273.9	298.8	323.7	348.6	373.5	398.4
16	65.0	97.6	130.1	162.6	195.1	227.7	260.2	292.7	325.2	357.7	390.3	422.8	455.3	487.8	520.4
18	82.3	123.5	164.6	205.8	247.0	288.1	329.3	370.4	411.6	452.8	493.9	535.1	576.2	617.4	658.6
20	101.6	152.4	203.3	254.1	304.9	355.7	406.5	457.3	508.2	559.0	609.8	660.6	711.4	762.2	813.1
22	137.8	206.7	275.6	344.5	413.4	482.3	551.2	620.1	689.0	757.9	826.7	895.6	964.5	1033.4	1102.3
24	164.0	246.0	328.0	410.0	492.0	573.9	655.9	737.9	819.9	901.9	983.9	1065.9	1147.9	1229.9	1311.9
26	192.5	288.7	384.9	481.1	577.4	673.6	769.8	866.0	962.3	1058.5	1154.7	1250.9	1347.2	1443.4	1539.6
28	223.2	334.8	446.4	558.0	669.6	781.2	892.8	1004.4	1116.0	1227.6	1339.2	1450.8	1562.4	1674.0	1785.6
30	256.2	384.3	512.4	640.6	768.7	896.8	1024.9	1153.0	1281.1	1409.2	1537.3	1665.5	1793.6	1921.7	2049.8

Note: The branch volumes are expressed in unit of cm^3.

Table S3. The branch volume table for multi-stemmed shrub of *Vitex negundo*.

Basal diameter (mm)	Branch length (cm)														
	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
4	3.8	5.8	7.7	9.6	11.5	13.4	15.3	17.3	19.2	21.1	23.0	24.9	26.8	28.8	30.7
6	8.6	12.9	17.3	21.6	25.9	30.2	34.5	38.8	43.1	47.5	51.8	56.1	60.4	64.7	69.0
8	15.3	23.0	30.7	38.3	46.0	53.7	61.4	69.0	76.7	84.4	92.0	99.7	107.4	115.0	122.7
10	24.0	36.0	47.9	59.9	71.9	83.9	95.9	107.9	119.8	131.8	143.8	155.8	167.8	179.8	191.7
12	27.5	41.2	54.9	68.7	82.4	96.1	109.9	123.6	137.3	151.1	164.8	178.5	192.3	206.0	219.7
14	37.4	56.1	74.8	93.5	112.2	130.9	149.6	168.2	186.9	205.6	224.3	243.0	261.7	280.4	299.1
16	48.8	73.2	97.7	122.1	146.5	170.9	195.3	219.7	244.2	268.6	293.0	317.4	341.8	366.2	390.7
18	61.8	92.7	123.6	154.5	185.4	216.3	247.2	278.1	309.0	339.9	370.8	401.7	432.6	463.5	494.4
20	76.3	114.5	152.6	190.8	228.9	267.1	305.2	343.4	381.5	419.7	457.8	496.0	534.1	572.3	610.4
22	94.5	141.7	189.0	236.2	283.4	330.7	377.9	425.2	472.4	519.6	566.9	614.1	661.3	708.6	755.8
24	112.4	168.7	224.9	281.1	337.3	393.5	449.7	506.0	562.2	618.4	674.6	730.8	787.1	843.3	899.5
26	132.0	197.9	263.9	329.9	395.9	461.9	527.8	593.8	659.8	725.8	791.7	857.7	923.7	989.7	1055.7
28	153.0	229.6	306.1	382.6	459.1	535.6	612.2	688.7	765.2	841.7	918.2	994.8	1071.3	1147.8	1224.3
30	175.7	263.5	351.4	439.2	527.0	614.9	702.7	790.6	878.4	966.3	1054.1	1141.9	1229.8	1317.6	1405.5

Note: The branch volumes are expressed in unit of cm^3.

Table S4. The branch volume table for multi-stemmed shrub of scattered *Vitex negundo* with the isolated canopies.

Basal diameter (mm)	Branch length (cm)														
	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
4	3.9	5.9	7.8	9.8	11.7	13.7	15.6	17.6	19.6	21.5	23.5	25.4	27.4	29.3	31.3
6	8.8	13.2	17.6	22.0	26.4	30.8	35.2	39.6	44.0	48.4	52.8	57.2	61.6	66.0	70.4
8	15.6	23.5	31.3	39.1	46.9	54.7	62.6	70.4	78.2	86.0	93.8	101.7	109.5	117.3	125.1
10	24.4	36.7	48.9	61.1	73.3	85.5	97.8	110.0	122.2	134.4	146.6	158.9	171.1	183.3	195.5
12	25.8	38.7	51.6	64.5	77.4	90.3	103.2	116.1	129.1	142.0	154.9	167.8	180.7	193.6	206.5
14	35.1	52.7	70.3	87.8	105.4	123.0	140.5	158.1	175.7	193.2	210.8	228.4	245.9	263.5	281.1
16	45.9	68.8	91.8	114.7	137.7	160.6	183.5	206.5	229.4	252.4	275.3	298.3	321.2	344.1	367.1
18	58.1	87.1	116.1	145.2	174.2	203.3	232.3	261.3	290.4	319.4	348.4	377.5	406.5	435.6	464.6
20	71.7	107.5	143.4	179.2	215.1	250.9	286.8	322.6	358.5	394.3	430.2	466.0	501.9	537.7	573.6
22	98.8	148.2	197.6	247.0	296.4	345.7	395.1	444.5	493.9	543.3	592.7	642.1	691.5	740.9	790.3
24	117.6	176.3	235.1	293.9	352.7	411.5	470.2	529.0	587.8	646.6	705.4	764.2	822.9	881.7	940.5
26	138.0	207.0	275.9	344.9	413.9	482.9	551.9	620.9	689.9	758.8	827.8	896.8	965.8	1034.8	1103.8
28	160.0	240.0	320.0	400.0	480.0	560.1	640.1	720.1	800.1	880.1	960.1	1040.1	1120.1	1200.1	1280.1
30	183.7	275.5	367.4	459.2	551.1	642.9	734.8	826.6	918.5	1010.3	1102.1	1194.0	1285.8	1377.7	1469.5

Note: The branch volumes are expressed in unit of cm^3.

Table S5. The branch volume table for multi-stemmed shrub of clumped *Vitex negundo* with the aggregated canopies.

Basal diameter (mm)	Branch length (cm)														
	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400
4	3.8	5.6	7.5	9.4	11.3	13.1	15.0	16.9	18.8	20.7	22.5	24.4	26.3	28.2	30.0
6	8.4	12.7	16.9	21.1	25.3	29.6	33.8	38.0	42.2	46.5	50.7	54.9	59.1	63.4	67.6
8	15.0	22.5	30.0	37.6	45.1	52.6	60.1	67.6	75.1	82.6	90.1	97.6	105.2	112.7	120.2
10	23.5	35.2	46.9	58.7	70.4	82.2	93.9	105.6	117.4	129.1	140.8	152.6	164.3	176.0	187.8
12	28.8	43.2	57.7	72.1	86.5	100.9	115.3	129.7	144.1	158.5	173.0	187.4	201.8	216.2	230.6
14	39.2	58.9	78.5	98.1	117.7	137.3	156.9	176.6	196.2	215.8	235.4	255.0	274.6	294.3	313.9
16	51.2	76.9	102.5	128.1	153.7	179.4	205.0	230.6	256.2	281.8	307.5	333.1	358.7	384.3	410.0
18	64.9	97.3	129.7	162.1	194.6	227.0	259.4	291.9	324.3	356.7	389.1	421.6	454.0	486.4	518.9
20	80.1	120.1	160.1	200.2	240.2	280.2	320.3	360.3	400.4	440.4	480.4	520.5	560.5	600.5	640.6
22	81.9	122.9	163.9	204.9	245.8	286.8	327.8	368.7	409.7	450.7	491.6	532.6	573.6	614.6	655.5
24	97.5	146.3	195.0	243.8	292.5	341.3	390.1	438.8	487.6	536.3	585.1	633.9	682.6	731.4	780.1
26	114.4	171.7	228.9	286.1	343.3	400.6	457.8	515.0	572.2	629.5	686.7	743.9	801.1	858.3	915.6
28	132.7	199.1	265.5	331.8	398.2	464.6	530.9	597.3	663.6	730.0	796.4	862.7	929.1	995.5	1061.8
30	152.4	228.6	304.7	380.9	457.1	533.3	609.5	685.7	761.8	838.0	914.2	990.4	1066.6	1142.8	1218.9

Note: The branch volumes are expressed in unit of cm^3.