

**Supplementary material**

Supplementary material Appendix 1. Table A1. Ecological profiles for the study sites in Mount Ziwuling.

	Pine plantations (PP)					Secondary growth oak forests (SG)				
	PP1	PP2	PP3	PP4	PP5	SG1	SG2	SG3	SG4	SG5
No. of plots	5	5	5	5	5	5	5	5	5	5
Latitude (°)	35°6'	35°18'	35°15'	35°22'	35°18'	35°7'	35°16'	35°21'	35°17'	35°19'
Longitude (°)	108°34'	108°37'	108°37'	108°55'	108°53'	108°33'	108°36'	108°52'	108°54'	108°56'
Dominant spp. <sup>a</sup>	Pt	Pt	Pt	Pt	Pt	Qw, Pd, Bp	Qw, Pd	Qw, Bp	Qw, Pt	Qw, Pt
Age range (years)	50	50	50	50	50	80	80	80	80	80
Stand area (Km <sup>2</sup> ) <sup>b</sup>	19.2	13.6	20.2	76.4	22.4	794.5	92.6	794.5	794.5	33.48
Elevation (m)	1630-1720	1310-1569	1351-1478	1395-1549	1560-1590	1629-1753	1470-1495	1549-1579	1515-1559	1455-1480
Slope degree (°)	15-40	26-46	32-33	14-40	13-30	20-37	17-40	17-24	18-28	10-33
Slope aspect (°) <sup>c</sup>	68-345	65-160	58-325	115-354	19-350	15-340	285-316	157-290	21-54	137-285
N (mg kg <sup>-1</sup> )	110.7±13.3	59.7±43.3	17.1±4.3	66.3±43.9	27.8±4.0	124.6±49.3	17.8±9.2	61.8±61.4	15.0±4.7	115.2±14.5
P (mg kg <sup>-1</sup> )	18.4±5.9	12.2±9.1	9.1±4.2	8.4±4.4	8.0±0.8	20.1±1.6	9.5±3.7	15.5±8.1	13.0±4.8	8.8±2.9
K (mg kg <sup>-1</sup> )	185.5±41.3	99.6±75.7	118.5±67.5	99.8±45.2	169.8±38.7	225.7±29.2	76.5±46.8	89.5±59.0	40.5±16.0	134.8±26.4
SOM (g kg <sup>-1</sup> )	28.7±5.9	16.4±6.7	5.7±1.8	18.1±6.9	70.7±15.0	36.2±13.8	6.0±2.2	15.4±11.2	6.1±1.3	28.1±3.4
Soil pH	8.1±0.1	8.0±0.8	7.5±0.5	7.6±0.2	8.1±0.2	8.1±0.3	7.5±0.2	7.6±0.3	7.1±0.1	7.4±0.1
SEC (S m <sup>-1</sup> )	0.24±0.05	0.21±0.02	0.17±0.02	0.22±0.01	0.22±0.02	0.21±0.03	0.21±0.03	0.23±0.05	0.22±0.01	0.28±0.05
Litter depth (cm)	7.1±2.5	5.5±1.4	4.2±0.3	3.3±0.7	3.5±0.3	2.8±0.8	2.6±0.3	2.5±0.5	2.4±0.5	2.6±0.6
Humus depth (cm)	2.6±1.1	3.1±1.1	3.6±0.5	2.2±0.5	2.3±0.5	3.8±0.8	2.8±0.6	2.6±0.7	2.9±0.7	2.5±0.8

<sup>a</sup> Dominant canopy species. Pt: *Pinus tabulaeformis*. Qw: *Quercus wutaishanica*. Bp: *Betula platyphylla*. Pd: *Populus davidiana*.

<sup>b</sup> The three sites (i.e. SG1, SG3 and SG4) are located in the same secondary growth oak forest patch, but have been discontinued by other vegetation types. Therefore, these three sites have equal stand area (see Fig. 1).

<sup>c</sup> Slope aspect is a circular variable; the northern direction is the start point.