Supplementary materials:

Table S1. Grouping situation of taiga forests. All data are displayed as mean ± standard error (n = 3), and different letters in the same column denotes significant difference in taiga forests with different important values ($p < 0.05$).

Experimental group	Important value
L1	0.434±0.009 [e]
L2	0.481±0.007 [d]
L3	0.514±0.012 [c]
L4	0.544±0.007 [b]
L5	0.585±0.009 [a]

Table S2. Differences in soil physical and chemical properties in taiga forests. All data are displayed as mean ± standard error (n = 3), and different letters in the same column denotes significant difference in taiga forests with different important values ($p < 0.05$).

Experimental Group	TN (g/kg)	AK (mg/kg)	AP (mg/kg)	AN (mg/kg)	SOC (g/kg)	MBC (mg/kg)	pH	WC (%)	C/N
L1	2.14 ± 0.02 [b]	137.44 ± 0.92 [c]	20.23 ± 0.08 [e]	67.57 ± 0.13 [c]	73.66 ± 1.46 [a]	200.77 ± 0.09 [a]	5.48 ± 0.01 [a]	31.16 ± 1.07 [b]	34.39 ± 0.73 [a]
L2	2.15 ± 0.02 [b]	112.21 ± 0.68 [e]	45.25 ± 2.02 [d]	69.47 ± 0.17 [c]	55.54 ± 0.33 [b]	170.70 ± 0.06 [b]	5.14 ± 0.01 [b]	34.77 ± 0.53 [ab]	25.80 ± 0.29 [b]
L3	2.27 ± 0.01 [a]	191.49 ± 0.97 [a]	57.16 ± 0.65 [c]	79.68 ± 1.46 [b]	42.18 ± 0.53 [c]	147.77 ± 0.03 [c]	5.05 ± 0.00 [c]	36.35 ± 2.35 [a]	18.58 ± 0.27 [c]
L4	2.29 ± 0.00 [a]	188.15 ± 0.62 [b]	61.56 ± 1.34 [b]	96.13 ± 1.17 [a]	40.29 ± 0.11 [cd]	139.67 ± 0.15 [d]	4.41 ± 0.01 [d]	36.06 ± 1.18 [a]	17.59 ± 0.05 [cd]
L5	2.31 ± 0.01 [a]	131.45 ± 0.70 [d]	77.38 ± 0.75 [a]	98.35 ± 0.70 [a]	39.41 ± 0.22 [d]	116.40 ± 0.20 [e]	4.31 ± 0.00 [e]	36.86 ± 1.08 [a]	17.09 ± 0.07 [d]