Table S1. Vegetation community characteristics and site factors at different restoration stages.

Restoration stage	Dominant plants	Composition proportion (%)	Density of woody plants (individuals hm^{-2})	Shannon index of woody plants	Average DBH (cm)	Average tree height (m)	Elevation (m)	Slope aspect	Slope
SG (n = 4)	*Loropetalumchinense*	34.48	18,130	0.96	/	0.85 (0.3–1.8)	120–131	Southeast	18°
	Vaccinium bracteatum	21.55							
	Rhododendron mariesii	12.07							
	Quercus fabri	7.76							
	Castaneamollissima	5.17							
	Others (8 species)	18.97							
Shrub (n = 4)	*Loropetalumchinense*	17.47	7633	1.94	2.74 (1.0–9.8)	3.37 (1.5–6.5)	120–135	Northwest	22°
	Cunninghamia lanceolate	14.85							
	Quercus fabri	12.66							
	Vaccinium bracteatum	12.66							
	Litseacubeba	11.35							
	Others (16 species)	31.01							
CF (n = 4)	*Pinus massoniana*	14.14	17,396	2.21	5.70 (1.0–28.0)	6.54 (1.5–20.0)	135–160	Southwest	20°
	Lithocarpusglaber	18.86							
	Loropetalumchinense	14.29							
	Cleyera japonica	11.43							
	Camellia cuspidata	8.88							
	Others (25 species)	32.40							
EF (n = 4)	*Lithocarpusglaber*	39.67	20,785	2.05	5.63 (1.0–40.0)	5.75 (1.5–20.0)	200–260	Southeast	22°
	Cleyera japonica	14.29							
	Cyclobalanopsisglauca	4.33							
	Cunninghamia lanceolate	4.21							
	Euryamuricata	3.10							
	Others (38 species)	34.40							

Note: Values are means for composition proportion, density of woody plants, average DBH, average tree height, elevation, slope aspect, slope and Shannon index of woody plant. Values in parenthesis are the ranges of diameter at breast height (1.3 m; DBH) or of total tree height (H) in each community.

Table S2. The result of two-way ANOVA tests.

Factor	SOC	TN	Cs	Ns	C/N
Stage	0.0000	0.0000	0.0000	0.0000	0.0023
Depth	0.0000	0.0000	0.0000	0.0000	0.0000
Stage×Depth	0.0014	0.0013	0.0036	0.0038	0.7037

Note: Stage is restoration stage, Depth is soil depth and Stage × Depth is restoration stage × soil depth interaction. P values from two-way ANOVA tests are presented.

Table S3. The result of Pearson's correlation analysis (n = 64).

Item	SOC	TN	BD	pH	Sand	Silt	Clay	LB	FB
SOC	1.00 **	0.98 **	-0.60 **	-0.72 **	-0.34	0.17	0.53 **	0.47 **	0.89 **
TN		1.00**	-0.54 **	-0.71 **	-0.37 *	0.18	0.58 **	0.53 **	0.88 **
BD			1.00 **	0.65 **	0.43 *	-0.35	-0.22	-0.16	-0.57 **
pH				1.00 **	0.61 **	-0.47 **	-0.40	-0.45 **	-0.70 **
Sand					1.00 **	-0.95 **	-0.04	-0.15	-0.36 *
Silt						1.00 **	-0.26	0.00	0.19
Clay							1.00 **	0.48 **	0.52 **
LB								1.00**	0.50 **
FB									1.00 **

Note: Correlations among soil organic carbon (SOC), total nitrogen (TN), soil bulk density (BD), soil sand content (Sand), soil silt content (Silt), soil clay content (Clay), litter biomass (LB) and fine root biomass (FB).The symbol of "*" indicates that the correlation between two variables is significant ($p < 0.05$), while the symbol of "**" indicates that the correlation between two variables is extremely significant ($p < 0.01$).

Table S4. Results of partial least squares regression (PLSR) in each soil layer.

Response variable (SOC)												
Soil Depth		**0–10 cm**			**10–20 cm**			**20–30 cm**			**30–40 cm**	
RMSEP		0.244			0.326			0.540			0.511	
R^2		0.934			0.885			0.685			0.716	
Predictor	FB	0.971	***	FB	0.291	***	FB	0.281	***	FB	0.355	***
variable	pH	0.506	*	Clay	0.290	**	LB	0.267	***	Clay	0.331	
with	Sand	−0.254	*	LB	0.280	***	Clay	0.249	*	BD	0.320	
Standard	Silt	0.251	*	pH	−0.203	**	pH	−0.180	*	pH	−0.306	
partial	LB	0.162		Sand	−0.127	**	Sand	−0.150	*	Sand	−0.278	**
regression	BD	0.131		BD	−0.035		Silt	0.070		Silt	0.185	*
coefficient	Clay	0.098		Silt	0.012		BD	0.063		LB	0.018	
Response variable (TN)												
Soil Depth		**0–10 cm**			**10–20 cm**			**20–30 cm**			**30–40 cm**	
RMSEP		0.295			0.253			0.470			0.440	
R^2		0.904			0.930			0.761			0.789	
Predictor	FB	1.283	***	Clay	0.405	***	Clay	0.300	**	Clay	0.398	*
variable	pH	0.821	***	FB	0.310	***	FB	0.294	***	FB	0.373	***
with	Sand	−0.280	**	Sand	−0.234	**	LB	0.247	***	Sand	−0.280	**
Standard	Silt	0.260	**	LB	0.200	*	pH	−0.173	*	BD	0.274	
partial	BD	0.206		pH	−0.161		Sand	−0.152	*	pH	−0.255	
regression	Clay	0.181	*	BD	0.139		BD	0.070		Silt	0.171	*
coefficient	LB	0.015		Silt	0.070		Silt	0.056		LB	0.013	

Note: Significant effects of soil and vegetation factors on SOC and TN contents are indicated with asterisks. The symbol of '***', '**' and '*' indicates $p < 0.001$, $p < 0.01$ and $p < 0.05$, respectively. RMSEP is Root Mean Square Error of Prediction.