Mixed broadleaved tree species increases soil phosphorus availability but decreases the coniferous tree nutrient concentration in subtropical China

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Table S1 Summary of ANOVA about effects of forest type, soil type, site location and their interaction on phosphorus fractions under pure Chinese fir plantation (PP) and its mixed plantation with broadleaved tree species (MP) at Hunan and Fujian provinces, China

Influencing factor	df	*F*- values					
		Av-P	So-P	Sl-P	Oc-P	Mi-P	Re-P
Forest type (FT)	1	5.43*	1.26^{ns}	44.54^{***}	26.57^{***}	0.17^{ns}	2.43^{ns}
Soil type (ST)	2	0.06^{ns}	5.37*	8.66**	1.64^{ns}	0.80^{ns}	5.55*
Site location (SL)	1	0.71^{ns}	1.26^{ns}	24.65^{***}	93.34^{***}	20.65^{***}	220.44^{***}
FT×ST	2	1.67^{ns}	1.39^{ns}	0.76^{ns}	0.06^{ns}	0.99^{ns}	1.02^{ns}
FT×SL	1	1.05^{ns}	1.83^{ns}	31.91^{***}	17.29^{***}	0.93^{ns}	0.79^{ns}
ST×SL	2	0.83^{ns}	0.70^{ns}	3.79*	0.16^{ns}	1.47^{ns}	0.21^{ns}
FT×ST×SL	2	2.54^{ns}	0.40^{ns}	0.46^{ns}	0.56^{ns}	0.00^{ns}	1.08^{ns}

Note: ^{ns}, not significant, * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Table S2 ANOVA of effect of forest type, root functional order, site location and their interaction on root nitrogen, phosphorus concentrations and N/P between pure Chinese fir plantation (PP) and mixed plantation with broadleaved tree species (MP) at Hunan and Fujian province, China.

Influencing factor	df	*F* values		
		N concentration	P concentration	N/P
Forest type (FT)	1	21.47***	1.37^{ns}	6.73*
Root order (RO)	2	60.46***	84.33***	10.82***
Site location (SL)	1	66.10***	3.02*	45.57***
FT×RO	2	5.15*	3.40*	1.80^{ns}
FT×SL	1	0.03^{ns}	19.02***	15.32***
RO×SL	2	7.70**	6.96**	7.67**
FT×RO×SL	2	2.54^{ns}	0.11^{ns}	0.48^{ns}

Note: ^{ns}, not significant, * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Table S3 ANOVA of effect of forest type, leaf age, site location and their interaction on leaf nitrogen, phosphorus concentrations and N/P ratio between pure Chinese fir plantation (PP) and mixed plantation with broadleaved tree species (MP) at Hunan and Fujian province, China.

Influencing factor	df	*F* value		
		N concentration	P concentration	N/P
Forest type (FT)	1	3.10^{ns}	4.60*	0.00^{ns}
Leaf age (LA)	3	42.6***	178.83***	50.84***
Site location (SL)	1	0.81^{ns}	20.57***	2.89^{ns}
FT×LA	3	7.10***	5.16**	2.72^{ns}
FT×SL	1	0.34^{ns}	0.08^{ns}	0.52^{ns}
LA×SL	3	3.09*	18.16***	1.99^{ns}
FT×LA×SL	3	0.36^{ns}	2.09^{ns}	1.41^{ns}

Note: ^{ns}, not significant, * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Table S4 ANOVA of effect of forest type, twig age, site location and their interaction on twig nitrogen, phosphorus concentrations and N/P ratio between pure Chinese fir plantation (PP) and mixed plantation with broadleaved tree species (MP) at Hunan and Fujian province, China.

Influencing factor	df	F value		
		N concentration	P concentration	N/P
Forest type (FT)	1	3.40^{ns}	0.37^{ns}	1.28^{ns}
Twig age (TA)	3	120.72***	104.29***	26.88***
Site location (SL)	1	55.40***	25.26***	1.36^{ns}
FT×TA	3	0.69^{ns}	0.92^{ns}	0.92^{ns}
FT×SL	1	0.20^{ns}	1.33^{ns}	6.56*
TA×SL	3	28.31***	21.13***	0.27^{ns}
FT×TA×SL	3	1.01^{ns}	0.37^{ns}	3.92*

Note: ^{ns}, not significant, * $p<0.05$, ** $p<0.01$, *** $p<0.001$.
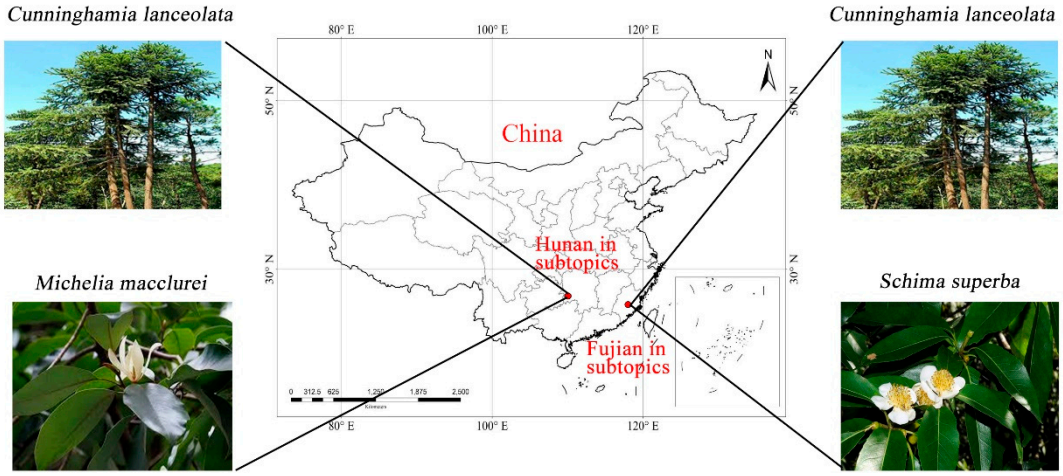
Figure. S1 The study sites in Huitong Forest Ecological Station of Hunan Province and Datian Experimental Forest Farm of Fujian Province