

Table S13. The relative importance and significance of driving factors based on the Random Forest model in forest system.

Variables	%IncMSE %	IncMSE.pval	IncNodePurity IncN	odePurity.pval
eT	21.5555508	0.00990099	9.12E+00	0.00990099
SD	15.3269007	0.00990099	9.09E+00	0.00990099
Pn	15.1611927	0.00990099	5.92E+00	0.10891089
FP	15.0885459	0.00990099	7.75E+00	0.00990099
FN	14.7280782	0.00990099	1.04E+01	0.00990099
ST	10.9459685	0.00990099	2.82E+00	0.01980198
T	10.7425277	0.02970297	2.73E+00	0.97029703
FV/FM	10.5129823	0.00990099	3.66E+00	0.56435644
WD	9.2839816	0.00990099	1.75E+00	0.07920792
SWC	9.1885098	0.02970297	1.93E+00	1
SLA	8.9641325	0.03960396	3.83E+00	0.3960396
MAP	8.7355488	0.00990099	1.23E+00	0.75247525
eCO ₂	8.1735143	0.01980198	4.96E+00	0.31683168
δ ¹³ C	7.5172134	0.03960396	1.06E+00	1
MAT	7.1830689	0.01980198	7.61E-01	0.93069307
Latitude	6.5363125	0.02970297	7.77E-01	0.96039604
P_type	6.0634376	0.02970297	6.44E-01	1
Gs	5.433488	0.16831683	1.62E+00	1
Longitude	5.3388969	0.07920792	4.01E-01	1
TC	5.0754075	0.24752475	1.07E+00	1
High	5.0482366	0.07920792	4.92E-01	1
Climate	3.867921	0.06930693	4.48E-01	0.9009901
WM	2.0179418	0.32673267	1.05E-01	1
Ammonia N	0.9963716	0.24752475	5.15E-04	1
Nitrate N	-1.0003497	0.45544554	4.96E-04	1
Chlorophyll	-1.560115	0.76237624	1.23E-02	0.92079208
SS	-1.8529543	0.74257426	2.86E-02	0.97029703