

Figure S1. Log-likelihood as a function of exponent c at 5-30 m across all individuals at sapling and adult life stages. Each point on curve_{mean} (black point) is the average value of the log-likelihood at 5-30 m at a certain c .

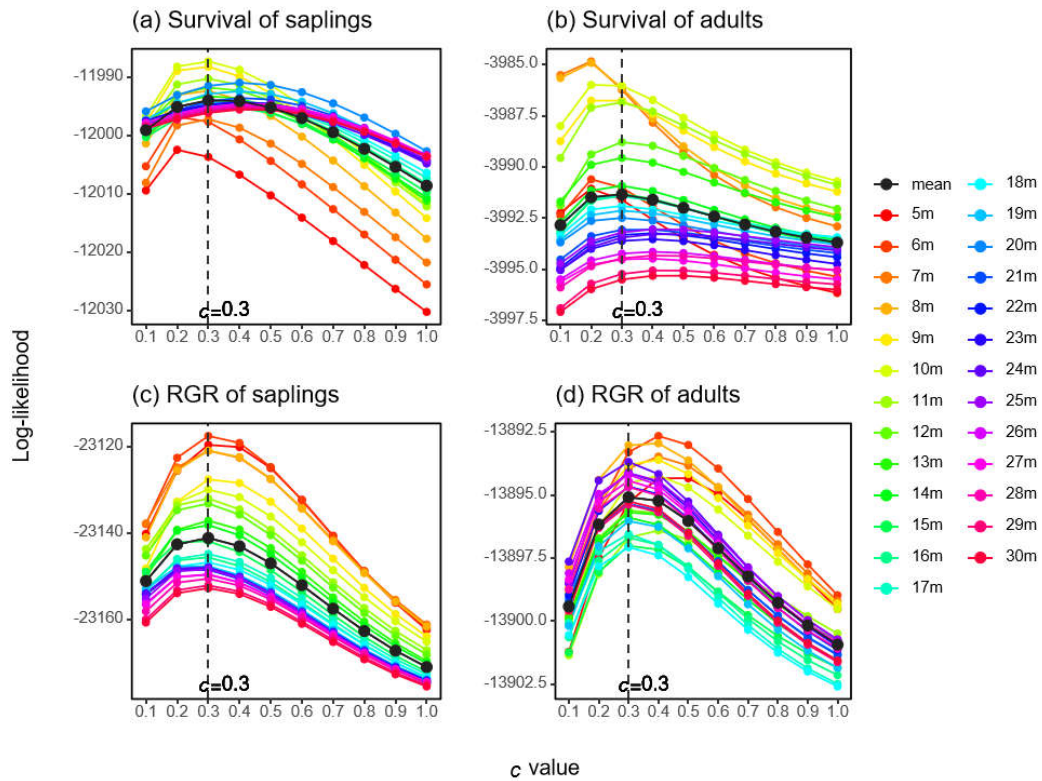


Figure S2. Log-likelihood as a function of exponent c at 5-30 m in different tree mycorrhizal types at sapling and adult life stages. Each point on curve_{mean} (black point) is the average value of the log-likelihood at 5-30 m at a certain c .

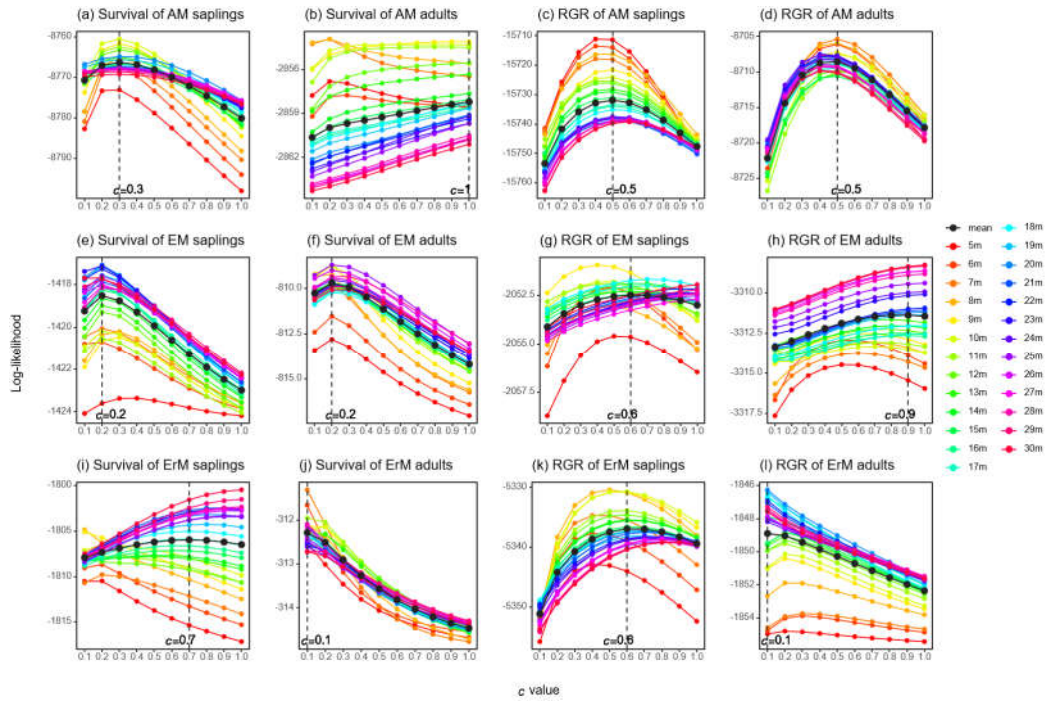


Figure S3. Estimates ($\pm 2SE$) of neighborhood factors on survival (a) and RGR (b) of all individuals at sapling and adult life stages at 5-30 m. Solid circles indicate significant effects ($P < 0.05$), while open circles indicate non-significant effects. Con, conspecific density; HetAM, heterospecific AM density; HetEcM, heterospecific EcM density; HetErM, heterospecific ErM density.

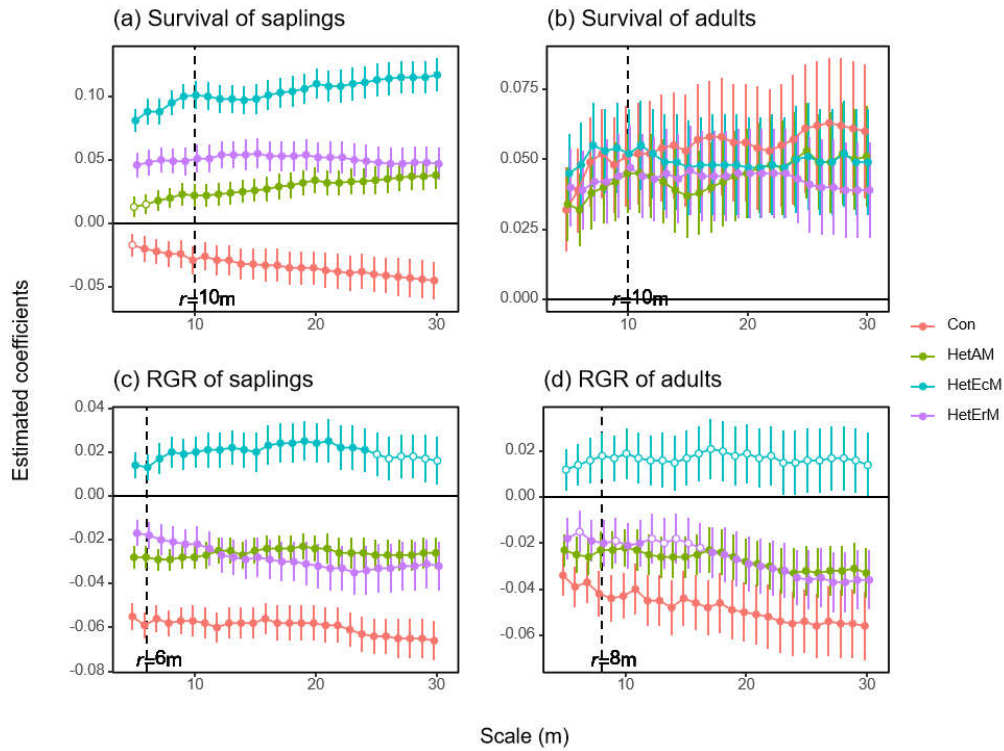


Figure S4. Estimated effects ($\pm 2SE$) of neighborhood factors on survival and RGR of tree mycorrhizal types at sapling and adult life stages at 5-30 m. Solid circles indicate significant effects ($P < 0.05$), while open circles indicate non-significant effects. Con, conspecific density; HetAM, heterospecific AM density; HetEcM, heterospecific EcM density; HetErM, heterospecific ErM density.

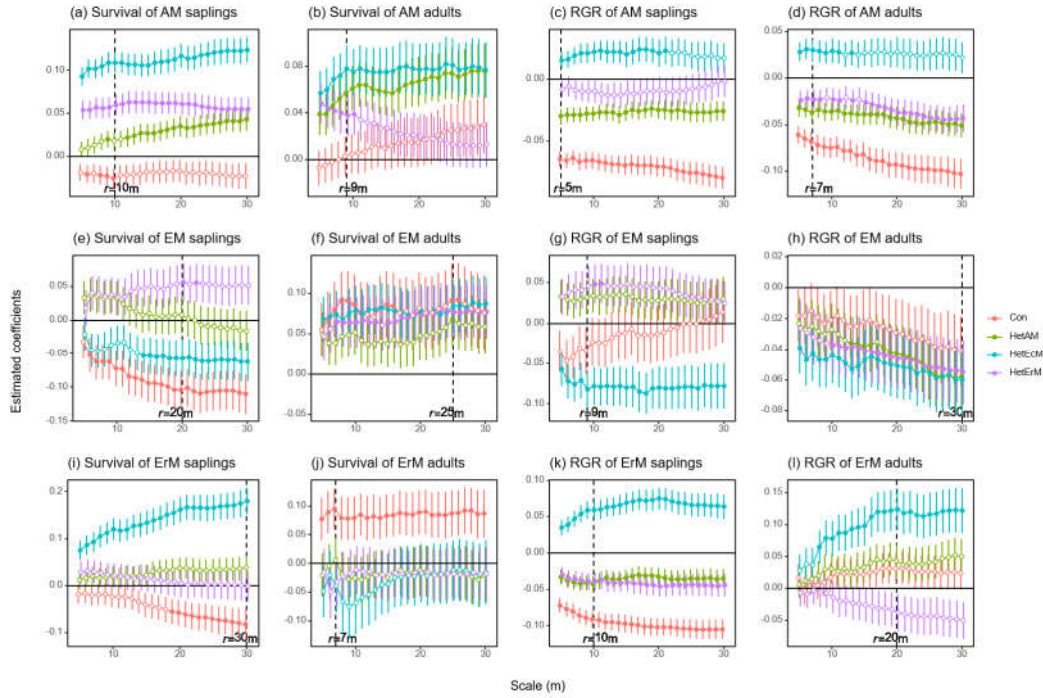


Figure S5. Correlations between BA of EcM species (BA_{EcM}) and BA of AM species (BA_{AM}) with species diversity (H , Shannon-Weiner index) (a & e), average RGR (b & f), total BA (c & g) and increment of total BA (d & h).

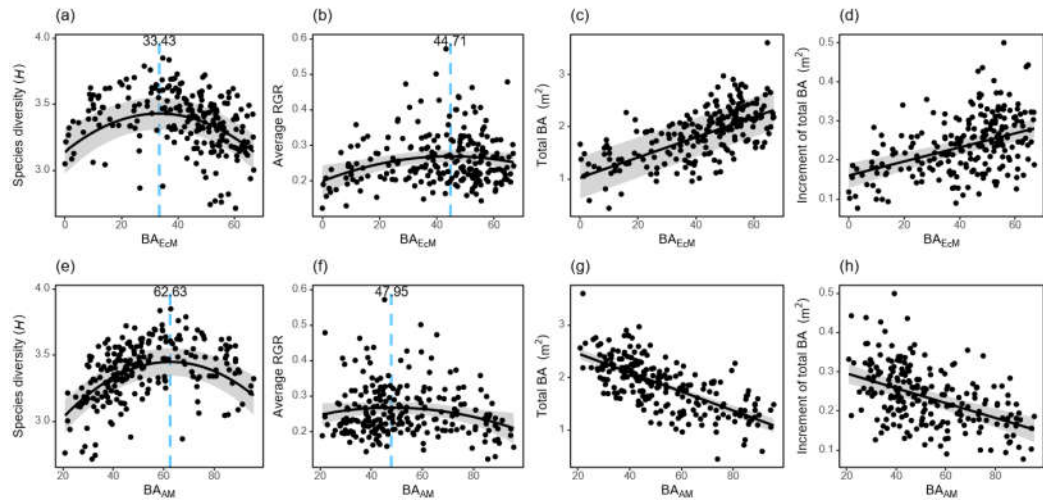


Table S1. 179 focal species used in the analysis of neighborhood effects on survival and growth. (Life form: C=canopy tree species, U=understory tree species, and S=shrub species) in subtropical evergreen broad-leaved forest in Wuyanling National Natural Reserve, Zhejiang, China.

Species	Family	Life form	Mycorrhizal type	No. individuals
<i>Acer amplum</i>	Sapindaceae	C	AM	26
<i>Acer cordatum</i>	Sapindaceae	C	AM	129
<i>Acer davidii</i>	Sapindaceae	C	AM	65
<i>Acer elegantulum</i>	Sapindaceae	C	AM	64
<i>Acer wilsonii</i>	Sapindaceae	C	AM	26
<i>Adinandra glischroloma</i> var. <i>macrosepala</i>	Pentaphylacaceae	S	AM	178
<i>Albizia kalkora</i>	Fabaceae	C	AM	3
<i>Alniphyllum fortunei</i>	Styracaceae	C	AM	263
<i>Betula luminifera</i>	Betulaceae	C	EcM	8
<i>Camellia chekiangoleosa</i>	Theaceae	U	AM	920
<i>Camellia cuspidata</i>	Theaceae	S	AM	3225
<i>Carpinus polyneura</i>	Betulaceae	C	EcM	3
<i>Carpinus viminea</i>	Betulaceae	C	EcM	426
<i>Castanopsis eyrei</i>	Fagaceae	C	EcM	1291
<i>Castanopsis fabri</i>	Fagaceae	C	EcM	55
<i>Castanopsis fargesii</i>	Fagaceae	C	EcM	1
<i>Castanopsis tibetana</i>	Fagaceae	C	EcM	11
<i>Celtis biondii</i>	Cannabaceae	C	AM	6
<i>Choerospondias axillaris</i>	Anacardiaceae	C	AM	7
<i>Cinnamomum austrosinense</i>	Lauraceae	C	AM	1
<i>Cinnamomum japonicum</i>	Lauraceae	C	AM	25
<i>Cinnamomum subavenium</i>	Lauraceae	C	AM	385
<i>Clerodendrum cyrtophyllum</i>	Lamiaceae	U	AM	2
<i>Clerodendrum kaichianum</i>	Lamiaceae	U	AM	2
<i>Clethra barbinervis</i>	Clethraceae	U	AM	12
<i>Clethra delavayi</i>	Clethraceae	U	AM	3
<i>Cleyera japonica</i>	Pentaphylacaceae	U	AM	520
<i>Cleyera pachyphylla</i>	Pentaphylacaceae	U	AM	2
<i>Cornus controversa</i>	Cornaceae	C	AM	2
<i>Cornus hongkongensis</i> subsp. <i>elegans</i>	Cornaceae	U	AM	556
<i>Cryptomeria japonica</i> var. <i>sinensis</i>	Cupressaceae	C	AM	5
<i>Cunninghamia lanceolata</i>	Cupressaceae	C	AM	195
<i>Cyclocarya paliurus</i>	Juglandaceae	C	AM	18
<i>Dalbergia hupeana</i>	Fabaceae	C	AM	7
<i>Daphniphyllum macropodum</i>	Daphniphyllac	U	AM	32

	eae			
<i>Daphniphyllum oldhamii</i>	Daphniphyllac	C	AM	76
	eae			
<i>Dendropanax dentiger</i>	Araliaceae	U	AM	496
<i>Diospyros japonica</i>	Ebenaceae	C	AM	9
<i>Diospyros morrisiana</i>	Ebenaceae	C	AM	1
<i>Diospyros tsangii</i>	Ebenaceae	U	AM	8
<i>emmenopterys henryi</i>	Rubiaceae	C	AM	1
<i>Elaeagnus glabra</i>	Elaeagnaceae	S	AM	1
<i>Elaeocarpus decipiens</i>	Elaeocarpacea	C	AM	4
	e			
<i>Elaeocarpus japonicus</i>	Elaeocarpacea	C	AM	120
	e			
<i>Erythroxylum sinense</i>	Erythroxylaceae	U	AM	5
	e			
<i>Euonymus laxiflorus</i>	Celastraceae	S	AM	1
<i>Euonymus myrianthus</i>	Celastraceae	U	AM	35
<i>Euonymus nitidus</i>	Celastraceae	S	AM	7
<i>Eurya alata</i>	Pentaphylacac	S	AM	15
	eae			
<i>Eurya hebeclados</i>	Pentaphylacac	U	AM	6
	eae			
<i>Eurya loquaiana</i>	Pentaphylacac	U	AM	315
	eae			
<i>Eurya loquaiana</i> var. <i>aureopunctata</i>	Pentaphylacac	U	AM	42
	eae			
<i>Eurya muricata</i>	Pentaphylacac	S	AM	1355
	eae			
<i>Eurya nitida</i>	Pentaphylacac	S	AM	6
	eae			
<i>Eurya rubiginosa</i> var. <i>attenuata</i>	Pentaphylacac	S	AM	4226
	eae			
<i>Fagus engleriana</i>	Fagaceae	C	EcM	72
<i>Fagus lucida</i>	Fagaceae	C	EcM	13
<i>Ficus heteromorpha</i>	Moraceae	U	AM	2
<i>Fraxinus chinensis</i>	Oleaceae	C	AM	9
<i>Fraxinus insularis</i>	Oleaceae	C	AM	3
<i>Gardenia jasminoides</i>	Rubiaceae	S	AM	40
<i>Halesia macgregorii</i>	Styracaceae	C	AM	363
<i>Hovenia trichocarpa</i> var. <i>robusta</i>	Rhamnaceae	C	AM	10
<i>Hydrangea chinensis</i>	Hydrangeaceae	S	AM	7
<i>Hydrangea strigosa</i>	Hydrangeaceae	S	AM	1
<i>Idesia polycarpa</i>	Salicaceae	C	AM	8
<i>Ilex buergeri</i>	Aquifoliaceae	U	AM	25

<i>Ilex chinensis</i>	Aquifoliaceae	C	AM	40
<i>Ilex crenata</i>	Aquifoliaceae	S	AM	3
<i>Ilex elmerrilliana</i>	Aquifoliaceae	U	AM	7
<i>Ilex ficoidea</i>	Aquifoliaceae	C	AM	839
<i>Ilex formosana</i>	Aquifoliaceae	C	AM	31
<i>Ilex kwangtungensis</i>	Aquifoliaceae	U	AM	75
<i>Ilex latifolia</i>	Aquifoliaceae	C	AM	34
<i>Ilex litseifolia</i>	Aquifoliaceae	U	AM	758
<i>Ilex lohfauiensis</i>	Aquifoliaceae	U	AM	3
<i>Ilex micrococca</i>	Aquifoliaceae	C	AM	36
<i>Ilex nitidissima</i>	Aquifoliaceae	U	AM	3
<i>Ilex rotunda</i>	Aquifoliaceae	C	AM	52
<i>Ilex suaveolens</i>	Aquifoliaceae	C	AM	149
<i>Ilex triflora</i>	Aquifoliaceae	U	AM	1
<i>Ilex triflora</i> var. <i>kanehirai</i>	Aquifoliaceae	U	AM	26
<i>Ilex wilsonii</i>	Aquifoliaceae	C	AM	968
<i>Illicium lanceolatum</i>	Schisandraceae	U	AM	3
<i>Itea omeiensis</i>	Iteaceae	S	AM	567
<i>Lagerstroemia subcostata</i>	Lythraceae	C	AM	7
<i>Lasianthus japonicus</i>	Rubiaceae	S	AM	4
<i>Ligustrum leucanthum</i>	Oleaceae	U	AM	2
<i>Lindera aggregata</i>	Lauraceae	S	AM	448
<i>Lindera erythrocarpa</i>	Lauraceae	U	AM	2
<i>Liquidambar acalycina</i>	Altingiaceae	C	AM	153
<i>Lithocarpus brevicaudatus</i>	Fagaceae	C	EcM	473
<i>Lithocarpus hancei</i>	Fagaceae	C	EcM	50
<i>Lithocarpus iteaphyllus</i>	Fagaceae	C	EcM	528
<i>Lithocarpus litseifolius</i>	Fagaceae	C	EcM	65
<i>Litsea elongata</i>	Lauraceae	C	AM	119
<i>Litsea elongata</i> var. <i>faberi</i>	Lauraceae	C	AM	550
<i>Lyonia ovalifolia</i> var. <i>hebecarpa</i>	Ericaceae	U	ErM	1
<i>Machilus leptophylla</i>	Lauraceae	C	AM	16
<i>Machilus litseifolia</i>	Lauraceae	C	AM	21
<i>Machilus pauhoi</i>	Lauraceae	C	AM	9
<i>Machilus phoenicis</i>	Lauraceae	U	AM	1660
<i>Machilus thunbergii</i>	Lauraceae	C	AM	1262
<i>Mallotus tenuifolius</i>	Euphorbiaceae	U	AM	1
<i>Malus leiocalyca</i>	Rosaceae	C	AM	59
<i>Manglietia yuyuanensis</i>	Magnoliaceae	C	AM	311
<i>Meliosma flexuosa</i>	Sabiaceae	U	AM	59
<i>Meliosma myriantha</i> var. <i>discolor</i>	Sabiaceae	C	AM	16
<i>Meliosma oldhamii</i>	Sabiaceae	C	AM	451
<i>Metasequoia glyptostroboides</i>	Cupressaceae	C	AM	2
<i>Michelia maudiae</i>	Magnoliaceae	C	AM	491

<i>Microtropis fokienensis</i>	Celastraceae	S	AM	6
<i>Morella rubra</i>	Myricaceae	C	AM	21
<i>Neolitsea aurata</i> var. <i>chekiangensis</i>	Lauraceae	U	AM	2368
<i>Neolitsea aurata</i> var. <i>paraciculata</i>	Lauraceae	U	AM	90
<i>Neolitsea aurata</i> var. <i>undulatula</i>	Lauraceae	U	AM	110
<i>Nyssa sinensis</i>	Nyssaceae	C	AM	229
<i>Osmanthus austrozhejiangensis</i>	Oleaceae	U	AM	314
<i>Osmanthus matsumuranus</i>	Oleaceae	U	AM	3
<i>Parakmeria lotungensis</i>	Magnoliaceae	C	AM	4
<i>Phoebe sheareri</i>	Lauraceae	C	AM	24
<i>Photinia beauverdiana</i>	Rosaceae	U	AM	66
<i>Photinia glabra</i>	Rosaceae	U	AM	943
<i>Photinia parvifolia</i>	Rosaceae	U	AM	24
<i>Photinia serratifolia</i>	Rosaceae	U	AM	7
<i>Photinia villosa</i>	Rosaceae	U	AM	48
<i>Picrasma quassioides</i>	Simaroubaceae	C	AM	3
<i>Pieris japonica</i>	Ericaceae	U	ErM	109
<i>Pinus hwangshanensis</i>	Pinaceae	C	EcM	12
<i>Pinus massoniana</i>	Pinaceae	C	EcM	3
<i>Pittosporum illicioides</i>	Pittosporaceae	S	AM	5
<i>Platycarya strobilacea</i>	Juglandaceae	U	EcM	2
<i>Prunus conradinae</i>	Rosaceae	C	AM	3
<i>Prunus phaeosticta</i>	Rosaceae	U	AM	9
<i>Prunus schneideriana</i>	Rosaceae	U	AM	115
<i>Prunus spinulosa</i>	Rosaceae	C	AM	12
<i>Quercus engleriana</i>	Fagaceae	U	EcM	237
<i>Quercus glauca</i>	Fagaceae	C	EcM	52
<i>Quercus jenseniana</i>	Fagaceae	C	EcM	18
<i>Quercus multinervis</i>	Fagaceae	C	EcM	90
<i>Quercus myrsinifolia</i>	Fagaceae	C	EcM	268
<i>Quercus sessilifolia</i>	Fagaceae	C	EcM	231
<i>Quercus shennongii</i>	Fagaceae	C	EcM	27
<i>Quercus stewardiana</i>	Fagaceae	C	EcM	1889
<i>Raphiolepis indica</i>	Rosaceae	U	AM	46
<i>Rhododendron championiae</i>	Ericaceae	U	ErM	85
<i>Rhododendron latouchaeae</i>	Ericaceae	U	ErM	4105
<i>Rhododendron mariesii</i>	Ericaceae	U	ErM	1255
<i>Rhododendron ovatum</i>	Ericaceae	U	ErM	2364
<i>Rhododendron simsii</i>	Ericaceae	S	ErM	138
<i>Sassafras tzumu</i>	Lauraceae	C	AM	75
<i>Schima superba</i>	Theaceae	C	AM	1085
<i>Schoepfia jasminodora</i>	Schoepfiaceae	U	AM	33
<i>Semiliquidambar caudata</i>	Altingiaceae	C	AM	1
<i>Sorbus folgneri</i>	Rosaceae	C	AM	2

<i>Styrax dasyanthus</i>	Styracaceae	U	AM	31
<i>Styrax odoratissimus</i>	Styracaceae	U	AM	4
<i>Styrax suberifolius</i>	Styracaceae	C	AM	179
<i>Symplocos anomala</i>	Symplocaceae	U	AM	414
<i>Symplocos botryantha</i>	Symplocaceae	U	AM	154
<i>Symplocos chinensis</i>	Symplocaceae	U	AM	2
<i>Symplocos cochinchinensis</i> var. <i>laurina</i>	Symplocaceae	U	AM	24
<i>Symplocos heishanensis</i>	Symplocaceae	C	AM	137
<i>Symplocos lancifolia</i>	Symplocaceae	U	AM	5
<i>Symplocos lucida</i>	Symplocaceae	U	AM	183
<i>Symplocos pendula</i> var. <i>hirtistylis</i>	Symplocaceae	U	AM	7
<i>Symplocos stellaris</i>	Symplocaceae	U	AM	140
<i>Symplocos sumuntia</i>	Symplocaceae	U	AM	37
<i>Syzygium buxifolium</i>	Myrtaceae	U	AM	344
<i>Taxus wallichiana</i> var. <i>mairei</i>	Taxaceae	C	AM	2
<i>Ternstroemia gymnanthera</i>	Pentaphylacaceae	U	AM	838
<i>Tetradium glabrifolium</i>	Rutaceae	C	AM	3
<i>Toxicodendron succedaneum</i>	Anacardiaceae	C	AM	150
<i>Vaccinium bracteatum</i>	Ericaceae	U	ErM	68
<i>Vaccinium mandarinorum</i>	Ericaceae	S	ErM	378
<i>Viburnum erosum</i>	Adoxaceae	S	AM	83
<i>Viburnum sempervirens</i> var. <i>trichophorum</i>	Adoxaceae	S	AM	31
<i>Viburnum sympodiale</i>	Adoxaceae	U	AM	17
<i>Yulania cylindrica</i>	Magnoliaceae	C	AM	10

Table S2. Optimal scales and c for survival and relative growth rate (RGR) of all individuals and tree mycorrhizal types at sapling and adult life stages at 5-30m.

		c		Scale (m)	
		Sapling	Adult	Sapling	Adult
Survival	All individuals	0.3	0.3	10	10
	AM tree species	0.3	1.0	10	9
	EcM tree species	0.2	0.2	20	25
	ErM tree species	0.7	0.1	30	28
RGR	All individuals	0.3	0.3	6	8
	AM tree species	0.5	0.5	5	7
	EcM tree species	0.7	0.9	9	30
	ErM tree species	0.6	0.1	10	19

Table S3. Coefficient estimates of the correlation between BA_{EcM} and BA_{AM} with species diversity, average RGR, total BA and increment of total BA. BA, basal area; BA_{EcM} , BA of EcM tree species; BA_{AM} , BA of AM tree species; RGR, relative growth rates.

Response variable	Explanatory variable	<i>Estimates</i>	<i>SE.</i>	<i>P</i>
Species diversity	BA_{EcM}	0.017	0.003	0.000
	BA_{EcM}^2	0.000	0.000	0.000
Average RGR	BA_{EcM}	0.003	0.001	0.006
	BA_{EcM}^2	0.000	0.000	0.013
Total BA	BA_{EcM}	0.019	0.002	0.000
Increment of total BA	BA_{EcM}	0.002	0.000	0.000
	BA_{AM}	0.029	0.003	0.000
Species diversity	BA_{AM}^2	0.000	0.000	0.000
	BA_{AM}	0.002	0.001	0.082
Average RGR	BA_{AM}^2	0.000	0.000	0.040
	BA_{AM}	-0.018	0.001	0.000
Total BA	BA_{AM}	-0.002	0.000	0.000
Increment of total BA	BA_{AM}			

Table S4. Coefficient estimates of the correlation between the square root of R_{EA} ($\sqrt{R_{EA}}$) with species diversity, average RGR, total BA and increment of total BA. RGR, relative growth rates; BA, basal area; R_{EA} , the ratio of BA of EcM to BA of AM tree species.

Response variable	Explanatory variable	<i>Estimates</i>	<i>SE.</i>	<i>P</i>
Species diversity	$\sqrt{R_{EA}}$	0.685	0.142	0.000
	R_{EA}	-0.447	0.070	0.000
Average RGR	$\sqrt{R_{EA}}$	0.143	0.055	0.009
	R_{EA}	-0.066	0.027	0.016
Total BA	R_{EA}	0.903	0.074	0.000
Increment of total BA	R_{EA}	0.092	0.014	0.000