# Supplementary Information

- **Article title:** Spatial variation in long-term natural recovery potential informs targeted post-fire restoration in a peri-urban forest
- **Journal:** Environmental Management
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**Table S1** Coding for 38 site types

| Number | Ecoregion Name | Number | Ecoregion Name |
|---|---|---|---|
| 1 | Eco_224 | 20 | Eco_241 |
| 2 | Eco_225 | 21 | Eco_335 |
| 3 | Eco_223 | 22 | Eco_424 |
| 4 | Eco_344 | 23 | Eco_342 |
| 5 | Eco_222 | 24 | Eco_435 |
| 6 | Eco_244 | 25 | Eco_123 |
| 7 | Eco_234 | 26 | Eco_125 |
| 8 | Eco_243 | 27 | Eco_434 |
| 9 | Eco_245 | 28 | Eco_423 |
| 10 | Eco_235 | 29 | Eco_422 |

| | | | |
|---|---|---|---|
| 11 | Eco_242 | 30 | Eco_323 |
| 12 | Eco_233 | 31 | Eco_325 |
| 13 | Eco_334 | 32 | Eco_143 |
| 14 | Eco_343 | 33 | Eco_124 |
| 15 | Eco_324 | 34 | Eco_133 |
| 16 | Eco_444 | 35 | Eco_425 |
| 17 | Eco_442 | 36 | Eco_333 |
| 18 | Eco_345 | 37 | Eco_322 |
| 19 | Eco_221 | 38 | Eco_431 |

**Note:** In the Table S1, the numbers annotated "from left to right" respectively represent the Slopes (1: gentle slope, 2: steep slope, 3: abrupt slope, 4: hazardous slope); Aspect (1: shady slope, 2: semi-shady slope, 3: sunny slope); Slope positions (1: valley, 2 : ridge, 3: lower slope position , 4: middle slope position, 5: upper slope position). For instance, "123" represents the gentle slope, semi-shaded slope, lower slope position area.

**Supplementary Methods S1** Parameterization basis for LANDIS-II

Species and site-type parameters were developed using a literature-informed and topography-adjusted parameterization approach rather than site-specific long-term empirical calibration. Core species attributes, including longevity, sexual maturity, seed-dispersal distances, vegetative reproduction probability, and sprouting ages, were compiled from published ecological studies and local floristic information and were used as species-level baseline parameters.

For the Biomass Succession extension, the 38 site types defined by slope, aspect, and slope position were treated as spatially distinct ecoregions. A baseline establishment potential was first assigned to each species or functional group, and

site-specific ProbEstablish values were subsequently adjusted according to documented ecological preferences and observed species-site associations within Jinyun Mountain. Relatively favorable combinations of slope, aspect, and slope position were assigned higher establishment suitability, whereas less favorable combinations were assigned lower values. ProbEstablish values were constrained to the range 0 – 1 and should therefore be interpreted as relative establishment suitability among site types rather than directly observed establishment probabilities.

ANPPmax and Biomassmax were parameterized in a similar manner. Species-level baseline productivity and biomass capacities were informed by published LANDIS-II applications, regional forest ecological studies, and local vegetation characteristics, and were then adjusted among site types to reflect relative differences in topographic suitability. Site types considered more favorable for a given species were assigned relatively higher ANPPmax and/or Biomassmax values, whereas less suitable site types received lower values. Because the study focused on fine-scale topographic heterogeneity within a single peri-urban mountain landscape, regional background climate and soil conditions were held constant across the simulation domain. Species-specific mortality probabilities were also held constant among site types to avoid introducing additional spatial variation not supported by local empirical data.

These parameter values were therefore intended to represent relative differences in establishment and growth potential among topographically defined site types, rather than independently calibrated physiological estimates. The complete species

× site-type parameter matrix used in the simulations is provided in Table S2.

**Table S2** Species-specific establishment and biomass parameters across the 38 topographically defined site types

| Ecoregion Name | SpeciesCode | ProbEstablish | ProbMortality | ANPPmax | BiomassMax |
|---|---|---|---|---|---|
| Eco_224 | Pinus_massoniana | 0.8 | 0.05 | 900 | 25000 |
| Eco_224 | Pterocarya_stenoptera | 0.75 | 0.04 | 1100 | 28000 |
| Eco_224 | Quercus_fabri | 0.95 | 0.03 | 800 | 30000 |
| Eco_224 | Castanopsis_fargesii | 0.95 | 0.03 | 850 | 28000 |
| Eco_224 | Schima_superba | 0.85 | 0.04 | 950 | 26000 |
| Eco_224 | Machilus_nanmu | 0.9 | 0.03 | 900 | 27000 |
| Eco_224 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_224 | Ferns_functional | 0.92 | 0.07 | 600 | 15000 |
| Eco_225 | Pinus_massoniana | 0.72 | 0.05 | 850 | 24000 |
| Eco_225 | Pterocarya_stenoptera | 0.68 | 0.04 | 1050 | 27000 |
| Eco_225 | Quercus_fabri | 0.87 | 0.03 | 750 | 29000 |
| Eco_225 | Castanopsis_fargesii | 0.88 | 0.03 | 800 | 27000 |
| Eco_225 | Schima_superba | 0.77 | 0.04 | 900 | 25000 |
| Eco_225 | Machilus_nanmu | 0.82 | 0.03 | 850 | 26000 |
| Eco_225 | Bamboo_spp | 1 | 0.06 | 1150 | 19000 |
| Eco_225 | Ferns_functional | 0.9 | 0.07 | 550 | 14000 |
| Eco_223 | Pinus_massoniana | 0.7 | 0.05 | 880 | 24500 |
| Eco_223 | Pterocarya_stenoptera | 0.85 | 0.04 | 1080 | 27500 |
| Eco_223 | Quercus_fabri | 0.85 | 0.03 | 780 | 29500 |
| Eco_223 | Castanopsis_fargesii | 0.95 | 0.03 | 830 | 27500 |
| Eco_223 | Schima_superba | 0.85 | 0.04 | 930 | 25500 |
| Eco_223 | Machilus_nanmu | 1 | 0.03 | 880 | 26500 |
| Eco_223 | Bamboo_spp | 1 | 0.06 | 1180 | 19500 |
| Eco_223 | Ferns_functional | 1 | 0.07 | 580 | 14500 |
| Eco_344 | Pinus_massoniana | 0.85 | 0.05 | 920 | 25500 |
| Eco_344 | Pterocarya_stenoptera | 0.6 | 0.04 | 1020 | 26500 |
| Eco_344 | Quercus_fabri | 0.9 | 0.03 | 820 | 28500 |
| Eco_344 | Castanopsis_fargesii | 0.9 | 0.03 | 870 | 26500 |
| Eco_344 | Schima_superba | 0.7 | 0.04 | 970 | 24500 |
| Eco_344 | Machilus_nanmu | 0.55 | 0.03 | 920 | 25500 |
| Eco_344 | Bamboo_spp | 0.85 | 0.06 | 1220 | 18500 |
| Eco_344 | Ferns_functional | 0.75 | 0.07 | 620 | 13500 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_222 | Pinus_massoniana | 0.65 | 0.05 | 870 | 24000 |
| Eco_222 | Pterocarya_stenoptera | 0.6 | 0.04 | 1070 | 27000 |
| Eco_222 | Quercus_fabri | 0.8 | 0.03 | 770 | 29000 |
| Eco_222 | Castanopsis_fargesii | 0.8 | 0.03 | 820 | 27000 |
| Eco_222 | Schima_superba | 0.8 | 0.04 | 920 | 25000 |
| Eco_222 | Machilus_nanmu | 0.75 | 0.03 | 870 | 26000 |
| Eco_222 | Bamboo_spp | 0.95 | 0.06 | 1170 | 19000 |
| Eco_222 | Ferns_functional | 0.87 | 0.07 | 570 | 14000 |
| Eco_244 | Pinus_massoniana | 0.9 | 0.05 | 940 | 26000 |
| Eco_244 | Pterocarya_stenoptera | 0.65 | 0.04 | 1040 | 27000 |
| Eco_244 | Quercus_fabri | 0.95 | 0.03 | 840 | 29000 |
| Eco_244 | Castanopsis_fargesii | 0.95 | 0.03 | 890 | 27000 |
| Eco_244 | Schima_superba | 0.75 | 0.04 | 990 | 25000 |
| Eco_244 | Machilus_nanmu | 0.6 | 0.03 | 940 | 26000 |
| Eco_244 | Bamboo_spp | 0.9 | 0.06 | 1240 | 18000 |
| Eco_244 | Ferns_functional | 0.91 | 0.07 | 640 | 13000 |
| Eco_234 | Pinus_massoniana | 0.95 | 0.05 | 960 | 26500 |
| Eco_234 | Pterocarya_stenoptera | 1 | 0.04 | 1160 | 29500 |
| Eco_234 | Quercus_fabri | 1 | 0.03 | 860 | 31500 |
| Eco_234 | Castanopsis_fargesii | 0.8 | 0.03 | 910 | 27500 |
| Eco_234 | Schima_superba | 0.9 | 0.04 | 1010 | 26500 |
| Eco_234 | Machilus_nanmu | 0.75 | 0.03 | 960 | 26500 |
| Eco_234 | Bamboo_spp | 1 | 0.06 | 1260 | 20500 |
| Eco_234 | Ferns_functional | 0.95 | 0.07 | 660 | 15500 |
| Eco_243 | Pinus_massoniana | 0.8 | 0.05 | 900 | 25000 |
| Eco_243 | Pterocarya_stenoptera | 0.75 | 0.04 | 1100 | 28000 |
| Eco_243 | Quercus_fabri | 0.85 | 0.03 | 800 | 29000 |
| Eco_243 | Castanopsis_fargesii | 0.65 | 0.03 | 850 | 26000 |
| Eco_243 | Schima_superba | 0.75 | 0.04 | 950 | 25000 |
| Eco_243 | Machilus_nanmu | 0.7 | 0.03 | 900 | 25000 |
| Eco_243 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_243 | Ferns_functional | 0.9 | 0.07 | 600 | 15000 |
| Eco_245 | Pinus_massoniana | 0.82 | 0.05 | 880 | 24800 |
| Eco_245 | Pterocarya_stenoptera | 0.57 | 0.04 | 1080 | 26800 |
| Eco_245 | Quercus_fabri | 0.87 | 0.03 | 780 | 28800 |
| Eco_245 | Castanopsis_fargesii | 0.57 | 0.03 | 830 | 25800 |
| Eco_245 | Schima_superba | 0.82 | 0.04 | 930 | 24800 |
| Eco_245 | Machilus_nanmu | 0.52 | 0.03 | 880 | 24800 |
| Eco_245 | Bamboo_spp | 0.82 | 0.06 | 1180 | 18800 |
| Eco_245 | Ferns_functional | 0.87 | 0.07 | 580 | 13800 |
| Eco_235 | Pinus_massoniana | 0.88 | 0.05 | 920 | 25800 |

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|---|---|---|---|---|---|
| Eco_235 | Pterocarya_stenoptera | 0.72 | 0.04 | 1120 | 27800 |
| Eco_235 | Quercus_fabri | 1 | 0.03 | 820 | 31000 |
| Eco_235 | Castanopsis_fargesii | 0.72 | 0.03 | 870 | 26800 |
| Eco_235 | Schima_superba | 0.82 | 0.04 | 970 | 25800 |
| Eco_235 | Machilus_nanmu | 0.68 | 0.03 | 920 | 25800 |
| Eco_235 | Bamboo_spp | 0.98 | 0.06 | 1220 | 19800 |
| Eco_235 | Ferns_functional | 0.88 | 0.07 | 620 | 14800 |
| Eco_242 | Pinus_massoniana | 0.75 | 0.05 | 900 | 25000 |
| Eco_242 | Pterocarya_stenoptera | 0.75 | 0.04 | 1100 | 28000 |
| Eco_242 | Quercus_fabri | 0.8 | 0.03 | 800 | 30000 |
| Eco_242 | Castanopsis_fargesii | 0.8 | 0.03 | 850 | 28000 |
| Eco_242 | Schima_superba | 0.65 | 0.04 | 950 | 26000 |
| Eco_242 | Machilus_nanmu | 0.45 | 0.03 | 900 | 27000 |
| Eco_242 | Bamboo_spp | 0.75 | 0.06 | 1200 | 20000 |
| Eco_242 | Ferns_functional | 0.65 | 0.07 | 600 | 15000 |
| Eco_233 | Pinus_massoniana | 0.85 | 0.05 | 900 | 25000 |
| Eco_233 | Pterocarya_stenoptera | 0.9 | 0.04 | 1100 | 28000 |
| Eco_233 | Quercus_fabri | 0.9 | 0.03 | 800 | 30000 |
| Eco_233 | Castanopsis_fargesii | 0.9 | 0.03 | 850 | 28000 |
| Eco_233 | Schima_superba | 0.9 | 0.04 | 950 | 26000 |
| Eco_233 | Machilus_nanmu | 0.85 | 0.03 | 900 | 27000 |
| Eco_233 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_233 | Ferns_functional | 0.9 | 0.07 | 600 | 15000 |
| Eco_334 | Pinus_massoniana | 0.9 | 0.05 | 900 | 25000 |
| Eco_334 | Pterocarya_stenoptera | 0.75 | 0.04 | 1100 | 28000 |
| Eco_334 | Quercus_fabri | 1 | 0.03 | 800 | 30000 |
| Eco_334 | Castanopsis_fargesii | 0.75 | 0.03 | 850 | 28000 |
| Eco_334 | Schima_superba | 0.85 | 0.04 | 950 | 26000 |
| Eco_334 | Machilus_nanmu | 0.7 | 0.03 | 900 | 27000 |
| Eco_334 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_334 | Ferns_functional | 0.9 | 0.07 | 600 | 15000 |
| Eco_343 | Pinus_massoniana | 0.85 | 0.05 | 900 | 25000 |
| Eco_343 | Pterocarya_stenoptera | 0.7 | 0.04 | 1100 | 28000 |
| Eco_343 | Quercus_fabri | 0.9 | 0.03 | 800 | 30000 |
| Eco_343 | Castanopsis_fargesii | 0.7 | 0.03 | 850 | 28000 |
| Eco_343 | Schima_superba | 0.8 | 0.04 | 950 | 26000 |
| Eco_343 | Machilus_nanmu | 0.65 | 0.03 | 900 | 27000 |
| Eco_343 | Bamboo_spp | 0.95 | 0.06 | 1200 | 20000 |
| Eco_343 | Ferns_functional | 0.85 | 0.07 | 600 | 15000 |
| Eco_324 | Pinus_massoniana | 0.75 | 0.05 | 900 | 25000 |
| Eco_324 | Pterocarya_stenoptera | 0.7 | 0.04 | 1100 | 28000 |

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|---|---|---|---|---|---|
| Eco_324 | Quercus_fabri | 0.9 | 0.03 | 800 | 30000 |
| Eco_324 | Castanopsis_fargesii | 0.9 | 0.03 | 850 | 28000 |
| Eco_324 | Schima_superba | 0.8 | 0.04 | 950 | 26000 |
| Eco_324 | Machilus_nanmu | 0.85 | 0.03 | 900 | 27000 |
| Eco_324 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_324 | Ferns_functional | 0.95 | 0.07 | 600 | 15000 |
| Eco_444 | Pinus_massoniana | 0.8 | 0.05 | 900 | 25000 |
| Eco_444 | Pterocarya_stenoptera | 0.55 | 0.04 | 1100 | 28000 |
| Eco_444 | Quercus_fabri | 0.85 | 0.03 | 800 | 30000 |
| Eco_444 | Castanopsis_fargesii | 0.55 | 0.03 | 850 | 28000 |
| Eco_444 | Schima_superba | 0.65 | 0.04 | 950 | 26000 |
| Eco_444 | Machilus_nanmu | 0.5 | 0.03 | 900 | 27000 |
| Eco_444 | Bamboo_spp | 0.8 | 0.06 | 1200 | 20000 |
| Eco_444 | Ferns_functional | 0.7 | 0.07 | 600 | 15000 |
| Eco_442 | Pinus_massoniana | 0.65 | 0.05 | 900 | 25000 |
| Eco_442 | Pterocarya_stenoptera | 0.4 | 0.04 | 1100 | 28000 |
| Eco_442 | Quercus_fabri | 0.7 | 0.03 | 800 | 30000 |
| Eco_442 | Castanopsis_fargesii | 0.4 | 0.03 | 850 | 28000 |
| Eco_442 | Schima_superba | 0.5 | 0.04 | 950 | 26000 |
| Eco_442 | Machilus_nanmu | 0.35 | 0.03 | 900 | 27000 |
| Eco_442 | Bamboo_spp | 0.65 | 0.06 | 1200 | 20000 |
| Eco_442 | Ferns_functional | 0.55 | 0.07 | 600 | 15000 |
| Eco_345 | Pinus_massoniana | 0.78 | 0.05 | 900 | 25000 |
| Eco_345 | Pterocarya_stenoptera | 0.52 | 0.04 | 1100 | 28000 |
| Eco_345 | Quercus_fabri | 0.82 | 0.03 | 800 | 30000 |
| Eco_345 | Castanopsis_fargesii | 0.52 | 0.03 | 850 | 28000 |
| Eco_345 | Schima_superba | 0.62 | 0.04 | 950 | 26000 |
| Eco_345 | Machilus_nanmu | 0.48 | 0.03 | 900 | 27000 |
| Eco_345 | Bamboo_spp | 0.77 | 0.06 | 1200 | 20000 |
| Eco_345 | Ferns_functional | 0.68 | 0.07 | 600 | 15000 |
| Eco_221 | Pinus_massoniana | 0.6 | 0.05 | 900 | 25000 |
| Eco_221 | Pterocarya_stenoptera | 0.85 | 0.04 | 1100 | 28000 |
| Eco_221 | Quercus_fabri | 0.75 | 0.03 | 800 | 30000 |
| Eco_221 | Castanopsis_fargesii | 0.85 | 0.03 | 850 | 28000 |
| Eco_221 | Schima_superba | 0.75 | 0.04 | 950 | 26000 |
| Eco_221 | Machilus_nanmu | 0.9 | 0.03 | 900 | 27000 |
| Eco_221 | Bamboo_spp | 0.9 | 0.06 | 1200 | 20000 |
| Eco_221 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_241 | Pinus_massoniana | 0.7 | 0.05 | 900 | 25000 |
| Eco_241 | Pterocarya_stenoptera | 0.75 | 0.04 | 1100 | 28000 |
| Eco_241 | Quercus_fabri | 0.75 | 0.03 | 800 | 30000 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_241 | Castanopsis_fargesii | 0.55 | 0.03 | 850 | 28000 |
| Eco_241 | Schima_superba | 0.65 | 0.04 | 950 | 26000 |
| Eco_241 | Machilus_nanmu | 0.6 | 0.03 | 900 | 27000 |
| Eco_241 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_241 | Ferns_functional | 0.9 | 0.07 | 600 | 15000 |
| Eco_335 | Pinus_massoniana | 0.82 | 0.05 | 900 | 25000 |
| Eco_335 | Pterocarya_stenoptera | 0.68 | 0.04 | 1100 | 28000 |
| Eco_335 | Quercus_fabri | 0.98 | 0.03 | 800 | 30000 |
| Eco_335 | Castanopsis_fargesii | 0.95 | 0.03 | 850 | 28000 |
| Eco_335 | Schima_superba | 0.78 | 0.04 | 950 | 26000 |
| Eco_335 | Machilus_nanmu | 0.62 | 0.03 | 900 | 27000 |
| Eco_335 | Bamboo_spp | 0.92 | 0.06 | 1200 | 20000 |
| Eco_335 | Ferns_functional | 0.82 | 0.07 | 600 | 15000 |
| Eco_424 | Pinus_massoniana | 0.7 | 0.05 | 900 | 25000 |
| Eco_424 | Pterocarya_stenoptera | 0.65 | 0.04 | 1100 | 28000 |
| Eco_424 | Quercus_fabri | 0.85 | 0.03 | 800 | 30000 |
| Eco_424 | Castanopsis_fargesii | 0.85 | 0.03 | 850 | 28000 |
| Eco_424 | Schima_superba | 0.75 | 0.04 | 950 | 26000 |
| Eco_424 | Machilus_nanmu | 0.8 | 0.03 | 900 | 27000 |
| Eco_424 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_424 | Ferns_functional | 0.9 | 0.07 | 600 | 15000 |
| Eco_342 | Pinus_massoniana | 0.7 | 0.05 | 900 | 25000 |
| Eco_342 | Pterocarya_stenoptera | 0.45 | 0.04 | 1100 | 28000 |
| Eco_342 | Quercus_fabri | 0.75 | 0.03 | 800 | 30000 |
| Eco_342 | Castanopsis_fargesii | 0.45 | 0.03 | 850 | 28000 |
| Eco_342 | Schima_superba | 0.55 | 0.04 | 950 | 26000 |
| Eco_342 | Machilus_nanmu | 0.4 | 0.03 | 900 | 27000 |
| Eco_342 | Bamboo_spp | 0.7 | 0.06 | 1200 | 20000 |
| Eco_342 | Ferns_functional | 0.6 | 0.07 | 600 | 15000 |
| Eco_435 | Pinus_massoniana | 0.77 | 0.05 | 900 | 25000 |
| Eco_435 | Pterocarya_stenoptera | 0.62 | 0.04 | 1100 | 28000 |
| Eco_435 | Quercus_fabri | 0.92 | 0.03 | 800 | 30000 |
| Eco_435 | Castanopsis_fargesii | 0.92 | 0.03 | 850 | 28000 |
| Eco_435 | Schima_superba | 0.73 | 0.04 | 950 | 26000 |
| Eco_435 | Machilus_nanmu | 0.57 | 0.03 | 900 | 27000 |
| Eco_435 | Bamboo_spp | 0.88 | 0.06 | 1200 | 20000 |
| Eco_435 | Ferns_functional | 0.77 | 0.07 | 600 | 15000 |
| Eco_123 | Pinus_massoniana | 0.68 | 0.05 | 900 | 25000 |
| Eco_123 | Pterocarya_stenoptera | 0.88 | 0.04 | 1100 | 28000 |
| Eco_123 | Quercus_fabri | 0.82 | 0.03 | 800 | 30000 |
| Eco_123 | Castanopsis_fargesii | 0.92 | 0.03 | 850 | 28000 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_123 | Schima_superba | 0.82 | 0.04 | 950 | 26000 |
| Eco_123 | Machilus_nanmu | 0.98 | 0.03 | 900 | 27000 |
| Eco_123 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_123 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_125 | Pinus_massoniana | 0.75 | 0.05 | 900 | 25000 |
| Eco_125 | Pterocarya_stenoptera | 0.7 | 0.04 | 1100 | 28000 |
| Eco_125 | Quercus_fabri | 0.9 | 0.03 | 800 | 30000 |
| Eco_125 | Castanopsis_fargesii | 0.9 | 0.03 | 850 | 28000 |
| Eco_125 | Schima_superba | 0.8 | 0.04 | 950 | 26000 |
| Eco_125 | Machilus_nanmu | 0.85 | 0.03 | 900 | 27000 |
| Eco_125 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_125 | Ferns_functional | 0.95 | 0.07 | 600 | 15000 |
| Eco_434 | Pinus_massoniana | 0.85 | 0.05 | 900 | 25000 |
| Eco_434 | Pterocarya_stenoptera | 0.7 | 0.04 | 1100 | 28000 |
| Eco_434 | Quercus_fabri | 1 | 0.03 | 800 | 30000 |
| Eco_434 | Castanopsis_fargesii | 0.7 | 0.03 | 850 | 28000 |
| Eco_434 | Schima_superba | 0.65 | 0.04 | 950 | 26000 |
| Eco_434 | Machilus_nanmu | 0.95 | 0.03 | 900 | 27000 |
| Eco_434 | Bamboo_spp | 0.95 | 0.06 | 1200 | 20000 |
| Eco_434 | Ferns_functional | 0.85 | 0.07 | 600 | 15000 |
| Eco_423 | Pinus_massoniana | 0.8 | 0.05 | 900 | 25000 |
| Eco_423 | Pterocarya_stenoptera | 0.75 | 0.04 | 1100 | 28000 |
| Eco_423 | Quercus_fabri | 0.95 | 0.03 | 800 | 30000 |
| Eco_423 | Castanopsis_fargesii | 0.95 | 0.03 | 850 | 28000 |
| Eco_423 | Schima_superba | 0.85 | 0.04 | 950 | 26000 |
| Eco_423 | Machilus_nanmu | 0.9 | 0.03 | 900 | 27000 |
| Eco_423 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_423 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_422 | Pinus_massoniana | 0.55 | 0.05 | 900 | 25000 |
| Eco_422 | Pterocarya_stenoptera | 0.5 | 0.04 | 1100 | 28000 |
| Eco_422 | Quercus_fabri | 0.7 | 0.03 | 800 | 30000 |
| Eco_422 | Castanopsis_fargesii | 0.7 | 0.03 | 850 | 28000 |
| Eco_422 | Schima_superba | 0.6 | 0.04 | 950 | 26000 |
| Eco_422 | Machilus_nanmu | 0.65 | 0.03 | 900 | 27000 |
| Eco_422 | Bamboo_spp | 0.85 | 0.06 | 1200 | 20000 |
| Eco_422 | Ferns_functional | 0.75 | 0.07 | 600 | 15000 |
| Eco_323 | Pinus_massoniana | 0.75 | 0.05 | 900 | 25000 |
| Eco_323 | Pterocarya_stenoptera | 0.8 | 0.04 | 1100 | 28000 |
| Eco_323 | Quercus_fabri | 0.9 | 0.03 | 800 | 30000 |
| Eco_323 | Castanopsis_fargesii | 1 | 0.03 | 850 | 28000 |
| Eco_323 | Schima_superba | 0.9 | 0.04 | 950 | 26000 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_323 | Machilus_nanmu | 0.95 | 0.03 | 900 | 27000 |
| Eco_323 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_323 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_325 | Pinus_massoniana | 0.68 | 0.05 | 900 | 25000 |
| Eco_325 | Pterocarya_stenoptera | 0.62 | 0.04 | 1100 | 28000 |
| Eco_325 | Quercus_fabri | 0.82 | 0.03 | 800 | 30000 |
| Eco_325 | Castanopsis_fargesii | 0.82 | 0.03 | 850 | 28000 |
| Eco_325 | Schima_superba | 0.72 | 0.04 | 950 | 26000 |
| Eco_325 | Machilus_nanmu | 0.78 | 0.03 | 900 | 27000 |
| Eco_325 | Bamboo_spp | 0.97 | 0.06 | 1200 | 20000 |
| Eco_325 | Ferns_functional | 0.88 | 0.07 | 600 | 15000 |
| Eco_143 | Pinus_massoniana | 0.78 | 0.05 | 900 | 25000 |
| Eco_143 | Pterocarya_stenoptera | 0.78 | 0.04 | 1100 | 28000 |
| Eco_143 | Quercus_fabri | 0.78 | 0.03 | 800 | 30000 |
| Eco_143 | Castanopsis_fargesii | 0.62 | 0.03 | 850 | 28000 |
| Eco_143 | Schima_superba | 0.73 | 0.04 | 950 | 26000 |
| Eco_143 | Machilus_nanmu | 0.68 | 0.03 | 900 | 27000 |
| Eco_143 | Bamboo_spp | 0.92 | 0.06 | 1200 | 20000 |
| Eco_143 | Ferns_functional | 0.92 | 0.07 | 600 | 15000 |
| Eco_124 | Pinus_massoniana | 0.77 | 0.05 | 900 | 25000 |
| Eco_124 | Pterocarya_stenoptera | 0.77 | 0.04 | 1100 | 28000 |
| Eco_124 | Quercus_fabri | 0.92 | 0.03 | 800 | 30000 |
| Eco_124 | Castanopsis_fargesii | 0.98 | 0.03 | 850 | 28000 |
| Eco_124 | Schima_superba | 0.88 | 0.04 | 950 | 26000 |
| Eco_124 | Machilus_nanmu | 0.92 | 0.03 | 900 | 27000 |
| Eco_124 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_124 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_133 | Pinus_massoniana | 0.82 | 0.05 | 900 | 25000 |
| Eco_133 | Pterocarya_stenoptera | 0.92 | 0.04 | 1100 | 28000 |
| Eco_133 | Quercus_fabri | 0.98 | 0.03 | 800 | 30000 |
| Eco_133 | Castanopsis_fargesii | 0.77 | 0.03 | 850 | 28000 |
| Eco_133 | Schima_superba | 0.88 | 0.04 | 950 | 26000 |
| Eco_133 | Machilus_nanmu | 0.82 | 0.03 | 900 | 27000 |
| Eco_133 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_133 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_425 | Pinus_massoniana | 0.62 | 0.05 | 900 | 25000 |
| Eco_425 | Pterocarya_stenoptera | 0.57 | 0.04 | 1100 | 28000 |
| Eco_425 | Quercus_fabri | 0.77 | 0.03 | 800 | 30000 |
| Eco_425 | Castanopsis_fargesii | 0.78 | 0.03 | 850 | 28000 |
| Eco_425 | Schima_superba | 0.68 | 0.04 | 950 | 26000 |
| Eco_425 | Machilus_nanmu | 0.72 | 0.03 | 900 | 27000 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_425 | Bamboo_spp | 0.92 | 0.06 | 1200 | 20000 |
| Eco_425 | Ferns_functional | 0.82 | 0.07 | 600 | 15000 |
| Eco_333 | Pinus_massoniana | 0.9 | 0.05 | 900 | 25000 |
| Eco_333 | Pterocarya_stenoptera | 0.85 | 0.04 | 1100 | 28000 |
| Eco_333 | Quercus_fabri | 1 | 0.03 | 800 | 30000 |
| Eco_333 | Castanopsis_fargesii | 0.85 | 0.03 | 850 | 28000 |
| Eco_333 | Schima_superba | 0.95 | 0.04 | 950 | 26000 |
| Eco_333 | Machilus_nanmu | 0.88 | 0.03 | 900 | 27000 |
| Eco_333 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_333 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_322 | Pinus_massoniana | 0.68 | 0.05 | 900 | 25000 |
| Eco_322 | Pterocarya_stenoptera | 0.55 | 0.04 | 1100 | 28000 |
| Eco_322 | Quercus_fabri | 0.75 | 0.03 | 800 | 30000 |
| Eco_322 | Castanopsis_fargesii | 0.75 | 0.03 | 850 | 28000 |
| Eco_322 | Schima_superba | 0.65 | 0.04 | 950 | 26000 |
| Eco_322 | Machilus_nanmu | 0.77 | 0.03 | 900 | 27000 |
| Eco_322 | Bamboo_spp | 0.9 | 0.06 | 1200 | 20000 |
| Eco_322 | Ferns_functional | 0.8 | 0.07 | 600 | 15000 |
| Eco_431 | Pinus_massoniana | 0.85 | 0.05 | 900 | 25000 |
| Eco_431 | Pterocarya_stenoptera | 0.9 | 0.04 | 1100 | 28000 |
| Eco_431 | Quercus_fabri | 1 | 0.03 | 800 | 30000 |
| Eco_431 | Castanopsis_fargesii | 0.8 | 0.03 | 850 | 28000 |
| Eco_431 | Schima_superba | 0.9 | 0.04 | 950 | 26000 |
| Eco_431 | Machilus_nanmu | 0.85 | 0.03 | 900 | 27000 |
| Eco_431 | Bamboo_spp | 1 | 0.06 | 1200 | 20000 |
| Eco_431 | Ferns_functional | 1 | 0.07 | 600 | 15000 |
| Eco_224 | Phoebe_zhennan | 0.85 | 0.03 | 900 | 27000 |
| Eco_224 | Pistacia_chinensis | 0.88 | 0.04 | 950 | 26000 |
| Eco_224 | Ulmus_parvifolia | 0.82 | 0.04 | 1000 | 25000 |
| Eco_224 | Cyclobalanopsis glaucoides | 0.9 | 0.03 | 850 | 28000 |
| Eco_225 | Phoebe_zhennan | 0.83 | 0.03 | 880 | 26500 |
| Eco_225 | Pistacia_chinensis | 0.86 | 0.04 | 930 | 25500 |
| Eco_225 | Ulmus_parvifolia | 0.8 | 0.04 | 980 | 24500 |
| Eco_225 | Cyclobalanopsis glaucoides | 0.88 | 0.03 | 830 | 27500 |
| Eco_223 | Phoebe_zhennan | 0.9 | 0.03 | 920 | 27500 |
| Eco_223 | Pistacia_chinensis | 0.87 | 0.04 | 970 | 26500 |
| Eco_223 | Ulmus_parvifolia | 0.9 | 0.04 | 1020 | 25500 |
| Eco_223 | Cyclobalanopsis glaucoides | 1 | 0.03 | 870 | 28500 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_344 | Phoebe_zhennan | 0.78 | 0.03 | 850 | 26000 |
| Eco_344 | Pistacia_chinensis | 0.9 | 0.04 | 900 | 25000 |
| Eco_344 | Ulmus_parvifolia | 0.8 | 0.04 | 950 | 24000 |
| Eco_344 | Cyclobalanopsis glaucoides | 0.85 | 0.03 | 800 | 27000 |
| Eco_222 | Phoebe_zhennan | 0.84 | 0.03 | 860 | 26500 |
| Eco_222 | Pistacia_chinensis | 0.82 | 0.04 | 910 | 25500 |
| Eco_222 | Ulmus_parvifolia | 0.82 | 0.04 | 960 | 24500 |
| Eco_222 | Cyclobalanopsis glaucoides | 0.86 | 0.03 | 810 | 27500 |
| Eco_244 | Phoebe_zhennan | 0.8 | 0.03 | 870 | 26000 |
| Eco_244 | Pistacia_chinensis | 0.92 | 0.04 | 920 | 25000 |
| Eco_244 | Ulmus_parvifolia | 0.87 | 0.04 | 970 | 24000 |
| Eco_244 | Cyclobalanopsis glaucoides | 0.87 | 0.03 | 820 | 27000 |
| Eco_234 | Phoebe_zhennan | 0.88 | 0.03 | 900 | 27000 |
| Eco_234 | Pistacia_chinensis | 0.9 | 0.04 | 950 | 26000 |
| Eco_234 | Ulmus_parvifolia | 0.86 | 0.04 | 1000 | 25000 |
| Eco_234 | Cyclobalanopsis glaucoides | 0.91 | 0.03 | 850 | 28000 |
| Eco_243 | Phoebe_zhennan | 0.83 | 0.03 | 880 | 26500 |
| Eco_243 | Pistacia_chinensis | 0.91 | 0.04 | 930 | 25500 |
| Eco_243 | Ulmus_parvifolia | 0.83 | 0.04 | 980 | 24500 |
| Eco_243 | Cyclobalanopsis glaucoides | 0.88 | 0.03 | 830 | 27500 |
| Eco_245 | Phoebe_zhennan | 0.77 | 0.03 | 840 | 25500 |
| Eco_245 | Pistacia_chinensis | 0.88 | 0.04 | 890 | 24500 |
| Eco_245 | Ulmus_parvifolia | 0.83 | 0.04 | 940 | 23500 |
| Eco_245 | Cyclobalanopsis glaucoides | 0.82 | 0.03 | 790 | 26500 |
| Eco_235 | Phoebe_zhennan | 0.87 | 0.03 | 890 | 26800 |
| Eco_235 | Pistacia_chinensis | 0.92 | 0.04 | 940 | 25800 |
| Eco_235 | Ulmus_parvifolia | 0.85 | 0.04 | 990 | 24800 |
| Eco_235 | Cyclobalanopsis glaucoides | 0.9 | 0.03 | 840 | 27800 |
| Eco_242 | Phoebe_zhennan | 0.75 | 0.03 | 850 | 26000 |
| Eco_242 | Pistacia_chinensis | 0.86 | 0.04 | 900 | 25000 |
| Eco_242 | Ulmus_parvifolia | 0.76 | 0.04 | 950 | 24000 |
| Eco_242 | Cyclobalanopsis glaucoides | 0.8 | 0.03 | 800 | 27000 |
| Eco_233 | Phoebe_zhennan | 0.9 | 0.03 | 920 | 27500 |
| Eco_233 | Pistacia_chinensis | 0.89 | 0.04 | 970 | 26500 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_233 | Ulmus_parvifolia | 0.86 | 0.04 | 1020 | 25500 |
| Eco_233 | Cyclobalanopsis glaucoides | 0.91 | 0.03 | 870 | 28500 |
| Eco_334 | Phoebe_zhennan | 0.87 | 0.03 | 900 | 27000 |
| Eco_334 | Pistacia_chinensis | 0.91 | 0.04 | 950 | 26000 |
| Eco_334 | Ulmus_parvifolia | 0.85 | 0.04 | 1000 | 25000 |
| Eco_334 | Cyclobalanopsis glaucoides | 0.9 | 0.03 | 850 | 28000 |
| Eco_343 | Phoebe_zhennan | 0.82 | 0.03 | 880 | 26500 |
| Eco_343 | Pistacia_chinensis | 0.92 | 0.04 | 930 | 25500 |
| Eco_343 | Ulmus_parvifolia | 0.84 | 0.04 | 980 | 24500 |
| Eco_343 | Cyclobalanopsis glaucoides | 0.88 | 0.03 | 830 | 27500 |
| Eco_324 | Phoebe_zhennan | 0.88 | 0.03 | 900 | 27000 |
| Eco_324 | Pistacia_chinensis | 0.88 | 0.04 | 950 | 26000 |
| Eco_324 | Ulmus_parvifolia | 0.85 | 0.04 | 1000 | 25000 |
| Eco_324 | Cyclobalanopsis glaucoides | 0.9 | 0.03 | 850 | 28000 |
| Eco_444 | Phoebe_zhennan | 0.77 | 0.03 | 850 | 26000 |
| Eco_444 | Pistacia_chinensis | 0.89 | 0.04 | 900 | 25000 |
| Eco_444 | Ulmus_parvifolia | 0.86 | 0.04 | 950 | 24000 |
| Eco_444 | Cyclobalanopsis glaucoides | 0.83 | 0.03 | 800 | 27000 |
| Eco_442 | Phoebe_zhennan | 0.72 | 0.03 | 840 | 25500 |
| Eco_442 | Pistacia_chinensis | 0.85 | 0.04 | 890 | 24500 |
| Eco_442 | Ulmus_parvifolia | 0.74 | 0.04 | 940 | 23500 |
| Eco_442 | Cyclobalanopsis glaucoides | 0.78 | 0.03 | 790 | 26500 |
| Eco_345 | Phoebe_zhennan | 0.76 | 0.03 | 840 | 25500 |
| Eco_345 | Pistacia_chinensis | 0.87 | 0.04 | 890 | 24500 |
| Eco_345 | Ulmus_parvifolia | 0.77 | 0.04 | 940 | 23500 |
| Eco_345 | Cyclobalanopsis glaucoides | 0.81 | 0.03 | 790 | 26500 |
| Eco_221 | Phoebe_zhennan | 0.88 | 0.03 | 900 | 27000 |
| Eco_221 | Pistacia_chinensis | 0.84 | 0.04 | 950 | 26000 |
| Eco_221 | Ulmus_parvifolia | 0.83 | 0.04 | 1000 | 25000 |
| Eco_221 | Cyclobalanopsis glaucoides | 0.9 | 0.03 | 850 | 28000 |
| Eco_241 | Phoebe_zhennan | 0.84 | 0.03 | 880 | 26500 |
| Eco_241 | Pistacia_chinensis | 1 | 0.04 | 930 | 25500 |
| Eco_241 | Ulmus_parvifolia | 0.82 | 0.04 | 980 | 24500 |
| Eco_241 | Cyclobalanopsis | 0.87 | 0.03 | 830 | 27500 |

| | | | | | |
|---|---|---|---|---|---|
| | glaucoides | | | | |
| Eco_335 | Phoebe_zhennan | 0.85 | 0.03 | 880 | 26500 |
| Eco_335 | Pistacia_chinensis | 0.91 | 0.04 | 930 | 25500 |
| Eco_335 | Ulmus_parvifolia | 0.94 | 0.04 | 980 | 24500 |
| Eco_335 | Cyclobalanopsis glaucoides | 0.89 | 0.03 | 830 | 27500 |
| Eco_424 | Phoebe_zhennan | 0.86 | 0.03 | 880 | 26500 |
| Eco_424 | Pistacia_chinensis | 0.87 | 0.04 | 930 | 25500 |
| Eco_424 | Ulmus_parvifolia | 0.86 | 0.04 | 980 | 24500 |
| Eco_424 | Cyclobalanopsis glaucoides | 0.88 | 0.03 | 830 | 27500 |
| Eco_342 | Phoebe_zhennan | 0.72 | 0.03 | 840 | 25500 |
| Eco_342 | Pistacia_chinensis | 0.85 | 0.04 | 890 | 24500 |
| Eco_342 | Ulmus_parvifolia | 0.74 | 0.04 | 940 | 23500 |
| Eco_342 | Cyclobalanopsis glaucoides | 0.78 | 0.03 | 790 | 26500 |
| Eco_435 | Phoebe_zhennan | 0.82 | 0.03 | 880 | 26500 |
| Eco_435 | Pistacia_chinensis | 0.9 | 0.04 | 930 | 25500 |
| Eco_435 | Ulmus_parvifolia | 0.82 | 0.04 | 980 | 24500 |
| Eco_435 | Cyclobalanopsis glaucoides | 0.86 | 0.03 | 830 | 27500 |
| Eco_123 | Phoebe_zhennan | 0.92 | 0.03 | 920 | 27500 |
| Eco_123 | Pistacia_chinensis | 0.86 | 0.04 | 970 | 26500 |
| Eco_123 | Ulmus_parvifolia | 0.85 | 0.04 | 1020 | 25500 |
| Eco_123 | Cyclobalanopsis glaucoides | 0.94 | 0.03 | 870 | 28500 |
| Eco_125 | Phoebe_zhennan | 1 | 0.03 | 940 | 28000 |
| Eco_125 | Pistacia_chinensis | 0.88 | 0.04 | 990 | 27000 |
| Eco_125 | Ulmus_parvifolia | 0.96 | 0.04 | 1040 | 26000 |
| Eco_125 | Cyclobalanopsis glaucoides | 0.91 | 0.03 | 890 | 29000 |
| Eco_434 | Phoebe_zhennan | 0.87 | 0.03 | 900 | 27000 |
| Eco_434 | Pistacia_chinensis | 0.92 | 0.04 | 950 | 26000 |
| Eco_434 | Ulmus_parvifolia | 0.85 | 0.04 | 1000 | 25000 |
| Eco_434 | Cyclobalanopsis glaucoides | 0.9 | 0.03 | 850 | 28000 |
| Eco_423 | Phoebe_zhennan | 0.9 | 0.03 | 920 | 27500 |
| Eco_423 | Pistacia_chinensis | 0.89 | 0.04 | 970 | 26500 |
| Eco_423 | Ulmus_parvifolia | 0.86 | 0.04 | 1020 | 25500 |
| Eco_423 | Cyclobalanopsis glaucoides | 0.92 | 0.03 | 870 | 28500 |
| Eco_422 | Phoebe_zhennan | 0.8 | 0.03 | 850 | 26000 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_422 | Pistacia_chinensis | 0.82 | 0.04 | 900 | 25000 |
| Eco_422 | Ulmus_parvifolia | 0.77 | 0.04 | 950 | 24000 |
| Eco_422 | Cyclobalanopsis glaucoides | 0.82 | 0.03 | 800 | 27000 |
| Eco_323 | Phoebe_zhennan | 0.92 | 0.03 | 920 | 27500 |
| Eco_323 | Pistacia_chinensis | 0.89 | 0.04 | 970 | 26500 |
| Eco_323 | Ulmus_parvifolia | 1 | 0.04 | 1020 | 25500 |
| Eco_323 | Cyclobalanopsis glaucoides | 0.94 | 0.03 | 870 | 28500 |
| Eco_325 | Phoebe_zhennan | 0.86 | 0.03 | 880 | 26500 |
| Eco_325 | Pistacia_chinensis | 0.88 | 0.04 | 930 | 25500 |
| Eco_325 | Ulmus_parvifolia | 0.83 | 0.04 | 980 | 24500 |
| Eco_325 | Cyclobalanopsis glaucoides | 0.88 | 0.03 | 830 | 27500 |
| Eco_143 | Phoebe_zhennan | 0.82 | 0.03 | 880 | 26500 |
| Eco_143 | Pistacia_chinensis | 0.9 | 0.04 | 930 | 25500 |
| Eco_143 | Ulmus_parvifolia | 0.82 | 0.04 | 980 | 24500 |
| Eco_143 | Cyclobalanopsis glaucoides | 0.86 | 0.03 | 830 | 27500 |
| Eco_124 | Phoebe_zhennan | 0.91 | 0.03 | 900 | 27000 |
| Eco_124 | Pistacia_chinensis | 0.89 | 0.04 | 950 | 26000 |
| Eco_124 | Ulmus_parvifolia | 0.95 | 0.04 | 1000 | 25000 |
| Eco_124 | Cyclobalanopsis glaucoides | 0.94 | 0.03 | 850 | 28000 |
| Eco_133 | Phoebe_zhennan | 0.9 | 0.03 | 900 | 27000 |
| Eco_133 | Pistacia_chinensis | 1 | 0.04 | 950 | 26000 |
| Eco_133 | Ulmus_parvifolia | 0.94 | 0.04 | 1000 | 25000 |
| Eco_133 | Cyclobalanopsis glaucoides | 0.91 | 0.03 | 850 | 28000 |
| Eco_425 | Phoebe_zhennan | 0.81 | 0.03 | 860 | 26500 |
| Eco_425 | Pistacia_chinensis | 0.87 | 0.04 | 910 | 25500 |
| Eco_425 | Ulmus_parvifolia | 0.8 | 0.04 | 960 | 24500 |
| Eco_425 | Cyclobalanopsis glaucoides | 0.84 | 0.03 | 810 | 27500 |
| Eco_333 | Phoebe_zhennan | 0.92 | 0.03 | 920 | 27500 |
| Eco_333 | Pistacia_chinensis | 0.92 | 0.04 | 970 | 26500 |
| Eco_333 | Ulmus_parvifolia | 0.96 | 0.04 | 1020 | 25500 |
| Eco_333 | Cyclobalanopsis glaucoides | 1 | 0.03 | 870 | 28500 |
| Eco_322 | Phoebe_zhennan | 0.8 | 0.03 | 850 | 26000 |
| Eco_322 | Pistacia_chinensis | 0.83 | 0.04 | 900 | 25000 |
| Eco_322 | Ulmus_parvifolia | 0.82 | 0.04 | 950 | 24000 |

| | | | | | |
|---|---|---|---|---|---|
| Eco_322 | Cyclobalanopsis glaucoides | 0.83 | 0.03 | 800 | 27000 |
| Eco_431 | Phoebe_zhennan | 0.9 | 0.03 | 920 | 27500 |
| Eco_431 | Pistacia_chinensis | 0.9 | 0.04 | 970 | 26500 |
| Eco_431 | Ulmus_parvifolia | 0.89 | 0.04 | 1020 | 25500 |
| Eco_431 | Cyclobalanopsis glaucoides | 1 | 0.03 | 870 | 28500 |

**Note:** ProbEstablish represents relative species establishment suitability among topographically defined site types and is bounded between 0 and 1. ProbMortality represents species-specific mortality probability and was held constant among site types for each species. ANPPmax and Biomassmax represent the maximum aboveground net primary productivity and aboveground biomass parameters used by the Biomass Succession extension, respectively. Site-specific ProbEstablish, ANPPmax, and Biomassmax values were derived using the literature-informed and topography-adjusted procedure described in Supplementary Methods S1. Eight species or functional groups were represented in S1, whereas four additional tree species were available for introduction under S2.

**Table S3** *Sensitivity of RPI spatial prioritization to alternative component weights*

| Scheme | SRI weight | FRI weight | CSI weight | Spearman ρ vs. baseline | Lowest 5% Jaccard | Lowest 5% retained (%) | Lowest 10% Jaccard | Lowest 10% retained (%) | Lowest 20% Jaccard | Lowest 20% retained (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| W0 Baseline | 0.400 | 0.400 | 0.200 | 1.000 | 1.000 | 100.0 | 1.000 | 100.0 | 1.000 | 100.0 |
| W1 Equal weighting | 0.333 | 0.333 | 0.333 | 0.997 | 0.955 | 97.7 | 0.989 | 99.5 | 0.979 | 99.0 |
| W2 Structural emphasis | 0.500 | 0.300 | 0.200 | 0.968 | 0.941 | 97.0 | 0.933 | 96.5 | 0.859 | 92.4 |
| W3 Functional emphasis | 0.300 | 0.500 | 0.200 | 0.967 | 0.949 | 97.4 | 0.946 | 97.2 | 0.857 | 92.3 |
| W4 | 0.300 | 0.300 | 0.400 | 0.993 | 0.930 | 96.3 | 0.983 | 99.2 | 0.972 | 98.6 |

| Community emphasis | | | | |
|---|---|---|---|---|

**Note:** W0 represents the weighting scheme used in the main analysis. All RPI surfaces were subjected to the same focal-statistics procedure using the median within a circular neighborhood of three cells in radius. Spearman's $\rho$ quantifies pixel-wise agreement in relative RPI ranking between each alternative scheme and W0. Jaccard similarity was calculated as the intersection divided by the union of priority cells identified under the two weighting schemes. "Retained" denotes the percentage of W0 priority cells that remained within the corresponding lowest-ranked RPI fraction under an alternative weighting scheme. Rank-based fractions rather than fixed absolute RPI thresholds were used for sensitivity testing to avoid confounding changes in component weights with shifts in the numerical RPI distribution.

**Table S4** Reference CF values for major tree species

| Species | CF | Species | CF |
|---|---|---|---|
| *Pinus massoniana* | 0.460 | *Pistacia chinensis* Bunge | 0.497 |
| *Pterocarya stenoptera* | 0.485 | *Ulmus parvifolia* | 0.497 |
| *Quercus fabri* Hance | 0.497 | *Cyclobalanopsis glaucoides* | 0.497 |
| *Castanopsis fargesii* | 0.497 | *Phoebe zhennan* | 0.503 |
| *Schima superba* | 0.497 | Bamboo | 0.470 |
| *Machilus nanmu* | 0.503 | Fern | 0.470 |

**Table S5** Candidate restoration measures associated with recovery-potential and site-condition classes. These measures represent management recommendations synthesized from site conditions and restoration literature; only targeted planting was explicitly evaluated in the S2 simulation.

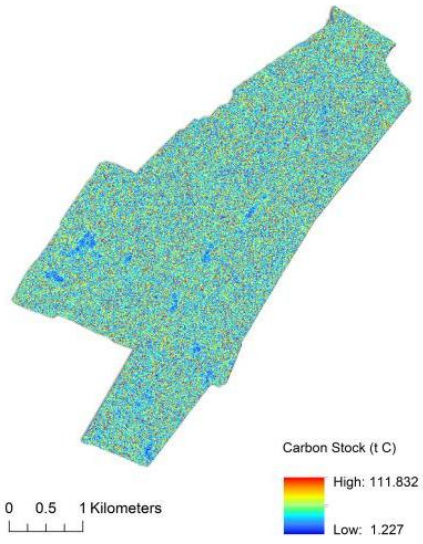
| Number | Measure | RPI | Land | Site Conditions |
|---|---|---|---|---|

| | | | | Slope | | | | Aspect | | | Slope position | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | gentle slope | steep slope | abrupt slope | hazardous slope | shady slope | sunny slope | semi-shaded slope | ridge | upper slope position | middle slope position | lower slope position | valley |
| Direction 1: Restoration of plant communities | | | | | | | | | | | | | | | |
| *A1* | ***A1a (Pterocarya stenoptera)*** | 12 | 1267 | ✓ | ✓ | ✓ | ✓ | • | ✓ | • | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ***A1b (Schima superba)*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | • | • | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ***A1c (Phoebe zhennan)*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | • | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ***A1d (Pistacia chinensis Bunge)*** | | | ✓ | ✓ | ✓ | ✓ | • | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ***A1e (Ulmus parvifolia)*** | | | ✓ | ✓ | ✓ | ✓ | • | ✓ | • | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ***A1f (Cyclobalanopsis glaucoides)*** | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| A2 | Plant herbaceous and shrub species with deep roots and tolerance to poor soil | 12 | 12 | ✓ | ✓ | • | • | | | | ✓ | ✓ | ✓ | ✓ | • |
| A3 | Drone sowing of pioneer plant seeds | 12 | 67 | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| A4 | Replant fire-resistant tree species | 23 | 345 | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| A5 | Regularly cut down bamboo rhizomes | 12 | 456 | ✓ | ✓ | • | • | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| A6 | Plant nectar plants | 12 | 567 | ✓ | ✓ | • | • | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| A7 | Continuous monitoring and standardized felling | 123 | 134 | ✓ | ✓ | • | • | | | | ✓ | ✓ | ✓ | ✓ | ✓ |

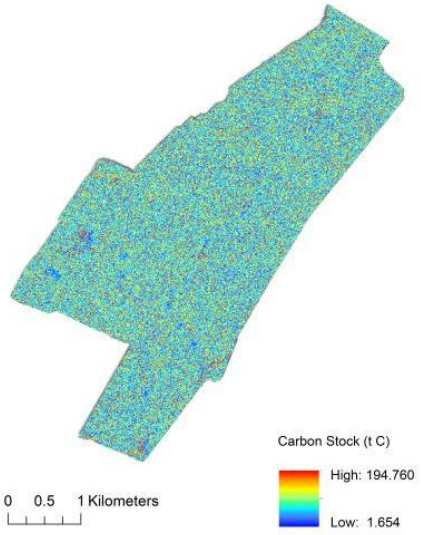
| Number | Measure | RPI | Land Cover | Site Conditions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Slope | | | | Aspect | | | Slope position | | | | | |
| | | | | gentle slope | steep slope | abrupt slope | hazardous slope | shady slope | sunny slope | semi-shaded slope | ridge | upper slope position | middle slope position | lower slope position | valley |
| | of burned wood | | | | | | | | | | | | | | |
| A8 | Drone and manual sowing of shade-tolerant tree species into fern-dominated areas | 12 | 67 | ✓ | ✓ | ✓ | ✓ | ✓ | • | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| A9 | Construct firebreaks and fire isolation belts | 123 | 12567 | ✓ | ✓ | ✓ | ✓ | | | | ✓ | ✓ | | • | ✓ |
| A10 | Manual and mechanical thinning and clearing of mid-story vegetation | 3 | 3 | ✓ | ✓ | • | • | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| A11 | Fuel reduction | 23 | 345 | | | | | | | | | | | | |
| A12 | Set up fire watchtowers and install fire monitoring equipment | 23 | 345 | | | | | | | | ✓ | ✓ | • | • | • |
| | Direction 2: Construction of key biological habitats | | | | | | | | | | | | | | |
| B1 | Manually clear the combustion residues | 12 | 15 | ✓ | ✓ | • | • | | | | | | | | |
| B2 | Retain combustion residues | 23 | 234 | ✓ | ✓ | ✓ | ✓ | | | | | | | | |
| B3 | Partially remove combustion residues | 12 | 23467 | ✓ | ✓ | ✓ | ✓ | | | | | | | | |
| B4 | Introduce artificial nest boxes or bird nests | 23 | 67 | ✓ | ✓ | • | • | ✓ | • | • | • | • | ✓ | ✓ | ✓ |
| B5 | Add bat boxes | 23 | 67 | ✓ | ✓ | • | • | • | ✓ | ✓ | ✓ | ✓ | ✓ | • | • |

| Number | Measure | RPI | Land Cover | Site Conditions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Slope | | | | Aspect | | | Slope position | | | | | |
| | | | | gentle slope | steep slope | abrupt slope | hazardous slope | shady slope | sunny slope | semi-shaded slope | ridge | upper slope position | middle slope position | lower slope position | valley | |
| B6 | Remove pest-infested wood | 1 | 34 | | | | | | | | | | | | | |

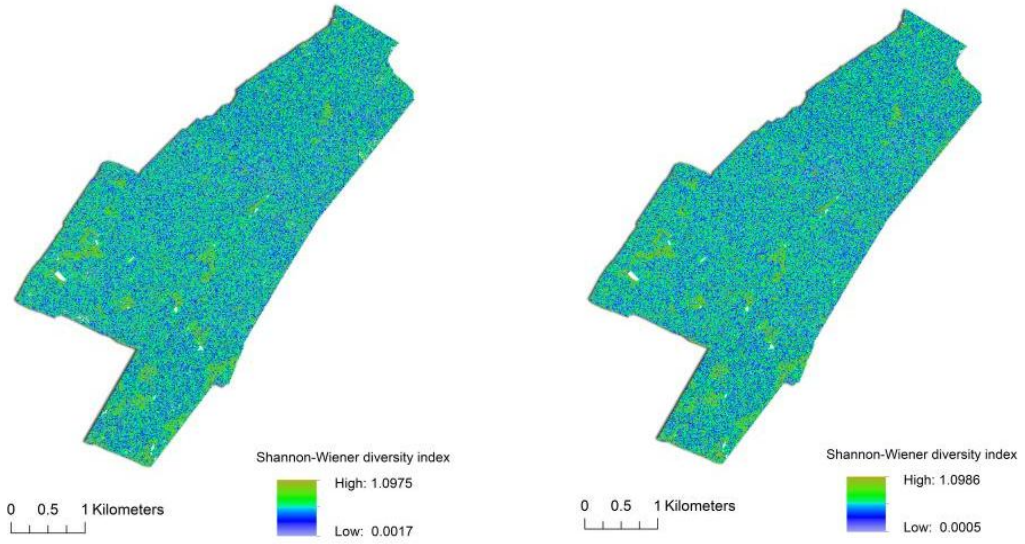
**Note:** For ease of presentation, the RPI was coded as follows: 1 (low-RPI areas), 2 (moderate-RPI areas), 3 (high-RPI areas). Land cover was coded as follows: 1 (high-severity burned area), 2 (bare ground area), 3 (relatively stable area), 4 (trees-dominated area), 5 (bamboos-dominated area), 6 (area dominated by ferns with a few trees and bamboos), 7 (fern-dominated area). "√" indicates that this measure is applicable to the site conditions. "●" indicates that this measure does not apply to the site conditions. Blank space indicates that this measure has no necessary connection with this indicator. Due to space limitations, only two intervention directions are listed as examples.




*(a) Carbon stock-S1*




*(b) Carbon stock-S2*




*(c) H'-S1* *(d) H'-S2*

**Fig. S1** Spatial distributions of aboveground carbon stock and Shannon-Wiener diversity under S1 and S2 at simulation year 100 (2124)

**Note:** (a, b) Aboveground carbon stock at simulation year 100 (2124) under S1 and S2; (c, d) Shannon-Wiener diversity index (H') at year 100 under S1 and S2, respectively.