**Table S5.** The phylogenetic dispersion of species diversity repeller at each scale of the nine forest dynamics plots based on NRI and NTI.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Radius(m) | Ailaoshan | BCI | Edoro-1 | Edoro-2 | Korup | Lenda-1 | Lenda-2 | Wabikon Lake | Xishuangbanna |
| 1 | C | O | C | R | C | R | R | C | C |
| 2 | C | O | C | R | C | C | C | O | O |
| 3 | C | O | C | O | C | C | C | O | C |
| 4 | C | O | R | R | C | C | C | O | C |
| 5 | C | O | R | R | C | R | C | R | C |
| 6 | C | O | R | R | C | R | C | O | C |
| 7 | C | O | R | R | C | R | C | O | C |
| 8 | C | O | C | R | C | R | C | O | C |
| 9 | C | O | C | R | C | R | R | O | C |
| 10 | C | O | C | R | C | R | R | O | C |
| 11 | R | O | C | C | C | R | R | O | C |
| 12 | R | O | C | C | C | R | R | O | C |
| 13 | R | O | C | R | C | R | R | O | C |
| 14 | R | O | C | - | C | R | R | O | C |
| 15 | C | O | R | - | C | R | C | O | C |
| 16 | C | O | R | - | C | R | C | O | C |
| 17 | C | O | C | - | C | R | C | O | C |
| 18 | C | O | R | - | C | R | C | O | C |
| 19 | R | O | R | - | C | R | R | R | C |
| 20 | C | O | R | - | C | R | R | R | C |
| 21 | - | O | C | - | O | C | R | R | C |
| 22 | C | C | C | - | O | R | C | R | C |
| 23 | R | O | C | - | O | R | R | R | C |
| 24 | - | C | R | - | O | R | R | R | C |
| 25 | - | C | C | - | O | R | R | - | C |
| 26 | - | C | C | - | O | R | R | - | O |
| 27 | - | C | C | - | O | - | R | - | O |
| 28 | - | C | C | - | O | - | R | - | C |
| 29 | - | O | C | - | O | - | - | - | C |
| 30 | - | C | C | - | O | - | C | - | C |
| 31 | - | C | C | - | O | - | - | - | C |
| 32 | - | C | C | - | O | - | - | - | C |
| 33 | - | C | C | - | C | - | R | - | C |
| 34 | - | C | C | - | O | - | - | - | C |
| 35 | - | C | C | - | C | - | R | - | C |
| 36 | - | C | R | - | C | - | - | - | C |
| 37 | - | C | R | - | C | - | - | - | O |
| 38 | - | C | R | - | C | - | - | - | O |
| 39 | - | C | R | - | C | - | - | - | O |
| 40 | - | C | R | - | C | - | - | - | O |
| 41 | - | C | R | - | C | - | - | - | C |
| 42 | - | C | R | - | C | - | - | - | C |
| 43 | - | R | R | - | C | - | - | - | C |
| 44 | R | C | R | - | C | - | - | - | C |
| 45 | R | C | R | - | R | - | - | - | C |
| 46 | R | R | R | - | R | - | - | - | C |
| 47 | - | R | R | - | - | - | - | - | O |
| 48 | - | - | R | - | - | - | - | - | O |
| 49 | - | R | R | - | - | - | - | - | O |
| 50 | - | R | R | - | - | - | - | - | O |

C, R and O are three types of phylogenetic dispersion of group “species diversity repeller”. C represents phylogenetic clustering, O represents phylogenetic overdispersion, R represents phylogenetic random and ‘-’ represent no species at this scale.