

Supplementary Materials

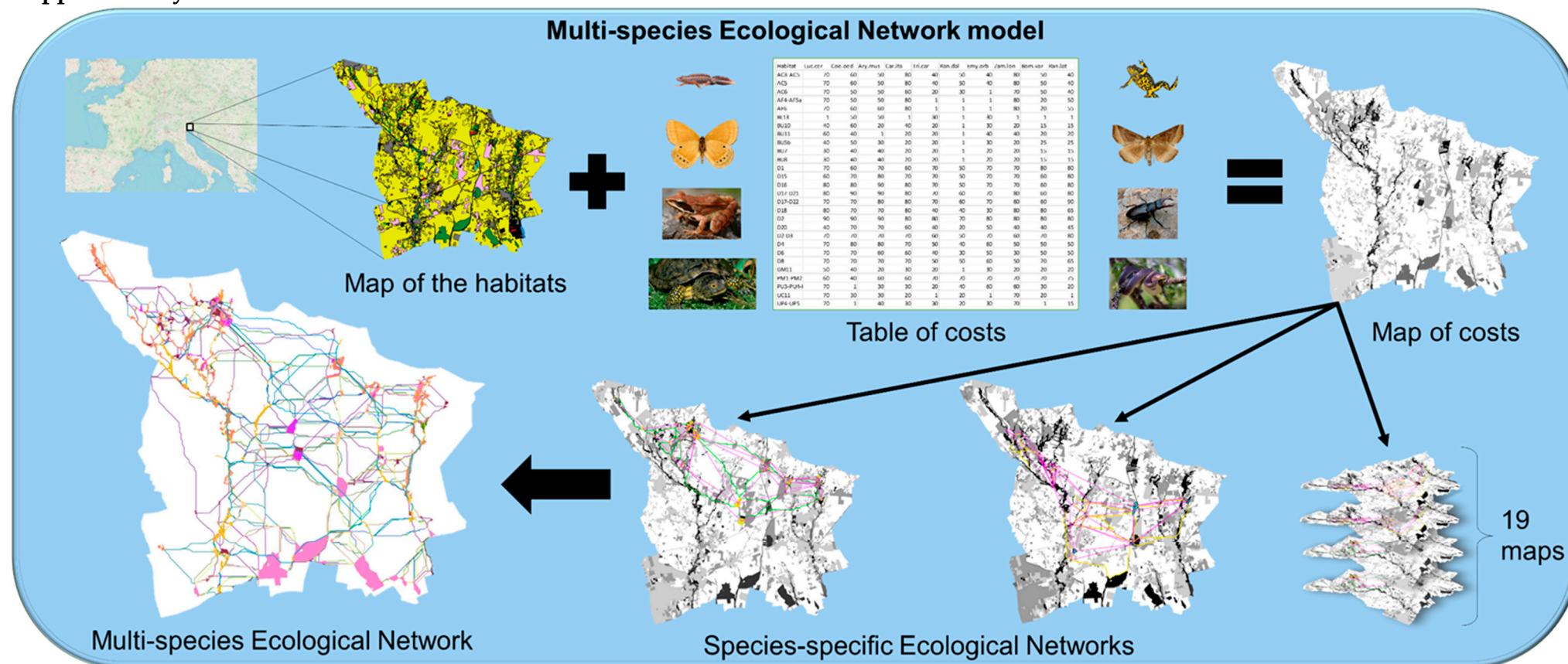


Figure S1. Flow chart of the main steps applied to model the multi-species Ecological Network: starting from a map of the habitat types of the study area and combining it with a table of costs (time and effort to travel through an environment) it was obtained a map of costs for all 10 animal species and 9 plant communities (habitats) present in the landscape. From the overlay of all species-specific networks the multi-species ecological network was obtained as the sum of all identified elements.

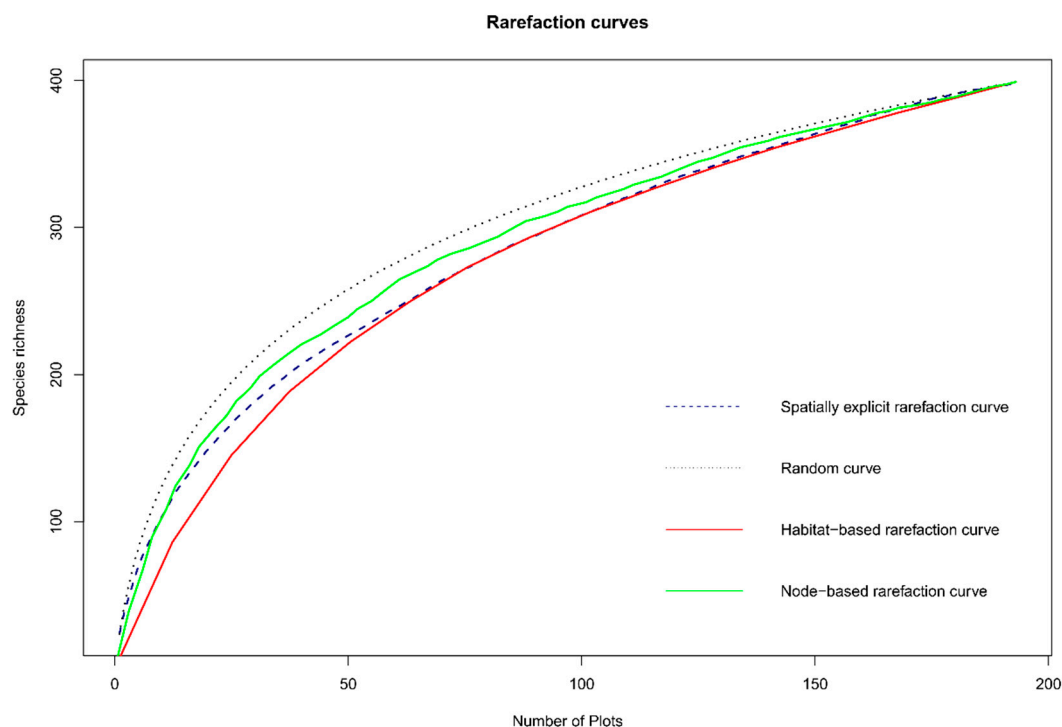


Figure S2. Spatially explicit rarefaction curve (SER, blue dashed line), traditional rarefaction curve (RC, black dotted line), habitat-based rarefaction curve (red solid line) and node-based rarefaction curve (green solid line) calculated from the whole dataset.

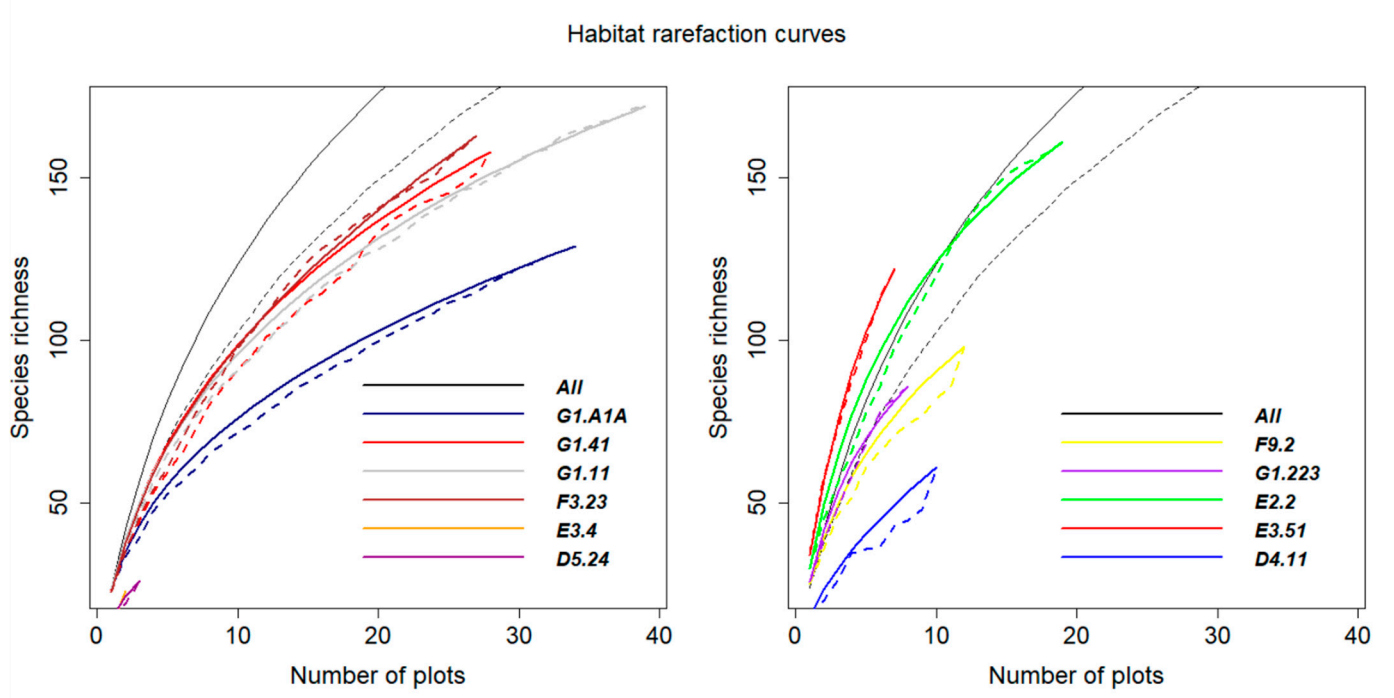


Figure S3. Spatially explicit rarefaction curves (SERs, dashed lines) and traditional rarefaction curves (RCs, solid lines) calculated for each habitat of the ecological network. The black solid line represents the RC calculated from the whole dataset.

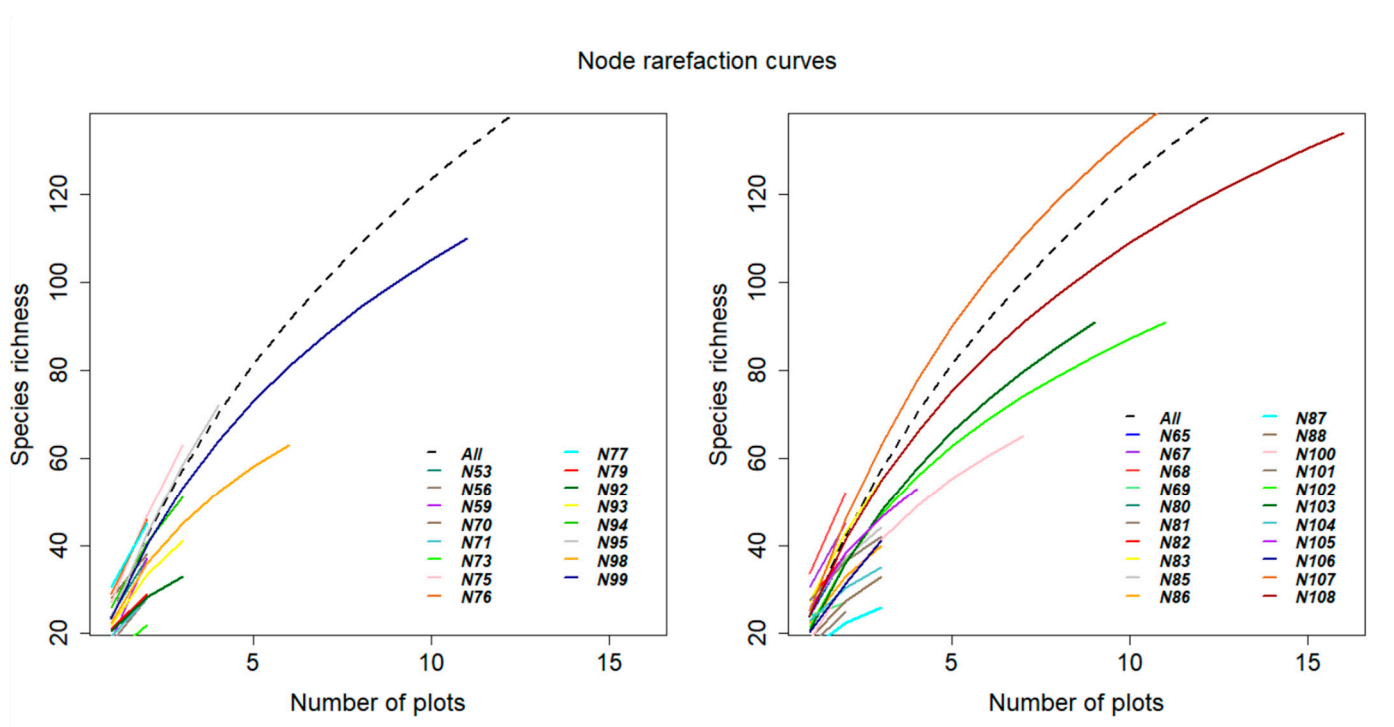


Figure S4. Classic rarefaction curves (RCs) calculated for each node of ecological network. The black dashed line represents the RC calculated from the whole dataset.

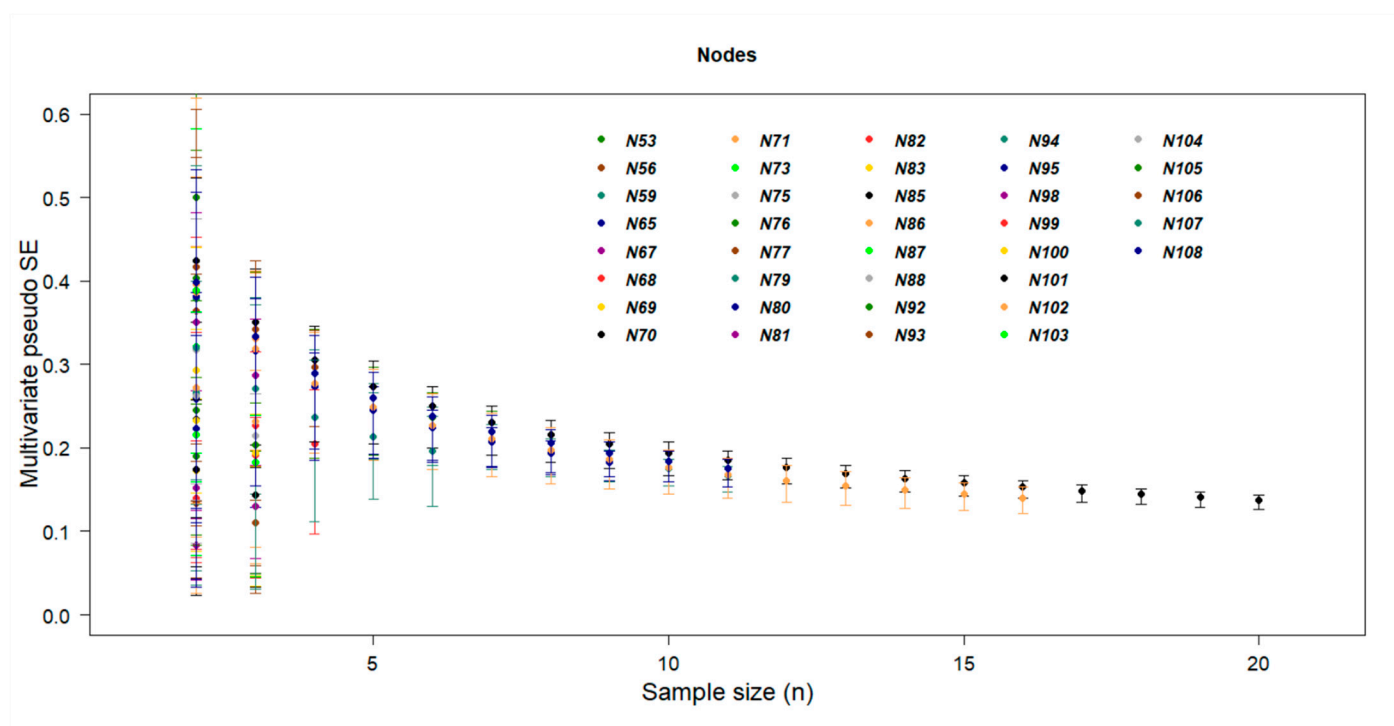


Figure S5. *MultSE* profile based on Bray–Curtis dissimilarity for each node within the ecological network.

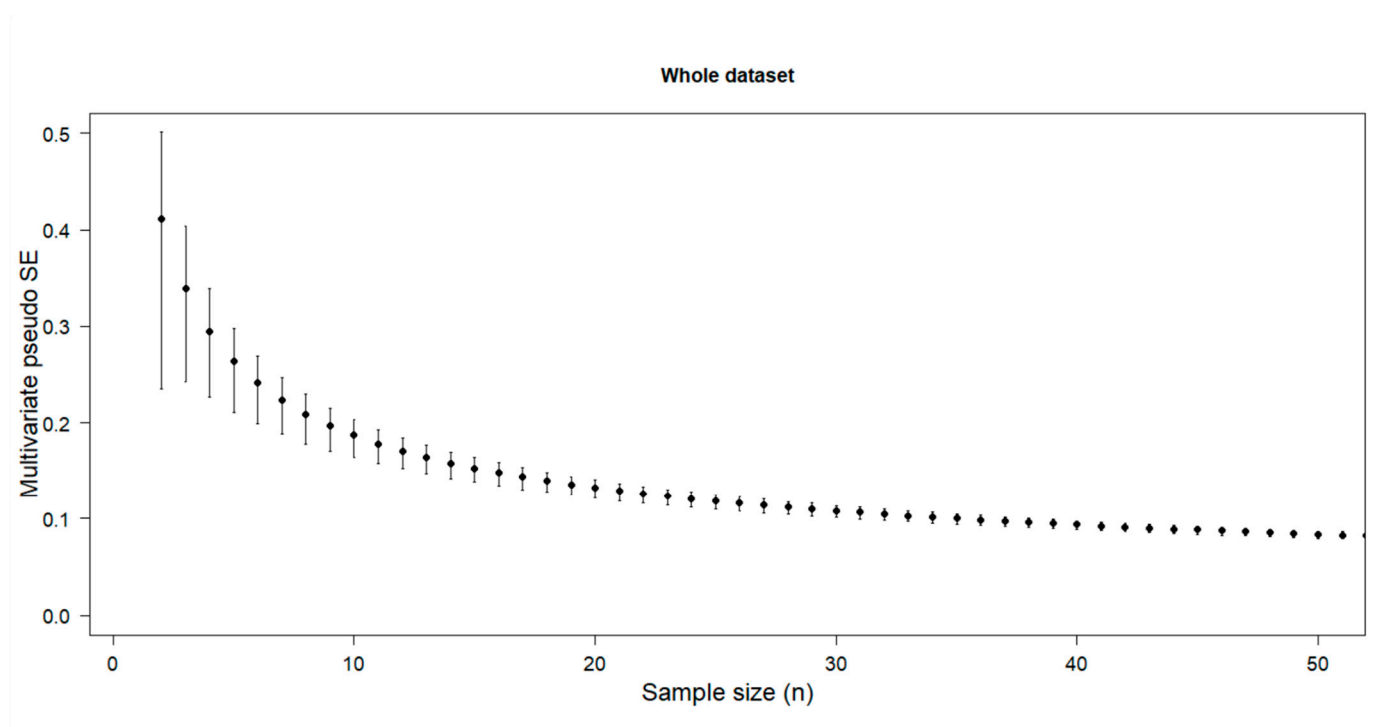


Figure S6. *MultSE* profile based on Bray–Curtis dissimilarity for the whole dataset within the ecological network.

Table S1. Estimated sample size for each habitat based on the slope change in the linear relation between *MultSE* and sample size. The value could not be estimated in habitat types with 3 or less replicates (NA = Not assessed, see main text).

Habitat EUNIS	Estimated sample size (\pm SE)
G1.A1A - Illyrian <i>Quercus</i> - <i>Carpinus betulus</i> forests	8 ± 0.31
G1.41 - <i>Alnus</i> swamp woods not on acid peat	7 ± 0.31
F9.2 - <i>Salix</i> carr and fen scrub	5 ± 0.23
G1.11 - Riverine <i>Salix</i> woodland	8 ± 0.33
G1.223 - Southeast European <i>Fraxinus</i> - <i>Quercus</i> - <i>Alnus</i> forests	4 ± 0.22
G1.224 - Po <i>Quercus</i> - <i>Fraxinus</i> - <i>Alnus</i> forests	NA
F3.23 - Tyrrhenian sub-Mediterranean deciduous thickets	7 ± 0.29
E1.55 - Eastern sub-Mediterranean dry grassland	NA
E2.2 - Low and medium altitude hay meadows	6 ± 0.26
E3.4 - Moist or wet eutrophic and mesotrophic grassland	NA
E3.51 - <i>Molinia caerulea</i> meadows and related communities	4 ± 0.18
C3.21 - <i>Phragmites australis</i> beds	NA
D5.24 - Fen <i>Cladium mariscus</i> beds	NA
D4.11 - <i>Schoenus nigricans</i> fens	4 ± 0.21