Supporting information for

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1 Trait data compilation

1.1 Definition of diet categories

For mammals and birds, diet was compiled from EltonTraits (ref). Primary diet was available in the avian dataset and declined in 5 categories: (1) plant or seed consumers; (2) fruit or nectar consumers; (3) For amphibians, diet information was extracted from AmphiBIO.

1.2 Habitat affinities and broad specialisation

Habitat preferences. IUCN habitat data records habitat types in which species occur. Habitats are classified into 96 categories, which I pooled into 13 broader habitat variables: Forest, Savanna, Grassland, Shrubland, Wetland, Rocky areas, Caves and subterranean, Desert, Marine, Marine intertidal or coastal/supratidal, Artificial, Introduced vegetation and Other/Unknown. Species habitat preferences were described using these variables as binary (taking 1 if a species was known to occur in the habitat and 0 otherwise).

Habitat breadth. Habitat breadth was calculated as the number of habitats recorded to be used by a species in the IUCN database. Given that information regarding habitat suitability and habitat importance was also available in the IUCN data files, I used a weighted sum to calculate habitat breadth. Suitability was declined in three categories in the IUCN files: 'suitable', 'marginal' or 'unknown'. Habitats were recorded to be either of major importance, not of major importance or of unknown importance. I used the weights provided in Table 1 to produce weighted sums of the number of habitats used by each species. A comparison of the distribution of habitat breadths calculated with and without weights shows that weighting did not have a strong impact on the results (Figure 1).

Table 1: Weights used in the calculation of habitat breadth. Habitat breadth was calculated as the weighted sum of the number of habitats used by a species. Weights were assigned to each habitat given its importance and its suitability. All weights would equal 1 if habitat breadth was calculated as a non-weighted sum of habitat numbers.

Suitability	Major importance		
	Yes	**No**	**Unknown**
Suitable	1	0.5	1
Marginal	0.3	0.3	0.3
Unknown	1	0.3	1

Degree of specialisation. A broad classification was adopted for species degree of specialisation. Using IUCN habitat files, I determined whether species were strictly natural habitat specialists or generalists. Generalists were species for which any habitat, suitable or of unknown suitability, was recorded to be artificial. Else, species were considered to be natural habitat specialists. When a habitat of an unknown type was considered suitable or was of unknown suitability, missing data was introduced for the degree of specialisation.
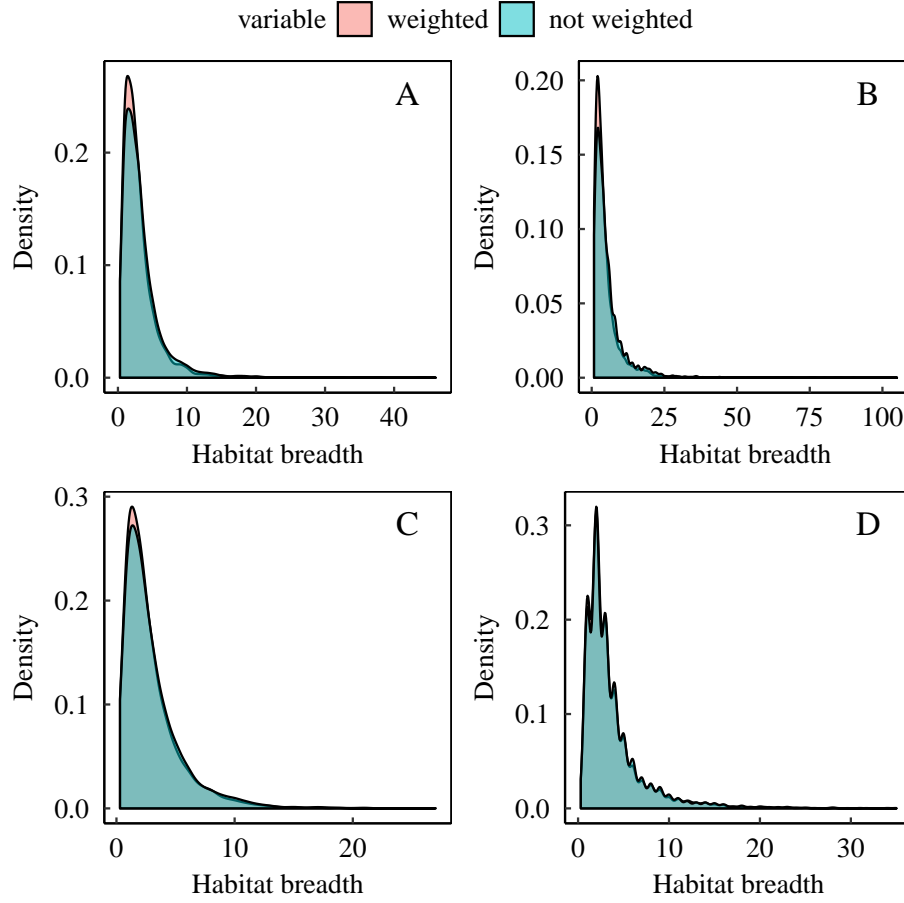
Figure 1: Distribution of habitat breadths across species for terrestrial vertebrates.

1.3 Tackling taxonomic synonymy

1.4 Imputation robustness

1.5 Trait distributions