

Supplemental Materials for “Detecting hidden diversification shifts in models of trait-dependent speciation and extinction”

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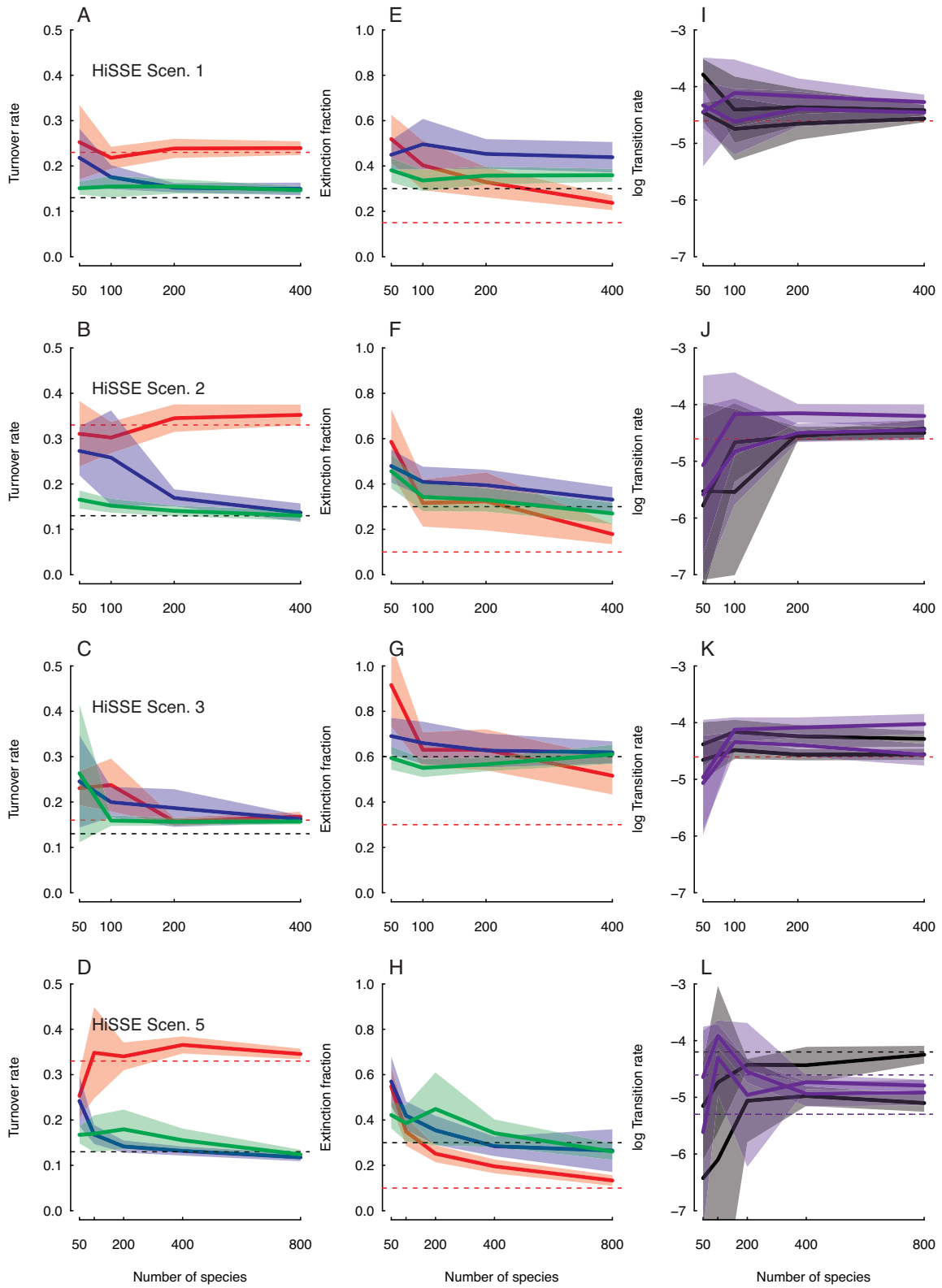


Figure S1. The uncertainty surrounding estimates of net turnover rate ($\lambda+\mu$), extinction fraction (μ/λ), and transition rates as a function of tree size. Each row represents a different simulation scenario, all of which are described in detail in Table 1 in the main text. For both turnover rates and extinction fractions the solid green line represents and green region represent the mean and 95% confidence interval for state 0, the solid blue line and blue region represents mean and 95% confidence interval for state 1A, and the solid red line and red region represents the mean and 95% confidence interval for state 1B. In the panels depicting the log-transformed transition rates, the solid purple line and purple region represent mean and 95% confidence interval for transition to and from the “hidden” state (i.e., 1B).

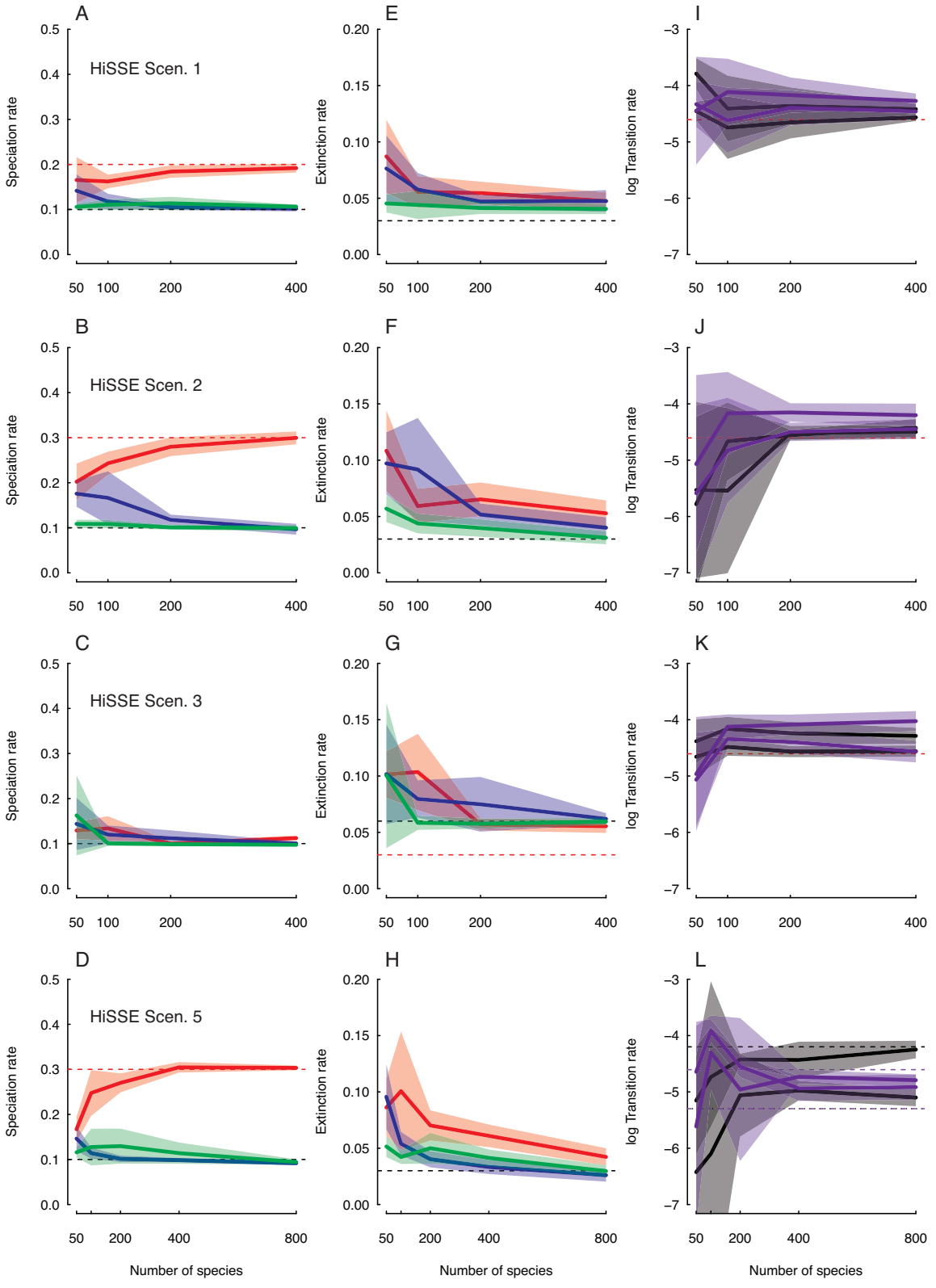


Figure S2. Results from the simulations when transforming the estimates of turnover and extinction fraction depicted in Figure S1 to reflect estimates of speciation (λ) and extinction (μ) rates.

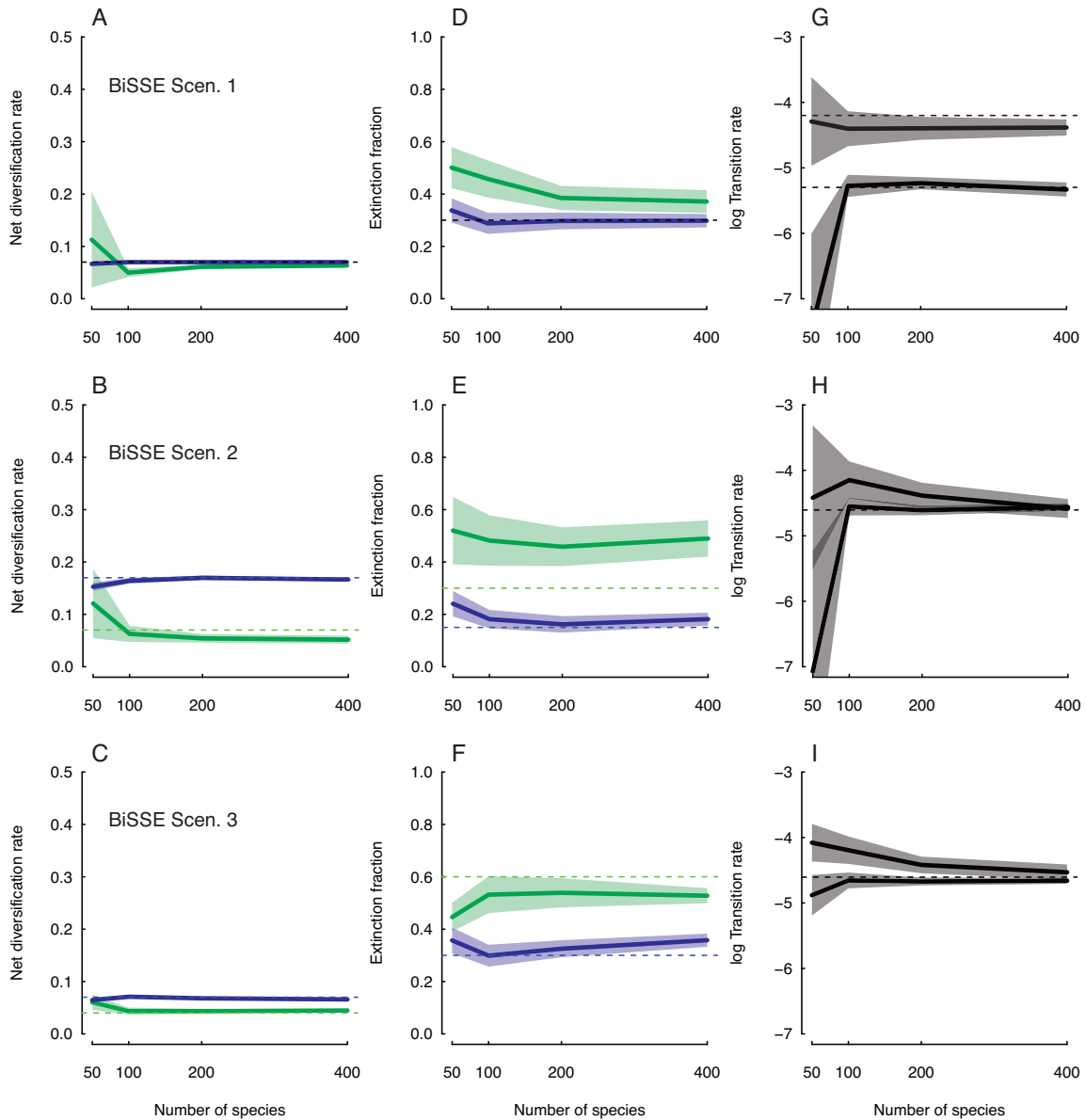


Figure S3. The uncertainty surrounding estimates of net diversification rate ($\lambda-\mu$), extinction fraction (μ/λ), and transition rates as a function of tree size, when the generating model does not contain a hidden state (i.e., a BiSSE model). The specifics of the different simulation scenarios are described in detail in Table 1 from the main text. For both net diversification rates and extinction fractions the solid green line represents

and green region represent the mean and 95% confidence interval for state 0, and the solid blue line and blue region represents mean and 95% confidence interval for state 1.

Table S1. The sampling frequencies of clades contained within our phylogeny of the Dipsidae clade. The current diversity estimates were taken from the Angiosperm Phylogeny Website (APWeb; Stevens, 2012).

Clade	Known diversity	Sampling freq.
<i>Quintinia</i>	25	0.08
<i>Paracryphia</i>	1	1.00
<i>Sphenostemon</i>	10	0.10
<i>Viburnum</i>	175	0.51
<i>Sambucus</i>	20	0.90
<i>Adoxa</i>	1	1.00
<i>Sinadoxa</i>	1	1.00
<i>Tetradoxa</i>	1	1.00
Diervilleae	16	0.75
<i>Lonicera</i>	180	0.42
Rest of Caprifolieae	30	0.63
<i>Heptacodium</i>	1	1.00
Linnaeae	32	0.47
<i>Zabelia</i>	5	1.00
Morinaceae	13	0.77
<i>Triplostegia</i>	2	1.00
Dipsacaceae	290	0.18
Valerianaceae	315	0.35

Supplemental References

Stevens, P. F. (2001 onwards). Angiosperm Phylogeny Website. Version 12, July 2012

[and more or less continuously updated since].