

S2 Table. Numerical results of power analysis for site-area data.

known statistical model (continuous)	analytical conclusions					
	power law	power-law tail	normal	exponential	lognormal	none
power law	0.97	0.97	0.04	0.09	0.15	0.00
normal	0.16	0.09	0.70	0.42	0.43	0.14
exponential	0.18	0.27	0.14	0.87	0.50	0.03
lognormal	0.31	0.67	0.06	0.49	0.87	0.02

Probabilities of identifying data models from random samples drawn from synthetic data with known parameter values based on values derived from the empirical data. For example, reading row one, from left to right, the table says that given synthetic power-law distributions with known parameter values comparable to those derived from the empirical data, there is a 97% chance that the procedure used here would correctly identify them as power-law distributions, a 97% chance that it would identify a power-law distribution in the upper tail, a 4% chance that it would identify a normal distribution, a 9% chance it would identify an exponential distribution, a 15% chance it would identify a lognormal distribution, and virtually no chance it would fail to find a plausible fit to any of the statistical models under consideration.