

Finding happiness in your SAD

Key references

Goodness of fit

- Arnold & Emerson (2011): R package that implements discrete versions of classic tests like KS; look into for finalizing suite of goodness of fit metrics

Model comparison

- Connolly *et al.* (2009): Develops bootstrap goodness of fit method; finds most support for Poisson lognormal in data considered
- Baldrige *et al.* (2016): Uses AIC to compare different SAD forms; finds logseries wins most
- Matthews & Whittaker (2014): Reviews SAD shapes; proposes that SAD analysis should include both model comparison (e.g. with AIC) and goodness of fit (e.g. parametric bootstrap); cites Connolly *et al.* (2009) for parametric bootstrap; says some weird stuff like rank plots have a seeming different likelihood than raw data?

Different SAD models

- Engen & Lande (1996): Different population dynamic processes that generate a gamma-type distribution; includes density dependence, environmental fluctuations, and speciation
- McGill *et al.* (2007): Argues to use AIC; argues that we need more than just SAD to draw conclusions about process; discusses different plotting methods
- Ulrich *et al.* (2010): Surveys lit on SAD shape and claims “complete” censuses of terrestrial communities yield log-normal shapes; but “completeness” is estimated as number of singletons (totally circular); cites (old) literature on importance of sampling; visually (?) analyses fit in both binned and rank plots
- Matthews & Whittaker (2015): Reviews potential relevance of SAD analysis to applied and conservation work; makes claims (and offers citations) about logseries being in disturbed communities; makes claims that shape of SAD can be meaningful in informing underlying ecological processes; uses binned plots

Citations

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