

Distance book idea

Purpose

The idea is to write something that someone who is familiar with the principles of distance sampling can fit models in R for a variety of distance sampling analyses. the audience would be grad students, postdocs and applied researchers (in natural resources/ecology departments, government and consultancies). The book would then be the bridge between the introductory book and actually performing analyses.

While avoiding reproducing the introductory book, there will be some material necessary to "set the table". This would mainly consist of material from chapter 3. I don't think I want to include anything about field procedures, this book should be about analysis only.

One possibility would be to have the introduction incorporate some of the core conceptual material DLB had suggested, showing appropriate simulation/code that readers could interact with. From there a walk through a series of examples of increasing complexity building on each other (perhaps based on a handful of sample data sets).

Chapters

- Distance sampling outline.
- Fitting CDS detection functions using `Distance`
- Fitting MCDS detection functions using `Distance`
- Abundance and density estimation, including stratification and random abundance effects using `reds`
- MRDS analysis using `mrds`
- Analysing spatial data using `dsm`
- Mixed clusters in `mads`
- Accounting to for availability bias (simple and more complicated methods a la Roland and DLB)
- Simulating distance data using `DSsim` (appendix?)
- Getting your data in the right format (appendix?)

NB in the above, `Distance` refers to my R package.

Publishing options:

- Springer useR! series
- electronic only (Kindle/ePub/PDF) -- <https://leanpub.com/>

- small print run/print-on-demand service?
- should we charge at all?

Possible titles

- Distance sampling analyses with R
- Analysis of distance sampling data in R
- Analyzing distance sampling data in R