Data Papers

Ecology, 96(11), 2015, p. 3109

An amniote life-history database to perform comparative analyses with birds, mammals, and reptiles

Ecological Archives E096-269

Nathan P. Myhrvold,[1,4] Elita Baldridge,[2] Benjamin Chan,[1] Dhileep Sivam,[1] Daniel L. Freeman,[1] and S. K. Morgan Ernest[2,3]

[1]*Intellectual Ventures, Bellevue, Washington 98005 USA*
[2]*Department of Biology and the Ecology Center, Utah State University, Logan, Utah 84322 USA*
[3]*Department of Wildlife Ecology and Conservation, University of Florida, Gainesville, Florida 32611 USA*

Abstract. Studying life-history traits within and across taxonomic classifications has revealed many interesting and important patterns, but this approach to life history requires access to large compilations of data containing many different life-history parameters. Currently, life-history data for amniotes (birds, mammals, and reptiles) are split among a variety of publicly available databases, data tables embedded in individual papers and books, and species-specific studies by experts. Using data from this wide range of sources is a challenge for conducting macroecological studies because of a lack of standardization in taxonomic classifications, parameter values, and even in which parameters are reported. In order to facilitate comparative analyses between amniote life-history data, we created a database compiled from peer-reviewed studies on individual species, macroecological studies of multiple species, existing life-history databases, and other aggregated sources as well as published books and other compilations. First, we extracted and aggregated the raw data from the aforementioned sources. Next, we resolved spelling errors and other formatting inconsistencies in species names through a number of computational and manual methods. Once this was completed, subspecies-level data and species-level data were shared via a data-sharing algorithm to accommodate the variety of species transformations (taxonomic promotions, demotions, merges, divergences, etc.) that have occurred over time. Finally, in species where multiple raw data points were identified for a given parameter, we report the median value. Here, we report a normalized and consolidated database of up to 29 life-history parameters, containing at least one life-history parameter for 21 322 species of birds, mammals, and reptiles.

Key words: amniote; birds; body size; comparative analyses; database; life history; macroecology; mammals; reptiles.

The complete data sets corresponding to abstracts published in the Data Papers section of the journal are published electronically in *Ecological Archives* at http://esapubs.org/archive (the accession number for each Data Paper is given directly beneath the title).

Manuscript received 11 May 2015; revised 14 August 2015; accepted 20 August 2015. Corresponding Editor: W. K. Michener.
[4] E-mail: nathanm@intven.com