# Data Papers

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# PanTHERIA: a species-level database of life history, ecology, and geography of extant and recently extinct mammals

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*Abstract.* Analyses of life-history, ecological, and geographic trait differences among species, their causes, correlates, and likely consequences are increasingly important for understanding and conserving biodiversity in the face of rapid global change. Assembling multispecies trait data from diverse literature sources into a single comprehensive data set requires detailed consideration of methods to reliably compile data for particular species, and to derive single estimates from multiple sources based on different techniques and definitions. Here we describe PanTHERIA, a species-level data set compiled for analysis of life history, ecology, and geography of all known extant and recently extinct mammals. PanTHERIA is derived from a database capable of holding multiple geo-referenced values for variables within a species containing 100 740 lines of biological data for extant and recently extinct mammalian species, collected over a period of three years by 20 individuals. PanTHERIA also includes spatial databases of mammalian geographic ranges and global climatic and anthropogenic variables. Here we detail how the data fields are extracted and defined for PanTHERIA using a customized data input format (MammalForm); how data were collected from the literature, species names and sources tracked, error-checking and validation procedures applied, and how data were consolidated into species-level values for each variable. Tables of the consolidated species-level values are made available for each of two recent species-level taxonomic classifications of mammals, as well as associated taxonomic synonymy conversion and data-input files. This study provides a useful guide to prospective researchers on how to structure and codify life-history, ecological, geographic, and taxonomic data and methods to extract meaningful species-level traits. It also provides comprehensive information on traits like size, diet, environmental conditions, and ecology to permit macroecological and macroevolutionary analyses of this important clade.

*Key words: behavior; biogeography; body size; climatic variables; comparative analyses; conservation; ecology; geographic range; life history; mammals; PanTHERIA; population density.*

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