

Metadata file for data presented by:

González-Suárez, Manuela; Bacher, Sven; and Jeschke, Jonathan. Intraspecific trait variation is correlated with establishment success of alien mammals. *American Naturalist*

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File description: The dataset has 511 records not including the header row and 57 fields. Missing data are indicated by the code 'NA'.

Format and storage mode: ASCII text, comma delimited, not compressed.

Data description:*Introduction data*

The dataset describes human-mediated introduction events of mammals to new locations in the wild, drawn largely from Long (2003) and references therein. An introduction event was defined as the release of individuals of a species to an island or a governmental state within a continental mainland that is outside the species' current native range. We considered an introduction as successful (field Establishment_success=1) if it resulted in the establishment of a persistent population on the island or state where the species was introduced, and unsuccessful (Establishment_success=0) otherwise. We excluded recent introductions (i.e. those that took place after 1985), for which it may be too early to determine whether a viable population has been established, and introductions for which the outcome (success or failure) was uncertain. Only events for which data on introduction effort were available (field Propagule_pressure) were included. For multiple releases of the same species to the same location within time intervals <20 years, the total number of individuals released was pooled and considered as a single release. Subsequent introductions of species that were already established in an area were discarded. Most releases were intentional, except for 31 accidental escapes and 7 observations (all of *Canis latrans*) in which the type of release was unknown.

Trait data

Species' traits are described using the arithmetic mean and coefficient of variation (CV) for the species for which introduction data were available. We followed the procedure described by González-Suárez and Revilla (2013) using the raw data file from the mammalian life-history dataset Pantheria (Jones *et al.* 2009). This file includes 97,827 records describing 4,204 mammalian species recognized by the Wilson and Reeder (2005) mammalian taxonomy. For each species with >1 record per trait we calculated the mean and CV after excluding records classified as minimum or maximum and making the corrections mentioned by González-Suárez and Revilla (2013) and a few additional corrections listed in the Online Table A1 of the reference paper. We also estimated sex-specific CVs for traits that may be influenced by sexual dimorphism. Sex-specific CVs were calculated using only measures obtained from same-sex individuals (as listed in the raw data file of Pantheria). The overall species CV

accounting for sex differences were then defined as the average of the female- and male-CVs, or if data were only available for one sex we used that within-sex CV estimate (which does not include any variation due to dimorphism).

Table 1. Variable description

| Variable name | Description |
|---------------------------------------|---|
| Species_name | Species taxonomic name |
| Taxonomic_order | Taxonomic order |
| Taxonomic_family | Taxonomic family |
| Taxonomic_genus | Taxonomic genus |
| Mean_adult_body_mass_g | Mean adult body mass, measured in grams. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass" and age="Adult". Sex="Pregnant Female", measure="Maximum" and measure="Minimum" excluded. |
| CV_adult_body_mass_g | Coefficient of variation in adult body mass. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass" and age="Adult". Sex="Pregnant Female", measure="Maximum" and measure="Minimum" excluded. |
| N_adult_body_mass_g | Number of records used to estimate mean and CV adult body mass. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass" and age="Adult". Sex="Pregnant Female", measure="Maximum" and measure="Minimum" excluded. |
| CV_adult_body_mass_g_female | Coefficient of variation in adult body mass among females. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass", age="Adult" and sex="Female". Sex="Pregnant Female", measure="Maximum" and measure="Minimum" excluded. |
| CV_adult_body_mass_g_male | Coefficient of variation in adult body mass among males. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass", age="Adult" and sex="Male". Measure="Maximum" and measure="Minimum" excluded. |
| CV_adult_body_mass_g_combined | Mean within-sex coefficient of variation in adult body mass (arithmetic mean of CV_adult_body_mass_g_female and CV_adult_body_mass_g_male) |
| Mean_neonate_body_neonate_body_mass_g | Mean neonate body mass, measured in grams. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass" and age="Neonate". Measure="Maximum" and measure="Minimum" excluded. |
| CV_neonate_body_neonate_body_mass_g | Coefficient of variation in neonate body mass. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass" and age="Neonate". Measure="Maximum" and measure="Minimum" excluded. |
| N_neonate_body_mass_g | Number of records used to estimate mean and CV neonate body mass. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass" and age="Neonate". Measure="Maximum" and measure="Minimum" excluded. |
| CV_neonate_body_mass_g_female | Coefficient of variation in neonate body mass among females. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass", age="Neonate", and sex="Female". Measure="Maximum" and measure="Minimum" excluded. |
| CV_neonate_body_mass_g_male | Coefficient of variation in neonate body mass among males. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Body Mass", age="Neonate", and sex="Male". Measure="Maximum" and measure="Minimum" excluded. |
| CV_neonate_body_mass_g_combined | Mean within-sex coefficient of variation in neonate body mass (arithmetic mean of CV_neonate_body_mass_g_female and CV_neonate_body_mass_g_male) |
| Mean_home_range_size_km2 | Mean home range size, measured in km ² . Estimated from the raw datafile of Pantheria selecting records classified as data_type="Ranging Behaviour". Range_type="Territory size", range_type="Day Range", Units="kilometres", Units="metres", Units="miles", measure="Maximum" and measure="Minimum" excluded. |

| Variable name | Description |
|---------------------------------|---|
| CV_home_range_size_km2 | Coefficient of variation in home range size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Ranging Behaviour". Range_type="Territory size", range_type="Day Range", Units="kilometres", Units="metres", Units="miles", measure="Maximum" and measure="Minimum" excluded. |
| N_home_range_size_km2 | Number of records used to estimate mean and CV home range size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Ranging Behaviour". Range_type="Territory size", range_type="Day Range", Units="kilometres", Units="metres", Units="miles", measure="Maximum" and measure="Minimum" excluded. |
| CV_home_range_size_km2_female | Coefficient of variation in home range size among females. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Ranging Behaviour" and sex="Female". Range_type="Territory size", range_type="Day Range", Units="kilometres", Units="metres", Units="miles", measure="Maximum" and measure="Minimum" excluded. |
| CV_home_range_size_km2_male | Coefficient of variation in home range size among males. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Ranging Behaviour" and sex="Male". Range_type="Territory size", range_type="Day Range", Units="kilometres", Units="metres", Units="miles", measure="Maximum" and measure="Minimum" excluded. |
| CV_home_range_size_km2_combined | Mean within-sex coefficient of variation in home range size (arithmetic mean of CV_home_range_size_body_mass_km2_female and CV_home_range_size_body_mass_km2_male) |
| Mean_population_density_ind_km2 | Mean population density, measured in individuals per km2. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Population Density". Units="Individuals/km ", Units="Groups/km ", Units="Groups/1000 nautical miles", Units="Groups/km2 ", Units="Groups/ha ", measure="Maximum" and measure="Minimum" excluded. |
| CV_population_density_ind_km2 | Coefficient of variation in population density. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Population Density". Units="Individuals/km ", Units="Groups/km ", Units="Groups/1000 nautical miles", Units="Groups/km2 ", Units="Groups/ha ", measure="Maximum" and measure="Minimum" excluded. |
| N_population_density_ind_km2 | Number of records used to estimate mean and CV population density. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Population Density". Units="Individuals/km ", Units="Groups/km ", Units="Groups/1000 nautical miles", Units="Groups/km2 ", Units="Groups/ha ", measure="Maximum" and measure="Minimum" excluded. |
| Mean_group_size | Mean group size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Group Composition & Size", group_type="Social group ", group_type="Social Group " and group_type="Population group ". Value=0, measure="Maximum" and measure="Minimum" excluded. |
| CV_group_size | Coefficient of variation in group size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Group Composition & Size", group_type="Social group ", group_type="Social Group " and group_type="Population group ". Value=0, measure="Maximum" and measure="Minimum" excluded. |
| N_group_size | Number of records used to estimate mean and CV group size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Group Composition & Size", group_type="Social group ", group_type="Social Group " and group_type="Population group ". Value=0, measure="Maximum" and measure="Minimum" excluded. |
| Mean_litter_per_year | Mean number of litters per year. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Litters Per Year". Measure="Maximum" and measure="Minimum" excluded. |
| CV_litter_per_year | Coefficient of variation in the number of litters per year. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Litters Per Year". Measure="Maximum" and measure="Minimum" excluded. |

| Variable name | Description |
|-----------------------------------|---|
| N_litter_per_year | Number of records used to estimate mean and CV number of litters per year. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Litters Per Year". Measure="Maximum" and measure="Minimum" excluded. |
| Mean_interbirth_interval | Mean interbirth interval, measured in days. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Interbirth Interval". IBI_definition="After failed litter", measure="Maximum" and measure="Minimum" excluded. |
| CV_interbirth_interval | Coefficient of variation in interbirth interval. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Interbirth Interval". IBI_definition="After failed litter", measure="Maximum" and measure="Minimum" excluded. |
| N_interbirth_interval | Number of records used to estimate mean and CV interbirth interval. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Interbirth Interval". IBI_definition="After failed litter", measure="Maximum" and measure="Minimum" excluded. |
| Mean_weaning_age_d | Mean weaning age, measured in days. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Weaning Age". Weaning_age_definition="First Solid Food", measure="Maximum" and measure="Minimum" excluded. |
| CV_weaning_age_d | Coefficient of variation in weaning age. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Weaning Age". Weaning_age_definition="First Solid Food", measure="Maximum" and measure="Minimum" excluded. |
| N_weaning_age_d | Number of records used to estimate mean and CV weaning age. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Weaning Age". Weaning_age_definition="First Solid Food", measure="Maximum" and measure="Minimum" excluded. |
| Mean_sexual_maturity_age_d | Mean sexual maturity age, measured in days. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Sexual Maturity Age". Measure="Maximum" and measure="Minimum" excluded. |
| CV_sexual_maturity_age_d | Coefficient of variation in sexual maturity age. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Sexual Maturity Age". Measure="Maximum" and measure="Minimum" excluded. |
| N_sexual_maturity_age_d | Number of records used to estimate mean and CV sexual maturity age. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Sexual Maturity Age". Measure="Maximum" and measure="Minimum" excluded. |
| CV_sexual_maturity_age_d_female | Coefficient of variation in sexual maturity age among females. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Sexual Maturity Age" and sex="Female". Measure="Maximum" and measure="Minimum" excluded. |
| CV_sexual_maturity_age_d_male | Coefficient of variation in sexual maturity age among males. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Sexual Maturity Age" and sex="Male". Measure="Maximum" and measure="Minimum" excluded. |
| CV_sexual_maturity_age_d_combined | Mean within-sex coefficient of variation in sexual maturity age (arithmetic mean of CV_sexual maturity age_body_mass_d_female and CV_sexual maturity age_body_mass_d_male) |
| Mean_litter_size | Mean litter size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Litter Size". Litter_size_measure_definition="Before birth", Litter_size_measure_definition="Before Birth", measure="Maximum" and measure="Minimum" excluded. |
| CV_litter_size | Coefficient of variation in litter size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Litter Size". Litter_size_measure_definition="Before birth", Litter_size_measure_definition="Before Birth", measure="Maximum" and measure="Minimum" excluded. |
| N_litter_size | Number of records used to estimate mean and CV litter size. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Litter Size". Litter_size_measure_definition="Before birth", Litter_size_measure_definition="Before Birth", measure="Maximum" and measure="Minimum" excluded. |

| Variable name | Description |
|----------------------------------|---|
| Mean_gestation_length_d | Mean gestation length, measured in days. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Gestation Length". Gestation_growth_type="Inactive", Gestation_growth_type="inactive", Gestation_start_point="Birth", Gestation_start_point="First Observed Birth", Gestation_start_point="Laying", Gestation_start_point="Removal of pouch young", Gestation_end_point="Permanent exit from pouch", Gestation_end_point="First pouch emergence", Gestation_end_point="End of obligate teat attachmen", Gestation_end_point="Implantation", measure="Maximum" and measure="Minimum" excluded. |
| CV_gestation_length_d | Coefficient of variation in gestation length. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Gestation Length". Gestation_growth_type="Inactive", Gestation_growth_type="inactive", Gestation_start_point="Birth", Gestation_start_point="First Observed Birth", Gestation_start_point="Laying", Gestation_start_point="Removal of pouch young", Gestation_end_point="Permanent exit from pouch", Gestation_end_point="First pouch emergence", Gestation_end_point="End of obligate teat attachmen", Gestation_end_point="Implantation", measure="Maximum" and measure="Minimum" excluded. |
| N_gestation_length_d | Number of records used to estimate mean and CV gestation length. Estimated from the raw datafile of Pantheria selecting records classified as data_type="Gestation Length". Gestation_growth_type="Inactive", Gestation_growth_type="inactive", Gestation_start_point="Birth", Gestation_start_point="First Observed Birth", Gestation_start_point="Laying", Gestation_start_point="Removal of pouch young", Gestation_end_point="Permanent exit from pouch", Gestation_end_point="First pouch emergence", Gestation_end_point="End of obligate teat attachmen", Gestation_end_point="Implantation", measure="Maximum" and measure="Minimum" excluded. |
| Number_records | Total number of available records used to estimate mean and coefficients of variation for the studied variables as obtained from Pantheria. Calculated by adding all N_ variables. |
| Native_geographic_range_area_km2 | Extend of the geographic range area in km2 calculated using IUCN distribution range maps (downloaded on September 2013) selecting polygons described as origin= "native", origina="reintroduced", presence="extant" and presence= "probably extant" using the cylindrical equal area projection. |
| Habitat_breadth | Number of distinct terrestrial ecoregions (Olson <i>et al.</i> 2001), based on the updated map available from the WWF, that overlapped with the native geographic distribution range area for each species (range area estimated as described in the variable "Native_geographic_range_area_km2") . |
| Establishment_success | Outcome of the introduction event classified as 1=successful if the event resulted in the establishment of a persistent population on the island or in a state where the species was introduced, and unsuccessful (=0) otherwise. Data from Long 2003 and references therein. |
| Year_introduction | Year of the introduction event as described by Long 2003. |
| Biogeographic_region | Biogeographic region in which the introduction event occurred as described by Long 2003. |
| Propagule_pressure | Number of introduced individuals in the event as described by Long 2003. For multiple releases of the same species to the same location within time intervals <20 years, the total number of individuals released was pooled and considered as one single release. |
| Nation_introduction | Nation in which the introduction event occurred as described by Long 2003. |

Cited literature

González-Suárez, M. & Revilla, E. (2013). *Variability in life-history and ecological traits is a buffer against extinction in mammals*. Ecology Letters, 16, 242-251.

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