Amniote Mass

Erin Keleske

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Species experience tradeoffs for where there energy is spent. In this brief analysis, we will consider one such relationship: energy spent on personal growth and energy spent on the growth of offspring.

Initial data download ——

Raw data can be found here. and originated from:

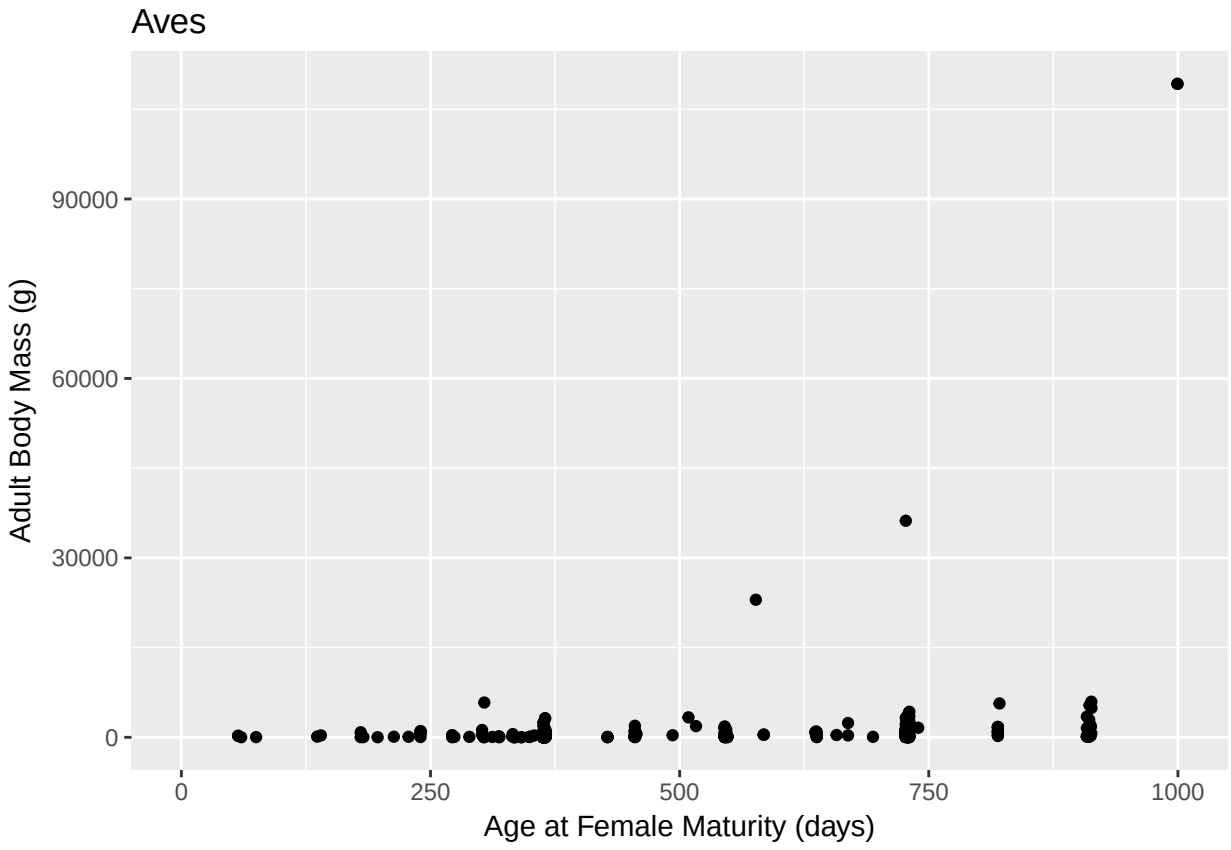
> Nathan P. Myhrvold, Elita Baldridge, Benjamin Chan, Dhileep Sivam, Daniel L. Freeman, and S. K. Morgan Ernest. 2015. An amniote life-history database to perform comparative analyses with birds, mammals, and reptiles. Ecology 96:3109.http://dx.doi.org/10.1890/15-0846.1

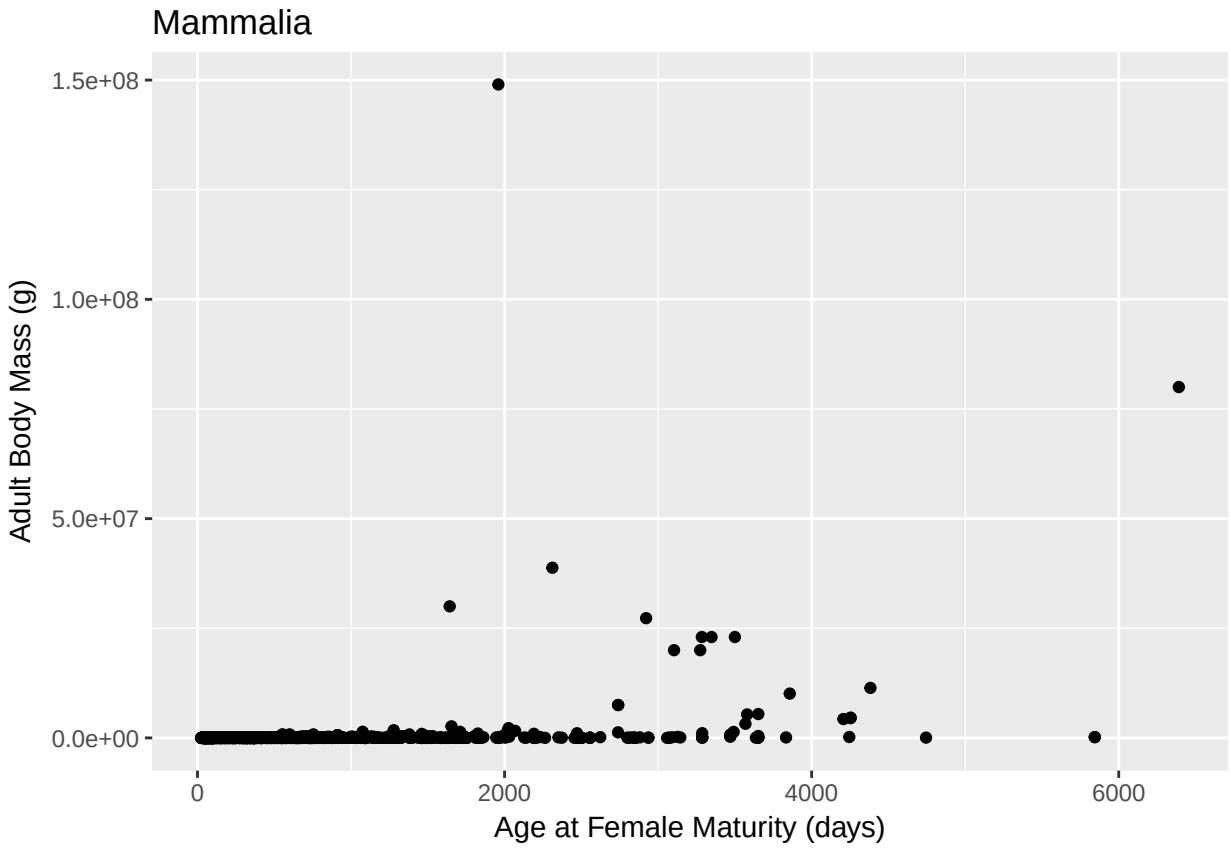
This data includes common life history data on species from the class Aves, Mammalia, and Reptilia.

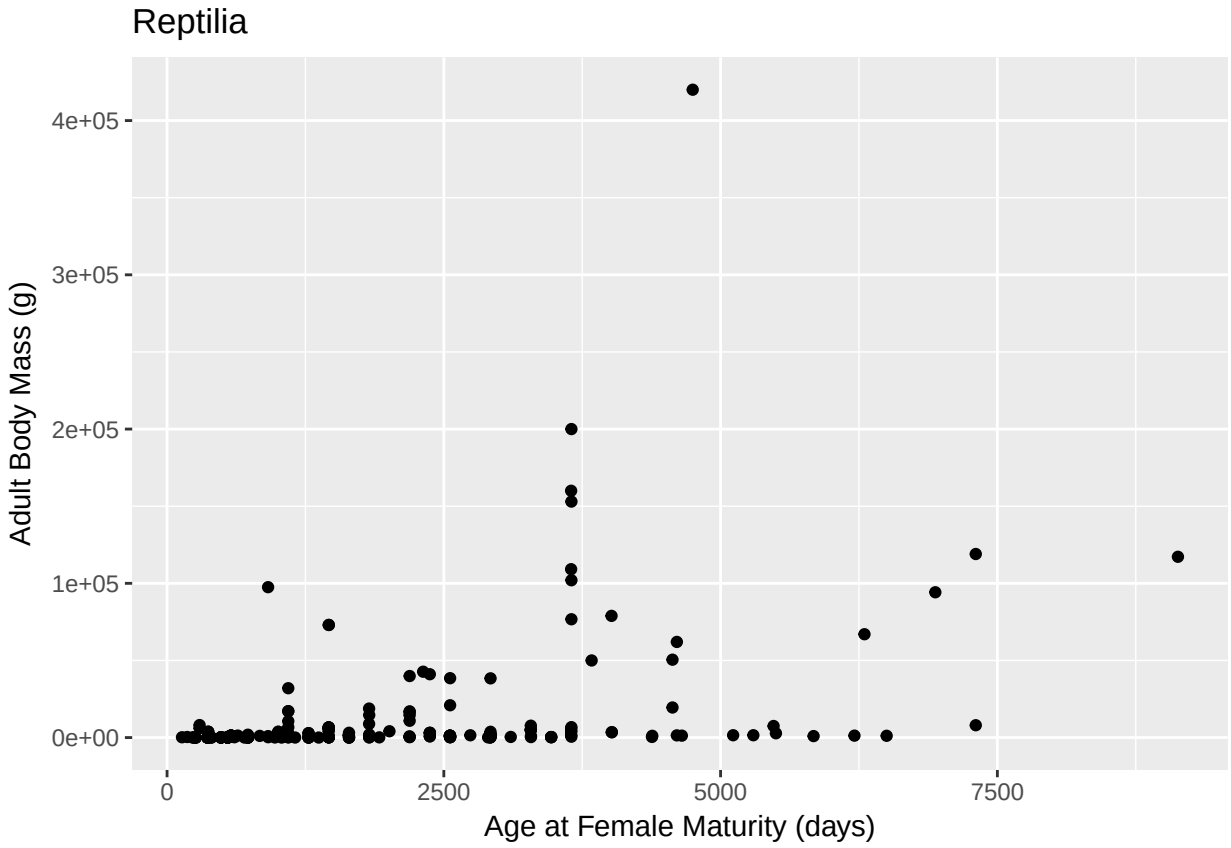
Data exploration and visualisation ——

Assuming females of a given species have reached "adult body mass" by the time of sexual maturity, the relationship betwen these two variables can be used to calculate the approximate growth rate from birth to adulthood.

First, let's explore the relationship between these variables. Since there's such a wide range of sizes within the full amniote data, from the Dwarf Gecko to the Blue Whale, the data have been subset into classes and plotted separately.


Aves
Adult Body Mass (g)
90000
60000
30000
0
0
250
500
750
1000
Age at Female Maturity (days)


Mammalia
Adult Body Mass (g)
1.5e+08
1.0e+08
5.0e+07
0.0e+00
0
2000
4000
6000
Age at Female Maturity (days)



Relationship between variables ——

Distribution of a variable among groups ——