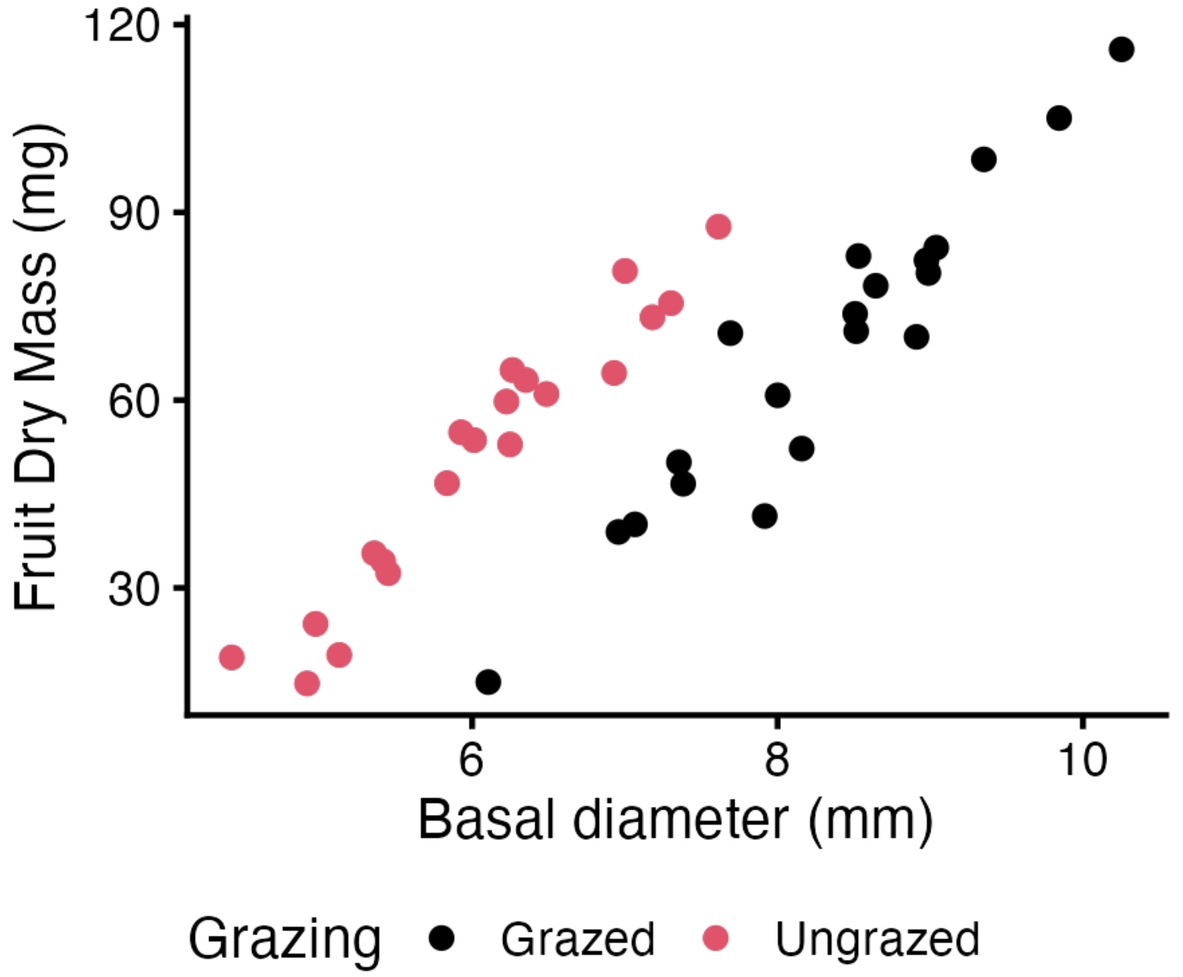
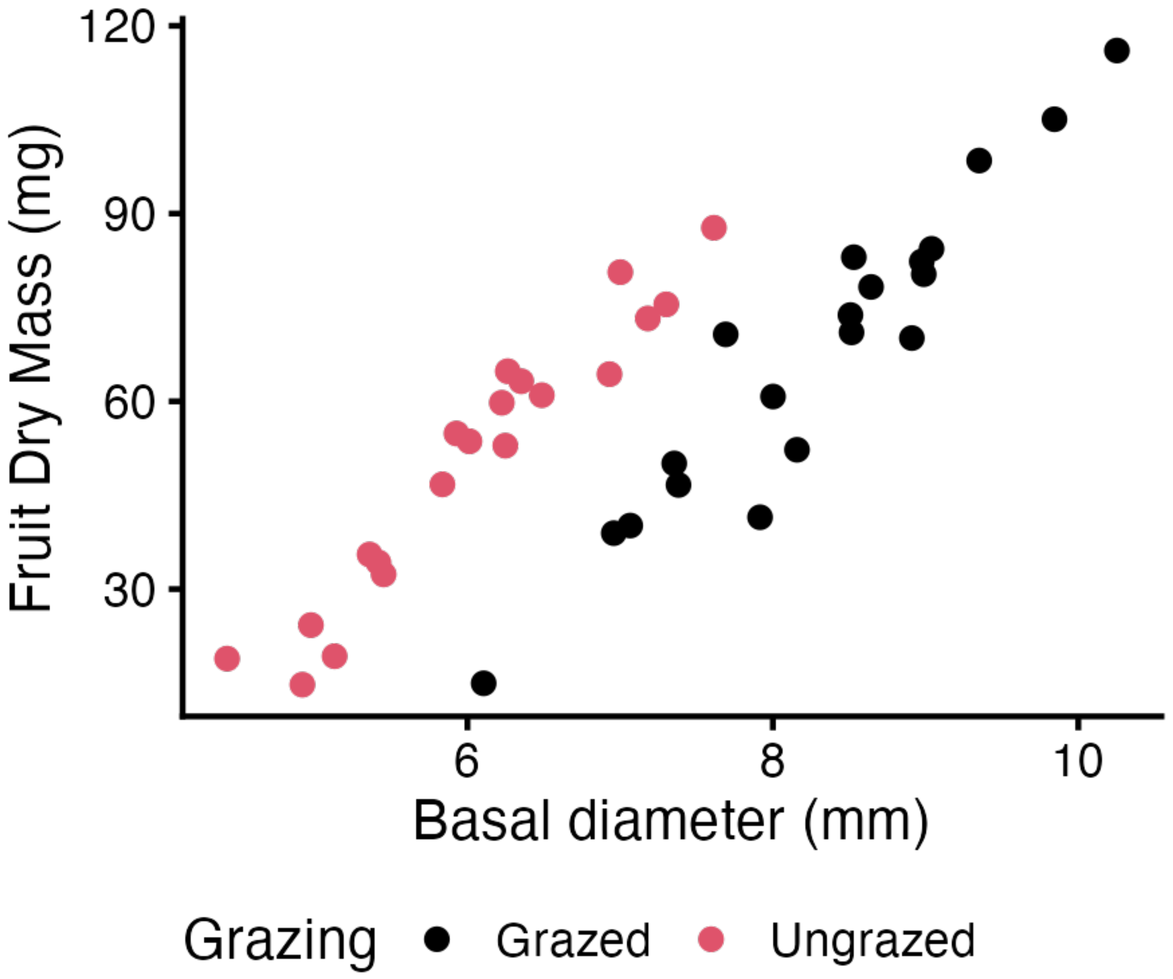
Example with more predictors

- **Question**: what's the impact of herbivory on plant fitness?
- **Field experiment**: 40 plants of *Ipomopsis agreggata* assigned at random to two treatments: unprotected from grazing by rabbits and protect from grazing by fenced cages.
- Response variable: fruit yield of each plant (mg dry mass)
- Predictor variables:
  - Treatment: fenced or non-fenced
  - Basal diameter of each plant (mm), measured before the treatment



Data from: Crawley (2007) The R Book

Scale variables



- It's good practice to scale variables by their standard deviation and subtract the mean:

$$\tilde{y}_i = \frac{y_i - \bar{y}}{sd(y)}$$

- The **z-score** of a continuous variable is a measure of how many standard deviations a data point is from the mean of the dataset

- Using z-scores makes coefficients easier to interpret and comparable across variables with different scales

- The transformation is linear, and we can always recover parameter values on their original scale by multiplying by the standard deviation