

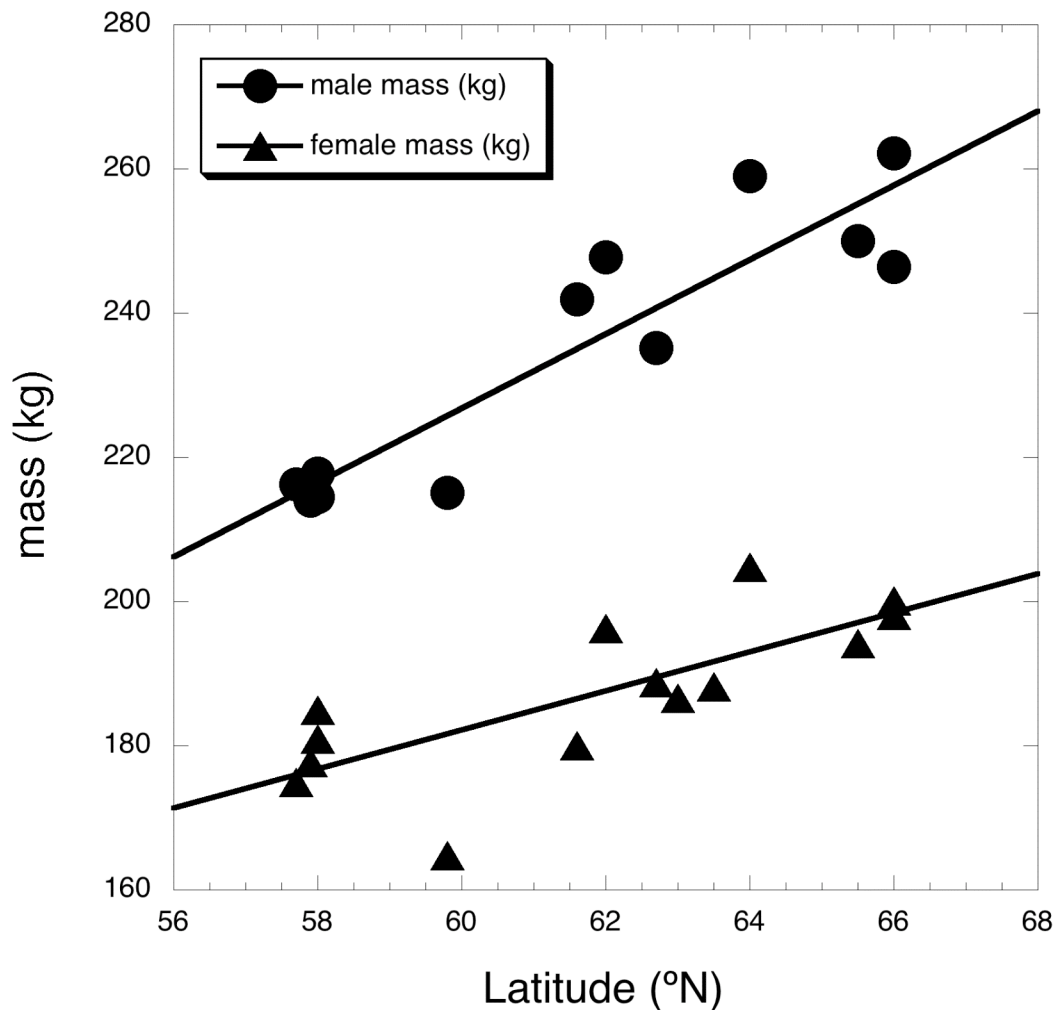
ASSIGNMENT ONE

Question One. *Bergmann's Rule*

The data below provide possible support for an ecological principle known as Bergmann's Rule (intra-specific size of mammals is larger in colder climates, see the Wikipedia entry for a more detailed explanation). It relies on the basic concept that surface area (heat loss) and mass (heat production) scale differently. Explore this idea from a *biophysical* viewpoint. Do changes in moose mass affect surface area? If so, is it sufficient to affect heat loss? Are there other confounding *biological/biophysical* issues? Explain quantitatively. Please ensure you show units!



Moose size versus Latitude in Sweden



Sand H, Cederlund G, Danell K (1995) Geographical and latitudinal variation in growth patterns and adult body size of Swedish moose (*Alces alces*). *Oecologia* 102:433-442.