Mar 5 Herbivore abundance and richness

Oiff, H., M. E. Richie, and H. H. T. Prins. 2002. Global environmental controls of diversity in large herbivores. Nature 415:901-904.

Discussion Questions

1. What is the general relationship between rainfall, soils, and herbivore biomass across Africa? What are the mechanisms behind this?

2. What is “plant quality”? How does it vary with rainfall and soils?

3. Figures 2a and 2b are the heart of the paper. Be ready to explain to explain them. Why would we expect that smaller bodied herbivores require higher quality forage?

4. These figures deal with the presence and abundance of herbivores. How do they lead to prediction about patterns of herbivore species richness?

5. How well do the data support the predictions in Figs 2a and 2b?

6. Why does Serengeti have some many species of herbivores? How about Yellowstone? How does predicted herbivore richness vary by biome and what explains these patterns?

7. How does land use vary with predicted global herbivore species richness and what are implications for conservation for this?