**Moritz et al. 2008 Yosemite small-mammals Notes for Reading Guide**

**How is a science article different than in other journals—**

* this journal has a broad disciplinary reach, not just biology, but any scientific field
* tends to publish major breakthroughs in a fields (similar to Nature and PNAS)
* this is a prestigious journal, but also one in which the studies can turn out more often to be faulty because they are on the cutting edge or in a less tested and understand area
* they do not publish review articles like we read for Wed RAT. They publish ony primary literature, which means where a scientific group or scientist has done the original research and is reporting it for the first time.
* the format is different than most journals in that it doesn’t have a separate methods section in the article itself—that is in the supplementary material. The supplement for this paper is something you read in class on Wednesday (I hope)
* while the articles are supposed to be for a broad scientifically educated audience, they do sometimes contain more jargon than is absolutely necessary—I’ll point out some of the terms you might not know. But look up anything else I miss!

~~When I read a scientific article, I almost always start with the abstract and the figures. I’ll start with the abstract here to see if I want to read the paper. Then I’ll go to the figures. In many cases, I won’t even read the article if it doesn’t pass my abstract or figures test. For a class, I absolutely will read every word☺~~

**this is a paper by Craig Moritz, the director of MVZ Berkeley. And it is by Beissenger—who was an author on the review article we read!**

**This is a resurvey of Joseph Grinnell’s original field work in California—see the webpage here: http://mvz.berkeley.edu/Grinnell/**

You will be filling out your message box for this paper. In addition, I will propose some questions you should answer for yourself as you read. These are likely to be things that we will talk about in class and have on an exam.

To help you, here is some vocabulary, background on what they are talking about, and a message box. You must come to class with your message box filled out—you will use these in your teams. Show message box and read each question.

**Vocabulary**

[**Phenology**](http://www.aldoleopold.org/Programs/phenology.shtml) is a segment of ecology focusing on the study of periodic plant and animal life-cycle events that are influenced by climate and seasonal change in the environment. Skunks emerging from winter dens, sandhill cranes trumpeting their return, and seeds ripening are all examples of annual phenological events. Phenology is derived from the Greek word *phaino* meaning to show or appear, indicating its principal concern with the dates of first occurrence of natural events in their annual cycle.

**Seral (or sere)** is an intermediate stage found in [ecological succession](http://en.wikipedia.org/wiki/Ecological_succession) in an ecosystem advancing towards its [climax community](http://en.wikipedia.org/wiki/Climax_community). In many cases more than one seral stage evolves until climax conditions are attained.

You’ve already read the methods for this in Activity 2 on Friday and Box 3 in the review article was about this paper. So this paper should be familiar.

**Akaike information criterion** (AIC)—is a way of comparing a series of models to find the one with the best fit and least parameters.

The AIC weights essentially tell you the probability that that model is better than the first model. Higher probability equals better model.

**What are the reasons given for changes in ranges, be specific about which direction each potential cause is associated with:**

Climate change (upward range shifts)

Recovery from overgrazing (downward shift)

Fire suppression (expansion)

Upward shifts were best predicted by high versus low initial elevation range, not so much by life history and ecological traits, especiall for high-elevation species

Lowland short-lived and fast life-cycle species more likely to expand range upward than long-lived less fecund