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Hi Jeff,

Thanks for your letter; it's nice knowing you are out there in such a wonderful place! I'd like to respond to the questions and comments in your letter.

First, we are in the process of abandoning the track plates. We haven't fully given up the idea just yet, but we are very close to offing them. We worked through all the methodological problems and started running them and two problems remain. First, they are so damned sensitive that we got all sorts of things showing up (the hind end and tail of some mouse that decided to sit down, for example), twigs, dew drops, and just so many tracks that it was impossible to discern single prints on most of the plates. We set up about 20 plates and ran them for several nights, and from all these we got maybe 2 or 3 clear tracks. One solution to this problem would be to run them only a few hours at a time, check them, and remove the prints as they appear. The second problem is, so far as we can tell, unsurmountable; its telling species apart. Genera are fairly easy to distinguish, but we haven't been able to separate species from one another. Going back over the literature on these track plates, it appears that most people have used them for larger species, such as ground squirrels or medium sized predators. If you are only going to have a single species in each genus, you'd probably be OK. As for relative abundance, the closest one could get would be estimating abundance from frequency of plates with tracks, a pretty coarse approach. And even with frequency you'd still be crap-shooting because you'd have no way of knowing whether an individual decided to run around over several plates. Despite all my nay-saying, enclosed is a pile of the literature we found on track plates so you can see what other people have done.

What we are doing now for small mammals is testing how few Sherman live-traps we can use and still get around 90-95% of the species present. We're doing this by setting up a Monte Carlo simulation, randomly selecting traps from an intensive small mammal project we're currently involved in (running 200+ traps per night), doing this a hundred times for each increment of 5 traps (5, 10, 15, 20....) and just looking at the species accumulation curves. Hopefully, we can carry in only about 10 or so traps, set them up for one night, and find out who's living there. Obviously, this is a very coarse, very quick, and rather dirty method, but we aren't too interested in density or relative abundance; we really want to simply find out presence/absence right now.

Your's and Wayne's idea for integrating terrestrial and aquatic systems based on a 1 tree-length zone surrounding a stream is interesting but I think there are a bunch of other factors to consider. Could you really find 3 types of drainages (and what about replicates?) to get at trees alone, trees with wider disturbance, and wider disturbance alone? Wouldn't these drainages likely be real different in other attributes as well, probably confounding the hell out of this study? What about all the drainages that don't have, ever had, and never will have trees? I'm pretty skeptical about trying to get a handle on such a large topic as terrestrial/aquatic integration based just on 1 tree-length. On the other hand,

there are gobs and gobs of studies on the relative importance of streamside vegetation on stream ecosystems, ranging from composition of animal communities to nutrient cycling. Maybe a more fruitful approach (and I'm just thinking as I type) would be to develop quantitative predications on the relative importance and impact of different types of streamside vegetation, and when combined in a GIS with classes of drainage area, soil type, average drainage slope, disturbance history, average precip, etc. maybe a stepwise canonical discriminant analysis (2 sets of dependent, categorical variables) would reveal the variables most influencing stream communities. This would certainly be in the realm of a meta-analysis with all the attendant problems of disparate quantities and qualities of data, but at least it would be a start. Hopefully some predictions would come out from such an effort that could then be tested, who knows, maybe even at Taylor Ranch! In such an analysis as I suggest above, then one could also vary the input parameters one-at-a-time in a type of sensitivity analysis to get at which variables seem to be the primary drivers of stream community variation. Anyway, the goal of terrestrial-aquatic integration is certainly worthy, I just have my doubts about the effectiveness of differentiating 1 tree-length from basin-wide disturbance influence on stream communities. And my suggestion of a GIS modeling approach is pretty far out in left field too! But the topic certainly warrants further mulling. Please discuss all this with Wayne and lets keep in touch about this.

House building has been driving us bonkers. The last two weeks I've been averaging 4 hours of sleep per night as a result of making decisions and the uncertainty involved in the new house, all the work we are doing on our existing house to get it on the market, and a job which could easily take 150% of my time. I've only been putting in about 1/2 to 2/3 time at work the last couple of weeks because of all the critical stages we are in with both houses. But, even as I type, all the work on our current house is done and its now on the market, and work-related things are slowing down. I hope to cut loose from work for several days of rest and relaxation (i.e., just deal with researching all the pros and cons about different lighting and plumbing fixtures, and all the other stuff about the new house). Dealing with just one major project, instead of three, will be like heaven!

I heard from Chuck Peterson that John (was that his name?) the intern found many populations of tailed frogs, so it sounds like he is working out well. Anyway, I hope that all is well at Taylor Ranch and that you are doing well and enjoying your job.

Take care and keep in touch,

Peter Landres