Laboratory #1: Amphibian Survey and Data Analysis

Introduction
The purpose of this lab is to (1) introduce you to the ecology of vernal pools; (2) participate in an intensive survey of the amphibian community associated with two putative vernal pools; and (3) use data collected in this monitoring study to explore some of the basic analytical techniques used by ecologists for hypothesis testing.

Natural History
Vernal pools are typically shallow depressions filled by Spring rains or snowmelt. Because the pools dry out during the summer, fish are absent. A number of amphibians take advantage of this fish-free environment for breeding, including both obligate (e.g., Ambystoma spp. salamanders and wood frogs) and facultative (e.g., red-spotted newt) species. In this lab, we may see spotted salamanders, wood frogs, and red-spotted newts among other species. Although a number of invertebrates are also associated with vernal pools, our focus will be on amphibians – a taxonomic group that appears to be in worldwide decline (Stuart et al., 2004).
Methods

We will visit and sample two potential vernal pools that are being monitored as part of an environmental impact assessment for a proposed housing development (see map). The sampling protocol that is being used is outlined below.

1. A drift fence encircling both of the vernal pools was established in early Spring 2006.
2. At roughly 10 meter intervals along the fence, pairs of 8.5" pitfall traps were installed with one of the pairs inside and one on the outside of the fence.
3. Traps have been checked at least twice daily with the species, length, sex, trap number, etc. recorded.
4. Trapped amphibians are released on the opposite side of the fence from the plastic bucket in which they were trapped.

Data collected as part of this project will be used to classify these pools, and to determine whether the proposed protective buffer is sufficient to protect the annual dispersal/migration of breeding amphibians. Some of these data are already available and will be analyzed by us in the lab worksheet.

References
