

SALAMANDER POPULATION STUDY

The techniques used at the Holt Research Forest to assess salamander populations have changed significantly over the course of the study. Because we feel that the techniques we no longer use may be both useful in understanding why we do what we do now and also may be of value at other research stations, we have included them here with a discussion of our experience.

Following are three sets of instructions: "Salamander Shingle Set-up Instructions," "Salamander Shingle Station Instructions," and "Salamander Censusing Instructions." The first two involving shingles detail our current methods. The third includes both strip censusing and quadrat searching methodologies; we no longer use strip censuses, and rarely conduct a quadrat search.

Evaluation

The methods for assessing salamander populations have changed since we began. Rainy night censusing and quadrat searches were used initially. The rainy night censusing was dropped because it produced low numbers of salamanders, and it was hard on crew morale. Another difficulty was having an adequate crew available when the weather was appropriate for sampling. Quadrat searches are still used but on a limited basis; they, like censusing, are labor intensive and weather dependent. Quadrat searches also have the disadvantage of being destructive in an area where disturbance needs to be minimized. Micro-site differences tend to produce variation that is sometimes difficult to explain. The presence of many zeros and ones in the data makes analysis more difficult. As with any sampling method for salamanders, there is always the question of what portion of this fossorial species population is being sampled.

The shingle method provides a non-destructive sample from a consistent location by providing an artificial refuge for salamanders to utilize. If individuals were marked, more information about use of surface refugia and territoriality of individuals could be obtained.

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