"The relationship between climate and nesting patterns in Two-Lined Salamanders spanning the Northeast to Southeast United States"

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Two-lined salamanders (*Eurycea bislineata* species complex) are among the most ubiquitous amphibians in the Eastern United States. Because this group is geographically widespread and shows notable life history variation, it provides an opportunity to study the role of phylogeny and environment in shaping these differences. However, records of some important life history traits—such as clutch size and the date of oviposition—are scarce in the scientific literature. In this study, we gathered observations from published research, field notes, and citizen science databases like iNaturalist—a site where anyone can share natural history photographs and pinned geographical locations for other users to see. With the combined efforts of citizen scientists, we compiled >200 records of two-lined salamander nests and recorded data such as date, location, species, and developmental stage. We categorized development into three stages: 1) no visible embryonic differentiation; 2) some visible differentiation; and 3) late developmental stages (e.g., presence of dark pigment and eyes prominent), and we approximated a date of oviposition based off of published estimates of embryonic developmental time. We then fit a series of linear models to evaluate the relative importance of climate and phylogeny in predicting date of oviposition and clutch size. Among other trends, we found a strong negative relationship between mean annual temperature and date of oviposition, with records from the Northeast occurring much later than those from the Southeast.