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# Genetic Evidence for Two New Species of Salamanders (Plethodon glutinosus complex)

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## Genetic Evidence for Two New Species of Salamanders (*Plethodon glutinosus* complex)

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The 16 species of Slimy Salamanders (*Plethodon glutinosus* complex) are distributed throughout the eastern United States and show little to no morphological variation, having been described primarily using genetic data. Four species are known to occur west of the Mississippi River in Arkansas, Missouri, Oklahoma, Louisiana, and Texas, but our knowledge of species diversity and distributions in this region is based on genetic analysis of only 19 populations. Some of these species have small geographic ranges and many areas have not been sampled, meaning that additional species may remain to be discovered. To better understand species diversity in this region, we collected salamander tissue samples from >200 localities and sequenced the mitochondrial ND2 gene. Phylogeographic analysis revealed two distinct groups of populations in southwestern Arkansas and extreme southeastern Oklahoma that do not align with any known species. Thus, our results indicate that two undescribed cryptic species are present and additional species diversity exists in the *Plethodon glutinosus* complex. Future work will incorporate genetic data from the nuclear genome and examine morphological variation to determine whether formal descriptions of new species are warranted.