Testing the “Allopatry-to-Sympatry” Hypothesis in *Escallonia*

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ABSTRACT

The “allopatry-to-sympatry” hypothesis views the speciation process as a continuum in which the early stages typically occur in allopatry, while range expansion and shift cause the later stages to occur in sympatry. In this study, we evaluated the hypothesis using the plant genus *Escallonia* as a study system to determine if the degree of sympatry is greater for species pairs between clades and lower within clades. Using Maxent, we developed Species Distribution Models for 28 species in the genus. Degrees of sympatry were calculated by the amount of overlap divided by the size of the smaller species range for each species pair. We evaluated the results in three ways: all species pairs, species located in the Tropical Andes, and species in the Southern Andes. Our results, rather than supporting the hypothesis, appeared to behave the opposite than expected besides for the Northern Andes, which was significant. We estimate that the clades of *Escallonia* have not had enough time to migrate to new regions for the study to be significant. We recommend more research on different study systems to have a more confident result.