



Resolving the taxonomy of the *Caladenia patersonii* and *C. reticulata* (Orchidaceae) species complexes in South Australia.

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Intense taxonomic activity over the past thirty years within the *Caladenia patersonii* and *C. reticulata* species complexes in South Australia (~31 spp.) has not resulted in a functional taxonomic framework. Species within these groups, including those listed as endangered, have been difficult to identify, impeding conservation efforts and wasting valuable resources. My PhD project aims to resolve this confusion from a systematic approach. The initial part of my project has involved examining the species that can be recognized and documenting incongruencies among the diagnoses, descriptions, and types. This has been followed by sample collection of these *Caladenia* spp. throughout South Australia for morphological and molecular analyses. The molecular dataset was constructed using DNA sequences derived from hybrid capture utilizing the Angiosperm353 and OzBaits kits (including nuclear and chloroplast loci) and a genome skim. The collection material shows that there is more morphological variation in contemporary populations than is recorded in descriptions or types. Initial phylogenetic analyses of these data show paraphyletic taxa. Hybridization with *C. dilatata* species complex appears common. Some clades conflict with our current understanding of this genus in South Australia. The next step will be to analyze population level structure in these taxa through SNP array data.

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