LANKESTERIANA 7(1-2): 270-271. 2007.

ARE SOME LIFE-HISTORY STRATEGIES MORE VULNERABLE TO THE GENETIC CONSEQUENCES OF HABITAT FRAGMENTATION? A CASE STUDY USING SOUTH AUSTRALIAN *CALADENIA* R. BR. (ORCHIDACEAE) SPECIES

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KEY WORDS: habitat fragmentation, life history, population genetics, *Caladenia*, pollination, South Australia

Habitat fragmentation, through land clearing, has been attributed in the demise of many species of plants and animals throughout the world (Kinzig and Harte 2000). Not surprisingly, much research effort has been devoted toward understanding the dynamics of populations subject to fragmentation.

The Mount Lofty Ranges, adjacent to the South Australian capital city of Adelaide, constitute a region where fragmentation, through land clearing, has been prevalent (Paton 2000). The area was historically home to a number of endemic orchid species which are now either extinct or under threat (Barker *et al*. 2005). The contemporary distribution of species that are still present, particularly of the genus *Caladenia* R. Br. (Orchidaceae), is interesting with respect to a diversity of traits in habitat requirements and pollination specificity. Some of these species are quite prolific while others are only found in remnant patches and it is not clear what is driving these differences. It is generally considered that habitat reduction effects plant population dynamics on several fronts by reducing recruitment potential through loss of pollinating agents (Aguilar *et al.* 2006), restricting potential for range expansion (Opdam & Wascher 2004) and interrupting natural disturbance regimes (Coates *et al.* 2006). However, the interactions driving these responses are often complex and management regimes require a thorough understanding of key processes if they are to be successful. In order to evaluate the effects of these variables, this study adopts the conservation genetics paradigm (Ouborg *et al.* 2006) as a means of identifying species and populations that have been effected by fragmentation and aims to associate the level of impact with life history characteristics.

TABLE 1. Pollination specificities (Cingel 2001) for three species of *Caladenia* found in the Mount Lofty region of South Australia.

Pollination Specificity	
High	*Caladenia tentaculata*
Moderate	*Caladenia rigida*
Low	*Caladenia carnea* var. *carnea*

The presenter discussed the results from an investigation of microsatellite allelic diversity and structure among populations of three species expressing a range of pollination specificities (table 1).

ACKNOWLEDGEMENTS. This project is funded through the Australian Research Council with support from South Australian Museum, Department for Environment and Heritage South Australia, Earth Sanctuaries Foundation of Australia Inc. and Royal Zoological Society of South Australia Inc.

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