GENETIC AND DEMOGRAPHIC MANAGEMENT OF CAPTIVE WILDLIFE POPULATIONS LOCALLY AND INTERNATIONALLY

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SUMMARY

Where a breeding program aims to achieve reintroduction of research directed towards assisting species recovery, it should aim to retain, as closely as possible, wild population characteristics in its captive individuals. The genetic consequences of maintaining a small, finite captive population militate against this, to some extent. Yet captive wildlife populations are essentially all small populations, and problems associated with managing small populations, in particular those resulting from inbreeding, loss of genetic variability and adaptation to captivity, are likely to be common to most wildlife breeding programs. The application of contemporary theories of genetic and demographic management can help to overcome these small population problems and zoos and zoo associations worldwide have been applying these theories to the management of their captive populations of threatened wildlife. Management strategies used include reducing the number of generations in captivity; periodically introducing new founders; increasing total population size; and pedigree management to ensure genetically optimal mating choices. An overview will be provided of the various schemes under which captive wildlife populations are managed for conservation purposes in Australasia and internationally, together with details of a range of programs currently in operation.
Keywords: Conservation, genetic variability, adaptation, captivity, wildlife.