Genetic management of fauna reintroductions

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Managing genetic diversity in fauna reintroduction programs is important to retain species' evolutionary potential. While it is critical to source genetically-diverse founders for reintroduction, constraints on population growth and longer term population size can lead to erosion of genetic diversity with time and create additional management challenges. This is of particular relevance for island and mainland exclosures where hard boundaries act to limit population sizes and create effectively isolated populations. Here we present genetic assessment of the translocation of golden bandicoots (*Isoodon auratus*) from a large source population on Barrow Island off the north-west coast of Western Australia to two other island sites and a mainland fenced enclosure. We assessed the genetic diversity of animals translocated to each site and their wild-born progeny, and whether wild-born animals showed evidence of genetic bottlenecks or genetic drift from the source population. Population viability modeling predicts that each of the translocated populations is susceptible to loss of genetic diversity over time, given constraints on long-term population size. We discuss these genetic management issues in light of the proposed fauna reconstruction program on Dirk Hartog Island. This ambitious project aims to reconstruct the island's fauna assemblage by reintroducing 10 species of native mammal and one species of bird, and introducing two other threatened mammal species for conservation reasons, over a 12 year period, and will be the largest ecological restoration project undertaken in the southern hemisphere.

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ABSTRACT BOOK