Paul Leberg and Brigette Firmin. **Purging of inbreeding depression and the management of captive populations.** Department of Biology, University of Louisiana, Lafayette, USA; US Fish & Wildlife Service, USA.

Populations that have experienced inbreeding may be less susceptible to inbreeding depression because they have been purged of deleterious recessive alleles. Use of such populations has been proposed as a strategy for captive breeding and restoration programs, because captive populations are often not large enough to avoid inbreeding. However, there has been much criticism of purging strategies with regard to their ability to eliminate inbreeding and their potential for decreasing population viability. We review experiments and simulations assessing the effects of purging to eliminate inbreeding depression. We also present results of an experiment testing whether lineages of mosquitofish (*Gambusia affinis*) that have passed through multiple bottlenecks experience reduced effects of inbreeding on their viability. While some reduction in inbreeding depression is possible following intentional inbreeding, elimination of inbreeding depression is not typically possible and the costs of purging are substantial. Furthermore, the response of a species to purging is difficult to predict, making the strategy risky for management of threatened taxa. In our experiment, we found no evidence that a history of bottlenecks reduced the detrimental effects of inbreeding on a population's ability to recover from a reduction in size; bottlenecks resulted in fixation of detrimental alleles that reduced population viability. Populations that have experienced such bottlenecks would be poor candidates for use as sources of individuals for restoration programs.