

GONADAL TISSUE PRESERVATION IN RARE AND ENDANGERED SPECIES

Pierre Comizzoli

Center for Species Survival, Smithsonian's National Zoo & Conservation Biology Institute, USA

There is enormous potential in applying human-related fertility preservation strategies to wild animals, especially approaches that could assist managing or 'rescuing' gametes and gonadal tissues of genetically valuable individuals. Indeed, one of the highest priorities in wildlife ex situ management is sustaining all existing genetic diversity to (1) preserve heterozygosity to avoid inbreeding depression and (2) ensure species integrity and the persistence of genomic adaptability to environmental changes. There are components of the rapidly growing field of onco-fertility in men and women that are highly compatible with preserving valuable germplasms of individuals or populations of threatened wildlife. Strategies associated with ovarian or testicular tissue cryopreservation followed by in vitro culture are especially attractive for protecting and extending fertility. Given adequate attention and more basic studies, we predict that these approaches could assist in the intensive and practical management of gene diversity in endangered species.