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Title of Research Project	Conservation networks in Human-dominated landscapes: Restoring a meta-population of <i>Loxodonta Africana</i>

ABSTRACT

The African elephant distribution is patchy, shares over 50% range with humans, and occurs mostly in Conservation Areas. Interferences that hinder dispersal within an ecosystem ultimately induce habitat deterioration and human/wildlife conflicts. These undesirable consequences can be neutralized through the development of conservation networks along spatial axes, which restore processes that sustain populations without habitat deterioration. Conservation network development, comprising land-use options, that cater for conservation in IUCN primary (I-IV) and secondary (V-VI) categories, communal and private land, without detracting from sustainable exploitation of wildlife by human communities is key in promoting the success of TFCAs. Component I of the project focuses on habitat availability and connectivity, based on resource selection function modelling and suitability. Spatial maps will be used to show landscapes suitable for conservation networks within and between TFCAs, cognisant of present and projected land use practices. Component II constitutes community Participatory Rural Appraisals to determine the livelihoods and magnitude of human/wildlife conflicts within potential wildlife corridor areas within TFCAs. A “decision model” will be formulated and communicated for each land-use type area. Component III is on apparent historical and present connectivity between elephant populations, implied by gene flow, based on patterns of mitochondrial and nuclear DNA. Faecal DNA will be sampled from Sebungwe, Hwange, Greater Mapungubwe and Gonarezhou elephant populations. Component IV focuses on demographic consequences of dispersal, based on dispersal success and functional distances of elephant movements. The “cost of displacement” in each landscape element will be a function of mortality, snaring, and physiological stress levels. The integration of the research components will provide a framework for planning for conservation networks and for making substantive recommendations for policy development.