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African Heartlands: A Science-Based and Pragmatic Approach to Landscape Level Conservation in Africa

AWF Conservation in Practice Papers

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The African Wildlife Foundation, together with the people of Africa, works to ensure the wildlife and wild lands of Africa will endure forever.

About This Paper Series

The AWF Conservation in Practice Paper Series has been designed to disseminate to partners and the conservation community, key lessons learnt and experiences from AWF's African Heartlands Program. This series aims to share current work, what lessons have been learnt in order to provide examples that can be adopted by other conservation organizations and players to improve conservation action world wide.

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Introduction

There is global concern over the rapid rate at which species are disappearing (Hilton-Taylor 2000) and various approaches have been developed to conserve biodiversity (Redford *et al.* 2003). Some conservation biologists advocate prioritization based on biodiversity hotspots (Myers *et al.* 2003) while others suggest that aggregate biodiversity levels are more important (Johnson 1995, Noss 1996, Dinerstein *et al.* 1993, Olson and Dinerstein 1998). Although conservation approaches are diverse, they are not always incompatible when it comes to looking at conservation targets (Redford *et al.* 2003). Conservation biologists are converging on identifying the most important areas of biodiversity conservation in Africa (da Fonseca *et al.* 2000).

At the same time, governments in Africa are focused on national strategies to reduce poverty, combat the scourge of HIV/AIDS, and promote economic growth within the context of environmentally and socially sustainable development. African governments face the need to marshal scarce resources, and to make use of any local assets that can provide an advantage in the competitive global environment. For the many parts of Africa that have been blessed with an abundant and globally significant natural heritage, wildlife and pristine habitats provide an important economic, as well as environmental, resource.

There is no universal agreement on what we are trying to save, or how to do it. The challenge is to carve a conservation approach grounded both in science and practicality. This paper describes the African Wildlife Foundation (AWF)'s approach to landscape-level conservation, as embodied in its *African Heartlands* Program.

The African Heartlands Program

AWF's *African Heartland* Program strives to conserve Africa's wildlife in large cohesive conservation landscapes which are biologically important and have the scope to maintain healthy populations of wild species and natural ecological processes in perpetuity. The desirability of conserving large areas is an almost universally accepted principle in conservation biology. The *African Heartlands* aim to maintain the ecological integrity of the landscape over time. The program augments, and strengthens the area under protection, and manages the surrounding areas according to the needs of the native species, ecosystem processes, and local stakeholders. As demonstrated by increased species extinction rates in small isolated parks (Dobson 1996, Woodroffe and Ginsberg 1998), protected areas are by themselves, incomplete ecosystems incapable of conserving a great variety of biodiversity. AWF supports *in situ* conservation by linking existing protected areas with natural areas to form a contiguous landscape. These landscapes are biologically coherent and safeguard livelihoods for local people (e.g., development of conservation enterprises).

The effects of fragmentation and habitat loss can each and collectively have far-reaching effects on the flora and fauna; soil water resources; genetic and, ecological processes; and functions, and patterns of human ecology (Hobbs 1993, Forman 1998, Bennet 2003). These in turn can compromise peoples' livelihoods, particularly in Africa. Preventing fragmentation and reduction in the size of habitat is critical in order to maintain diversity of vegetation, increase the likelihood of occurrence of rare or specialized habitats, maintain species richness, and ensure the sustainability of natural disturbance regimes. AWF's *African Heartlands* Program therefore strives to maintain and restore connectivity. Connectivity is crucial as key habitats become increasingly isolated, and further removed from any wildlife that could move in from the outside, as the areas around are either clear-cut, overgrazed, or colonized by settlements and agriculture. The land set aside to protect biodiversity is only a small fraction of the total area of natural habitat that is being converted to agriculture or harvested for timber.

AWF's concern for maintaining species and communities, habitats and other entities is complemented by a concern for the ecological and evolutionary processes that brought these entities into being and that will allow them to persist and evolve over time. African landscapes depict habitat heterogeneity and ecological gradients – aspects of natural variation which *African Heartlands* encourage. Ecosystem processes that are dependent on some vector for transmission through the landscape are most sensitive to isolation and these include for example pollination, seed dispersal, and predator-prey relations.

Current AWF Heartlands are located in central, eastern and southern Africa (see *African Wildlife Foundation Heartlands* Map on page 3). The number of Heartlands

will increase with time and resources to encompass other geopolitical areas and ecosystems of Africa.

Undertaking the African Heartlands Program

Using its Heartland Conservation Process (HCP) (AWF 2003), AWF first prioritizes and selects Heartlands, then plans and implements activities in these priority landscapes together with its multiple partners, and adapts when and where necessary (www.awf.org/heartlands). AWF then considers the range of landscapes in Africa that merit its investment. Pre-selection draws on prioritization work at the continental level that has been undertaken by other organizations (ecoregions: Olson and Dinerstein 1998, biodiversity hotspots: Myers *et al.* 2000, important bird areas: Fishpool and Evans 2001, biosphere reserves: www.unesco.org/mab, heritage sites: www.unesco.org/heritage).

Using a variety of biological, ecological, social and economic criteria AWF identifies large landscapes of exceptional biological value where AWF can work over the long term to have significant, positive conservation impact. AWF uses over forty years of accumulated experience of practicing conservation in Africa to identify large landscapes where field level conservation can be practical and effective. Following prioritization and selection, AWF uses the science-based Heartland Conservation Process[1] (HCP) to work with partners to identify conservation targets, goals, threats and opportunities, and to design strategies and interventions to mitigate threats and ensure conservation targets persist. AWF and partners then implement activities in a Heartland and adapt where and when necessary. Analyses and syntheses of results are undertaken regularly through AWF's Program Impact Assessment (PIMA) system. The HCP provides a useful framework for effective conservation in *African Heartlands*.

AWF and partners conduct systematic HCP during which specific features of biodiversity are explicitly selected. These features of biodiversity are called conservation targets (Groves 2003). They include species, species assemblages, ecological communities and systems.

Conservation targets drive landscape-scale conservation planning including the process of identifying threats, developing strategies, measuring success, and approximately delineating the boundaries of a Heartland. The size of a specific Heartland is decided by combination of characteristics of conservation targets such as the ranging patterns of keystone species and the size of a watershed. AWF's *African Heartlands* approach incorporates time-tested species approaches while placing species into the

[1] HCP has been adapted from The Nature Conservancy

context of a large landscape encompassing their ecological needs such as breeding, feeding, seasonal movements and shelter. The Wildlife Conservation Society has a similar approach (landscape species approach: Sanderson *et al.* 2002). Adequate protection of taxa with large home ranges can lead to successful protection of smaller organisms. In general, the ecology of conservation targets means Heartlands straddle international borders to enhance landscape integrity.

There is no predetermined size for AWF's *African Heartlands*. AWF works at the scale of "conservation landscapes"; a size smaller than ecoregions and larger than sites (Poiani *et al.* 2000, Redford *et al.* 2003). These conservation landscapes form the basis for conservation planning and implementation (www.awf.org/heartlands, Redford *et al.* 2003, Groves 2003). Working at the landscape scale ensures that AWF is conserving an area large enough to sustain a majority of conservation targets and yet is of a manageable size for intervention strategies to be applied effectively.

AWF's initial planning horizon for work in a Heartland is 15 years thus accommodating temporal scales beyond usual project funding cycles. This will allow the achievement of conservation goals and also tracking of factors acting at larger spatial scales which may take longer to become apparent.

What does AWF do in a Heartland?

AWF works closely with a wide variety of partners – central and local government, private sector, communities, research organizations - to ensure that conservation targets and their environment persist in the long term. This is achieved by applying conservation strategies relating to land and habitat conservation, applied research, conservation enterprise and capacity building and leadership.

Land and Habitat Conservation

AWF explores and applies appropriate mechanisms to bring land to conservation in each Heartland and country. AWF works with landowners to help them decide which lands will be reserved for wildlife, which lands will be used for farms, grazing, and tourist lodging and to bring other benefits to the landowners. For example, in the Maasai Steppe Heartland, AWF and partners "secured" Manyara Ranch, an important habitat linkage between Tarangire and Manyara National Parks, through the Tanzania Land Conservation Trust (www.awf.org/succcess/manyara.php). In the Samburu and Kilimanjaro Heartlands, AWF is helping local communities to undertake participatory natural resource management planning and implementation thus securing key areas for conservation and meeting livelihood needs of the communities.

AWF works with protected area authorities in Heartlands to support protected area planning, management, enforcement and monitoring. This has involved development of General Management Plans, building staff houses, providing safe drinking water, and improving visitor services given the often high dependency of protected areas on revenue from tourism.

In all Heartlands, the conservation of wildlife movement corridors, habitat linkages, dry season refuges and dispersal areas is an important strategy. Gap analysis is used to select areas of land to set aside as corridors. AWF studies the status including use of these corridors by wildlife as an essential part of their conservation. We facilitate land-use planning by landowners. In Kilimanjaro Heartland, for example, AWF helped in the "formalization" of the Kitendeni corridor so that elephants and other species can move between Kilimanjaro Forest Reserve, Kilimanjaro National Park in Tanzania and Amboseli National Park in Kenya. In each heartland we identify key corridors and habitats that will need to be secured in the long-term. Despite potential risks posed by corridors, it is undeniable that they can significantly enhance the conservation of protected areas by connecting them.

Species Conservation and Applied Research

Applied research into the status of conservation targets and threats to their conservation is an important component of AWF's work in Heartlands. Between a third and a half of conservation targets in the existing Heartlands (*see Map*) are species or species assemblages. AWF undertakes multifaceted research, addressing ecological and socio-economic issues, and uses the findings to inform overall conservation in the landscape. AWF's species research and management work is collaborative involving AWF researchers and a variety of partners, consisting of individual researchers, institutions, landowners, communities, NGOs and government agencies. AWF addresses significant interactions between humans and wildlife species. Negative interactions often lead to loss of property and deaths of wildlife and humans. Positive interactions between wildlife species and humans if enhanced, say

through tourism, can lead to long-term coexistence. The threat of wildlife extinctions is real in Africa (Hilton-Taylor 2000) hence AWF emphasizes conservation of endangered species, and their habitats. . Through our research theme "*Essence of Africa: species, key populations and ecological processes*" we try to ensure that AWF protects different ecotypes of a species (such as savanna, forest and desert elephants) and ecological phenomenon like migrations. Because of their important roles in natural ecosystems and the special challenges their conservation poses, predators and their conservation are accorded special emphasis by AWF. The importance of disease as a threat to wildlife populations and to human livelihoods through shared diseases is addressed in a separate theme – disease and conservation.

Collared lions by Large Predator Research in Kazungula

Conservation Enterprise

AWF is demonstrating that "conservation enterprises", though no panacea, are a useful strategy in extending the area of land under sound conservation. AWF has also pioneered a methodology for assessing the impact of conservation enterprises on local people and their livelihoods.

Conservation enterprises enable AWF to leverage additional land for wildlife as well as helping develop community-based business ventures that improve and safeguard livelihoods for local people. AWF has multidisciplinary enterprise support teams working in each Heartland, helping communities identify business opportunities, supporting community-private sector partnerships, helping to build marketing capacity and market opportunities, and enabling sound governance and good business management skills within community organizations. Much of AWF's conservation enterprise work has focused on the tourism sector, including the development of ecotourism lodges, tented camps, community campsites, fishing lodges, cultural bandas and handicrafts. For example, AWF was asked to intervene in a court case involving a Maasai Community and a South African operator. The new deal brokered by AWF formally recognizes community rights and has provided a significant income to the community while protecting a key migration area. In another Heartland, AWF assisted a community owning key habitat between the Okavango and the Moremi Game Reserve to replace outdated tourism chalets that they had inherited from the government and create a new, competitive camp that will provide income. The community voluntarily created its main center of settlement far from this wildlife corridor to protect its revenue-generating potential. AWF also supports non-tourism enterprise development including bee-keeping and honey products, shade coffee, bottled water and 'wildlife' tea, and works with local development organizations to help safeguard community livelihoods based on livestock and crops.

Koija Starbeds Ecolodge®, Laikipia, Kenya

Capacity Building and Leadership Development

AWF supports capacity building at many levels. At the community level, AWF works with local leaders and members of village natural resource committees to gain the skills and experience they need to help manage land and conservation enterprises. AWF has found that community groups like to learn from each other; therefore "exchange" visits in which two or more communities learn from the experiences, successes and mistakes of each other are commonly arranged within and between Heartlands. The Ranger-Based Monitoring (RBM) program originally developed to protect mountain gorillas in the Virunga Heartland has been

adapted and applied to the Samburu and Kilimanjaro Heartlands.

Ranger Based Monitoring Team in Virunga

At a higher level, AWF is committed to developing and supporting Africa's future conservation leaders for Africa. This commitment led to the creation of the Charlotte Conservation Fellowship Program. This program provides educational grants to Africans pursuing advanced degree studies in conservation-related fields under the assurance that they will return and apply their learning on the continent.

Measuring Success

AWF measures success by applying its Program Monitoring and Assessment (PIMA) system. PIMA tracks viability and status of conservation targets, severity and scope of critical threats and key socio-economic components relating to our enterprise strategy. PIMA has been developed by looking at many other approaches such as TNC's Measures of Success and adapted for use in Africa.

How African Heartlands and Ecoregions Compare

As mentioned above, AWF already works with WWF's ecoregions during the prioritization and selection stages of the Heartland Conservation Process (HCP). Unlike WWF's Global 200 ecororegions approach, *African Heartlands* is not a strictly prioritization approach. Ecoregion-based conservation works at larger scales than *African Heartlands*. Both approaches answer the questions of where and how to undertake conservation. Heartland conservation planning and ecoregional planning (WWF 2000) address landscape level action and recognize multiple conservation targets ranging from species to ecosystems larger than Heartlands. There is much scope for collaboration between these two approaches which have potential to complement each other. Informed collaboration will enhance long-term conservation of Africa's biodiversity.

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