

## NEW THREATS TO AMBOSELI AND MOBILIZING RESPONSES

The threats to East Africa's magnificent savannas come in many forms and Amboseli faces most of them. By far the gravest danger lies in the fragmentation of the 10,000 square kilometer ecosystem and collapse of the migratory herds of zebra, wildebeest, elephants and pastoral livestock. The seasonal migrations and movement of wildlife through habitats of the Amboseli Basin each dry season has kept the savannas productive and animals able to ride out droughts and recover in good years. The migrations and free-ranging movements of wildlife and pastoral livestock in response to local conditions and each other have allowed them to coexist in the Amboseli ecosystem for millennia.

ACP over the years has documented the patterns of migration in Amboseli and explained how so much wildlife and so many livestock thrived in the same area and maintained the richness of habitats and productivity of pastures. The information is given in the report titled *The Ecology and Changes of the Amboseli Ecosystem: Recommendations for Planning and Conservation* (see under Amboseli Ecosystem).

The report lays out the minimum conditions needed to sustain the wildlife and biodiversity of the Amboseli ecosystem and the array of threats its faces from rising population, the spread of farming, water diversion, subdivision of land, habitat loss, falling pasture productivity and poaching. The combined pressures on the ecosystem over the last three decades have seen the late season pastures shrink and decline. Severe forage shortages in the national park and surrounding Maasai ranches have grown more frequent and intense. The shrinking pastures culminated in precipitous declines in Amboseli's wildlife and Maasai herds in 2009 (See *The Worst Drought: Tipping Point or Turning Point*).

The recovery from the drought is far slower than in previous droughts. Our ACP website reports on the slow pace of recovery as well as the likely causes and consequences in an update below.

In the last two years new threats have arisen in Amboseli. The gravest threat stems from the inexplicable government plans to build a Nairobi Metropolitan township on the boundary of the park and a new highway through the migratory routes northwards from Amboseli. Why Nairobi Metropolitan Area needs Satellite Township 150 kilometers away speaks to political intent rather than rational planning. Both the proposed town and road have been floated with no reference to the Amboseli Ecosystem Management Plan and or public hearings in the region.

Yet another threat arises from the rapid pace of subdivision of land on the eastern border of Amboseli, a rash of new lodges and land sales to outsiders speculating on rising property prices.

The resurgence of ivory poaching that killed off over 100,000 of Kenya's elephants in the 1970s and 1980s also threatens the Amboseli herds. Further details can be found on the Big Life and Amboseli Elephant Trust websites.

The surge in ivory demand in China since 2010 and the rise in price to an all-time high of \$1,000 a kilo has sent poachers in pursuit of elephants across Africa, accounting for 25,000 dead in 2011. Tanzania is losing 10,000 elephants a year. Kenya, at close to 400 officially last year, and certainly more in unaccounted elephants, has fared better. The difference comes down to superior KWS anti-poaching and intelligence capacity and strong community conservation initiatives and scouting patrols. In Amboseli community conservation efforts have kept down poaching as they did in the 1980s. The success is in large part due to the 350 community scouts who patrol the areas outside the park.

Despite the security network, poachers have infiltrated Amboseli several times in the last three years. Big money, ivory cartels, small arms, corruption and rural farmers and herders out to make do in hard times add up to a formidable threat to elephants in Amboseli. And Amboseli's elephants link up with other herds across the entire Kenya-Tanzania borderlands where one of the largest bushed savanna populations move between and beyond the world famous national parks from Serengeti-Mara to Tsavo.

The following reports give a thumb-nail sketch of the threats to Amboseli ecosystem and some of the responses underway. Regular updates will be posted on the ACP website.

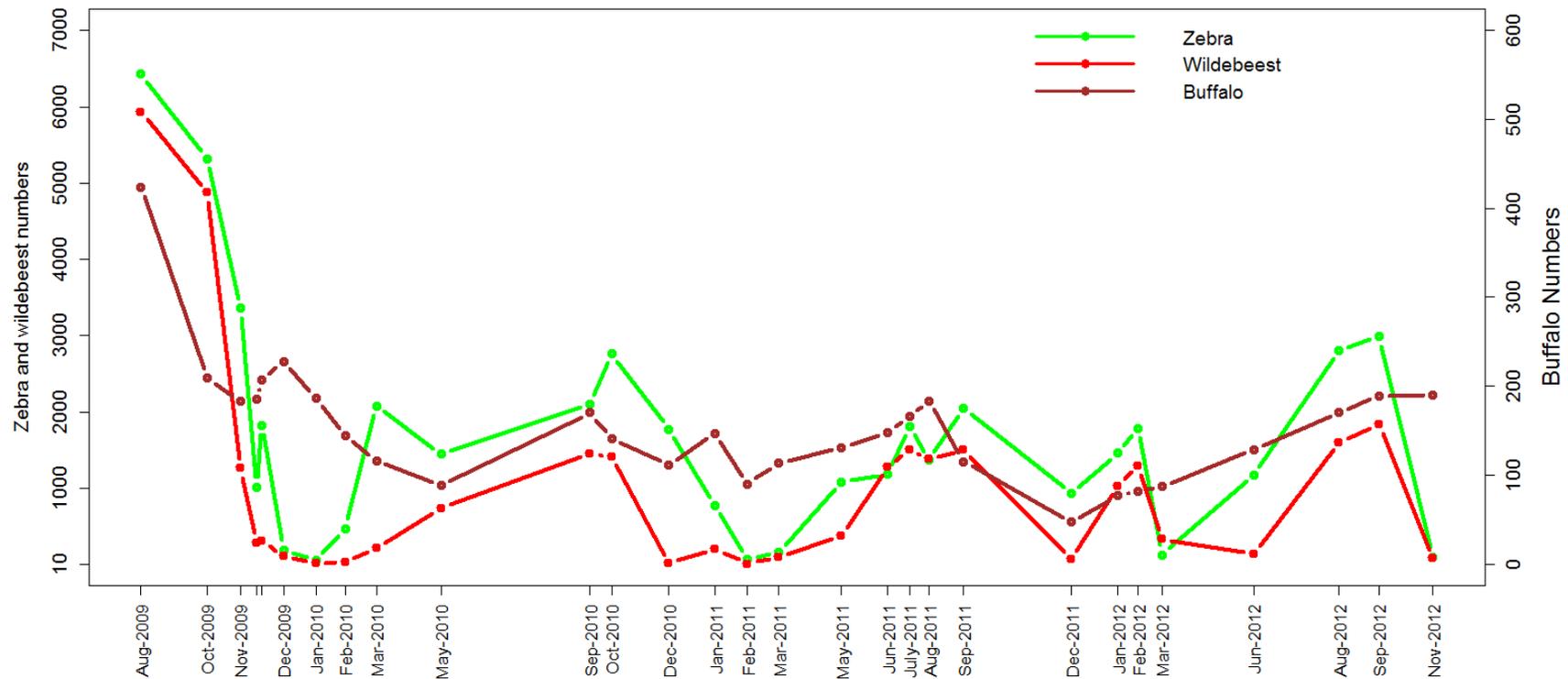
## **TRACKING THE RECOVERY OF AMBOSELI AFTER THE 2009 DROUGHT**

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The recovery from the 2009 drought remains sluggish, despite an abundance of pasture in the Amboseli Basin and Amboseli National Park. The initial boost in zebra and wildebeest numbers through immigration in the year following the drought has not been sustained. In the extreme droughts of the 1970s wildlife numbers rebounded quickly once the rains resumed. Three years after the 2009 drought, numbers should be close to double. But, as the aerial and ground counts show in the graph below, zebra and wildebeest numbers in the basin have not risen significantly since 2010. The suggestion we made earlier that numbers dropped to such a low levels that predators are dampening recovery seems to be borne out by counts over the last year.

Population Estimates for wildebeest, zebra and buffalo in the Amboseli Basin.



**Buffalo numbers in the basin over the last year also suggest a sluggish post-drought recovery and, perhaps, a slight downturn. In 2010 the numbers reached a peak of 210, down from 600 pre-drought. The numbers in early 2013 had dropped to 180.**

Another indication that predation is depressing recovery is evident in the seasonal and daily migrations of animals out of the park. Resident zebra and wildebeest numbers in the basing during the rains dropped to the lowest recorded since the 1970s. Buffalo now regularly migrate out of the park in the rains after being resident year-round since the 1970s. The most telling change is in the daily movements zebra and wildebeest. Both species move out of the park each evening the outlying bush country where predators are far fewer.

This is an entirely new movement pattern. In the past, the herds left the swamps and woodlands at night to evade predators but bedded down on the plains in the centre of the park. The new movements out of the park each evening began in the aftermath of the drought and still continue.

The depressed wildlife herds in Amboseli do not apply to the elephant. Prior to the 2009 drought elephant numbers in the basin had been falling steadily from a daily peak of close to 600 in the late 1980s to a daily low of under 300 by 2008. Since 2009 drought, daily numbers have climbed steeply to over 700, the highest recorded in 45 years of counting. The high concentrations mean that elephants are suppressing the recovery of swamp pastures expected after the drought. The failure of sedge recovery will leave the park short of surplus pasture in the next drought. The suppressed wildlife numbers will, however, prevent a drought die-off of 2009 proportions until the herds recover.

The slow recovery of wildlife numbers, the exaggerated seasonal and daily migrations from the park, the rapid recovery of livestock herds (especially sheep and goats) and continuing permanent settlement of pastoralists around the basin has seen predation on Maasai animals climb. The consolation payment to herders for loss of livestock has reached troubling levels. The conflict will not be mitigated without wildlife herds increasing to make up the bulk of carnivore diet.

ACP research in the coming months will look into the impact of predation on wild herbivores and livestock to gauge the repercussions on the numbers and mix of species in Amboseli. The species numbers and mix will affect the speed of ecosystem recovery and bear on what restoration measures are possible.

### **A GRANT TO IMPROVE THE OUTLOOK FOR AMBOSELI**

ACP has been assisting a consortium of organizations, coordinated by Kenya Wildlife Service, to prepare a proposal for ensuring the ecological viability of the Amboseli ecosystem and diversifying community livelihoods. The proposal has been submitted to the Global Environmental Facility with the approval of the National Environmental Management Authority and is currently being prepared for final submission following a successful review. The proposal recognizes the biological and international importance of Amboseli and the need to restore habitats and wildlife. It proposes to remedy the losses by addressing the threats to wildlife, livestock and livelihoods caused by rangeland degradation. The GEF funding will support ecosystem-wide planning based on an updated Amboseli Ecosystem Plan, build the capacity of community institutions such as the Amboseli Ecosystem Trust and improve livelihoods by improving rangeland health, livestock production and widening local sources of income. High priority will be given to raising local benefits from wildlife and cultural tourism.

ACP's long term research and conservation work in Amboseli is providing much of the information for the grant proposal. Subject to approval, funding will start in 2014.

### **THE AMBOSELI ECOSYSTEM TRUST FIGHTS NEW THREATS**

ACP in its recommendations for conserving the Amboseli ecosystem identified the need for an Amboseli Ecosystem Trust to coordinate and oversee the implementation of the Amboseli Ecosystem Plan. AET, formed by the landowners with representation from KWS and the conservation bodies on its board, was formerly established in 2010 but was not fully underway until 2011. In the last year AET has revamped its board and addressed some of the pressing threats to Amboseli.

The immediate threats stem from the expansion of the Nairobi Metropolitan Area, plans for a new major highway cutting through the migratory routes north of the park and a rush of land subdivisions and tourism developments on the eastern border of the national park. The Nairobi Metropolitan Plan for a major township on the northern border of the park was announced in a legal gazette notice by government in mid-2012. All three developments would pare down the wildlife migrations and encourage land sales and ex-urban spread across the ecosystem.

None of these threats can be addressed without the strong backing and leadership of the group ranches that own ninety percent of the ecosystem lands.

ACP, in collaboration with the African Conservation Centre, African Wildlife Foundation, International Fund for Animal Welfare, Kenya Wildlife Service and other organizations, has backed the efforts of AET to ward off these threats. AET has filed formal objections to government for the development of a metropolitan in the Amboseli ecosystem. ACP has also worked with AET and other conservation organizations to address the threat to the wildlife migrations posed by the prospects of a highway through the migratory route.

The rash of unplanned developments in Amboseli runs counter to the Amboseli Ecosystem Plan, which zones the region into compatible conservation and development areas. Although signed by the Amboseli group ranch associations and KWS, the plan has no legal standing unless gazetted by government. Until now the National Environmental Management Authority has had no legal means of using the Amboseli Ecosystem Plan to authorize only those developments that fall in line with the plan.

Given the urgency of doing something to stop the runaway developments, the newly appointed director of NEMA, Dr, Geoffrey Wahungu, called a meeting of parties on February 4th to fast-track the gazettelement of AEMP using a Strategic Environmental Assessment provision. AET will take a lead in calling a meeting of all parties in Amboseli to address the threats to the ecosystem and ensure the AEMP is given legal backing to regulate developments within the next few months.

## **CONSERVING ELEPHANTS ACROSS THE TANZANIA-KENYA BORDERLANDS**

The Tanzania-Kenya borderlands span 16 protected areas ranging from Serengeti-Mara to Tsavo-Mkomazi and support the largest bushed savanna elephant population in Africa. Herds range widely beyond parks, across community land and between the two countries. The challenge of conserving such migratory and vulnerable herds brought together in Arusha over sixty representatives of the two governments, communities, conservation organizations and researchers to forge a collaborative approach. The workshop, held in February 2012 was organized by the African Conservation Centre (ACC) from Kenya and the Wildlife Conservation Society (WCS) from Tanzania, and funded by LCAOF.

Cross-border collaboration is vital for conserving the large elephant population in the Tanzania-Kenya borderlands and connecting the fragmented herds spread among the many national parks, reserves and community wildlife areas in the region. The borderlands elephant population is the best studied and most famous in all of Africa and a key attraction in the \$1.3 billion tourism industry of Tanzania and Kenya.

Heavy poaching for ivory in the 1970s and 1980s reduced the elephant population in the borderlands from some 50,000 to fewer than 15,000 by 1989. The large, connected herds that traversed the border and the Rift Valley were fragmented and confined to parks by heavy poaching. The concentrated herds have had a large impact on the habitats of many parks. Following the international ivory ban of 1989, elephant numbers began to recover and spread out from the parks once more.

In recent years a sharp rise in poaching and deepening conflict with people has slowed elephant recovery and blocked range expansion. Most of the poaching and all of the conflict takes place when elephants spread onto community lands around parks. Tanzania's and Kenya's national elephant plans recognize that recovery of elephant populations and their viability in parks depend on an expanded range and population connections among fragmented herds. Expanding elephant ranges beyond parks depends on access to suitable community lands, protection from poachers, containing conflict with people and, above all, ensuring that communities benefit from wildlife and have the conservation and management skills to do so.

The scale and scope of conserving a viable elephant population in the Tanzania-Kenya borderlands calls for a close collaboration between the two countries and among government agencies, local communities and non-government organizations (NGOs) operating in the region. The Liz Claiborne Art Ortenberg Foundation (LCAOF) sponsored a meeting to foster such cooperation.

The goal of the workshop was to bring together community representatives, conservation organizations and government agencies in the Tanzania-Kenya borderlands concerned with elephant conservation with the following aims in mind:

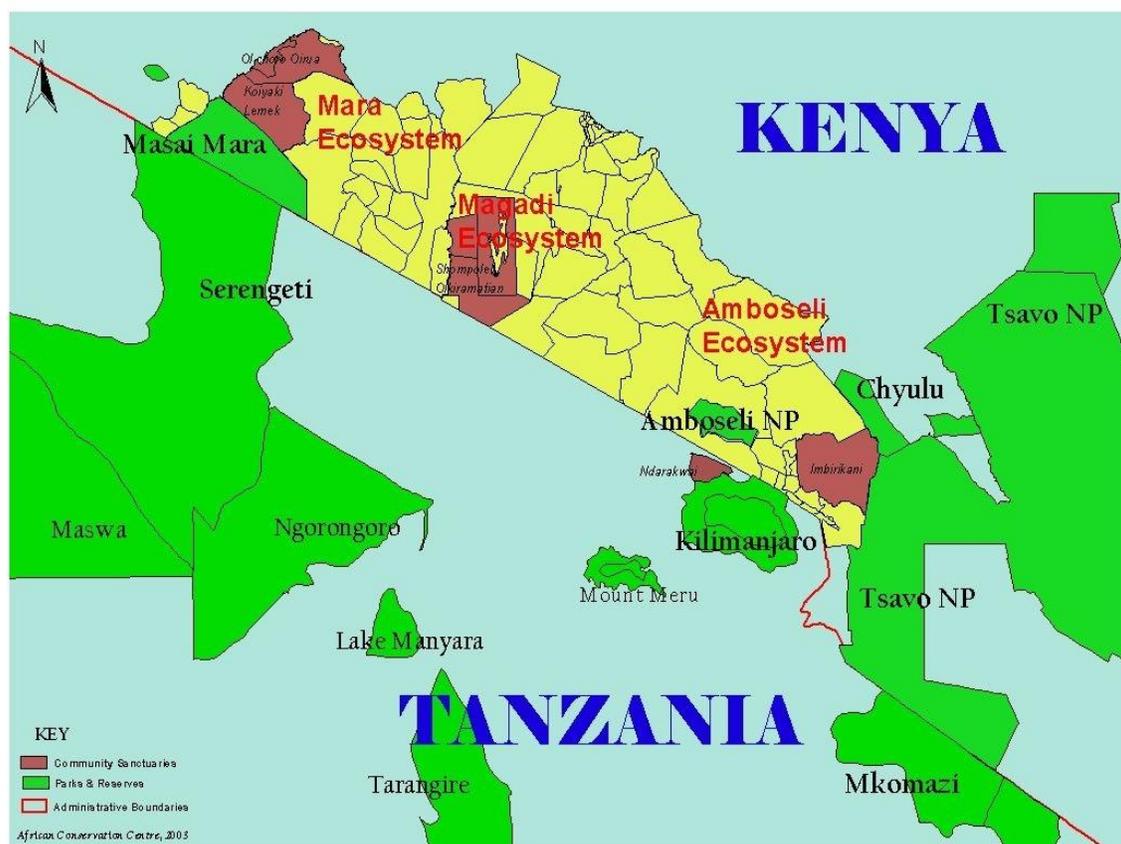
- Assess the status and movements of elephant populations in the borderlands region.
- Identify pathways needed to establish a viable, interconnected elephant population.
- Strengthen community conservation capacity in critical pathways, aimed at safeguarding elephants, reducing conflict and increasing local benefits.
- Identify how government agencies, conservation organizations and communities can work collaboratively towards these ends.

## **SUMMARY OF THE WORKSHOP**

The Tanzania Wildlife Research Institute (TAWIRI) opened the workshop by strongly endorsing a collaborative approach to conserving the trans-border elephant population. The Tanzania Wildlife Division (WD Tanzania) and Kenya Wildlife Service (KWS) outlined their newly completed national elephant management plans. Both countries stressed the need to win space for the expanding elephant herds beyond parks by identifying and securing movement pathways, improving anti-poaching operations, reducing human-wildlife conflict, generating wildlife benefits to communities and supporting collaboration between governments and with the private sector.

The collaboration at the heart of the workshop was given a timely boost by passage of the East African Community Trans-boundary Ecosystems Management Act, signed into law on January 29<sup>th</sup>, 2012. The act will set up a commission to oversee the conservation and sustainable development of important East African trans-border ecosystems.

The workshop compiled the first tentative map of the location and movements of elephant populations in the borderlands, based on population counts, radio-tracked animals, tracks and signs gathered by researchers and community scouts and on genetic analysis of dung samples. The map (below) showed the widespread movements of elephants across the Tanzania-Kenya border, between parks, over community lands and across the rift valley. It was agreed that the map will be routinely updated and made freely available for research and conservation purposes. The workshop also reviewed the information needed to monitor, plan and conserve a viable, interconnected elephant population across the borderlands and set up a task force to recommend compatible monitoring methods and research tools.



The Tanzania-Kenya borderland showing protected areas in green. Community conservation associations and key conservancies are shown in yellow and purple for the Kenya side of the border. The program will promote and link up similar programs in Tanzania and across the border. Elephants move widely between parks. The combined populations exceed 30,000 elephants.

The government agencies looked at their role in oversight and implementation of elephant conservation plans in the borderlands. They agreed that the current cross-border security meetings should be widened to a task force looking at all aspects of borderlands conservation, in line with the commission to be set up under the East African Community Trans-boundary Ecosystems Management Act. The task force will encourage public-private partnerships, community initiatives, joint patrols and monitoring and other collaborative efforts. It will include representatives from Tanzania National Parks, TAWIRI, Ngorongoro Conservation Area, WD Tanzania, Lusaka Agreement Taskforce, KWS, NGOs, researchers, communities and the private sector.

The community discussions looked into how to strengthen the capacity of communities to protect elephants, avert and reduce human-wildlife conflict and raise benefits from the use of wildlife. Top priority was given to mobilizing communities in the key elephant pathways, setting up security networks, raising awareness, encouraging partnerships, sharing information, exchanging know-how and developing integrated work plans. The South Rift Association of Landowners (SORALO) was elected to organize cross-border meetings as soon as possible. The communities, with the assistance of the government wildlife agencies and conservation organizations, will prepare conservation plans and identify the support they need to implement them.

The workshop assigned specific tasks and identified possible start-up funds to get the cross-border community exchanges underway. ACC in Kenya and WCS in Tanzania were charged with coordinating activities.

The workshop concluded that the collaboration and coordination envisaged by the participants lays a foundation not only for conserving the borderlands elephant populations, and wide-ranging species more generally, but also for sustaining the diversity and integrity of ecosystems and landscapes.

## **UPDATE**

Since the Arusha workshop, meetings were held between Tanzanian and Kenyan communities to agree on conservation plans. The Liz Claiborne Art Ortenberg Foundation (LCAOF) funded the plans in February 2012 and activities are now underway. A meeting of conservation organizations was also held in the South Rift of Kenya on 11th and 12th of February to agree on setting up a common database to track and monitor elephant movements in the borderlands region.

## **SOME RECENT ARTICLES FROM THE AMBOSELI CONSERVATION PROGRAM**

**2008** Curtin, C. and Western, D. Grasslands, people and conservation: over-the-horizon learning exchanges between African and American pastoralists. **Journal of Conservation Biology**.

**2008** Muchiru, A., Western, D. and Reid, R. The role of abandoned pastoral settlements in the dynamics of African large herbivore communities. **Journal of Arid Environments** 72: 940-952.

**2009** Muchiru, A. Western, D. and Reid, R. The impact of abandoned settlements on plant and nutrient succession in an African savanna ecosystem. **Journal of Arid Environments**. 72: 322-331.

**2009** Western, D. Rethinking wildlife: bridging the conservation divide. In **Reconceptualizing Wildlife Conservation**. Ed. Toshio Meguro. African Centre for Technological Studies. Nairobi.

**2009** Western, D. Ecotourism, conservation and development in East Africa: How the Philanthropic Traveler can make a difference. Proceedings of the Traveler's Philanthropy Symposium. Arusha, Tanzania.

**2009** Western D and Behrensmeyer. K.A. Bone assemblage tracks community structure over 40-years in an African savanna ecosystem. **Science**. 234: 1061-1064.

**2009** Western, D., Russell, S. and Cuthill, I. The Status of protected areas compared to non-protected areas of Kenya. **PLoS One**. 4 (7): 1-6.

**2009** Western, D. The Future of Maasailand, its People and Wildlife. In **Staying Maasai. Livelihoods, Conservation and Development in East African Rangelands**. Editors K. Holmewood, P. Kristjanson and P. Trench. Springer, New York.

**2009** Western, D Groom, R and Worden, J. The impact of land subdivision and sedentarization of pastoralist on wildlife in an African savanna ecosystem. **Biological Conservation** 142: 2538-2546.

**2010** Western, D. People, elephants and habitat in a Amboseli National Park: A century of change detected by repeat photography. In **Repeat Photography: Methods and Applications in the Geological and Ecological Sciences**. Ed. R.H. Webb, Boyer, D.E. and Turner, R.M. Island Press, Washington, D.C.

**2010** Western, D. Conservation of Art and Species. In **Coping with the Past. Creative Perspectives on Conservation and Restoration**. Edited Pasquale Gagliardi, Bruno Latour and Pedro Memelsdorf. Leo Olschki. Furenzi. Italy.

**2010** Western, D. Conservation in an age of climate change. **Swara**: 1. 24-25.

**2010** Western, D. The Worst Drought: Tipping Point or Turning Point. **Swara**: 2.16-20.

**2010** Western et al. Towards a National Conservation Framework. Policy Recommendations of the Conference on Biodiversity, Land Use and Climate Change. African Center for Technological Studies, Nairobi.

**2011** Ahlering, M.A., Millspaugh, J.J., Woods, R.J., Western, D. and Eggert, L.S. 2009. Elevated levels of stress hormones detected in crop-raiding male elephants. **Animal Conservation** 14 (2) 124-130.

**2011** Dunne, T., Western, D. and Dietrich, W. The effects of cattle trampling on vegetation, infiltration and erosion in rangelands in southern Kenya. **Journal of Arid Environments**. 75: 58-69.

**2012** Sunstrom, S, Tynon, J. and Western, D. Rangeland privatization and the Maasai experience: Social capital and the implications for traditional resource management in southern Kenya. **Society and Natural Resources**. 2(5).

**2012** Mose, V.N., Nguyen-HUU, T., Auger, P., Western, D., 2012. Modelling herbivore population dynamics In Amboseli National Park, Kenya. **Ecological Complexity** 10:42-51.

**2012** Ahlering, M. A., J. E. Maldonado, R. C. Fleischer, D. Western, and L. S. Eggert. Fine-scale group structure and demography of African savannah elephants recolonizing lands outside protected areas. **Diversity and Distributions**18:1-10.

**2012** Ahlering, M.A., Eggert, L.S., Western. D., Estes, A., Munishi. L., Fleischer, R., Roberts, M., and Maldonado, J.E. Identifying source populations and genetic structure for savannah elephants in human-dominated landscapes and protected areas in the Kenya-Tanzania borderlands. **PLoS ONE** 7 (12):1-9).

**2013** Mose V. N., Nguyen-Huu, T., Western, D., Auger, P., Nyandwi, C. Modelling the dynamics of migrations for large herbivore populations in the Amboseli National Park, Kenya. **Ecological Modelling** (254) 43-49.