Hunting Secures the Most Habitat for Wildlife and Biodiversity Integrity (10 October 2020)

Tourist Safari Hunting[1] secures and is growing the largest extent of wild habitat in key African countries.[2] Those countries are key because they are the strongholds of African game populations. Safari hunting is a primary tool for conservation of habitat for wildlife and that habitat supports the largest remaining populations of game, particularly those populations that are stable or increasing. But for the decades of regulated hunting as a conservation tool, most existing wild habitat and the wildlife that exists upon it would not exist.

IUCN Recognition as Protected Areas

The IUCN World Conservation Union recognizes and ranks Protected Areas. It recognizes regulated hunting areas as managed protected Categories IV and VI[3], i.e., protected areas (PAs) that allow forms of sustainable use. Hunting areas exceed the area of habitat of national parks in all of Africa, especially in the key SADC countries.

Tourist Safari hunting is also an important use of private and communal lands that again remain under conservation management.[4] [5] In turn, the use of such lands for recreational hunting provide community benefits in remote rural areas.[6] [7] Most wildlife, including elephant and lion, is found in hunting areas, not national parks. Moreover, what exists within national parks dependently ranges beyond park boundaries.

	Tanzania[8]		Zimbabwe[9]	Zambia[10]	Mozambique[11]	Botswana[12]	South Africa[13]	Namibia[14]	TOTAL 2019
	2014	2019							
Size of Hunting Areas (km²)	~304,000	~249,500	~96,280	191,582	131,425	143,070	~205,000	~150,000	**~1.166.857**
Size of National Parks (km²)	~58,000	~105,500	~30,890	~64,000	87,806	115,819	78,100	138,749	**~602,000**

Table 1 Comparison: Habitat under protection by Hunting Concessions vs National Parks in key SADC African Countries.

A sample of other countries that practice safari hunting (Cameroon, Ethiopia, Central African Republic, Burkina Faso, Benin and Uganda) secure an additional >330,000 km^2 to the hunting habitat in Table 1.[15]

The hunting areas in the following key SADC countries far exceed the national park areas and are securing growing, connecting and incentivising wild and re-wilded habitat.

Tanzania

More than a quarter (249,500 km^2) of Tanzania's land (945,000 km^2) is secured by safari hunting in Game Reserves, Controlled Hunting Areas, Open Areas and WMAs.

Importantly, 21 of 38 planned community Wildlife Management Areas (WMAs) are operational and conserve wildlife habitats and corridors, covering an area of 27,924Km^2. The WMA community-based framework is home to 166 villages with 480,000 people.[16]

Tanzania has Africa's largest lion[17] and third largest elephant populations[18] and most of both are in its hunting areas. The reality is that there is four times as much lion habitat in Africa's hunting areas than in its national parks."[19] .

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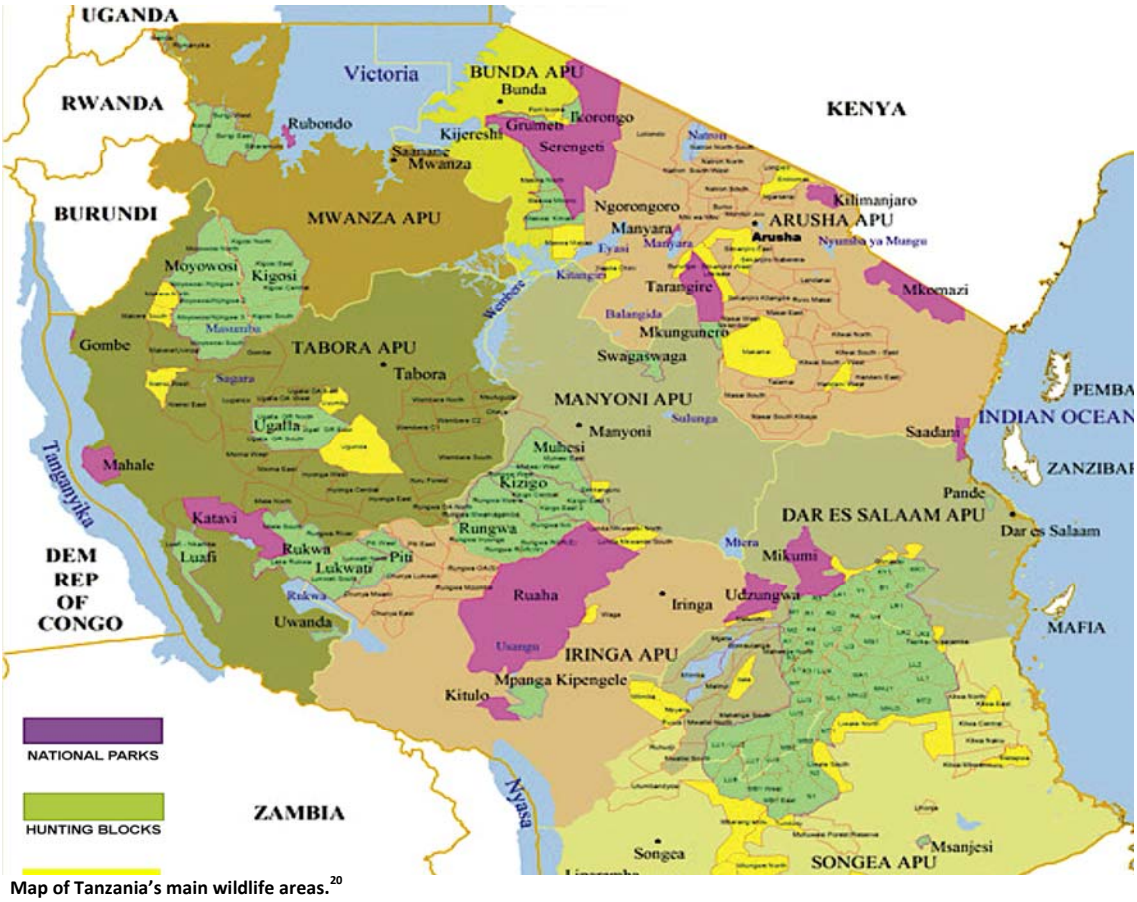


Figure 1: Map of Tanzania's main wildlife areas.[20]

Zimbabwe

Hunting has been growing and securing habitat in Zimbabwe through its renown CBNRM CAMPFIRE program and private conservancies.

Tourist Safari Hunting is carried out in four land use types (Safari Areas, Communal Land, Forest Estates and Private Land) totalling about 101,590 km^2. About half of this (50,000 km^2) is in communal lands implementing the CAMPFIRE scheme whereby approximately 777,000 households (25%) benefited directly or indirectly from sustainable wildlife use and approximately 25% of Zimbabwe's people are receiving incentives to conserve wildlife and prevent anti-poaching due to the fact that about 90% of CAMPFIRE revenue comes from hunting, with elephant hunting contributing up to 70% of annual revenue.[21] Private Conservancies, like Bubye Valley[22] and Save Valley Conservancies[23] in the South-East Lowveld cover nearly 9,000 km^2 of pristine habitat, rehabilitated from livestock cattle farms. They are key areas for the conservation of endangered species such as Black Rhino and African Wild dog. They also secure and propagate some of the country's most important lion and leopard populations.

Safari areas hold about 30% of the estimated elephant population in Zimbabwe that is estimated between 76,000 and 93,000[24] individuals, the second largest elephant population in the world.

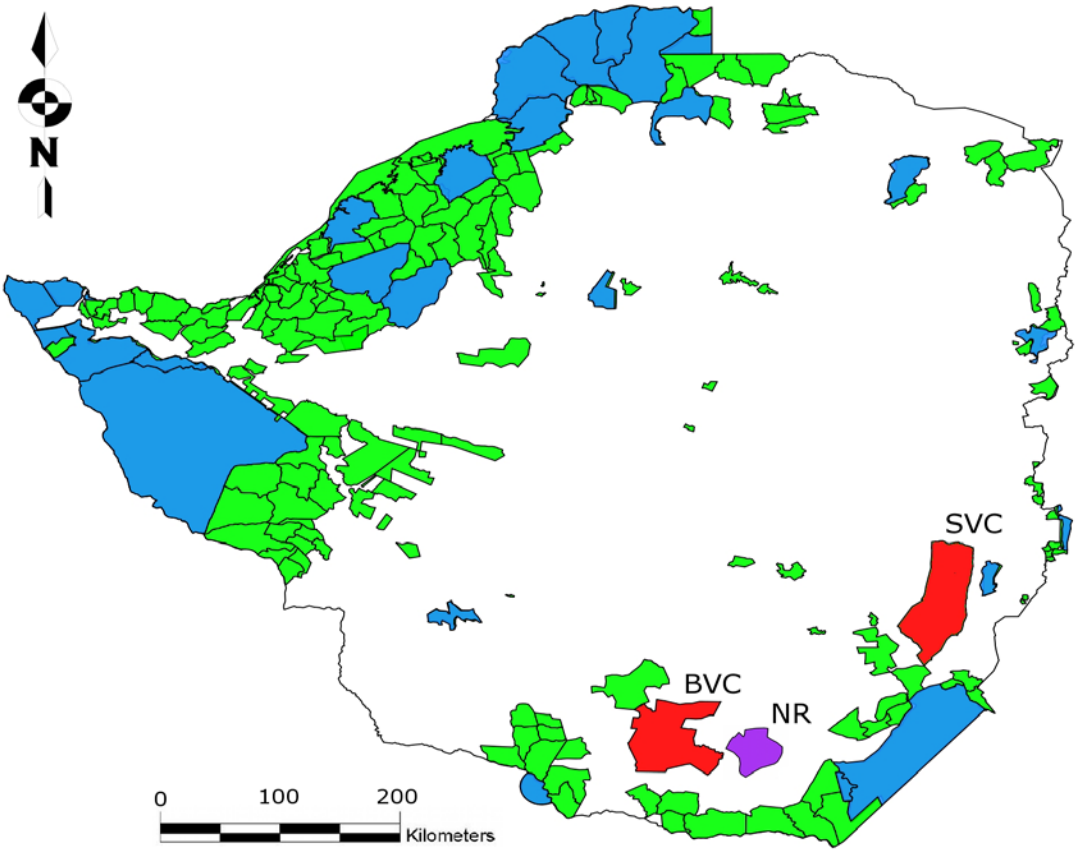


Figure 2: Map of Zimbabwe's main wildlife areas. [25] **National Parks and Safari Areas are represented in blue. Communal Land (CAMPFIRE Areas) are represented in green. The Bubye Valley [BVC] and Savé Valley [SVC] Conservancies are represented in red. The Nuanetsi Ranch [NR] is represented in purple.**

Zambia

Tourist Safari Hunting is conducted mainly in Game Management Areas (GMA) and Open game Ranches totaling 191,582 km^2. Game Management Areas (GMA) are a category of protected areas in Zambia designed to form buffer zones between National Parks and Open Areas. The main land use forms in GMAs has been Safari and Resident hunting. However, a few GMAs have included photographic tourism. Settlement is allowed in designated areas defined by the GMA's General Management Plan. CBNRM in Zambia is implemented in GMAs through Community Resource Boards (CRBs) provided for by the Wildlife Act of 2015.

Open Game Ranches are unfenced private wildlife estates outside public protected areas that are reserved by a person or local community for wildlife conservation and management. Game ranching in Zambia has evolved in the last ten years as one of the best conservation success stories where habitat under protection is growing through Tourist Safari Hunting. Open Game Ranches started in areas that were severely depleted in terms of wildlife species and with widespread illegal activities such as poaching, illegal logging and mining, thanks to partnerships between private investors and local communities most of these areas have been rehabilitated and recolonized by wildlife including elephant and large carnivores.[26]

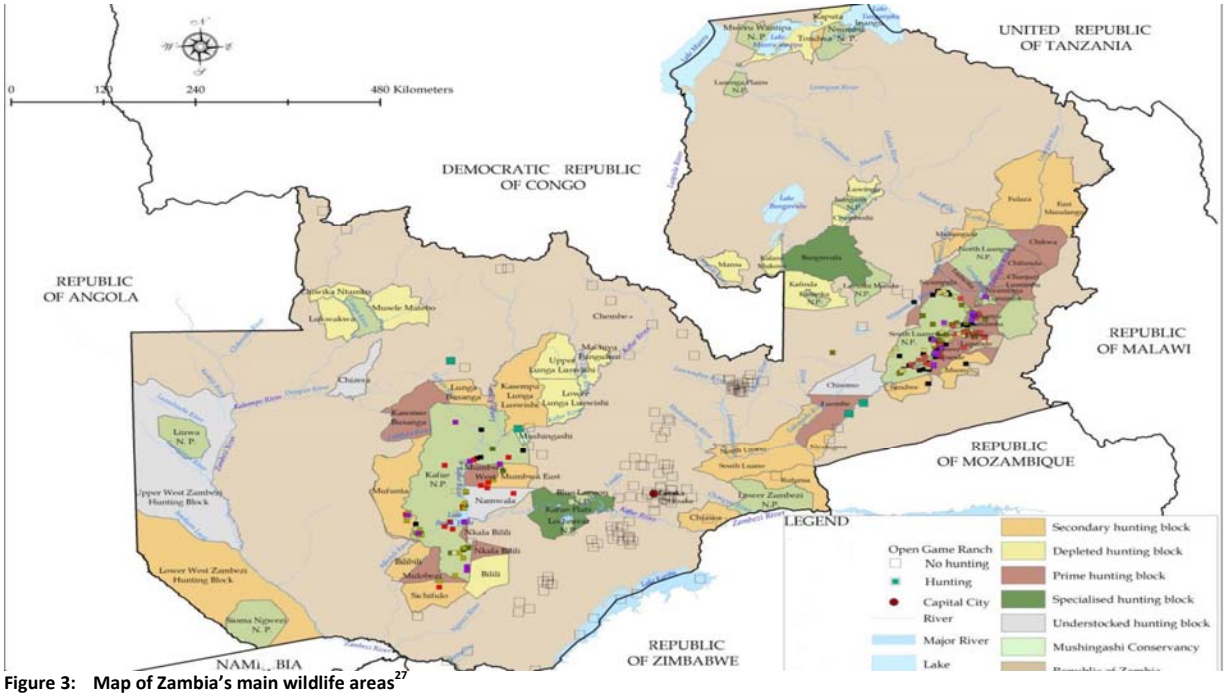


Figure 3: Map of Zambia's main wildlife areas[27]

Botswana

Approximately 38% of Botswana surface area has wildlife as the main land use. This includes National Parks (NPs) and Game Reserves referred to collectively as Protected Areas (115,819 square km), Wildlife Management Areas (WMAs) (143,070 square km), and Forest Reserves (4,207 square km). Land use over most of the remainder is extensive subsistence pastoralism and subsistence crop farming on communal land. Land outside the protected areas may be declared to be a Controlled Hunting Area (CHAs). Botswana holds the largest elephant population in the world that is estimated between 118,000 and 143,000 individuals.[28]

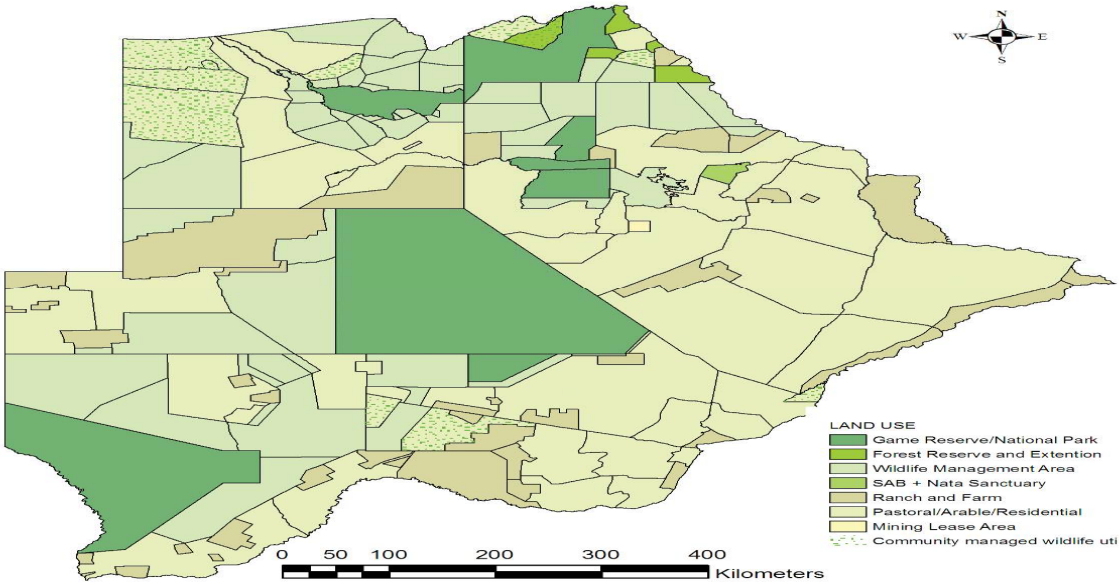


Figure 4: Map of Botswana's main wildlife areas[29]

Namibia

Namibia's national parks cover 139,000 km^2 of the terrestrial area of the country and includes some hunting concession areas. The state has created a policy and legislative framework for freehold farms (including commercial conservancies), communal conservancies and community forests to acquire rights over wildlife and tourism. These rights confer both responsibilities and economic benefits to the legal custodians of these resources.

86 Communal conservancies (of which 56 with conservation hunting concessions[30]) cover about 15.7% (166,179 km^2) of the country and represent one of the best examples of pragmatic habitat and wildlife conservation in Africa.

In freehold farms (Conservancies), the total area managed for wildlife either exclusively or in mixed farming systems is significant. Almost 700 farms covering over 35,000 Km^2 are registered as trophy hunting farms[31] out of a total of 49,914 Km^2.

Habitat under protection in Namibia has increased by 80% over the last three decades[32], mainly due to the growth of communal conservancies, with corresponding substantial increases in wildlife numbers[33]. *Conservation hunting,* as Tourist Safari Hunting is called in Namibia is a primary driver of this growth in habitat under conservation.

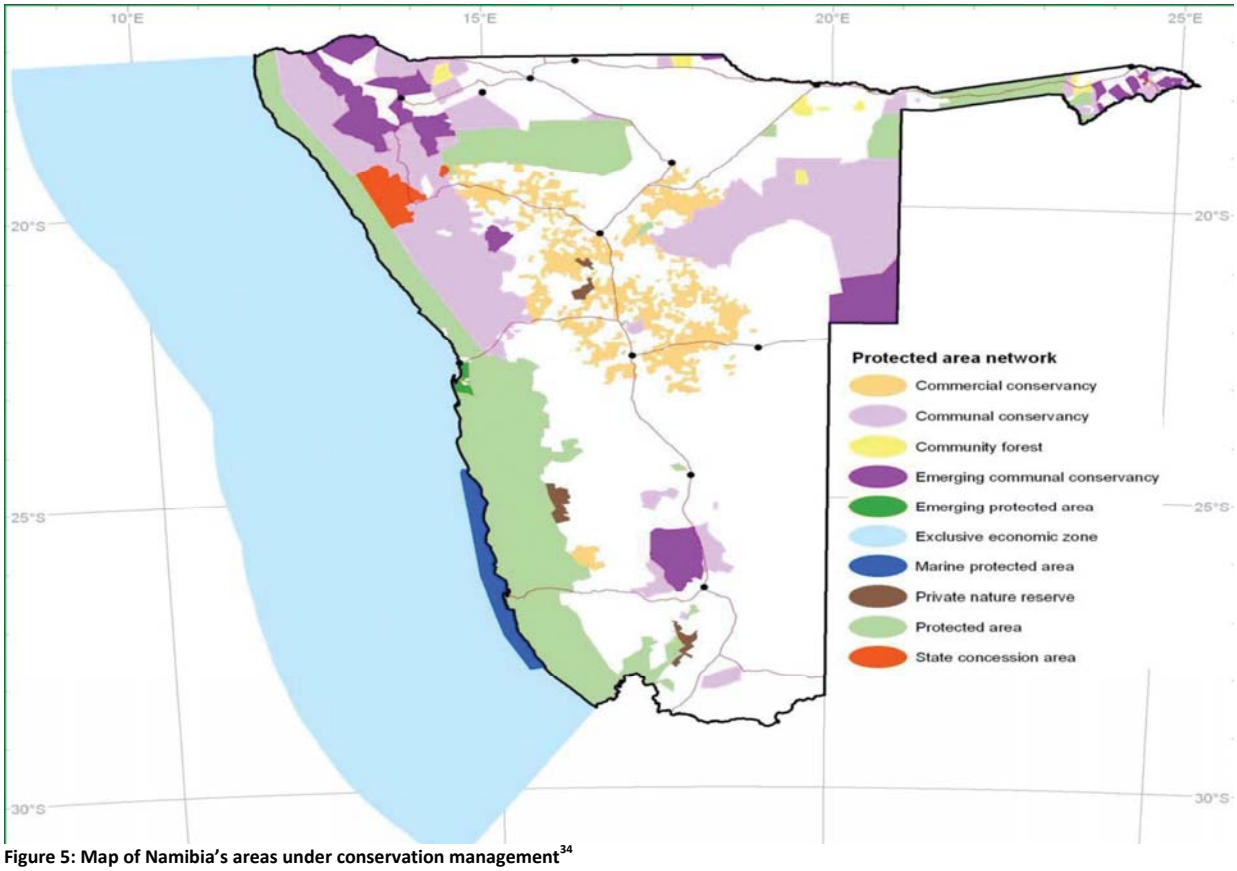


Figure 5: Map of Namibia's areas under conservation management[34]

Mozambique

The legally established Conservation Areas cover 219,231 km^2, which is nearly 28% of the country's land surface (799,380km^2). Hunting areas included in Conservation Areas (Niassa Reserve Blocks, Coutadas, Community Programs and Game Farms) cover an extension of 131,425 km^2, equivalent to nearly 17% of the country's land surface.

Newly established conservancies that rely on tourist Safari Hunting such as the Greater Lebombo Conservancy (not shown in figure 5) in southern Mozambique has grown the habitat under conservation in the country. This key area, bordering Kruger National Park in South Africa, holds the country's last rhino population is also dependent upon revenues from safari hunting.[35]

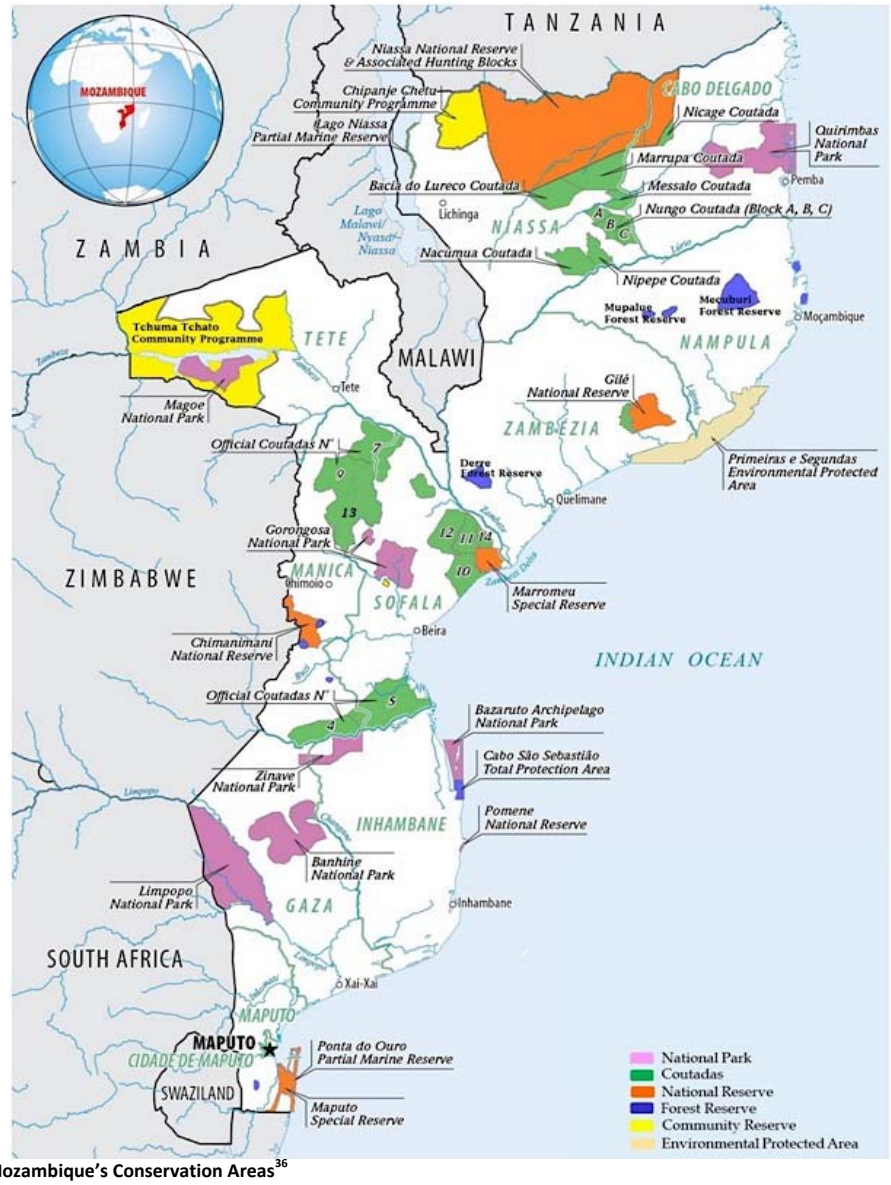


Figure 5: Map of Mozambique's Conservation Areas[36]

South Africa

Multiple land use, built around hunting, is the main driver of rewilding in South Africa.

There are in excess of 9,000 wildlife ranches in South Africa, covering an area of about 205,000 km^2 and harboring between 16 and 20 million wild animals[37]. The number of game ranches have grown exponentially in the last 30 years and it has been demonstrated that they can be effective in conserving natural land cover and biodiversity intactness[38] including the persistence of large mammals[39]

The majority of Tourist Safari hunting occurs on these Private Land Conservation Areas, which receive no funding or management support from the state.[40]

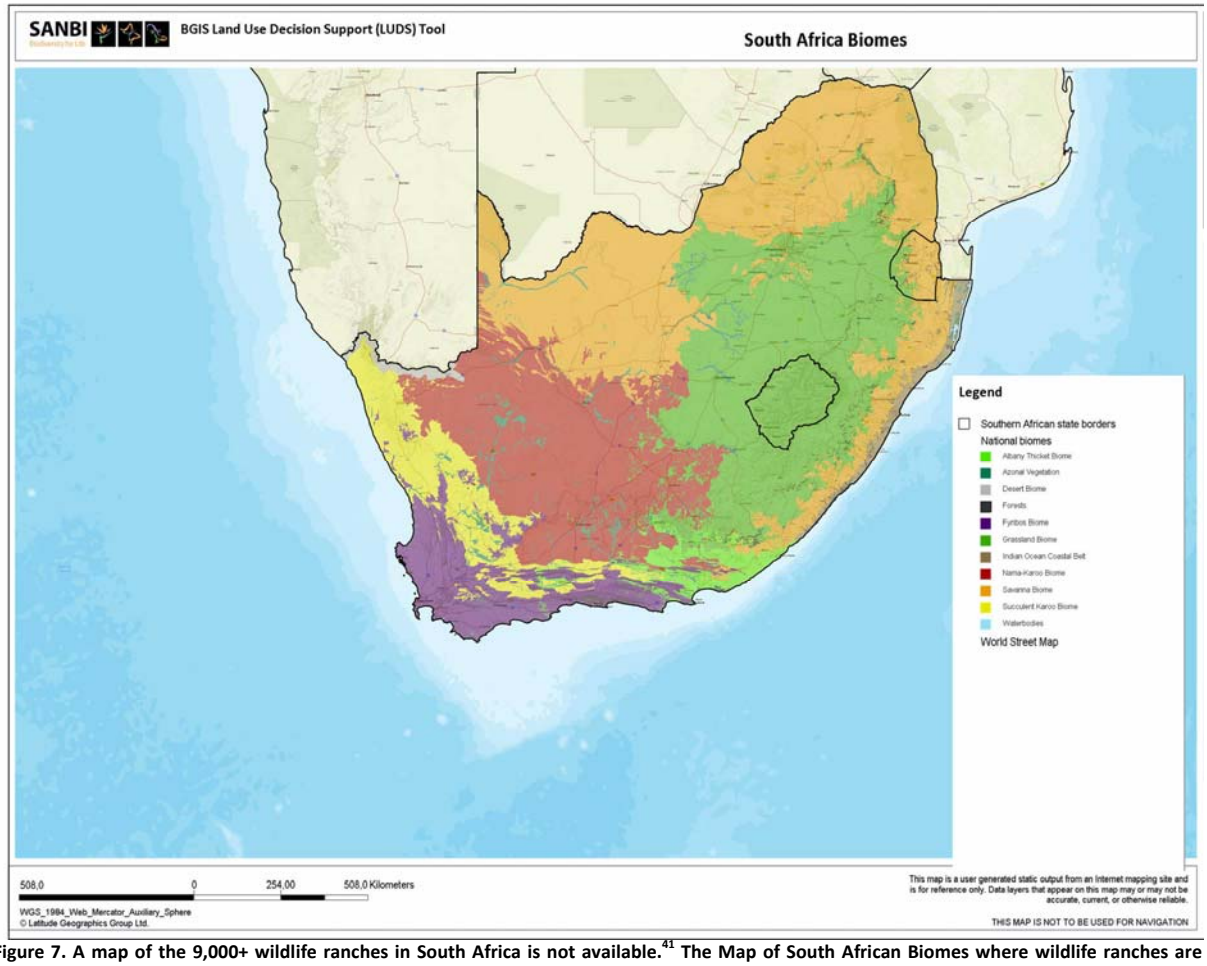


Figure 7. A map of the 9,000+ wildlife ranches in South Africa is not available.[41] The Map of South African Biomes where wildlife ranches are located is shown. [42]

Endangered Spaces: Hunting Helps Habitat

Loss of habitat is the focus of Aichi Biodiversity Target 5, "*Habitat loss halved or reduced*".[43] That loss is the primary cause of species endangerment and the loss of biodiversity. Safari hunting is a primary tool preventing both in Africa. It secures the most habitat and provides the most poaching control and management on that habitat.

Rapid human growth and expansion and conversion of land to agriculture or livestock ranching and illegal activities can be controlled and limited through the value given to wildlife, the presence of hunting operators and the willingness of local communities to collaborate due to the returns they obtain from safari hunting, including protein, which is not generally available from photo tourism.[44] It is clearly a Payment for

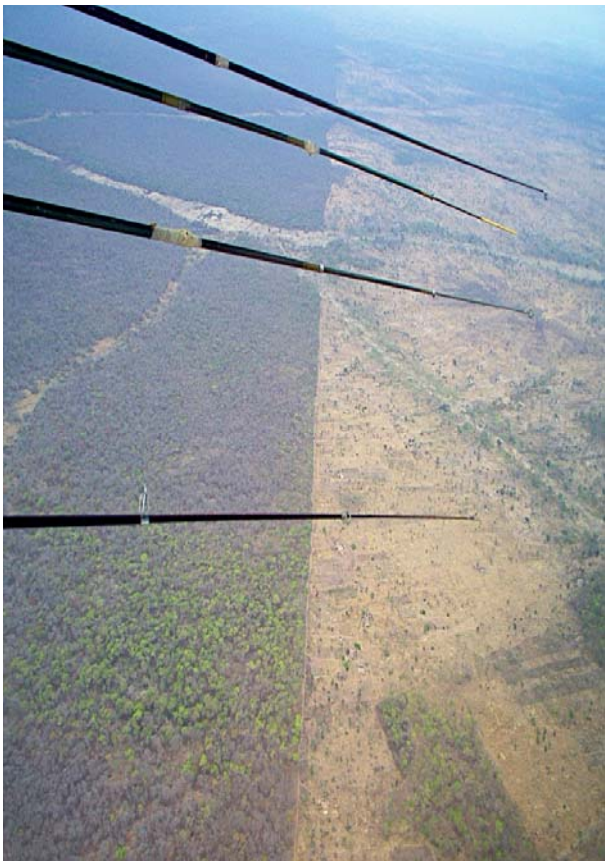
Ecosystem Services and its role in conserving habitats is essential, [45] [46] as it provides in this sense an important contribution toward the achievement of Aichi Biodiversity Target 14 "*Ecosystem Services*".[47]

Research on the impact of hunting on biodiversity has shown that hunting (and its associated management) is a strong driver in conserving biodiversity, because many of the objectives essential to hunting (preserving natural habitats, maintaining healthy populations, reducing limiting factors for game) are shared with those of wildlife management and conservation at large.[48]

For example, in the KAZA Transfrontier Conservation Area[49] (more than half a million square kilometres of wild lands spanning the catchments of the Kavango and Zambezi rivers and encompassing protected areas across Angola, Namibia, Zambia, Botswana and Zimbabwe), hunting areas play a vital role in maintaining landscape scale integrity and ecosystem connectivity across this vast system – the largest contiguous protected area in the world . Hunting and strictly protected areas continue beyond the KAZA virtual boundary along the Zambezi Valley, up to Mozambique Cahora Bassa Lake, adding another 100,000 km^2 of pristine and natural habitat.

Wildlife needs habitat, and hunters need habitat. Regulated safari hunting secures the largest extent of wild habitat in Africa often with the greatest game populations. Wildlife needs hunters.

Comparison: Maswa Game Reserve, Tanzania on right versus habitat degradation from agriculture and livestock.
Mike Angelides 2018



Comparison: Kigosi Game Reserve on left versus land degradation.
Andre de Georges. 2014

NOTES

[1] Defined as managed, licensed, regulated safari hunting by non-resident hunters for the hunter's personal enjoyment and use. It is the key part of the user-pay sustainable use system. Also called sport hunting to distinguish it from hunting for commercial purposes, safari hunting for short, licensed, regulated hunting because that is what it is, big game hunting to distinguish it from small game hunting, conservation hunting because of the management purpose, design and effect. We do not use the term "trophy hunting" because it has come to be misused and is indicative of too small a component of the values of a safari hunt.

[2] Lindsey, P.A. et al. (2006) Potential of trophy hunting to create incentives for wildlife conservation in Africa where alternative wildlife-based land uses may not be viable. Anim. Conserv. 9, 283–291. *From a conservation perspective, "the provision of incentives which promote wildlife as a land use is the single most important contribution of the "trophy hunting" industry and that "trophy hunting" generates revenues in areas where alternatives, such as ecotourism, may not be viable."*

Di Minin, Enrico & Leader-Williams, Nigel & Bradshaw, Corey. (2016). Banning Trophy Hunting Will Exacerbate Biodiversity Loss. Trends in Ecology & Evolution. 31. 10.1016/j.tree.2015.12.006. *Confirms that "trophy" hunting "strongly contributes" to conservation in sub-Saharan Africa, where large areas currently allocated to use for trophy hunting support important biodiversity. They also note that, if revenue cannot be generated from trophy hunting, these natural habitats will be converted to other forms of land use.*

Naidoo, R. et al. (2015) Complementary benefits of tourism and hunting to communal conservancies in Namibia. Con- serv. Biol. Published online October 13, 2015. http://dx.doi. org/10.1111/cobi.12643. *Describes the complementary benefits of tourism and hunting to communal conservancies in Namibia.*

Cooney, Rosie & Freese, Curtis & Dublin, Holly & Roe, Dilys & Mallon, David & Knight, Michael & Emslie, Richard & Pani, M. & Booth, V. & Mahoney, S. (2017). The baby and the bathwater: Trophy hunting, conservation and rural livelihoods. FAO Unasylva. 249.

[3] IUCN – The World Conservation Union (2013) *Guidelines for Protected Areas Management Categories.* IUCN, Cambridge and Gland.

[4] Child, G. (1995) Wildlife and People: the Zimbabwean Success. Wisdom, Harare and New York.

[5] Leader-Williams N. (2009) *Conservation and Hunting: Friends or Foes?* in *Recreational Hunting, Conservation and Rural Livelihoods: Science and Practice.* Edited by Barney Dickson, Jon Hutton and William M. Adams Blackwell Publishing Ltd. ISBN: 978-1-405-16785-7

[6] Jones Brian T.B (2009). *Community Benefits from Safari Hunting and Related Activities in Southern Africa* in *Recreational Hunting, Conservation and Rural Livelihoods: Science and Practice.* Edited by Barney Dickson, Jon Hutton and William M. Adams Blackwell Publishing Ltd. ISBN: 978-1-405-16785-7

[7] Naidoo, Robin & Weaver, Chris & Diggle, Richard & Matongo, Greenwell & Stuart-Hill, Greg & Thouless, C. (2015). *Complementary benefits of tourism and hunting to communal conservancies in Namibia*. Conservation Biology. 30. 10.1111/cobi.12643.

[8] Tanzania Government (2016) Non-detriment findings on African lion (*Panthera leo*) in the United Republic of Tanzania, including Enhancement findings, Dar es Salaam. Due to import restrictions and associated anti-hunting campaigns and consequent revenue losses, by 2018, 130,000 km^2 of hunting concessions have been returned by operators to the Government of Tanzania. (TZ Wildlife Division pers.comm.) In most of these concessions, encroachment started immediately and although not yet calculated, habitat loss has been very severe. Furthermore in 2019, 7,000 km^2 of protected hunting areas were annulled and allocated to people for settlements, farming and livestock keeping. Finally, also in 2019, 47,471 km^2 of game reserves, with pristine wilderness were gazetted as National Parks, including part of the Selous Game Reserve, and building of roads and tourist infrastructures are being developed by instable donor money with further potential habitat loss.

[9] Enhancement and Non-Detrimental Findings for *Panthera leo* in Zimbabwe, ZPWMA, October 2016 - CAMPFIRE Association, The Role of Trophy Hunting of Elephant in Support of the Zimbabwe CAMPFIRE Program. December 2016 - Desktop Review of the Communal Areas Management Program for Indigenous Resources (CAMPFIRE) and other Community-Based Natural Resource Management Models in the Region. Ministry of Environment Water & Climate Government of Zimbabwe (2017).

[10] DNPW Enhancement and Non-Detriment Findings for African Lion Sport Hunting in Zambia. January 2020

[11] Review of the Leopard (Panthera pardus) quota of Mozambique, established per Resolution Conf. 10.14 (Rev. CoP16) and non-detriment determinations, in accordance with CITES Decision 17.114

[12] Review of the Leopard (Panthera pardus) export quota for Botswana, established per Resolution Conf. 10.14 (Rev. CoP16) and non-detriment determinations, in accordance with CITES decision 18.165

[13] Table 1 indicates the extent of Wildlife Ranches. Taylor, W.A., Lindsey, P.A. & Davies-Mostert, H. 2015. An assessment of the economic, social and conservation value of the wildlife ranching industry and its potential to support the green economy in South Africa. The Endangered Wildlife Trust, Johannesburg. Private Conservancies are not indicated.

[14] Turpie, J., Letley, G., Venter, R., McLaren, C., Lindeque, P. & Middleton, A. 2017. Incentives for sustainable practices and conservation in Namibia's freehold rangelands. Vol IV in Turpie, J. (ed). The development of strategies to maintain and enhance the protection of ecosystem services in Namibia's state, communal and freehold lands. Report prepared by Anchor Environmental Consultants and Namibia Nature Foundation on behalf of the GIZ. The Economics of Ecosystems and Biodiversity (TEEB) in Namibia. Vol.IV

MacLaren, C., Perche, J., Middleton, A., 2019. The value of hunting for conservation in the context of the biodiversity economy. Vol V in Turpie, J. (ed). The development of strategies to maintain and enhance the protection of ecosystem services in Namibia's state, communal and freehold lands. Report prepared by Namibia Nature Foundation for the GiZ, on behalf of Namibia's Department of Environmental Affairs.

NACSO website - Latest Statistics on Conservation areas in Namibia http://www.nacso.org.na/sites/default/files/Conservation Areas.xlsx . Community Conservancies cover 166,179 km^2 and Freehold Conservancies 49.914 km^2. The Table shows the estimated extent in these two categories of Conservancies that use safari hunting as a land use option. Hunting is conducted also in Private Game Ranches not included in the Table.

[15] Habitat under protection by Hunting Concessions vs National Parks in some non-SADC African Countries.

	Central African Republic	Ethiopia	Cameroon	Uganda (also UWA pers.comm)	Burkina Faso	Benin	**TOTAL**
Size of Hunting Areas (km²)	205,000	8,335	48,260	30,954	35,300	4,850	**332,699**
Size of Protected areas (km²)	61,500	55,394	52,290	11,180	6,890	7,775	**195,019**

[16] Tanzania National Ivory Action Plan Progress Report. 2018

[17] Tanzania Government (2016) Non-detriment findings on African lion (*Panthera leo*) in the United Republic of Tanzania, including Enhancement findings. Dar es Salaam.
[18] C.R. Thouless, H.T. Dublin, J.J. Blanc, D.P. Skinner, T.E. Daniel, R.D. Taylor, F. Maisels, H. L. Frederick and P. Bouché (2016). African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN / SSC Africa Elephant Specialist Group. IUCN, Gland, Switzerland. vi + 309pp.
[19] Packer, C., 2015, Lions in the Balance, p. 31 ("the simple truth of the matter was that [hunters] controlled four times as much of lion habitat in Africa than was protected by the national parks. So, 80 percent of the lions left in the world were in their hands").
[20] TAWA 2019 Safari Hunting in Tanzania
[21] CAMPFIRE Association. 2016. The Role of Trophy Hunting in Support of the Zimbabwe CAMPFIRE Program. CAMPFRE Association. Harare, Zimbabwe.
[22] https://www.bubyevalleyconservation.com
[23] Lindsey, P. & Toit, R. & Pole, A. & Romañach, Stephanie. (2008). Savé Valley Conservancy: A Large-Scale African Experiment in Cooperative Wildlife Management. Book Chapter in: Suich, Helen, B. Child, and Anna Spenceley. Evolution and Innovation in Wildlife Conservation: Parks and Game Ranches to Transfrontier Conservation Areas. London: Earthscan, 2009.
[24] Dunham, K. M. (2015). National summary of aerial survey results for elephant in Zimbabwe: 2014. Harare, Zimbabwe Parks and Wild Life Management Authority.
[25] du Preez, B. Groom, R., Mufute, O. and Mandisodza-Chikerema, R. (2016) Zimbabwe Lion Conservation Research Report 2016. Harare. Zimbabwe Parks and Wild Life Management Authority.
[26] DNPW Enhancement and Non-Detriment Findings for African Lion Sport Hunting in Zambia. January 2020
[27] Adapted from: Non-Detrimental Findings Report for African Leopard Sport Hunting in Zambia. DNPW. May 2018
[28] C.R. Thouless, H.T. Dublin, J.J. Blanc, D.P. Skinner, T.E. Daniel, R.D. Taylor, F. Maisels, H. L. Frederick and P. Bouché (2016). African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN / SSC Africa Elephant Specialist Group. IUCN, Gland, Switzerland. vi + 309pp.
[29] See note 10
[30] MET/NACSO. 2020. The state of community conservation in Namibia (Annual Report 2018). MET/NACSO, Windhoek.
[31] Turpie, J., Letley, G., Venter, R., McLaren, C., Lindeque, P. & Middleton, A. 2017. Incentives for sustainable practices and conservation in Namibia's freehold rangelands. Vol IV in Turpie, J. (ed). The development of strategies to maintain and enhance the protection of ecosystem services in Namibia's state, communal and freehold lands. Report prepared by Anchor Environmental Consultants and Namibia Nature Foundation on behalf of the GIZ. The Economics of Ecosystems and Biodiversity (TEEB) in Namibia. Vol.IV
[32] NACSO website Latest Statistics on Conservation areas in Namibia http://www.nacso.org.na/sites/default/files/Conservation Areas.xlsx
[33] NACSO 2019. Keep Namibia's wildlife on the land!
[34] Letley, G. & Turpie, J. 2017. Improving state protected area financing through pricing and institutional changes. Vol II in Turpie, J. Vol II in Ministry of Environment and Tourism (ed). Namibia's national TEEB study: The development of strategies to maintain and enhance the protection of ecosystem services in Namibia's state, communal and freehold lands. Report prepared by Anchor Environmental Consultants and Namibia Nature Foundation for GIZ on behalf of the DEA.
[35] ANAC 2019 - Wildlife Management and Conservation in Hunting Areas in the Greater Lebombo Conservancy - Great Limpopo Transfrontier Conservation Area (GLTFCA) – Unpublished report Maputo Mozambique.
[36] See note 9
[37] See note 18
[38] Shumba, T., De Vos, A., Biggs, R., Esler, K.J., Ament, J.M., Clements, H.S., 2020. Effectiveness of private land conservation areas in maintaining natural land cover and biodiversity intactness. Global Ecology and Conservation 22, e00935.
[39] Clements, Hayley & Kerley, Graham & Cumming, Graeme & De Vos, Alta & Cook, Carly. (2018). Privately protected areas provide key opportunities for the regional persistence of large- and medium-sized mammals. Journal of Applied Ecology. 10.1111/1365-2664.13300.
[40] Child, B. A., Musengezi, J., Parent, G. D., & Child, G. F. T. (2012). The economics and institutional economics of wildlife on private land in Africa. Pastoralism: Research, Policy and Practice, 2, 18, . https://pastoralismjournal.springeropen.com/track/pdf/10.1186/2041-7136-2-18 and Taylor et al. 2020: see note 18.
[41] See note 13
[42] South Africa National Biodiversity Institute. Biodiversity GIS
[43] Secretariat of the Convention on Biological Diversity (2020) Global Biodiversity Outlook 5. Montreal.
[44] Tanzania Government (2016) Non-detriment findings on African lion (*Panthera leo*) in the United Republic of Tanzania, including Enhancement findings
[45] Naidoo, R., Weaver, L.C., Stuart-Hill, G. and Tagg, J. (2011), Effect of biodiversity on economic benefits from communal lands in Namibia. Journal of Applied Ecology, 48: 310-316. doi:10.1111/j.1365-2664.2010.01955.x
See also note 6
[46] Young, Nicholas E., Paul H. Evangelista, Tefera Mengitsu and Stephen J. Leisz. "Twenty-three years of forest cover change in protected areas under different governance strategies: A case study from Ethiopia's southern highlands." Land Use Policy 91 (2020). Found that protected areas in Ethiopia that were actively managed for timber production or hunting were more effective at conserving forest cover than the national park and the unoccupied hunting concessions.
[47] See Note 39
[48] Hunting for sustainability. Research on the wider meaning of hunting. https://fp7hunt.net
[49] https://www.kavangozambezi.org/en/