The Great Elephant Debate: Let's remove emotions and pseudo-science from wildlife management and get down to scientific facts

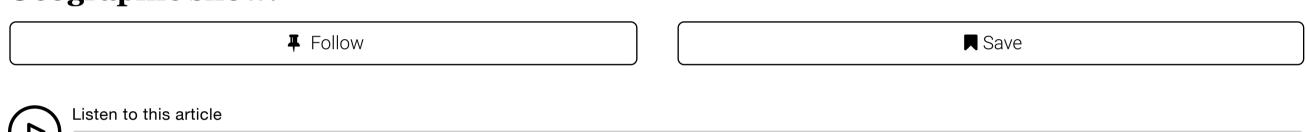
By Rowan Martin • 30 June 2019

○ Elephants at Chobe National Park, Botswana. (Photo: Tony Weaver) ^ Less

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All wild species have predators and humans are the super-predator for elephants. There is nothing 'natural' about a large national park dominated by elephants without a predator. The management of wild landscapes is largely an aesthetic issue. It's called 'The Myth of Wild Africa', and is played out on every luxury safari and National Geographic show.



Ross Harvey accuses the Botswana Government (https://www.dailymaverick.co.za/opinionista/2019-05-29-the-elephants-in-the-room-the-myths-informing-botswanas-hunting-policy/?) of lifting its ban on elephant trophy hunting for reasons that are primarily political, ie to secure the rural vote in upcoming elections.

Let's start by recapping the facts. The Southern African Development Community (SADC), which consists of the Democratic Republic of the Congo and Tanzania in addition to the countries in the Southern Africa Region is home to roughly three-quarters of the world's remaining elephant population (421,125 animals out of 541,684 animals (https://www.dropbox.com/s/r6eab7ouy8etdzi/AfESG%2oAfrican%2oElephant%2oStatus%2oReport%2o2o16.pdf? dl=o)).

In May, Botswana's president, Dr Mokgweetsi Masisi, hosted an elephant summit in Kasane. The first three days of this meeting were technical, involving experts drawn from a number of SADC and other African countries. Ministers and heads of state attended in the last two days. This was no low-level meeting of NGO riff-raff targeted towards the media and donating public.

A focus of the meeting was the Kavango Zambezi Transfrontier Conservation Area (Kaza) involving Angola, Botswana, Namibia, Zambia and Zimbabwe. Kaza is home to about half of the SADC elephants, more than 200,000, or roughly one-third of the world's elephants. The meeting presented a broad assessment of the factors and options for management and conservation of elephants in the Kaza.

This writer was an invited expert at all five days of the summit. Masisi's speech to the summit, which has been widely quoted internationally, was articulate, objective, informed and showed a government heedful of the "people's voice". Botswana's minister of environment and tourism, Kitso Mokaila, further demonstrated a firm grasp of the key issues. The cheap "mud-slinging" by Harvey against these two individuals (smacking of "Heaven forbid that native Africans could manage their own natural resources") is unwarranted and *lèse-majesté*. \bigcirc

Harvey, a vocal opponent of hunting, claims Botswana has lifted its ban on hunting based on five myths about that country's elephant population. In doing so, he insinuates that the Botswana leaders have no idea what they are doing.

In his introduction, Harvey asserts that, at the summit, hunting was defended as the silver bullet for conservation. The claim is not true – hunting in no way dominated the debate – but it suits his narrative. The real myths are conservation policies emerging from dubious scientists opposing all forms of consumptive use on principle... and Harvey belongs in this group. In his article, he listed a number of "myths" about Botswana's elephants, and I repeat them here verbatim.

Harvey's Myth 1: Kitso Mokaila, Botswana's minister of environment and tourism, claimed that Botswana's elephant population has surged to 160,000 from 55,000 in 1991.

Harvey claims the minister's population numbers are false. However, it is Harvey who has made the errors. The best estimate for Botswana's elephant population in 1983 is 30,000 to 40,000 elephants [1] (not 70,000 to 75,000 as claimed by Harvey) and the current population of 126,114 (https://www.dropbox.com/s/ptgie91xldciapg/2018-Botswana-report-final-version-compressed-upload.pdf?dl=0) asserted by Harvey is almost certainly an underestimate. Therefore, elephant populations are growing, not stable, as he asserts. The accepted standard for elephant population numbers are IUCN's African Elephant Status Reports (AESR): Harvey should have read the fine print in AESR (2016, p151).

Achievement of a "stable" population in the dynamic situation of northern Botswana and its neighbouring countries is akin to balancing a ball bearing on a knife edge. Elephant populations are either increasing or decreasing. If they are decreasing it is usually because of illegal hunting, disease or drought. The Botswana population is pumping out emigrants (https://www.dropbox.com/s/yyicztk3nre9anh/BW%2oElephants%2oFinal%2oDraft.pdf?dl=o) and this might be construed as achieving stability, but the emigrants should be added to the total estimate.

Harvey's Myth 2: Botswana has exceeded its 'carrying capacity' of 54,000 elephants

Harvey does not state where he obtained the figure of 54,000 elephants as the "carrying capacity" for elephants in Botswana. Ironically, it is a very good benchmark. With the elephant range in northern Botswana being about 160,000km² this would correspond roughly to a population of 53,000 elephants at a density of 0.333/km², ie one elephant to 3km². It is a reasonable starting point for any management plan and certainly not a "myth".

Harvey states: "This has become an expedient cover under which to justify elephant trophy hunting and even culling."

The Botswana wildlife management authorities are well aware that the sport hunting of a small number of elephant bulls will not rectify any overpopulation of elephants. Harvey's use of the phrase "even culling" speaks volumes about his predetermined position on this subject.

Harvey maintains that "the entire concept of 'carrying capacity' is arbitrary. It has no relevance for vast, unfenced wilderness landscapes that adapt and maintain integrity without human intervention."

The concept of carrying capacity is not arbitrary. Most of the large canopy trees that are valued in "wild landscapes" disappear when elephant densities exceed 0.3/km (https://www.dropbox.com/s/vpuoit8zqsxomob/EMZ2%2oRev1.pdf?dl=o). dl=o)² (https://www.dropbox.com/s/vpuoit8zqsxomob/EMZ2%2oRev1.pdf?dl=o).

(https://www.dropbox.com/s/vpuoit8zqsxomob/EMZ2%2oRev1.pdf?dl=o) It is all very well for Harvey and the pseudo-scientists (that he quotes) to treat elephants as living on a checkerboard of plant communities where they will redistribute themselves dynamically to maintain food resources, but the reality is that the checkerboard is finite in size and has a limited number of squares that can be occupied. Unless populations are reduced, famine will ensue.

While Botswana has "vast unfenced wilderness areas", elephant distribution is constrained by the distribution of surface water in the dry season – as effectively as by any fence.

Humans have been managing elephants since the start of the Pleistocene

(https://www.dropbox.com/s/qrwo7scxt9kq2u7/Surovell%20et%20al%20%282005%29%20Proboscidian%20overkill%20-%20PNAS.pdf?dl=0). This has profound implications for the way we conceive the role of elephants in ecosystems. All wild species have predators and humans are the super-predator for elephant. There is nothing "natural" about a large national park dominated by elephants without a predator.

Pursuing this line of thought, we must recognise that the management of wild landscapes is largely an aesthetic issue. It's called "The Myth of Wild Africa", and is played out on every luxury safari and *National Geographic* show or David Attenborough sob story. Man is the architect trying to achieve a condition that is pleasing to human perceptions and he does not need "scientific criteria" in his aesthetic quest as long as he is practising adaptive management. (https://www.dropbox.com/s/fis6srlptnrtmfo/Paper%201.pdf?dl=0)

Culling is actually the lower risk option when a choice of management measures has to be made. The experience from southern Africa is that no elephant population has ever been made extinct through culling: the opposite is true – culling has rescued habitats damaged by elephants, allowed regeneration to take place and generally protected soils and biodiversity.

Harvey's Myth 3: Bringing back hunting will solve the 'population explosion problem'

This myth contains little that is not covered in the first two myths. We have already established that hunting will not ameliorate the "population explosion problem" – therefore this is a redundant myth. However, Harvey uses it as an opportunity to vent his spleen against sport hunting per se.

He states that hunting "decimates the big tuskers, reducing genetic diversity" and "destroys herd sociology and ensures that big tuskers are being shot out" (in *sensu stricto* "decimate" means to reduce something by one-tenth, ie to take one in ten. Perhaps Harvey should have said "annihilate".)

Harvey persists with his idea that the population is stable. This is an extreme claim when we are already agreed that hunting is only taking a drop out of the bucket. Moreover, it is not the case. In examining trophy hunting in Botswana over 15 years, Craig *et al* (2011) found:

"The quotas set for trophy hunting in Botswana from 1996-2010 reached a maximum of 0.2% of the total population in 2009. This is low by any regional standards where, for years, elephant managers have typically set quotas around 0.5% of the total population. **This accounts for the very high standard of the trophies taken over the past 15 years** (my emphasis) and the DWNP should be complimented for the conservative approach they have taken in increasing quotas over the years. This is good adaptive management.

"A remarkable feature of the Botswana hunting data from 1996-2010 is that the proportions of tusks of different sizes taken in the hunting concessions over 15 years of hunting remained constant from year to year. In undertaking this study we expected to find that, at the start, a large proportion of the trophies would be the biggest tusks in the population and that the mean tusk weight of the trophies would decline thereafter. This was not the case: the manner in which the safari operators managed their hunting quotas over a decade ensured that the flow of hunting trophies was of a high quality and was sustainable."

Harvey persists: "Hunting is a fundamentally unsustainable activity, as the incentives are loaded in favour of over-consumption and rule-breaking... Hunting quotas tend to be arbitrarily determined by the hunters themselves and over-exploited, which violates the 'maximum sustainable yield' principle... In this respect, hunters are aiding the poachers – undermining, not supporting, conservation."

This paragraph does not stand up to scrutiny. Hunting is not a fundamentally unsustainable activity in Botswana and most of the other Southern African countries. Craig *et al.*(2011) state:

"The impact of trophy hunting on the elephant population is negligible in biological terms (my emphasis). Trophy hunting has no effect whatsoever on limiting population growth and is not a management tool to replace culling when an elephant population is judged to be over-abundant.

"Conventional concepts of biological sustainability have little relevance to trophy hunting (my emphasis). Long before the population of adult males becomes totally depleted, the safari industry causing the depletion would have collapsed. In the lower weight classes (animals carrying tusks less than 22kg) there are thousands of animals in the population. Quotas exceeding 1% of the population are eminently sustainable in biological terms but totally incompatible with the notion of a high-quality elephant trophy hunting safari industry."

Harvey's Myth 4: Bringing back hunting will solve human and elephant conflict (HEC) and increase benefits to local communities

Harvey is way out of his depth here. Experience from Zimbabwe shows that full devolution of rights over wildlife to landholders (private land) and land occupiers (communal land) has the greatest impact on HEC. The status conferred on local communities by devolution is more important than the benefits they receive. There are very few complaints by local communities in areas where they feel they own their wildlife and, more particularly, where they have the authority to deal with problem elephants themselves and set their own quotas for hunting. It boggles the mind that Western ideology should trump indigenous management solutions.

Harvey states: "Ironically, however, hunting is rooted in a colonial anthropology that castigated indigenous people groups as 'poachers' and colonialists as 'hunter-conservationists'. So, the colonial hunting fraternity established fortress conservation, which displaced and disempowered local communities, but now paints itself as the saviour of conservation and communities."

The colonial hunting fraternity did not establish fortress conservation: it was done by the governments of the day. However, the more experienced governments devolved authority to local communities adjacent to State Protected Areas enabling them to negotiate with the state wildlife authorities from a symmetrical status.[2]

Harvey continues: "HEC can be mitigated through bee and chilli solutions, or some combination thereof. Safe migratory corridors can also be established in which human settlement is limited. Ultimately, if communities are empowered to earn and receive benefits from elephants being alive, HEC might become negligible. Hunting is not the answer, as the global hunting industry is in decline and is fundamentally unsustainable in open systems."

The use of bee and chilli solutions to deter elephants simply moves the problem to another area. Corridors become unnecessary where communities have converted to a land use based on wildlife. However, hunting (https://www.dropbox.com/s/bdegdlrihvpyiam/Hunting%20and%20tourism%20-

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(https://www.dropbox.com/s/bdegdlrihvpyiam/Hunting%20and%20tourism%20-

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(https://www.dropbox.com/s/bdegdlrihvpyiam/Hunting%20and%20tourism%20-

%20key%20partners%20for%20conservation%20April%202017.pdf?)because of the added value it brings to the communities. We have already debunked the notion that hunting is fundamentally unsustainable. Harvey's claim that the global hunting industry is in decline is contentious.

More Harvey: "While the hunting lobby argues that photography is not viable in 'marginal lands', Mike Gunn reports that the establishment of Thobolo's Bush Lodge has falsified this hypothesis" (author's note: Gunn's lodge is about 25km from the Chobe River and hardly qualifies as marginal land).

He continues: "Instead of allocating previous hunting concessions to photographic, non-consumptive businesses, the Botswana government has been accused of sitting on them despite high levels of interest. Idle land is an invitation to poachers."

This is simply untrue. The department of tourism called for tenders on the previous hunting concessions and received only one inquiry – which did not result in a bid. Notwithstanding Gunn's assertion above, there were no potential investors in photographic tourist camps in areas that were only viable as hunting concessions. It seems the hunting lobby was right.

"The bottom line here is that hunting tends to increase elephant aggression, which exacerbates HEC instead of resolving it," Harvey says. In fact, some of the most aggressive elephant populations in Zimbabwe are in areas where there is no trophy hunting and which have not been hunted for 50 years. In the areas where there is legal hunting of trophy bulls, we are not aware of any unusual aggressive traits in the elephants.

Harvey's Myth 5: The hunting moratorium led to increased poaching

Harvey attempts a sophism in an attempt to disprove an established axiom: "This argument only works on confirmation bias and sequence ignorance. The logic is that poaching has increased in the wake of hunting's absence, and the latter must, therefore, be the cause of the former. However, poaching only started to increase in 2017, three years after the

moratorium was imposed. Poaching is more likely to be a function of scarcity elsewhere."

There is sufficient evidence from all countries where trophy hunting is practised that the presence of established hunting safari operations reduces illegal hunting – this has the status of an axiom. Harvey's claim that poaching started to increase only in 2017 flies in the face of AESR (2013 and 2016) which put the inception of severe illegal hunting at around 2006.

Had Harvey chosen to blame poaching on the CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) ivory trade ban, I could have supported his conclusion.

Harvey's parting shot against consumptive use is: "In the final analysis, Botswana appears intent on moving against science and cogent argument through lifting [former president Ian] Khama's hunting moratorium... No less than one million species are at risk of extinction, in a large part because of our unsustainable 'consumptive-use' doctrine.

"While the rest of the world takes stock of the implications of having destroyed the planet, Botswana has now committed to a policy built on myths, one that may generate short-term revenue and political gain. But it comes at the expense of elephants, ecological integrity and future eco-tourism revenue."

My riposte to Harvey's jaundiced diagnosis of the ills of the world follows:

An African country that has slavishly followed the doctrine espoused by Harvey and allowed animal rights activists to dictate its wildlife policy is Kenya. The empirical evidence from this exemplar includes:

- In 1981 Kenya had an estimated elephant population of 65,000 compared to 23,000 today;
- Since Kenya stopped hunting its wildlife population has declined by 85%, and just last week yet another person was killed by an elephant in Kenya, not a prime example on any count; and
- In contrast, Botswana had an estimated elephant population of about 20,000 in 1981 and now has more than 130,000 (the latter is Dr Mike Chase's estimate (Elephants Without Borders) and it is probably a gross underestimate).

Ogutu (https://www.dropbox.com/s/jlo4se05pt6qsbt/Ogutu%20paper.PDF?dl=0)et al.

(https://www.dropbox.com/s/jlo4seo5pt6qsbt/Ogutu%2opaper.PDF?dl=0)(2016)

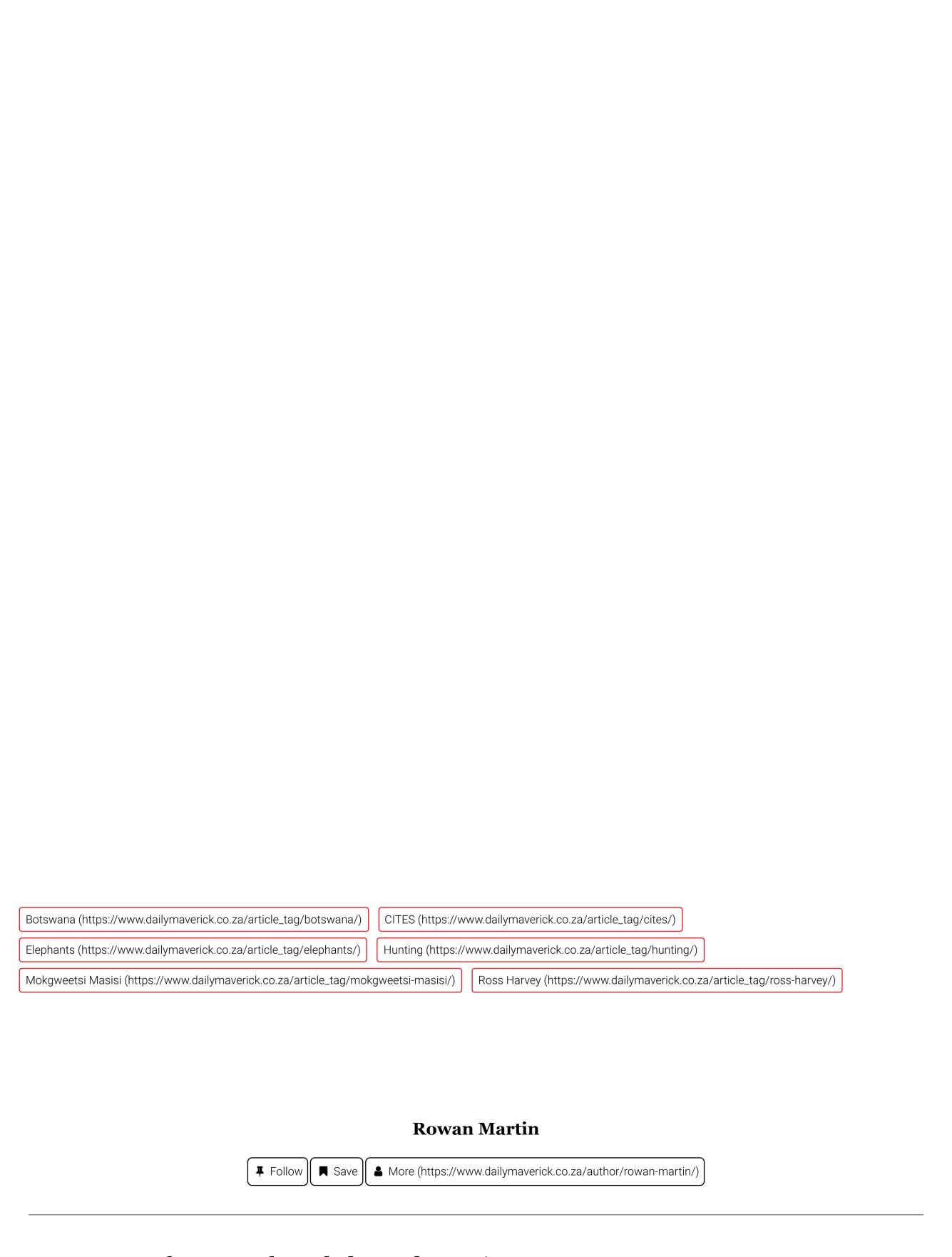
(https://www.dropbox.com/s/jlo4seo5pt6qsbt/Ogutu%2opaper.PDF?dl=o) investigated the causes of the wildlife declines in Kenya and found they included exponential human population growth, increasing livestock numbers, declining rainfall and a striking rise in temperatures – but the fundamental cause seemed to be policy, institutional and market failures.

Accordingly, they thoroughly evaluated wildlife conservation policy in Kenya and recommended policy, institutional and management interventions likely to succeed in reducing the declines and restoring rangeland health, most notably through strengthening and investing in community and private wildlife conservancies in the rangelands.

As the poet Robert Burns wrote, Facts are chiels that winna ding, An' downa be disputed. **DM**

Zimbabwean ecologist Rowan Martin was head of research at the Zimbabwe Wildlife Department from 1987 to 1997. He developed the first community wildlife management programmes in Zimbabwe in the 1980s (Campfire). He is a founder member of the African Elephant and Rhino Specialist Group; a member of the IUCN Sustainable Use Specialist Group and chair of the Southern African branch; represented Zimbabwe in the Cites forum; and carried out a number of consultancies for the Cites secretariat. He is a wildlife consultant and has prepared management plans for elephants and rhinos and restructured wildlife departments in Botswana, Mozambique, Namibia and South Africa.

- [1] Extrapolation from ULG (1995). **Final Report Aerial Surveys**. Consultants' Report to the Department of Wildlife and National Parks, Botswana. ULG Consultants, Birmingham Road, Saltisford. Warwick CV34 4TT, England. 59pp
- [2] Martin RB (1986). **CAMPFIRE** (Communal Areas Management Programme for Indigenous Resources). Publ. Department of National Parks & Wild Life Management, Zimbabwe. 86pp.



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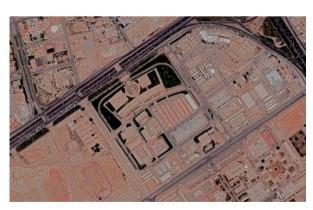
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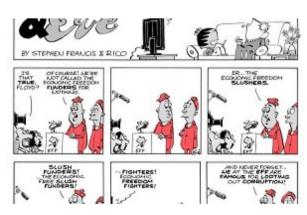
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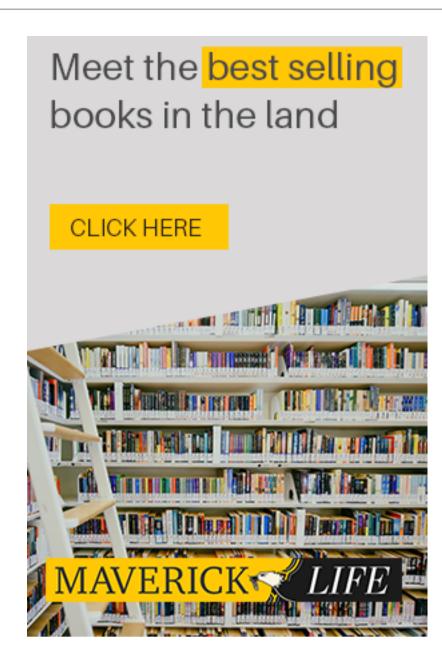
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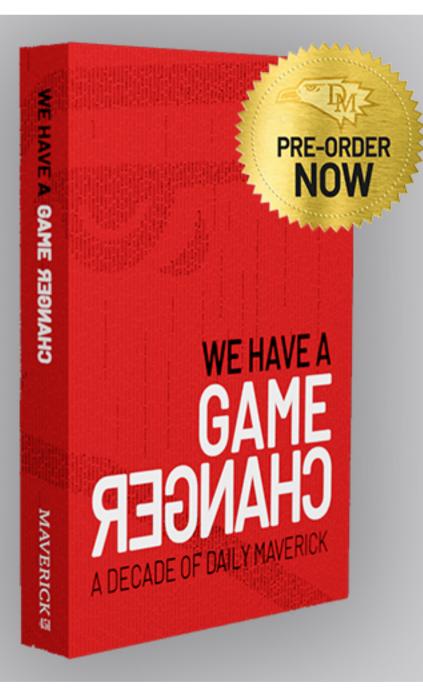
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