

by Brian Child

# Elephants: A Crisis of Too Many, Not Too Few



*Reflections and recommendations on elephants, ecosystems and people in Botswana. There is a way forward.*

After two decades of working in communities, parks and private conservancies, I became an associate professor at the University of Florida as opportunities to pursue my passion as a field conservationist in my African homeland evaporated. I chose to carry out my UF academic fieldwork in Botswana. I was excited about the emerging young talent in government and academia, as well as the potential for community-based natural resource management (CBNRM), and drawn to these drylands and people by the legacy and knowledge of my father, who had explored them five decades previously.

But by 2013, this positive situation in Botswana had been undermined by the re-imposition of externally driven, top-down, non-use philosophies of wildlife management. This led to despair and destitution in rural communities and frustration among the young professionals who were supporting them. Unaccountable Western conservation dogma and media hype did tremendous harm to wildlife, people and professionalism. So forgive me a brief rant before I review elephant conservation and wildlife potential in Botswana.

## ***The poison of special interest***

It is not exaggerating to say that simplistic, self-serving armchair opinions and special interests are

by Brian Child

greater threats to wildlife than the illegal wildlife trade. These false narratives not only deliberately undermine decades of African-led conservation that actually works, but also prevent much-needed innovation. Southern African policies increased wildlife populations six-fold since 1970, but they are now being purposefully undermined at global forums like CITES by voices that perpetuate wrong-headed policies associated with a global loss of 84% of all wildlife. People with good intentions are being duped to put their money in the wrong places, hence the string of failed wildlife projects. Moreover, such top-down conservation processes run roughshod over the principles of democracy in countries that have so recently thrown off the shackles of colonialism.

It is bad enough that this dysfunction is depriving the planet of wildlife and wild spaces, but the costs of this incompetence are borne by the poorest of the poor. I personally witnessed this in Sankuyo, a village of hunter-gatherers on the edge of Botswana's Okavango Delta. Denied cattle and access to parks, they became a model wildlife community, deriving 56% of their livelihoods from wildlife. Then, in 2013, the hunting ban threw this village into destitution, destroying 40% of village GDP in one day. As a mother, how would you feel if you could not feed your children because of someone else's decision? As one of many young people with a job in a hunting camp, what would you do if your rights to employment and self-determination were removed? How can we trust conservationists who lack such empathy and understanding?

These catastrophes emanate from top-down funding of conservation and an ideology that wildlife is a public good, brought to us by a technocratic elite who think they know best (despite almost no time in the dirty and dusty field) and reinforced in a constant round of international conservation conferences.

But there is another, more real world out there, one where wildlife has to pay its way. In Southern Africa, anger and resentment have been stewing in many rural communities over unworkable ideas imposed by outsiders who are neither informed nor accountable for their actions.

Now, under the mature leadership of Botswana's new president, Mokgweetsi Masisi, the dam of pent-up frustration is bursting, unleashing African voices on social media and in local journalism. (Witness the many Africans calling Ellen DeGeneres to task on Facebook after her comments about Botswana's wildlife.)

### ***Continuing to reward failure***

The global media is complicit in this wildlife and human-rights disaster, which remains conveniently hidden unless you actually talk to rural people in wildlife areas. The media does not understand how the recovery of wildlife follows sustainable-use policies and legal trade, and thus continues to spout simplistic and false narratives. With some refreshing exceptions, the media does not fact-check even blatantly one-sided articles that oppose Southern Africa's pragmatic wildlife policies, with their 70-year track record of success. Hence the meme "CITES - Continuing to reward failure and punish success in African conservation since 1975."

Last year, on local radio, I heard a shrill "conservationist" lecturing South Africa to follow the Kenyan example, despite the fact that Kenya has lost some 80% of its wildlife while South Africa's increased at

by Brian Child

least 10-fold in the same time. In this post-truth world, CITES has been manipulated into listing the giraffe on its high-alert Appendix 1 based on losses in Western Africa, but ignoring Southern Africa's challenge of having too many giraffes.

Southern Africans brought rhinos back from the brink of extinction, from fewer than 100 animals to more than 20,000 now. Despite this, we were completely unheard at the recent CITES meeting in South Africa, which chose instead to continue along the path of proven failure.

The elephants and lions that live in our backyards are ours to manage, not global assets that we Africans are too unimportant or ignorant to look after competently. Our rights and our track record may threaten the global conservation hegemony, but we are fed up with being sidelined in decisions that cost us hundreds of millions of dollars in favor of unworkable, condescending, external, colonial and even racist ideologies.

As people who had to constantly fix decades-old Land Rovers in order to do our jobs in the field, it sickens us to see scarce conservation dollars being captured by smooth middlemen and fake solutions. Some NGOs are raising money deceitfully on the backs of unworkable concepts that they are unable to implement. Promising what you can't deliver goes by one name: fraud.

For too long, conservation policy has been shaped by unrealistic narratives, cultivated by the narrow perspective of special interests and even self-interest, exacerbated by the blunt instrument of external financing and its susceptibility to spin or BS, and finally magnified by celebrities. The facts—ecological, economic and distributional—and their consequences and opportunities have been pushed to the margins of these debates, like floor sweepings in the corner of a room.

I would like to bring to the table facts and personal thoughts about the relationship in Botswana between the management of elephants and other wildlife and the people who live with them. I have been privileged to absorb many of these ideas from African farmers, communities, hunters, field conservationists and tour operators over many years.

### ***Elephants in Botswana***

There are now at least 130,000 elephants in Botswana, part of the 216,000 elephants in the Kavango-Zambezi Transfrontier Conservation Area (KAZA). This is by far the largest elephant population in Africa.

But is this too many? The recent film "Voices from the Frontline: Communities & Livelihoods in Botswana" documents how expanding elephant herds are devastating farms and the livings of rural people in Botswana. As a conservationist, I am shocked by the enormous habitat destruction. In junior school, I was taught that any excesses—too many elk in Yellowstone, too many cattle on the range—have environmental and human consequences. Elephants are no exception, which is why Southern Africa needs to manage this massive and destructive overpopulation of elephants—a challenge totally separate from uncontrolled poaching hundreds or thousands of miles away—and not be confounded by it. In Botswana, forests of dead and dying trees are visible to even the casual observer,

by Brian Child

even if the substantial changes in the composition and function of these ecosystems are less obvious. As we are learning from the coronavirus, nature does not care about political spin or political correctness. Continuing to deny the problem, and inaction, will be magnified by poverty, the fragile complexity of dry savannas and the increasing impact of climate change.

### ***Warning signs flashing red***

If you enter Chobe National Park along the original road from Kasane town, you pass a small ruined house on the banks of the Chobe River near the old park gate. This was built by my father in 1965. It replaced the tent where my mother and I lived while my father spent many weeks deep in the field, mapping and measuring the environment before the days of reliable radios, let alone good maps or satellite images. I still envy his freedom exploring unmapped wilderness in his Land Rover, with two drums of fuel and two Bushmen trackers.



Graham Child, the author's father, and his assistants doing transects in Botswana in the mid-1960s.  
Author's photo

by Brian Child

Set among huge trees, this house overlooked the dense, tall reedbeds of the Chobe floodplain. We could not see cars on the nearby road because the riverine bush was so thick. These reedbeds are now gone and thick bush no longer hides the ruins of our old house, a sign of the radical changes to Botswana's ecosystem wrought by tens of thousands of elephants since the 1960s.

My late father, Botswana's first professional ecologist, played a significant role in shaping Chobe and other national parks as well as creating Botswana's Department of Wildlife and National Parks. The agency's logo is a bat-eared fox, the legacy of our pet, Nipper, whom we rescued from a python in the Kalahari. My father was mentored by Thane Riney, who led FAO's (Food & Agricultural Organization) Africa Special Project for Wildlife and later played a prominent role in IUCN, the International Union for Conservation of Nature. With powers of observation that I always found miraculous, my father had an exceptional capability for reading the environment—scrupulous observation about the number and condition of animals, grass and trees fill his worn notebooks and carefully cross-referenced forms. This is how we know that, in 1965, 299 trees lined a mile-long river transect from our Chobe camp, including 17 species of big, impressive giants.

One of my greatest pleasures as a new professor at the University of Florida, in 2004, were the many months I spent with my students and my father as he unveiled the ecological and human history of northern Botswana and eastern Namibia for us, and as we re-did some of his measurements. It takes a single glance to see that the riverine habitats of the Chobe River have been devastated by elephants, yet more amazing is the denial of uncomfortable fact, even by scientists.

To quantify these losses, we repeated dad's early transects along the riverbank. Much to our surprise, there were now slightly more "trees"—324, to be exact. However, 270 of these—83%—were the scrubby bush *Croton megalobotrus* and three species (*Markhamia obtusifolia*, *Markhamia zanzibarica* and *Capparis tomentosa*) not previously present had colonized the riverbank. (*Tomentosa* is actually a vine that grows into the tree layer and can be self-supporting.) The huge knobthorns, *Senegalia nigrescens*, that had constituted 51% of the forest were now down to 1.3% and only four of the 152 large ones present in 1965 had survived. Six slow-growing large species had disappeared altogether. The only real "trees" to survive are the unpalatable (to elephants) Natal mahoganies, *Tricelia emetica*.

Despite the obvious damage and obvious cause—too many elephants, which tear down trees for fodder—more than one politically correct scientist has sought fascinating explanations to shift the blame and avoid the need to tackle a looming problem. Therefore, on the same trip, Alicia Brantley and Prof. Mike Binford sampled all 413 trees in the Sedudu Valley near our old house. Ninety-one percent of these (375) were dead, including all but 15 of the 327 original magnificent *Acacia eriolobas* and *nigrescens*. Six of the 22 leadwood trees (*Combretum imberbe*) had survived, but elephants avoided all 12 unpalatable *Baikiaea plurijuga*. Careful inspection of each and every tree excluded death by fire or insects; 352 trees had Category 5 ring-barking, meaning that more than 80% of the bark had been stripped away, and only 16 of these were still alive.

One would expect these radical changes in vegetation to be transmitted to the animal kingdom through the intricate hand of ecological feedback mechanisms. Indeed, repeating Dad's transects and dung plots from the 1960s showed a radical shift in wildlife. So-called "increaser" species, such as elephant, impala

by Brian Child

and kudu, respond positively to shrub encroachment, and giraffes, which historically never occurred on the riverfront, were now common too.

However, ecology is a story of winners and losers. There were substantial declines in warthog and waterbuck, and we no longer counted a single bushbuck, puku or wildebeest in the sample plots. Ironically, the Chobe bushbuck is now rare in Chobe, except near human habitation where thickets are protected from elephants. Sample sizes were too small for clear findings about rare antelope like tsessebe, roan and sable, but my father nevertheless expressed concern about them.

Is it acceptable that one of the great parks on this planet is sacrificing several species of animals and plants for elephants? How do we reconcile this, as conservationists, with our claim to promote healthy ecosystems and biological diversity? Are we shirking a great burden of responsibility and avoiding the tough decisions in front of us?

Between 1965 and 1970, my father surveyed northern Botswana. He expressed official concern that elephants were damaging the ecosystem and traced their history and effects. At this time, there may have been as few as 15,000 elephants in Botswana, and surface water was more abundant. Elephants were concentrated among particular species of trees in given areas, often destroying them in a short time. My father reported that the majority of *mukwa* and *mugongo* nut trees were ring-barked in an area just to the north of Ngwezumba Bridge in 1963. In 1965, virtually all the *Kirkia* and *Commiphora* trees were pushed over in a large area on the face of the sand ridge west of Ihaha.

by Brian Child



Elephants peeling bark from a tree. Roger de la Harpe/agefotostock

All but one of the 124 *Vachellia tortilis* trees scattered through the mopane woodland in the eastern Mababe had been pushed over by elephants that year. Many of the majestic old camelthorn trees, *Vachellia eriolobas*, around the Savuti Channel and south of the Gubatsa Hills were also killed by elephants in that or the next year. Returning to Kasane in 2007, my father wrote:

“The once magnificent riparian strip with its attendant species of birds and small animals has all but disappeared except where it is protected by the old Park Headquarters, and even there it is under threat. When we left Kasane there was a magnificent belt of mainly camel thorn trees running up the length of the Sedudu valley where Selous camped in 1874, but elephant had already started work on them. Today virtually all of the 600 odd trees that had been over 400 years old stand as stark skeletons in a sea of scrubby croton bushes.”

Was this an isolated problem, limited to the Chobe riverfront? My father and Tim Fullman, my PhD student, bounced 80 kilometres south of the river on old cutlines to count trees and tree damage (complaining bitterly about having to cross the “haemorrhagic plains” of the upper Ngwezumba catchment, once a permanent source of water and home to a band of Bushmen). It is hard to be

by Brian Child

scientific about what is not there, but many of the palatable species that one would expect in these environments were missing from Tim's data. We saw the same thing in Moremi, where my father trained my students in ecological methods by repeating his old transects. In a transect near the Khwai Community, tasty (to elephants) species like *Ziziphus macronata* and good old knobthorns recorded on my father's 1967 transect forms were gone or stood as stark skeletons.

The elephants had eaten all the sweets in the shop. They also seemed to be "farming" mopane, which was spreading because of its ability to coppice when knocked down. Indeed, 70% of the huge mopane trees near Third Bridge were gone, often lying supine and sprouting brush. My father said this was perhaps the most magnificent stand of cathedral mopane he had seen—likening them, in his notebooks, to the old oak forests of Europe. As had happened in Chobe several decades before, almost every *Senegalia nigrescens* that we passed was dead or damaged as elephants pushed ever deeper into the Okavango Delta.

People may not worry too much about mere plants if the alternative means dealing with the elephant problem. But with elephants constituting 92% of the large mammal biomass in Chobe by 2011, it is unlikely that the loss of elephant-palatable plant species and habitats does not cause significant losses of other animals.

Tsessebe are far rarer than elephants but used to be the favored species for bush rations by scientists like my father, in part because they were numerous in Chobe and Moremi. He measured every one he shot and claimed (with a grin) that he was a world expert on tsessebe. Tsessebe thrive in ecotones, between the woodlands and the grasslands. However, elephants destroy ecotones through tree destruction and the resultant shrub encroachment and, with the sharp ecotones between mopane woodlands and grasslands now largely gone, so therefore are the tsessebe.

Botswana Qorokwe Okavango Delta.

*Video of elephant destruction shot and narrated by safari operator Paul Stones in Botswana.*

### ***The history of elephants in Botswana***

Always learning from local people and history, my father put together a chronology of the elephant in Botswana, which I summarize from his memoirs:

Before 1912, District Commissioner A.G. Stigand explored and mapped the Ngamiland District of northwest Botswana (Bechuanaland, then) extensively for 10 years. He stated categorically that there were then no elephants or buffalo in the area. The Chobe District also had very few elephants. Several early hunters recorded their explorations in northern Botswana; in 1853, Chapman found about 250 elephants near the Shinamba hills in the southeast of what is now Chobe National Park, but he found no elephants north of this all the way to the Linyanti River. Courtney Selous hunted and explored the south bank of the Chobe in 1874. Along the entire Chobe riverfront between Kasane and Ngoma, he found about a hundred elephants, and shot a number of them.

by Brian Child

My father tracked down and interviewed several elderly Bushmen who had grown up around the source of the Ngwezuma River, which is now in the center of Chobe National Park. According to them, elephants were unknown to the Bushmen living in the east of the Chobe Game Reserve for several generations, at least until the mid-1940s. Then the “country filled with elephant” in a single year.

By 1963, Pat Hepburn, the park warden and our neighbor in Kasane, counted an average of 497 sets of elephant tracks along the main Chobe road each day. This increased to 619 by 1966, despite the fact that good rains in 1966 filled the inland pans late into the dry season so elephants did not need to move to the river. The rapidly growing elephant population in Zimbabwe was spilling into Botswana along well-used paths that linked Wankie (Hwange) and Chobe national parks.

In the early 1930s, the first warden of Hwange, Ted Davidson, had started pumping water for what he estimated were 2,000 elephants. Zimbabwe’s elephant population exploded from only 4,000 in 1900 to more than 76,000 by 1991. On threat of lawsuits from the Natural Resource Board for vegetation destruction, between 1960 and 1991 Zimbabwe culled or hunted some 46,775 elephants. The elephant population nonetheless expanded from 30,000 to 76,000. Even heavy culling of more than 4,000 a year, in the late 1980s, caused only a minor blip in elephant numbers and the accompanying habitat destruction.

The Chobe-Hwange elephant population now numbers some 200,000 to 250,000 animals, which have spread into Namibia, Angola and western Zambia. Interestingly, this was not the primary elephant population in the region in the early and middle 20th Century; that population was centered on the Tuli Block and the Limpopo River in what was called the Tati Concession. (On the border of the Bechuanaland Protectorate, near Francistown, the Ndebele King Lobengula granted the Tati Concession to Sir John Swinburne in the late 19th Century, to be incorporated into what is now Botswana in 1911.)

In good rainfall years, elephants were seen and reported along the northern fringe of the Makgadikgadi Salt Pans, apparently travelling west to Lake Ngami and north to the Shinamba hills. The Bechuanaland authorities set up an elephant culling unit in the late 1950s. In an irony shared with many countries in Africa, Botswana’s Elephant Control Unit, run by Pat Bromfield and John Benn, evolved into the country’s Game Department and finally today’s Department of Wildlife and National Parks.

### ***Wildlife in early Botswana***

My father was employed by the FAO Africa Special Project to plan and map the Chobe area and northern Botswana, and then to create the new wildlife department, together with the former chief game warden of Uganda, Lawrence Tennant, and my father’s good friend Alec Campbell, the anthropologist. Botswana was unfenced wilderness, accessible only by churning along miles of deep sand track, with spectacular wildlife. In 1963, Dr. Thane Riney, who was establishing projects all over Africa for FAO, described the wildebeest, zebra, gemsbok and springbok around the western Makgadikgadi Pans as “the largest herds of plains game left in Africa today,” the Serengeti notwithstanding.

by Brian Child

My father's notes of interviews with old residents of Botswana, both black and white, often mention springbok "treks." A number of authors in the late 19th and early 20th centuries describe hundreds of thousands of springboks swarming for hundreds of miles, consuming all the vegetation in their path. In 1925, Conwright-Schreiner observed, from a single point and with binoculars, 50,000 springbok, part of a trek that covered an area of 130 by 15 miles. Davis (1921) described "100 million head" from part of a trek through which he drove for 47 miles. Shooting thousands of these animals did not seem to reduce their numbers. The 1950 trek took place on a front at least 200 miles wide and took three days to pass Tsabong town.

These truly spectacular springbok migrations are not the only Botswana phenomenon that has passed into history. My father's memoirs offer a glimpse of Botswana's wildlife as it used to be. Having also worked in Egypt and Saudi Arabia, he was at pains to emphasize that the well-grassed Kalahari was the last "natural" desert in the world, and he noted regular sightings of springbok, gemsbok, hartebeest and, less frequently, eland. These were interspersed with occasional but vast herds of other antelope, mainly wildebeest or hartebeest, probably exceeding 100,000 head.

Farther north, at least a quarter of a million wildebeest were recorded on the open grassland around the Makgadikgadi Pans from the mid-1930s to the late 1950s, until the population crashed between 1962 and 1965.

Waking up once in his tent at Makgadikgadi after a spectacular rainstorm, my father recalled one of the most spectacular scenes of his life: In the crystal-clear air, his tent was surrounded by more than 25,000 wildebeest and zebra, 1,000 springbok, a handful of hartebeest and one hyena. As we discuss the future of Botswana's wildlife, it does us well to remember that what we see today, spectacular as it can be, is but a ragged remnant of the pulsing wilderness and extravagant wildlife phenomena that my father witnessed only 60 years ago.

### ***And today***

To return to the problem of today: The elephant population in northern Botswana, increasing from a few thousand animals in the 1940s to some 130,000 now, exceeds the land's sustainable carrying capacity. We can argue all day about carrying capacity, but my father recorded substantial damage by elephants (and expressed his concerns about it) when there were perhaps only 15,000 elephants in Botswana. Similarly, veteran warden, professional hunter and author Ron Thomson suggests that South Africa's Kruger National Park—two million hectares, or almost 5 million acres—began to lose trees in some habitats with a mere 3,500 elephants. Today Kruger has 18,000.

With 38 species, Chobe has more large mammals than any other national park in the world except perhaps Kafue in Zambia. Elephants are putting this at risk. Even before we consider the conflicts elephants cause as they spill into areas of human habitation, they are grossly simplifying fragile, age-adapted ecosystems and displacing plant and even other large mammal species. In nearby Hwange National Park, where as many as 3,000 elephants use some waterholes each day, French research shows a substantial decline in non-elephant wildlife, and Mark Butcher notes that once-magnificent herds of a hundred sable, 3,000 to 4,000 buffalo and 500 eland are no more—they simply cannot

by Brian Child

compete with the elephants.

### ***Tough choices***

Man has severely disrupted the ecosystems of northern Botswana and the surrounding countries. Gone are the hunter-gatherers of old, who, like wolves in Yellowstone, harassed the elephants. Instead, there are artificial waterholes and endless fence lines that destroy animal migrations and dispersals. We have lost two critical ecosystem functions: landscapes of fear and source-sink relationships.

Botswana now has more than 130,000 elephants in an area that, ecologically, should probably support fewer than 25,000 to 50,000, as was the case only a few decades ago.

The natural increase in elephants is 6,500 more each year. If we were to remove 10,000 elephants every year, it would take 15 years to get down to 50,000, or six years if 20,000 were culled per year. Killing 10,000 elephants is mind-numbing to contemplate, but avoiding such decisions may be even worse if it dooms vast habitats and the species that live in them, especially in the face of the enhanced risks caused by climate change. The debate is not helped by the amount of misinformation in the international press.

In a decision that is deeply emotional and highly political but has real effects on people and ecosystems, what should Botswana do with its elephants? What are the ecological and economic facts, and what choices does Botswana have?

First, Southern Africa's elephants are clearly not endangered. Here the "elephant problem" is that the world's largest elephant population is rapidly becoming a serious threat to itself, and certainly to Botswana's responsibility to conserve the unmatched mammalian biodiversity of Chobe National Park and biodiversity more generally.

The simplest choice—a no-brainer, really—is the reintroduction of safari hunting as a tool to improve livelihoods and involve people in managing the wildlife they live with. Legal, regulated hunting generates as much as \$40,000 per elephant for rural communities. It also creates more elephant habitat, but hunting adult males has little impact on elephant numbers and does not solve the ecological problem of overpopulation.

The trickier issue, politically, is the management of elephants in national parks, which are legally created for biodiversity conservation. Yellowstone experienced enormous ecological benefits from restoring its apex predator—the wolf—to the system. In Africa, however, we have removed the apex predator of nearly four million years: the hunter-gatherer.

Without predation, park elephants are unnaturally sedentary and concentrated, leading to habitat changes akin to those caused by Yellowstone's elk herds, but on a much larger scale. This explains why ecosystems in hunting blocks across Southern Africa are often in much better shape than in nearby protected areas. In Yellowstone, wolves re-created dynamic grazing and browsing patterns through restored predator-avoidance behavior. At the risk of being branded a conservation heretic, judicious

by Brian Child

hunting in national parks may be good for biodiversity, by recreating landscapes of fear and avoiding the unnatural sedentarisation of large herbivores like elephants. Africa had no gregarious, sedentary herbivores until the introduction of fenced cattle, and we know what ecological harm they can cause.

The politically safe option is to remain in denial about the impacts of too many elephants, but the tradeoff is significant biodiversity loss, habitat degradation and conflicts with humans.

### ***Expanding elephant range with bold policy reform***

Reducing elephant density by non-lethal means such as translocation or contraception is unrealistic, given the numbers involved. The most palatable option is to encourage neighboring countries like Zambia and Angola to provide habitat for elephants. This requires building an “elephant economy” by making them as profitable as possible through bold policy reform so that local people accept elephants. This solution lies at the heart of the massive recovery of wildlife in Southern Africa.

By the 1960s, wildlife administrators in Southern Africa recognized the critical flaws in conventional conservation approaches. Then, to maximize the value of wildlife to landholders, they adopted the Proprietorship-Price Philosophy. Public wildlife was not viable outside public lands, so they boldly devolved wildlife proprietorship to landholders and communities, with full rights to use, manage and sell wildlife. Wildlife was priceless but valueless, so they maximized the value of wildlife to landholders by encouraging all uses (hunting, trade in wildlife products and tourism); by removing regulations, license fees and market restrictions; and by ensuring that 100% of the value of wildlife got to landholders and communities.

Botswana’s elephants are reluctant to move into Zambia and Angola, as hoped. This situation is unlikely to change until those countries adopt proprietorship-price policies so that local communities get real cash benefits from elephants. Global strategies such as banning hunting or trade in wildlife products further undercut the potential for any wildlife to pay for itself.

Trade restrictions, which are the exact opposite of payments for ecosystem services, make elephants a less valuable and more risky land-use option than domestic crops and animals. Armchair conservationists seem not to understand that most wildlife lives on lands from which people make a living, which cannot be treated as national parks. They also presume that wildlife is a global public good, denying that Botswana’s elephants belong to the citizens who live with them, yet fail to provide public funding for them. In Southern Africa, we are experiencing a growing resistance to imposed Western conservation ideology and a sovereign determination to protect these wonderful animals by balancing the high costs of living with them against the sustainable benefits derived from them.

Like cattle, the more profitable wildlife is, the more prolific it will be. Contrary to perception, elephants are not very profitable. The price of trophy bulls may be high, but this is a long-lived species and hunting offtake rates are low, usually well below one percent of the population.

The viability of an “elephant economy” requires making every effort to encourage a full spectrum of usage. The Kavango-Zambezi TFCA has wonderful parks. But most will continue to underperform

by Brian Child

economically until they receive hundreds of millions of dollars in recapitalization and tourism infrastructure. This will produce an economic return of roughly 30% in job creation and general economic growth.

However, important as parks are, the reality is that most wildlife occurs outside parks, and this wildlife will be paid for with legal, regulated hunting.

Unfortunately, we face a problematic divergence between perception and reality in today's post-truth society. Ecotourism alone is not the solution, as it is concentrated in very few parks, leaving the majority financially neglected. (This can be corrected.) Neither is tourism benign. Ecotourism also has a high ecological footprint in terms of water use, solid waste and carbon output. Less recognized is the subservience of park management to the whims of tourism and political correctness, so that many famous parks are squandering the biodiversity they were legally established to conserve in favor of a few charismatic species, especially elephants and lions.

The shrill attacks on legal, regulated hunting disregard the fact that more than 80% of wildlife outside protected areas in Southern Africa is paid for by hunting; ecotourism contributes less than 5% of this bill. The billion dollars or so that we are losing every year because of CITES trade bans would also go a long way toward securing the wildlife estate; this is almost enough to fund all the parks in Africa.

Wildlife utilization has funded the rewilding of much of Southern Africa, and we are working hard to include rural communities in this wildlife economy. But let me ask the armchair critics: Can we legitimately require poor rural people to conserve wildlife while they undermine the rights of these people to use and benefit from the wildlife they live with? Amid the applause at the hunting ban, the silence about the hunger and suffering it imposed on Botswana's wildlife communities was deafening.

***The easiest way to increase space for elephants and pay for their conservation is through legal, regulated hunting.***

The strident media narrative against safari hunting is deceitful and highly detrimental to African wildlife. Botswana is a case in point: Anticipating the 1977 hunting ban in Kenya, big names in the hunting industry like John Lawrence, Harry Selby, Andrew Holmberg and Eric Rundgren relocated to Botswana and started the Southern African hunting industry. Already by 1965, Botswana's embryonic safari business was contributing R54,000 of the total R80,000 earned from wildlife by government; at the time, the Game Department cost R60,221.

As in Theodore Roosevelt's America, hunters were the real pioneers of Southern African conservation and many became game rangers and established tourism companies. Controlled hunting areas constitute a large and important share of Botswana's conservation estate. Hunting fees pay most of the wildlife bills, just as it has paid roughly 80% of the costs of rewilding vast former cattle-ranching areas in Southern Africa. Legal, regulated hunting is a formidable conservation tool for a number of reasons.

In stark contrast to the way the media portrays them, most professional hunters and outfitters are dedicated, lifelong conservationists with skills and decades of experience in wildlife protection and

by Brian Child

management. We decry the bad apples who undermine this position and challenge the hunting industry to sort them out.

Counterintuitively, wildlife numbers increase rapidly in areas set aside for hunting. Botswana's elephant population increased from fewer than 20,000 to more than 130,000 while supporting a hunting industry for 60 years, as well as major culling operations in Hwange National Park and the dispersal of elephants to parts of Angola and Namibia. With hunting quotas set at 0.2% to 0.7% of the population compared to elephant population growth of 5% to 6% annually, trophy hunting has an inconsequential impact on elephant numbers, but it finances the local economies as well as anti-poaching efforts and wildlife management.

In my experience, unsubstantiated fears perpetuate overzealous, unenforceable and old-fashioned colonial hunting regulations when we should be creating a modern industry that relies on extreme market transparency to encourage best practices. The hunting market is already well informed, and any outfitter who sells sub-par hunting or over-utilizes wildlife will quickly ruin his reputation. Going forward, we need to reduce the costs of regulation while providing information that encourages hunters to buy from landholders and communities that govern wildlife income well. We must also ensure that everyone benefits fairly, including women and marginalized groups.

Understanding taxation is critical too, given the history of double-taxing wildlife. Avoiding direct fees on the sale of wildlife and applying only normal business and personal taxes, as most other sectors do (agricultural ministries do not charge license fees for cattle or corn), will level the economic playing field for wildlife relative to other land uses. Given associated economic multipliers, the growth of the wildlife economy will in the end deliver more tax revenue—as well as employment and economic growth—than an industry sucked dry by fees and regulations.

Media storms about canned lions, irresponsible hunters and so on identify problems that—as in all industries—need to be dealt with harshly. The problem is that the media hype distracts us from the core business of making wildlife valuable to landholders. For example, conservation success rises rapidly if wildlife is valuable and if landholders and producer communities retain this value (e.g., 100% of trophy fees). A serious media truly concerned about wildlife would be promoting legal markets, not closing them, and scrutinizing financial transparency to ensure landholder and community benefits rather than getting cheap thrills out of sensationalist stories.

### ***Call it what it is: culling***

The last issue to discuss is the most controversial one—controversial to people now disconnected from their sources of food: elephant culling. It may seem callous to build an industry around elephant products, at least to the affluent urban elite. However, this will create jobs and more space for elephants, and it is uncontroversial to farmers who both love and eat their livestock (sometimes in the face of the terror of too many elephants).

When Zimbabwe culled elephants, the sequencing of decisions was important. The primary decision, to cull or not to cull, was entirely an ecological one. Once this decision was made, products were used as

by Brian Child

profitably as possible—to waste anything on a crowded planet is problematic. As my father said, way back in the day, all conservation actions need to be ecologically sustainable, economically viable and socio-politically acceptable.

Meat from culled elephants was given to local communities or sold cheaply. Cull ivory is generally small, but artistic Zimbabweans added enormous value to it through high-quality craftsmanship. Counterintuitively, the most valuable product from culling is hides. In the 1980s, Zimbabwe employed many people in the substantial industry of converting elephant skin into fashion objects, especially briefcases and boots.

The lesson is that competent management of hunting, culling and wildlife products coincided with a booming tourist industry and a six-fold increase in wildlife populations. This gives the lie to the sensationalist claim that opening hunting in Botswana will chase away tourists. The evidence points to the opposite: People flock to areas where wildlife is managed well and for local benefit—through hunting, tourism or quality wildlife products. These all serve our vision of rewilding land by making wildlife more profitable than the alternative.

### ***Community conservation***

The global reality is that the poorest people usually co-exist with the best wildlife. Few countries have as much potential as Botswana does to combine community development and wildlife conservation. If we expect people to live with dangerous animals like elephants and lions, each household must benefit directly, including through significant cash dividends. This depends on effective community governance.

At the time of Botswana's hunting ban, instituted in 2014, I was monitoring livelihoods and governance in several rural communities. The USAID-funded Natural Resources Management Project had helped communities get 15-year leases from the government for the wildlife on their land, and they were selling hunting and tourism for good money. However, governance had been neglected—a couple of the smaller communities were doing well, but in the majority of CBNRM (community-based natural resources management) communities people complained that “the committees were eating,” but they were getting very little. Fingers were pointed at “irresponsible” communities, but the real culprit was the absence of clear governance guidelines, compliance monitoring and capacity-building.

Sankuyo was one of the well-governed exceptions. The community earned 4 million pula annually (about \$360,000), mainly from elephant hunting. It built houses for destitute members and invested in water infrastructure and toilets. People past working age were given cash allowances; otherwise, the community had a deliberate policy of employing people from every household. Hunting provided plenty of meat and jobs, with some additional jobs in tourism. Wildlife provided some 60% of the community economy, with the remainder coming from “town” jobs, remittances and government anti-poverty grants. (In such a dry area, agriculture was a non-starter.)

The hunting ban crashed Sankuyo's GDP by more than 40% overnight—a more catastrophic decline than the economic collapses in Zimbabwe and Venezuela. The wildlife economy had allowed the people of Sankuyo to climb out of extreme poverty and reliably feed themselves. Their community was a model

by Brian Child

of the effectiveness of sustainable wildlife usage. Then the hunting ban flung them into destitution overnight.

Anticipating this catastrophe, I was already working with Sankuyo on an alternative economic plan. (Most land-use plans were written by biologists, and neglected issues such as economic development.) Being on the edge of the Okavango Delta, roughly half of Sankuyo's land has strong potential for ecotourism while the other half is only suitable for hunting. However, ecotourism contributed less than 20% of the community's wildlife revenues. Furthermore, the tour operators were far less engaged in community affairs than the hunters, who were also much better at anti-poaching work and wildlife management.

Ecotourism was performing well for tourists and tour operators, but not the economy of Botswana or for local communities—as I can illustrate with photos of tourism luxury and community poverty taken on the same day. Tourism underperformance also reflects Botswana's strategy of low-volume, high-fee tourism, which is highly beneficial to operators, but not in terms of jobs, economic growth, community development or market diversification.

Working with the leaders in Sankuyo, we calculated that we could quadruple community benefits and employment (and taxes paid to government) by allocating drylands to hunting and prime delta-edge areas to game-viewing tourism, and by replacing some high-end lodges with three-star models. Not inconsequentially, this also allows the expanding middle class of Africans to enjoy their own wildlife.

### ***Re-planning the wildlife economy***

Botswana's wildlife industry has not been re-planned for several decades. The time is right to do this now, using economic data and social and ecological goals rather than according to who tells the best story or has the most political influence. Botswana, its people and its wildlife would benefit greatly from a far more diverse, visionary and imaginative wildlife sector.

High-end ecotourism is important, but the jury is still out regarding its overall economic contribution. It is highly profitable for tour operators, but its economic, employment and tax advantages compared to mid-range tourism are certainly not given. Tourism that excludes all but the rich is problematic in other ways, too—we need to consider the environmental and social footprints of extreme pampering, such as a plunge pool for every tent.

Tourism can generate high revenues in prime areas, but what is the best type and density of tourism for Botswana? In South Africa, the greater Kruger ecosystem alone generates R6.6 billion (\$383 million) in GDP, R3.4 billion in wages, and R1.5 billion in taxes, but this combines high-end and mid-range tourism. This is almost twice the value of Botswana's entire P2.52 billion (\$202 million) tourism sector. I am not recommending East Africa-style minivans or uncontrolled chaos, but Botswana could earn much more from a well-planned and diversified tourism sector that combines different kinds of tourism, including a focus on the middle-class African market. Planning should be guided by performance metrics that include wildlife conservation, jobs and economic growth, and careful investment in infrastructure and wildlife management.

by Brian Child

Reintroducing hunting to Botswana, on the other hand, is essential. Hunting thrives in Botswana's remote, vast landscapes that are too harsh for ordinary tourists, where it pays communities and finances water infrastructure and protection for wildlife. This is also the right time to reconfigure and strengthen CBNRM. First, we have learned that disciplined single-village governance works, but that large communities thrown together for convenience often suffer from "elite capture" and financial mismanagement. Second, elephants are ranging into more communities. CBNRM would gain enormously from clear governance criteria and from new boundaries that better match communities to wildlife and take into account historical rights.

Words matter and classifying tourism as "consumptive" leads to incorrect decision-making. Tourism leads to game-viewing roads, water use, solid-waste disposal issues, carbon footprints and, not least, an emphasis on elephants and lions at the expense of other species. By contrast, hunting "consumes" a few adult male animals, but it leaves the ecosystem in a more natural and balanced state and generates far more income per unit of energy or water consumed.

### ***Land use choices***

In Zimbabwe, South Africa and Namibia, wildlife earns up to as four times as much as livestock does, with four times as many jobs, much higher skill levels and wages that can be 32 times higher. Those countries have more than 10,000 properties with wildlife. Wildlife has saved many cattle ranchers from bankruptcy and environmental decline after a steady drop in commodity prices, including beef, since the 1950s. Today's economic trends favor tourism and wildlife. In the face of climate change, a wildlife economy based on selling a bio-experience may be more resilient and profitable than beef production.

Botswana has made cultural and political decisions that support the cattle industry, which has squeezed wildlife into the north of the country. Like its land usage, however, Botswana's culture is also changing rapidly. Older people placed a considerable premium on weekends at cattle posts, but most people now live in urban areas and the youth prefer cell phones and tourism jobs. Farmers in the drier parts of the country struggle more each year and cattle have become uneconomical north of the buffalo fences. Is it time for Botswana to chart a new economic course?

My father's memoirs describe a Botswana with some of the world's most spectacular wildlife scenes as recently as the 1960s. A powerful economic choice is to recreate these, providing jobs as hunters, guides, shopkeepers and wildlife managers and with many more jobs further along the supply chain. Just as Botswana has to make bold decisions about elephants, there is every reason to believe that a bold decision to re-create its incredible wildlife spectacle, including migrations, may well enhance the national economy and rural livelihoods. Every industry has its place, and this will require careful evaluation of the potential of the wildlife economy, along with informed tradeoffs and spatial planning between wildlife, dryland crops and livestock.

### ***Recommendations***

Botswana could quadruple its wildlife economy in the next decade based on a clear vision of a 10 billion to 20 billion pula economy with as many as 100,000 jobs. The first and easiest step is already

by Brian Child

underway—the reintroduction of safari hunting, with local communities as the primary beneficiaries. Done properly, this will require clear, bold CBNRM policy and strengthened community proprietorship and governance. It would also be sensible to put the management of hunting in the hands of those communities, with government stepping back from day-to-day management to facilitate and monitor performance.

Rethinking the ecotourism strategy to maximize jobs and economic growth and minimize the sector's environmental footprint could result in enormous gains. The singular focus on high-end foreign tourism should be critically examined, and significant investment in mid-level tourism (where Botswana could lead in pioneering the middle-income African market) should be encouraged. Sustained expansion of tourism will require much better planning around and maintenance of tourism hubs like Maun and Kasane.

Managing elephants judiciously in a politically heated arena will take powerful leadership and vision backed by thorough science and careful calculation. The hardest decision, politically, is what to do about too many elephants. Avoiding the issue for years has only made this decision harder and increased the risk of an ecological catastrophe for elephants and other wildlife. Let me remind you that Zimbabwe enhanced its global reputation as a leader in conservation—while culling 46,775 elephants—by making professional decisions, turning problems into assets and rapidly expanding wildlife populations and tourism. This required national consensus around a well-articulated policy based on economic, social and environmental goals, implemented competently, transparently and with integrity. With this hindsight, there is no reason why Botswana cannot do even better.

As Botswana faces important decisions about its elephants, it also faces momentous decisions about land use. Here too the country can reimagine its future with careful planning. The price of agricultural commodities, including beef, will continue to decline while the value of tourism and wildlife will increase. However, drought and disease are also likely to increase with climate change and global interconnectedness. Thus, the economics of land use should guide Botswana strongly in the direction of resurrecting the amazing wildlife spectacle that my father was so fortunate to witness in the north and west, while focusing on cattle and farming in the east.

Prompted by the elephant crisis, this is the time to think big and make bold decisions about the future of the vast connected landscapes of the Kalahari Desert, the Okavango Delta and the Chobe River. Making this landscape the foundation of a multi-million-dollar wildlife economy directly addresses rural poverty and marginalization, and might estore Botswana's ecosystems of old, including the incredible migrations. Paradoxically, sensationalizing and Disney-fying wildlife to exclude hunting, the wildlife trade and even culling is preventing this future.

**Dr. Brian Child** is an associate professor with the University of Florida, where he focuses on wildlife economics and governance, and higher education in African leadership development. Dr. Child holds a PhD from Oxford in wildlife and livestock economics. He grew up in Botswana and Zimbabwe as the son of a park ecologist and director. He provided extension services to private wildlife landholders and coordinated the CAMPFIRE program for Zimbabwe Parks for 12 years, after which he spent 10 years in Zambia establishing CBNRM and park management systems. This article was posted on Just

by Brian Child

*Conservation in July 2019 but has been extensively rewritten since the first auction of elephant hunting permits, in February, after Botswana re-opened hunting.*

*Banner Image: Sunset elephants along the Chobe Rive near the old Serondela Camp. Silvio Calabi photo*