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DEDICATED TO THE WORLD’S CUSTODIANS OF WILD SPACES & WILDLIFE

A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
Conservation Frontlines' editor-in-chief on the harm that COVID-19 may cause to conservation—and how to lessen it.

As the world grapples with COVID-19, times are tough for us all. Nevertheless, we need to stay curious about nature and continue to celebrate the life around us. All of us here at Conservation Frontlines, in the US and South Africa, hope that our free and factual news and fascinating stories will help ease the stress of the coming weeks.
But we cannot ignore the fact that virus-driven policies and restrictions will surely have devastating consequences for wildlife, wildlife companies and rural communities around the world, and especially in sub-Saharan Africa and western and central Asia.

Tourism everywhere has been swamped by a tsunami of cancellations. Photographic and hunting operations are struggling to absorb the impact of zero income and are closing operations left and right—temporarily, we hope. Conservation work and habitat restoration and management also may grind to a halt. South Africa, where I live, has announced that its anti-poaching and wildlife services will continue during our initial three-week lockdown, but what comes next? And what about our neighbor countries? Poaching (for bushmeat, elephant ivory and rhino horn), illegal wood-cutting and clandestine charcoal production are expected to increase across Africa.

Worse yet, the livelihoods of families, where the breadwinner depends on employment with wildlife-focused companies or community conservancies, are seriously compromised. For these vulnerable people, income lost to the pandemic translates into spikes in poverty, missed meals for children and reduced access to healthcare far beyond COVID-19.

But it goes even deeper. My good friend Malan Lindeque from Namibia recently wrote: “African rural communities do not generally benefit in any significant manner at household and livelihood levels from tourism, except those that are directly employed in tourism. [Their] households are a very small percentage of the total. Remember the statement by the President of Botswana questioning how it can be that there are barefoot people living within walking distance of luxury lodges charging $5,000 per night? This is extreme, and should rightly make the owners squirm, but we don't see much squirming or a real commitment to socially sustainable tourism. [These are the] same operators [who] had much to say about how they are saving Africa's wildlife, and that hunting is irrelevant and damaging to tourism.”

It may just be possible to emerge from this pandemic with the will to right some glaring wrongs of the past—and developing economic hardships of the present. For example: Billions and even trillions of dollars are being channelled into gigantic infrastructure projects in Africa and Asia that are financed by China or private and public investors from the West. Despite their avowed good intentions, these projects often cause terrible socio-economic and environmental damage, particularly in rural areas. Once the world has mastered COVID-19, our governments (we, the voters) could demand these public and private mega-investors direct at least a part of

A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
their funds to the mitigation of the pandemic’s effects on habitats and wildlife—and perhaps even toward helping resurrect the hundreds and thousands of small companies and rural conservancies that serve the wildlife sector.

And those who effectively condemn wildlife and wild lands by advocating against their sustainable, ethical use—again to the detriment of rural communities—should also think again. This issue of Conservation Frontlines presents extraordinarily compelling testimony to counter armchair conservationists’ wishful thinking. Who are the real heroes at the frontlines of conservation? The urban emotionalists who profess their (distant) love for nature, or those who live with and understand wildlife?

Wildlife, wild places and the people who live there will need even more of our support once we get through this. Now is the time to show your personal commitment to the causes we cherish—don’t cancel your trip to the wilds, just postpone it.

We present this April issue of Conservation Frontlines for your clicking, scrolling and reading enjoyment. Our expert authors are here to expand your knowledge—and don’t overlook our ever-growing on-line library and video archive.

We will get through this together. Hang tight with us. We’re ramping up our output to keep you informed.

Keep the passion!

*Banner photo: The author after 10 days in the Siberian wilderness. (With a hot shower still a week away, he had a bath in the near-freezing river the next day.)*
Namibia’s Black Rhino Custodianship Program

By Birgit Kötting

READ TIME 10 MINUTES

In 1993, one nation set out to conserve an iconic species; 27 years later, its success deserves note.

Namibia’s vision for its black rhinoceros is that by 2030 *Diceros bicornis bicornis* will be re-established in viable, healthy breeding populations throughout its former range; and that it will be sustainably utilized through photo tourism and conservation hunting. One of the strategic objectives of Vision 2030 is to establish black rhinos across all three of Namibia’s land-tenure systems—state-protected areas, communal conservancies and private freeholds—in order to use all available vacant habitat.

Sparked by Vision 2030, after careful planning and preparation Namibia’s Black Rhino Custodianship Program officially kicked off on April 14, 1993, when the first six animals were
translocated to a freehold farm under a Memorandum of Understanding signed by the farmer and MET, the Ministry of Environment and Tourism. Later that year, on July 29, five more black rhinos were moved to a second freehold farm. At the time, the two farms had a combined area of 29,300 hectares (72,400 acres). The rhinos came from national parks, as Namibia has no zoo rhinos. All black rhinos in Namibia are state-owned; white rhinos are not part of the custodianship program because they can be privately owned.

The concept of the Black Rhino Custodianship Program is that breeding nuclei of the animals be relocated as free-ranging populations to suitable habitat on farmland and communal conservancies where the landholders are willing and able to undertake the responsibility of providing basic care and security to them.

Other prerequisites for the BRC Program are that the applicant must be a bona fide landowner; the property must be appropriately fenced for black rhino; the property must be at least 10,000 hectares (24,710 acres) and financially sound; and the applicant must be willing to enter into a Memorandum of Understanding with the Ministry of Environment and Tourism.

The MoU covers aspects such as ownership of the animals (black rhinos in Namibia remain state property, even progeny born on custodian or conservancy lands) as well as their care. (MET provides veterinary care and the Protected Resources Division of the Namibian Police assists with security.) Custodians must monitor and oversee their populations, provide food and water and keep the rhinos safe to the best of their ability. Custodians also must report births, mortalities, animals that have not been seen for a while, animals that are sick or in poor condition, etc. in addition, the MoU addresses research and filming, the sale or enlargement of the property, genetic management of the population and indemnity from civil liability.

All applicants to receive black rhinos undergo a detailed assessment; major considerations include the size of the property, its habitat (topography, drought potential, browse variety and abundance, soil deficiencies, competition from other browsers), water (number and type of water points, distribution, quality and availability of natural perennial or seasonal water), security (fence quality, risks from proximity to roads, towns and borders, the prevalence of poaching and the attitude of the neighbors), the potential for disturbance (nearby mining, roads, capture of wildlife, hunting, proximity to airports) and the risk of disease. Also considered are the owner’s anti-poaching capacity (monitoring, patrolling, gate control, neighborhood watch, radio communications, aerial support, vetting of staff), management
skills (knowledge and experience, continuity, presence, attitude) and experience with other specially protected species (introduction success, monitoring, safekeeping). Exceptions to some of these prerequisites may be allowed under certain conditions—for example, rhinos may be put into areas smaller than 10,000 hectares or, with careful planning, rhinos may be released into unfenced areas.

After assessment by senior MET officials and the Protected Resources Division of the Namibian Police, properties and compared and weighted according to a score card. In the past, security was not weighted heavily as there had been little or no rhino poaching in Namibia and neighboring countries. With the onslaught of poaching, however, the score card was revised, and the importance of security and anti-poaching measures adjusted.

The first communal conservancy officially joined the BRCP in April 2004, when four animals were introduced into a fenced core area. From 2006 onward, several other conservancies, all in
the remote Kunene region of northwest Namibia, have joined the program and taken in rhinos from the free-roaming Kunene population.

In 2009, MET made a bold move by establishing two rhino populations in much more arid southern Namibia—one group at the Fish River and one at the Orange River. A previous attempt to re-introduce black rhinos to the south, in Naute Game Park, had failed, which led to a reluctance to translocate black rhinos south of Windhoek. Not only was there great concern over such re-introductions, but this was a formidable undertaking in general, as the habitat there is so different from that of any donor population and the animals had to go through lengthy boma (corral) training in Etosha national Park as well as at the receiving farms.

![A black rhino in boma training. Author’s photo](image)

Boma training means conditioning captive rhinos to, among other things, the food plants of the area into which they will be released. In southern Namibia, this required a huge amount of logistical support and commitment from both MET and the custodians, who made significant contributions by building bomas on their properties at their own cost and paying for the
transport of the animals, as well as providing staff and tractors and other equipment to look after the rhinos in the bomas.

The Fish River rhinos have not done as well, but today the black rhino population at the Orange River is hugely successful, having increased to 11 animals from four (two bulls and two cows). Although most of them came from Etosha National Park, where there are virtually no euphorbia plants, all these animals learned to eat the toxic euphorbias of southern Namibia and are managing astonishingly well in this arid habitat.

![Orange River black rhino cow and calf in very poor condition before supplementary feed was provided. Author’s photo](image)

(The *Euphorbia* genus is widespread throughout the world; in Namibia, several species occur, of which the best known is probably *Euphorbia damarana*, a shrub in northwest Namibia, which black rhino love to eat. In far southern Namibia, a similar-looking but different euphorbia occurs, *Euphorbia gregaria*. Its milky latex can be an irritant—and in other species even toxic or lethal—but animals can adapt to certain toxic plants, and these two *Euphorbia* species are
browsed by kudu and giraffe as well as black rhino. Black rhino may uproot the entire plant to get the stem and root, leaving their bodies streaked with white latex. People use the latex, leaves and bark of several *Euphorbia* for fish poison and to repel insects, but eating food exposed to euphorbia smoke—when cooked on an open fire—can result in headaches, nausea and even death.

Drought has to be taken seriously, especially in habitat that is already so marginal. About six years of below-average rainfall in the far south of Namibia caused the animals at the Orange River property to lose considerable condition, and the cow-calf combinations especially suffered tremendously. The animals are currently being offered supplementary feed and their condition has improved significantly. An advantage of boma training is that rhinos can become accustomed to eating lucerne (alfalfa) and so, in years of drought, take to it more easily than animals that have undergone vend-to-veld translocation and are not familiar with lucerne.
In 2010, MET tried to relocate black rhinos to communal conservancies in the arid extreme northwest of Namibia, but these attempts failed, likely because of the competition from community livestock around water points, which caused the rhinos to wander in search of less disturbance.

Today, 27 years after the first animals were translocated, 35 land units are part of the Black Rhino Custodianship program—25 commercial farms or game ranches and 10 communal conservancies. The 25 freehold custodians, plus one core area in a conservancy, cover an area of 769,000 hectares (1.97 million acres) and the nine Kunene conservancies cover a combined area of 2,674,100 hectares (6.61 million acres). The custodianship program presently hosts an estimated 560 black rhinos on freehold land and a further 150 in conservancies.

Over the years, nine freehold custodians and one communal custodian have exited the program for various reasons, resulting in a loss of more than 85,000 hectares (210,000 acres) of prime habitat for rhino conservation in the private sector, which potentially could have accommodated more than 150 rhinos. The impact of habitat loss on conservation remains a threat of immeasurable magnitude, and it is no different for the black rhinoceros. Losing custodians should therefore be avoided at all costs, if possible. Remarkably, and regrettably, no financial support was ever available to assist custodians, even in providing security, which is very costly. This is testimony to the commitment to conservation of the participants in the program.

For metapopulation management objectives, DNA samples and other information is used to assess the degree of relatedness among the individual populations and the need to move animals around among the different populations. For many years, the aggregate black rhino population in Namibia's custodianship scheme outperformed all other black rhino populations in Africa in breeding success and rate of increase.

This can be attributed to several factors (among others): Generally, young cows, which are only coming into breeding age, are involved; and when breeding commences, it is at optimal levels, with short inter-calving periods and high calf survival rates. Typically, a sex ratio of 1:1 is introduced and when bulls are involved, one is older (to take on the role of breeding) and the others are of pre-breeding age, which initially reduces social pressures of competition and dominance. As well, founder populations are relatively small, to initiate rapid growth, and prime habitat is selected.
As the individual populations increased, the rate of growth was expected to slow down, and this has indeed occurred. Nonetheless, the custodianship rhino populations in aggregate continue to increase at a near-optimal rate. The long-term average growth rate for the custodian metapopulation—that is, our 560 black rhinos on custodial properties—stands at 8.7%, from 1994 to 2019.

The 150 animals in conservancies are excluded from the calculation as they are in extremely arid areas and are thus affected badly by drought, so their population growth is the lowest in the country. Still, we have already achieved Vision 2030, as we currently have just over 2,000 black rhinos in Namibia, with approximately 1,500 in the rest of the country (at Etosha National Park and other smaller parks). Namibia now holds more than 90% of the world’s wild black rhinos.

In 2017, the growth rate across the program was 8.1%; however, with the drastic increase in poaching on custodian properties from 2018 on, the growth rate dropped to 7.6% in 2018 and 7.2% in 2019. In contrast, the Namibian national growth rate for black rhino before poaching was 6%. Although at 7.2%, the growth rate is still far higher than for any other black rhino population in Namibia (and possibly in the entire southern African range), the sharp decline in the past two years is a huge concern.

Previously, due to a sudden escalation of rhino poaching in northwestern Namibia, MET decided in 2014 to dehorn all state-owned rhinos. Since 2016, a total of 182 rhinos have been dehorned on 18 custodian properties, and many more in the national parks. Dehorning is the removal of horns under anesthesia; it is the horns that are of value to poachers. (This is a temporary measure, as horns regrow.)

Dehorning reaches far beyond just removing an animal’s horn for security—such operations help audit numbers, sex and age structures. As well, unmarked animals are ear-notched, which
makes monitoring easier and more accurate, and all individuals are DNA-sampled, which can assist with forensic investigations when a rhino carcass is found or horns are confiscated.

The challenge in this approach is to conduct proactive, rather than reactive, dehorning, to keep up with re-dehorning and backing up dehorning with other counter-poaching measures. Dehorning should therefore not be seen as the only solution to poaching but part of the solution.

**Good monitoring remains the foundation of anti-poaching efforts and is absolutely critical for properties with rhinos—**in order to be able to pre-empt threats, one needs to know how many rhinos there are and where they roam. **In small populations all individuals can be known, but in larger populations regular aerial counts are made. To identify individual animals, ear-notching is critical. Camera traps are also widely used for monitoring.**
Effective security for rhinos requires a combination of methods such as foot, vehicle, aerial and horse patrols, cameras, dog units, perimeter security technology, threat analyses and training. Cooperation between custodians, MET, the Namibian Police and Defence Force, police reservists, neighborhood watches, security companies and others is critical. Improved information-sharing between stakeholders builds trust and is therefore also critical.

Furthermore, sustainable incentive schemes must be developed and implemented so that custodians can receive direct benefits from “their” rhinos. Options for this are covered under MET’s Black Rhino Management Strategy, and a model has been developed to determine how this could work. Donor funding for this is critical.

One way to ensure a direct benefit to custodians is via conservation hunting (as trophy hunting is called in Namibia). Old breeding bulls are displaced by younger bulls, who then take over dominance and defend their females against competitors. Often, in such fights for dominance, the older bull is terminally injured. Older bulls in the post-reproductive phase are therefore considered for conservation hunting in order to generate income.

The first instances of conservation hunting of custodianship rhinos have taken place. However, the scale of program costs versus the potential for recovery through hunting is a considerable challenge and other means of creating revenue must be explored as well.

Birgit Kötting is a control warden with MET, Namibia’s Ministry of Environment and Tourism, where she has been employed for 25 years. She has been the Black Rhino Custodianship Program manager since 2006.

Banner photo: Black rhinos at a pan in central Namibia. Despite their reputation as solitary animals, black rhinos enjoy socializing around water sources. Author’s photo
Modern-Day Grizzly Bear Reality

By T.A. Opre

READ TIME 12 MINUTES

Across the North American West, the burgeoning restoration of an apex predator is bringing conflict with—and among—humans. Biologists and Native Americans propose solutions.

Newspaper accounts of livestock killed and eaten; social media posts from a bloodied hunter describing being attacked; tourists and mountain bikers killed in and around national parks—such events are almost becoming a norm rather than an exception. What do they all have in common? The grizzly bear.

Some people say a way of life valued throughout the western USA and Canada is being threatened by recent legal decisions regarding the status of the grizzly bear. These decisions limit wildlife managers’ ability to mitigate a serious problem, one that threatens to explode. An
apex predator, the grizzly bear has successfully recovered much of its range. In 1975, when the bear was listed as threatened under the Endangered Species Act, the US Fish and Wildlife Service said that a stable population of several hundred grizzlies lived south of the Canadian border in small ecosystems. Today, grizzly bears are expanding into areas they haven’t occupied in a century or more. Their population in the Lower 48 states is now estimated to be at least 1,550.

With increasing populations and range, grizzlies are foraging closer to human habitation, leading to more, and more serious, conflict while taxpayers assume the costs of relocating or euthanizing “problem” bears. Grizzlies are losing every day. What can we do to ensure that these iconic predators continue to prosper and provide biodiversity?

Cattle vacating a meadow as grizzly bears move in. A still photo from “The Wildlife Conservation Project: Grizzly Bear Chapter I” from Firesteel Films. (https://www.youtube.com/watch?v=DmKyw5-Hi40)
The problem

It's complicated. No surprise. In this day and age of extreme partisanship, both sides use the grizzly as political fodder. Whether one side wants to expand fossil-fuel extraction or grazing rights, or the other side objects to the actions of farmers, ranchers or the natural-resource industry, the bears are caught in the middle and not being managed in their best interests.

Grizzly bear conservation has been hijacked by politicians and the anti-hunting lobby.

In 2017, British Columbia's New Democratic Party stirred up its base by promising to ban “trophy hunting” of the species. It was no surprise that such a highly emotional issue polled well with an urban society. Most British Columbians live in and around the megacity of Vancouver. Many no longer have a connection to nature except through the anthropomorphism of animals via Hollywood and the mainstream media. Few, if any, have traditions that include the direct use of wild resources. The province banned grizzly bear hunting in December 2017.

Protectionism—or wise conservation?

“Why were we not asked [about the grizzly bear issue]?” wondered Tahltan Council President Chad Day. “Our people have lived on and managed our lands for 10,000 years. We need to be the people making the decisions. Not people from urban areas. Not people from other parts of the world. We are the people who live with these bears. We need to make these decisions.” Day was speaking to me for a video interview at the World Mountain Ungulate Conference in Bozeman, Montana, in September 2019.

The Tahltan are a First Nations people who have long inhabited northwestern British Columbia. Salmon, moose and berries were staples of their diet, which led to direct competition with grizzly bears. The Tahltan managed this conflict by hunting the bears. The Tahltan have a strong tradition of realizing economic benefits from wildlife. Tribal members were some of the first professional hunting guides in Canada, taking European clients on months-long horseback expeditions to hunt moose, mountain goat, Stone sheep, mountain caribou and grizzly bear.

Day added, “Tahltan people are going to be forced to take matters into their own hands and protect people, our communities, our ungulates and our culture. This grizzly [hunting] closure
is by far the stupidest decision which impacts the Tahltan Nation. The grizzly closure is not going to save a single grizzly bear in Tahltan territory.

In years past, a Tahltan outfitter could earn upward of $15,000 on a single, carefully managed grizzly bear hunt. Most outfitters only had one or two bear permits per season, but their hunters often added other species like moose or caribou, which could push the total price of their hunt over $25,000. Resource extraction—mining—provides the highest-paying jobs in Tahltan territory, but outfitting has provided a high-quality lifestyle and reasonable pay, which has kept many Tahltan connected to their ancestral land. Is killing bears illegally, outside of this economically incentivized model, going to lessen the human-bear conflict?

Tahltan wildlife guardian Jarret Quock told me, “We’re not here saying all the grizzly bears need to be shot. We’re saying there’s just too many. The end result is going to be the grizzly bear will do the suffering.”
‘Best-managed bears’

The BC ban on grizzly bear hunting didn't even pass muster with the science community in Canada. Dr. Mark Boyce is a professor of population ecology in the Dept. of Biological Sciences at the University of Alberta, and the Alberta Conservation Association Chair in Fisheries and Wildlife. He told me, “We did a review synthesis, two years ago, for the BC government looking at how the bears were managed and the science that went into decision making.

“The upshot of the review was this was the best-managed grizzly population in the world. They had a team of highly qualified scientists making all these regulatory decisions, making sure there was a limited harvest. In locations where there was opposition by the local First Nations, there was no harvest. Any place where there was declining or inadequate populations, there was no harvest.”

Evidently the bear-hunting ban was a political decision, made with no science to back it up. Although it was intended to “save” grizzly bears, their habitat is under increasing pressure from human development and encroachment.

What is happening in British Columbia is also occurring in Montana, Idaho and Wyoming, where lawsuits brought by organizations such as the Center for Biological Diversity promote a no-hunting approach to grizzly bear management. Their goal is to see grizzly bears fill their historic range prior to European colonization of North America. This includes states with huge human populations, including California and the Rocky Mountain Front Range, home to more than 5 million people from Fort Collins to Albuquerque. Politicians from as far away as New Jersey are clamoring to ban the hunting of predators such as grizzly bears.

Today, grizzlies have exceeded the carrying capacity of the available habitat in some recovery zones, including the Greater Yellowstone Ecosystem in Montana and Wyoming. The bears are now moving into areas where they haven't been seen since the 1800s. Numerous encounters have led to serious conflict. Both humans and bears are dying. Not only have elk and deer hunters been attacked, but hikers, horseback riders and even mountain bikers also have found themselves on the receiving end of claws and teeth. Whatever the result of these encounters, in the end the grizzly bear almost always loses.
In addition, livestock, fruit trees and other agriculture are drawing the attention of grizzly bears. However, the US federal government, charged with enforcing the Endangered Species Act, has done little, if anything, to educate people living in bear habitat about how to coexist with grizzlies. Also at the WMC Conference, wildlife photographer, conservationist and Confederated Tribes of Grand Ronde member Tony Bynum told me, “The Feds dumped a bunch of bears on us, [but] we haven’t had to live with them in over a hundred years. I think the federal government could be held liable.”

Whether anyone or any entity will be held liable for human-bear conflict will be up the courts, but today, in prime grizzly habitat throughout western Montana, hunters report that ungulate populations are declining. A lack of predator management coupled with a bad winter or two and now CWD, chronic wasting disease, is a recipe for disaster. And if hunters stop buying hunting licenses, government fish and game agencies will be unable to fund wildlife management.

“We will have the total collapse of the ecosystem,” Dr. Valerius Geist added. Geist is a Canadian biologist—a professor emeritus in Environmental Design at the University of Calgary and a specialist in the biology and behavior of North American large mammals. “That’s what you’re working towards right now. The collapse of the ecosystem is created by an oversupply of predators, which outgrow themselves, literally. That’s wolves and grizzly bears. And grizzly bears will do fairly well if and when much of your wildlife disappears because they will have still available the vegetation which wolves cannot eat.”

**Solution: management**

What seems to stir up the hornets’ nest is any mention of lifting legal protections or consideration of hunting as a management tool for grizzly bears. University of Sherbrooke biologist Dr. Marco Festa-Bianchet said, “Inevitably, [managers] have to take into account what we may refer to a ‘social license.’ For example, there is a lot of opposition to hunting any kind of predator, and that may have to be taken into account. This was the case with the British Columbia grizzly bear hunt. It was essentially driven by an apparent desire by the public not to see large predators being hunted.

“I never see management [proposed] as a way to improve on Nature. [But] I think we can tolerate a sustainable harvest if we use management to limit our impact.”
Dr. Jon Swenson, of Norway’s University of Life Sciences, said, “Hunting in a controlled regime is not threatening the conservation of any of our species. But this polarization [of society] is a problem. We have to manage these species’ populations for all of the public. Some of these species will become overabundant. So are you going to have state employees killing deer in people’s yards? That’s what they do in England. We need balance. We need to work for the best of the wildlife.”

A bear-hunting camp in Alaska. Author’s photo

Based on sustainable utilization, the North American Model of Wildlife Conservation has successfully ushered in the repopulation of dozens of wildlife species, some of which were at the brink of extinction. The “coattails effect” of habitat preservation and management for wild game species has benefited numerous non-game species as well, and enhanced biodiversity across the continent. So how would grizzly bear hunting work to protect the species?
‘Freedom of the woods’

Dr. Geist: “The grizzly bear is designed by nature to be very careful about anything approaching. The one thing a grizzly bear cannot be habituated to is being stalked. [So] take advantage of it—have a very inefficient grizzly bear [hunting] season. The grizzly bear notices very quickly if people are afraid of it or if people are being bold and too dangerous. If you have inefficient hunting, you will have what I call ‘freedom of the woods.’ This is because the predators are very, very shy of human beings. We never had the slightest problem [during biological field work] in areas where grizzly bears were hunted.”

Grizzly bears can learn to avoid humans. And if bear numbers could be managed to prevent overpopulation and ranging into human conflict zones, would this enhance the grizzly bear’s life?

[Grizzly bears] are all programmed to expand beyond the carrying capacity of the place they live,” said former Montana Fish, Wildlife and Parks biologist and author Jim Posewitz; “Hunting is probably the most benign of the [management] alternatives. There’s no evidence in modern history where a species of legally hunted game, which has been part of a well-regulated, science-based management plan, has ever gone extinct. The reality that we’ve seen, time and time again, [is that] game populations expand in size and are found in overall great health. Game managers, scientists and biologists have shown scientifically the offtake of 1% to 3% of a population has no effect on the population as a whole. These experts anticipate and factor-in for natural death along with predation and even deaths by vehicles or trains.

“The main issue here is, we need to maintain a group of [hunters] who are going to be out there fighting in favor of protecting habitat, not polluting a river, doing something about climate change and realizing we humans depend on ecosystem services,” added Dr. Festa-Bianchet.

Remove the politics

It is unlikely that 50,000 grizzlies will ever again roam the Great Plains. These historic numbers will never be seen unless we tear down fences, stop planting crops, rip up highways and railroads and bulldoze not only small towns but entire cities and their suburbs—basically remove the region from its critical place in the food, energy and raw materials systems, and then depopulate it.
However, our critical need for conservation and biodiversity demand that the grizzly bear—among many other wild species—remain and flourish. In the Lower 48, the continental US, humans must learn how to co-exist with the grizzly bear. Alaska has tens of thousands of grizzlies and a legal, well-regulated, sustainable hunting season. Hunting creates significant revenue for communities in remote locations of Alaska. It also pays for much of the state’s wildlife conservation and management programs. Non-game and endangered species also greatly benefit from the money earned from hunting. Hunting also creates a level of respect between bears and man. In Alaska, a bear with a whiff of human scent usually starts looking for an escape route.

If we want a healthy, biodiverse ecosystem where grizzly bears can safely co-exist with humans, we must take the politics out of wildlife conservation. Just maybe, if we work together, we’ll make our planet a better home for everything on it.

Banner photo: Grizzly bear photographed by Tony Bynum

As a second-generation outdoor communicator, Tom Opre has made educating the public on wildlife conservation and stewardships a priority. As past president of the Professional Outdoor Media Association, he has worked to help other outdoor communicators and industry leaders understand and present a unified message regarding wildlife and habitat conservation. He is the founder and CEO of the Shepherds of Wildlife Society, a non-profit made up of wildlife filmmakers and photographers, with a mission to promote broader public understanding and the critical importance of modern day wildlife conservation and habitat stewardship. Opre has produced and/or directed national film projects for Fortune 500 companies and television. In 2015, after a highly rated seven-year prime-time run on NBC Sports, he wrapped the award-winning “Eye of the Hunter.” Currently, he produces The Wildlife Conservation Project, which examines the future of the world’s wildlife species and their habitats and is the executive producer of the reality show “Ultimate Huntress,” which airs online and on Amazon Video Direct. Opre’s YouTube channel has logged more than 26 million views.
Saving the ‘Middle Ground’

By Greg Sheehan

READ TIME 4 MINUTES

As Kenya and so many other countries are learning, the “middle ground” is critical for wildlife increasingly squeezed by human development.

When Americans hear the words “middle ground” nowadays, we tend to think of those few ambivalent souls who have not yet been polarized by the left or right, conservative or liberal, Democrat or Republican. But the “middle” I speak of reaches much further than the outcome of the next political showdown, and it is global in scale. My middle ground is foreign in many ways to most Americans, yet most of us have an opinion of what it should be, whether in vivid detail or broad brush strokes.
The middle ground I speak of lies in the vast landscapes of Africa and other continents—areas not yet overshadowed by skyscrapers nor rowed by the mechanical plow, but not the national parks that are reserves for our world’s cherished wildlife. The middle grounds are the landscapes that are still occupied by small towns, villages and family farms, or nomadic people who even now rely on hunting and gathering. These rural inhabitants commonly share their lands with wildlife that roams freely, often in migratory corridors or flyways that span international borders. These, then, are the middle grounds I mean—undeveloped, shared open spaces comprised of non-urban, non-park lands.

In Africa, more than 60% of wild animals make this middle ground their home, far from the protections of well-known parks such as Kruger in South Africa and the Serengeti of Tanzania. Many of Africa’s iconic species, from the blue wildebeest to the stealthy leopard and the magnificent elephant, are found in this middle ground.

But in many regions the numbers of animals on these landscapes continues to decline. Animal-rights activists point to poaching, wildlife trafficking and hunting as the causes of these declines, but the reality is often very different. In the long run, species disappear because their habitat is lost to farming, logging, mining, roads and other developments.

While leading the US Fish and Wildlife Service, I was fortunate to meet with ambassadors, wildlife ministers and secretaries from a dozen African countries regarding their wildlife management opportunities and challenges. One of the most interesting meetings I had was with a principal for the Department of Wildlife of Kenya. During his visit to Washington, DC, he shared with me that since Kenya banned hunting, in 1977, his country’s wildlife populations have fallen by 70%.

What happened, I asked the professor? His answer was simple. During the past 40 years, farmland in Kenya has increased from just a few million acres to nearly 50 million acres. This loss of habitat—the middle ground—has eliminated important spaces for wildlife, and human-wildlife conflicts have proliferated over the defense of farms. This has led to the demise of plains game, elephants and other species.

Poaching is still a concern, but destruction of habitat has become a key driver of Kenya’s broad declines in wildlife. Additionally, the rural communities and their people and lifestyles are themselves being eliminated by the encroachment of large agricultural developments, many of
which are backed by large multinational corporations that go to Africa to capitalize on its resources.

According to the United Nations, more than 40% of Kenyans overall are farmers and more than 70% of rural citizens are farmers. Furthermore, with 46% of the Kenyan population earning less than $1 per day, survival often demands more land be converted to farming and more wild animals killed illegally to protect those crops.

When hunting was banned, in 1977, there were around 11 million Kenyans; the UN estimates that number will reach 81 million by 2039. Urban sprawl, yet more farming and new infrastructure will certainly eliminate even more of the middle ground, and we can expect wildlife to be pushed ever nearer the brink. When it had sustainably managed hunting, Kenya was known for its magnificent and robust populations of wild animals.

A lioness in Nairobi National Park, just seven kilometres (4 miles) from downtown. An electric fence separates park and city. Kenya’s burgeoning human population has led to enormous losses in wildlife habitat. Shutterstock/Ithitma
Could hunting help curb these losses of landscape? Perhaps so. Creating monetary value for wildlife should incentivize local communities to protect the all-important middle ground, and sustainably managing a limited take of some game can fund conservation programs. This approach is not a new model, either in Africa or in the US. As well, protecting certain corridors and landscapes can create some certainty for wildlife into the future.

Perhaps blaming hunting in the 1970s or poaching today for Kenya's loss of wildlife is a misdirected attempt to excuse the precipitous and ongoing declines in wildlife in a country struggling to grow and feed itself. In Kenya and globally, it is time to reevaluate the real drivers of the loss of our wildlife, and well-regulated hunting should not be on the list of those threats.

Greg Sheehan (banner photo) has served as Director of the Utah Division of Wildlife Resources, the Principal Deputy Director and Acting Director of the US Fish and Wildlife Service, in Washington, DC, and co-chair of the US Wildlife Trafficking Task Force.

A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
Meet a Vegetarian Hunter

By Christine Fischer

READ TIME 2½ MINUTES

The author, a Swiss hunter and blogger, chooses not to eat meat and focuses instead on the science of hunting and the sociology of hunters.

Apparent contradictions have not stopped me from doing what my heart beats for—my passion is hunting in the mountains. I guess Swiss girls have a love for nature and mountains in their blood. But as an animal lover, I am concerned with our inconsiderate meat consumption and...
contradictory relationship with animals. This raises many questions to which I find answers in my hunting activities.

I have been hunting for 12 years now, mainly in Germany and Austria. Some people don’t understand how I can hunt but do not consume my harvest of venison. (It is not wasted—I give it to people who appreciate it.) My personal understanding of hunting is broader than simply a high-quality meal. Many of the responsibilities of a huntress speak to me: respect, mindfulness, love and appreciation for our wildlife and nature, awareness and acceptance of the natural cycle of life and death, sustainable use of our natural resources and the need to keep this beauty accessible and tangible for the following generations—to mention just a few.

I am particularly interested in hunting in a socio-political context. To gain a better understanding of these complex relationships and interactions, I studied at the University of Natural Resources and Life Sciences in Vienna and graduated as Akademische Jagdwirtin; in English, you might call this a bachelor’s degree in hunting.

There is a symbiotic relationship between hunting and science that is beneficial to both sides. In the two years of my studies, I researched hunters on social networks and wrote my thesis about them. The urgency and relevance of this topic have led to a more in-depth and diverse commitment in this area.

My blog, www.HirschundCo.com, is a platform where hunters and scientists may network. Knowledge makes us hunters better in practice. It creates more understanding of the concepts of sustainable hunting, and the more we know, the better we can debate in public. It is high time to convince the non-hunting majority of the valuable contributions that hunting makes to our natural resources.

To communicate our diverse responsibilities as hunters, we must now use social networks. Without these channels, we cannot reach younger groups. HIRSCH&CO therefore provides suggestions, ideas and thoughts about the sensitive handling of hunting content on social media. My blog also focuses on “scientific blinks”—highly compressed content from scientific studies and projects that we can absorb in a maximum of five minutes of reading time. The reader gains useful knowledge for hunting practices.
I expressly advocate a constructive dialogue with all interest groups. Especially important to me is the discourse with open-minded but skeptical non-hunters. The fact that I myself generate meat but do not eat it has often proven to be a conversation starter.

I invite everyone to share their knowledge and their questions and to bring their experiences into the discussion at www.HirschundCo.com.

Banner Image: Christine Fischer with Eddie, “the greatest hunting dog of all time.” Author photo
Hunters Are the Original Conservationists

By Simon Roosevelt

READ TIME 9 MINUTES

But hunters must reclaim their rightful place at the table by emphasizing fair chase, game management and wilderness protection. From remarks delivered at the Wild Sheep Foundation's annual finale banquet on January 18, 2020.

Thank you for the opportunity to speak here tonight and thank you for being here. By “you” I mean all of you here in this room; but equally I mean the larger you, collectively: The Wild Sheep Foundation here in Reno and in North America—Canada, the US and Mexico. And in the world—in the IUCN, in Europe, in Asia. I hope I haven’t left out any other place you are working.
You already know something about what I am going to talk about tonight: You all know that the number of American hunters has declined and is declining. You have read or heard that we are down to around 5% of the US population. Thus our common fear, that hunting will end. Participation will die away. Some of the freedoms we have enjoyed since this country’s first days will erode away.

But something worse has already happened: The much bigger group of people in conservation—the ones who are today more widely recognized as leaders in conservation than we are—don’t know us and don’t know anything about us. We are being forgotten while we are still here.

They don’t know that we hunters founded the conservation movement and that we are still driving much of it today. This is a problem, and it’s our problem. We should be working with these non-hunting conservationists and gaining their support. And we need to do this now.

On the one hand, this requires some changes. When everyone still knew, or remembered, what being outdoors really is about, there was no need to explain. And, if we’re honest, we hunters aren’t by nature inclined to explain ourselves.

On the other hand, you’re already doing this. You already gather coalitions around your issues. You are engaged through grassroots programs such as 1Campfire. You have an incredible youth program. You are headquartered in one of the world’s leading centers of conservation passion—Bozeman, Montana. These folks see your interest in conservation. You have opened your doors to that community. That’s smart.

But the rest of the conservation world is big. We could use their help. They need ours and they can’t succeed without us—whether they know it or not. All together, hunters and anglers and wildlife-watchers make up about 40% of the US population. The outdoor industry says the all-in number of Americans going outdoors is nearly 50%.

Recruitment, retention and reactivation of hunters is essential, I agree, but the objective I’m speaking of is different. It’s bigger, but it’s easier. Toward this objective—to remind and educate the larger conservation community for the common good—over the last several years I have convened the Conservation Roundtable.
This is an occasional gathering of conservation groups including hunters—notably your Wild Sheep Foundation—and non-hunters. We have met twice on our own, twice with Secretary of the Interior Ryan Zinke and twice with the current Secretary, David Bernhardt.

We now have an active list of issues including two of yours: big-game habitat corridors and the Desert National Wildlife Refuge. The entire list includes other issues of importance to us hunters—and to the campers, hikers, bikers and paddlers who more commonly represent conservation to the modern world.

In working with them, they soon realize—and help us remind the world—that hunters created the conservation movement, that we hold knowledge and have experience that is essential to their goals.

There is something else we can do, something the founders of conservation also did: They created a new language for hunting, which helped them earn the leading role in restoring wildlife. And it should be easier for us than it was for the founders of conservation—hunters, all of them.

By the beginning of the 20th Century, hunting in America was destroying wildlife. Hunting was open to all, at all times and by all means. It was done to supply restaurants and the clothing trades, and much else. It went full-on like this until wildlife was too hard to find.

This was hunting. So the founders of conservation coined the term “market hunting.” In so doing, they not only changed the meaning of the word, but also persuaded society that hunting—which was the problem at the time—would become the solution. By enacting game laws, they redefined “hunting” and introduced “poaching.” And by creating and publishing the Fair Chase Ethic, they moved hunting away from market slaughter and also made it more than sport: They made hunting into conservation.

They were the first to use the term “conservation” in common talk and print; and they said that Fair Chase is “the ethical, sportsmanlike, and lawful pursuit and taking of any free-ranging wild, big game animal in a manner that does not give the hunter an improper or unfair advantage over the game animals.”
By creating forest preserves and refuges, limiting harvest, stopping erosion and funding wildlife agencies, the founders demonstrated how a personal and often solitary pursuit advanced the conservation of wildlife and habitat, and so was good for the whole of society.

Their campaigns against what they called the “slob hunting” of litterers, trespassers and game gluttons demonstrated the honor and respectability of fair-chase hunting.

Now think of modern hunting today: Our founders, mainly men, are gone. But where those great fathers pioneered, we now have great families—all of you—carrying on the work. There are fewer of us, but more kinds of us. And there are more kinds of conservation-curious people to hear us.

Hunting itself looks a lot different. The great fathers did it with wool, canvas and leather. We do it in the phenomenal kits of synthetic materials made by people in this room. The guns and other gear, even the science of fitness, all are now more diverse, precise and effective. Also made by people in this room.

These innovations, and the commitment of their makers to conservation, are part of why wildlife restoration has worked and continues to work.

But to the uninformed we do not look like the great fathers, and meanwhile, conservation challenges have grown. Some game species are overabundant, and others are threatened by overabundant predators. Virtually all non-game species are declining.

The larger public doesn’t know what hunting has to offer to these problems. Hunting itself is not part of every solution for these challenges, of course—but hunters can be. For example, we can explain predator control. We understand the importance of all species and the need to sustain them. We know the policies and programs that are in place, and we can help develop the new ones that are needed.

We can hold the conservation movement to a steady direction, so the Wilderness Act and the Endangered Species Act don’t circle back on us and get in the way of the conservation they are supposed to advance.

If we make this connection with non-hunters, they will see and understand us as the modern hunters who carry on the legacy of the originals.

A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
This is how our language of today can blaze through the ignorance and nonsense: Today, the uninformed public hears about “sport hunting,” “trophy hunting,” “canned” shoots masquerading as hunting and other terms. They don't know what these things mean, and they can't distinguish between them. We do, and we can.

The term “sport hunting” has got to go. It sounds like we're in it only for the fun and the kill. We've got to do something with “trophy hunting,” too. It should mean going deeper, farther and longer—working harder to find an animal that shows what conservation can produce. (Sheep hunters may understand this the most.)

We talk of “hog hunts” and other “varmint hunts” that differ in purpose and practice from what we usually mean by hunting. “Culling” is a better word for that, and it has a conservation meaning.

There is an industry of “canned shooting” that calls itself hunting. We should outlaw this as false advertising.

Our own media industry, which publishes for and broadcasts to hunters, is visible to non-hunters too. Our media must recognize this and show the conservation at the root of the skills, experiences and equipment on display.

We already have examples of what such change can bring about.

We have coalitions on wilderness policy in the Desert National Wildlife Refuge and access to the Castle Mountains National Monument. These partners are with us because they are coming to appreciate the need for management and our help in getting it.

We have coalitions even on predator control—which is, along with wilderness, one of our most challenging issues. By explaining “control” as necessary management, not “hunting,” we have made it about ecology.

A bipartisan vote in Congress approved predator control of sea lions in the Columbia River estuary, where they were over-killing salmon. In California, the Audubon Society worked with duck hunters to control skunks and other predators that destroy ground nests of ducks and of plovers.
You are already part of the most powerful communication system that hunting has ever had. Let's use it to better explain, to build broad support for what we do and to advance the conservation of what we care most about.

I hope we'll work together so that your story, and the stories of your corporate sponsors and their professional communicators, is continually refining the words we use and expanding the audiences we reach.

We must use a new language for modern hunting that restates as brightly today what the Fair Chase Ethic said a century ago. Our new language must be more specific. It must keep conservation foremost. Fair chase is still the vital force of our passion. It must become our identity again.

Thank you for helping keep the Fair Chase Ethic foremost. The Wild Sheep Foundation is and can be a powerful partner in defining modern hunting.

You—all of us—should be equally recognized as conservationists when we walk into a meeting room as when we show up in the field to move sheep or improve habitat. Our language—spoken, written, filmed—can explain exactly, consistently that hunting is an honorable ethic, an expert skillset and an indispensable part of conservation.

Thank you.

Based in Bozeman, Montana, the Wild Sheep Foundation works in North America and Central Asia for the conservation and management of wild mountain ungulates and the habitats these magnificent creatures share with other wildlife and rural communities.

Simon Roosevelt is the great-great-grandson of Theodore Roosevelt. Educated as a lawyer, he is a principal of Olimpia Fund Management, Ltd., a multi-family investment group, and an avid hunter and conservationist involved in a wide variety of conservation and environmental projects in North America, South America and Africa. Simon Roosevelt serves as a commissioner of the New York State Office of Parks, Recreation and Historic Preservation and belongs to the Boone & Crockett Club and the Camp Fire Club of America. He is also a trustee of the Scenic Hudson Land Trust and Scenic Hudson, Inc. and a member of the President’s Advisory Council of the National Wildlife Federation.
Elephants: A Crisis of Too Many, Not Too Few

By Dr. Brian Child

READ TIME 36 MINUTES

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 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 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, 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*
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 obtusfolia, Markamia 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 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.

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 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.
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.
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.

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 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-gather.

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 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 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

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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 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 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 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.

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 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 restore 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.

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Banner Image: Sunset elephants along the Chobe River near the old Serondela Camp. Silvio Calabi photo
An African Conservation Tool

By David Peddie

READ TIME 7 MINUTES

A personal perspective on the ethics and emotive narrative of trophy hunting.

The topic of safari hunting—unfortunately, more widely known as trophy hunting—often stirs passionate debate around the questions Is recreational hunting ethical? and Can hunting contribute to the conservation of wild species?

Unfortunately, many of the comments made and positions taken, by both opponents and proponents of hunting, only exacerbate the polarization around this issue instead of offering pragmatic answers about the role and validity of hunting as a tool in the African conservation landscape.

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The more vociferous members of the anti-hunting lobby tend to feed disingenuous information to a sincere but sometimes ignorant and gullible public—all too often for the purpose of stoking emotions to raise funds for agendas that do not acknowledge the reality of circumstances in the field or of the rural communities living with wildlife.

The logical and sensible answers to much anti-hunting propaganda are countered—at least for the many reasonable, non-hunting people looking to contribute to wildlife conservation—by the behavior of rogue operators, the corruption of government ministries and wildlife departments, the shooting of caged lions, “kill videos” and the posting of grotesque pictures of hunters with leopards draped over their shoulders. With a little manipulation, it is not difficult for anti-hunters to project the image of psychopaths who kill for pleasure—and tar all hunters with the same brush.

In addition, it sometimes seems that the very concept of safari hunting has been degraded into a travesty of collecting horns and tusks, the trophies, that lacks morality and personal integrity, respect for the quarry and any real concern for the future of the species hunted. That is a broad and serious generalization, especially to those who are ethical hunters and/or committed conservationists.

Nevertheless, a close inspection of the African hunting industry makes it appear that ethical Professional Hunters and ecologically sound hunting operations are something of an exception in most African countries rather than the rule1.

The willingness of some safari companies to operate outside the rules, the misguided demands of some clients for more and bigger trophies and the endemic corruption of some game department officials may create a climate of greed. The list of transgressions is long: shooting from vehicles, leaving wounded animals, shooting as many animals as it takes to find one big enough to make the record books, shooting animals over or outside the quota, baiting or calling animals along the boundaries of national parks, shooting “canned” lions—the list goes on.

1 Namibia, through the Namibia Professional Hunting Association (NAPHA), functions with generally high integrity and standards of management. NAPHA’s criteria for setting conservation-hunting quotas have been adapted to reflect ecological management requirements rather than trophy size.
The notion of a collection safari—making a distinction between a “conservation” hunt and simply amassing as many as possible of the largest-possible horns and tusks—goes back many decades. A portion of the blame for this lies with some of the big American safari clubs. Such organizations often raise large sums of money for wildlife conservation, which can have significant positive impact when invested wisely. However, the practice of rewarding and glorifying those members who shoot the most and the biggest panders to those who seem to have lost perspective and who primarily pursue the satisfaction of their egos.

It is a fallacy that the most impressive animals with the biggest horns or tusks are always the oldest, past their prime and no longer contributing to the reproductive health and social structure of a population. Elephant, lion, sable antelope and buffalo are some of the species where this is often not the case, and removing these specimens may have reproductive and population-structural consequences.

Although subsistence hunting was an essential element in our evolution and is embedded in our genes, there are some principles of hunting that should be kept in mind in today’s world. If hunting is not part of the sustainable, subsistence livelihood of a society; if it is not done for the protection of life or livelihood or for the scientific management of ecosystems disturbed by human interference, then at the very least it should be conducted as “fair chase.” Among other things, fair chase allows the hunter to use the experience to fully integrate with nature. Hunting should never, in any way, negatively affect the viability of the quarry population or its role in the ecosystem. Hunting should also be carried out with respect for the quarry and without malice or misguided ego.

A commercial safari should also adhere to these principles. The client should immerse him or herself in all facets of the hunt to experience its essence and to connect psychologically and physically with wilderness. This process starts with the hunt preparation, extends to tracking, stalking and killing the quarry, and concludes with processing the carcass and consuming the meat.

Can safari or recreational hunting play an ethical and economic part in wildlife conservation? The answer is a resounding yes, but with a number of clear provisos.

The first is that the trophy-hunting clubs must change their criteria of what constitutes a successful safari. Clear ethical norms need to be reinstated and the wilderness experience, the
chase, the effort and the story be the objective and the prize, not the number or size of the heads on a wall. Club members should be encouraged to get into the wild and fully embrace the experience, successful kill or not. And they should be reminded that the quarry needs respect, not undignified Facebook photographs.

Second, the commercial hunting industry must be cleaned up. Rogue operators who abuse the resource and jeopardize hunting’s viability need to be named, shamed and put out of business by their peers and conservation authorities.

Third, some wildlife conservation authorities must redevelop the expertise they once had in managing hunting areas and operators, including their research and monitoring capacities and strict control over science-based quotas.

Fourth, those authorities also need to think carefully about where they use safari hunting in their wildlife conservation strategies. Easily accessible state-protected areas of high wildlife diversity and density are generally more suited to (and financially lucrative as) wildlife viewing rather than game ranching or safari hunting.

Finally, and critically for the future of Africa’s wild areas, the whole approach to the distribution of benefits to, and the economic development of, rural communities in or alongside wildlife areas, including hunting concessions, should be reviewed. If wildlife is a principal use in these areas, it is essential that the flow of benefits from hunting or ecotourism to these communities is equitable and transparent. Otherwise the hunting industry cannot truly live up to its claim of contributing to both wildlife conservation and rural development.

In Zimbabwe, for example, the northwest Matabeleland complex of juxtaposed national parks, safari areas, forest reserves and communal lands lends itself to a whole new land-use planning model. In the Matetsi and Deka safari areas, and in the Kazuma, Fuller and Panda-Masuie forest reserves, the land-use emphasis should be shifted to a mix of safari hunting, game viewing, wildlife management and small-scale “conservation” agriculture in cooperation with Victoria Falls and the adjacent communal areas.

Throughout Africa there are still large areas and circumstances where well controlled and ethically conducted safari hunting has an important role in wildlife conservation. In the
Zambezi Delta in Mozambique, for example, controlled hunting concessions have provided the revenue, manpower and security to allow depleted wildlife populations to recover.

To reiterate my opinions: Trophy hunting, as it is currently managed and practiced in many areas, and by some operators, is not an ethical and effective conservation tool.

Safari hunting—when it is conducted ethically, transparently and verifiably, with strictly managed quotas set on sound scientific knowledge and not just the desire to collect big heads—will contribute significantly to wildlife and ecosystem conservation, to rural community socio-economic development and to the elimination of corruption within the safari industry.

As a final consideration, the proponents of hunting in Africa should actively demonstrate and promote their commitment to wildlife and wild area conservation, and to implementing pragmatic solutions to the difficult issue of co-existence of people and wildlife. To accomplish this, public perception and political influence are critical. Words are both positively and negatively emotive: “Trophy hunting,” “recreational hunting” and “trophy” have been given strongly negative connotations by the public, and their politicians listen to them. This sort of terminology must be consigned to history.

Go on safari, embrace the whole experience of the hunt, take home memories and mementos, and leave the trophies in the cabinets of footballers, golfers, tennis players and other athletes. You are a conservationist, embracing the wilderness, accepting its bounty and ensuring its perpetuation.

David Peddie is a conservation ecologist experienced in wildlife management, rural community development and safari tourism in Southern Africa. David grew up in Hwange, northwest Zimbabwe. After earning degrees in agricultural economics and wildlife ecology, he worked with both the Rhodesia and Zimbabwe Department of National Parks. Since leaving Zimbabwe National Parks, in 1988, he has been a consultant in wildlife management, protected-area planning and rural development throughout Southern Africa. For a number of years he managed the Sindisa Foundation, a UK-registered charity supporting wildlife conservation and rural development in southern Africa.

Banner image: A hunter in the Omaruru area of Namibia, glassing the terrain from a kopje in search of kudu. Author’s photo
Motivation vs. Justification: Hunting from the Heart

By Paul McCarney

READ TIME 8 MINUTES

The hunting conservationist’s perspectives can be presented in ways that touch emotions and make change imaginable.

As conservationists, communication is one of our most important tools. In many ways, the future health of wildlife depends on our ability to tell compelling stories from the heart that move the public and politicians. But as hunters, we sometimes allow ourselves to be baited into reactionary justifications for hunting, and we forget to focus on our personal motivations. Yet speaking of our motivations from the heart creates opportunities for genuine communication.

Hunters and non-hunters will need to engage in thoughtful and productive dialogue about conservation into the foreseeable future. If we accept this certainty, it is valuable to consider the most effective ways to present our perspectives. Why is justification often the wrong approach? Why is focusing on personal motivations often more effective? How can this help advance conservation objectives?
**The justification trap**

Divisiveness and defensiveness define far too much of public discourse these days, and conversations about hunting are not exempt from this. On the contrary, hunting often become a focal point for polarization. To move beyond and, we hope, avoid these clashes of opinion, we should avoid defensiveness and be aware of how we frame our stories.

Our ability to tell stories is a uniquely human characteristic. Story-telling has been a profoundly important part of our collective history for many thousands of years. Stories are effective through connection and emotion. Compelling stories have never relied on defending and justifying our actions. When we try to justify hunting, we lose much of the nuance and specificity that make our motivations to hunt so rich and personally meaningful. We also risk overextending ourselves by searching for a universally applicable explanation for why hunting is right.

Both people and hunting are complex, so looking for a universally objective answer to a morally subjective question seldom works. Further, we often end up speaking defensively, trying to forcibly create in our audience the intellectual ability to accept hunting. Instead, this approach often shuts down discourse and debate rather than enabling people to embrace multiple perspectives.

Most of us hunt because we are secure in the understanding that hunting is morally right. So, in contrast to justifying hunting on a generic level, the real power of our argument comes in connecting more personally.

**Psychic numbing**

In his fantastic book about the current state of public discourse, *I’m Right and You’re an Idiot*, James Hoggan interviews Paul Slovic, a professor of psychology at the University of Oregon. Slovic describes a phenomenon he refers to as “psychic numbing.” This helps explain “the difficulty we have with emotionally connecting to problems that are large in scale”—an under-reaction to large problems because they seem removed from our immediate lives. We see evidence of psychic numbing in the conservation world every day. It helps explain why we have allowed the decline or extirpation of caribou herds across North America, the leveling of the Amazon rainforest and so many other ecological tragedies.
Slovic explains that while there is no single reason for psychic numbing, statistics and sterile facts are ineffective in communicating the true meaning of large-scale problems. In particular, dry facts “don’t spark emotion or feeling and thus fail to motivate action.” In some cases, a barrage of facts that an audience perceives as a challenge to their value system can actually end up strengthening their original perspectives. This can be true even in cases where someone’s beliefs are factually incorrect. This is known as the Backfire Effect—too many facts can, paradoxically, entrench the misconceptions we want to change. As illogical as this sounds, it is simply human nature.

In terms of conservation, what is a more effective way to spark action and how do we communicate the meaning and role of hunting in conservation actions?

Moving from logic to emotion

People are more committed to their values than to facts. A common mistake in hunting advocacy is to over-saturate our audience with facts to convinced them we are right. We proudly talk about the funds raised through hunting revenues and the ways that hunting has contributed to conservation over the previous century. The problem with this approach is that it often fails to engage with the public’s values and emotions.

When we talk about conservation issues on the scale of entire species and landscapes, the conversation often becomes so large that it lacks an emotional attachment for someone to grasp. And without that anchor, it is difficult for someone else to identify with our perspective, particularly in an ethically charged issue such as hunting.

Part of the reason for the difficulty in attaching ourselves to dry facts goes back to our early days as a species. Humans have evolved to balance logic and emotion when evaluating risk and making decisions. When we decide how to act, we rely on a careful but often subconscious balance of gut feelings and analytical evaluation. When discussing conservation issues, we should be aware of how we appeal to this balance of gut versus analysis. As Paul Slovic explains, dealing with enormous issues such as species extinction requires slow, analytical thinking and science. However, there is a time and place to engage with the human instinct for fast thinking and emotive reactions.
To the extent that the public will continue to rely on gut feelings (and they will), Slovic suggests that in order to make people care about global issues, we need to make the issues more emotionally gripping. We shouldn't ignore the facts or numbers, but “if a number doesn't carry feeling, we don't really understand it, and we won't act on it.”

People engage in conservation actions because they care deeply about wildlife and habitats. These volunteers, under the direction of biologists, are carefully preparing wild sheep for translocation, somewhere in North America. Wild Sheep Foundation

**Motivations connect to emotion**

Slovic offers lessons for how we talk about both hunting and conservation issues. When we discuss hunting in the public sphere, we often encounter reactions rooted in the fast-thinking, gut reactions I mentioned above. Therefore, we should not shy away from engaging emotionally in conversations and expressing our deep care and passion for conservation.
I believe that thinking about our conversations in terms of motivations can be helpful. Where justifications tend to rely on large-scale context and objective statistics, motivations are rooted in emotion and personal meaning. Rather than justifying the righteousness of hunting, we can ground our discussions in the reasons we feel hunting is meaningful. When we highlight our own personal motivations, we are more likely to provide the needed emotional anchors for our audience.

One of the ways we can create emotional engagement in conversations is to tell our stories. Rather than reciting facts and statistics, tell a story about a meaningful experience while hunting. Frame the story sensitively, in a way that lets a non-hunter identify with our experiences.

**Motivation vs. justification**

It may seem like a subtle distinction on the surface, but consider the difference between two scenarios that both attempt to convey why I value hunting and my identity as a hunter:

I can explain that I value hunting because it has historically supported revenue-generation systems such as the [Pittman-Robertson Act](#) and because, in 2017 alone, donors—many of whom are hunters—contributed more than $86 million to Ducks Unlimited for wetlands conservation.

On the other hand, I can frame this discussion in terms of motivations. I can say that I hunt because I want to personally contribute to conservation programs. I also want to participate first-hand in the great habitat restoration projects of organizations like DU. Being part of a community of people who care about wildlife is powerful and gives me a sense of meaning.
Both of these scenarios are true. But when we frame our positions in our personal motivations, it becomes more difficult for someone to dismiss or dispute our perspectives. How can anyone argue that it doesn’t give me deep personal joy to be part of a community that cares about wildlife?

**The take-away**

Overly objective and coldly detached discourse can too easily fall into defensive justifications for hunting; and impersonal and defensive discourse can often close off genuine listening. At worst, this approach contributes to animosity in what are already emotionally charged issues.

It is important to remember why we talk about hunting and our goals for these conversations. If we are trying to convey why hunting is so meaningful to us, we need to give our audience something to identify with, so they understand our perspective. People rarely identify with statistics and numbers; they identify with emotion and personal meaning.
When we talk about hunting in order to explain our relationship with conservation, we should try to resist the urge to justify hunting itself. We should focus instead on what motivates us personally to hunt, why it brings us joy and what we truly hope to contribute to wildlife as hunters.

Paul McCarney wrote *The Value of Hunting Stories for Conservation* in the January 2020 issue. In his PhD thesis, in environmental studies, he examined the social and ecological dimensions of wildlife research and management in the Arctic. McCarney lives in Nain, Labrador, where he is involved in coordinating environmental research for the region. This article first appeared in *Landscapes & Letters*, where McCarney discusses issues and experiences in hunting and conservation.

*Banner image: A string of pack horses moving through Alberta’s Wilmore Wilderness. Gerhard Damm photo*
Staying in the Game

Financing the Timbavati Private Nature Reserve

READ TIME 9 MINUTES

This 64-year-old reserve along the western edge of The Kruger National Park has developed a successful and sustainable wildlife-driven business model. It has never been easy.

In 1956, a group of visionary landowners formed the Timbavati Association to restore and conserve a large wilderness area adjacent to South Africa’s Kruger National Park. Since those pioneering days of conservation, protected areas in the Kruger lowveld have grown dramatically. With the dropping of fences in 1993 between the Timbavati, neighboring private nature reserves and the Kruger National Park, a large, thriving, unfenced yet protected space was created that now forms part of the Greater Limpopo Transfrontier Conservation Area (GLTFCA). Today, the Timbavati Private Nature Reserve (TPNR) is one of the flagship private nature reserves in the Greater Kruger and we take great pride in managing a unique and thriving wilderness area.
The world has changed much since 1956. Conservation now takes place within a complex socio-ecological system and gone are the days when outside influences could simply be “fenced out.” The complexities—and costs—of managing a large private nature reserve increase daily. A good example is the far-reaching and well-known impact of rhino poaching in our area. Every day we work with our neighbors to curb organized crime and illegal wildlife trade. Doing so is simply one of the many challenges we face. Even as we invest huge amounts of time and money to keep criminals out of our system, we engage in a number of outreach activities to better link and integrate the Greater Kruger protected area with our surrounding communities—the 2.5 million people who live along Kruger’s western boundary—in ways that promote human wellbeing and ecological sustainability.

Managing 50,000 ha (123,600 acres) of private reserve

These are the big-picture issues in our landscape—finding innovative ways to help local communities derive income from wildlife activities, growing the social and economic relevance of wilderness spaces in their lives, and joining hands across fences and boundaries to slow down rampant illegal practices in wilderness areas.
While private nature reserves are vital pieces of the Greater Kruger landscape, it is not commonly known that private reserves receive no government funding. All income is generated by the reserves themselves and typically goes towards the costs of anti-poaching, the salaries of wardens, ecologists and other staff, conducting expensive aerial censuses to monitor animal populations, monitoring vegetation and controlling alien plants, and maintaining roads, fire breaks and fences, to name a few of our expenses.

For 2020-21, our operational budget is just over R22 million ($1.26 million) and is broken down into five main categories: Sustainable Utilization, Operational & Mechanical, Conservation, Administration & Headquarters and Security. Security remains the most significant portion of our operational budget, at around 45% of the total.

Some of the recent successes of our high security budget have been: the upgrade of perimeter fences, which help us form an important buffer to the Kruger National Park; the employment of more field rangers and Operations Room staff to help protect rhinos and to reduce wildlife crime; and the implementation of various forms of technology as early warning systems to
reduce incursions and poaching-related activities. The increased “boots on the ground” and the early warning systems, entirely at our expense, have been implemented along the western and southern boundaries of land managed by the Kruger National Park.

In addition to covering operational expenses, the TPNR donates 10% of its annual revenue to the Timbavati Foundation, a public benefit organization that acts as the community upliftment arm of the reserve, focusing on four main pillars: Education, Environmental & Conservation Awareness, Social Upliftment and Health Care. This annual donation contributes more than 70% of the annual operating costs of the Timbavati Foundation.
Given the ever-escalating importance and cost of “staying in the game,” finding a sustainable funding model (as a non-profit organization), one that does not compromise our commitment to minimizing the ecological footprint and maximizing conservation goals, is perhaps the ultimate test faced by many private nature reserves in the Greater Kruger today.

**Sustainable use and what it means to TPNR**

Our reserve is built on the principles of sustainable use, which in simple terms means that we use nature’s resources—in physical or aesthetic form—in a manner that is ethically defendable, ecologically sustainable and economically viable. Sustainable utilization therefore includes activities such as photographic and hunting safari tourism, our annual impala cull to ease grazing pressure on the ecosystem, water-resource use and the harvesting of wood and sand from the natural landscape.

To finance the management of the reserve, we rely primarily on photographic tourism and hunting. The latter has a much lighter landscape footprint and yields far more revenue per capita for the reserve than the former.

Management analyzed the reserve’s financial model in 2016. This revealed that the conservation levies paid by the approximately 24,000 photographic tourists who visited the reserve that year were less than a third of the income earned from the 46 hunters who visited over the same period. Consequently, in January 2018 we increased the conservation fee levied
on photo tourists so that our conservation fees should match those of the Kruger National Park. The practical result of this was more revenue from photo tourism without the need to increase bed-nights, and hence our human footprint. Our income has become better balanced in the revenue that each sector brings to the reserve.

Both photo tourism and hunting rely on sound reserve management enabling a healthy ecosystem, which supports stable plant and animal populations. We monitor wildlife populations closely through annual aerial censuses and conduct annual vegetation assessments to determine veld condition. The reserve is fortunate to have accurate data spanning more than two decades, and our data shows that the total animal population in Timbavati continues to grow. This includes elephant, whose numbers are declining in other areas around Africa.
Every year, our hunting application is scrutinized, and conservation authorities consider ecological sustainability, the contribution that hunting will make to the running costs of our reserve and, importantly, how the hunting revenue will support conservation in the open system, beyond the boundaries of just our own reserve. Kruger National Park, Mpumalanga Tourism and Parks Agency (MTPA), Limpopo Department of Economic Development, Environment and Tourism (LEDET) and various specialists are part of review and approval process. Not a single hunt takes place without an in-depth review of census data and other ecological specialist studies.

Similarly, photo tourism activities within the reserve also are monitored and scrutinized to ensure their contribution and sustainability are balanced. The revenues earned by the reserve through conservation levies supports conservation in the open, larger system and contribute to the wellbeing of the communities in which the reserve operates.

In 2018, the protocols that govern sustainable hunting in the open system were revised and standardized. We implement the Greater Kruger Hunting Protocol and we actively participate in the implementation of the Responsible Tourism Best Practice Toolkit for the Greater Kruger. We are proud to be part of these multi-sector initiatives to ensure that both photo tourism and hunting are sustainable and ethical, and beneficial to a wide range of stakeholders beyond our boundaries.

Both photo tourism and hunting are compatible funding practices and we call on all our Greater Kruger partners to work together to govern these activities with integrity and careful oversight. We continue to call on the media and the public at large to take a landscape-level view when appraising the management practices of private reserves. We need to cooperate better, put aside differences and work together to prevent fragmentation of an integrated and sustainable Greater Kruger. Private nature reserves are essential elements in the integration of wilderness spaces within the bigger system.

*How does the Timbavati fund itself?*

With photo tourism and hunting being two major components in the funding model of our reserve, our proposed approach for 2020 follows:
From 1 January to 31 December 2020, the conservation levies for photo tourism will increase to R400 ($23) per person per night. This is in line with the increases applied by the Kruger for its entrance fees and will provide necessary revenue for us while keeping our tourism footprint at ecologically sustainable levels. The projected contribution to the Timbavati’s income from conservation levies for 2020 will be just over 62%, with estimated photographic visitor numbers of around 21,700 for the year.

In addition to this, the tables below show the proposed hunting quotas for 2020 that Timbavati is submitting for approval by the authorities. Some important points are highlighted below with regards to the figures in these tables.

**Table 1: Timbavati Private Nature Reserve – 2020/2021 Hunting Quota Request - Commercial**

<table>
<thead>
<tr>
<th>Species</th>
<th>Category</th>
<th>Quantity</th>
<th>% of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elephant Bulls</td>
<td>25-30 years (30 lbs. per side)</td>
<td>6</td>
<td>0.75%</td>
</tr>
<tr>
<td></td>
<td>30-35 years (40 lbs. per side)</td>
<td>3</td>
<td>0.37%</td>
</tr>
<tr>
<td></td>
<td>35-40 years (55 lbs. per side)</td>
<td>1</td>
<td>0.12%</td>
</tr>
<tr>
<td>Cape Buffalo</td>
<td>Unlimited &gt;12 Yrs</td>
<td>1</td>
<td>0.06%</td>
</tr>
<tr>
<td></td>
<td>Buffalo Bulls &lt;38”</td>
<td>4</td>
<td>0.25%</td>
</tr>
<tr>
<td></td>
<td>Buffalo Bulls &lt;34”</td>
<td>16</td>
<td>0.98%</td>
</tr>
<tr>
<td></td>
<td>Cows</td>
<td>10</td>
<td>0.61%</td>
</tr>
<tr>
<td>Hippopotamus</td>
<td>Bulls</td>
<td>5</td>
<td>3.28%</td>
</tr>
<tr>
<td>Kudu</td>
<td>Bulls</td>
<td>3</td>
<td>0.87%</td>
</tr>
<tr>
<td>Impala</td>
<td>Bulls</td>
<td>15</td>
<td>0.17%</td>
</tr>
<tr>
<td>Warthog</td>
<td>Boar</td>
<td>3</td>
<td>1.45%</td>
</tr>
<tr>
<td>Waterbuck</td>
<td>Bulls</td>
<td>3</td>
<td>1.33%</td>
</tr>
<tr>
<td>Giraffe</td>
<td>Bulls</td>
<td>3</td>
<td>1.04%</td>
</tr>
<tr>
<td>Blue Wildebeest</td>
<td>Bulls</td>
<td>3</td>
<td>0.47%</td>
</tr>
<tr>
<td>Burchell’s Zebra</td>
<td>Stallions</td>
<td>3</td>
<td>0.35%</td>
</tr>
</tbody>
</table>

A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
Table 1 shows the animals allocated to be sold as hunts to raise revenue for the reserve. Revenue earned from two of the buffalo will be donated to our local communities. In this way, closer links are forged with the reserve’s neighbors who share the Greater Kruger landscape.

**Table 2:**
*Timbavati Private Nature Reserve – 2020/2021 Hunting Quota Request – Non-commercial*

<table>
<thead>
<tr>
<th>Species</th>
<th>Category</th>
<th>Quantity</th>
<th>% of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Buffalo</td>
<td>Cows</td>
<td>5</td>
<td>0.30%</td>
</tr>
<tr>
<td>Kudu</td>
<td>Cows</td>
<td>5</td>
<td>1.46%</td>
</tr>
<tr>
<td>Impala</td>
<td>Non-selective</td>
<td>385</td>
<td>4.39%</td>
</tr>
</tbody>
</table>

Those animals allocated for non-commercial hunts, in Table 2, do not raise revenue for the reserve. In the case of impala, hunting is used for population control.

**Table 3:**
*Timbavati Private Nature Reserve – 2020/2021 Hunting Quota Request – Non-commercial*

<table>
<thead>
<tr>
<th>Species</th>
<th>Category</th>
<th>Quantity</th>
<th>% of population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impala</td>
<td>Non-selective</td>
<td>1000</td>
<td>11.42%</td>
</tr>
</tbody>
</table>

The 1,000 impalas to be hunted, in Table 3 above, are part of the reserve’s management program deemed necessary to reduce the impact impala have on grazing and hence to other herbivores.

The culling program represents more than 95% of the reserve’s hunting quota request and includes animals to be removed by Timbavati management (Table 3) as well as those to be removed by landowners within the reserve (Table 2). Culling programs are costly and time-consuming but essential for the continued health of the reserve, and culling decisions are informed by annual vegetation condition studies.
The above figures represent around 20 safari hunters visiting the Timbavati during 2020, with less than 0.65% of the Timbavati’s total animal population allocated for commercial hunting. In 2020, the budgeted income from hunting will represent approximately 20% of the reserve’s total income.

Overall then, the income of the Timbavati for 2020 will come from member-landowner contributions, photo-tourism conservation levies and limited hunting. The hunting and member contributions are balanced and make up around 38% of the budget, with the rest of the income brought in through the conservation levies.

What lies ahead in the new decade?

The TPNR will continue to implement the GLTFCA’s uniform framework for the protection and management of our reserve and sharing of socio-economic benefits through continuing support of our neighboring communities, ensuring that they form part of the wildlife economy. We will be an enthusiastic implementer of best practices in all forms of protected-area management, whether through responsible resource use, management of endangered species, eradication of alien plants or enabling sustainable tourism.
We further look forward to lending a helping hand to neighboring private nature reserves as well as the Kruger National Park through the continued implementation of security initiatives and the use of technology. The Timbavati remains an important buffer to the Kruger National Park, with field rangers and security managers spending countless hours in trying conditions to ensure that we keep our combined reserves' wildlife protected.

In conclusion, being a responsible conservation partner in the Greater Kruger requires not just commitment, but also time and money. The Timbavati remains—since 1956—committed to investing time, funding, passion and expertise into the irreplaceable wilderness landscape of our own reserve and the larger protected area network.

*From Timbavati.co.za, with permission; written before COVID-19 slashed tourism around the world. Contact the management authority at: Telephone +27 15 793 2436, Email info@timbavati.co.za, Facebook @timbavatiprivatenaturereserve.*
US Senate Passes a Comprehensive Sporting-Conservation Package

By Jeff Crane

The bipartisan America's Conservation Enhancement (ACE) Act contains a number of long-standing priorities for sportsmen and other conservationists and authorizes critical funding for habitat and wildlife. Now it must pass the House.

At a time of political hyper-partisanship in the US, few issues demonstrate the power of bipartisanship more than the country’s hunting and fishing heritage. In particular, conservation remains an area where both political parties can work together to advance meaningful legislation that benefits sportsmen and women. This has been consistently demonstrated throughout the past year despite a divided Congress.

To assist both Republicans and Democrats in advancing conservation causes, the Congressional Sportsmen’s Foundation works directly with the Congressional Sportsmen’s
Caucus, the largest bipartisan, bicameral caucus on Capitol Hill, with nearly 250 members. CSC members are in large part the drivers for the recent bipartisan victories for sportsmen and women, including the signing into law of S 47, the John D. Dingell Jr. Conservation, Management and Recreation Act, the Target Practice and Marksmanship Training Support Act, Modernizing the Pittman-Robertson Fund for Tomorrow’s Needs Act and robust funding for many of the most important conservation programs, all of which occurred in 2019. These programs are some of the most meaningful legislative victories for sporting conservationists in the past decade.

Building on these successes, the Senate quickly passed S 3051, the America's Conservation Enhancement (ACE) Act, by amending the bill into HR 925. The ACE Act then passed the Senate on January 9, on a bipartisan unanimous-consent agreement, which does not happen often in today’s legislative process.

The ACE Act addresses a number of long-standing priorities for sportsmen and other conservationists. One of these is reauthorization of the North American Wetlands Conservation Fund at $60 million for five years. NAWCA provides grants to states, which must be matched with non-federal funds, for wetlands conservation projects. The newly authorized funding would be used to increase habitats for birds, fish and other wetlands-dependent animals. Since its inception three decades ago, NAWCA has conserved more than 29.8 million acres (12.07 million hectares) of land in the United States, Canada and Mexico and completed nearly 3,000 different projects, making this program one of the most meaningful contributors to waterfowl and wetland habitat conservation.

Another provision in the ACE Act would establish grants to compensate farmers and ranchers for the loss of livestock to predation from federally protected species such as wolves and grizzly bears. Specifically, $15 million is authorized for each of Fiscal Years 2021 - 2025. America's private landowners, including ranchers and farmers, play a critical role in conservation and their commitment to collaborating with state and federal fish and wildlife managers has resulted in the recovery of iconic predators such as the grizzly bear and the gray wolf.

Furthermore, the ACE Act would establish a task force within the US Fish and Wildlife Service to help combat Chronic Wasting Disease. CWD is currently found in 26 states, with new detections occurring every year. CWD is a progressive, always fatal degenerative neurological
disease that occurs in farmed and free-ranging deer, elk and moose, which are the most sought-after big-game species in North America. State agencies spend countless hours and dollars to track this disease, diverting much-needed resources from other conservation priorities. In addition, scientists do not yet fully understand CWD and its transmission pathways. The top objective in managing CWD is to prevent its spread into new areas, but a lack of reliable information makes this a tough task. The ACE-funded task force would be a step in the right direction to combat this disease.

Section 108 of HR 925 would exempt lead sportfishing equipment from the Toxic Substances Control Act and the purview of the Environmental Protection Agency. There has been no documented evidence that sportsmen’s use of lead has negatively impacted fish and wildlife at the population level in the United States.

Bans on lead fishing products would be unnecessarily burdensome to manufacturers, as it would require the industry to reassemble and overhaul their products. Non-lead alternative fishing tackle would be far more costly to the consumer. It is important to note the EPA has consistently denied efforts to ban lead fishing gear under the Toxic Substances Control Act.

The ACE Act would also codify the National Fish Habitat Conservation Through Partnerships program, another top priority for sportsmen and women. This authorizes $7.2 million annually through Fiscal Years 2021-2025 for fish and aquatic habitat conservation through partnerships with non-government organizations.

The ACE Act meets three priorities for the Chesapeake Bay region: First, it reauthorizes funding for the Chesapeake Bay Program, which would receive roughly $90 million each year until FY 2024. This program is a regional partnership between agencies and organizations to direct and conduct restoration efforts in the Chesapeake Bay.

The second priority is the reauthorization of the Chesapeake Bay Initiative Act of 1998, which would authorize funding for a grants program for the Secretary of the Interior to coordinate with state and local governments, local communities and NGOs to conserve and restore important areas within the Chesapeake Bay Watershed, including National Wildlife Refuges.

Finally, it creates the Chesapeake Watershed Investment for Landscape Defense Program, known as WILD. This program would coordinate restoration and protection projects among

A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
federal, state, local and regional entities. WILD would also engage with other agencies and organizations to build support, capacity and funding for projects for the Chesapeake, the largest estuary in the US and a critical home to one million wintering waterfowl and roughly 70% to 90% of the Atlantic striped bass population.

The Congressional Sportsmen’s Foundation commends CSC member and Environment and Public Works Committee Chairman Senator John Barrasso (R-WY) and CSC member and Ranking Member Senator Tom Carper (D-DL) for their bipartisan leadership in introducing S 3051, and for securing the passage of the ACE Act as part of HR 925. Their leadership moved this bill swiftly through the Senate. The bill is now awaiting scheduling by the House Leadership for a floor vote.

The Congressional Sportsmen’s Foundation will continue to work tirelessly with Congressional Sportsmen’s Caucus members to advance HR 925 to the President’s desk to be signed into law. CSF urges readers of Conservation Frontlines to contact their representatives in the House to urge them to support final passage of this legislation.

To keep up with state-based regulation of sporting rights in the US, Tracking the Capitols (TTC) is a free service provided by CSF that sends personalized email alerts about sportsmen’s legislation. Sign up at http://congressionalsportsmen.org/legislative-alerts/login.

Jeff Crane is President of the Congressional Sportsmen’s Foundation.


A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
Book Review

Rowland Ward’s Record of Big Game

Thirtieth Edition: Africa

By Silvio Calabi

READ TIME 5 MINUTES

A heads & horns book for more than hunters alone—a “continent between covers”


James Rowland Ward’s father, Edwin Henry Ward, established a taxidermy shop in London in 1857. Years earlier, he had accompanied John James Audubon on his natural-history explorations, collecting and preparing feathered skins for The Birds of America. By 1870, when Edwin earned a royal warrant as a supplier to Queen Victoria, three members of the Ward family were working taxidermists in England and others were in the trade in Australia and New York. In 1886, Herbert Ward followed in his grandfather Edwin’s footsteps by joining one of Stanley’s African expeditions as a zoologist. By then, his uncle James had a thriving shop—known far and wide as “the Jungle”—at 167 Piccadilly, London. Taxidermy, it seemed, was in the family genes.

James Rowland Ward was in the right place at the right time and with the right skills. Britain’s upper crust was fixated on shooting and hunting, and heads, horns and hides were being shipped home from every corner of the Empire, which stretched around the globe. Some of this interest was scientific—the Age of Exploration was turning up all sorts of interesting new...
creatures and museums were bursting at the seams—and some of it was simply the itch to bring home souvenirs. But Rowland Ward did much more than just prepare lifelike specimens for the wealthy and the learned; he also pioneered the Victorian craze for curios featuring mammalian bits and pieces: elephant-foot wastebaskets, inkwells made from hooves, table lamps with birds, warthog-tusk letter openers and much more. (Type “Wardian furniture” into Wikipedia.)

Business was booming. In 1880, Rowland Ward branched out and published The Sportsmen’s Handbook, which grew into a series that is still in print. Two years later came Horn Measurements and Weights of the Great Game of the World, revised and greatly expanded in ’86 as Rowland Ward’s Records of Big Game. The company had long understood the male compulsion to whip out a tape measure and say, “Mine is bigger than yours!”

Over the decades, Records became a sort of social register-cum-field guide. Big-game hunters, who then tended to be tycoons, royals, celebrities and other notables, vied to be in “The Book” while naturalists turned to each new edition to see what beasts were being found where and in what variations. Naturally, Rowland Ward mounted many of these specimens.

After JRW died, in 1912, the business slowly migrated away from the family and then overseas. Ownership passed to Texas, South Africa and most recently, in 2015, to California, where it is now part of the group that publishes another venerable outdoors title, Sports Afield magazine. (BTW, they’re offering two vintage sets of Rowland Ward’s records. One is comprised of the 27 editions up to 2006, for $8,250; the other is the first 10 editions, for $6,250.)

Since the 10th edition, in 1935, The Book has addressed only Africa. The 30th edition, published this year, covers 12 genera, Antelopes to Rhinos, and the species of each. That means just four different rhinos—black, white, southern white, northern white—but 152 flavors of antelope (if I counted correctly), from blesbok to black wildebeest. You may quibble at dik-dik as “big” game, but there they are. Each genus begins with photos, a description of the animal and a map of its distribution. Then comes page after page of the records: the hunter or owner, the year, location, the animal’s score and the scoring method used. (Over time, some horn or skull measurements have evolved.) There are also instructions on how to submit trophies for review and possible inclusion in future editions.
The word “trophy” means whatever item is being measured and scored. In the field, hunters are moving away from the term “trophy hunting,” with its emotive freight, to “conservation hunting”—hunting that benefits fish and game agencies, environment ministries and rural communities, and that follows the principles of good wildlife management. *Records of Big Game* explains its mission today as “to help preserve and increase wildlife and its habitat worldwide by supporting sustainable, fair-chase hunting, which, in turn, directly benefits the local indigenous people of the areas involved. To further this goal, Rowland Ward maintains a database of measurements of big-game animals that have been hunted on a fair-chase basis and under the highest sporting standards.” Rowland Ward ignores the semi-domesticated animals bred on game farms for freakish horns or size.

Anti-hunters will reject the cataloging of thousands of victims of the blood sports. Non-hunters may be astounded by the diversity of species and sub-species across Africa. (Angolan or black-faced impala, East African impala, southern impala—32 pages of impalas.) A few hunters may zero in on certain species and say, “Aha, I see an opportunity to get my name in The Book!” (Although most record-book specimens are taken by lucky accident.) But most hunters will browse in wonder and possibly delight.

Historically, the black-and-white photos are the most interesting. A few of them date from when Africa—at least the part between the Sahara and the Limpopo River—was still “the Dark Continent,” Theodore Roosevelt’s “wilderness of savage men and savage beasts.” Leaving aside the bwana idiom, who would not have wanted to see Southern Africa at the beginning of the 20th Century? And if you’ve never seen 300-plus pounds (136 kg) of elephant ivory in a single pair of tusks, turn to pages 752 – 756.

But most of the photos in this edition are in color and some were no doubt taken with smartphones. They and the many 21st Century records speak to the resurgence of hunting across Southern Africa. Beginning about 50 years ago, African farmers—that is, whites who held large tracts of land—began to realize that wild game offered a greater return on investment than cattle. This came hand-in-hand with a surge in interest among hunters and shooters in Nitro Express cartridges, heavy double-barreled rifles and reprints of old books by African explorers, white hunters and their clients. The upshot is that, in some respects, safari hunting is better and more widely available now than it has been since the 1930s, and the book underscores this qualified victory for conservation.
Such an enormous tome took nearly three years to assemble. Rowland Ward says the photos were chosen according to ethics and aesthetics and that the book is now organized by biological kinship, like a field guide. There are also 83 new color maps of the distribution of more than 200 varieties of game, and the table of contents and index have been restructured to help the reader find things. Finally, should your camp coffee table be in danger of blowing away, the book weighs as much as a 12-bore game gun.

Page 755: The largest known pair of elephant tusks—dry weight 440 pounds. The elephant was shot on Mt. Kilimanjaro in 1898 by a slave with a blackpowder musket. A few years later, an American ivory dealer named E.D. Moore bought them for around $5,000, the equivalent of $130,000 today, but fortunately they were never cut up for billiard balls or piano keys. The tusks are now on display at London’s Natural History Museum.

Silvio Calabi is co-editor of Conservation Frontlines.
Book Review

Humans and Lions: Conflict, Conservation and Coexistence

By Gerhard R. Damm

READ TIME 2 MINUTES

Keith Somerville’s remarkable book offers pragmatic solutions to lion conservation.


Prof. Keith Somerville’s latest book traces man’s relationship with lions through history—from early hominids to the Roman empire, through Africa’s colonial occupation and independence, to contemporary conservation politics. It is a coherent, evidence-based assessment of the human-lion experience, and thus a detailed history of conflict that ultimately stems from two related developments: declining lion numbers and increasing human numbers.

As human populations in Africa surge, the ever-increasing demands on land threaten the future of lions. Somerville explores the daunting task of conserving lions in the wild. This includes the valiant efforts of a handful of conservationists to reverse lion population decline amid rural poverty, and mitigate situations where human lives and livestock are threatened. At stake are the precarious livelihoods of communities that live among lions. The book also explores the positive aspects and negative consequences of lion hunting.

Somerville searches for the best forms of lion conservation in the current environmental crisis, exacerbated by the tension between Western animal-welfare concepts and sustainable use
and development. He admits that, emotionally, lion hunting may be viewed as a contradiction, but concludes that science-based, regulated lion hunting does not endanger lion populations and can become part of the strategy to protect lions. This can be seen in Southern Africa, where lion numbers recently have grown.

To the future of lions in the wild, the main dangers are loss of habitat, the expansion of humans into lion country and bushmeat poaching, which depletes the prey base of lions. The best solution, Somerville writes, is to ensure that rural African communities benefit economically from coexisting with lions.

Keith Somerville, a former BBC News reporter, is an academic specializing in the politics and human aspects of African wildlife conservation at the Centre for Journalism of the Durrell Institute of Conservation and Ecology at the University of Kent. He is also a Senior Research Fellow at the Institute of Commonwealth Studies and a Fellow of the Zoological Society of London.

These credentials guarantee that the book (with a foreword by David W. Macdonald, Director of WildCRU, University of Oxford) is not only of interest to students and scholars of environmental and African history, but also to anyone concerned with wildlife conservation, environmental management and political ecology—or simply the future of lions.

An afterthought: Readers who want to stay abreast of current conservation solutions and challenges in Africa should bookmark Keith Somerville's blog Africa Sustainable Conservation News.

Gerhard R. Damm is the founder and editor-in-chief of Conservation Frontlines.
USFWS Director Aurelia Skipwith Addresses Boone and Crockett Club

By Boone & Crockett Club Press Office

READ TIME 4 MINUTES

‘Hunters and outdoors enthusiasts know that effective conservation is as much about people as it is about wildlife.’

On March 11, Aurelia Skipwith, Director of the US Fish and Wildlife Service, addressed more than 125 members of the Boone and Crockett Club during its annual dinner at the North American Wildlife and Natural Resources Conference in Omaha, Nebraska. The Club has been holding the dinner since the early 2000s as a way to honor its professional members, considered to be the “brain trust” of the organization. Since then, the invitation list has expanded to include state and federal agency leaders and senior administration officials.
During her remarks, Ms. Skipwith recognized the importance of hunting and fishing to conservation and praised the Club’s historic engagement on the most important conservation issues facing the United States.

“Some call hunting and fishing a way of life. I call it—and my family calls it—living. Hunters and outdoors enthusiasts know that effective conservation is as much about people as it is about wildlife,” Skipwith said. “Now more than ever, the challenges we face are going to require an unprecedented level of collaboration and cooperation among federal, state and tribal governments and conservation organizations like the Boone and Crockett Club. The Club, through Theodore Roosevelt and other early leaders, saw a crisis in humanity’s impact on wildlife and their habitats and called upon people to take action to change America’s direction.”

Skipwith discussed the Club’s leadership on developing what has become known as the North American Model of Wildlife Conservation and the premise that fish and wildlife belong to all Americans and must be sustained for future generations to enjoy. She emphasized that these concepts are what unite all who work on conservation issues across North America, and that conservation is a big part of the US economy.

“The strength of state and federal partnerships and our unified mission has led to the creation of the world’s most extensive and interconnected network of protected public lands and comprehensive protections for native wildlife and habitats across North America,” she continued. “We continue to work together to further the support for public lands today and to improve access to those lands for all Americans. Since the beginning of the Trump Administration, we have opened 1.7 million acres of Service-managed lands and waters for hunting and fishing.

“The US Fish and Wildlife Service and other Interior bureaus are also working closely with state partners on implementing Secretarial Order 3362 to improve Western big-game winter range and migration corridors, and to support developing the scientific knowledge of big game migrations and movement.

“The financial support, the political support and the scientific and communications support that Boone and Crockett Club provides its members place the Club in a unique position. Unlike other conservation organizations, you are able to successfully address all of the challenges we face...
are facing today and what we will face in the future," Skipwith concluded. “The Boone and Crockett Club is a constant reminder to hunters and conservationists about how far we have come while challenging ourselves to not only protect our investment in hunting and conservation but also to invest and advance it for our future generations.”

“The Boone and Crockett Club fully supported Director Skipwith's nomination,” said club president Timothy C. Brady. “After hearing her message last night, we are confident this was the right decision and the Director is proving to be a competent, visionary and committed leader for the US Fish and Wildlife Service.”

Confirmed by the US Senate in December 2019, Aurelia Skipwith is the first African American director of the US Fish and Wildlife Service; previously she had been the Dept. of the Interior’s Deputy Assistant Secretary for Fish and Wildlife and Parks. Skipwith earned a master's degree
in molecular biology from Purdue University and a law degree from the University of Kentucky and served as general counsel for agriculture-based companies.

Founded by Theodore Roosevelt in 1887, the Boone and Crockett Club is the oldest conservation organization in North America, which helped to establish the principles of wildlife and habitat conservation and hunter ethics, as well as many of the institutions, agencies and funding mechanisms for conservation. Its contributions include enlarging and protecting Yellowstone National Park and establishing Glacier and Denali national parks, founding the US Forest Service, the National Park Service and the National Wildlife Refuge System, creating the Pittman-Robertson and Lacey Acts and the Federal Duck Stamp program and developing the framework for modern game laws. The Club continues to lead the hunter-conservationist community through its work in conservation policy, research and education programs at major universities, hunter ethics and collaboration with similar organizations.

*Banner Image: Ms. Aurelia Skipwith. US Dept. of the Interior photo*
The Sounds of Science and Hunting

By Kyrie Long

READ TIME 4 MINUTES

An Alaskan ecology professor takes to the airwaves with a science podcast for hunters—or is it a hunting podcast for scientists?

Hunting, science and the intersection between the two is on full display in a new podcast from a university professor experienced in both subjects. Mark Lindberg, professor of wildlife ecology at the University of Alaska Fairbanks, started a hunting podcast last fall. “Hunting
Science” discusses moose hunting, predator management and trophy hunting, among other topics mostly focused on Alaska right now.

“This really came out of a motivation to try to communicate science to a different audience in a different way than we have in the past,” Lindberg said. Scientists are good at communicating among themselves, he said, but they’re very poor at, and don’t have the incentive to, communicate with other people.

Lindberg has a master’s degree in wildlife sciences, while his bachelor’s degree is in biology. He got his PhD from UAF in wildlife management. His graduate work in Alaska focused on a species of goose which breeds on the coast of the state and winters in Mexico. He grew up in Pennsylvania, where he hunted with his dad, who only recently stopped hunting at the age of 95.

Lindberg is personally really involved in waterfowl and upland bird hunting. “That’s my real passion, but I do all forms of hunting and I really enjoy hunting with dogs as well. I’ve had dogs most of my hunting career,” Lindberg said.

The dogs have mostly been black labs, with “a few other variations on that theme.” Lindberg gets his dogs from a breeder from Idaho, whom he interviewed for episode 2 of the podcast.

“That’s one of the funnest podcasts I’ve done to date for sure,” he said. “Mike’s a very good storyteller and very entertaining.”

The podcast is a balance of science and anecdote. Real hunters and real scientists (often the same person) can be discussing the best gear for a moose hunt one minute and on to ecology the next.

One thing Lindberg asks his guests, ecologists and lifelong hunters alike, is what their favorite hunt is; it’s a new story and a different perspective every episode.

Another motivation for the podcast is to make hunters aware of the importance of science in the activity, according to Lindberg. Hunters, he said, have been providing data for 50-plus years, which has been essential to conservation efforts.

Another example Lindberg cited is lead poisoning. In 2017, former Secretary of the Interior Ryan Zinke repealed the ban on the use of lead ammunition on federal lands and waters. In
Lindberg’s research, countless articles have been published on the problem of lead poisoning, but people are still using lead ammo.

“So that, to me, is such a glaring example of how poorly we’ve done—the poor job we’ve done of communicating science to the end users of that science,” Lindberg said. “If you were scientifically informed about toxic shot and lead poisoning, I think you might make a different decision.”

Motivation does not make a podcast, however, and Lindberg has been working with university staff to make the hunting conversations an actual production.

Owen Guthrie, UAF e-campus director, provided essential support in their efforts and came up with the name “Hunting Science”; Christen Bouffard, instructional designer with e-campus, assisted with the development of the podcast and shares it to several forms of media; and Joe Jackson, the media studio production designer, does all the sound editing and he developed a short video from the moose harvest lab.

The project was in development for half a year and Lindberg said they don’t have it perfected yet, but he thinks they’re getting better and better at putting things together and making it attractive for people to listen to.

He’s learned to interview people along the way. “I enjoy talking to folks and listening to their stories, so I started with people I’m familiar with, mostly,” he said.

That was the “low hanging fruit,” but Lindberg says he’s getting more comfortable with podcasting, with the thought of reaching out to people he’s not so familiar with.

There’s a growing list of topics he wants to work through with the podcast. For example, the team recently finished an interview with an individual living in the bush for 15 years, where they were able to talk about care of meat in the field in remote settings.

Going forward, Lindberg has a few directions he’d like to see the work go. “Well, I’d like to see [the podcast] used more in classes, although I think it’s most valuable in communicating to hunters broadly,” Lindberg said.

As a faculty member, Lindberg said he has a strong interest in communicating with the student body and he thinks it’s important for students to get that exposure, since the number of
hunters nationally is declining, yet the university has students seeking employment with offices that manage hunting. Lindberg has been talking with other parties about further hunting education at UAF.

He noted he also doesn’t think hunters know how valuable they are in conservation efforts, notably through citizen science, which is when people gather scientific evidence but aren’t employed by an agency responsible for gathering it.

“[Hunters] are often our eyes and ears out there and tell us what’s going on with animals we hunt and study and what habitats they use,” Lindberg said, “and I don’t think hunters realize how much we [scientists] get from them.”

Readers can listen to Lindberg at bit.ly/2GyFlcz.

Banner photo: Prof. Mark Lindberg hunting chukar partridge in Idaho with (from left) Boomer, Gibson and Hesston. Kent Pattridge photo

This story is reprinted with permission from the Fairbanks Daily News-Miner, where the author, Kyrie Long, is a staff writer. She can be reached at klong@newsminer.com or +1 907-459-7510. Follow her on Twitter at twitter.com/FDNMlocal
At its annual meeting, in St. Paul, Minnesota, in September 2019, AFWA passed 10 resolutions that address issues ranging from the decline in hunting to the proliferation of sagebrush. Resolution No. 2019-06-10 supports the sustainable use of wildlife:

The Association of Fish and Wildlife Agencies (Association) is the professional association that serves as the collective voice of state, provincial and territorial fish and wildlife agencies in the United States and Canada on a broad spectrum of biodiversity and conservation priorities. This includes a variety of cross-cutting national and international issues ranging from migratory bird conservation to invasive species management to engagement in international treaties and conventions, and more. These agencies play a critical role in the conservation and management of biodiversity. The agencies require a comprehensive set of tools to manage wildlife, reintroduce wildlife, address human-wildlife conflict, manage for threatened and endangered species, and engage the public in wildlife conservation. One critical tool is the sustainable use
of wildlife. At the Association's Annual Meeting in September 2019, the membership passed a resolution titled—**Reaffirming Support for Sustainable Use and Regulated Trade**.

**RESOLUTION 2019-06-10: REAFFIRMING SUPPORT FOR SUSTAINABLE USE AND REGULATED TRADE**

**WHEREAS**, the sustainable use of fish and wildlife is the foundation of natural resource conservation and management in the United States and Canada as embodied by the North American Model of Wildlife Conservation; and

**WHEREAS**, jurisdictions and governments have a responsibility to manage fish and wildlife to ensure sustainable populations; and

**WHEREAS**, hunting, fishing, and trapping are regulated methods of take informed by science which engage the public in a meaningful role in fish and wildlife management and conservation; and

**WHEREAS**, regulated hunting, fishing and trapping are essential for the conservation of species including endangered and threatened species, management of populations, control of disease, resolution of human-wildlife conflicts, support of indigenous peoples’ livelihoods, and protection of sensitive habitats; and

**WHEREAS**, scientifically managed sustainable use may involve individual personal use and/or the trade in fish and wildlife; and

**WHEREAS**, well managed, regulated hunting, fishing, and trapping supports and promotes biodiversity conservation, can affirm strong cultural ties, and is a heritage activity across eons; and
WHEREAS, international conventions and treaties promote the sustainable use and trade of fish and wildlife; and

WHEREAS, two of the three objectives of the Convention on Biological Diversity are to conserve biodiversity and the sustainable use of its components; and

WHEREAS, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) exists to ensure international trade in fish, wildlife and plant species is sustainable; and

WHEREAS, sustainable trade in CITES-listed species can be an important and beneficial component of sustainable use of fish and wildlife and their conservation including providing funding for and economic incentives to local communities to support fish and wildlife conservation;

NOW, THEREFORE, BE IT RESOLVED that the Association of Fish and Wildlife Agencies reaffirms its support for the sustainable use and regulated trade of fish and wildlife.

Submitted by the International Relations Committee and the Sustainable Use of Wildlife Committee.
‘A Springbok which is White, People Do Not Kill It’

Contrasting attitudes of colonizer and colonized towards mammal anomalies

By Chris Roche

READ TIME 5 MINUTES

South Africa’s indigenous /Xam people entertained superstitions surrounding the white springbok they encountered periodically, which were in sharp contrast to those of the colonizing European settlers.

Springbok and other animals occasionally produce white individuals. Although these animals are sometimes true albinos, for the most part they are more correctly referred to as leucistic, a condition of paleness that results from a recessive gene\(^2\). Such anomalies of course draw...

attention and even today such individuals of various species are acclaimed\(^3\) and even selectively bred. This attention to anomaly is no different from the past and the differing attitudes of the colonizers and the colonized towards white springbok perhaps best place the attitudes of the /Xam [San] towards nature in context.

European colonizers, for example, most often viewed white springbok as *een groote rariteit* \(^4\)[a great rarity] and immediately upon discovery sought either to capture and display the creature at centres such as Kimberley\(^5\) or Johannesburg, or to kill it and present the skin to the nearest museum\(^6\). Whether or not either course was followed, the discovery of a white springbok or the procurement of its skin was always reported with some pride and excitement\(^7\). This is not to say there was only academic or commercial interest bestowed on springbok by the white community.

On the contrary, white springbok also evoked considerable superstition in some communities. In Beaufort West in the mid-19th Century, for example, a white springbok which moved between this district and that of Prince Albert was continually harassed by all the local hunters, who believed that shooting the animal would ensure the success of all future hunting efforts. The fact that the animal survived for two years despite this unwelcome attention only served to fuel the belief. Several decades later, a white springbok in the western Orange Free State survived “thousands of cartridges” over a similar period of time before eventually succumbing to hunters’ bullets, this animal being the subject of a local myth that held it was “a phantom-shape assumed by the evil spirit himself to delude people from the chase of other game.”

In contrast to these attitudes, the /Xam held a completely different belief with regard to white springbok. The following well-known extract from one of /Han...kass’o's narrations encapsulates this attitude:

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\(^6\) A *Phantom Buck*, Graaff Reineter Herald (1882); *Queen of the Bucks: A Native Romance*, Graaff Reineter Advertiser (1904).

A springbok which is white, people do not kill it, for the people look at it, while the people feel that the springbok are wont altogether to disappear. The springbok will not come to a place where a white springbok has lain dead. All the springbok altogether go away. Therefore, the people look at a springbok which is white, even if it be near to them.

In other words, while the /Xam also entertained superstitions surrounding the unusual white springbok which they would have encountered periodically, these are in sharp contrast to those of their white counterparts. Instead of seeking to shoot white springbok to increase hunting prowess and success, the /Xam fastidiously avoided such practices in order to avoid chasing the springbok herds from their lands. The reliance of the /Xam on springbok was profound, and a core difference between the two cultures of course was the contrast between subsistence hunting and sport hunting. In another of /Han...kasso's narrations, he makes it clear that the presence of the white springbok, which the /Xam called !Guara-!Guara, was valued because it was associated with large herds of springbok and the ensuing abundance of protein:

*The people say that the springbok resemble the Milky Way when a white springbok is there. Therefore, the people say, Thi-gusa to it. They also say that the number of springbok resembles the stars. Also [they] say !guara-!guara to it. ... The springbok are not numerous when a white springbok is not there, for the springbok are in small troops when a white springbok is not among the springbok.*

This general attitude prevailed even among those Khoi who had been co-opted as goatherds in the Graaff-Reinet district in the early part of the 20th Century, further indicating the extent of the difference between colonizer and colonized:

*An instance has recently occurred at Shirlands, where the presence of a white springbuck has become the centre of a veritable romance. The goat herds declare that a miraculous halo surrounds the animal, she is the 'Queen of the Bucks' and has been endowed with perpetual youth. If a dozen bullets pierced her body, she would rise phoenix-like from the bushes, with wound healed and with a double

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8 L.VIII–22: 7994; see also Lewis-Williams, *Stories that Float*, 233. The notebooks of Bleek and Lloyd Collection are prefixed by the initial of the recorder, i.e. B = Bleek; L =Lloyd, and are followed by the numeral assigned to each informant: I = /A!kunta; II = //Kabbo; IV = ...Kasin; V = Dialkwain; VIII = /Han...kass’o.


10 L.VIII–14: 7241-7259.
measure of vitality. Consequently, when their ‘baas’ (Mr. John E. Hobson) announced his intention of calling a few friends together in order to hunt the animal and secure the skin and horns for the Port Elizabeth Museum, his swarthy retainer started aghast, and prophesied dire disaster! .... Mr Hobson shot the animal with no consequences ... skin can now be inspected at the Direct Supply Store in Graaff Reinet.

The value in understanding this dichotomy is the added emphasis it places on the differing dependence and relationship with nature held by /Xam hunter-gatherers and European agri-pastoralists. The /Xam ethnography is not limited to this aspect of environmental history, however, and a close reading thereof can play a significant role in the understanding of long extinct natural phenomena such as springbok treks.

Do you know the Samoan Dodo?

By Gerhard R. Damm

READ TIME 4 MINUTES

A peculiar-looking and culturally and ecologically significant pigeon is on the verge of extinction in Samoa.

*Didunculus strigirostris*, a rare tooth-billed pigeon, exists only in the primary forests of the Samoan islands of Upolu and Savai’i at altitudes up to 1,600 metres (1,780 feet). This chunky, almost chicken-size bird is locally known as manumea—“red bird” or “precious bird.” In fact, it is the closest living relative to the famously extinct dodo, hence its nicknames: little dodo or Samoan dodo. The manumea is Samoa’s national bird, found on the nation’s currency and in murals throughout the capital city of Apia.
The heavy, hooked bill of this pigeon is red at its base, then yellow above; it is adapted to saw through the tough fruit of *Dysoxylum* trees, a mahogany-like species common in the western Pacific. The lower bill has two “teeth” that overlap the upper mandible. The manumea's feathers are mostly dark greenish-black or blue-green, with chestnut upper parts; the eyes have a red ring around them. The bird vocalizes with an irregular, uniform, territorial coo, repeated frequently. It prefers to perch on thick branches in the dark interior of tree crowns, usually at 15 to 20 metres (17 to 22 feet) up. During the breeding season, manumeas apparently lay two eggs, but nests have never been documented and little is known about the tooth-billed pigeon's ecology.

The manumea provides significant value to the ecosystem as a crucial seed disperser to sustain the native forest. Other birds can't open the *Dysoxylum* fruit.

The population numbers of this bird are very low and it is “critically endangered” on the IUCN Red List. Its total population was estimated at 4,800 to 7,200 in the mid-1980s, but the numbers declined drastically after cyclones to fewer than 2,500 mature individuals by 2000. In 1999 and 2000, surveys on Savai'i found only scattered pairs. An 11-month survey in 2005-2006 reported the species in just 10 locations and estimated the population at only a few hundred, although the remote uplands of Savai'i remained largely unsurveyed.

Small numbers of manumea were recorded in a few locations on Upolu in 2009. No definitive results were obtained during surveys in 2012 in upland Savai’i. Surveys on Savai’i in 2013 yielded a photo of one juvenile bird at the edge of the Tafua rainforest and an adult bird was observed in the same area. This was the first confirmed sighting on Savai’i in almost a decade. Surveys in 2016 produced only one definite viewing of the species on Upolu.

Reliable local hunters reported a steady decline in manumea numbers for decades, but say that it still exists in the Uafato and Malololelei forests on Upolu island and in the Aopo and Taga areas on Savai’i. The very low numbers of recent sightings by local people on Savai’i suggest that the population is now extremely small, on the order of 50 to 249 mature individuals, assumed to equate to approximately 70 to 380 individuals in total.

Historically, pigeon hunts were a divine ritual on Samoa and, in this strongly hierarchical social system, hunting them was reserved for *matai*, the chiefs. They used long-handled nets to catch pigeons in flight. Manumea hunting has been prohibited by law for more than 25 years, but it
continues and the meat is highly valued among Samoan elites. A single bird sells for 15 Samoan tālā—more than $5—and pigeons are still given as traditional gifts to Samoa’s 18,000 matai.

Although manumeas are no longer deliberately hunted, accidental, non-target mortality through hunting remains a significant threat. The more-common Pacific imperial pigeon (Ducula pacifica, locally known as lupe) is now the main target.

Historically, it is likely that approximately 400 to 500 manumeas were being killed annually, and this rate might have continued through the 1980s. Of 30 hunters interviewed in 2015-16, 30% reported having accidentally killed at least one manumea, including two instances in 2016. Depredation by rats and feral cats may now represent the most serious threat to manumea, especially when rat and cat numbers increase following cyclones. Habitat loss has been significant also and continues, especially on Savai'i. Storms such as cyclone Evan, in 2012, reduce forest quality further by destroying fruiting trees and leaving space for exotic plants that compromise the recovery of native trees.
Fiame Naomi Mata'afa, the Deputy Prime Minister and Minister of Natural Resources and Environment, is calling for intensive conservation to halt the manumea's slide toward extinction. She is a spokesperson for a new campaign to save the species led by the Samoa Conservation Society and her ministry. In the campaign's strategy document, she publicly applauds “all Samoans who have made the voluntary decision to forego the purchase, gifting, or eating of all pigeon until we can ensure that our Manumea is out of danger.”


Gerhard R. Damm is the founder and editor-in-chief of Conservation Frontlines.
Letters to the Editors

Conservation Frontlines welcomes signed, relevant letters to the editor. Verified names may be withheld upon request. Letters chosen for publication are edited for clarity and brevity.

Culling Deer vs. Culling Elephants

(“Deer overpopulation, meet women who hunt”—Frontline Dispatches, March 2020)

I would like to pose a simple question: How come there are absolutely no comments, abuse or threats when sensible women hunters are helping deal with the explosion of deer BUT the world vilifies those who wish to do the same with the explosion of elephants in the greater Kruger Park area and in Botswana? Culling was halted many years ago due to “possible tourists refusing to visit the area” if it did not stop. (Tourism keeps half of our countries alive—we need you.)

We are now at the stage where the majority of large trees are disappearing—there are no new specimens coming up, as they are immediately eaten or pulled out by elephants]. It has got to the stage that we have to put up false nests for birds like the ground hornbills as there are very, very few natural large trees left in which they can nest.

I would also like to point out some basic rules of “trophy” hunting: That does not necessarily mean the biggest tusker elephant, but some of the hundreds of lesser males that need to be culled. Please also keep in mind that a very old and great tusker, once his last teeth have gone, is felled by starvation and thirst. He is then eaten alive. The vultures start on his eyes, the hyenas on his rectum and testicles, until the lions come and rip open his belly. It is a horrifying death. Would it not be better to put him down with one bullet—at great price to the hunter, the income offsetting the massive costs we are all bearing to try to save the rhino and other species?

All the meat most of you eat is farmed, culled and sold. The best males are sold or culled as necessary, as are the unproductive females. Are you all saying that as long as you can buy your meat in a supermarket, it is OK to cull? But in the wild, where the wilderness is shrinking due to overpopulation and animals are threatened by poachers, these rules should not apply?

A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
I would dearly love all of you—who sit behind a computer or loudspeaker but who do not come and see what most of Africa is trying to do—to speak up against the half of the world that is decimating our fauna and flora before you open your mouths and criticize.

Get up and get out and call for bans on countries like China and Vietnam and others that are our greatest enemies to the environment!

Timothy Hancock (Mrs!)
March 1, 2020
South Africa

Adjusting the Narrative

Thank you for all the great work you do at Conservation Frontlines! It is a pleasure to read the frequent publications, so comprehensive, well researched and balanced. If this had been in place 10 years ago, possibly many of the nuclear anti-hunting episodes on social media would not have happened. These, among other things, have made it so hard to make wildlife conversation, with hunting as a critical part of it, a dinner table topic. (Which—thank you, again—you also made an article topic recently.)

Many non-hunting scientists have come out of the woods lately to give a much-needed boost to the effort of adjusting and correcting the narrative of ethical hunting in the real world.

[Name withheld by request]
March 27, 2020
Vaud, Switzerland
Abstracts of Recently Published Papers on Hunting & Conservation

By Editorial Team

The Conservation Frontlines Team selected a range of new scientific, peer-reviewed papers. Scan the abstracts to get an overview. All items have links to the original papers.

Abstract: Human-induced changes to environments are causing species declines. Beyond preserving habitat (in situ), insurance (ex situ) populations are essential to prevent species extinctions. The Conservation Centers for Species Survival (C2S2) is leveraging space of breeding centers and private ranches to produce “source populations”—genetically diverse reservoirs that also support research and reintroductions. The initial focus is on four African antelopes. C2S2 has developed a program, the Source Population Alliance, that emphasizes animals living in spacious, naturalistic conditions in greater numbers than can be accommodated by urban zoos. Simulation modeling demonstrates how herds can rapidly increase population abundance and retain genetic diversity. Advances in genomics and resulting DNA data allow monitoring of genetic diversity and parentage as well as refined decision-making. This approach, neither pure in situ nor ex situ, but rather “sorta situ”, is an innovative way of linking public and private sector resources to ensure that endangered species survive.


Abstract: Leopard (Panthera pardus) conservation has a strong international dimension. Hunting trophy export quotas established for African range states under the Convention on International Trade in Endangered Species (CITES) are a case in point. We test these quotas, and the methods for their establishment, against the benchmark of the general principles of precaution, sustainable use and adaptive management. The various national approaches and the CITES regime condoning them largely fail this test. For decades, CITES bodies have endorsed apparently arbitrary quotas lacking robust scientific bases, without regular adjustment. Thus, the quotas have been inadequately performing their assigned function within the Convention’s framework. The way in which the CITES leopard quota regime has

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been operating is fundamentally at odds with the principles of sustainable use, precaution and adaptive management. To remedy this, we offer recommendations on how to embed a science-based, sustainable, precautionary and adaptive approach to quota-setting within the CITES system.


Abstract: This study proposes that anthropomorphism is a key factor in stimulating both wildlife value shift and changing attitudes toward wildlife management in modernized countries. Evidence suggests that cultural shift due to modernization increases anthropomorphic attributions which leads to seeing wildlife as more human-like. This provides a foundation for a shift in values from domination, in which wildlife are for human uses, to mutualism in which wildlife are seen as part of one's social community. This theoretical proposition was tested with a nationwide study of 43,949 U.S. subjects obtained by mail survey and email panel. Values and anthropomorphism were measured using established item scaling. We found that, as expected, anthropomorphism is strongly related to mutualist values. It was weakly associated with modernization variables (income, urbanization, education) at the individual level and moderately associated at the state level. Results suggest a modernized environment fosters anthropomorphic attribution, but the variables we used are not the proximate cause of this process at individual level. To provide a partial test of the likely causal sequence, we found that the effect of anthropomorphism on attitudes is mediated by wildlife values. Anthropomorphism, through its effect in stimulating value shift, leads to challenges of traditional approaches to wildlife management. It emphasizes consideration of individual animals and the avoidance of lethal control techniques such as is proposed in the concept of A World That Values The Conservation And Livelihood Benefits Of Sustainable Wildlife Utilization
compassionate conservation. Further research in other modernized countries with similar cultural characteristics is needed to establish the broader generalizability of our findings.


Abstract: Autumn ungulate hunting in the Greater Yellowstone Ecosystem carries the risk of hunter–grizzly bear (Ursus arctos) conflict and creates a substantial challenge for managers. For Grand Teton National Park, Wyoming, USA, a key information need is whether increased availability of elk (Cervus canadensis) carcasses during a late autumn (Nov–Dec) harvest within the national park attracts grizzly bears and increases the potential for conflict with hunters. Using a robust design analysis with 6 primary sampling periods during 2014–2015, we tested the hypothesis that the elk harvest resulted in temporary movements of grizzly bears into the hunt areas, thus increasing bear numbers. We detected 31 unique individuals (6 F, 25 M) through genetic sampling and retained 26 encounter histories for analysis. Markovian movement models had more support than a null model of no temporary movement. Contrary to our research hypothesis, temporary movements into the study area occurred between the July–August (no hunt; \( N_{2014-2015}=5 \)) and September–October (no hunt; \( N_{2014-2015}=24 \)) primary periods each year, rather than during the transition from September–October (no hunt) to November–December (hunt; \( N_{2014-2015}=15 \)). A post hoc analysis indicated that September–October population estimates were biased high by detections of transient bears. Grizzly bear presence during the elk hunt was limited to approximately 15 resident bears that specialized in accessing elk carcasses. The late timing of the elk hunt likely moderated the effect of carcasses as a food attractant because it coincides with the onset of hibernation. From a population response perspective, the current timing of the elk harvest likely represents a scenario of low
relative risk of hunter–bear conflicts. The risk of hunter–grizzly bear encounters remains, but may be more a function of factors that operate at the level of individual bears and hunters, such as hunter movements and bear responses to olfactory cues.


Abstract: Several caribou and reindeer (*Rangifer tarandus*) populations have experienced recent population declines, often attributed to anthropogenic stressors such as harvesting, landscape fragmentation, and climate change. Svalbard reindeer (*R. t. platyrhynchus*), the wild reindeer subspecies endemic to the high–Arctic Svalbard archipelago, was protected in 1925, after most subpopulations had been eradicated by harvest. Although direct pressure from harvest has ceased, indirect anthropogenic stressors from environmental changes have increased in this climate change hot spot. An assessment of the current distribution and abundance is therefore urgently needed. We combined distance sampling (300 km transects, \(n = 489\) reindeer groups) and total counts (1,350 \(km^2\), \(n = 1,349\) groups) to estimate the Svalbard reindeer distribution and abundance across its entire range, which we compared with historical data from the literature and radiocarbon–dated bones. Reindeer have now recolonized nearly all non–glaciated land (i.e., areas occupied prior to human presence), and their spatial variation in abundance reflects vegetation productivity. Independent of vegetation productivity, however, recently recolonized areas have lower reindeer densities than areas not subject to past extirpation. This suggests that recovery from past overharvesting is still in progress. These incompletely recovered areas are potential targets for increased monitoring frequency and maintaining strict conservation to follow the Svalbard management goal (i.e., virtually untouched wilderness areas). Because of such ongoing recolonization, possibly combined with vegetation greening effects of recent warming, our
status estimate of Svalbard reindeer abundance (22,435 [95% CI = 21,452–23,425]) is more than twice a previous estimate based on opportunistic counts. Thus, although our study demonstrates the successful outcome of strict harvesting control implemented a century ago, current and future population trajectories are likely shaped by climate change.

Conservation conversations: A typology of barriers to conservation success. 2019. Michele Jeanette Sanders, Alex Rogers, Laura Miller, Shonil A. Bhagwat. Oryx. DOI: https://doi.org/10.1017/S0030605319000012

Abstract: Despite considerable achievements in the field of conservation, biodiversity continues to decline and conservation initiatives face numerous barriers. Although many of these barriers are well known, for example insufficient funding and capacity, there has been no systematic attempt to catalogue and categorize them into a typology. Because risks compromise the conservation mission, any barrier to success is a risk. Here we present the first attempt at identifying key barriers. We analyse extensive interviews with 74 conservationists, primarily from Africa but with international experience, to identify potential risks to their projects and use that information to create a typology of barriers to conservation success. We draw on the literature to explain the prevalence of some of the barriers identified. We suggest that this typology could form the basis of heuristic tools that conservationists can use to identify and manage potential risks to their projects, thereby improving decision-making, strategic planning and, ultimately, overall impact. The typology is also useful for the conservation community (comprising conservationists and funders) to help implement better practices and improve the likelihood of success. We present examples of such work already underway and suggest more can be done to continue to improve.

Abstract: Because of their status of res nullius—owned by no one—property theory is underdeveloped in regard to wildlife. In this article, wildlife is seen to be sometimes subject to a shadow ownership by class interests in society. Hunters accuse protected wolves of being the “pets” or “property” of an urban-based conservationist middle class. This phenomenon fragments the common fauna and undermines responsibility taking and policy compliance for wildlife that is seen as being owned by an oppositional social class. Using an empirical case study of Swedish hunters, we show how responsibility for wildlife has become entangled with property rights. A historical materialist analysis reveals that hunters once experienced ownership of wildlife by the nobility as co-opting state coercive power. Today, however, aristocracy is replaced by a new elite class of conservationists. Noting the hunters’ tendency to evoke quasiaristocratic virtues of ownership, we advance recommendations for an alternative approach. We appeal to deliberative democracy to promote the “communing” of wildlife across classes in fora that withstand co-optation by class interests.


Abstract: Mammals are imperiled worldwide. Threats to terrestrial species are primarily from habitat loss or modification, and in some instances from commercial, illegal, or unregulated hunting. Terrestrial species are negatively affected throughout the tropics from deforestation. Threats to marine mammals are related to harvest, strikes in shipping lanes, pollution, and
depleted levels of food resources. Hazards to marine species are pronounced in the North Atlantic Ocean, North Pacific Ocean, and oceans and seas flanking southeastern Asia. Protected areas designed to conserve mammals often are too small, too few, poorly delimited or isolated, and too unreliably supported. The new conservation science proposes that human livelihoods be considered alongside traditional preservationist perspectives. For conservation outside of protected areas to succeed, the protection of wild mammals and their habitats should result in benefit to local people, especially in rural or poor communities. Concerns about declining populations of large mammals in North America during the late 19th and early 20th centuries resulted in the institution of regulations that contributed to the recovery of many populations. Today, in North America and Europe, wild populations are thriving and legal hunting is allowed for a number of mammals, something that is less common in many developing countries, where illegal killing remains a threat to conservation. Nevertheless, populations of large mammals are resilient to regulated hunting because of density dependent processes that result in increased reproduction, survival, and growth rates. Unfortunately, hunting is unregulated for cultural and economic reasons over much of the Earth. We are beginning to see effects of climate change and invasive species on risk of extinction for many species. The future of mammals, however, is entwined ultimately with the size, growth, and resource demands of the human population.


DOI: 10.1038/s41586-019-1806-y.

Abstract: Humans seem to have an adaptive predisposition for inventing, telling and consuming stories. Prehistoric cave art provides the most direct insight that we have into the
earliest storytelling, in the form of narrative compositions or ‘scenes’ that feature clear figurative depictions of sets of figures in spatial proximity to each other, and from which one can infer actions taking place among the figures. The Upper Palaeolithic cave art of Europe hosts the oldest previously known images of humans and animals interacting in recognizable scenes and of therianthropes—abstract beings that combine qualities of both people and animals, and which arguably communicated narrative fiction of some kind (folklore, religious myths, spiritual beliefs and so on). In this record of creative expression [spanning from about 40 thousand years ago (ka) until the beginning of the Holocene epoch at around 10 ka], scenes in cave art are generally rare and chronologically late (dating to about 21–14 ka), and clear representations of therianthropes are uncommon—the oldest such image is a carved figurine from Germany of a human with a feline head (dated to about 40–39 ka). Here we describe an elaborate rock art panel from the limestone cave of Leang Bulu’ Sipong (Sulawesi, Indonesia) that portrays several figures that appear to represent therianthropes hunting wild pigs and dwarf bovids; this painting has been dated to at least 43.9 ka on the basis of uranium-series analysis of overlying speleothems. This hunting scene is—to our knowledge—currently the oldest pictorial record of storytelling and the earliest figurative artwork in the world.


Abstract: Finding effective ways of conserving large carnivores is widely recognised as a priority in Conservation. However, there is disagreement about the most effective way to do this, with some favouring top-down “command and control” approaches and others, collaborative approaches. Arguments for coercive top-down approaches have been presented elsewhere; here we present arguments for collaboration. In many parts of the developed world, flexibility of approach is built into the legislation, so that conservation objectives are
balanced with other legitimate goals. In the developing world, limited resources, poverty and weak governance mean that collaborative approaches are likely to play a particularly important part in carnivore conservation. In general, coercive policies may lead to the deterioration of political legitimacy and potentially non-compliance issues such as illegal killing, whereas collaborative approaches may lead to enhanced trust, learning, and better social outcomes. Sustainable hunting can play a crucial part in the conservation and management of large carnivores. There are many different models for how to effectively conserve carnivores across the world, research is now required to reduce uncertainty and examine the effectiveness of these approaches in different contexts.


Abstract: Methane (CH$_4$) emissions by human activities have more than doubled since the 1700s, and they contribute to global warming. One of the sources of CH$_4$ is produced by incomplete oxidation of feed in the ruminant's gut. Domestic ruminants produce most of the emissions from animal sources, but emissions by wild ruminants have been poorly estimated. This study (i) scales CH$_4$ against body mass in 503 experiments in ruminants fed herbage, and assesses the effect of different sources of variation, using published and new data; and (ii) it uses these models to produce global estimates of CH$_4$ emissions from wild ruminants. The incorporation of phylogeny, diet and technique of measuring in to a model that scales log$_{10}$ CH$_4$ g d$^{-1}$ against log$_{10}$ body mass (kg), reduces the slope, from 1.075 to 0.868, making it not significantly steeper than the scaling coefficient of metabolic requirements to body mass. Scaling models that include dry matter intake (DMI) and dietary fiber indicate that although both increase CH$_4$, dietary fiber depresses CH$_4$ as the levels of DMI increases. Cattle produce more CH$_4$ per unit of DMI than red deer, sheep or goat, and there are no significant differences.
between CH$_4$ produced by red deer and sheep. The average estimates of global emissions from wild ruminants calculated using different models are smaller (1.094–2.687 Tg yr$^{-1}$) than those presented in the reports of the Intergovernmental Panel on Climate Change (15 Tg yr$^{-1}$). Potential causes to explain such discrepancy are the uncertainty on the world's wild ruminant population size, and the use of methane output from cattle, a high methane producer, as representative methane output of wild ruminants. The main limitation researchers' face in calculating accurate global CH$_4$ emissions from wild ungulates is a lack of reliable information on their population sizes.

The implications of the reclassification of South African wildlife species as farm animals.


Abstract: The Government Gazette No. 42464 dated 17 May 2019 amended Table 7 of the Animal Improvement Act (Act no. 62 of 1998), which lists breeds of animals, to include at least 32 new wild animal species, including 24 indigenous mammals. The list includes threatened and rare species such as cheetah, white and black rhinoceros, and suni. Some alien species such as lechwe, various deer species and rabbits are also included. The cornerstone of the original Act is ‘To provide for the breeding, identification and utilisation of genetically superior animals to improve the production and performance of animals in the interest of the Republic; and to provide for matters connected therewith.’ By declaring these wild animals as landrace breeds (in Table 7 of the regulations), the Act implies that they are locally developed breeds. The Act typically provides for landrace breeds to be bred and ‘genetically improved’ to obtain superior domesticated animals with enhanced production and performance. Similarly, provision is made for the Breeders Association to lay claim to the breed and to establish specific breed standards for animals to be included in stud books. Animals declared as landrace breeds can also be used for genetic manipulation, embryo harvesting, in-vitro fertilisation and embryo transfers. As indigenous
species of wildlife are included in the recent amendment to the Act, the amendment is flawed. Here we point out numerous concerns in the new legislation, including the process of consultation, and argue that the law will not improve the genetics of the species mentioned but will have considerable negative genetic consequences and pose ecological and economic risks. We also suggest that this new law is in direct conflict with other biodiversity laws in South Africa.


Abstract: We compared population structure and trophy hunting statistics of Himalayan ibex (Capra sibirica) in two community-controlled hunting areas (CCHAs) of northern Pakistan with varying duration of trophy hunting and isolated populations of C. sibirica. Based on fixed-point direct count method during winter 2016–2017, 939 ibexes were counted in Khyber and 346 in Hussaini, with a density of 7.5 and 3.2 animals km², respectively. Though the populations of C. sibirica at both the study sites have increased compared to the past estimates, we found variations in population structures and horn sizes, presumably as a result of trophy hunting. The sex ratios are skewed toward females in Khyber (87 males/100 females) and towards males in Hussaini (115 males/100 females). The trophy size males were 7% of the population in Khyber and 11% in Hussaini. Mean group (herd) size in Khyber was 28 (range = 1–117) and Hussaini was 20 (range = 1–79). Mean horn size of the trophies harvested in Khyber was 102 cm (± range = 91–114) compared to 108 cm (range = 99–121) in Hussaini. Stringent regulatory measures are suggested to determine the number of permits.