

Outback Hunting



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ISBN: 978-1-946628-02-2

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Published by:

Juniper Publishers

Date: February 21, 2017

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Introduction

Man's desires to survive over eons of years have shaped hunting as a tradition of a food supply technique, warmth and recreation. The history of Zimbabwe is as old as the region's first human occupation and it is remarkable that hunting has been passed on from generation to generation (Figure 1) with increasing levels of sophistication and with minimum losses of acumen ship (Table 1). Table 1 shows modern wildlife collection techniques and the ancient techniques that continue to be employed in small and large hunts. Many Stone Age tools found in Zimbabwe and elsewhere appear to have been used for the purpose of hunting. The sporting use of firearms is nearly as old as firearms themselves, just as explosives were used for entertainment before ever being applied to destruction. As soon as guns could be made sufficiently portable and efficient

they were used for hunting. This made hunting a sophisticated industry for the savage wild. The sporting rifles invented gave rise to new economic opportunities to many impoverished and isolated enclaves that now thrive on incomes from the Safari industry to improve livelihoods. New concepts and techniques have evolved to leverage on trophy quality of wildlife species. But alarmed by the sheer efficiency of modern sporting rifles the public invited caution due to the new problem posed to wipe out wildlife species in an instant. The savage wild is characterized by ruggedness of the terrain, harsh weather, thick impenetrable thorny bushes, closed canopy trees, wide open savannas' parklands, wide spectrum of curious wildlife species and the unpredictability of the outcomes of the hunt that could end up devouring himself the hunter.



Figure 1: Ancient artwork and paintings in a granite bornhardt cave showing a complex interaction between humans and rangeland wildlife species.

Table 1: Hunting techniques used to collect wildlife species in small and large hunts.

Big Hunts Technique	Ancient hunts Technique
Large Calibre rifles	Stones
0.243	Dogs
0.27	Sticks
0.3	Soil pits
0.375	Nets
0.458	Baits
Shotgun	Snares with hooks Snares with rope Snares with wire Bow and arrow

Southern Africa in particular Zimbabwe offers to the serious sportsmen some of the finest hunting opportunities in the world in terms of numbers of wildlife species (indigenous living species), dangerous game, excitement, thrill and variety. Without hunting, wildlife remains a charity and a non contributor to the land. Poaching decreases as local communities receive benefits and self report active members. Hunters have a passion and an instinct to go for the ultimate trophy and score it. Biological resources have social, ethical, cultural and economic values and hunting is one unique industry which combines all these noble attributes.

Rodriguez [1] illustrated what passion a man may have in Ernest Hemingway's rendezvous Safaris' by developing a dedicated fishing machine with everything to boot. The masculinity ego was demonstrated in deep sea tuna fishing on the deep remote Atlantic Ocean. He trawled giant blue fin tuna, trout broadbill swordfish, blue marlin shark Hendrickson [2]. He was proud of marlin trophies and his deep sea fishing illustrated the American dream of masculinity Hendrickson and Rodriguez [2, 1].

Rodriguez [1] illustrated the zeal a man may have in Safari Hunting by describing Ernest Hemingway's unique lifestyle of hunting and writing, fishing vessels, variety of lethal tools (variety of sporting rifles), Hemingway was seen as an example of a pace setter in the history of safari hunting industry but there were others elsewhere who developed rivalry skills (e.g. Theodore Roosevelt, Peter Cap stick). In Southern Africa, Frederick Selous (1875-1917) emerged as a serious contender Millais [3]. Bulpin [4] illustrated what a lone hunter could do and not do to the local communities and the environment. But what are some of the drivers of the hunting industry? And what are some of the costs associated with the hunting industry? Safari hunters cherish the exotic lifestyles, exotic romantic flares, exotic fantasies, the glitz and glamour in some of the world's finest places besides the ultimate destinations where they would have chosen to ply their craft. The leisure time that

they get outside formal engagements is devoted to writing the fascinations they come across and about this there is more in the bookshops and libraries than in the hunters themselves. These allures often sucked in more devotees to the noble profession of Safari hunting. Safari hunting has flourished through time albeit with characteristic bottlenecks.

Foreign hunters must go through "hunting outfitters", such as safari companies, and purchase packages to hunt game, often the rarer species. But local hunters, who are mostly in search of biltong and venison, are far more prevalent and often arrange hunts privately with game farmers. They usually target common

game such as impala, steenbuck, bushbuck, springbok, warthog, bush pig, kudu and eland. Illegal bush meat hunters use a mixed bag of extraction techniques in (Table 1). In their service to the ideals of Safari Club International Club charter, Professional hunters and their clients help flush out bush meat poachers and traffickers. Gandiwa [5] has reported on the selection of wildlife species important for bush meat in southern Zimbabwe. As it emerges from the hunters themselves, some regions are more interesting than others and there are reasons for this. A photo gallery is provided from the old and current Safari hunting experiences in order that others to learn a page and compare this with experiences gathered from elsewhere (Figures 1 & 2).

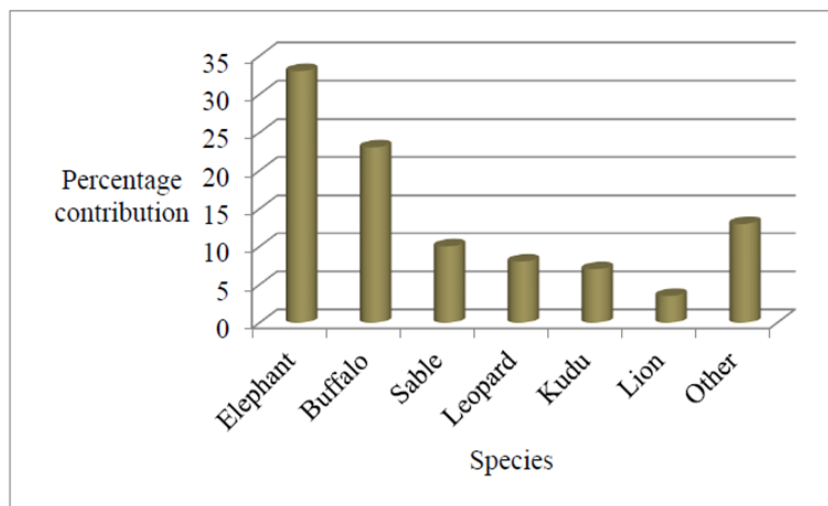


Figure 2: Percentage contribution of various wildlife species to the profitability of Safari hunting in Zimbabwe.



Trophy lions



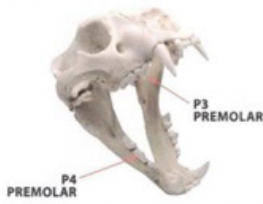
Trophy lion more than 6 years old

The primary quarry for most hunters is buffalo (Figure 2), which together with leopard provide the most dangerous hunting. It is the relatively high danger together with the reasonable cost that makes these two species popular.

In a 'hunters wonderings', The lion in South African Badminton Library, and 'The gun at home and abroad', Selous gives the most complete account of the lion and its habits and mode of hunting that has been written by any hunter of wide experience Mills [3]. Selous considered the lion as much of the worst when cornered. Lions never refuse battle when they are stopped. A danger rating in order of hunting is given in order of decreasing importance to; lion, elephant, rhino, leopard and buffalo. Other famed hunters place rhino, buffalo, and lion in

that order. Most hunters agree that buffalo is perhaps the most dangerous animal, because he is so hard to stop and offers generally so sudden, so determined and so unfavorable a target when charging Mills [3]. Buffalo usually conceal themselves after a wounding and charge suddenly and lethally. A charging buffalo does not take many seconds to cover 40 yards. More hunters may have been killed by the Cape buffalo than lions. A man may know all about hunting elsewhere, yet would make the most egregious mistakes in Africa, and perhaps never to see the animals to possess Mills [3]. Lion, elephant and sable antelope are very important to trophy hunting providing huge incomes for very limited off takes. Current CITES Quotas from Zimbabwe are: elephant 400, Leopard 500 and Cheetah 50 (Table 1).

Teeth



All 30 permanent teeth are visible between 15–17 months, sharp and white. At 3–4 years, all teeth are fully erupted and mostly white. Only a small amount of wear on incisors and canines. Little to no wear on premolars noted above.

By 5–6 years there is obvious wear on the canines, incisors, and all premolars. Canines are now yellow at the base and the longitudinal ridge is often chipped. Uncommon to have more than one canine broken or missing.

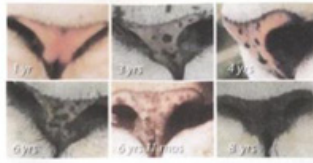
From 7–9 years all teeth show wear, with it being most obvious on the canines and incisors. The incisors show the most wear on the upper and lower outermost tooth, some often missing. Nearly all teeth yellowed and canines commonly broken.

Leg Markings



Due to scent marking conspicuous dark markings develop on the back hind legs. Most often found on breeding resident males between 3–7 years, they are most prominent between 4–5 years and taper off with age.

Nose Pigmentation



After about 3 years of age, the fleshy part of the nose begins to freckle or become liver spotted. As the lion ages, more pigmentation appears until the nose is entirely black by about 8 years. A general rule of thumb is that by 6 years noses are >50% black.

Traits NOT to use

A swayed back, donkey-skin coat color or elbow tufts are not related to old age.



Pocket Guide to Aging Lions

by Karyl Whitman, PhD

CONSERVATION FORCE

on behalf of Conservation Force
www.conservationforce.org

It is best to use a combination of traits to estimate a lion's age. A large degree of variation exists in the expression of each trait, therefore relying on only one factor can be misleading. The most reliable estimate will be the composite of five key areas: the mane, teeth, leg markings, nose color and facial characteristics.

Mane Trends

As this one male shows at different ages, between 1–3 years, the mane around the neck is longer and darker than on the shoulders, but by 3–4 years the areas are similar in length and color. The chest continues to darken with age. After 4 years, the chest and shoulders are often darker than the forehead and contrast significantly with the hair around the face. By 5–6 years the mane begins to fill in the area around the shoulder. Beyond 7 years, manes slowly lose condition.



Trophy lion ageing criteria

Immature: 3 and 4 years

3 and 4-year-old males are not mature. Their skeleton will continue to grow for another year. The chest is more broad than a 2-year-old, but does not have the breadth or bulk of a 5-year-old. Mane development is highly variable. The 'mohawk' is visible on the forehead and the shoulder area and area behind the ears has not filled in yet.



Nose Pigmentation:
3 yrs: 15–30% nose black;
4 yrs: 25–50%

Mane: Mohawk & shoulder patch present.



Chest and shoulder can be darker than neck and forehead.

Teeth: Typically white with minimal yellowing. Little wear except for slight chipping on the longitudinal ridge on the back of the canines—if any teeth are not fully erupted he is younger than 3 years.



Adapted from: Whitman, K.L. & Packer, C. 2007. A Hunter's Guide to Aging Lions in Eastern and Southern Africa, Safari Press, Long Beach, CA.

Mature: 5 and 6 years

5 and 6-year-olds are in their prime, fully grown, and massive, especially in the shoulders. Foreheads and chest are broad and manes usually are well developed.



Nose Pigmentation:
5 yrs: ~50% of nose is black (range 35–60%)
6 yrs: ~60% of nose black (range 37–85%)

Teeth: Canines are yellow at the base, light at the tips, and the back ridge is slightly worn or chipped. Unlikely to have more than one canine broken.

Incisors are still fairly white, rarely missing, and will show a small amount of wear.



Mane: By 5½ years the forehead section is fully filled between and behind the ears. By 6½ years, the mane is fully developed; the shoulders are filled in and the mane is nearly continuous from the ridge of the back to the chest.

Aged: 7+ years

Fully mature and massive, muscle tone declines with age so they may appear smaller than younger males. Hair on the muzzle begins to thin by about 7 years and becomes progressively "pock-marked". Mane fully developed with ends mostly smooth but begins to look fuzzy around 7 years. Greater than 8 years, the mane loses condition, may thin, hair ends split, and length shortens as lion loses condition.



Muzzles and flanks can be heavily scarred.

Whisker spots more difficult to discern >9 yrs and lions begin to look slack-jawed in expression.

Teeth: Conspicuously yellow teeth, with all showing heavy wear. Canines often broken and incisors may be missing.



Nose Pigmentation:
7 yrs: ~50–85% black
8 yrs: 75–100% black
10 yrs: 100% black

© 2010 Conservation Force



Trophy Cheetah



Trophy tuskless elephant



Trophy Bull elephant



Trophy buffalo bull

Imperfections in Safari hunting industry

Zimbabwe follows the principles of best practice in International Wildlife Safari Hunting. Its hunting clients participate in Safari Club International SCI [28] to gain honors'. Despite this glory some animals and even hunters and their clients go on with injuries after a futile and or fatal safari hunt (refer to accidents and obituaries in "The African Hunter

magazine 2012"). The fault may not be with the regulations themselves but rest squarely with the tools of hunting that suffers imperfections. On this, manufacturers pass on the blame to the odd professional hunter who takes it upon himself to shelve hunting rules while doing duty. Who then is right and is to be believed? The blame game approximates euphoria of a Gypsy lady playing Russian roulette from the hip with no firm start/endpoint (Figure 3).

Hunting Perceptions

Big game hunting is a controversial issue in contemporary Southern Africa due to the dwindling number of rare and endangered animals. The heated debate about the ethics of hunting invariably draws an emotional knee-jerk reaction from hunters and humanitarians. Increasing percentage of safari hunting proceeds are claimed to go towards conservation. From the standpoint of the economic and environmental impact of hunting the sport is necessary for the survival of species and not simply as a modern day horn and tusk-measuring competition. There are more game animals in Zimbabwe now than 150

years ago (Figure 3). Towards the middle of the 19th century, wildlife had no economic value. At that stage there were only 5000 elephant Zimbabwe Parks and Wildlife [6]. But in 1920 the government intervened and established game reserves. Hwange National Park (Figure 3) was the first gazetted national park with about 1000 elephant at the time but the population has since increased to more than 50000 in the same park. Ironically conservation efforts have been successful to the degree of causing overpopulation.



Figure 3: Parks and Wildlife Authority controlled areas showing road links and aerodromes in Zimbabwe.

Forms of Sport hunting in Zimbabwe

- Bush meat hunting by local citizens includes commercial cropping. This applies to impala, warthog and bush pig which breed very rapidly and have a low economic value for other forms of hunting.
- Sport hunting by both local citizens and some foreign clients. This involves moderate off take by hunters who are interested in the hunt as a form of recreation rather than trophy or meat hunters Sport hunters usually pay less for the hunt than trophy hunters but select or are directed to

non-trophy animals [2,7].

- Trophy hunting by foreign clients. This is the most financially rewarding use of an individual animal, but quotas have to be kept very low in order to maintain quality. Origins of hunters are as follows: USA 50%, Germany 15%, and Spain 11%. Trophy hunting is monitored by Zimbabwe Professional Hunters Association, Professional Guides Association, Safari Club International and Zimbabwe Parks and Wildlife Authority. International conventions that regulate wildlife trade are employed e.g. CITES.

Hunting justification

Who said hunting needs justification? It is the essence of life driven by DNA instincts to collect food, live, merry and survive and it embodies sound recreation to most ages of human beings. Hunting is as old as humankind. The Eskimo of the Arctic Circle, Red Indians of the Americas, The Pygmy of the Congo, the Semai of Malaysia, the Aboriginal communities of Papua New Guinea, Australia and New Zealand and, the Bushman of the Great Kalahari have been bound by ancient old ideas, traditions and customs centered on the exploitation of wildlife for human progress. Hunting is a birthright. The evolution of hunting strategies has given humans better opportunities to shape and grasp more efficient tools and get more food and recreational opportunities. Hunting encounters with monsters and wild animals are common in folktales across cultures Japanese and Korean cultural monsters in Google [7]. African folklores have many mind warping monsters and wildlife species that range from the wacky to the profound. In Zimbabwe, African cultures are identified by affinities to particular wildlife species and their ecological roles. Culture of world peoples would not be complete without monsters, wildlife and their scary stories. The anecdotes of wildlife species and their behavioral patterns have been monetized in the new vibrant successful African movies that mimic Hollywood (see Nollywood films) wide screen films/ DVDs. A Safari hunt invokes mind twist and mind blast in one bow. It is jaundicing to win over the odds of the wilderness to achieve masculinity egos but below are some highlights of what the 'yo-yo' is really about.

- i. What pay stays
- ii. The weakest animals are removed
- iii. Necessary to hunt beautiful animals in the record book and preserve trophies
- iv. Successful hunters are true gentlemen of the first order
- v. The thrill of masculinity affair and ego
- vi. The wish to live out a fantasy of hunting tradition
- vii. There is hunting and there is real hunting in the savage and untamed wild
- viii. Show of angels taming the demons in the savage wild
- ix. About constant change in wild outfits
- x. Easily combines with photo tourism
- xi. There is real hunting and there is no experience fallback

Without any natural predators and with the introduction of artificial water certain big game animals need to be culled in order to maintain the overall welfare of the particular species that share its habitat. A certain percentage of elephant and other species must be removed from the population each year and it is logical to monetize the deaths for conservation objectives.

Positive benefits

There is raging debate on the high streets and backstreets in the missionary work of Safari hunting. Strong hunting lobbyists suggest the following winning points:

- a) Masculinity ego testing

- b) Recreational opportunity
- c) Land use option
- d) Increase value of land
- e) Career opportunities
- f) Use of marginal land
- g) Raises conservation value of species
- h) Game watering improved
- i) Education
- j) Early warning of uncontrolled burns
- k) Early warning of illegal activities
- l) Illegal activity mapping
- m) Disease surveillance
- n) Trading opportunities
- o) Foreign currency income
- p) Downstream occupations
- q) Employment
- r) Culture and lifestyle promotion

Negative benefits

This is where the quarry of the battle has to be won between rightists and pacifists in order to save Noahs' species from extinction. It depends on who has a louder voice and a vantage position on the ladder to save wildlife species from extinction. Who said humans should not eat bush meat and the braai boerwors and let alone put on leather shine at 'Grand Slams' on the high streets and backstreets? It is unequivocal in the eyes of rightists that wildlife should be utilized with caution-Quota, otherwise why should animals have speed, wings and flight distance? For all the evils of Safari hunting in its exceedance, the human DNA should be blamed for exposition of behavioral instincts to gather food, warmth materials and fulfil key functions of an organism. An organism should be capable of eating, locomotion, defecations and reproduction and with humans, "reason".

The anti-lobbyists look at themselves in the mirror and at their positions with suspended lenses in the following manner with hunting:

- a) Associated with greediness
- b) Associated with corruption
- c) Exploit the animals then move on
- d) Environmental pollution e.g. lead
- e) Wildlife disturbance
- f) Expensive land use option
- g) Expensive recreational opportunity
- h) Removal of keystone/breeding species
- i) Erosion of the gene pool

j) Culture erosion

The anti-hunting lobbyists use Sculley's concepts Sculley [8] of the power of man, the suffering of wild animals to portray a call for mercy to wildlife. Such a doctrine calls for animal liberation and an animal manifesto that portrays the rights of wild animals not to be hunted. An evil genius theory unmasks the animal manifesto to the elementary question; do animals

have rights and a legal standing? Scully's arguments have been used to advance a ban in fur trade across the globe. There is need for a moratorium with Scully who has not had opportunity to witness firsthand the amazing powers of the CAMPFIRE [9] philosophy in turning around livelihoods of the 'hobo' in the most impoverished enclaves and in the salvaging of wildlife from the jaws of poachers.

Hunting Rule Book

The rule book of hunting is the single most important quotient in Safari hunting that guarantees the safety and survival of a hunting party and ensures hunting success and satisfaction of adventure. Here no superstitions or horoscopes hold. Depending on one's origin some superstitions reign supreme to prevent oddities. Some hunters believe that passing a sporting rifle to other persons diminishes luck during a Safari hunt. Still others believe that it endangers the person engaged to hunt. The hunting magazines are full of hunters' names that neglected the hunting rule book to their own peril and never made it home for family occasions. Some of the hunting rules have been formulated by hunters themselves when they hit a roadblock. In savage wild Africa the Big Five treats each hunter on merit and depending on the degree of intrusion and provocation. In the imponderable forest ('gusvu') of western Zimbabwe famed hunters have ended hunting expeditions riding on lion backs holding the tail and ears to a convenient position and pleading for mercy. This suggests that the pursuit of hunting knowledge is now a global enterprise to save lives. Hunting rules are summarized below but they need adaptations to suit local situations and the gatekeepers.

- a) Meticulously follow hunting rule book in all its forms
- b) First aid kit a must
- c) Protocols on ballistic science and theory should be

ruthlessly followed

- d) Track game on foot the real way and carefully (Figure 4)
- e) Ears, eyes, nose and reason should be fully employed
- f) Understand adequately wind direction and movement patterns
- g) Stealth stalking
- h) Quick decisive action
 - i. Take binoculars, telescope, cell phone and GPS
 - ii. Take rangefinder and a buck skinning panga (bush craft knife)
 - iii. Take spare ammunition and have fall back plans arranged hierarchically in the mind
 - iv. In steep terrain shoot 400-500 yards
 - v. Level terrain shoots 3000 yards
 - vi. Identify sex age classes of species correctly
 - vii. Take a couple of deep breath. Get out of harm's way (Figures 4 & 5).



Figure 4: Hunting party under strict protocol of hunting rules.



Figure 5: A hunter readies himself for ululation at the SCI podium trophy parade.

Drivers of Safari hunting

On a road in free-wheeling the wilderness littered with detours and barriers and even speed limits with stealth quantum

encrypted speed detectors one should recognize sustainability challenges and the upper hand of illegal traffickers in shadowy archways. The limits to goal setting in Safari industry (Figure 6.) include the following:



Figure 6: ‘Dlulamiti’ namesake for record trophy ivory collected in the Gonarezhou National Park in the mid 19th century (After T. V. Bulpin, 1954, 1968).

- a. Trophy quality
- b. Hunting Quotas
- c. Safari Packages
- d. Customs and Clearance
- e. CITES regulations
- f. Wildlife population data
- g. Biodiversity
- h. Effective communication with base station

Frederick Selous [3] recounted encounters where hunters fell harm’s way in the savage wild. To those who fell, the words “may his spirit find hunting country in the next world” applied. For the many fortunate hunters it’s a “screw it and do it again” masculinity ego. Tragedy falls when hunters run out of ammunition and a failure to reload and get out of harm’s way. Most seasoned hunters and sporting rifle manufacturers allege that victims would have neglected the important rule book. The Cape buffalo is regarded as one of the most dangerous of Big Five (lion, leopard, Cape buffalo, elephant and rhino (not on hunting list)) in Safari hunting history.

The Safari Club International (SCI) championship wars and the glory

Many gridlocks must be forced open to arrive at the SCI high trophy parade and champagne toast.

A selection at the parade implies recognition of sportsmanship at the highest level and the potential for great influence among peers. SCI is an International organization composed of hunters SCI.org [28]. This club has more than 50 000 members and 180 local chapters. The uniting force is freedom to hunt (Figure 3) and promotion of wildlife conservation worldwide. The organization takes an active stance against poaching. SCI has a special awards issue which honors trophy hunters who rise to the podium each

year to grace the champagne toast. The club has devised its own scoring and record book system which ranks the biggest tusks, horns, antlers, skulls and bodies of hunted animals. Hunters are rewarded with trophies for completing a “Grand Slam”, a special awards issue and SCI’s Record Book of trophy animals (Table 2) (Figures 6 & 7). Highest scores go to the animals with the highest measurements. This SCI Book ranks every species of game animal using the SCI official scoring method. Countries with trophy animals selected for the ‘Grand Slam’ take pride in their conservation record and want to maintain the record as a marketing gimmick and crowd puller. Some of the trophy animal ratings in Zimbabwe are given in (Table 2) (Figure 6 & 7).

Table 2: Trophy quality assessment criteria in some Safari hunting areas.

Species	Trophy Quality Find Attributes					
	Very Poor	Poor	Fair	Norm	Best	Rare
Impala	<2h turns		2.5h turns		>3h turns	>3h turns
Buffalo	20"-27"		30"-37"		40"-47"	
Kudu			22"		26"-27"	
Elephant					70-85kg	90kg

NB: 70-90kg one tusk still preferable in a sport hunt

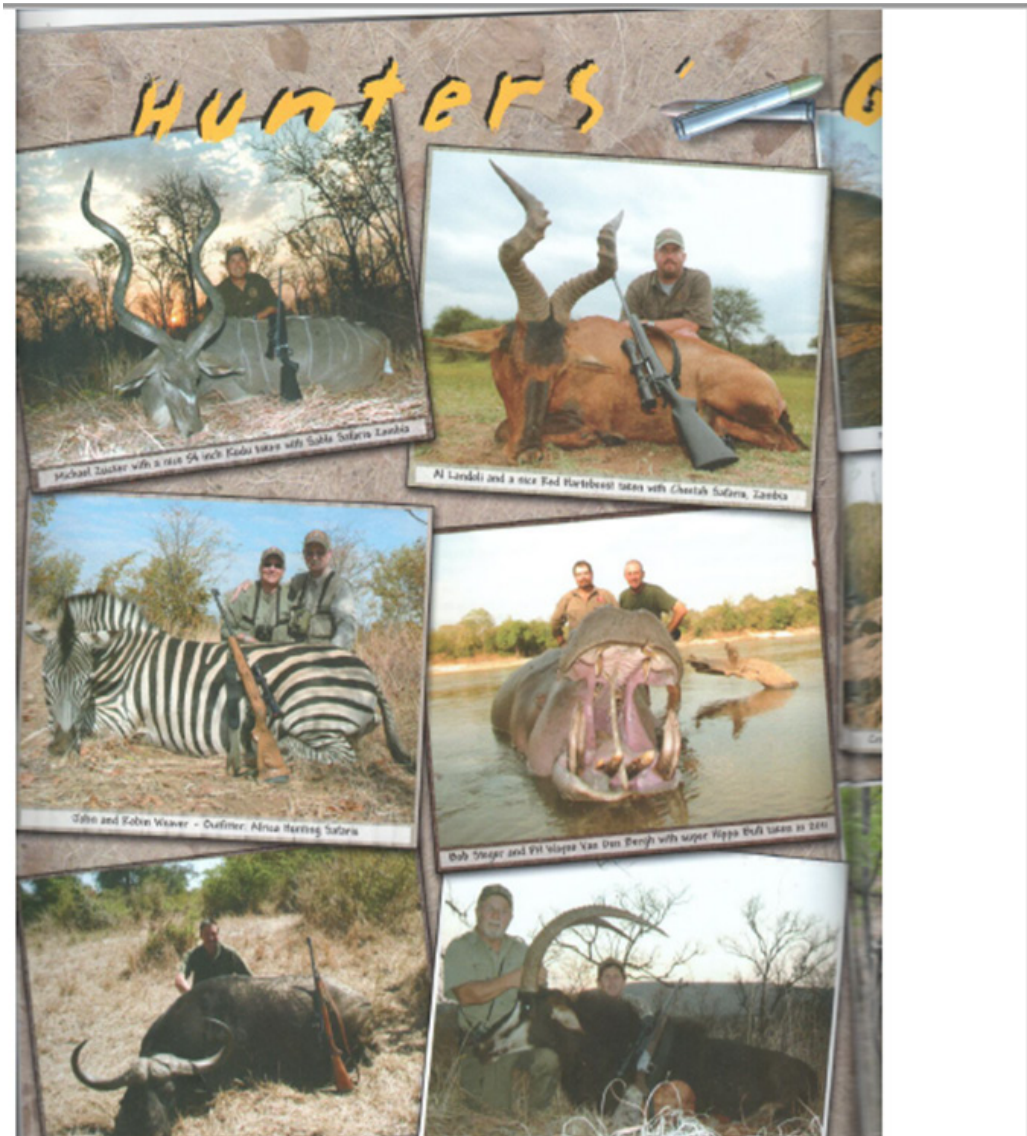


Figure 7: Wildlife trophies at the end of successful hunts in Zimbabwe (After African Hunters Magazine, 2012).

Zimbabwe embodies the true essence of wild Africa. Tracking the Big Five on foot the real way through savanna thorny scrub and Jesse bush is one of the most fantasies, thrilling and daring

wildlife experiences. Hunting on foot approximates hunting the real way the way it was with our ancestors' eons of years ago (Figure 8).



Figure 8: A mounted trophy specimen paraded at the exquisite SCI Convention for elite hunters (After Wikipedia SCI.org., 2012).

Logistics in safari hunting

To be upfront with the rigors of Safari hunting one needs a radar chart of the actual scene with its drivers.

- i. Selection of hunting operator
- ii. Written contract with hunting operator
- iii. Secure daily hunting rates
- iv. Secure number of hunting days
- v. Secure number of species to be shot
- vi. Secure price for each species
- vii. Secure charge for non hunting visitors
- viii. Secure cost of transfers from port of entry to point of departure
- ix. Secure treatment and departure of trophies
- x. Secure any incidental charges likely to arise (Figure 9)

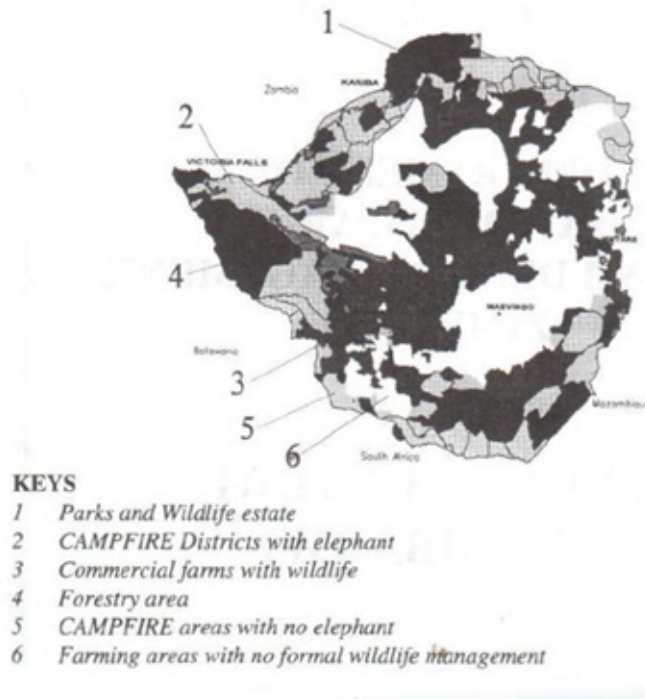


Figure 9: Hunting areas in Zimbabwe (After Ministry of Environment and Tourism, 1997).

Responsibilities of Hunting Operator

Hunting operators stumble across some unworthy bureaucracy wherein clients are left kicking the door for commencement of the actual hunts while no effort is spared to miss the scheduled hunts in anticipation of permits. Somehow the hardball is the responsibility of many supply factors on the radar chart in the following manners:

- i. Obtain licenses
- ii. Obtain licenses and permits
- iii. Supply camp accommodation
- iv. Supply catering
- v. Supply services
- vi. Supply trackers
- vii. Supply skimmers
- viii. Supply vehicles
- ix. Supply all services
- x. Supply professional hunter

Weapons Prohibition and Restrictions for Hunting and Hunting Ballistics

The free for all in Safari hunts is not attainable and not even desirable Zimbabwe Firearms Act [10]. It would defeat the central tenets of Safari hunting anchored on sustainability and 50 environment 50 human if there was unregulated control of firearms. Safari industry needs visible and anonymous referees for social progress. African dangerous game elephant, rhino, buffalo, lion, leopard, etc. require massive shock and deep penetration (Tables 3 and 4). A special class of cartridges for hunting was gradually developed in the monstrous .600 and .577 Nitro Express and slightly smaller though no less powerful cartridges of .45, .475 and .500calibre. Such cartridges push bullets of 1-2 ounces at velocities 2000 foot pound per second achieving deep penetration. They were the most powerful in the world until late 1950's when they were surpassed by the .460 and .378 Weather by Magnum. Since then the .458 Winchester Magnums has almost become the standard cartridge for dangerous African game. Many British experts for big game (thick skinned) still prefer the .35 to .375 calibers from the deluge of a wide spectrum of rifles. Since then cartridges generate great recoil. African rifles are relatively heavy short barreled, and designed for fast handling in close quarters at very short ranges. Ballistic [30] coefficient-a number given a bullet which tells how its shape, length, diameter and nose design

affect its stability, velocity and range against air resistance. The participants in the lucrative Safari hunts visit championship fairs and conventions for recognition but like in any championship wars there are victims. This is what makes the Safari hunting industry challenging and compelling in order to achieve the constant drive to ensure purity of hunting techniques and the ultimate enhancement of an admirable safety record.

Ballistics and sporting rifles limitations

- a) Ballistic coefficient
- b) Bullet construction
- c) Velocity
- d) Caliber
- e) Bullet mass
- f) Knockdown power
- g) Different types of rifles/actions
- h) Rifle actions
- i) Reloading expediency
- j) Different types of telescopic sights (Table 3)

Table 3: Checklist of equipment used to collect specific categories of trophy animals.

Species Group	Species category	Sporting rifle	Munition	
				Minimum Calibre
1	Game birds	Shotgun.22	BOR Shotgun No 7-8	
	Guinea fowl	Shotgun.22	BOR Shotgun No 7-8	
	Francoline	Shotgun.22	BOR Shotgun No 7-8	
	Ducks	Shotgun.22	BOR Shotgun No 7-8	
2	Rodents	Shotgun.22	BOR Shotgun No7-8	
	Daisies	Shotgun.22	BOR Shotgun No7-8	
	Rabbits	Shotgun.22	BOR Shotgun No7-8	
	Porcupine	Shotgun.22	BOR Shotgun No7-8	
3	Reptiles	Shotgun.22	BOR ShotgunNo7-8	
	Snakes	Shotgun.300	Rifle.270&.308	
	Crocodile			
4	Primates	Shotgun.22	Rifle.22LR&.22Hornet	
	Monkeys	Shotgun.22	Rifle.22LR&.22Hornet	
	Baboons			
5	Cats	0.27	Rifle.306&.308&.375	H&Hmagnum
	Cheetah	0.27	Rifle.306&.308&.375	H&Hmagnum
	Leopard	0.3	Rifle.306&.308&.375	H&Hmagnum
	Lion			
6	Dogs	0.243	Rifle.308&.27	H&Hmagnum
	Wild dog	0.243	Rifle.308&.270	H&Hmagnum
	Foxes	0.243	Rifle.308&.270	H&Hmagnum
	Jackals			

Outback Hunting

7	Hyaena	0.243	Rifle.308&.270	H&HMagnum
	Brown hyaena	0.243	Rifle.308&.270	H&HMagnum
	Spotted hyaena			
8	Antelopes	0.243	Rifle.308 &.270	H&Hmagnum
	Small antelopes	0.375	Rifle.308 &.270	H&Hmagnum
	Large antelopes			
9	Hippo	0.27	Rifle.375&.458	H&Hmagnum
10	Rhino	CITES	CITES	CITES
	white Rhino	CITES	CITES	CITES
	Black Rhino			
11	Elephant	0.375	Rifle.458&.375 H&H Magnum	

Requirements of cartridges used on game in Zimbabwe

This section provides a comparison of two types of cartridges of choice to the Zimbabwe hunting public. The areas of application of soft and hard nose cartridges are considered below:

- Large dangerous game
- Lion
- Large framed-soft skinned animals
- Small soft-skinned animals
- Hunting regulations in Zimbabwe
- Bow hunting in Zimbabwe (Table 2 & 4)

Table 4: Checklist of equipment used to collect selected groups of trophy animals.

Target species category soft skins	Sporting rifle Minimum calibre
Impala	0.243
Warthog	0.243
Common duiker	0.243
Bushbuck	0.243
Reedbuck	0.27
Waterbuck	0.27
Hard skins	Minimum calibre
Buffalo	0.375
Hippopotamus	0.375
Giraffe	0.375
Zebra	0.3
Eland	0.375
Lion	0.3
Elephant	0.458

Table 2: Types of cartridges and their implications on trophy animals.

Types of cartridges	
Soft nose	Hard nose
Applies to all large mammals	Applies to very large mammals
Preserves trophy quality	Reduces trophy quality
No penetration power	Large penetration power
Bursting shock waves	Penetrates bones & skulls

Catalogue of hunting issues

- Prohibition or restriction on use of certain weapons for hunting
- Safety precautions
- Hand gun hunting in Zimbabwe
- Shot placement

Common problems with sporting rifle stoppage in action during hunting

- Gas
- Hard extraction
- Hang fire
- Faulty round
- Faulty magazine
- Trajectory failure

Efficiency and Safety Issues In Hunting

The regulations and their forcing powers are provided in the Parks and Wildlife Act 1990 Chapter 134 with amendments 1996 Third Schedule Statutory Instrument S3 of Firearms Act 10:09 revised edition 1996.

In accordance with the provisions of sub-section (2) of these regulations-

1. No person shall use for hunting purposes-

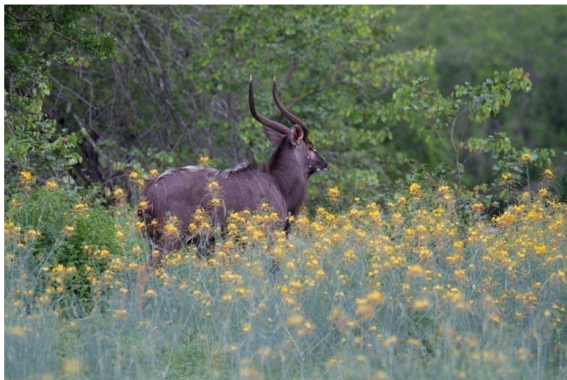
- Any rifle or shotgun capable of firing more than one cartridge as a result of one pressure on the trigger; or
- Any weapon with a barrel less than five hundred millimeters in length; or
- A pistol or revolver or a bow and arrow.

2. Sub-section 2 is not applicable to the state

3. PART A

- Buffalo
- Elephant
- Hippopotamus

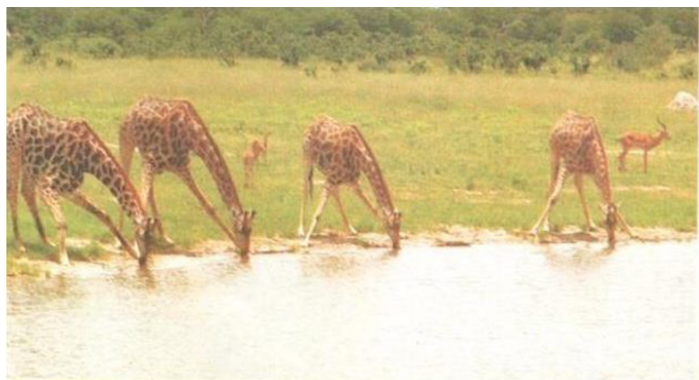
Any person who hunts any animal specified in Part A of the Third Schedule shall use a weapon having a rifled barrel and propelling a projectile of not less than nine comma two millimeters in diameter with not less than five comma three kilojoules of energy at the muzzle (+/-3910 ft/lbs)



Trophy kudu



Mixed trophy animals: wildebeest, giraffe and zebra



Trophy giraffe and impala

4. PART B

- Eland
- Giraffe
- Lion

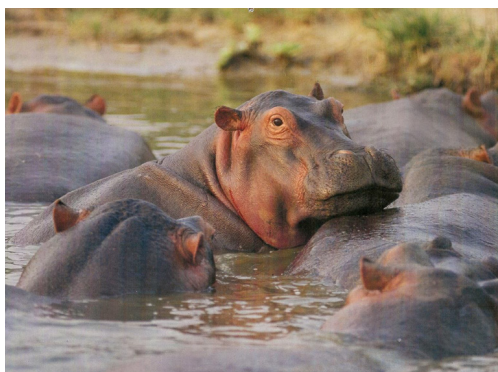
Any person who hunts any animal specified in Part B of the Third Schedule shall use a weapon having a rifled barrel and propelling a projectile of not less than seven millimeters in diameter with not less than four comma three kilojoules of energy at the muzzle (+/-3180 ft/lbs)

5. PART C

- Crocodile
- Kudu
- Leopard
- Sable
- Waterbuck
- Wildebeest
- Zebra
- Hyena
- Nyala



Trophy waterbuck



Trophy Hippopotamus



Trophy sable

Any person who hunts any animal specified in Part C of the Third Schedule shall use a weapon having a rifled barrel and propelling a projectile of not less than seven millimeters' in diameter with not less than three kilojoules of energy at the muzzle. (+/-2220 ft/lbs).

6. PART D

- a) Bushbuck
- b) Bush pig
- c) Impala
- d) Reedbuck
- e) Warthog

Any person who hunts any animal specified in Part D of the third schedule shall use a weapon having a rifled barrel and propelling a projectile of not less than five comma six millimeters in diameter with not less than eight hundred and fifty joules of energy at the muzzle (+/-630 ft/lbs).

Any person who hunts any animal except a bird or an animal which is specified in the Third Schedule (excluding Parts A, B, C, D) shall use:-

- a) A weapon having a rifled barrel and propelling a projectile of not less than five comma six millimeters in diameter with not less than eight hundred and fifty joules of energy at the muzzle; or
- b) A smooth bore weapon with an internal barrel diameter of not less than fifteen millimeters and propelling shot of an average diameter of not less than five millimeters

Any person who hunts any bird shall use a weapon having-

- a) A rifled and propelling a projectile with not less than one hundred and fifty joules of energy at the muzzle; or
- b) A smooth bore weapon with an internal barrel diameter of not less than ten millimeters

Wounded Animals

Wounded animals count against the bag and must be entered on the permit. The hunter must follow any animal wounded while it remains in the area allocated to the hunt, but may not hunt such an animal outside the area prescribed.

Wounding of dangerous game

The wounding of elephant, buffalo, lion, leopard or hippopotamus' must be reported to an officer of the Parks Authority within 24 hours.

Specially protected game

If specially protected game is killed or injured except in terms of a permit must be made to either the Parks Authority or the Police and various obligations then follow.

Species and sex of animals

The onus is on the hunter to determine the species or sex of any animal he/she intends to hunt/shoot, and Parks Authority will not accept responsibility.

Protection of vegetation

It is an offence to damage the vegetation.

Hunting assistance-Dangerous game animals

Should hunters be inexperienced in the hunting of dangerous game animals, they are requested to seek advice of Parks Authority which may authorize the services of a licensed hunter.

Hunting restrictions

While hunting it is important not to shoot:

- a) Within 400 m of main roads
- b) From a motor vehicle and/or boat
- c) Within 1 km of a recognized waterhole
- d) No hunting within 1 km of camp
- e) No hunting outside prescribed area
- f) No domestic animals are allowed in hunting areas
- g) Females with dependent young at foot
- h) At night that is half an hour after sunset to half an hour before sunrise.

Un shot animals

No refunds will be made for any unshot animals, nor will Parks Authority consider the resale of any unshot animals during the season.

Sale of hides, skins and trophies

The hunting permit issued will when endorsed by an officer of the Parks Authority permit to sell hides, skins and trophies from that specific hunt.

Export of Trophies

Trophies for exports should be accompanied by a letter to the Zimbabwe Veterinary Officer stating that the trophies have been treated. On receipt of this letter the Veterinary Officer should issue a Veterinary Export Certificate required by Customs officials at departure/Entry points. All CITES import/Export Regulations should be complied with (Refer to Control of Goods (Import/Export) Wildlife Regulations S.1. 557 OF 1982).

Sustainable Management of Natural Resources: Legislation, Standards and Conventions

Hunting involves the actual off take of animals and to avoid over utilization and unethical hunting behavior the Zimbabwe Parks and Wildlife Authority which is the custodian of wildlife in Zimbabwe takes a regulatory role to ensure sustainable wildlife utilization within the hunting industry. To achieve sustainable conservation certain regulations were enacted to deal with such issues as the issuance of professional and learner professional hunters and guides licenses, awarding of hunting concession areas, allocation of hunting quotas, issuance of hunting and fishing permits, conducting the actual hunt and movement of the wildlife and wildlife products. Hunting is regulated by Acts of Parliament that include the Parks and Wildlife Act 20:14 of 1975 which is the main act, the Trapping of Animals Control Act and the firearms Act. There are several other ancillary statutory instruments such as S1 362 of 1990 and Amendments that govern trade and movement of wildlife and wildlife products within the outside Zimbabwe. Zimbabwe is also a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and hence trade in endangered species of both fauna and flora is controlled by CITES regulations.

Here legislation and other regulatory framework seek to curb unsustainable practices in natural resource extractions but also seek to offer incentives and protection mechanisms. The Zimbabwe Parks and Wildlife Management Authority is the custodian of all wildlife in Zimbabwe. Hunting is regulated by Acts of Parliament that include the Parks and Wildlife Act [11] which is the main act, the Trapping of Animals Control Act and the Firearms Act. Other Statutory instruments include the S1 362 of 1990 and Amendments that govern trade and movement of wildlife and wildlife products within and outside Zimbabwe.

Zimbabwe is party to the Convention on International Trade in Endangered Species of Wild Fauna (CITES) and trade in endangered species is controlled by CITES regulations.

Because of greediness, corruption and other unethical behavior in the hunting industry, legislation and hunting industry standards have been put in place to ensure sustainable utilization within hunting industry. The principles that guide wildlife hunting are as follows:

- i. Safari Operators license
- ii. Professional hunter and Learner Professional Hunter licenses
- iii. Guide licenses
- iv. Award of hunting concession areas
- v. Allocation of hunting quotas
- vi. Issuance of hunting permits
- vii. Issuance of fishing permits
- viii. Supervision of actual hunts
- ix. Supervision of wildlife and wildlife products

Zimbabwe Parks and Wildlife Management Authority applies to CITES for following Quotas:

- a) Elephant
- b) Leopard
- c) Cheetah
- d) Crocodile

Wildlife species not on CITES Quotas

Undeniably illegal extractions have at certain times had an upper hand to wipe away interesting and lucrative wildlife species for the shadowy black markets. The shadowy market presents itself as a spirited force to get the last valuable animal before they move on to the less valuable animals. In other cases some animals are still seen as vermin that must be eliminated on sight because of their voracious feeding habits and domestic livestock losses. Wildlife species that are really threatened with extinction have been flagged for protection and removed from hunting lists. Every hunter should be able to identify them in the wild and save them from a muzzle loader Estes [12].

- i. Black rhino
- ii. White rhino
- iii. Roan
- iv. Lichtentestein's hartebeest
- v. Wild dog (Painted Dog)

General hunting requirements

The hardball in the Safari hunting industry is played with its own rules to safeguard the resource base as follows:

- i. Safari Operators in Zimbabwe should have a Tour Operators License number that should quoted be at all times.
- ii. Safari Operators should hold a lease or agreement on a suitable concession with accompanying quota of animals
- iii. Safari Operators process all paperwork and permits at all times
- iv. Bow hunts and handgun hunts require special permits on experimental basis
- v. Hunting operators required to provide local Zimbabwean Professional Hunters who should accompany foreign hunters in Zimbabwe.

Professional Requirements for Hunters/Guides In Zimbabwe

Habits and Habitats

Learner students and Professional hunters/Guides should have basic ecological and veld management principles that are at the core of understanding wildlife behavior. Estes [12] has provided a useful guide on the habits and habitats of wild animals. This understanding makes a crucial difference in surviving the odds in the savage wild. Knowledge of the phenology (onset/fall of leaves, flowers, and ripened fruit) of indigenous trees often makes a crucial difference in wildlife species congregations (Table 6). Opportunity is made available to answer the awesome questions that the client should ask (Table 6).

Animal behavior and distribution

This section deals with wildlife identification, behavioral, feeding, reproductive and adaptation strategies that also make a crucial difference in surviving the odds in the wild. The wildlife behavioral attributes are exploited in organized hunts but these same attributes are also exploited by bush meat hunters at varying degrees of sophistication (Table 6). Opportunity is made available to answer some basic questions that the client should

ask. All animals are capable of escape, warning and if this does not work to their comfort zone attack is the ultimate prize. A useful guide to the identification and behavior of wild animals is available in Estes [12] (Figure 10).

Table 6: Fruit trees important for congregations of wild animals.

Common name	Local name	Scientific name
Baobab	Muwuyu	Adansonia digitata Ziziphus
Buffalo thorn	Muchecheni	mucronata
Cape fig	Muonde	Ficus capensis
Hissing tree	Muzhanje	Uapaca kirkiana
Marula	Mupfura	Sclerocrya birrea
Monkey orange	Mutamba	Strychnos madagascariensis
Ebony	Mushuma	Diospyros mespiliformis
Wild plum	Mutsubvu	Vitex mombassae



Figure 10: Cape Buffalo occur in large herds for most of the time and trophy animal identification maybe an uphill task

Hunting knowledge:

- a) Significance of Professional hunter
- b) Ethics
- c) Rules
- d) Tourism bodies Communication techniques
- a) Non verbal
- b) Verbal
- c) Cross cultural

Background natural history of a country/region/town/village

- a) Location and neighbors

- b) Geology
- c) Soils
- d) Hydrology
- e) Animals
- f) The people
- g) Cultures
- h) Archaeology
- i) Economic activities
- j) Education
- k) Politics

- l) Religion and culture
- m) History
- n) Politics
- o) Legislation and hunting laws
- p) Places of interest
- q) Itinerary interpretation
- r) Conservation biology

Guiding techniques

- a) Briefings
- b) Travel and transfers
- c) Route planning
- d) Route procedures
- e) Map reading/GPS
- f) Duties and responsibilities
- g) Vehicle safety procedures
- h) Tourism guiding mock project
- i) Sporting rifle training
- j) First Aid with Red Cross /other

Books to read

- a) Habits and habitats
- b) Firearms
- c) Ballistic science

Hunting Quotas

- a. Safari Areas
- b. Campfire Areas
- c. Game ranches
- d. Problem Animal Control (P.A.C.) operations
- e. Terms and conditions for Rural District Councils (RDCs)
- f. S. C.I. Trophy measurements
- g. Export procedures
- h. Final project
- i. Proficiency tests
- j. shooting, trophy, client hospitality, taxidermy and travel procedures
- k. Internship Attachments

Syllabus

Examinations (January/February)

- a) General paper
- b) Environmental and hunting Law
- c) Habits and habitats
- d) Firearms

- e) Ballistic science

Professional associations

Professional Guide training

- a) Significance of Professional tour guide
- b) Ethics
- c) Rules
- d) Tourism bodies

Communication techniques

- a) Non verbal
- b) Verbal
- c) Cross cultural

Background natural history of a country/region/town/village

- a. Location and neighbors'
- b. Geology
- c. Soils
- d. Hydrology
- e. Animals
- f. The people
- g. Cultures
- h. Archaeology
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- j. First Aid with Red Cross /other

Books to read Syllabus

- a) General paper
- b) Law
- c) Habits and habitats
- d) Firearms
- e) Ballistic science

Examinations January/February

Professional associations & membership fees

Final Project

Proficiency field tests

Internship Attachment

The screening of a successful Safari hunter/Guide is provided by referees who are themselves champions, league title medalists, trophy holders who know exactly what it takes to win in the savage wild. The following points apply to the ordainment of a professional hunter/Guide:

- i. Zimbabwe Parks and Wildlife Management Authority

is the official licensing agency of Professional Hunters in Zimbabwe.

- ii. Candidates write Learner examinations
- iii. Successful candidates are apprenticed for two years
- iv. Must pass shooting tests conducted by Zimbabwe Shooting Federation.
- v. Successful candidates should pass oral interview
- vi. Candidates should proceed to a proficiency test
- vii. Successful candidates become professional hunter.
- viii. Professional hunter carry following:
 - a. plastic disk cards
 - b. photograph of Professional Hunter
 - c. License number
- ix. Learner license holders carry following:
 - a) -paper license with personal details
 - b) -License number

Categories of protected areas in Zimbabwe

- a. National Parks
- b. Safari areas
- c. Recreational parks
- d. Sanctuaries
- e. Botanical gardens

Functions and requirements for categorized protected areas

a) National parks

Responsible ecotourism and conservation of wildlife species. prohibition of certain acts in national parks.

Powers of minister in relation to national parks applies.

b) Safari areas

Powers of Minister in relation to safari areas applies.

Lease of sites and grant of hunting rights in Safari areas

Control of hunting in and removal of animals or animal products from a Safari area and sale of animal products

Permit to hunt in or remove animals or animal products from a Safari area and to sell animals or animal products

c) Sanctuaries

Powers of Minister in relation to sanctuaries

Control of hunting in and removal of animals or products from a sanctuary and sale of animals or animal products

Permit to hunt in or remove animals or animal products from sanctuary and sell animals or animal products.

d) Recreational Parks

Designated land for purposes of recreation

e) Botanical Gardens

Control of introduction into or removal of plants in a Botanical Reserve/Garden

Specially Protected Animals

- 1) Knowledge of specially protected animals
- 2) Control of hunting of specially protected animals and possession of or sale of specially protected animals and products thereof
- 3) Permit to hunt or sell live specially protected animals and products thereof
- 4) Trophies of specially protected animals which are state trophies .

Specially Protected Indigenous Plants

- 1) Knowledge of specially protected plants
- 2) Control of picking of specially protected indigenous plants

- 3) Permit to pick specially protected indigenous plants.
- 4) Control of sale of specially protected indigenous plants
- 5) Permit to sell specially protected indigenous plants

Hunting, Removal, Viewing and Sale of Animal Products

- a) Control of hunting, removal and sale of live animals and animal products
- b) Prohibition and restriction of hunting and removal of animals in defined areas by the Minister
- c) Killing or injuring of animals in self defenses
- d) Destruction of dogs
- e) Report of killing of animals or injury of animals other than dangerous animals
- f) Report of dangerous animals
- g) Control of Safaris
- h) Professional Hunters License

Safari hunting regulations

- a) Forest Act
- b) Hunting, Removal, viewing and sale of animals
- c) Classification and description of traps
- d) Import and export (Wildlife Regulations S. 1.76 of 1998
- e) Firearms Act Chapter 10:09
- f) Trapping of Animals Control Act Chapter 134
- g) Parks and Wildlife Act 20:14 1996. Revised Edition
- h) Parks and Wildlife General Regulations (Statutory Instrument 362 of 1990)
- i) Professional Guides License
- j) Power of lawful hunters over hunters
- k) Prohibition of sale of meat of animals unlawfully hunted
- l) Sale of animals born or hatched and held in captivity
- m) Sale and manufacture of articles from trophies
- n) Purchase of live animals and trophies
- o) Declaration of trophies (Figure 11).

Hunting takes place within National Parks Estate Safari Areas, Communal land and Commercial farmland. There are 17 safari areas within the Parks Estate (Figure 11), comprised almost entirely of land unsuitable for agricultural purposes and much of it also unsuitable for intensive responsible ecotourism. Five of these Safari Areas are set aside for citizen sport hunters, and the remainder is aimed at the international market being either leased for citizen sport hunters, and the remainder is

aimed at the international market being either leased to local professional hunters who then package and sell the individual hunts to foreigners. Individual hunts in Safari Areas may be sold

by the Parks and Wildlife Authority to foreign hunters by public auction. The purchaser of auctioned hunts has to arrange his own safari or simply hunts alone.

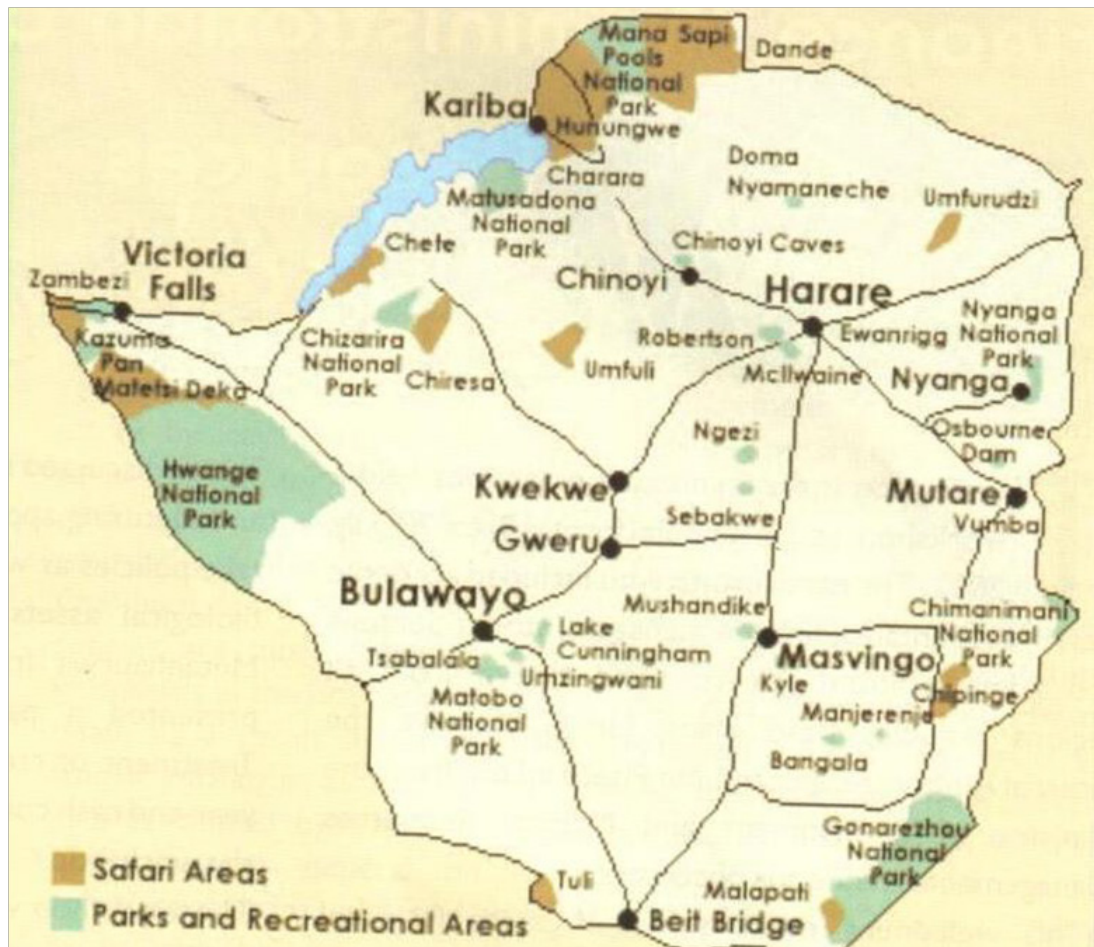


Figure 11: Distribution of Safari areas in Zimbabwe.

Game ranches

Multi-species use of bush land must yield higher returns of meat than single species utilization by cattle. By 1960 the first game ranches were in operation with meat production as their goal. Veterinary and hygiene considerations limited the expansion of the game industry and safari hunting took off in Zimbabwe in mid 1980's. In the more arid parts of the country live wildlife sales and sport hunting yielded US\$1.1/ha while cattle ranching yielded US\$0.6/ha. Private ranches offered "Plains Game" only. Cheetah and leopard were included in hunts on private ranches due to the need to protect livestock from predators. After years of predator elimination on ranches these were re-introduced and are now offered for hunts to make the safari business more profitable in a variety of bags. Sable, leopard, tsessebe, kudu and bushbuck are popular trophy animals with eland, zebra and wildebeest close behind. Citizen recreational hunts target kudu, warthog, eland and impala. The addition of wildlife to cattle ranches improves viability and biodiversity conservation.

On a cattle ranch with wildlife there are niche overlaps and separation into short grass grazers, tall grass grazers, low level browsers, high level browsers, rooters and omnivores. About 12 large mammal wildlife species feed, live, feed on same species. Some large mammal species exercise complimentary grazing

and browsing. There is also differential and non duplicating feeding habits that make co-existence of wildlife species in one area. The habitats of wildlife and cattle ranches include swamps, rivers, dams, plains, thickets, woodlands, and evergreen forest patches. Wildlife species are ecologically competitive with cattle suggesting maximization of rangeland resources.

CAMPFIRE Areas

CAMPFIRE (Communal Areas Management Program for Indigenous Resources) [9] Areas occur in Communal Land. Communal Land is traditionally held by indigenous people (Figure 12). The State grants authority to the Rural District Councils to assume responsibility for the management and utilization of the wildlife in their areas. Safari hunting on Communal Land has been developed from a CAMPFIRE Project concept in the mid 1980's. CAMPFIRE partially replaced Problem Animal Control that sought to compensate victims of property loss and life. Thanks to sport hunting by high paying clients, local communities have benefitted schools, clinics, roads, medicines, bush meat protein and cash dividends to households. As a result poaching has declined as communities self report and take responsible positions to look after wildlife. Rural District Councils sell the hunting rights, on behalf of the local communities to a local safari operator who then package the quota into bags and market the hunts (Figure 13).

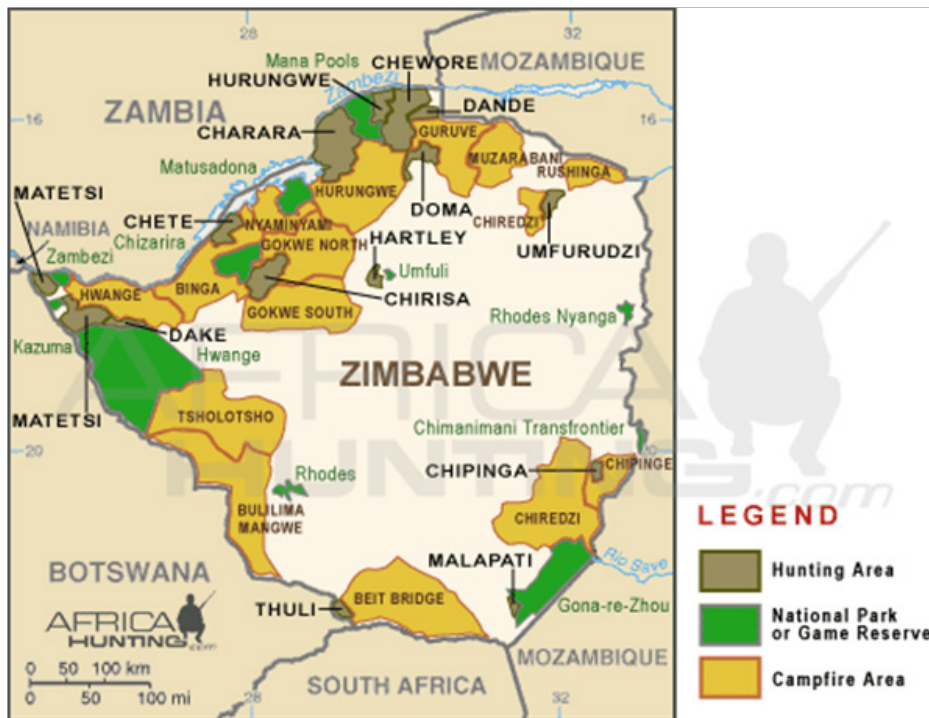


Figure 12: Major CAMPFIRE Districts in Zimbabwe (After CAMPFIRE Association, 2007).



Figure 13: Hunting takes place on various categories of land.

State Safari Land

This is land in marginal areas, owned by the State and generally unsuitable for agriculture (steep slope, stoniness, high erosion hazard and less than 400 mm precipitation) but ideal for wildlife management. State Safari Land includes Chewore, Chete, Chirisa, Dande, Matetsi, Deka, Forestry Land and Malapati among others.

Communal Land

Communal Land is traditionally held by indigenous people (Figures 13). The State grants authority to the District Councils to assume responsibility for the management and utilization of wildlife in their areas. With assistance from Zimbabwe Parks and Wildlife Management Authority a quota is set and offered

by tender to the hunting operators. The successful operator markets the hunts abroad and the funds earned from trophy animals are paid to the District Council which distributes them to families in the appropriate area. A portion is retained for community developments such as:

- i. Grinding mills
- ii. Construction of schools and clinics
- iii. Fencing arable land for protection from wildlife
- iv. Installation of boreholes with engines for domestic and wildlife use
- v. Cattle rearing projects

Drivers of Safari industry

The sustainable use of wildlife is a source of low-fat organic meat without hormone emplacement and other unpopular residues i.e. 'GMO'. Wildlife production and its harvesting is the first step in the production of quality protein to satisfy the growing world requirements from the present 4 billion people in 2011 to 7 billion by 2014.

Many variables are required to change the equation on the ground to attain trophy quality. The seasons, the bush craft knowledge, the auto ecology of species, wildlife management and hunting technology all help to shape and refine hunting success and trophy quality. Safari models can be refined, tweaked and rejigged to ensure satisfaction. Hunters are always in search of silver bullets. As a result, hunters feel safaris are really good, so good that they cannot wait until the next day so that they do it again, screw it up and yet do it again. They would not do it if they did not feel so good.

At every turn in the Safari industry, hunting is a risky business and unpredictable recreational opportunity. Lativers [13] outlined some of the accidents and their causes in the hunting industry. Most of the accidents seem to concern lack of attention to hunting rules and failure to organize oneself when confronted with a deadly risk. Machado [14] suggests that hunts do not always go the way one expects. To this extent Bulpin [15] in his book 'hunter is death' shows an illustration of a savage attack on a hunter on the cover page. A hunting intuition in others suggests that the odds encountered in a hunt are chance events that may not repeat in other adventures. In a true gist of gritty hunting, uncertainties arise from quality of munition to reloading opportunity and human skill is always the major element in achieving a desirable effect on a standing Cape buffalo or any dangerous wild animal. When a wounded buffalo darts for cover in a thick Jesse bush uncertainties arise during follow-up. The gain in a future hunt may compensate all the hazards and setbacks of a previous hunt. As a result hunters take it upon themselves to always get an extra bounty. In addition, the hazards encountered in a hunt are what make hunting challenging to a hunter. No hunter should expect chariots of trophies on a silver plate. In a hunt the client and his mentor should always expect the unexpected and the collection of trophies is a pinnacle achievement that is always celebrated with champagne toasts. The winner is always remarked as 'a true gentleman of the first order' and herein lies a true champagne toast at the podium.

Collateral Safari hunt opportunities

One of the advantages to hunting buffalo is the occasional opportunity to take other species such as eland or kudu. Collecting a honey badger or porcupine or bat eared fox should stand as one of the windfall benefits to the world when one least expected it. Collateral safari opportunities raise the bar in the maximization of a quota in the hunting bag. Most hunts return a bag of unshot animals that were originally on the hunting list. It is common sense to believe that species avail themselves spontaneously on occasions that enable decent photographic opportunities. A rare to find natural history study is appropriated. The photo panoramas jog memories about what animals think about themselves and what humans can do with them. This allows for a gallery of photo shots that extend the

original scoop of a hunt by exhibiting solo in a parallel photo arrangement itinerary of trophy quality animals at fairs. This allows a hunter to be champion the second time thus enhancing a double trophy glory. With this one earns innumerable media interviews and authority. This should invoke others to be outdoor the next time for showmanship. In a hunt the big five present themselves as iconic species and hunting them remains a privilege. Collateral safari hunt opportunities turn themselves unexpected when 'soft bossed' buffalo is put down instead of the usual 'hard bossed' type for the league title in the presence of a bounty of other species. Because these would be difficult to pick out in a head. In essence collateral safari hunting presents itself as profit taking ventures and life well spent in the savae wild.

Hunting trophy quality measurements

The final selection in the championship in the Safari hunting league title is done on the basis on who has more. The following hard criteria apply:

- i. Body length
- ii. Tail length
- iii. Hind foot
- iv. Head length
- v. Shoulder height
- vi. Body girth
- vii. Tooth dentition and wear
- viii. Tooth succession
- ix. Tip to tip horn gap length
- x. Nose tip to end of tail tip
- xi. Horn length (outside inside)
- xii. Number of twisted turns (horn)
- xiii. Basdal circumference (horn)

Non-consumptive wildlife tourism is historically a high risk low profit enterprise, usually requiring high capital and quality staff inputs. Wildlife tourism may be affected by criminal activities or social upheaval however remote from the actual tourist destination. Wildlife by definition refers to indigenous living things.

Land use policies are strongly influenced by technical, economic, political and attitude considerations. Wildlife is not permitted in regions 1, 2 and 3 where rainfall is above 400 mm and soils are fertile or of good agronomic standard. Wildlife is a legitimate component of land based production systems in Natural Regions 4 and 5, but is also an important 'crop' on other marginal agricultural land or in initiatives complimentary to conventional agriculture in other regions.

Wildlife is a natural component of multiple land use in grassland ecosystems on all continents, including the savannas of Africa. In 40% worlds land surface it is the only land use option in many such ecosystems. The Zimbabwe Farmers Union (ZFU)/ Commercial Farmers Union (CFU)/CAMPFIRE/ Zimbabwe Association Tourism Authority Safari Organization (ZATSO)/Agricultural Rural Development Authority (ARDA)

organizations represent combined constituents which operate the wildlife industry in approximately 80% of the country, whereas Zimbabwe Parks and Wildlife Authority manages wildlife resource in less than 15% of Zimbabwe (Figure 3). These organizations contribute to rural development, employment creation, resource conservation and alleviation of poverty. The Zimbabwe Parks and Wildlife Act of [11] amended in 2001 has for more than 20 years provided a regulatory framework of the wildlife and Safari industry.

Fishing

In many parts of the world fishing in the Safari industry is as old as humankind and has seen thorough developments through time. Ernest Hemingway ably demonstrated sport fishing with marine blue fin and other species in the deep and remote oceans where the ordinary folk feared venturing Rodriguez [1]. For achieving this human feat, Safari hunting was demonstrated the first time in ways that inspired future generations. Masculinity ego was demonstrated the first time to the world by Ernest Hemingway Rodriguez [1]. Hemingway would use as his toolkit shotgun, spear and even automatic rifle on the shark, whale and blue fin among other species Hendrickson [2]. In Zimbabwe this has been limited to rod and line fishing, spear fishing, catch and release fishing and the little developed traditional fishing, "saila". These opportunities are limited to tiger fish, bass fish, kapenta fish, trout fish in the large and small dams and freshwater rivers with tournaments being oversubscribed and catches being awesome on all occasions.

Angling on very large rivers (Zambezi) or Dams is permitted from a boat or the bank.

15 fish per day may be caught, and only 15 fish are permitted to be removed from the area on departure. International boundaries should not be crossed. Not more than two boats at a camp are permitted.

Trends in the 'see-saw' or 'yo-yo' of the Safari Industry may be determined by the following variables:

- i. CITES
- ii. CAMPFIRE
- iii. Wildlife censuses

- iv. Hunting Quotas
- v. El Nino droughts
- vi. Climate change
- vii. Cyclonic floods
- viii. Zoonotic diseases
- ix. Safari hunting skills
- x. Safari club fairs
- xi. Regulatory framework

Types of Safari industry

The Safari industry plays its ball in a virtual landscape littered with possibilities that stretch the body in diverse media as follows:

- a) Aerial
- b) Aquatic
- c) Marine
- d) Terrestrial

To a large extent all the media offer unique viewing opportunities of landscapes, wildlife, rural and urban terrains and great and astonishing wonders of the world such as the Victoria Falls in Zimbabwe and the Great Zimbabwe Ruins.

Sound Wildlife Management principles

Wildlife and hunting decisions in Zimbabwe should always be made within the framework of adaptive management WWF [16]. The establishment of a hunting quota is arrived at after considering better information that reduce the uncertainty of outcomes by adapting habitat changes, illegal extractions, populations, climate and ecosystems. The integration of hunting based information sources that include census data, life history and monitoring programs together with management information should always provide a lead in feeding new data to improve the ability of science to inform future actions. Scientific approaches enable optimization of sustainable hunting efficiency that allows for viable population maintenance (Table 2). In addition, scientific approaches and information underpin this iterative decision- making process of quota setting.

Safari Hunt Revamping Strategies

While scathed Safari hunters fail to reach epic gripping glories. The losers are tweaked and re-jigged by folks in hunters associations who earn another opportunity to screw it up and do it again for a better turn of fortune the next time. Hunting in itself is a dynamic business with its own valves, screws and bearings to make it better at all times and to be rewarding to whomever participates in it. The anatomy of Safari hunting receives surgical interventions at all levels to keep the ball rolling but its' a hardball in the savage wild.

A quota in Safari hunting presupposes a profitable venture to a hunter. A hunter should be able to break-even and even make a living from a quota. Adventurers sometimes view profits as a collateral benefit; the main thrust of a Safari would be anchored on the fun and hype at every turn of opportunity in the intricacies of the sport. For eons of years sport hunting was a preserve of the die-hards who enjoyed adrenaline spiking challenges with local communities, wildlife encounters, manufacturers and business chain suppliers. These attributes should ring true in the Karoo dry veld and Kalahari virtual sands, thorny scrub, thickets, plains, Forests and even deserts [31].

Anyone who emerges unscathed should straight away head for thanksgiving to the most high for another bounty. Safari Club International keeps a meticulous record of hunts, GPS fix, hunter, location, species and trophy quality measurements. The trophy measurements may be selected for trend analysis in the areas hunted. A global flux of trophy quality is then maintained to serve as benchmarks in future hunts. The difficulties encountered in hunts are logged and used to refine and re-jig future generation of Safari toolkits. The databases serve as

expert systems or gateways in the assessment of an individual country's conservation status. The barriers to entry in Safaris rendezvoused are explored and distributed among hunting associations for mitigations.

Occasionally, erstwhile professional hunters and their associations support training of a future generation of professional hunters and guides. Hunters associations support conservation scientists training with bursaries and attachments, sometimes lucrative job emplacements. This makes it possible to maintain continuity and competitiveness in the business of Safari hunting in future generations. Local conservation programs aimed at particular wildlife species or wildlife in general are supported and environmental program initiatives are funded. Burning environmental issues are taken to their hilt at many forums. Aggressive educational campaigns often include tailored ecology, environmental law, ballistics science and bush craft courses. These ambitious training programs help minimize field injuries, fatalities, the wounding of animals by raising the bar in the specialist interest areas, compliance with regulations, hospitality and the business of running viable Safaris.

The Zimbabwe Parks and Wildlife Authority takes hunting seriously in all its forms and levels. The Parks and Wildlife Authority takes pride when its hunting clients excel at trophy exhibitions. The winners in the trophy quality contests reflect the achievements of conservation agendas on the ground. These successes paint a brighter day to the country's treasury account that seeks to make the country a hunter's paradise, and a destination of first choice. So, should all countries worldwide.

Safari Industry Social Responsibility

Safari industry social responsibility

Few books deal with this worthwhile subject. Hunting as a topic has been associated with social responsibility in the impoverished areas where hunters conduct their business. The local communities envy the hunters with their up to date modern lethal technological devices that have a dramatic knock down power that instantly brings food to the high table. To the local communities hunting evocates association with aristocratic and sci-fi lifestyle, adequate protein, good health, longer life span, reduced incidences of diseases, rare to find gifts and temporary employment and access to animal curio artifacts fantasy. At times transport is generously provided to traditional events and clinics.

Through the bygone centuries noteworthy books emerged written by hunters themselves and others accompanying expeditions, motives showing local communities in utter despair and madness from the ravaging droughts and the relief brought by the presence and occupation by hunters' (see Paul Kruger, Stevenson Hamilton, Frederick Selous, Jules Gerard, Thomas Victor Bulpin (Bvekenya, The ivory trail, The hunter is death books) GOOGLE autobiographies). Of course there have been many worldly important Germany, French, Spanish, Portuguese, Japanese, Chinese, Korean, Mongolian and American Safari hunters among a few who did exactly the same to the local communities in the areas they operated. Such emotive assistance invoke admiration and it goes both ways wherein local communities are always really ready to give a hand by nursing injured hunters and even burying the dead on their land. Sometimes local communities were viewed as worthy accessories as mules transporting the hunters' loot overland (e.g. ivory, horns, ornamental plants, animal pets, fish and even in rare circumstances precious minerals. Local communities provided the badly needed labor to skin animals and process biltong and venison. Additionally, local communities provided expert plant identification, wildlife species identification, tracking expertise and with precision local geographical knowledge and even the vital local bush craft. Thus local communities were perceived by every hunter as a vital cog in the wheels of Safari hunting. There were no quotas given to the hunters up to about the 1970's. Rare to find ivory (e.g. 'Dlulamiti' namesake elephant in the Gonarezhou National Park (Figure 6) was hunted out before the 1970's.

In a reciprocal approach the local community's indigenous knowledge systems contributed to a 50 environment 50 human responsibility but may be not nowadays. It was a full circle of responsibility that fostered human understanding of the natural environment. There was no end game in itself. Safari hunting was Ball-Pac game that rolled through corridors of time as if to eternity.

The idea that more is more among hunters' needs elucidation in the light of enlightened ecological understanding but this aspect easily lends itself to redundancy and the alternative that less is more should be the way forward. More is more imply hunting inefficiencies characterized by leakages in the supply chain of trophies. Less is more imply maximization of income with a few trophies that are marketed to best advantage to maximize profit taking and this directs itself to 50 environment 50 human principles.

Bulpin [15] outlined the sexual passion hunters have with local beauty pageants often thinly dressed with assets to boot and with well built stature to home standards. The sexual fantasies and exploits of hunters have given rise to unexplained mixed blood in local communities. Selous described hunters who succumbed to exotic romantic flares as low immoral hunters and did not dispute their existence Mills [3]. On this Selous furiously defended colleagues actions by remarking "Hunters are neither Monk nor Saints" Mills [3]. Who said Safari hunters should have abstinence and stress when they are on a rendezvous of loot? Unlike today, a hunter's bounty was only limited by the size of his arms length, boots and not by "quota" as is now implied. Obviously far remote into the hinterland, hunters dig where they stand with one bow. Mixed blood offspring are a result of the surgical lust of fly by night visitors who are themselves required to cure the evil of hunter lone less. These are issues that have been kept under lid for a long time but pose great identity difficulties to the siblings. These developments reflect the undercurrents of the underbelly of professional hunters who must endure long periods of time outdoor. For all the evils of Safari hunting the blame game of exceedance in the DNA of professional hunters should be brought to scrutiny. Hunters merely seek to fulfill key functions of an organism that is eating, move, defecates and reproduce. To avoid pitfalls that always surround indiscriminate extraction of natural resources regulations and penalties are enforced. However, penalties' cause animosity whereas incentives cause cooperation.

Climate Change and the Extinction of Synergy in Safari Industry

The propensity for trophy quality championship wars at the Safari Club International should be viewed in the light of new information on the hazards of climate change. Many workers IPCC [17, 18], Jacobs [19], Kandji et al. [20], Le [21] suggest that climate change may be understated in the present circumstances of prediction. An analysis of long-term changes to precipitation suggests that no definite pattern of this phenomenon in Zimbabwe has been found as yet Mazvimavi [22]. Figure 14 shows the long-

term precipitation pattern at the major meteorological stations of Zimbabwe. The extremes of severe weather patterns may result in increased frequencies of severe droughts, surface water scarcity, wildlife deaths of principal grazing species and in some other year's cyclonic precipitation result in floods. Livelihood options that include among other things Safari hunting may experience bottlenecks during severe periods of environmental perturbations.

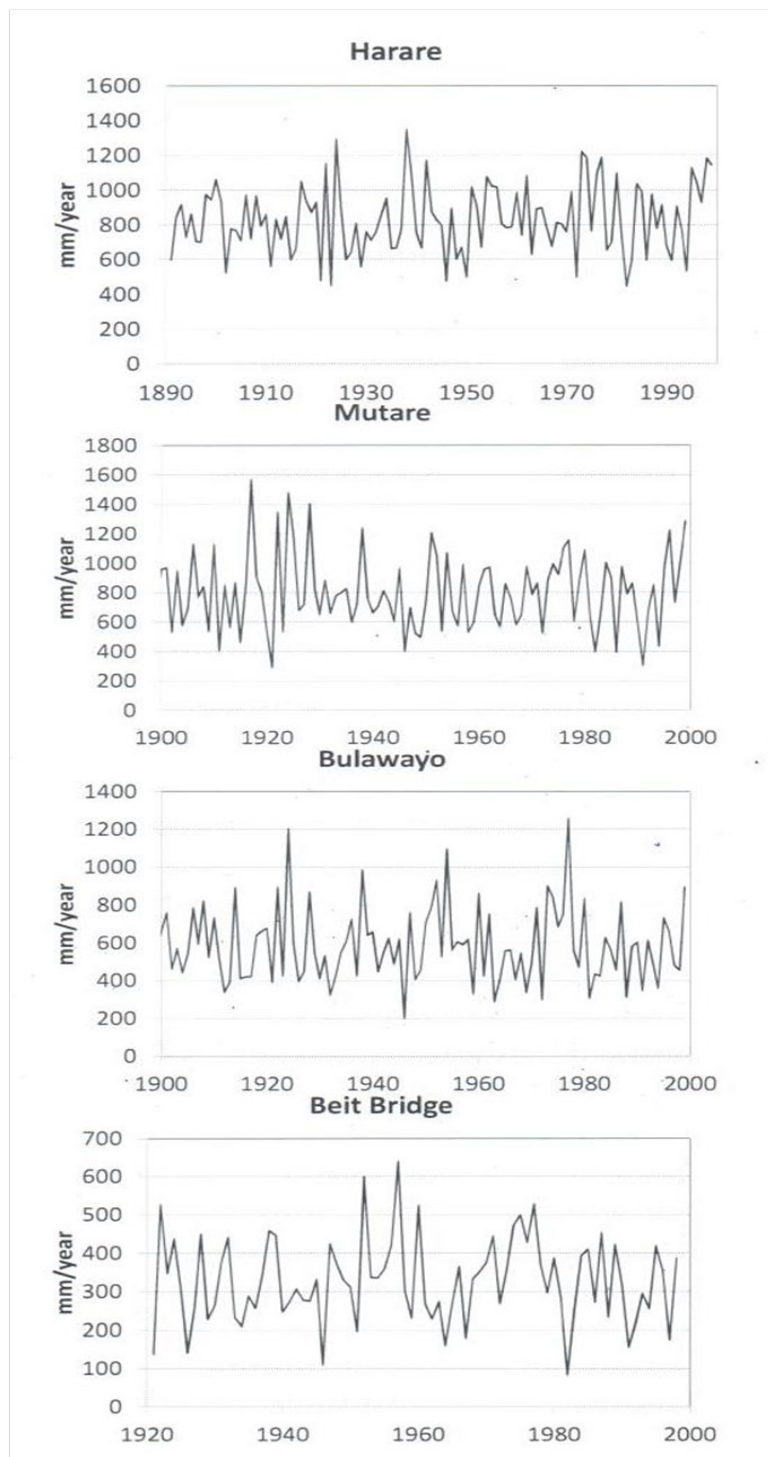


Figure 14: Variation of annual rainfall for Harare, Mutare, Bulawayo and Beitbridge (After Mazvimavi D., 2010).

Given the real threats of climate change some local communities have reported geobotanical, zoological, marine, and geomorphologic and livelihood changes. A detailed anthropological study on the Savoonga hunting community by St Lawrence University Environmental Studies Department suggest deep seated problems in the adaptation and subsistence economy of the Siberian Yupik community St Lawrence University [23]. The ecosystems impacts and adaptation study by [23] suggested that Savoonga hunters faced random and severe climatic changes. The Savoonga hunters hunt on the edges of the ice sheets for seals, whales and walrus. The US Department of Wildlife and Fisheries [24] indicated that anthropogenic environmental change may be associated with change on distribution and abundance of wildlife species. Among the other likely impacts in the USA are agricultural production changes, grasslands/livestock, water resources, forests, fisheries, wildlife, wildlife hunting opportunities and health [24]. The Associated Press on 04/10/2008 suggested that game fish were in jeopardy through wildlife displacements as habitat boundaries shifted for elk, mule deer, trout and ducks. Anglers and hunters took aim at global warming and suggested global action Associated Press [25]. St Lawrence University [23] suggests that hunting is a foundational activity that unites the local community and is central to the Siberian Yupik culture and identity. In sum, St

Lawrence University suggested that anecdotal evidence from local communities is indicators of future environmental trends and that to the local community the boat must be steered quickly in a new direction.

In Southern Africa, Tafangenyasha et al. [26] in observed that climate change was accompanied by sharpened human wildlife conflict and a deterioration in the social fabric as frequencies of droughts increased and livelihood strategies shifted as the spectacle shifted from the garden of Eden to the fall from it. As the severity of droughts intensified local communities prayed for rain to compensate material losses with spiritual gains Tafangenyasha et al. [26].

The example of Savoonga local community seems less adorable from the standpoint of strict protocols demanding case studies in same geographical zone. Climate change spares no one irrespective of geographical zone especially when the causes and mitigations are the same. Adaptation responses in the world's harshest Eskimo environment seem a good example when one wants a page to turn to in the tropics as an example of coping with the worst scenarios in savanna ecosystems. It would be folly and unscientific for us not to learn from one another. Global climate systems and dynamics are related and inseparable (Figures 15, 16).



Figure 15: Climate change prognosis presupposes that primates and scavengers prevail to the near exclusion of grazers and browsers (see Tafangenyasha et al., In press 2013). This file photo after Cavendish press from a location outside Zimbabwe).

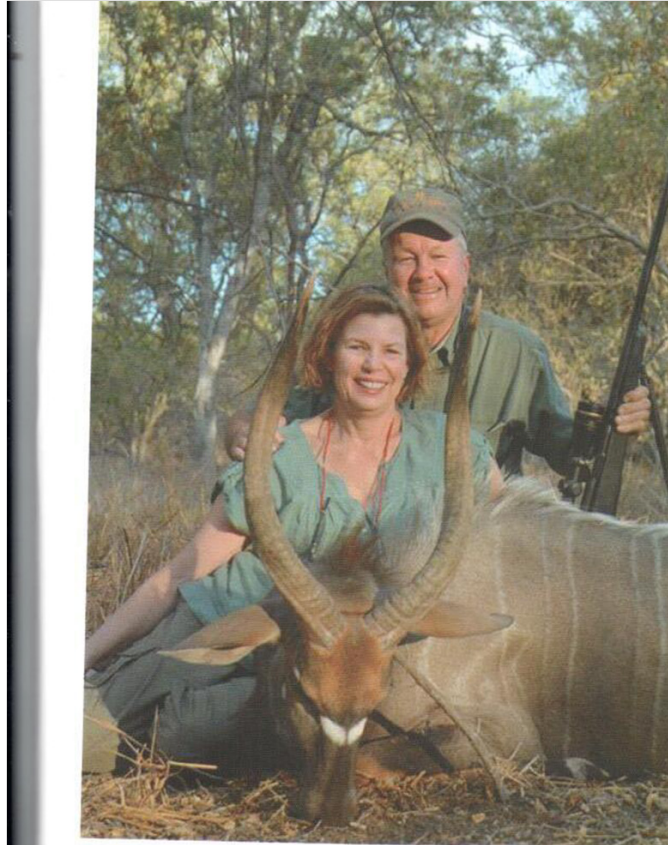


Figure 16: Elephant storm hunting table after getting wind that there was nothing on it for them.

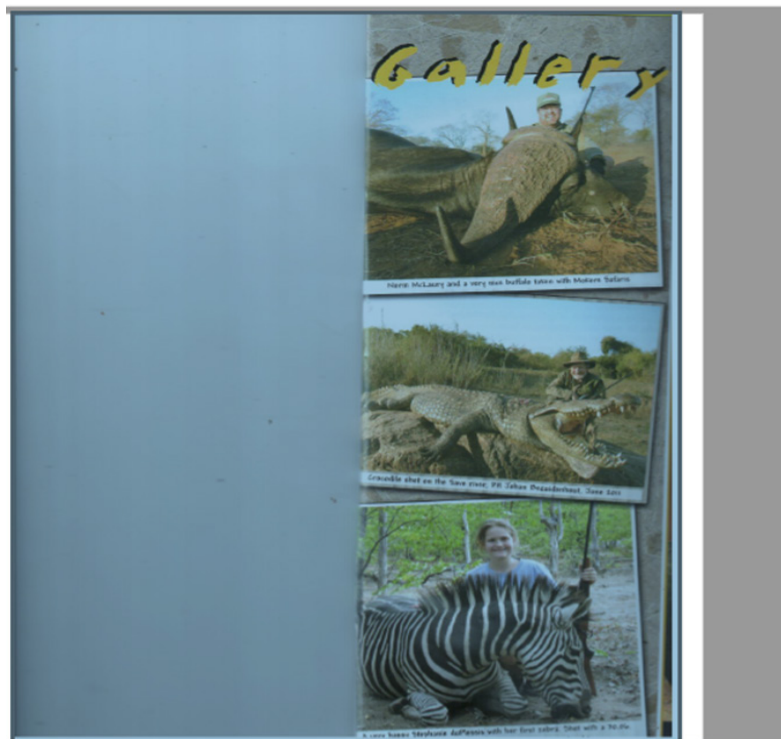


Wildlife trophy animals at the end of a successful hunt. (After African Hunters magazine, 2012).

Outback Hunting



Wildlife trophies at the end of successful hunts in Zimbabwe (After African Hunters Magazine, 2012).



Wildlife trophies at the end of successful hunts in Zimbabwe (After African Hunters Magazine, 2012).

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