THE SURPRIZING BENEFITS. OF LION SAFARI HUNTING (Rev. March 1, 2018)

Experts agree on the primary threats to African lion: loss of suitable habitat, loss of prey base, and conflict with humans and livestock.[i] These interrelated threats overlap. They are exacerbated by expanding human populations.[ii] Few lion still exist without management intervention to contend with these threats. Tourist safari hunting is an important management intervention that greatly counteracts those threats.

Tourist safari hunting[iii] protects and secures the largest share of lion and prey habitat. It underwrites most poaching control, incentivizes rural community tolerance, supports rural livelihoods, and significantly funds management authority operating budgets. It provides these benefits in parts of Southern and Eastern Africa where the most lion continue to exist. The benefits[iv] of tourist safari hunting counter the foremost threats to lion. Those benefits overwhelmingly account for the survival of most lion, habitat, and prey as well as the most lion population growth. Safari hunting is essential to maintain lion outside of national park boundaries as well as lion in parks when inevitably ranging beyond park boundaries.

Habitat Secured by Tourist Safari Hunting

Habitat loss is the "most powerful" threat impacting lion.[v] "In the face of expanding human and livestock populations, protecting habitat and prey populations is likely the most important single factor in the conservation of lions in Africa."[vi] The leading lion ecologists agree that the "most important benefit from an African conservation perspective is that trophy hunting maintains vast areas of land for wildlife, which is invaluable in an ever more human-dominated world."[vii]

Most lion owe their existence to countries that rely on safari hunting as a conservation tool, with Tanzania representing the world's largest lion population and Mozambique, Namibia, South Africa, and Zimbabwe assessed as having "increasing" lion populations by the IUCN *Red List*.[viii] In short, most lion rely on hunting area habitat thus would probably cease to exist but for hunting. "Love it or hate it, lions needed trophy hunting as much as trophy hunting needed lions."[ix]

The Ratio of Hunting Areas to National Parks in Hunting Countries with the Most Lion[x]

Country	Tanzania	Zimbabwe	Zambia	Mozambique
Size of Hunting Areas (km²)	~304,000	>88,000	~180,000	134,425
Size of National Parks (km²)	~58,000	~28,000	~64,000	87,806
Ratio of Hunting to National Park Areas	5:1	3.14:1	2.81:1	1.48:1

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Habitat contrast between Ibanda Game Reserve, Tanzania (hunting area) on left and communities on right (Mike Angelides)

Poaching Control

Safari hunting benefits the lion through financial support for anti-poaching, putting "boots on the ground," and as discussed in the next section, reducing rural communities' reliance on bush meat poaching.[xi] Hunting operators occupy their areas, pay hunting area lease, game, and other fees that government wildlife management authorities use to conduct anti-poaching patrols and purchase necessary equipment.[xii] Government management authorities typically direct most of their budget to ranger staff costs, and rely on these hunting fees to pay salaries and equip rangers. For example:

- **Tanzania:** The Tanzania Wildlife Protection Fund (TWPF) underwrites conservation efforts inside and outside protected areas in Tanzania. Over 80% of the fund is utilized for poaching control and conservation activities. Through 2016, approximately 80% of funding for the TWPF and the Tanzania Wildlife Division came from hunting fees.[xiii]

- **Zimbabwe:** The Zimbabwe Parks and Wildlife Management Authority (ZPWMA) directs almost 80% of its budget to staff costs and more to equipment and training.[xiv]

- **Mozambique:** According to Mozambique's National Administration of Conservation Areas, "Sport Hunting Revenues are used essentially to improve law enforcement in protected areas, hunting blocks and community programs such as Tchuma and Chipanje Chetu." From 2013-2015, this administration spent MTM 126,581,000 on poaching control.[xv]

- **Namibia:** Hunting fees (hunting area and game) are deposited in the Game Products Trust Fund (GPTF), a statutory fund used to support conservation and rural community livelihood efforts in Namibia. From September 2012 to March 2015, the GPTF has spent N$ 27,915,463.80 on poaching control activities.[xvi]

Further, hunting operators employ their own anti-poaching patrols to cover their hunting areas, reducing the government's patrol burden.[xvii] Operator expenses and contributions for their anti-poaching teams include: paying salaries for scouts and rewards for anti-poaching achievements; supplying rations and fuel for field patrols; providing equipment such as automobiles, boats, all-terrain vehicles, GPS, tents, and uniforms; and otherwise underwriting and coordinating financial and logistical support for on-the-ground anti-poaching units. The poaching control contributions detailed below describe only a sample of overall contributions by hunting operators. Their actual contributions are significantly higher.

- **Tanzania:** In 2016, Conservation Force audited 27 hunting operators, documenting the largely unreported benefits provided by safari hunting and lion hunting. Eleven operators maintain specific patrol records and recorded 7,170 patrol days in the 2013-2015 period (19.6 years of anti-poaching patrols). Operators reporting anti-poaching results accounted for 1,409 poachers arrested; 6,223 snares and gin traps collected; 171 firearms and 1,557 rounds of ammunition confiscated; 22 vehicles and 12 motorcycles seized; 670 bicycles seized; over 1,118 knives, machetes, spears, bows, and arrows confiscated; 65 canoes seized; and 216 fishing nets confiscated. In the 2013-2015 period, the operators spent approximately $6.7 million on anti-poaching and related road opening activities.[xviii]

- **Zimbabwe:** A recent ZPWMA survey of 18 hunting operators indicated that on average each hunting operator spends over $87,000 on law enforcement in their hunting areas annually. All the sampled outfitters have lion on their hunting quota.[xix] In Zimbabwe's communal areas, hunting operators lease concessions, pay fees, and share revenues with rural district councils and villages. The councils' share is directed in part to law enforcement and from 2010 to 2015, rural district councils spent almost $1.8 million on law enforcement.[xx]

- **Zambia:** In Zambia, a small sample of four hunting operators spent ~$202,000 on poaching control in their hunting areas in 2015.[xxi]

- **Mozambique:** In the 2013-2015 period, a sample of 13 hunting operators spent over $1.2 million on anti-poaching.[xxii]

2015 poaching control results by Rio Save Safaris in Coutada 9, Mozambique (Neil Duckworth)

Rural Community Programs

Rural communities bear the burden of living with dangerous and destructive wildlife which kill or injure family members and destroy their crops and livestock. "No one ever forgets a lion attack."[xxiii]

Rural people must have incentives to tolerate lion and steward prey. Communities may choose to exploit wildlife and habitat illegally through commercial bush meat poaching or logging if they are unable to

legally benefit from the wildlife. They retaliate more against dangerous wildlife, like lion, if they do not benefit from the species.[xxiv] Government-sponsored community-based natural resource management[xxv] programs (CBNRM) and voluntary hunting operator contributions provide cash, game meat, infrastructure improvement, and other benefits to rural communities to incentivize tolerance and control poaching. The community programs below are examples of CBNRM and operator contributions:

- **Tanzania:** Tanzania's Wildlife Management Area (WMA) program has increased the amount of protected habitat available for lion and other species by incentivizing the use of land for conservation over other land uses. There are currently 21 WMAs and another 17 being gazetted. Approximately 500,000 households participate in WMAs and receive a share of block fees, game fees, conservation fees, and other fees. $1,337,717 in revenue was generated by safari hunting in WMAs from 2011 to 2014.[xxvi]

  From 2013 to 2015, a sample of hunting operators spent over $3.125 million on community programs. This included over $250,000 for health care, $337,000 for education, $231,000 in cash from game fees, and $24,000 to build six local government offices.[xxvii]

- **Zimbabwe:** Under CAMPFIRE, approximately 800,000 households (25% of Zimbabwe's population) benefits primarily (over 90%) from safari hunting. Between 1994 and 2012, $21.5 million was allocated to CAMPFIRE communities. From 2010 to 2015, CAMPFIRE wards utilized almost $3 million for assistance to wildlife victims, food security, direct cash benefits, and social services (rehabilitating and building schools and clinics, etc.). An estimated 550,000 kilograms of hunted game meat was also distributed to CAMPFIRE communities during this period. Because of these incentives, poaching and problem animal control in CAMPFIRE areas is relatively low.[xxviii]

  In the 2013 to 2015 period, Charlton McCallum Safaris paid over $1.05 million into the CAMPFIRE program of which over $470,000 accrued directly into ward accounts. These funds were used to construct schools, nurses' houses, toilet facilities, and other incentivizers.[xxix]

- **Zambia:** Hunting operators in Game Management Areas contract with the government wildlife authority and local Community Resource Board (CRB) and must commit to anti-poaching and community investment. Under these agreements and Zambian law, 50% of game fees and 20% of lease payments are distributed to the CRB, and 50% of hunted game meat is distributed to local communities—an average of 129.8 tons of game meat per year. Hunting operators are further required to hire 80% of their staff from local communities. From 2010 to 2015, 34,330,042.68 Zambian Kwacha has been distributed to rural communities.[xxx]

  In 2015 alone, a sample of four Zambian hunting operators contributed $99,900 to rural communities in their Game Management Areas.[xxxi]

- **Mozambique:** In Mozambique, 20% of hunting fees are distributed to the local communities. By decree communities formally register with the Ministry to receive revenue that is distributed through dedicated bank accounts. There are presently 45 registered communities under this program. Moreover, communities such as the Tchuma Tchato provide a higher revenue share.[xxxii]

  A sample of 13 Mozambican hunting operators invested $830,000 in community projects from 2013 to 2015. For example, one operator constructed 43 homes and drilled 13 boreholes to improve the livelihoods of surrounding communities.[xxxiii]

- **Namibia:** The community conservancy system provides over 165,182 km^2 in habitat and benefits over 195,000 people. Most conservancies depend on safari hunting to fund their operations and to incentivize participation through distribution of game meat. The conservancy system has benefited lion and many other species by extending available habitat and prey, and has benefitted rural Namibians by generating N$ 111 million in returns to communities and 5,147 jobs. The GPTF has made over N$ 11 million in grants for programs aimed at mitigating human-wildlife conflict.[xxxiv]

Community game scout training, CAMPFIRE Program (Director Charles Jonga)

Management Authority Operating Revenue

Safari hunting generates a significant amount of operating revenue for wildlife authorities to use for law enforcement, problem animal control, compensation payments for lion damage, monitoring, planning, and other management. Wildlife authorities benefit from fees paid to hunt specific game (license or game fees), additional daily fees charged for hunters and observers, concession lease fees, professional hunter licensing fees, firearm and ammunition fees, taxes, etc.[xxxv]

- **Tanzania:** Through 2016, over 74% of the revenue generated to TWPF is comprised of 25% of the total proceeds of harvested game in Game Reserves and Open Areas. TWPF is a principal funding source for governmental rural community support and anti-poaching in Tanzania's protected areas.[xxxvi]

- **Zimbabwe:** From 2010 to 2015, safari hunting revenue accounted for ~22% of total ZPWMA revenue (over $5 million annually).[xxxvii]

- **Zambia:** The Zambian government suspended hunting from 2013 to 2014 (for most species) and 2013 to 2015 (lion and leopard). That caused a significant decrease in revenue generated from safari hunting. Prior to the suspension, safari revenue accounted for 32% of the management authority's annual revenue.[xxxviii]

- **Mozambique:** Mozambique's Central Treasury retains 20% of safari hunting revenue. Twenty percent of the remaining revenue is allocated to rural communities from where the revenue

accrued. The balance is allocated to Mozambique's National Administration of Conservation Areas. From 2013 to 2015, safari revenue was MTM 126,581,000.[xxxix]

- **Namibia:** The exact revenue generated by safari hunting for the GPTF is unknown, however, the fund is comprised of revenue collected from the sales wildlife and wildlife products on state lands.[xl]

Additional Lion Conservation Benefits of Tourist Safari Hunting

Hundreds of hunting-based conservation organizations and foundations have long provided tens of millions of dollars for lion conservation. Examples include the following:

- **Conservation Force:** For the past decade, Conservation Force (IUCN member) has spent up to $200,000 annually towards regional, national, and local lion action plans, population status surveying from Kruger National Park to Benin Complex, lion aging, and a plethora of research and publications such as *Conservation of the African Lion: Contribution to a Status Survey*.[xli]

- **Dallas Safari Club and Dallas Safari Club Foundation:** Dallas Safari Club (IUCN member) and Dallas Safari Club Foundation funded $1,064,997 from 2007-2017 towards direct lion conservation initiatives such as lion genetic research, monitoring, surveys to the Tanzania Lion Illumination Project, Texas A&M Foundation, WildCru, Zambia Lion Project, et al.[xlii]

- **Safari Club International and Safari Club International Foundation:** Safari Club International Foundation (IUCN member) has contributed $300,611 towards the Tanzania Lion Project from 2014-2015 (total project investment estimated at $423,000), and $250,000 for the Zambia Lion Project from 2011-2015.[xliii] In one fundraising event alone, Safari Club International raised over $1.4 million for African lion conservation.[xliv]

Conclusion

Safari hunting is the foremost force against the extirpation of lion. Most lion depend on habitat designated as hunting areas and protected by the occupancy of hunting operators and operator revenue. Lion prey also depend on that habitat and stewardship. Further, safari hunting incentivizes greater tolerance of lion by rural communities and reduces poaching through the distribution of tangible community benefits. Lion populations are healthiest and most numerous in the countries where hunted. As long as there is safari hunting, there will be lion, but in the absence of safari hunting most lion will probably be lost to the three primary threats. Lion need tourist safari hunting as much as safari hunters need lion.

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[i] Chardonnet, P. (ed.), 2002, *Conservation of the African Lion: Contribution to a Status Survey*, p. 103-113; IUCN, 2006, *Regional Conservation Strategy for the Lion Panthera leo in Eastern and Southern Africa* (2006), p. 23; IUCN, 2006, *Conservation Strategy for Lion in West and Central Africa*, p. 18; Bauer, H. et al., 2016, *Panthera leo* in *Red List of Threatened Species*, p. 2; Macdonald, D., 2016, *Report on Lion Conservation with Particular Respect to the Issue of Trophy Hunting*, p. 32; USFWS, 2015, *Listing Two Lion Subspecies; Final Rule*, p. 80007; USFWS, 2017, *Enhancement Finding for Lions Taken as Sport-hunted Trophies in Zimbabwe during 2016, 2017 and 2018*, p. 8.

[ii] *IUCN 2006*, p. 23.

[iii] Defined as managed, licensed, regulated safari hunting by non-resident hunters for the hunter's personal enjoyment and use. It is the key part of the user-pay sustainable use system. Also called "sport hunting" to distinguish it from hunting for commercial purposes, "safari hunting" for short, "licensed, regulated hunting"

because that is what it is, "big game hunting" to distinguish it from small game hunting, and "conservation hunting" because of the management purpose, design and effect. We do not use the term "trophy hunting" because it has come to be misused and is indicative of too small a component of the values of a safari hunt.

[iv] Defined as a positive conservation contribution to lion or lion habitat, prey, and lion perpetuation. It is enhancement. It is above and beyond a non-detriment, no net loss, or sustainability determination.

[v] *Chardonnet*, p. 103.

[vi] Loveridge, A.J., 2009, *Science and Recreational Hunting of Lions*, p. 120.

[vii] Dickman, A., 2018, *Ending trophy hunting could actually be worse for endangered species*, http://www.cnn.com/2017/11/24/opinions/trophy-hunting-decline-of-species-opinion-dickman/index.html; *see also* Loveridge, p. 120 ("Substantial areas of well-connected habitat with abundant natural prey populations are crucial for healthy, self-sustaining lion populations… In the face of expanding human and livestock populations, protected habitat and prey populations is likely the most important single factor in the conservation of lions in Africa."); *Macdonald*, p. 34 ("The protection of wildlife habitat is the primary benefit associated with trophy hunting, as it reduces the major threat of habitat loss—conversion to other forms of land use such agriculture and livestock"); Packer, C., 2015, *Lions in the Balance*, p. 31 ("the simple truth of the matter was that [hunters] controlled four times as much of lion habitat in Africa than was protected by the national parks. So 80 percent of the lions left in the world were in their hands").

[viii] *Macdonald*, p. 27; *Bauer*, p. 7-8.

[ix] *Packer*, p. 42

[x] These hunting countries manage the most lion. Tanzania alone has more lion than the rest of Africa. Namibia is not included although its increasing lion population is attributed to safari hunting because it is not a high population area. South Africa has 11,000 lion but is excluded as an outlier because approximately 8,000 are captive bred, not wild.

[xi] *Macdonald*, p. 35.

[xii] *Macdonald*, p. 35.

[xiii] *Tanzania Lion NDF,* p. 61.

[xiv] *Zimbabwe Lion NDF*, p. 26-27.

[xv] Mozambique National Administration of Conservation Areas, 2016, *Response to your letter dated 2 Feb 2016 on African Lion in Mozambique*, p. 10.

[xvi] Game Products Trust Fund, Website, http://www.gptf.org.na.

[xvii] *Tanzania Lion NDF*, p. 11, 16-17.

[xviii] Conservation Force, 2016, *Tanzania Lion Enhancement Summary Report*, http://docs.wixstatic.com/ugd/87ac64_dcddf23899b847d7acbc0b9774eab119.pdf, p. 2-4.

[xix] *Zimbabwe Lion NDF*, p. 28-29.

[xx] *CAMPFIRE Report*, p. 16.

[xxi] Conservation Force, 2016, *RE: Zambian Operator Enhancement Report Summary*, p. 1.

[xxii] *Mozambique Lion NDF*, p. 19.

[xxiii] *Packer*, p. 42 ("Lions were mean, vicious, terrible, horrible, awful animals; local people hated them....").

[xxiv] Naidoo, R., 2016, *Complementary benefits of tourism and hunting to communal conservancies in Namibia*, p. 2; *Loveridge*, p. 120; *Lindsey*, p. 463; *Macdonald*, p. 42.

[xxv] "CBNRM aims to create the right incentives and conditions for an identified group of resource users within defined areas to use natural resources sustainably. This means enabling the resource users to benefit (economically) from resource management and providing strong rights and tenure over land and the resources. CBNRM also supports the development of accountable decision-making bodies that can represent community members and act in their interests. CBNRM promotes conservation through the sustainable use of natural resources, enables communities to generate income that can be used for rural development, and promotes democracy and good

governance in local institutions." USAID, *What is Community-Based Natural Resource Management (CBNRM)?*, p. 1.

[xxvi] USAID, 2013, *Tanzania Wildlife Management Areas Evaluation: Final Evaluation Report*, p. 12, 74; Wambura, G., 2016, *The Role of Local Communities in Enhancing Wildlife Conservation in Tanzania Presentation*, p. 8, 23-24, 38; *Tanzania Lion NDF*, p. 45.

[xxvii] *Conservation Force Tanzania Lion Report*, p. 5-7.

[xxviii] *CAMPFIRE Report*, p. 5-7, 10-11, 21; Jonga, C., 2017, *CAMPFIRE Association Press Statement on Lifting of the Suspension of Elephant Trophy Imports into America*, https://www.campfirezimbabwe.org/index.php/news-spotlight/26-press-statement-21-november-2017 ("Despite [human life and crop] losses, the poaching of elephant in CAMPFIRE areas is relatively low").

[xxix] Conservation Force, 2017, *Request for Reconsideration of Denial of Permit Application PRT-04846C and PRT-04205C*, p. 14.

[xxx] *Zambia Lion NDF*, p. 27-28, 43, 45, 49. (Note that this figure would be higher, but hunting was suspended in 2013 and 2014, and lion hunting was suspended from 2013 to 2015. Zambia's communities played a major role in lifting the suspension.) *See also* Onishi, N., 2016, *A Hunting Ban Saps a Village's Livelihood*, The New York Times, https://www.nytimes.com/2015/09/13/world/a-hunting-ban-saps-a-villages-livelihood.html.

[xxxi] *Conservation Force Zambia Report*, p. 2.

[xxxii] *Mozambique ANAC Response*, p. 9, 11.

[xxxiii] *Mozambique Lion NDF*, p. 19; McDonald Safaris, 2016, *McDonald Safaris Operator Report*, p. 1.

[xxxiv] Namibian Association of CBNRM Support Organisations, 2016, *The State of Community Conservation in Namibia: A review of communal conservancies, community forests and other CBNRM initiatives annual report 2016*, p. 7; Game Products Trust Fund, Website, http://www.gptf.org.na; *see also Macdonald*, p. 26 ("This community-based conservation model is thought to be one of the key factors behind Namibia's expanding population of free-roaming lions.").

[xxxv] *Lindsey*, 462-464.

[xxxvi] *Tanzania Lion NDF*, p. 47.

[xxxvii] *Zimbabwe Lion NDF*, p. 27.

[xxxviii] *Zambia Lion NDF*, p. 46-47.

[xxxix] *Mozambique ANAC Response*, p. 9-10.

[xl] Game Products Trust Fund, Website, http://www.gptf.org.na/about-us.php.

[xli] Jackson, J., 14 Dec. 2017, personal communication; *see also* Conservation Force, Website, http://www.conservationforce.org/brochures-posters-reports.

[xlii] Mason, C., 13 Dec. 2017, personal communication.

[xliii] Safari Club International Foundation Department of Conservation, *Safari Club International Foundation Conservation Highlights*, unpaginated.

[xliv] Safari Club International, Website, https://www.safariclub.org/what-we-do/media/hunt-forever-blog/hunt-forever/2013/02/13/hunters-can-save-lions-and-lion-hunting.