



United States Department of the Interior



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In Reply Refer To:
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Memorandum

To: The File
From: Chief, Branch of Permits

Subject: Enhancement Finding for African Elephants Taken as Sport-hunted Trophies in
Zambia On or After January 1, 2016 and On or Before December 31, 2018

The African elephant (*Loxodonta africana*) is listed as threatened under the U.S. Endangered Species Act (ESA) and is regulated under section 4(d) special rule [50 CFR 17.40(e)]. The 4(d) special rule provides the requirements for the import of sport-hunted trophies. Under paragraph 17.40(e)(6)(i)(B), in order for the U.S. Fish and Wildlife Service (Service) to issue a threatened species permit under 50 CFR 17.32 authorizing the import of a sport-hunted elephant trophy, the Service must make a determination that the killing of the trophy animal will enhance the survival of the species. After evaluating the available data as of the date of this finding on elephant hunting in Zambia, including information provided by the Government of Zambia, current applications to import sport-hunted elephant trophies, interested individuals and organizations, and other information available to the Service, under the regulatory requirements provided by 17.40(e)(6)(i)(B), **the Service is able to make a determination that the killing of the trophy animal in Zambia, on or after January 1, 2016, and on or before December 31, 2018, will enhance the survival of the African elephant.** Applications to import trophies hunted during this time period will be considered to have met the enhancement requirement unless we issue a new finding based on available information. The Service may replace this finding at any time that this finding no longer reflects the available information consistent with the regulatory requirements. The Service reviews each application received for import of such specimens and evaluates the information provided in the application as well as other information available to the Service on the status of the elephant population and the total management program for elephants in the country to ensure that the program is promoting the conservation of the species. Each application to import sport-hunted elephant trophies must also meet all other applicable permitting requirements before it may be authorized, including the issuance criteria in 50 CFR 13.21.

General Considerations:

In evaluating whether the killing of the trophy animal will enhance the survival of African elephants in accordance with 50 CFR 17.40(e)(6)(i)(B), the Service considers the permit issuance criteria outlined in 50 CFR 17.32(a)(2). These include, in addition to the general permitting criteria in 50 CFR 13.21(b):

- (i) Whether the purpose for which the permit is required is adequate to justify removing from the wild or otherwise changing the status of the wildlife sought to be covered by the permit;
- (ii) The probable direct and indirect effect that issuing the permit would have on the wild populations of the wildlife sought to be covered by the permit;
- (iii) Whether the permit, if issued, would in any way, directly or indirectly, conflict with any known program intended to enhance the survival probabilities of the population from which the wildlife sought to be covered by the permit was or would be removed;
- (iv) Whether the purpose for which the permit is required would be likely to reduce the threat of extinction facing the species of wildlife sought to be covered by the permit;
- (v) The opinions or views of scientists or other persons or organizations having expertise concerning the wildlife or other matters germane to the application; and
- (vi) Whether the expertise, facilities, or other resources available to the applicant appear adequate to successfully accomplish the objectives stated in the application.

As with all permit applications submitted under 50 CFR 17.32(a), the individual requesting authorization to import a sport-hunted elephant trophy bears the burden of providing information in their application showing that the activity meets the requirements for issuance criteria under 50 CFR 17.32(a). In some cases, such as for import of sport-hunted trophies, it is not always possible for the applicant to provide all of the necessary information needed by the Service to make a positive determination under the Act to authorize the activity. In such cases, the Service may consult with the range country and other interested parties to the extent practicable to obtain necessary information. The Service has the discretion to make the required findings on sport-hunted elephant trophy imports on a countrywide basis, although individual import permits will be evaluated and issued or denied for each applicant. While the Service may make enhancement findings for sport-hunted elephant trophy imports on a countrywide basis, the Service encourages the submission of information from individual applicants. We rely on the information available to the Service and may rely on information from sources other than the applicant when making a permitting decision.

Neither the African elephant 4(d) rule nor 50 CFR 17.32(a)(2) specify what would constitute the enhancement of survival of a species regarding the authorization for the importation of an African elephant sport-hunted trophy. Therefore, when making a determination of whether the killing of the trophy animal will enhance the survival of African elephants, the Service examines the overall conservation and management of the species in the country where the specimen originated and whether that management addresses the threats to the species (*i.e.*, that it is based on sound scientific

principles and that the management program is actively addressing the current and longer term threats to the species). In that review, we evaluate whether the import contributes to the overall conservation of the species by considering whether the biological, social, and economic aspects of a program from which the specimen was obtained provide a net benefit to the species and its ecosystem.

As stated in previous findings, in evaluating whether the killing of the trophy animal will enhance the survival of African elephants within a country, the Service looks at a number of factors. We evaluate whether a country has a valid national or regional management plan and if the country has the resources and political will to enact the plan. If there is a plan, what government entities implement the plan and how often is it reviewed and updated? Does the plan have clear, achievable objectives? Are the objectives measurable and are they being achieved? Is there an adaptive management approach within the plan so that enacting agencies can quickly respond to changing environmental or social issues?

The Service also evaluates the status of the elephant population within a country and trends over time. Particularly, we are interested in population numbers, sex and age-class distribution, and mortality rates (both natural and human-induced). Are standardized surveys being conducted and, if so, what are the timing, census methodology, and coverage? Since elephant populations can move across international borders, what level of cooperation is there between neighboring countries in management and surveying efforts for shared populations? How is poaching accounted for within survey efforts?

The Service takes into account all forms of offtake when evaluating population viability and sustainability, including human-elephant conflicts, problem animal control, poaching, and sport hunting. While recognizing that there may be limited resources available for elephant management, the Service considers what national policies are in place to address human-elephant conflicts and problem elephant control. Is there a policy on culling surplus animals and removal of nuisance animals? Does domestic harvesting of elephants occur for local consumption or use? The amount of protected area either set aside for elephants or managed for elephant populations and the level of protection provided are also important in the Service's evaluation of whether imports of trophies could be authorized.

Finally, the Service considers the country's sport-hunting program and whether it contributes to the conservation and management of the species. Is the hunting program scientifically based and has it been incorporated into national/regional management strategies, particularly in light of data on population numbers and trends and levels of utilization (both legal and illegal)? Are the funds generated by hunters going directly to in-situ conservation and management efforts or deposited into a general treasury fund? How are hunting quotas distributed? If there are concession areas, how are they managed and allocated? Do U.S. hunters, through their participation in the hunting program, contribute funds used to help address management needs of the species, and are those funds utilized in a meaningful manner?

In short, the Service is looking to determine if a country has sufficient numbers of elephants to support a hunting program, if the country has a management plan and adequate laws and regulations

to effectively implement a hunting program, and if the participation of U.S. hunters in the program provides a clear benefit to the species to meet the requirements for the import of sport-hunted trophies under paragraph 17.40(e)(6)(i)(B).

The Service's approach to enhancement findings for the importation of sport-hunted trophies of African elephants is consistent with the purpose and intent of the Endangered Species Act. Well-managed trophy hunting can benefit conservation by generating funds to be used for conservation, including for habitat protection, population monitoring, wildlife management programs, and law enforcement efforts. We are, of course, aware that not all trophy hunting is part of a well-managed, well-run program, and we evaluate import of sport-hunted trophies carefully to ensure that all legal requirements are met before allowing import.

We note that our approach is also consistent with the approach provided in the *IUCN Species Survival Commission (SSC) Guiding Principles on Trophy Hunting as a Tool for Creating Conservation Incentives, Ver. 1.0* (IUCN SSC 2012). The SSC document provides useful principles and sets out guidance from international experts in the field on the use of trophy hunting as a tool for "creating incentives for the conservation of species and their habitats and for the equitable sharing of the benefits of use of natural resources" (IUCN SSC 2012, p. 2) and recognizes that recreational hunting, particularly trophy hunting, can contribute to biodiversity conservation and more specifically, the conservation of the hunted species. The SSC document lays out the following five guiding principles:

(a) *Biological sustainability*: The hunting program cannot contribute to the long-term decline of the hunted species. It should not alter natural selection and ecological function of the hunted species or any other species that share the habitat. The program should not inadvertently facilitate poaching or illegal trade in wildlife by acting as a cover for such illegal activities. The hunting program should also not manipulate the ecosystem or its component elements in a way that alters the native biodiversity.

(b) *Net Conservation Benefit*: The biologically sustainable hunting program should be based on laws, regulations, and scientifically based quotas, established with local input, that are transparent and periodically reviewed. The program should produce income, employment, and other benefits to create incentives for reducing the pressure on the target species. The program should create benefits for local residents to co-exist with the target species and other species. It is also imperative that the program is part of a legally recognized governance system that supports conservation.

(c) *Socio-Economic-Cultural Benefit*: A well-managed hunting program can serve as a conservation tool when it respects the local cultural values and practices. It should be accepted by most members of the community, involving and benefiting local residents in an equitable manner. The program should also adopt business practices that promote long-term economic sustainability.

(d) *Adaptive Management: Planning, Monitoring, and Reporting*: Hunting can enhance the species when it is based on appropriate resource assessments and monitoring (e.g., population counts, trend data), upon which specific science-based quotas and hunting

programs can be established. Resource assessments should be objective, well documented, and use the best science available. Adaptive management of quotas and programs based on the results of resource assessments and monitoring is essential. The program should monitor hunting activities to ensure that quotas and sex/age restrictions of harvested animals are met. The program should also generate reliable documentation of its biological sustainability and conservation benefits.

(e) *Accountable and Effective Governance*: A biologically sustainable trophy-hunting program should be subject to a governance structure that clearly allocates management responsibilities. The program should account for revenues in a transparent manner and distribute net revenues to conservation and community beneficiaries according to properly agreed decisions. All necessary steps to eliminate corruption should be taken and to ensure compliance with all relevant national and international requirements and regulations by relevant bodies such as administrators, regulators and hunters.

We explained in our final rule revising the 4(d) Rule for the African elephant, 81 FR 36388, 36394 (June 6, 2016) that, “[w]hen a trophy hunting program incorporates the following Guiding Principles, IUCN considers that trophy hunting can serve as a conservation tool: Biological sustainability; net conservation benefit; socio-economic-cultural benefit; adaptive management—planning, monitoring, and reporting; and accountable and effective governance. We support this approach.”

Basis for Finding for African Elephants in Zambia:

In December 2012, the Service made a positive enhancement finding for the import of sport-hunted elephant trophies from Zambia. The Government of Zambia subsequently suspended elephant hunting from 2013 to 2014. In 2015, information arose that the suspension of the elephant sport-hunting program in Zambia had been lifted. On March 4, 2015, the Service sent a letter to the Zambian Department of National Parks and Wildlife (DNPW)¹ with a list of questions that would aid the Service in evaluating the overall conservation and management of African elephants in Zambia and confirm if a sport-hunting season for elephants had been opened for 2015. In response to our March 4, 2015, letter, DNPW provided a letter on April 28, 2015, that laid out current legislation governing elephant management, an explanation for the elephant sport-hunting suspension, and clarification of the 2015 elephant sport-hunting quota. In addition, on April 30, 2015, they provided a copy of Enhancement and Non Detriment Findings for African Elephant Sport Hunting in Zambia (March 2015), as well as a list of responses to the questions in our March 4, 2015, letter. On December 22, 2015, DNPW sent the Service additional information about an apparent increase in the elephant population in the Kafue area and a comparison of population estimates in 2008 compared to 2015. In addition, DNPW sent an updated version of the Enhancement and Non Detriment Findings for African Elephant Sport Hunting in Zambia (July 2015), a preliminary report of the Dry Season Survey of Large Herbivores for Kafue and Luangwa Ecosystems (2013), and the 65th Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Standing Committee Meeting Summary. At the Safari Club International meeting held in Las Vegas, NV, in February 2017, the Service provided a letter to a DNPW official, requesting any new and updated information regarding the management and conservation of

¹ At the time the letter was sent, the wildlife department was called the Zambia Wildlife Authority (ZAWA).

elephants in Zambia, as well as a list of questions that would aid the Service in making a required enhancement finding under the ESA and non-detriment finding under CITES. In response to our February 2017 letter, DNPW provided a list of responses to our questions on March 31, 2017. These aforementioned documents, relevant information obtained separately through open sources such as IUCN documents, and contained in comments received from interested parties, were the basis of this finding.

Governance of African Elephants in Zambia: The responsibility for implementing wildlife conservation laws in Zambia dates back to the 1930s or 1940s with the establishment of the Department of Tsetse, Fisheries, and Wildlife. In the late 1950s, this agency became the Department of Game and Fisheries and operated under this designation until the mid-1970s when it became the Department of National Parks Wildlife Service (DNPWS) who was responsible for the protected area network. In 1999, the Government of Zambia transformed this agency into the Zambia Wildlife Authority (ZAWA), a semi-autonomous agency responsible for the management and protection of this network, with statutory powers derived through the Zambia Wildlife Act No. 12 of 1998.

For much of the time since its inception in 1999, due partly to its semi-autonomy, ZAWA did not appear to have had adequate resources to conduct their functions fully due to a low funding capability, relying primarily on revenue from tourism, which also included sport hunting. Between 1999 and 2005, ZAWA struggled with their law enforcement capabilities. The costs associated with transforming DNPWS to ZAWA continued to affect the financial and staff allocations for law enforcement activities. Large sums of money that could have been utilized by law enforcement were apparently channeled into tasks involved in the transformation process. From the information provided to the Service when we were making our 2012 finding, between 2005 and 2008, there were shortages in work force and a need for proper staff training, as well as a lack of material resources to enable staff to carry out their duties. Although ZAWA continued to pay salaries for staff throughout the country, ZAWA appear to have had to rely largely on outside donor organizations to recover from the costs associated with its transformation from the DNPWS to ZAWA. There was a need for suitable vehicles, radios or other means of communication, field staff accommodations, uniforms, weapons and other patrol equipment. The financial resources were also inadequate in terms of providing funding for management operations and projects. One organization, the Norwegian Agency for Development Cooperation (NORAD), through the Emergency Support Programme (ESP), provided funding to cover both management and law enforcement operations, allowing ZAWA to procure uniforms, patrol equipment, boats, and vehicles for resource protection in the Western and Central regions, where a majority of the hunting areas are situated. Another organization, the United Nations Development Program (UNDP) supported the Nsumba – Mweru Wa Ntipa Ecosystem, providing vehicles to Law Enforcement, as well as funding for the preparation of general management plans for the three national parks located in this area.

Between 1999 and 2011, the Service provided \$1,279,085 through the African Elephant Conservation Act (AECA) to a number of organizations conducting activities in Zambia. Organizations such as the Wildlife Conservation Society, Southern African Wildlife Trust, African Wildlife Trust, and South Luangwa Conservation Society have used such funds to conduct elephant crop damage control, anti-poaching, community law enforcement efforts, and addressing human-elephant conflicts. Two projects in particular include a grant in 2006 to the Wildlife Conservation Society for \$5,038 to provide support to village scouts in the Rufunsa GMA in southern Zambia, one of three GMAs designated for elephant sport hunting, to help strengthen conservation efforts by

providing basic equipment and supplies to the community game scouts. This grant helped provide basic field equipment and rations to fourteen village scouts to improve their ability to patrol their community area outside the Lower Zambezi National Park. On September 16, 2008, the Service provided grant money to the Frankfurt Zoological Society, through the AECA, in the amount of \$74,646 to provide support for law enforcement and protection of elephants in North Luangwa National Park, to better equip security teams protecting wildlife in eastern Zambia. This project was designed to provide equipment for trained ZAWA patrols in the Park, including rations for 10-day field patrols, base radios and solar equipment, handheld radios and GPS equipment for patrol teams, and conducting regular maintenance and upkeep of equipment and vehicles.

The lack of resources available to ZAWA since this transformation previously raised questions about their ability to monitor and control poaching, as well as their enforcement capabilities in addressing the ongoing illegal ivory trade within their own borders.² This was part of the rationale for the Service not finding that elephant hunting and the subsequent importation of trophies taken between 2005 and 2010 enhances the survival of the species. In 2011, however, it appears that the situation improved. Management of ZAWA appeared to have stabilized and funding improved. ZAWA appeared to have made efforts to improve their overall management and control. There was also evidence of an increase in the cooperation between ZAWA and community groups for the betterment of elephant management. Further, the Service reported in its 2012 finding that ZAWA has established a stronger domestic network with other law enforcement agencies to control illegal trade at the national level by collaborating with other law enforcement agencies, such as the Drug Enforcement Commission (DEC), Anti-Corruption Commission (ACC), and Zambia Police and Customs, to make numerous seizures (CITES 2010). All seizures were reported to the Elephant Trade Information System (ETIS). These improvements appear to have continued into 2012; therefore, import permits for trophies taken in 2011 and 2012 were granted.

In 2013, the Zambian government established an elephant-hunting moratorium (some trophies apparently taken before the moratorium were exported during this time, however). The moratorium was established to allow time to restructure Zambia's governance of elephant management and to carry out population surveys. The moratorium was extended through 2014 to allow additional time for evaluating the country's elephant management and population status (DNPW 2016). In 2015, after completing their evaluation, the moratorium was lifted.

In 2015, ZAWA was disbanded and reincorporated as a government department, the Department of National Parks and Wildlife (DNPW 2016). In addition, the Zambia Wildlife Act No. 12 of 1998 was repealed, but it is the Service's understanding that the statutory instruments enacted under this act, as well as the Zambia Wildlife Regulations No. 107 of 2010, and Zambia Wildlife Regulations No. 60 of 2007, are the regulatory framework for the Zambia Wildlife Act (Wildlife Act) No. 14 of 2015, currently the main law under which elephants are protected within Zambia. Revised statutory instruments on elephant sport hunting were submitted to the Ministry of Justice, and the Service is

² Documents CoP14 Doc. 53.2 ("Monitoring of Illegal Trade in Ivory and Other Elephant specimens") and CoP15 Doc. 44.1 Annex ("The Elephant Trade Information System (ETIS) and the Illicit Trade in Ivory") appear to support DMA's statement regarding ZAWA's inability to monitor and control poaching. While the number of seizures reported in ETIS were low between 2004 (CoP13) and 2009 (CoP15) (CITES 2009), the volumes of the seizures were very high (e.g., few seizures of very high quantities). The ETIS documents indicate that such occurrences are indicative of highly organized criminal activity is a major feature of the illicit ivory trade out of Zambia.

awaiting a copy of these changes (DNPW 2017). However, the Wildlife Act is the principle legislation guiding the management of wildlife in Zambia through a system implemented and enforced by DNPW with assistance from stakeholders (DNPW 2016).

The Wildlife Act is administered by DNPW under the Ministry of Tourism. DNPW is headed by a Director, with assistant directors who command four elements of the department: Principal Warden-Operations Wildlife Law Enforcement Unit, Principal Warden-Conservation Unit, Principal Engineer Infrastructure Development Unit, and Principal Natural Resource Management Officer Community-based Natural Resource Management Unit. *The Wildlife Law Enforcement Unit* is comprised of 1,250 Wildlife Police Officers who are responsible for investigating and enforcing wildlife crimes within 236,376 km² of wildlife area (average 189 km² per officer). The Zambian government has also committed to adding an additional 850 officers by 2018 (600 new officers were reportedly added in 2016). *The Wildlife Conservation Unit* is responsible for mitigating human-wildlife conflict, facilitating wildlife officer trainings, regulating private wildlife estate operations, managing ecosystems, managing landscape conservation of certain species, and both developing and implementing park regulations. *The Infrastructure Development Unit* is responsible for construction and maintenance of infrastructures and machinery within protected areas. *The Community-based Natural Resource Management Unit* is responsible for co-managing Game Management Areas (GMAs) with local communities. Duties include providing technical support to Community Resource Boards regarding the management of human-natural resources in GMAs and open areas. This unit facilitates the election of the Community Resources Board members and the election of Village Action Groups. Responsibilities also include monitoring the use of funds disbursed to Community Resources Boards and training village scouts and Community Resources Board members.

The African elephant is a protected species under the Wildlife Act. It is a criminal offense to hunt, kill, capture, or possess an elephant without a license. The elephant is also protected under private wildlife estate legislation and statutory instruments implemented with the (now repealed) Wildlife Act of 1998 and carried over to the Wildlife Act. Additionally, in 2016, four new statutory regulations were reportedly enacted to address various aspects of elephant management to complement the operation of the new Wildlife Act. They included the Zambia wildlife regulations for granting of hunting concessions, elephant sport hunting, and conducting ecological or research wildlife assessments (DNPW 2016).

In addition to Zambia's domestic laws, it is also a Party to CITES. The African elephant in Zambia is listed in Appendix I of the Convention. As an Appendix-I species, certain criteria must be met before such species can be exported, including findings from the exporting country's CITES Management Authority that the specimen was legally acquired and the country's Scientific Authority that the export will not be detrimental to the survival of the species in the wild. In addition, the importing country's CITES Management Authority must determine that the import is not for primarily commercial purposes and the importing country's Scientific Authority must determine that the import is not for purposes that are detrimental to the species. In their reply to our inquiry, Zambia provided a copy of their March 2015 non-detriment finding for elephants. This finding states that the CITES Scientific authority of Zambia has considered the population of elephants in Zambia and concluded "that the low level of off-take generated by trophy hunting is not detrimental to the survival [of elephants] and the amount of revenues generated by this low level of off-take are

of critical importance for the conservation of the species, also because of the benefit it provides to local communities.”

Current Population Status: To manage any population to ensure an appropriate population level and determine whether sport hunting is having a positive effect on the survival of African elephants, it is vital to have sufficient data on population numbers and population trends to base management decisions. Without current population data, it is not clear how one can calculate the number to offtake. Without information on population demography and mortality, it is not possible to determine accurately what impact hunting, in conjunction with other offtakes, including problem animal control and poaching, is having on Zambia’s elephant population.

During the 1970s, Zambia experienced a severe decline in their elephant populations due, in part, to increased human population, conversion of land for agricultural activities, and excessive hunting for ivory. The increase in poaching brought about by international demands for ivory also contributed to this decline (CITES 2010). Since the early 1980s, most of the elephants have been restricted to National Parks, Game Management Areas and adjacent lands.

Currently, the range for the elephant in Zambia can be considered in seven subregions as follows: Luangwa Valley system, Mid/Lower Zambezi system, Kafue system, Mosi oa Tunya, Sioma - upper Zambezi system, Bangweulu system, Nsumbu – Mweru wa Ntipa, Lusenga -Tanganyika system, and West Lunga system. Each of the sub regions is larger than 10,000km² and has a total area exceeding 200,000km². These elephant sub regions cover a diverse landscape and land tenure systems encompassing National Parks, Game Management Areas and some open areas creating an almost contiguous landscape in which elephants can roam between habitats (CITES 2010, Thouless et al. 2016 p. 191). Habitat varies throughout the major elephant areas, but most is dominated by miombo or mopane woodlands (CITES 2010; ZAWA 2015).

In 1982, the Government of Zambia instituted a ban on elephant sport hunting. By 1989, it was estimated that Zambia’s elephant population had fallen below 18,000 from an estimated 200,000 in the 1970s (CITES 2002). In the 1990s and 2002, Zambia’s elephant population was estimated to be 22,000 and 25,000, respectively, indicating a stable and/or increasing population (CITES 2010). As a result, in 2005, elephant sport hunting, which had been banned since 1982, was re-opened. Under the Zambia Wildlife Act, the sport hunting of elephant was authorized for non-commercial purposes. According to a DNPW’s April 28, 2015, e-mail, elephant sport hunting was again suspended from 2013 to 2014, as the Zambian Government was interested in ascertaining the status of wildlife populations in the Game Management Areas where hunting occurs.

Aerial population surveys conducted in 2008 covered approximately 166,712.51 km² of the major elephant range, representing about 80% of the total range and resulted in a population estimate of 26400 ± 4400 elephants, indicating a stable population in reference to previous estimates of 2002 and the 1990s when estimates were 25000±3000 and 22000±3000 elephants respectively. In 2013, a survey conducted by DNPW (then ZAWA) in the Kafue and Luangwa Ecosystems alone revealed a population of 9,594 and 22,112 respectively, for a total of approximately 32,000 animals (ZAWA 2013). In a December 22, 2015, e-mail, DNPW provided a possible explanation for the elephant increase in the Kafue area, noting more areas were surveyed in 2013 than 2008, increased average sampling intensity, and influx of elephant groups from Sioma Ngwezi and west Lunga to Kafue.

The Government of Zambia's proposal for the 15th meeting of the CITES Conference of the Parties (CoP 15 - Doha, Qatar, March 2010) to transfer its elephant population from Appendix I to Appendix II, contained a report on the illegal killing of elephants indicating that between 2002 and 2008, there were 327 elephants illegally killed. Although elephant poaching trends indicated an increase in poaching levels, the estimated illegal annual off-take was said to be less than 0.3% of the elephant population estimates. The increasing trend in elephant poaching was attributed to increased poaching levels in Lower Zambezi and areas of the Luangwa Valley system where resources for law enforcement were considered inadequate. The high level of human-elephant conflicts taking place in these areas also exacerbated elephant poaching. Over 67% of problem elephant reports involved crop and property damages, as well as human injuries and deaths (CITES 2010). However, there was no information given on the number of animals taken during this same timeframe in relation to problem animal control measures undertaken by ZAWA, leading to a potential increase in the percentage of annual off-take from both illegal and problem animal control activities.

In 2014, the Pan African Aerial Elephant Survey (<http://www.greatelephantcensus.com/>), or the Great Elephant Census (GEC), was carried out over a significant portion of the savanna elephant's range in Africa. The GEC developed standardized survey methodology to establish a consistent continent-wide population basis line. The 2014 survey that was part of the Great Elephant Census, covering nearly 85,000 km² in the Luangwa, Kafue, Sioma, and Lower Zambezi ecosystems, revealed the elephant population in Zambia to be an estimated $21,760 \pm 4,523$ (DNPW 2016, GEC 2016); this was not significantly different from the 2008 estimate, and may not have accounted for elephants in Sioma-Ngwezi that regularly migrate into neighboring countries during the dry season. However, this is a decrease of about 10,000 animals since the 2013 survey. Thouless et al. (2016) reports an estimate of $21,967 \pm 4,704$, although this contains 214-314 educated guesses from areas not systematically surveyed.

Carcass ratios may help indicate present levels of poaching in different areas; a carcass ratio of 2-8% is indicative of stable or increasing populations, while a ratio of over 9% indicates a declining population (Douglas-Hamilton & Hillman 1981, Douglas-Hamilton & Burril 1991). The 2008 aerial survey apparently showed low carcass ratios in Kafue (0.97%), Luangwa (1.57%) and Upper Zambezi (3.20%), with Lower Zambezi (>5%) as the only exception (CITES 2010); these ratios indicate stable or increasing populations. The 2015 survey showed decreased carcass ratios from the 2008 survey in Luangwa (1.2%), but an increased ratio in Kafue (7.02%), and Lower Zambezi (6.3%); it is possible that not all carcasses were counted in the survey, and these percentages are higher in reality. While these ratios are still considered sustainable, several poaching camps were detected: six in Kafue, two in South Luangwa, one in North Luangwa, and one in Lower Zambezi National Parks. GEC (2016), as well as DNPW (2016), report 85% and 85.5% carcass ratios in Sioma Ngwezi National Park, respectively, with the rest of Zambia being a 3% overall ratio (GEC 2016). For Sioma Ngwezi, this ratio suggests a recent or ongoing problem of illegal hunting, which has led to a loss of most of the original population (DNPW 2016). However, this National Park makes up a small proportion of the national population (Thouless et al. 2016). With the help of World Wide Fund for Nature (WWF) and the Peace Parks Foundation, DNPW recruited an additional 30 rangers and built new housing for them in Sioma Ngwezi, with the intent of aiding anti-poaching efforts in the National Park (DNPW 2017).

According to Thouless et al. (2016), Zambia's elephant population appears to be relatively stable apart from losses in the southwest of the country, which amounts to approximately 2% of the overall population. Available range also appears to be increasing due to the Southern African Development Community (SADC) Trans-Frontier Conservation Areas³ (TFCAs) initiative, and law enforcement representation in major protected areas has led to a rise in arrests from poaching incidents.

It is possible that population fluctuations in Lower Zambezi could be explained by the movements of elephants between Zambia, Zimbabwe, and Mozambique. Additionally, most of the subpopulations within Zambia are contiguous with populations in neighboring countries, hence the formation and implementation of the modern concept of TFCAs in southern Africa to promote the maintenance of movement corridors for elephants between countries in the region (CITES 2010). A main goal for TFCAs is to make fragments of protected areas in adjacent countries interconnected in order to "facilitate and enhance the free movement of animals across international boundaries" (NASCO, undated). A memorandum of understanding regarding the establishment of Kavango Zambezi (KAZA) TFCA, which stretches into southwestern Zambia, was signed in December 2006. A master integrated development plan (IDP), which is a five-year strategy that began in 2014 to steer development of the TFCAs at a regional level, was approved by partner countries in 2015 (PPF, undated). Protected Areas alone cover approximately 27% of Zambia in the form of National Parks and Game Management Areas (Thouless et al. 2016). With TFCA initiatives in and around Zambia, elephant habitat is growing due to the increased interconnectedness of protected areas in neighboring countries.

Human settlements and activities appear to be impacting the distribution of elephants, especially in southern portions of the Kafue ecosystem and Sioma-Ngwezi ecosystem (DNPW 2016). The primary risks to the long-term survival of the elephant in Zambia appear to be increasing human-elephant conflict, loss of habitat for agriculture use, and poaching. Zambian law requires that the government is responsible to the rural communities by conserving wildlife resources for the benefit of its people (CITES 2010). There were 10 and 16 elephants killed through problem

animal controls in 2015 and 2016, respectively. In that same time period, poaching occurred in Lower Zambezi, Sioma, South Luangwa, Lukusuzi, and Kafue National Parks as well as Rufunsa, Chiawa, West Petauke and Mulobezi Game Management Areas (GMAs). In 2015, 168 elephants were reported as being poached, and 155 were reported in 2016; there were 50 fresh and 22 recent carcasses recorded in national parks and GMAs across the country in recent patrols, indicating a need to address possible poaching (DNPW 2017).

African Elephant Management in Zambia: Zambia elephant hunting occurs in Game Management Areas (GMAs) and Open Game Ranches (OGRs). OGRs are unfenced private lands reserved for the wildlife conservation management of an individual or local community and are buffered by GMAs. DNPW issues annual non-resident hunting quotas to the OGRs in exchange for managing the wildlife; although all animals remain the property of the State (DNPW 2016).

³ TFCAs were founded through SADC with the aim of collaboratively managing shared natural and cultural resources across international boundaries for improved biodiversity conservation and socio-economic development. <http://www.sadc.int/themes/natural-resources/transfrontier-conservation-areas/>

GMA's are primarily designated for safari (tourist) and resident hunting, but some GMA's also include photographic tourism. There are 36 GMA's in Zambia covering 177,404 km² (DNPW 2016). Most, but not all, GMA's have General Management Plans outlining basic management practices. All 20 of Zambia's national parks are surrounded by GMA's, but currently, elephant hunting only occurs within hunting blocks located in the GMA's that surround the National parks in the Luangwa and Lower Zambezi ecosystems. In 2015, DNPW stated that it was their policy that GMA's be managed with the guidance of management plans. At that time, land use plans had been developed for most GMA's and National Parks. All GMA's allow settlement. Community-Based Natural Resource Management (CBNRM) is implemented within GMA's through Community Resource Boards (CRBs) (DNPW 2016). The CRBs focus on the economic and social well-being of local communities. There are currently 75 registered CRBs within Zambia that employ approximately 750 community scouts and 79 support staff.

DNPW, in consultation with the local community, is mandated to grant hunting concessions within specific hunting blocks within GMA's. Hunting concessions must be registered in Zambia, have a tourism enterprise license, have a valid tax clearance certificate, provide proof that the company is not bankrupt, and they must meet any additional conditions set by an evaluation committee (DNPW 2016). Leases are stated to range from 7 - 15 years, with the length of lease time dependent on the abundance of species classified within the individual hunting block (DNPW 2016). Prime hunting blocks have greater species abundance and are generally awarded shorter lease agreements in comparison to secondary hunting blocks. Secondary hunting blocks are generally given longer lease periods in an effort to provide incentives for the concessionaire to invest greater resources and allow wildlife populations to increase before offering hunting (DNPW 2016).

Hunting block concessions are awarded through a bid process in accordance with the Zambia Public Procurement Act No 12 of 2008. Bids are taken from companies through a "two envelop system." The bids consist of a technical proposal and a financial proposal being placed in separate clearly marked envelopes. The technical bid is required to be evaluated by criteria outlined in Zambia's Wildlife Act before the envelope containing the financial bid is opened. Financial envelopes will only be opened for bidders that received meet a specific technical expertise (e.g., a score of over 80 on the established criteria). The lease is awarded to the bidder that qualified with a minimum technical rating of 80 and whom submitted the highest financial bid (DNPW 2016).

Successful bidders must address statutory obligations to communities and provide enforcement contributions when developing Concessionary Agreements. Concessionary Agreements are developed through a partnership between the communities, safari operators, professional hunters, and DNPW. As such, a hunting concession agreement is not valid without the signature of the Chief(s) or CRB associated with the hunting block (DNPW 2016). Concessionaires are required to use collected fees to support resource protection by providing community scouts, vehicles, fuel, patrols, and equipment. They must provide infrastructure development to local communities and also offer resource monitoring and fire management. Some concessionaires further benefit community development by supporting the employment of teachers and nurses, purchasing ambulances, building classrooms and clinics, and providing houses for teachers and health personnel. Moreover, they are mandated to provide 50% of the meat from hunted animals to the local community. Concessionaires are evaluated annually and those that do not comply with their

obligations can have their concession terminated before the end of the agreement's term (DNPW 2016).

According to an April 30, 2015, e-mail, Zambia is managing its elephant population using the 2005 National Strategy for Elephant Management in Zambia (However, this management plan is under review, with a new strategy scheduled for release in late 2017). DNPW has implemented several actions in the Elephant Management Plan, including but not limited to, building and implementing a management system for a central strong room for ivory, coordination of elephant management in TFCAs, carrying out Monitoring Illegal Killing of Elephants (MIKE) and Spatial Monitoring and Reporting Tool (SMART) systems in protected areas, as well as the improvement of funding. ZAWA's reincorporation as DNPW now allows the government to pay DNPW staff salaries while allowing the department to retain all revenue, which has improved resources for anti-poaching efforts. One hundred and sixty-eight elephants were reported to have been poached in 2015 and another 155 in 2016 (DNPW 2017). The government allocates K40 million (USD3.8 million) to DNPW annually, of which 75% is used for anti-poaching. The level of effort to curb poaching increased after the Presidential order for all security wings (Zambia Army, Air force, National Service, Police, Intelligence, Department of National Parks and Wildlife) to be involved in anti-poaching efforts. This led to increased number of man-days spent on patrol as well as the number of poaching arrests (DNPW 2017).

A major threat to the survival of elephants in Zambia appears to be increasing human-elephant conflicts. An increase in human elephant conflicts may imply that the species will continue to reclaim its former range; however, human settlements continue to expand in the GMAs and human-elephant conflicts will continue to be a management challenge (CITES 2010). From 2012 to 2014, there were 1,780, 2,400, and 1,261 reported human elephant conflicts, respectively (ZAWA 2015). A total of 26 elephants were killed through controls 2015-2016 (DNPW 2017 pers. comm., March 31). DNPW (ZAWA 2015) notes that an integrated elephant control approach is better than any single method. It is believed, however, that poor perception of elephants by HEC-affected communities could be counteracted if elephants are perceived to have value (CITES 2010).

Hunting and Utilization: Sport hunting of elephants, banned in Zambia between 1982 and 2004, was re-opened in 2005 under the Zambia Wildlife Act (Act No. 12 of 1998/Statutory Instrument No. 40 of 2005), authorizing the sport hunting of elephants for non-commercial purposes. From 2005 through 2010, the export quota was set at 20 elephants annually (Thouless et al. 2016). This quota apparently did not include elephants taken as part of problem elephant control. In 2011 and 2012, the export quota was increased to 80 elephants (Thouless et al. 2016). This quota, however, including hunting of problem animals involved in human-elephant conflicts (ZAWA 2015). In a letter to the Service, dated April 28, 2015, ZAWA explained elephant hunting had again been suspended in Zambia from 2013 to 2014. The Zambian Government was interested in ascertaining the status of wildlife populations in the Game Management Areas where hunting is done (ZAWA 2015, pers. comm., April 28). After re-opening elephant hunting in 2015, Zambia again established a quota of 80 individuals per year for trophy hunting for noncommercial purposes. The level of sport hunting appears to be based largely on the 0.5% of standing population guideline (Martin 1986 and Martin 2005).

While Zambia has established an export quota under CITES of 80 animals (160 tusks), the actual hunting quota has been established at a lower level. In 2015, different reports indicated that the

hunting quota was set at 36 elephants (ZAWA 2015) and 12 elephants (DNPW 2017). However, DNPW (2017) reported that only three elephants were harvested that year. In 2016, the hunting quota established at 30 sport-hunted elephants, but only 12 elephants were harvested; all were males. The elephant-hunting quota for 2017 was again set at 30 (DNPW 2017). Only hunting blocks located in the Luangwa and Zambezi Valley have allocated elephants to hunt. It is unclear if private wildlife estates are also regarded as private concessions in Zambia; ZAWA (2015) notes that there is no private hunting concession done by local communities, however, hunting is permitted in private wildlife estates. According to DNPW, hunting quotas are now set based on population size, distribution, trophy quality, occurrence of human-elephant conflicts, and demand from the community or outfitter. However, it does not exceed 1% of the total population. Hunters that harvest elephants with underweight tusks (below 15kg) are penalized; the average trophy weight for 2015-2016 was 19.2kg (DNPW 2017).

The information used to develop quotas includes data from ground counts, patrol sightings, local and expert opinion, and hunting monitoring. CRBs use the information they collect to determine what the maximum hunting quota could be in GMA managed by them. Their proposals are submitted to DNPW for approval. Once a proposal is received, DNPW accepts feedback from field staff and safari hunting outfitters, before the quotas are approved by the Wildlife Conservation and Management Unit. The quotas are then distributed by DNPW's Licensing Unit to the CRBs and hunting companies. DNPW is required to share the approved quotas with other government agencies, including the Auditors General Office and Anti-Corruption Commission. For 2016 and 2017, Zambia established a quota of one elephant per hunting concession. Quotas are set for individual hunting blocks within the GMAs (DNPW 2017).

Besides a professional hunter, a wildlife officer from DNPW must also accompany hunters on all hunts (DNPW 2016). The officer is responsible for recording hunt activities on specified forms such as the Safari Hunting Monitoring form and Trophy Measurement form. The officer endorses licenses to ensure that they are not used more than once and the officer ensures that all harvested trophies are registered (DNPW 2016).

The season commences on May 1st and ends on December 31st each calendar year. According to DNPW (2017) only hunting blocks in Luangwa and Zambezi valley are allocated elephants to hunt, and it appears hunting may also take place on private game ranches.

Hunting-generated Revenue: Prior to the 1980s, wildlife management in GMAs was the sole responsibility of the Zambian Government, with little or no local community involvement or stake in the management of these wildlife resources. According to information obtained from ZAWA when evaluating Zambia's hunting program for the 2012 enhancement finding, this approach led to an escalation in the illegal harvesting of these resources. In the early 1980s, this reportedly changed with the development of the Administrative Management Design (ADMADe) program, a government initiative to guide and encourage the participation of local communities in managing wildlife in GMAs. In return for their participation in this program, the Government, under the ADMADe program, provided communities financial incentives derived from wildlife utilization in their respective areas. The revenue generated from safari hunting activities was divided in half with 50% going to the central treasury and 50% going to wildlife management.

Under the Zambia Wildlife Act No. 12 of 1998, with the transformation of the DNPWS to ZAWA, the concept of community participation in wildlife management was further advanced by providing a framework for the formation of Community Resource Boards (CRBs) in GMAs and open areas. The CRBs are local institutional bodies composed of elected community representatives, as well as representatives of the Chief and the local authorities, providing a link between the central government and local communities. In many rural areas where elephants exist in Zambia, there has been a steady rise in human-elephant conflicts that in turn creates a negative attitude toward elephant conservation efforts. This is of great relevance in rural communities where livelihoods are most affected by the presence of elephants (CITES 2010). Through this community-based approach to natural resource management, the creation of CRBs in designated GMAs is intended to give local communities a direct say in how these areas are managed and operated.

In 2008, a letter was sent to the Director General of ZAWA requesting a detailed accounting of the amount of funds generated in a given year associated with safari hunting, and details on how those funds were allocated and spent. The Service received a response that each CRB operated a bank account where the 50% allotment of funds accrued from wildlife hunting was deposited. The administration of these accounts was supervised by the Auditor General's Office. According to this response, between 2005 and 2007, a total of 44 elephants were taken in the four hunting blocks through licensed safari outfitters. The total income generated from this activity was \$594,000, with \$297,000 being the community share. Of that total income, 5% was paid to the Chiefs as the patrons of the CRBs. The remaining \$267,300 was paid to the CRBs, with revenue amounting to \$120,285 spent on wildlife management within the GMAs, \$93,355 spent on community projects, and \$53,460 spent on CRB administrative activities. While a detailed breakdown was received for several of the hunting blocks and the community projects undertaken with this funding, an accounting of the revenue ZAWA received during this same timeframe, and how it was utilized to further elephant conservation and management programs within Zambia, was not provided. This puts into question whether the revenue ZAWA collected from elephant sport hunting during this timeframe in any way furthered Zambia's efforts to establish a sustainable management program for elephants. These questions persisted until 2011 leading, in part, to the Service being unable to make a positive enhancement finding for the import of elephant trophies from Zambia.

In 2011, through ongoing discussion with the Zambian government, additional information on what percentage of elephant hunting revenue retained by ZAWA went towards activities involving elephant management, protection, and conservation in the National Parks and GMAs. Hunting fees for all species accounted for 32% of revenues that ZAWA received during 2010 - 2012. With improved accounting of received revenue and how it was being utilized, along with other factors being considered at that time, the Service was able to make a positive enhancement finding in 2012. However, that amount was reduced to about 4% during the 2013 and 2014 moratorium (DNPW 2016). Safari hunting creates other revenue for Zambia during this time, including activities such as tipping, eating in restaurants, staying at lodges, purchasing souvenirs, and paying for taxidermy. However, with the voluntary moratorium placed on elephant hunting by the Zambian government in 2013 and 2014, the Service did not request or receive any additional information from Zambia on revenue generated through hunting during this time.

With the lifting of the moratorium in 2015, the transition of ZAWA into DNPW, and renewed discussion between the Service and the Zambian government, there is a better understanding of the

revenue generated and how it is distributed. According to DNPW (2016), they receive revenue by charging GMA fees per elephant hunt. They also receive funds from annual professional hunter fees, certificate of valuation of trophies fees, certificate of ownership of trophies fees, permit fees, handling fees, and CITES security stamp fees. Hunting license fees in Zambia are statutory. The foreign hunter looking to take an elephant must pay the fee directly to the outfitter, with the minimum amount currently set at \$4,200. DNPW collects these fees from the outfitter/concession and does not deal with the foreign hunter directly. Therefore, the outfitter may choose to charge the foreign hunter any amount greater than \$4,200. The revenue generated from license fees (also referred to as Animal fees by DNPW) is mandated to be shared with CRBs under the Zambia Wildlife Act No. 14 of 2015. The fees are shared with CRBs and DNPW as follows:

License fees (animal fees):

- 5% of funds go to the CRB chief/leader.
- 45% of funds go to CRB community funds.
 - According to Zambia's "Guideline on the use of Community funds accrued from wildlife management", 45% of these community funds should go to wildlife protections and patrols, 35% should go to community projects such as constructing clinics, roads, schools, and wells, and 20% of the funds should go towards CRB administration costs.
- 50% of funds go to DNPW (mandated under the *Zambia* Wildlife Act No. 12 of 1998 and continued in the Wildlife Act) in the form of conservation funds, including, but are not limited to: scout/wildlife officer salaries, resource protection, consultancy and legal fees, animal surveys, staff training, administrative and operational expenses, repair and maintenances, and other conservation expenses.

According to Zambia's hunting guidelines, hunts involving elephants are required to be a minimum of 21 days (DNPW 2016). A daily conservation fee of \$150 per hunter and \$100 per observer is collected for monitoring purposes (DNPW 2016). These daily hunt fees typically cover combined hunt packages that include hunting elephant, along with other species such as hippos and impalas. The fees are allocated by percentages to CRBs and DNPW as follows:

Daily fees (Concession fees):

- 5% of funds go to the CRB chief/leader.
- 15% of funds go to CRB community funds.
 - Based on recommended guidelines, 45% of these community funds go to wildlife protections and patrols, 35% goes to community projects such as constructing clinics, roads, schools, and wells, and 20% of the funds go to CRB administration costs.
- 80% of funds go to DNPW in the form of conservation funds, including, but are not limited to: scout/wildlife officer salaries, resource protection, consultancy and legal fees, animal surveys, staff training, administrative and operational expenses, repair and maintenances, and other conservation expenses.

A total of USD150,000 was raised from elephant sport hunting in 2015-2016. As per Zambia's approved budget, DNPW retains all revenue from elephant sport hunting and distributed it proportionately to the CRBs and DNPW (DNPW 2017). Community funds have been used for

instances such as paying children's school fees and repairing classrooms and health centers. Current concession agreements require at least 80% of outfitter's employees be from local communities; outfitters also share 50% of meat from elephant hunting with the local communities as well as provide agricultural produce (DNPW 2017). As such, communities in wildlife areas are eager to conserve elephants as they earn income from doing so, both directly and indirectly.

Evaluation:

As explained earlier in General Considerations, the Service evaluates a number of factors to determine whether the killing of the trophy animal taken in a range country will enhance the survival of African elephants under 50 CFR 17.40(e)(6)(i)(B). The Service evaluates applications in accordance with the African elephant 4(d) rule and the permit issuance criteria outlined in 50 CFR 17.32(a)(2). In evaluating each of these criteria the Service has considered the information currently available to the Service as of the date of this finding on elephant hunting in Zambia, including information provided by the Government of Zambia, current applicants to import sport-hunted elephant trophies, interested individuals and organizations, and other information available to the Service. In accordance with the regulatory requirements, the Service is able to make a determination that the killing of the trophy animal in Zambia, on or after January 1, 2016, and on or before December 31, 2018, will enhance the survival of the African elephant. Therefore, with the information currently available, applications to import trophies hunted during this time period will be considered to have met this requirement unless we issue a new finding based on available information. In accordance with the 4(d) rule for the African elephant, 50 CFR 17.40(e), the Service will review each application received for import of such specimens on a case-by-case basis and each application also needs to meet all other applicable permitting requirements before it may be authorized. On an ongoing basis and as it evaluates each application, the Service will continue to monitor the status of the elephant population, the total management program for elephants in the country to ensure that the program is promoting the conservation of the species, and whether the participation of U.S. hunters in the program provides a clear benefit to the species. Accordingly, the Service may modify its determination based on available information consistent with the regulatory requirements. Further discussion for each of the criteria follows:

17.32(a)(2)(i): Whether the purpose for which the permit is required is adequate to justify removing from the wild or otherwise changing the status of the wildlife sought to be covered by the permit:

Communities that bear the burden of dealing with problem elephants are more likely to support the conservation of the species as a whole if they benefit from them in some way. Sixty-seven percent of problem elephant reports involve crop and property damages; however, many community projects are made possible by encouraging the conservation and sustainable sport hunting of elephants, as Zambia has a scientifically based quota system. In addition, the TFCA initiative is linking several protected areas across international borders, which promotes regional support of elephant conservation and movement by expanding habitat availability.

Therefore, the purpose for which the permit is required is adequate to justify removing elephants from the wild or otherwise changing the status thereof.

In evaluating this criterion, the Service assesses whether the hunting program established for elephants has demonstrated the ability to contribute toward positive conservation outcomes that mitigate or improve the status of elephants throughout their range within Zambia, while addressing the main threats of habitat loss, human-elephant conflicts, and poaching.

The IUCN's 2012 Guiding principles on trophy hunting support the concept that hunting can provide a conservation benefit if it is part of a governance system that provides both implementation and enforcement at a level that adequately supports conservation. The Service also believes that conservation hunting can assist the elephant populations if managed well. Elephant hunting, if managed properly, could meet the Service's enhancement criteria under the Act. There must be adequate information and data clearly showing that removing elephants from the wild for trophy hunting will be done at a level and with sufficient oversight such that it improves the current status of elephants in the wild (50 CFR 17.32).

Zambia has demonstrated their desire to maintain the long-term conservation of their elephant population with their 2013-2014 moratorium on elephant hunting. When the Zambian government realized that population numbers were declining to an unsustainable level, they applied the moratorium for 2 years, until they determined that their elephant population increased enough to tolerate a limited offtakes (DNPW 2016).

The Zambian government has done a good job of identifying how resources from hunting-generated revenue would be shared with communities. The local communities receive funds from concessions and license (animal) hunting fees. As outlined in the license fee distribution above, 35% of the funds allocated to CRBs help support community projects such as constructing clinics, roads, schools, and wells, thereby providing incentives for the local community to ensure the long-term conservation of elephants. In addition, 45% of the CRB license fees go to wildlife management, including resource protection and patrols.

Zambia's human population growth has contributed to conflicts within the GMAs. As clarified in detail on pages 16 and 17 of this document, DNPW contributes 50% of the license fees (animal fees) and 20% of the Concession fees to local communities. These financial benefits received from living in a GMA have provided incentives for newcomers to illegal squat in the GMAs looking to capitalize on the financial benefits. Consequently, the illegal squatting has caused enough conflict with local people to trigger the Zambian government to take action. In August of 2015, over 2,000 squatter households within the Mumbwa GMA were evicted so that the registered local communities could receive the full benefits of living within a conservation area (DNPW 2016). The long-term results of the eviction will need to be addressed in future analysis of Zambia's trophy hunting.

Based on the information available to the Service and provided that hunted elephants are properly permitted and in compliance with national and provincial regulations, we conclude that the purpose for which a permit being requested is adequate to justify changing the status (i.e., exporting trophy elephants) of animals taken in accordance to Zambian laws and regulations.

Therefore, provided that elephants harvested in the 2016, 2017 or 2018 season were properly permitted and in compliance with international, national and provincial regulations, we find that the requirements of 17.32(a)(2)(i) is met.

17.32(a)(2)(ii): The probable direct and indirect effect that issuing the permit would have on the wild populations of the wildlife sought to be covered by the permit:

The elephant population appears to be stable or increasing, apart from Sioma-Ngwezi, which makes up a small portion of the national population, and where law enforcement efforts have been increased. Zambia's sport hunting quotas also do not exceed 1% of the total population. The subsequent increase in funds provided by U.S. sport hunters would allow DNPW to further vital conservation activities for elephants and incentivize local communities to protect them.

The two separate quotas that seem to exist for elephants in Zambia are a source of some confusion. Documents provided to the Service from Zambia note that there is both an export quota under CITES, which is 80 animals (160 tusks), and hunting quotas, for which conflicting information on the 2015 quota was reported (12 elephants in DNPW (2017 pers. comm., March 31) and 36 elephants in ZAWA (2015 pers. comm., April 30)). However, if looking at the GEC (2016) population estimate, the higher quota of 80 animals does not exceed the 1% mark that Zambia appears to use as a limit and, to date, does not appear to have ever been met.

Provided that the off-take of elephants continues to be monitored, the participation of U.S. hunters in elephant hunts would provide an indirect benefit to wild populations by helping to support the areas where elephants are found. Therefore, based on the information available to the Service and provided that elephant hunting remains at a sustainable level in Zambia, the probable direct and indirect effect that issuing the permit would have on the wild populations of the wildlife sought to be covered by the permit would be positive.

17.32(a)(2)(iii): Whether the permit, if issued, would in any way, directly or indirectly, conflict with any known program intended to enhance the survival probabilities of the population from which the wildlife sought to be covered by the permit was or would be removed:

Zambia said in a personal communication that they are managing the elephant population using the National Strategy for Elephant Management, and that a new version of this strategy was going to be reviewed sometime this year (in 2017). It is clear, however, from the documents provided to the Service, that Zambia is actively implementing management actions to ensure sustainable sport hunting of elephants to further their conservation in the wild.

Issuing an import permit would not in any way conflict with the Zambia Wildlife Regulations No. 60 of 2007, providing all U.S. sport hunters obtain the proper permit and provided Zambia with pertinent information related to each hunt. In Wildlife Regulations No. 107 of 2010, it is required that at least 50% of meat and 45% of profits from elephant sport hunting be given to the local community in the game management area which the hunt(s) takes place.

Therefore, based on the information currently available to the Service, the issuance of import permits for legally hunted elephants will not conflict with known conservation programs and rules.

17.32(a)(2)(iv): Whether the purpose for which the permit is required would be likely to reduce the threat of extinction facing the species of wildlife sought to be covered by the permit:

In evaluating this criterion, the Service assesses whether the hunting program established for elephants is subject to a governance structure that clearly allocates management responsibilities and supports regulatory pathways in support of positive conservation outcomes. Zambia's elephant management program is based on a precautionary quota and direct community benefits (DNPW 2016).

Currently, as per Zambia's approved budget, DNPW retains all revenue from sport hunting. A total of USD150,000 was raised from elephant sport hunting from 2015-2016. Fifty percent of animal fees, and 80% of concession fees, go to DNPW as conservation funds. This is a vital source of funding for ensuring the continued existing of elephants in the wild in Zambia; also important is the 45% of animal fees and 15% of concession fees that go to communities where the hunts take place. If local communities continue to benefit from the sport hunting of elephants, through job opportunities, funded community projects, and sharing of meat post-hunt, they will have incentive to protect it.

Therefore, based on the information available to the Service, the purposes for which import permits would be issued would likely reduce the threat of extinction facing elephants in Zambia.

17.32(a)(2)(v): The opinions or views of scientists or other persons or organizations having expertise concerning the wildlife or other matters germane to the application:

Based on our review of information obtained through personal conversations and literature, there is a general agreement that hunting, done properly and well managed, would not have an adverse effect on elephant populations. Researchers and others with substantial knowledge of elephant management have stated that, whether or not they support hunting in general, they see that benefits can be had through a scientifically based hunting program for elephants.

The IUCN Guiding Principles on Trophy Hunting as a Tool for Creating Conservation Incentives (Ver.1.0, August 2012) state that well-managed trophy hunting can "assist in furthering conservation objectives by creating the revenue and economic incentives for the management and conservation of the target species and its habitat, as well as supporting local livelihoods" and, further, that well-managed trophy hunting is "often a higher value, lower impact land use than alternatives such as agriculture or tourism." Lindsey et al. (2007), in their paper on the economic and conservation significance of the trophy hunting industry in sub-Saharan Africa, state their belief that, from a conservation perspective, "the provision of incentives which promote wildlife as a land use is the single most important contribution of the trophy hunting industry." In addition, they note that trophy hunting generates revenues in areas where alternatives, such as ecotourism, may not be viable. More recently, Di Minin et al. (2016) assert that trophy hunting "strongly contributes" to conservation in sub-Saharan Africa, where large areas currently allocated to use for trophy hunting support important biodiversity. They also note that, if revenue cannot be generated from trophy hunting, these natural habitats will be converted to other forms of land use. While recognizing that the degree to which trophy hunting contributes to conservation is a subject of debate, Mallon (2013), in his report on trophy hunting of CITES-listed species in Central Asia, states that "well-run hunting

concessions have an economic interest in maintaining the resource (*i.e.*, conserving the species) so will also aim to manage the area to conserve high-quality habitat that supports high numbers of the hunting species, and also to prevent unregulated use by others (poaching, overgrazing).” Naidoo et al. (2015) describe the complementary benefits of tourism and hunting to communal conservancies in Namibia.

We have reviewed a number of comments from NGOs and the public opposing hunting any elephants. This opposition, however, is primarily based on the perceived ethics of hunting. While these comments are an indication of concerns from some members of the public over hunting, they are not germane to our review process.

Therefore, based on the information available to the Service, there is general support for scientists and other persons or organizations having expertise concerning elephants that the legal well managed, science-based harvest of elephants, and the subsequent import of these trophies, would not have an adverse effect on the species, but would further efforts to conserve the species in the wild into the future.

17.32(a)(2)(vi): Whether the expertise, facilities, or other resources available to the applicant appear adequate to successfully accomplish the objectives stated in the application:

Based on our understanding of the hunting program within Zambia, U.S. hunters must be accompanied by a professional hunter on land that is being managed by the landowner, concessionaire, or representatives of the communal land where the hunt occurs. Although the U.S. hunter may not have the expertise to ensure adequate and proper management of elephants on that land, the professionals associated with the hunt have the expertise and resources to successfully accomplish DNPW management goals. Along with oversight established by the DNPW, there are expertise and facilities available to U.S. hunters to accomplish the stated objective of their application that the killing of an elephant in Zambia whose trophy is intended for import into the United States would enhance the survival of the species in the wild. Therefore, based on the information available to the Service, that applicants that are hunting on properly permitted reserves that carry out their management practices in accordance with national and provincial regulations, have the expertise, facilities, or other resources available to them to successfully accomplish the objective of their application; *i.e.*, the long-term survival of elephants in Zambia. In its evaluation of each application, the Service will further ensure that this criterion, along with the other criteria, is met by each applicant before issuing an import permit.

Conclusion:

Sport hunting of elephants is integral to ensuring the long-term survival of this species in Zambia; funding provided by U.S. sport hunters will further aid in the implementation of conservation objectives and the realization of community projects. These reasons, as well as the implementation of a scientifically based quota system, and clear regulations provided in Wildlife Regulations No. 107 of 2010, have enabled the Service to determine that **permits for sport-hunted elephants taken from Zambia on or after January 1, 2016 and on or before December 31, 2018 meet the enhancement requirements under 50 CFR 17.32 and 50 CFR 17.40(e)(6)(i)(B).**

The Service may replace this finding at any time that this finding no longer reflects the available information consistent with the regulatory requirements. While the Service is currently satisfied that U.S. hunters taking elephants in Zambia at this time and the subsequent import of such trophies meets the enhancement requirements, there are several areas where additional information and follow-up would be required before the Service could make another finding for the 2019 hunting season and beyond. Specifically, the Service would like to receive an update on the status of revision to the 2005 National Strategy for Elephant Management in Zambia that was scheduled for release in late 2017. While DNPW provided an accounting of the amount of revenue generated through elephant hunting in 2015 and part of 2016, additional information on 2017 revenue would be needed. The same would be true for 2018 revenue when such data are available. Further, current information on the success of CRB's implementation of elephant management and how DNPW is addressing poaching, human-elephant conflicts, and increasing human populations would be needed before future findings could be completed. The Service will formally reach out to Zambia in the beginning of 2018 to request such information.

REFERENCES:

- CITES (2002). Consideration of Proposals for Amendment of Appendices I and II. Prop. 12.9.
- CITES (2009). The Elephant Trade Information System (ETIS) and the Illicit Trade in Ivory. CoP15 Doc. 44.1.
- CITES (2010). Consideration of Proposals for Amendment of Appendices I and II. Fifteenth meeting of the Conference of the Parties.
- DNPW (2015). Enhancement and Non Detriment Findings for African Elephant Sport Hunting in Zambia.
- DNPW (2016), *The 2015 Aerial Survey in Zambia. Population Estimates of African Elephants (Loxodonta africana) in Zambia. Vol. 1.* Chilanga, Zambia.
- Douglas-Hamilton I. & A. Hillman (1981). Elephant carcasses and skeletons as indicators of population trends in low-level aerial survey technique. ILCA Monograph.
- Douglas-Hamilton I. & A Burrell (1991). Using carcass ratios to determine trends. In: Proceedings of the International symposium on African Wildlife: Research and Management.
- Great Elephant Census (GEC) (2016). The Great Elephant Census: Country-by-Country Findings.
- IUCN Species Survival Commission (2012). Guiding Principles on Trophy Hunting as a Tool for Creating Conservation Incentives, Ver. 1.0. IUCN SSC 2012.
- Martin, R.B. (1986). Establishment of African ivory export quotas and associated control procedures. Report to CITES Secretariat.
- Martin, R.B. (2005). Elephants. Transboundary Mammal Project. Ministry of Environment and Tourism. Windhoek, Namibia.
- NACSO - Namibian Association of CBNRM Support Organizations (undated). Trans frontier conservation areas.
- Thouless, C.R., H.T. Dublin, J.J. Blanc, D.P. Skinner, T.E. Daniel, R.D. Taylor, F. Maisel's, H.L. Frederick and P. Boucher (2016). African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN / SSC Africa Elephant Specialist Group. IUCN, Gland, Switzerland. vi + 309pp.
- ZAWA (2013). Preliminary Report: Dry Season Survey of Large Herbivores for Kafue and Luangwa Ecosystems.
- ZAWA (2015). Enhancement and Non-Detriment Findings for African Elephant Sport Hunting in Zambia.