



United States Department of the Interior



FISH AND WILDLIFE SERVICE
International Affairs
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Falls Church, VA 22041-3803

In Reply Refer To:
FWS/ALA/DMA/PRT-12548C

Enhancement Finding
Applicant: Carl R. Atkinson

I. Summary:

Mr. Atkinson submitted an application on November 9, 2016, for the importation of one male African lion (*Panthera leo melanochaita*) from Tanzania for the purpose of enhancing the propagation or survival of the species in the wild. This subspecies of African lion is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and is listed as threatened under the U.S. Endangered Species Act (Act or ESA). As such, export of a hunted African lion from Tanzania requires prior issuance of a CITES export permit from the CITES Management Authority of Tanzania, and import into the United States requires prior issuance of an ESA import permit by the U.S. Fish and Wildlife Service (Service). The Service, therefore, may authorize the import of a sport-hunted lion trophy from Tanzania, but only if it first makes a finding that permitting import of a trophy would enhance the propagation or survival of the species in the wild.

After evaluating the available information submitted with the application, information provided by the government of Tanzania, and other information available to the Service, the Service has determined that the importation of the sport-hunted trophy to be taken between July 11 and August 8, 2019, from the Lukwati North Game Reserve in the Rukwa, Tabora and Mbeya Regions of central and western Tanzania meets the enhancement criteria under 50 CFR 17.32.

The Service recognizes that legal, well-regulated hunting as part of a sound management program can benefit the conservation of certain species by providing incentives to local communities to conserve the species and by putting much-needed revenue back into conservation. A management program for a species such as *P. l. melanochaita* is expected to address, at a minimum, an evaluation of population trends; the biological needs of the species; quotas; management practices; legal protection; local community involvement; and use of hunting fees for conservation; we work closely with the range countries and interested parties to obtain the information. In evaluating whether the importation of Mr. Atkinson's trophy of *P. l. melanochaita* would be authorized in accordance with our permit issuance criteria, we were particularly interested in examining how Tanzania's management program for lions addresses the three main threats that have led to the decline of the subspecies: habitat loss, loss of prey base, and human-lion conflict. We considered whether the management program is actively addressing the current and longer term threats to the subspecies based on sound scientific principles. We evaluated how, and how well, the hunting component of the management program addresses these threats by looking at whether hunting concessions/tracts are managed to ensure the long-term survival of the lion, its prey base, and habitat. We also considered how the participation of a U.S. hunter, in this case, Mr. Atkinson, contributes to the overall management of lions within a country.

The government of Tanzania has provided a series of documents, including Tanzania's "enhancement"¹ and non-detriment finding for lions (TAWA, 2016). These documents, verbal updates/presentations at the 16th Annual African Wildlife Consultative Forum (Uganda, November 2018), information received in Mr. Atkinson's application, the Tanzania Wildlife Research Institute (TAWIRI), open sources (e.g., IUCN, published literature), and a field mission in November, 2018, were the basis of this finding.

II. U.S. Governance of the Lion:

On December 23, 2015, the Service published in the Federal Register a final rule effective January 22, 2016, listing the lion subspecies *P. l. melanochaita* (southern and eastern Africa) as a threatened species under the Act with a rule under Section 4(d) of the Act, which is set forth at 50 CFR 17.40(r) (USFWS 2015; 80 Fed. Reg. 79999). Therefore, as of January 22, 2016, the lion subspecies *Panthera leo melanochaita*, whose range includes Tanzania, is listed as threatened under the ESA and is regulated under an ESA species-specific 4(d) rule [50 CFR 17.40(r)].

Where a rule is promulgated for a threatened species under Section 4(d) of the Act, the species-specific 4(d) rule contains the applicable prohibitions and exceptions for the threatened species (50 CFR 17.31(c)). Under the 4(d) rule for *P. l. melanochaita* (50 CFR 17.40(r)), all of the prohibitions of 50 CFR 17.31 and permit provisions of 50 CFR 17.32 apply to *P. l. melanochaita* specimens. The prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to "take" (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt any of these) within the United States or upon the high seas; import or export; deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever, in the course of a commercial activity; or sell or offer for sale in interstate or foreign commerce any lion specimens. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken in violation of the ESA. Permits may be issued to carry out these otherwise prohibited activities, including import, under certain circumstances (e.g., scientific purposes or activities that enhance the propagation or survival of the species), in accordance with the Service's regulations at 50 CFR 17.32. Accordingly, as we explained when finalizing the 4(d) rule for *P. l. melanochaita*, the Service may authorize the import of a sport-hunted lion trophy from Tanzania, but only if it first makes a finding that permitting the import of a trophy would enhance the survival of the species in the wild (USFWS 2015; 80 Fed. Reg. 79999; 50 CFR 17.40(r)(2); 50 CFR 17.32(a)).

As with all permit applications submitted under 50 CFR 17.32, the individual requesting authorization to import a sport-hunted trophy of *P. l. melanochaita* bears the burden of providing information in their application showing that the activity meets the issuance criteria under 50 CFR 17.32. 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 made the required enhancement finding based on this individual application to

¹ Note, although "enhancement finding," is referenced in the document's title, the document is not, nor does Tanzania produce, an enhancement finding under the U.S. Endangered Species Act.

import a sport-hunted trophy of *P. l. melanochaita*; however as detailed below, relevant information obtained for the country as a whole has been considered, as it contains information pertinent to the Service's evaluation as required by the 4(d) rule for *P. l. melanochaita*.

A. General ESA permitting requirements

As we explained when finalizing the 4(d) rule, our threatened species permitting regulations provide issuance criteria for threatened species permits [50 CFR 17.32(a)(2)], but do not specify what would constitute the enhancement of propagation or survival with regard to authorizing the import of parts or products of *P. l. melanochaita*, including sport-hunted trophies. Therefore, when making a determination of whether an otherwise prohibited activity enhances the propagation or survival of *P. l. melanochaita*, the Service examines the overall conservation and management of the subspecies in the country where the specimen originated and whether that management of the subspecies addresses the threats to the subspecies (*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 subspecies). In this review, we evaluate whether the import of a sport-hunted lion trophy taken in Tanzania contributes to the overall conservation of the species by considering whether the biological, social, and economic aspects of a program under which the specimen was obtained provide a net benefit to the subspecies and its ecosystem.

The Service evaluates an application involving a *P. l. melanochaita* sport-hunted trophy in the context of enhancement of propagation or survival in accordance with our threatened species permitting regulations at 50 CFR 17.32 and issuance criteria for threatened species permits [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.

B. IUCN guiding principles

In addition to these factors, particularly in relation to sport-hunting, in the 4(d) rulemaking for *P.l. melanochaita*, the Service explained it considers the publication, *IUCN Species Survival Commission (SSC) Guiding Principles on Trophy Hunting as a Tool for Creating Conservation Incentives* (IUCN SSC, 2012), to provide useful principles, which, considered in conjunction with our threatened species issuance criteria, will aid the Service when making an enhancement finding for importation of sport-hunted trophies of *P.l. melanochaita*. The Service has, therefore, considered these principles in conjunction with our threatened species issuance criteria in making our determination of enhancement concerning import of the sport-hunted *P. l. melanochaita* trophy that is the subject of this permit application. The IUCN document sets out guidance from 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”. It recognizes that recreational hunting, particularly trophy hunting, can contribute to biodiversity conservation and, more specifically, the conservation of the hunted species.(IUCN SSC, 2012)

The IUCN 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.

This approach to enhancement findings for the importation of sport-hunted trophies of *P. l. melanochaita* is consistent with the purpose and intent of the ESA. As such, before the Service will authorize the importation of a sport-hunted trophy, we must determine that the trophy-hunting program is managed to ensure the long-term survival of the species. As part of this evaluation, we recognize that in many parts of the world, wildlife exists outside of protected areas and must share the same habitat and compete with humans living in these areas for space and resources. As identified in the *IUCN SSC Guiding Principle on Trophy Hunting as a Tool for Creating Conservation Incentive*, if communities that share these resources with wildlife do not perceive any benefits from the presence of wildlife, they may be less willing to tolerate the wildlife. However, under certain circumstances, trophy hunting can address this problem by making wildlife more valuable to the local communities, thus encouraging community support for managing and conserving the hunted species, as well as other species.

III. Basis for Finding:

As explained above, any person wishing to conduct an otherwise prohibited activity, including import of *P. l. melanochaita* specimens, must first obtain a permit as required by 50 CFR 17.32; issuance of an import permit for a sport-hunted trophy of *P. l. melanochaita* requires an enhancement finding.

The Service has made the required enhancement finding for this import permit based on this individual application to import a sport-hunted trophy of *P. l. melanochaita*. Additionally, as detailed below, relevant information obtained for Tanzania as a whole, has been considered. The government of Tanzania has provided a series of documents, including Tanzania's "enhancement"² and non-detriment finding for lions (TAWA, 2016). These documents, verbal updates/presentations at the 16th Annual African Wildlife Consultative Forum (Uganda, November 2018), information received in Mr. Atkinson's application, the TAWIRI, open sources (e.g., IUCN, published literature), and a field mission in November, 2018, were the basis of this finding.

² Note, although "enhancement finding," is referenced in the document's title, the document is not, nor does Tanzania produce, an enhancement finding under the U.S. Endangered Species Act.

On April 14, 2016, the Service sent a letter to Mr. Herman Keraryo, Acting Director of Wildlife for the Wildlife Division of the Ministry of Natural Resources and Tourism (MNRT), with a list of questions that would aid the Service in evaluating the overall conservation and management of the lion subspecies, *P. l. melanochaita*, in Tanzania, and whether that management addressed the three main threats that have been identified as the reason for the decline of the species: habitat loss, loss of prey base, and human-lion conflict. Additionally, in the letter the Service referenced the *IUCN Species Survival Commission (SSC) Guiding Principles on Trophy Hunting as a Tool for Creating Conservation Incentives* (IUCN SSC, 2012), as it provides useful principles, which, when considered in conjunction with the Service's permit issuance criteria, would aid the Service in making the required enhancement findings for permitting importation of sport-hunted lion trophies. In response to our April 14, 2016, letter, the MNRT provided a series of documents, including Tanzania's "enhancement" and non-detriment finding for lions.

Upon invitation, a U.S. delegation of Service personnel visited Tanzania in November 2018 to observe the challenges and successes of conserving wildlife, including lions, in Tanzania. This trip allowed first-hand exposure to the on-the-ground implementation of policies and procedures the government has put into place to conserve lions. Detailed discussions with government officials, national experts, land managers, game officers, village leaders, and leaders in the hunting industry, as well as several site visits, served to both substantiate and elucidate information provided in documents. We determined that the status of lions and the management approach of Tanzania are substantially as presented, conferring confidence to the conclusions drawn from information provided.

IV. Governance of Wildlife in Tanzania:

In Tanzania, wildlife resources, such as lions, are protected under several Acts of Parliament, establishing the authority for all aspects of wildlife management, including law enforcement activities. The **Wildlife Conservation Act (WCA)** of 2009, which replaced the original WCA of 1974, provides the legal framework for operation of the Wildlife Division under the MNRT, including the appointment of the Director of Wildlife. The WCA provides for the establishment of a Wildlife Protection Unit granted paramilitary status to protect wildlife against unlawful utilization, and a Wildlife Authority to manage all Tanzania wildlife located outside the boundaries of the National Parks and the Ngorongoro Conservation Area. The Wildlife Authority is also responsible for meeting international obligations involving wildlife conservation. The WCA ensures the protection of natural habitat and wildlife through the establishment of a network of protected areas, e.g., Game Reserves, Game Controlled Areas, Wildlife Management Areas, and areas such as wildlife corridors. The **National Parks Act (CAP 282 R.E. 2002)** establishes the legal authority for the creation and management of national parks, granting powers to the Director to enable maintenance and security within national parks, as well as the responsibility for the protection of their wildlife resources. The **Ngorongoro Conservation Act (CAP 284 R.E. 2002)** provides the legal framework for the existence of the multiple land use in the Ngorongoro Conservation Area, its Management Authority under the direction of the Conservator, and the authority for its maintenance and security. The **TAWIRI Act (CAP 260 R.E. 2002)** grants powers to the Director who is responsible for research involving wildlife, and for providing this information to the Wildlife Authorities. The TAWIRI also functions as the CITES Scientific Authority for Tanzania.

The responsibility for managing Tanzania's wildlife currently falls primarily under four institutions. The **Tanzania Wildlife Research Institute (TAWIRI)** is responsible for conducting

and coordinating wildlife research in Tanzania. It functions as the scientific authority for wildlife conservation and management. The **Tanzania National Parks Authority (TANAPA)** is responsible for managing 15 National Parks with a total area of 50,872 sq.km. In the national parks, only non-consumptive utilization (tourism game viewing) of wildlife resources is allowed. **Ngorongoro Conservation Area Authority (NCAA)** is responsible for management of only one area, the Ngorongoro Conservation Area, a protected area of 8,300 km². It is the only multiple land use wildlife area in Tanzania in which the consumptive utilization of wildlife is not permitted. Both organizations are parastatal – public organizations, but not directly run by the government; all revenue is kept by the organizations for use in management of these areas.

The Wildlife Division has historically been responsible for the country's wildlife resources located outside the jurisdiction of the Ngorongoro Conservation Area and Tanzania National Parks. However, in response to concerns over questionable management practices and lack of adequate funding for the Wildlife Division to successfully manage wildlife resources, the **Tanzania Wildlife Management Authority (TAWA)** was established in 2014³. Also a parastatal organization, TAWA operates with significant autonomy and retains all revenue generated from hunting⁴. TAWA became operational in July 2016, and has since established an aggressive, proactive approach to protecting wildlife. In addition to conducting routine anti-poaching patrols, TAWA is actively building capacity with technology (e.g., GIS), relationships with local communities (e.g., intelligence-led operations), and collaborative efforts on an international scale.

TAWA is responsible for the management of 28 Game Reserves with an area of 112,564 km², approximately 38 Game Controlled Areas covering about 161,521 km², and Ramsar sites covering 249,856 km². There are also District Councils, Local Government institutions that work in collaboration with the TAWA. These Councils oversee wildlife conservation issues and facilitate the establishment and management of Wildlife Management Areas (WMAs) on village lands that are outside of Protected Areas (PAs). WMAs were established as a new category of wildlife conservation area consisting of settled and unsettled lands outside PAs, with the goal of allowing for rural communities and private landholders to manage wildlife on their land for their own benefit, shifting wildlife such as lions from a liability to an asset. The framework for WMAs was outlined in Tanzania's Wildlife Policy of 1998 (revised in 2007), with legislation established under the Wildlife Management Areas Regulations of 2002, authorizing the formal establishment of WMAs.

From 2010 to 2014, over 1.3 million USD from hunting fees were disbursed to WMAs (TAWA, 2016). In 2012, Tanzania amended its Wildlife Management Area Regulations to provide a new basis for strengthening the links between local communities and wildlife management by addressing the issues of benefit sharing and control over concession allocations. Under the new regulations, the WMAs receive 75% of the block fees, as well as 45% of the game fees, observer fees, and conservation fees. These new provisions provide the WMAs with approximately 60-65% of the total hunting revenue occurring within the block. Additionally, WMAs gained the power to sign utilization contracts with the private sector, enabling seven WMAs to sign contracts with hunting operations worth more than 4.3 million USD (TAWA, 2016). The establishment of these WMAs has resulted in an additional 23,700 km² of Tanzania's land area being added to its

³ Prior to the establishment of TAWA, funding to the Wildlife Division was paid by the central treasury; inadequate funding left the Wildlife Division unable to effectively manage and protect Tanzania's wildlife resources.

⁴ The mandate to collect and retain revenue from trophy hunting is enshrined in "The Wildlife Conservation (The Tanzania Wildlife Management Authority) Establishment Order 2014.

conservation network and increased capacity for protected area management through the training of village game scouts and WMA managers.

The tourism industry, largely wildlife-based, contributes to about 13% of Tanzania's annual Gross National Product and is predicted to increase (WTTC, 2017). The tourist industry generates almost 6 billion per year (WTTC, 2017) with about 80 million annually going to TANAPA, NCAA, and the Wildlife Division to fund their operations. The three parastatal organizations, TANAPA, NCAA and TAWA, retain 100% of their revenue share. Both TANAPA and NCAA are generally self-sustaining; consequently, National Parks and equivalent areas such as Ngorongoro Conservation Area, with an area covering approximately 57,387 km², or 38% of all PAs in Tanzania, are adequately funded. Revenue generated from the sustainable utilization of resources (i.e., hunting) accounts for 70% of TAWA revenue; therefore, the viability of TAWA will depend, in part, on sufficient revenue from safari hunting. In 2012/2013, the Government of Tanzania re-established the Selous Game Reserve Revenue Retention Scheme, whereby 50% of the revenue generated from photographic tourism and tourist safari hunting is retained in order to meet management and enforcement costs in the Selous Game Reserve, one of the largest protected areas in Africa.

In addition to Tanzania's domestic laws, it is also a Party to CITES. The lion is listed in Appendix II of the Convention. As an Appendix-II species, certain criteria must be met before such species can be exported, including a finding from the exporting country's CITES Scientific Authority that the proposed activity will not be detrimental to the survival of the species in the wild. In their reply to our inquiry, Tanzania provided a copy of their CITES non-detriment finding (NDF) for lions, which finds that the export of the species will not be detrimental to the survival of the species in the wild.

Tanzania is also a member of the Southern African Development Community (SADC). Under the SADC Treaty, Article 5(g) establishes objectives to, among other aspects, promote the sustainable use of wildlife, harmonization of legal instruments governing wildlife use and conservation, promote the conservation of shared wildlife resources through the establishment of transfrontier conservation areas, and facilitate community-based natural resources management practices. As required of a member state, Tanzania has established management programs for the conservation and sustainable use of wildlife.

V. Status of Lions in Tanzania:

Approximately 40% of all lions in Africa are found in Tanzania (Riggio et al., 2013). The lion range in Tanzania covers over 90% of land (Mesochina et al., 2010), with four main subpopulations:

1. the Maasailand Ecosystem, which encompasses the Mara, Arusha Kilimanjaro and Manyara Regions of northeastern Tanzania;
2. the Kagera and Kigoma Regions of northwestern Tanzania;
3. the Rukwa, Tabora and Mbeya Regions of central and western Tanzania;
4. Selous Ecosystem, which encompasses the Lindi, Morogoro and Ruvuma Regions of southern Tanzania.

TAWIRI presents Tanzania's latest lion population estimates as 16,800 individuals (Mesochina et al., 2010), and 17,564 (12,208-19,320) (Ikanda & Packer, 2006). They estimate that 13,600 (or

81%) of these lions occurred within PAs and approximately 3,200 (or 19%) individuals occurred outside PAs. According to Riggio et al. (Riggio et al., 2013) and Björklund (Björklund, 2003), the minimum number of lions estimated to categorize an area as a lion stronghold is 500 individuals. The estimated lion population size of the four main ecosystems was 3,700 in the Maasailand Ecosystem, 520 in Kagera and Kigoma Regions, 2,300 in Rukwa, Tabora and Mbeya Regions, and 7,200 in the Selous Ecosystem. Trend analysis of the lion population in Tanzania is limited due to the sporadic nature and variable methodology of past surveys, as well as the difficulty of obtaining precise lion counts (Brink, Smith, & Skinner, 2013; Funston et al., 2010), but it is suggested that, nationally, far fewer lions exist today than did 50 years ago (Ikanda, 2008). Available information suggests that this may be spatially variable, e.g., declining populations in Katavi and Tarangire (Bauer et al., 2015) and stable populations in the Selous Game Reserve (Packer et al., 2011).

VI. Management of Tanzania's Lion Population

In recognition of the role that Tanzania plays in the conservation of this species, a workshop was held in 2006 to assess available information and to set priorities for conservation of the lion in Tanzania. The Tanzania Lion and Leopard Conservation Action Plan (TAWIRI, 2009) provided an overview of this workshop and outlined a national strategic plan for lion conservation. Habitat loss and increased conflict with humans had been identified as the major threat to the species. The Tanzania Lion and Leopard Conservation Action Plan (Plan) concluded that, for those lion populations existing outside National Parks, well-run trophy hunting programs could be leveraged to successfully manage and conserve lions against these threats. To that point, the majority of permanent lion range in Tanzania lies within protected areas, 61% of which are designated as hunting areas (Mesochina et al., 2010).

A. Hunting:

Hunting of lions is allowed across much of Tanzania. Safari hunting occurs in areas known as hunting blocks, designated in Game Reserves, Game Controlled Areas, Open Areas, Forest Reserves and WMAs. Until recently, blocks were allocated using an administrative process; the government would invite hunting companies to apply to operate a hunting block. Interested hunting companies were evaluated by the Hunting Block Advisory Committee. Hunting companies were allocated blocks for a period of five years, with a reporting requirement on the third year to determine compliance under the terms outlined within the hunting block regulations (TAWA, 2016). However, in 2017, it was announced that the block allocation process would be amended to introduce an auction system.

Wildlife hunting in Tanzania is based on hunting regulations set forth in Tourist Hunting Regulations No. 306 (2002). The hunting regulations specify the fees for hunting different species, and further specify a minimum number of hunting days. Hunters are required to purchase a minimum 21-day safari in order to request a permit for the harvest of lions, as well as other specified animals (e.g., elephant, leopard). Hunters must pay a number of different fees for permits and licenses to be granted harvest authorization. The game fee to hunt a lion is the second highest game fee in Tanzania, second only to elephants.

A quota system historically was the primary method of regulating trophy hunting in Tanzania. However, the Plan noted the lack of scientific justification underlying that

system. Furthermore, a quota system is reliant on accurate population estimates, a near impossibility with lions. A model that simulated the dynamics of populations as a function of both quota size and age at harvest showed that there is almost no negative affect on population size when hunting is restricted to males six years or older (Whitman, Starfield, Quadling, & Packer, 2007). Restricting lion hunting by age would reduce the reliance on population estimates – an intensive and expensive effort that does not reliably return accurate results. Tanzania was the first country in African lion range states to officially establish age restriction rules, prohibiting hunting lions of an age below six years (section 27(1) of the Tourist Hunting Regulations of 2015). Violations of this regulation can result in penalties for the professional hunter guiding the offending hunter, including fees and revoking of the professional hunters' license. Although inspection of trophies are required prior to export, the fundamental difficulties of accurately estimating lion age, as well as a disregard for these regulations, can result in the take of lions younger than six years. Tanzania has consequently implemented a quota system by hunting area that is set according to the lions harvested during the previous hunting season. This two-pronged approach is designed to direct hunting intensity to surplus/huntible lions (TAWA, 2016).

Annual harvest quotas have been lowered over the past decade, from 520 in 2008-2009 (Lindsey et al., 2013) to 315 in recent years (TAWA, 2016). In 2016, the annual quota was further reduced to 200 individuals (TAWA, 2016). An annual quota of 200 individuals is well within the suggested sustainable 1 lion/2000 km² harvest rate identified by Packer et al. (Packer et al., 2011), and 25% below the sustainable harvest level suggested by TAWIRI (TAWA, 2016). Tanzania further addressed offtake rates by establishing an age-based rule for the harvesting of lions, as discussed above. Trophies can only be exported if the lion is posthumously determined to be 4 years of age or older. If a trophy lion is estimated to be 4-6 years, the hunter/client may export that lion, but the quota for the hunting block where the trophy was taken is reduced for the following hunting season. If a trophy is taken below the age of 4, penalties described above include a reduction of the hunting block's quota of harvestable lions by 2 and potential cancellation of the hunter's license along with other penalties such as the trophy not being eligible for export. If the trophy meets the criteria of 6 years of age or older, the hunting block's quota remains unchanged for the following hunting season. According to MNRT, these regulations have been in place since the 2012/2013 hunting season. For each trophy harvested, a compulsory hunter evaluation form, photos along with presentation of lion skull to officials for inspection and measurements, including tooth x-rays, are necessary prior to the issuance of an export permit (MNRT, 2015; TAWA, 2016).

B. Human-Lion Conflict:

It is difficult to estimate how many lions are killed illegally each year; however, retaliatory killings may be as high as 200 individuals annually (TAWA, 2016). Lions are provided protection from illegal or retaliatory killing under the Fourth Schedule due in part to human/livestock-conflict under the Dangerous Animals Damage Consolation (Government Notice No. 146) of 2011; unauthorized personnel are not permitted to kill a conflict lion unless under exceptional circumstances. Tanzania established a mitigation scheme to protect lions from retaliatory killings. This scheme consoles people affected by the loss of relatives and property through payment in kind, and is intended to increase human tolerance for lions (TAWA, 2016).

VII. Evaluation:

In evaluating whether the importation of Mr. Atkinson's trophy of *P. l. melanochaita* would be authorized pursuant to 50 CFR 17.32, in accordance with our permit issuance criteria, we examined how Tanzania's management program for lions addresses the three main threats that have led to the decline of the subspecies: habitat loss, loss of prey base, and human-lion conflict. We considered whether the management program is based on sound scientific information and identifies mechanisms that would arrest the loss of habitat or increase available habitat (*i.e.*, by establishing protected areas and ensuring adequate protection from human encroachment). We considered whether the management program actively addresses the loss of the lion's prey base by addressing poaching or unsustainable offtake within the country. For example, several components of a management plan by which trophy imports could meet the issuance criteria might be government incentives in place that lead to increased habitat protection for lions by private landowners and communities, and incentives provided to local communities that lead to reductions in the incursion of livestock into protected areas for lions or lead to increases in active management of livestock to reduce conflicts with lions. We examined if the hunting component of the management program supports all of these efforts by looking at whether hunting concessions/tracts are managed to ensure the long-term survival of the lion, its prey base, and habitat. Hunting, if properly conducted and well managed, can generate significant economic benefits that may contribute to the conservation of lions. As such, we examined if the trophy hunting provides financial/resource assistance to the wildlife department to carry out elements of the management program, and if there is a compensation scheme or other incentives to benefit local communities that may be impacted by lion predation. We also considered how a U.S. hunter's, in this case, Mr. Atkinson's, participation in the hunting program contributes to the overall management of lions within the country.

As stated earlier, the Service has evaluated this application in accordance with our regulations at 50 CFR 17.32 and the issuance criteria for threatened species permits [(50 CFR 17.32(a)(2))]. In evaluating each of these criteria based on information available to the Service, we have been able to determine for this application that the import of the wild lion trophy animal would enhance the propagation or survival of the species in the wild and qualifies for the issuance of the required import permit.

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:

In evaluating this criterion, the Service assesses whether the proposed activity in this permit application (import of a trophy hunted lion from Tanzania) has demonstrated the ability to contribute towards positive conservation outcomes that mitigate or improve the status of lions throughout their range while addressing the main threats of habitat loss, human-lion-livestock conflict, and prey depletion that collectively contribute towards continued population declines.

Tanzania faces a growing human population, and the subsequent development of land and increasing rates of human-wildlife interactions. Protection of suitable habitat for both the lion and its prey is essential for the survival of the lion, as well as developing and sustaining the local communities' support for such policies. Wildlife protected areas, in various forms, cover about 40% of Tanzania's land area, and safari hunting has created a financial incentive to maintain these areas as wildlife conservation as a land use. Both the consumptive and non-consumptive utilization of wildlife resources contributes to about 13% of Tanzania's annual Gross National

Product and is predicted to increase (WTTC, 2017). The tourist industry generates almost 6 billion per year (WTTC, 2017) with about 80 million annually going to TANAPA, NCAA, and the Wildlife Division to fund their operations.

The companies awarded a hunting block are in a key position to conserve this land for wildlife, and are annually evaluated by the Tanzania government on several criteria, including the maintenance of prey populations, contributions/provision of benefits to the local villages, improvement to infrastructure and protection of the environment, and anti-poaching operations.

Mr. Atkinson will hunt with Old Nyika Safaris, a subsidiary of McCallum Safaris. McCallum Safaris has developed several programs by which to address the main threats to lion populations.

- The company, in collaboration with government game scouts, maintains significant anti-poaching efforts to protect against potential threats to habitat loss and the loss of game. Anti-poaching teams include government scouts with the ability to arrest, and company scouts with years of anti-poaching training and experience. The company has established a network of informants in the villages, and maintains the road system within the hunting area, both of which aid in the monitoring and apprehension of active poachers. The company invests a significant amount of resources into anti-poaching activities, including funding their own poaching teams, purchasing state-of-the-art equipment, and contributing to government anti-poaching operations occurring in areas surrounding their holdings. The successes of these anti-poaching activities include the removal of illegal fishing camps; the seizure of weapons, vehicles, and equipment; and the arrest and prosecution of poachers. The active monitoring by the anti-poaching teams has resulted in a decrease in the occurrences of timber felling.
- While there has been no instances of human-lion conflict in the hunting areas, the company has established an agreement to compensate the owner of the full value of lost livestock.
- The company protects prey base species by setting low off-take quotas, and mandating that professional hunters take only mature adults.
- McCallum Safaris has adopted a company hunting policy to which all professional hunters must adhere, or else lose employment. This policy reiterates the country's age restriction on lion off-take, prohibiting the take of lions under the age of six, of lions accompanied by a pride with cubs or sub-adult lions, or of lions accompanied by a pride of lactating females.
- The company has implemented a lion-monitoring program that allows personnel to view and track the movement of lions. With this data, the company can efficiently and accurately determine the age and status of lions, reducing the take of young males or males accompanied by a protected class of individuals.

It has been stated that upwards of 200 lions are killed annually due to preemptive strikes or as retaliatory actions after some form of direct loss is experienced (TAWA, 2016). In the Ruaha communities surrounding hunting blocks and the Ruaha National Park, researchers reported 35 large carnivores were killed over an 18-month period in three villages. Similarly, Lichtenfeld et

al. (Lichtenfeld, Trout, & Kisimir, 2015) reports that in 12 communities of the Maasai Steppe region, more than 50 attacks by large carnivores on livestock resulting in retaliatory killing of 72-84 lions annually across these communities has been observed. Tanzania established a mitigation scheme to protect lions from retaliatory killings. This scheme consoles people affected by the loss of relatives and property through payment in kind, and is intended to increase human tolerance for lions (TAWA, 2016).

As described above, we have determined that the government of Tanzania and McCallum Safaris contribute towards positive conservation outcomes by addressing the main threats of habitat loss, human-lion-livestock conflict, and prey depletion, which contributes to improving the status of lions in Tanzania. Further, the fees garnered through Mr. Atkinson's hunt will provide revenue to support these positive conservation outcomes.

Therefore, based on the information available to the Service, the purpose for which the permit is being requested, import of this trophy lion, is adequate to justify removing the sport-hunted trophy lion from the wild or otherwise changing its status.

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:

A myriad of issues and factors, largely related to an increasing human population, complicate and put at risk the management of Tanzania's wildlife (Kideghesho, Rija, Mwamende, & Selemani, 2013). It is likely that the lion populations that exist outside of protected areas will continue to decline (Riggio et al., 2013), making the existence of these protected areas all the more important. The trophy-hunting program in Tanzania provides a revenue source to maintain and manage protected areas from encroachment or elimination.

It is a widely supported belief that increasing the benefits for those most impacted by wildlife can increase tolerance of wildlife, especially of large carnivores (e.g. lions), by those communities who live with and bear costs of wildlife damage or injury (Bencin, Kioko, & Kiffner, 2016; Lindsey et al., 2013; Winterbach, Winterbach, Somers, & Hayward, 2012). The Service is encouraged by the recent action taken by the MNRT to amend the WMA regulations enabling them to receive a greater proportion of revenues returned on wildlife uses. Furthermore, the Service has received individual reports from a number of operators who are conducting anti-poaching and wildlife protection activities and investing in local community development.

Mr. Atkinson will hunt with a subsidiary of McCallum Safaris, which, as outlined below, will provide an indirect benefit to the lion population by generating revenue to help support a hunting block where lions are found and conserved. McCallum Safaris is required by Tanzanian law to pay directly a \$5,000 community development fee to the villages in the hunting area. The company has contributed significantly more than the base requirement, aiming to develop and maintain a strong relationship with these villages. These contributions have paid school fees, constructed classrooms, purchased books, and invested in solar power. In addition to direct financial assistance, the company also employs villagers in both permanent positions and short-term projects; conducts conservation workshops to educate the local residents of the importance of wildlife and hunting in their daily life, and the negative effects of poaching.

Therefore, based on the information available to the Service, the probable direct and indirect effect that issuing an import permit for this legally hunted lion would have on the species 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:

The government of Tanzania has implemented a number of policies and regulations to monitor and control the harvest of lions in the country. Therefore, the issuance of an import permit for a lion legally hunted in Tanzania does not conflict with any programs intended to enhance the survival probably of the species in Tanzania.

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:

As previously stated, almost 40% of all remaining lions are found in Tanzania. The lions located within protected areas are under the legal authority of MNRT, as well as subjected to direct management activities by hunting companies. All indications show, that given the threats identified by the Service when listing the species as threatened under the ESA, the maintenance of these protected areas by hunting companies is actively addressing the three causes of lion decline: loss of habitat, loss of prey base, and human-lion conflict. The cost of operating a hunting block is considerable, and lion safaris are a large source of revenue for hunting companies. This revenue is, in part, what allows the company to first and foremost maintain a presence in this protected area, and subsequently maintain an anti-poaching program, and to aid in local community development, all factors which reduce the threats faced by lions.

With limited, controlled off-take of lions in a manner that mimics natural processes, the hunt proposed in Mr. Atkinson's application contributes to reducing the threat of extinction of lions in Tanzania. The utilization of hunters such as Mr. Atkinson in supporting the safari hunting industry is an important element of the success of lion management in Tanzania.

Therefore, based on the information available to the Service, the purpose for which this import permit would be issued will likely reduce the threat of extinction facing lions in Tanzania.

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:

As with any discussion of hunting as a management tool, there are numerous opinions on the impact it would have on a species. From reviewing comments made during the listing process for lions, as well as information obtained through personal conversations and available literature, there is a general agreement that hunting, done properly and well managed, would not have an adverse effect on lion populations. Mimicking natural processes within the management program, such as maintaining pride hierarchy for long periods by leaving the alpha male in place, will better ensure the long-term survival of the species. Numerous researchers have stated that, while they may not support hunting in general, they see benefits that can be realized through a scientifically based hunting program for lions. There have been a large number of comments from some Non-Governmental Organizations (NGOs) and the public that oppose hunting any lions.

While these comments are an indication of concerns from some members of the public over hunting, they are not germane to our review process for this application.

Therefore, based on the information available to the Service, there is general support by scientists, individuals, and other organizations having expertise concerning lions, that legal and sustainable harvest and subsequent import of these lion 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.

The long-term survival of lions in Tanzania is tied directly to the success, both ecologically and economically, of the protected areas. Based on our understanding of the hunting block allocation and management, companies must submit annual reports that address several criteria, including the maintenance of key prey populations, contributions to the local villages, improvement to infrastructure and protection of the environment, and anti-poaching operations.

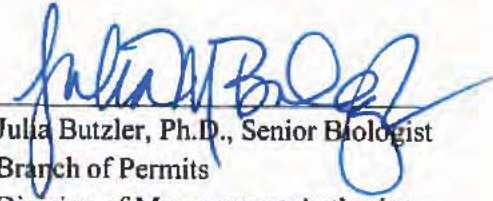
Therefore, based on the information available to the Service, the applicant will hunt on a hunting block that carries out their management practices in accordance with national regulations, having the expertise, facilities, or other resources available to them to successfully accomplish the objective stated in the application.

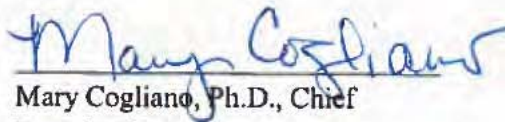
VIII. Conclusion

As stated earlier, this application received by the Service for the import of a sport-hunted trophy lion from Tanzania has been evaluated on an individual basis. The major threat facing lions today is the loss of habitat to humans, and the subsequent consequences of living among humans (e.g., decrease of prey base due to bush-meat consumption, increase in human-lion conflict). The occupation and maintenance of hunting areas by hunting concessions -- an industry supported by U.S. hunters such as Mr. Atkinson -- protects lion and prey habitat through legal hunting by preventing conversion of such land to other uses, thereby contributing to the enhancement of this species. In addition, the financial benefits to local communities generated from lion safari hunting creates incentives for protection of lions, resulting in fewer lions lost as a result of human-lion conflict, which further contributes to enhancement of this species. Given the status of lions in Tanzania and the level of management and oversight provided to them, it appears that the harvest and import of this lion as a sport-hunted trophy meets the purposes of the Act. The applicant will hunt on a hunting block that is actively managing lions in a manner that will maintain the species in the block in a manner that mimics natural processes. The applicant attests in the application that the hunt will occur on a properly licensed hunting block, and this finding is contingent on the hunting block where the lion will be taken, having been properly licensed and fully in compliance with national and local regulations.

Therefore, with the information currently available to the Service and in accordance with the issuance criteria laid out above, the Service is able to make a determination that the import of the sport-hunted trophy of this wild lion will enhance the propagation or survival of the species in the

wild. Therefore, the Service is able to authorize the import of one male trophy lion taken from the wild in Tanzania, to Carl R. Atkinson, Orlando, Florida.


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