

Saving Spots

**TACKLING LEOPARD POACHING FOR CEREMONIAL
LEOPARD SKIN TRADE IN WESTERN ZAMBIA**



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Summary

Project Title - Saving Spots: Tackling leopard skin trade for ceremonial use in western Zambia.

Scanning

Poaching for ceremonial attire is a severe threat to leopards. For example, the Lozi people of Western Zambia utilize leopard skins for their ceremonial attire to participate in ‘Kuomboka’ and other cultural festivals. The unsustainable demand for leopard skins is primarily met through illegal hunting and trafficking from the nearby Greater Kafue Ecosystem (GKE) and surrounding landscape. Panthera first pioneered the use of synthetic leopard skins as a solution to a similar problem in South Africa. Impressed by its success, His Royal Highness Inyambo Yeta- a Lozi Senior Chief, invited us to replicate this solution in his community in Western Zambia.

Analysis

We analysed the problem using various sources of information, including key informant interviews, questionnaire surveys, court monitoring, and interactions with local officials. According to the analysis, ceremonial skin use is specific to a user group, locations on the Barotse Floodplain close to the Royal Palaces and months of the year. Moreover, new skins are predominantly acquired through the direct hunting of leopards and purchasing leopard skins from local traders. These factors provided the key vulnerabilities which a targeted intervention can exploit. However, the prestige associated with participating in traditional ceremonies and wearing authentic leopard skin could potentially produce behavioral resilience to change among users. Nevertheless, the influence of His Majesty the Litunga (the Lozi King) over the Lozi people and their respect for the King provided a social framework for curtailing authentic skin use.

Response

A royal declaration to use synthetic furs at the Kuomboka ceremony was communicated through a radio message to the Lozi People by His Honour the Prime Minister of Barotseland (the Ngambela). The message was reinforced through in-person interaction with potential

paddlers, awareness programs and social media. To assist compliance with this rule the project provided 1,350 specially designed and highly realistic synthetic replica garments called ‘Heritage Furs’ for use during traditional ceremonies.

Assessment

Our assessment highlights that the Lozi people are now less likely to desire, use, own, and acquire authentic ceremonial leopard skins as a result of the interventions. The decline in acquiring authentic leopard skins by Lozi paddlers led to a decrease in the trafficking and poaching of leopards from the GKE and other source populations. Leopard populations in the source landscape of GKE increased during the project period. The cultural acceptance and practical suitability of Heritage Furs was key to its widespread adoption. We conclude that endorsement and shared ownership of the response by traditional authorities and a significant buy-in by a majority of users are essential to countering poaching for ceremonial attire through demand-reduction strategies.

Scanning

Context:

Leopards (*Panthera pardus*) are estimated to have disappeared from an estimated 48-67% of their historic African range (Jacobson et al., 2016). Panthera - A global NGO dedicated to the conservation of wild cats aims to initially stabilize and then increase leopard populations by at least 25% relative to 2018-2019 levels at key sites within the Kavango-Zambezi Trans-frontier Conservation Area (KAZA). KAZA extends over 4,44,000 km² across Angola, Botswana, Namibia, Zambia and Zimbabwe. Multiple threats affect leopards, including habitat loss, retaliatory killing by livestock herders, targeted poaching for skin and parts, and incidental killing of leopards and depletion of prey due to bushmeat hunting (Jacobson et al., 2016) (Figure 1). Poaching of leopards fueled by the demand for ceremonial leopard skin attire by various local communities is the most pressing illegal wildlife trade threat facing leopard populations in southern Africa (Naude et al., 2020).

Replicating an effective intervention:

The Nazareth Baptist 'Shembe' Church, with an estimated 4 million followers, is the largest demand source for leopard skins used in ceremonial attire in southern Africa (Naude et al., 2020). In response to the problem, Panthera conceptualized and implemented the 'Furs for Life' project, which provided a synthetic alternative to authentic leopard skins. As a result, the use of synthetic furs by members of the Shembe church at major gatherings increased from 10% to over 50% between 2013 to 2016 (Balme, 2016), and has since been maintained at that level. His Royal Highness Inyambo Yeta, the Senior Chief of the Barotse Royal Establishment (BRE) based in Zambia's Western Province, took notice of the project and invited Panthera to partner with the BRE to tackle a similar problem in western Zambia.

The Problem:

The Lozi People use leopard skins for several key cultural events. The most prominent events are the Kuomboka and Kufuluhela ceremonies which respectively coincide with the onset and retreat of the annual flooding of the Barotse Floodplains (Image 1). There are three distinct Kuomboka and Kufuluhela ceremonies, one each for the Litunga (the Lozi King), the Queen of the South and the Queen of the North. The largest of these events is the Kuomboka for the Litunga, during which 200 paddlers on his barge are adorned in red berets topped with lion

(*Panthera leo*) mane trim (known as *Mishukwe*) and animal skin skirts (known as *Lipatelo*) (Image 2). The *Lipatelo* consists of either full or half skins and strips of leopard (*Panthera pardus*), serval (*Leptailurus serval*), genet (*Genetta spp*), civet (*Civettictis civetta*), and to a lesser extent, cheetah (*Acinonyx jubatus*) (Figure 2). The attire symbolizes strength, courage, grace, stealth and fierceness, and stems from a deep reverence of leopard. The poaching of wildlife, and illicit trade, sale and possession of wildlife parts without a permit is illegal under Zambian law (Zambia Wildlife Act, 2015). Thus, the Department of National Parks and Wildlife (DNPW) and other law enforcement agencies can conduct operations to tackle poaching and arrest traders during the transport and illicit sale of wildlife contraband. However, they do not arrest skin users or seize skins during traditional gatherings, due to the cultural sensitivity of such events. Unsustainable demand for ceremonial skin use results in increased mortality of leopards, and the decline of leopards in the region threatens to erase a cultural symbol of the Lozi People.

Problem Definition:

Illicit harvesting, supply and use of leopard skin by Lozis are tightly linked and demand-driven (Whittington-Jones et al., 2020). The interviews also suggested that skins are sourced from the nearby Greater Kafue Ecosystem, Sioma-Ngwezi National Park and surrounding Game Management Areas (GMAs). Based on this assessment and Panthera’s strategic goal of recovering wild cat populations, the problem was defined as:

“Leopard poaching to supply ceremonial attire for Lozi cultural gatherings.”

Analysis

Sources of information:

We conducted field visits to the Kuomboka festival in 2018 and documented the authentic skins and parts on display to estimate for the number of leopard, serval and other species used during the ceremony. In addition, we conducted a pilot survey in 2019 to assess the prevalence, preference and motivations for wildlife skin use among Lozi People by interviewing one community contact with in-depth knowledge of Lozi customs and 16 prospective Lozi paddlers. We used this to detail a product-based crime-script of targeted leopard poaching for ceremonial attire (Whittington-Jones et al., 2020) and refined the questionnaire for future surveys. We subsequently conducted questionnaire surveys interviewing 166 existing and potential users of wild cat skins among the Lozi community in western Zambia from 2020 to 2022. The first two surveys were conducted before the Kuomboka (pre-Kuomboka) in 2020 and 2021, and the third was conducted post-Kuomboka in 2022.

Insights into the Kuomboka and other ceremonies were gained through discussions with His Majesty the Litunga, His Honour the Ngambela (Prime Minister of Barotseland), His Royal Highness the Senior Chief, Inyambo Yeta and other BRE members. In addition, to understand the distribution and trend in leopard trafficking in western Zambia, we used information on wildlife crime cases from 2019 to 2021 collected through court-monitoring undertaken by Wildlife Crime Prevention-Zambia.

Key Insights from Analysis:

We found that leopard skin use is concentrated at the Kuomboka and Kufuluhela ceremonies on the Barotse floodplains west of Mongu town (Figure 3). The Kuomboka is celebrated each year for six days in March/April, depending on the onset of flooding, while the Kufuluhela ceremonies are usually conducted in August after flood waters recede. The skins are used only by the royal paddlers - approximately 200 Lozi men selected for the event. The overt use of skins enables the monitoring of authentic skins. The specific and overt user group, and particular occasion, location and time for skin use are critical vulnerabilities for targeted intervention. However, participating as a paddler on the Litunga's barge is considered highly

prestigious by the Lozi community and leopard skins have high symbolic value. Among the 86 paddlers surveyed in 2020, majority used leopard skins for ceremonial attire (69%), and considered it the most prestigious type of skin (53%). Lozis listed ceremonial attire for Kuomboka and subsequent use at Kufuluhela as the sole purpose of contemporary leopard skin use. A strong desire to preserve traditions was listed as a reason to continue using authentic leopard skins. Therefore, any intervention to reduce authentic leopard skin use should be formulated to be effective against strong resistance to change. In this regard, the role of the Litunga and BRE can be critical to developing a culturally acceptable and effective intervention. The Litunga exerts strong political and moral influence on the Lozis, while the BRE organizes and administers the cultural ceremonies involving leopard skins. This traditional administrative setup potentially enables the Litunga to function as a ‘handler’ to influence the Lozis to endorse an intervention, while the BRE can function as a ‘place manager’ to restrict authentic skin use at the Kuomboka and Kufuluhela.

The analysis identified two pathways linking skin acquisition for traditional ceremonies to leopard poaching at source sites (Figure 4). In 2020, 66% of paddlers (57 of 86) possessed leopard skins, of which 35% (20) stated that they hunted the leopard themselves, 32% (18) purchased skins from traders and 28% (16) inherited skins from relatives. In the first case of paddler-cum-poacher, a paddler conducts the whole operation, from poaching a leopard, processing the skin, transporting the skin and use during a ceremony. In the second case, a paddler orders a skin through a trusted trader, who, in turn, acquires it from a local poacher who hunts, harvests and cures the skin (or may already have a skin ready for sale). Finally, the trader typically delivers the skin to the paddler (buyer) at his village. Alternatively, paddlers may have connections with local poachers near source sites and purchase from them without needing an intermediary. Thus, the paddlers are a common group and interventions to target paddlers (users) can complement the controls on poaching and trafficking currently implemented by DNPW and other law enforcement agencies.

Local community contacts indicate that at least 1000 Lozi men require leopard skin attire annually in anticipation of being selected as one of the 200-odd paddlers for the Kuomboka. The authentic leopard skins acquired by paddlers are cured using rudimentary techniques and have a short retention time of 4.24 years (SE 0.56), after which paddlers need to re-acquire skins. Thus, with an average skin life of roughly 4.24 years, 1/5th to 1/4th of the stock of 1000 skin garments possessed by paddlers will require replacement, generating an annual potential demand for ~ 200 to 300 new leopard and other wild cat skin garments. The leopard skin garments can consist of half skins, full skins and strips of skin, thus it hard to estimate exact number of whole leopard furs. However, counts from the 2018 Kuomboka visits yielded a rough

total of around 150 leopards and 800 servals among 220 paddler attires. Therefore, an intervention to reduce or eliminate authentic skin attire should result in a measurable reduction in leopard mortality in source populations if poaching is concentrated at a few sites. We found that paddlers who hunted leopards used areas south of Mongu close to Sioma-Ngwezi NP. In contrast, most paddlers who purchased or inherited skins were unaware of where the leopards were hunted. However, wildlife-related seizures recorded in western Zambia during the 2019-2021 period show that leopard parts constitute 72% (37 of 51) of carnivore species seizures, and leopard skins constitute 95 % (35 of 37) of leopard part seizures. Moreover, 79% (11 of 14) of leopard seizures with known origins were from Kafue National Park (KNP), and four of the six leopard poaching incidents recorded by patrols in KNP involved the harvesting of skins. Seizure records, patrol data from KNP and interactions with local communities around Kafue suggest that the GKE and the Sioma-Ngwezi NP are major source of leopard skins in the region (Figure 3). Moreover, leopard population monitoring surveys have indicated low population densities in GKE (0.46 to 3.56 leopards/100km²) at the start of the project period in 2018-2019 (Figure 12). Therefore, a reduction in poaching-induced leopard mortality should reflect in increased leopard survival and, eventually, improved densities in GKE.

Response

Key elements and situational factors identified during the analysis were used to help design and improve interventions. The response was implemented through two situational crime prevention techniques: 1) set rules and 2) assist compliance.

1. Set Rules

The Litunga issued a declaration that only synthetic ‘Heritage Furs’ were to be worn by the Lozi people for the Kuomboka festival, and authentic leopard skins were to be avoided. The declaration was communicated to the Lozis by the BRE’s Prime Minister through a radio broadcast on 24th December 2019.

2. Assist Compliance

The project assisted the Lozi paddlers to comply with the rule by providing the BRE with 1,350 highly realistic and synthetic alternatives for *Mishukwe* and *Lipatelo* called ‘Heritage Furs’. The Heritage Furs are stored centrally at the respective royal palaces of the Litunga, Queen of the North and Queen of the South, and provided to the participants before the commencement of ceremonies and retrieved back after use. This approach aims to elevate the prestige of the garments, extend their longevity and enhance the sustainability of the intervention.

In addition to these two approaches, Panthera produced three educational videos highlighting the challenges faced by leopards and other wild cats in 2019 ([Video 1](#) & [Video 2](#)) and 2021 ([Video 3](#)). These were shown at several large Lozi communal gatherings and Kuomboka fundraising meetings, and shared online through social media (primarily YouTube and WhatsApp). We estimate that at least 5000 Lozis have seen these videos, not accounting for social media viewership.

Implementation challenges:

In 2019, the Kuomboka was cancelled due to poor rains, and in 2020 and 2021, COVID-19 forced the cancellation of the Kuomboka and Kufuluhela events. We resumed the work in August 2020 once COVID-19-related restrictions began to ease, but the interruption affected

overall engagement with stakeholders and community and the collection of interview data. The first Kuomboka using Heritage Furs was conducted in April 2022; however, this led to a considerable time gap with the official launch events and declaration for Heritage Furs issued in 2019. Some prospective paddlers may have acquired authentic furs as awareness potentially declined. Moreover, some paddlers selected for the Kuomboka in 2022 reported that they did not receive Heritage Furs due to distribution issues and borrowed authentic skins or used their own to paddle.

Assessment

Information Sources:

In addition to the information sources used for the analysis, we accessed ranger-collected patrol data from Kafue National Park, conducted a photographic survey of the royal barge at Kuomboka, and utilized leopard population density estimates for GKE to evaluate our response. Law enforcement patrol monitoring with SMART Software (www.smartconservationtools.org) was initiated in the GKE in 2018 to strengthen site security apparatus. As a result, information on poaching incidents recorded by ranger patrols and foot patrol effort (km walked) from 2018 to 2021 were available, and utilized to assess the trend in leopard poaching in GKE. In addition, a Panthera observer photographed the paddlers rowing the royal barge during the Kuomboka in 2022. We used the photographs to assess the impact of our intervention by counting the number of paddlers wearing only authentic leopard skins, only Heritage Furs and those wearing a mix of both. Additionally, post-Kuomboka questionnaire surveys were conducted with paddlers in 2022 to ascertain types of skins used. In partnership with DNPW, Panthera conducted population assessments of leopards in GKE using camera-traps-based surveys. Cameras with motion sensors were used to photograph leopards, individual leopards were identified using the unique rosette patterns on their skin (like fingerprints), each individual's detection history was mapped, and statistical models were used to estimate leopard density (Karanth and Nichols, 1998). The annual leopard density estimates from 2018 to 2022 were used to assess the trend in leopard population in five survey sectors in GKE.

Impact Evaluation:

We developed a conceptual mechanism of how our interventions will trigger behavioral change leading to a decline in targeted and opportunistic leopard poaching and eventual recovery of leopard populations at source sites. The project intervention of setting rules and assisting

compliance to use Heritage Furs should lead to a decline in the desire for authentic leopard furs if potential paddlers are aware of the royal declaration and have access to and are satisfied with Heritage Furs. Reduced desire for authentic skins should lead to a decline in the number of paddlers seeking to acquire authentic furs if a majority of paddlers use Heritage Furs for Kuomboka and other Lozi ceremonies. If the number of paddlers seeking authentic furs declines, it should lead to a decline in poaching-induced mortality of leopards; if poaching by paddlers declines and reduced purchasing of skins by paddlers results in a decline in leopard poaching by local poachers. Eventually, a decline in poaching-induced mortality should lead to increased survival and higher densities of leopards at source sites. We used the conceptual map to identify indicators to monitor our inputs, outputs and ultimate project outcomes. We tested each step of our mechanism and based on our assessment results, classified the evidence as strong, mixed, and poor or inconclusive. Our assessment identified the effects of our interventions which validate vital stages of our mechanism (Figure 13), and moderators, which influence the effectiveness of our interventions. Additionally, we examined the potential for displacement and identified the key implementation components critical for replicating our response strategy.

Effects:

1. Satisfaction with Heritage Furs lead to a decline in the desire for authentic leopard skin.

The declaration by the Litunga successfully raised awareness of Heritage Furs among prospective paddlers. In 2020, 87% (75 of 86) of interviewees were aware of the Heritage Furs and the royal declaration. Awareness declined to 65% (15 of 23) in 2021 and 68% (39 of 57) in 2022, yet it was considered high given the time gap between the declaration and first use in Kuomboka (Figure 5). In the pre-Kuomboka surveys (2020 & 2021), 64 % of the 109 paddlers interviewed had a positive opinion of Heritage Furs, about 18 % had negative opinion and 18 % were neutral towards the use of Heritage Furs. Post-Kuomboka (2022), when the paddlers experienced using Heritage Furs at Kuomboka, their approval increased to 75% (43 of 57) and just 16 % of the paddlers retained negative opinion (Figure 6). Moreover, across all surveys, most paddlers surveyed (66 %, 109 of 166) did not wish to acquire authentic leopard skin (Figure 7).

2.

3. Decreased desire for authentic skins leads to increased compliance with using Heritage Furs and a decline in leopard skin ownership.

In April 2022 at the Kuomboka, photographic records captured 45 of the 200 paddlers, with 76 % (34) wearing Heritage. Furs, 20% (9) wearing authentic leopards and other

wild cat furs and 4% (2) using a mix of both. Post-Kuomboka interviews with 44 paddlers identified 61% (27) wearing Heritage Furs exclusively, 30% (13) wearing authentic skins and 9% (4) using a mix of both (Table 1). The use of authentic leopard and other wild cat skins by 25% to 40% of the paddlers in either exclusive or mixed form in 2022 reflects a decline in use, as 67% of the prospective paddlers surveyed in 2020 owned leopard skins and could have potentially used it in the absence of the intervention (Figure 8). This is further corroborated by the > 70% decline in reported leopard skin ownership from 67% in 2020 to 19% in 2022. Skins replacement rates of ~ 4.24 years reported by the paddlers should result in a decline of at least 40-50 % in leopard skin ownership in two years from 2020 to 2022, if no new skins are acquired. Thus, the greater than > 50 % decline in reported leopard skin ownership suggests that the acquisition of new leopard skins was minimal.

4. Decline in leopard skin acquisition potentially reduced targeted poaching of leopards for ceremonial skins.

The number of leopards identified in seizures of illegal wildlife parts declined from 8.08 leopards/100 recorded cases in 2019 to 1.60 leopards/100 cases in 2021. A decline in seizures of other spotted carnivores from 5.56 individuals/100 cases in 2019 to 0.53 individuals/100 cases in 2021 mirrored the trend in the number of leopard skins seized (Figure 9). The 'other spotted carnivores' include servals, genets, hyenas and cheetahs, also used during Kuomboka to substitute or complement leopard skins. However, the decline was not evident in number of seizures involving elephant ivory. Elephant ivory smuggling should not be affected by our intervention and serves as a 'control' being a distinct crime type with different target species, commodity prices, end-use, end users, offenders and poaching methods. Thus, the comparison suggests a reduction in demand for leopard and other spotted carnivore skins. Leopard poaching in the GKE also reflects a declining trend (Figure 10). In 2019, five leopards were reported to be poached from GKE, while in 2021, there was only one such incident despite a significant increase in patrol efforts.

5. Population densities of leopards increased in the Greater Kafue Ecosystem following the implementation of the Saving Spots project.

The mean population density of leopards measured as an estimated number of leopards (> 1 year old) per 100 km² showed an upward trend in all of the five monitored areas (Figure 12). Estimated leopard densities showed a statistically significant increase in

Central Kafue, South Kafue and Mumbwa GMA, with an increase in mean density estimate by 122 %, 184% and 100%, respectively, from the baseline surveys in 2018-2019. The increase in densities occurred after the implementation of the Saving Spots project.

Moderators:

Moderators are contextual factors determining the relationship between our intervention and their effects on project outcomes. Our assessment identified two moderators: 1) Adherent skin users and 2) Supply-centric interventions to control poaching and trafficking of leopards.

1) Adherent skin users

We used interview data to identify a consumer group of Adherent skin users. It constitutes a minority of prospective paddlers with a negative opinion of Heritage Furs, a desire to continue using authentic skins and poaching to acquire leopard skins. However, they disproportionately impact leopard skin use and pose a hurdle to the adoption of Heritage Furs. For example, in 2020, just 20% (17 of 86) of the prospective paddlers had a negative opinion of Heritage Furs, but 70% (12) of them wanted to acquire authentic furs, and 53% (9) admitted hunting for leopards (Table 3). Additionally, over the years, most paddlers with a negative-opinion of Heritage Furs wanted to continue acquiring authentic leopard skins (Table 2). Adherent skin users were also more likely to be fully or partially unemployed and have poorer education compared to those with positive opinion of Heritage Furs.

2) Interventions to control poaching and trafficking of leopards.

DNPW has been conducting patrols to deter poaching in GKE. After the introduction of SMART to monitor patrols in KNP 2018 and the gradual expansion to the GKE in 2019, there has been an increase in SMART monitoring of patrols (Figure 10). However, the increase in monitoring is accompanied by a gradual decline in the number of bushmeat and fish poaching incidents (most common offence types) detected per kilometer of patrol effort in KNP (Figure 11). Thus, it is plausible that improved site security in KNP aided our interventions through patrol-based deterrence to leopard poaching and prevention of accidental mortality through bushmeat snares. Secondly, DNPW and other law enforcement agencies also conduct operations to disrupt the trafficking and sale of illegal wildlife products outside of protected areas. From 2019

to 2021, such operations led to the filing of 25 cases of leopard trafficking involving 43 offenders arrested in western Zambia. It is possible that operations leading to arrests and prosecution of offenders may have prevented additional instances of offending by the same individuals and/or deterred other potential offenders.

Potential for Displacement:

Displacement could potentially occur through two plausible means: a) local poachers continuing targeted leopard poaching by supplying an alternative (and potentially more lucrative) demand-source and b) local poachers increasing bushmeat harvests or switching to another commercially high-value (CHV) illegal wildlife trade (e.g. elephant ivory or pangolin). Recent interviews with potential poaching communities around Kafue NP do not indicate that local poachers are exploiting an alternative demand source for leopard skins. Moreover, the data on leopard trafficking in western Zambia and ranger-collected patrol data from Kafue NP do not support this possibility. Similarly, the court-monitoring data does not reflect the potential for local poachers to switch to CHV illegal wildlife trade in ivory or pangolin. However, recent anecdotal accounts of local poachers indicate that they may continue to harvest bushmeat or increase bushmeat harvests to replace income lost due to the decline in demand for leopard skins.

Implementation:

Support provided by the Barotse Royal Establishment headed by the Litunga was key to implementing interventions. Strong endorsement by the Litunga and other senior figures, including the Ngambela and Senior Chief and their influential leadership of the Lozi People, was vital to the acceptance of Heritage Furs by the Lozi community. The project's ability to satisfy a large and consistent share of users with the synthetic alternative was key to its adoption. Panthera's awareness and community outreach programs potentially resulted in strengthening community support for the intervention, thus negating the influence of adverse opinions. The project focused on a demand-centric approach to reducing poaching; however, it was placed within an environment with existing complementary interventions. Counter-trafficking interventions by law enforcement agencies and their NGO partners, increased support for the prosecution and monitoring of wildlife crimes and improved patrolling in the GKE increased the risk to offenders and potentially affected the supply of leopard skins.

Conclusion:

Indigenous communities with cultural ties to their land have sustained high biological diversity through traditional institutions and customary laws (Torrents-Ticó et al., 2022). However, illegal or unsustainable use of wildlife products in traditional ceremonies has been linked to species declines (Naude et al., 2020). In such cases, counter-wildlife crime projects must ensure that interventions effectively conserve species while ensuring cultural acceptance and sustainability. Panthera, in partnership with the BRE and supported by the DNPW, implemented a problem-oriented approach to tackle ceremonial skin use. Our assessment concludes that our interventions to reduce skin demand by adopting synthetic alternatives successfully reduced the problem. Moreover, our assessment identified factors vital to increasing success in replicating this approach with other communities utilizing wildlife parts for traditional ceremonies. Endorsement and shared ownership of the response by traditional authorities and significant buy-in by a majority of users are essential to countering poaching for ceremonial attire through demand-reduction strategies. Demand-reduction strategies could potentially be further enhanced by adapting interventions to address motivations of resilient user groups and developing complementarity with supply-side interventions.

Agency and officer information:

Contact Person:

Name: Gareth Whittington-Jones

Designation/Role: Counter Wildlife Crime Regional Coordinator: Southern Africa

Affiliation: Panthera

Contact: gwhittington[at]panthera[dot]org

Key Team Members:

Name: Aditya Malgaonkar

Designation/Role: Site-Support Catalyst/Analyst and Saving Spots Case Study Lead Analyst

Affiliation: Panthera

Contact: amalgaonkar[at]panthera[dot]org

Name: His Royal Highness, the Senior Chief, Inyambo Yeta

Designation/Role: HRH Senior Chief

Affiliation: Barotse Royal Establishment

Contact: inyamboyeta[at]yahoo[dot]com

Name: Tristan Dickerson

Designation/Role: Project Consultant and current Saving Spots Project Coordinator (2022 onwards)

Affiliation: Panthera

Contact: tdickerson[at]panthera[dot]org

Name: Maswabi Lishandu

Designation/Role: Community Engagement Coordinator

Affiliation: Panthera

Contact: lmaswabi[at]panthera[dot]org

Name: Rob Pickles

Designation/Role: Counter Wildlife Crime Analytics Lead

Affiliation: Panthera

Contact: rpickles[at]panthera[dot]org

Name: Abishek Harihar
Designation/Role: Deputy Director, Tiger Program
Affiliation: Panthera
Contact: aharihar[at]panthera[dot]org

Name: Jeffrey Dunnink
Designation/Role: Saving Spots Project Coordinator (2020-2022)
Affiliation: Panthera
Contact: jeffdunnink[at]gmail[dot]com

Name: Steven Kope
Designation/Role: Community Engagement Officer
Affiliation: Panthera
Contact: skope[at]panthera[dot]org

Name: Lungowe Mulopo
Designation/Role: Community Engagement Intern
Affiliation: Panthera
Contact: queenmulopo[at]gmail[dot]com

Name: Mutafela Makokwa
Designation/Role: Community Engagement Officer
Affiliation: Panthera
Contact: mutafelamakokwa[at]yahoo[dot]co[dot]uk

Name: Sam Enoch
Designation/Role: Site-Support Catalyst, Tiger Program
Affiliation: Panthera
Contact: senoch[at]panthera[dot]org

Name: Gareth Mann
Designation/Role: Leopard Program Director
Affiliation: Panthera
Contact: gmann[at]panthera[dot]org

Name: Kristine Maciejewski
Designation/Role: Regional Director: Southern and East Africa
Affiliation: Panthera
Contact: kmaciejewski[at]panthera[dot]org

Name: Guy Balme
Designation/Role: Executive Director, Conservation Science
Affiliation: Panthera
Contact: gbalme[at]panthera[dot]org

Name: Kim Young-Overton
Designation/Role: KAZA Director
Affiliation: Panthera
Contact: kyoung-overton[at]panthera[dot]org

Name: Jake Overton
Designation/Role: Zambia Director
Affiliation: Panthera
Contact: joverton[at]panthera[dot]org

Name: Sarah Davies
Designation/Role: Justice and Awareness Director
Affiliation: WCP Zambia
Contact: sarah[at]wcpzambia[dot]org

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References:

- Balme, G. 2016. Saving Spots: Conserving the Imperiled Leopards of the Kavango Zambezi Transfrontier Area. A Proposal to the Peace Parks Foundation. Panthera.
- Dickerson, T., Naude, V.N., 2018. Exploratory Report: Kuomboka Ceremony, Mongu, Zambia. Panthera. Peace Parks Foundation.
- Johnson, S.D., Tilley, N., Bowers, K.J., 2015. Introducing EMMIE: an evidence rating scale to encourage mixed-method crime prevention synthesis reviews. *J Exp Criminol* 11, 459–473. <https://doi.org/10.1007/s11292-015-9238-7>
- Karanth, K.U., Nichols, J.D., 1998. Estimation of Tiger Densities in India Using Photographic Captures and Recaptures. *Ecology* 79, 2852–2862. [https://doi.org/10.1890/0012-9658\(1998\)079\[2852:EOTDII\]2.0.CO;2](https://doi.org/10.1890/0012-9658(1998)079[2852:EOTDII]2.0.CO;2)
- Naude, V.N., Balme, G.A., Rogan, M.S., Needham, M.D., Whittington-Jones, G., Dickerson, T., Mabaso, X., Natrass, N., Bishop, J.M., Hunter, L., O’Riain, M.J., 2020. Longitudinal assessment of illegal leopard skin use in ceremonial regalia and acceptance of faux alternatives among followers of the Shembe Church, South Africa. *Conservation Science and Practice* 2, e289. <https://doi.org/10.1111/csp2.289>
- Torrents-Ticó, M., Fernández-Llamazares, Á., n.d. Biocultural conflicts: understanding complex interconnections between a traditional ceremony and threatened carnivores in north Kenya 10.
- Whittington-Jones, G., Yeta, S., Naude, V., Lishandu, M., Chibeya, D., Dickerson, T., Dunnink, J., 2020. Product-based crime script of targeted leopard poaching for skin use in ceremonial attire by the Lozi People of Western Zambia. pp. 8–16.

Appendix I: Images and Figures



Image 1: The Kuomboka ceremony with the Litunga's barge rowed by approximately 200 paddlers dressed in ceremonial attire in 2022 (Photo Credit: Harry Vlachos).

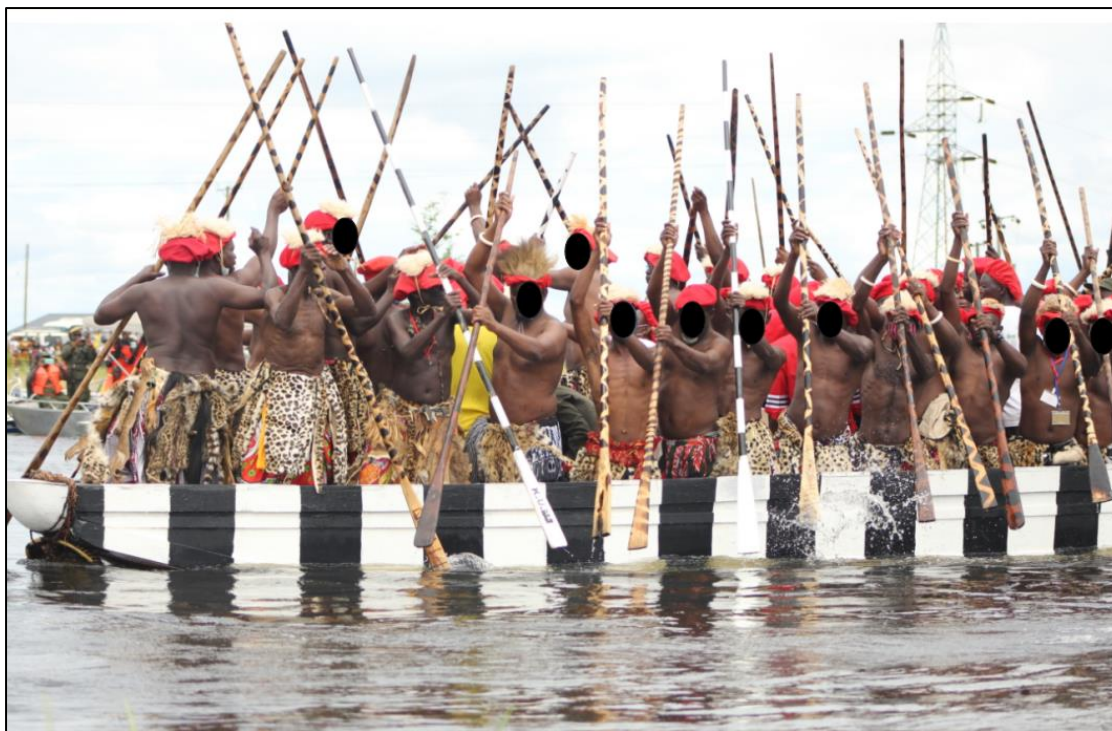


Image 2: Lozi paddlers wearing ceremonial attire paddling the King's barge during the Kuomboka in 2022 (Photo Credit: Gareth Whittington-Jones/Panthera).

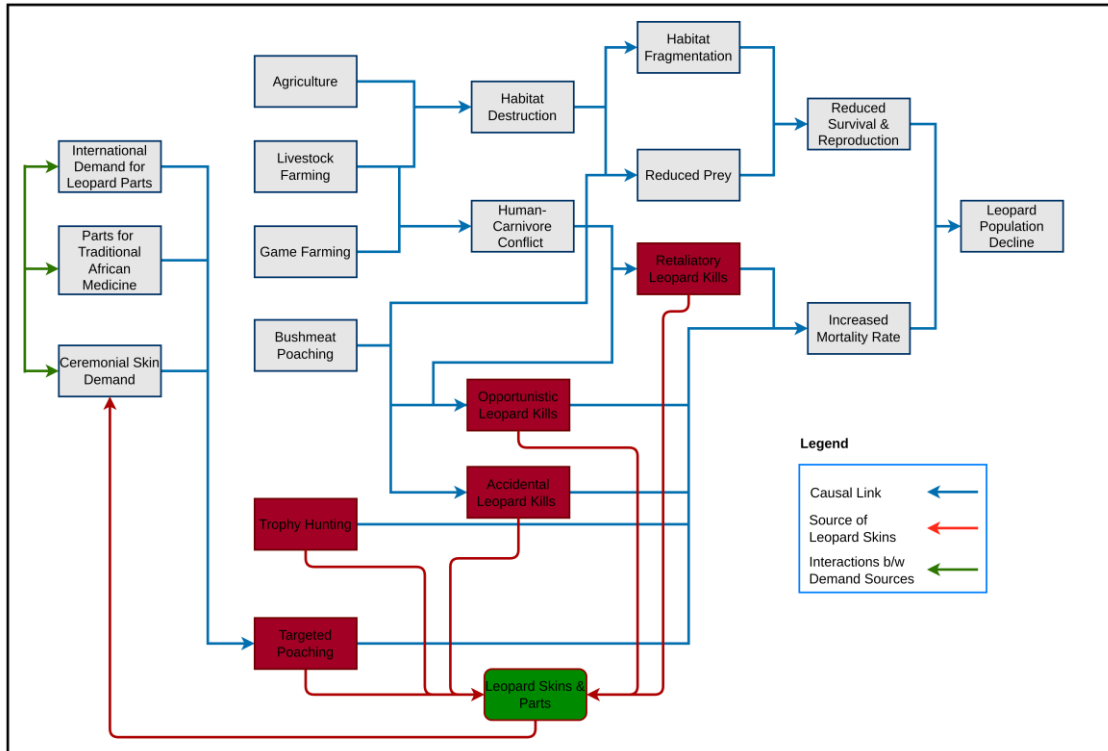


Figure 1: Leopards face multiple threats in southern Africa, and demand for ceremonial skins is a severe threat.

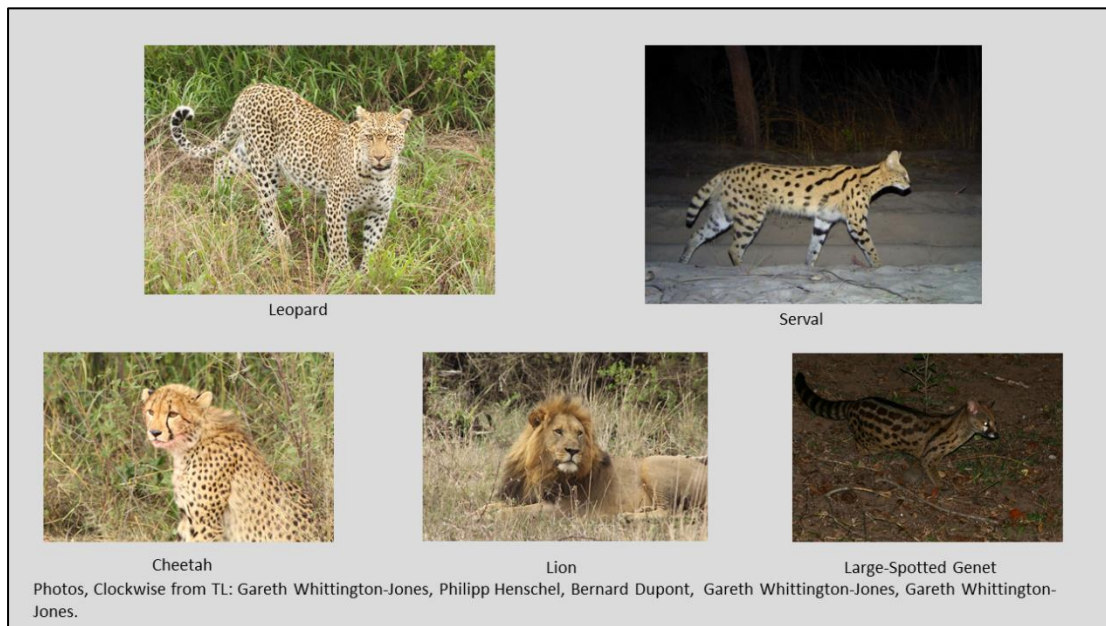


Figure 2: Primary target species (Leopard) and other victims of ceremonial skin use in western Zambia.

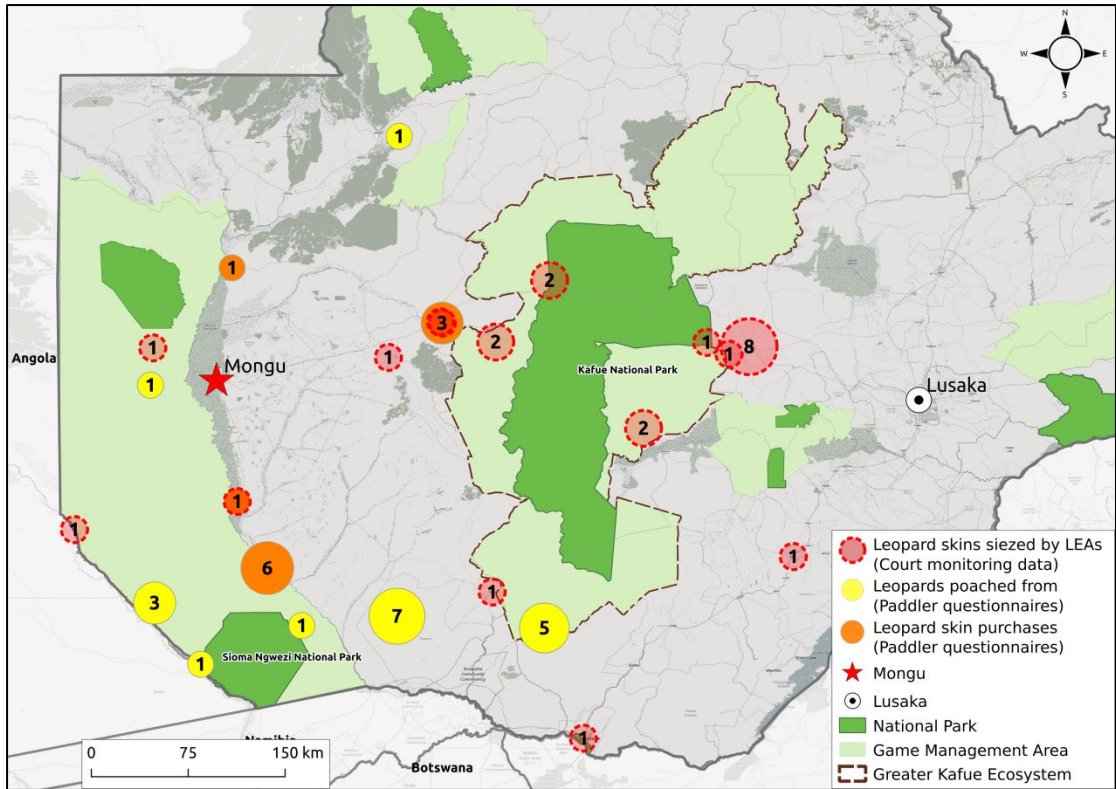


Figure 3: Map of the focal region showing the location of the main town Mongu, locations of skin purchases and leopard hunting by paddlers, seizures and arrests involving leopards and protected areas.

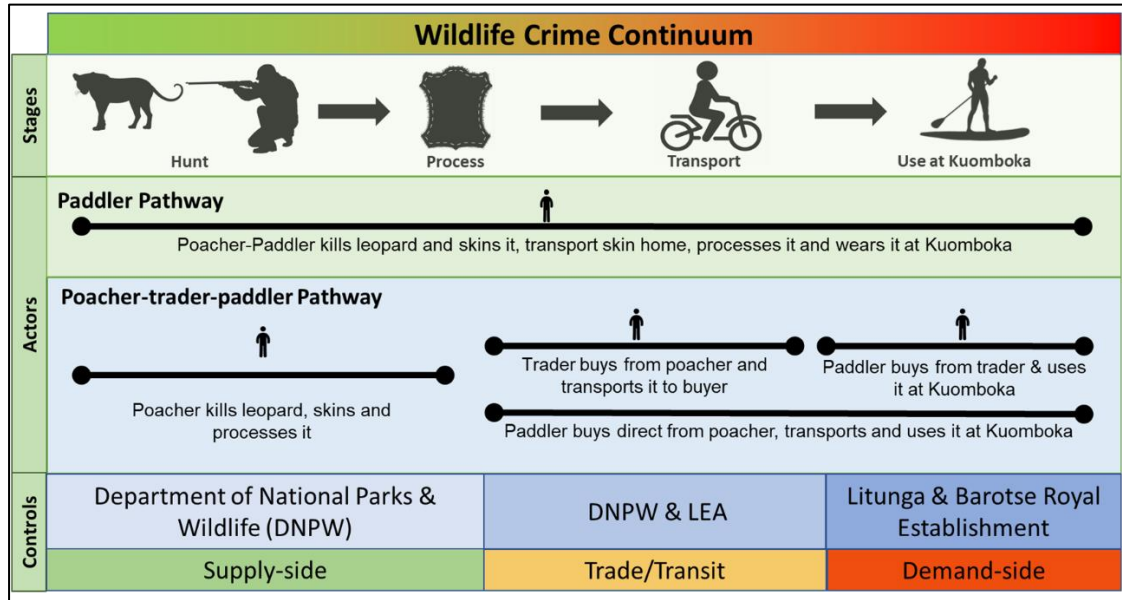


Figure 4: Problem stages, actors and controls across the ceremonial leopard skin trade in western Zambia.

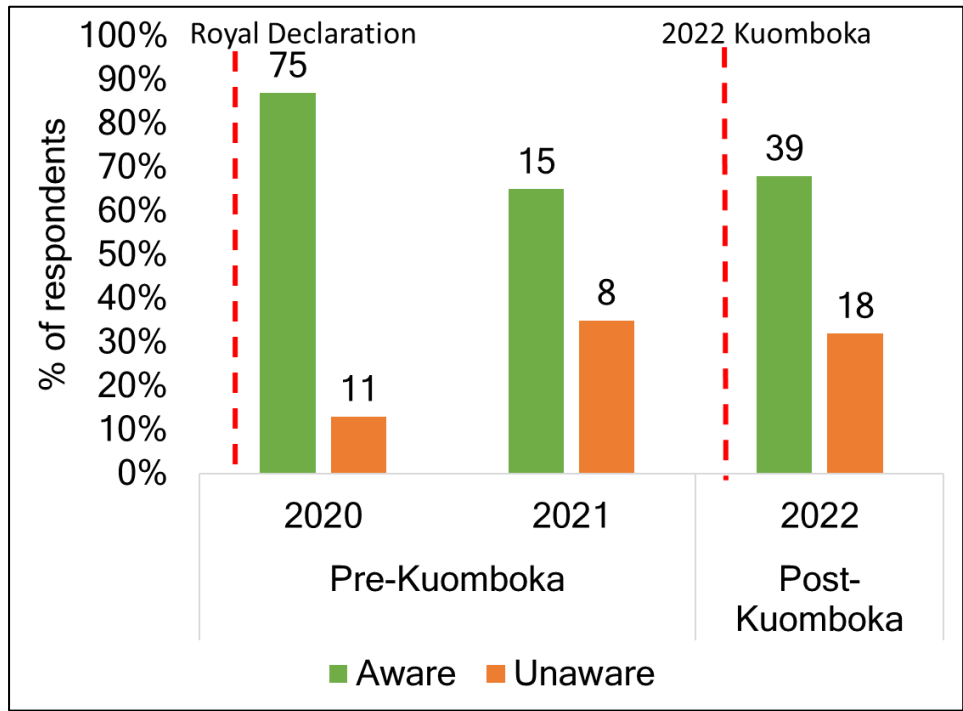


Figure 5: Awareness of Heritage Furs among prospective Lozi paddlers pre and post-Kuomboka.

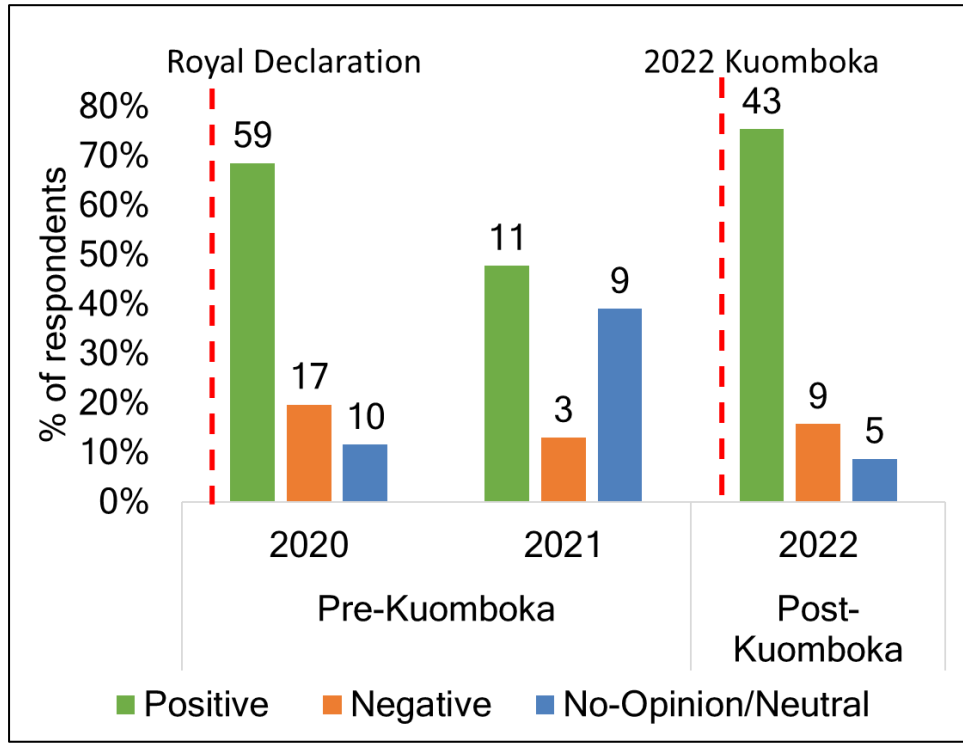


Figure 6: Proportion of paddlers classified by positive, no-opinion/neutral or negative opinion of Heritage Furs before and after 2022 Kuomboka Ceremony.

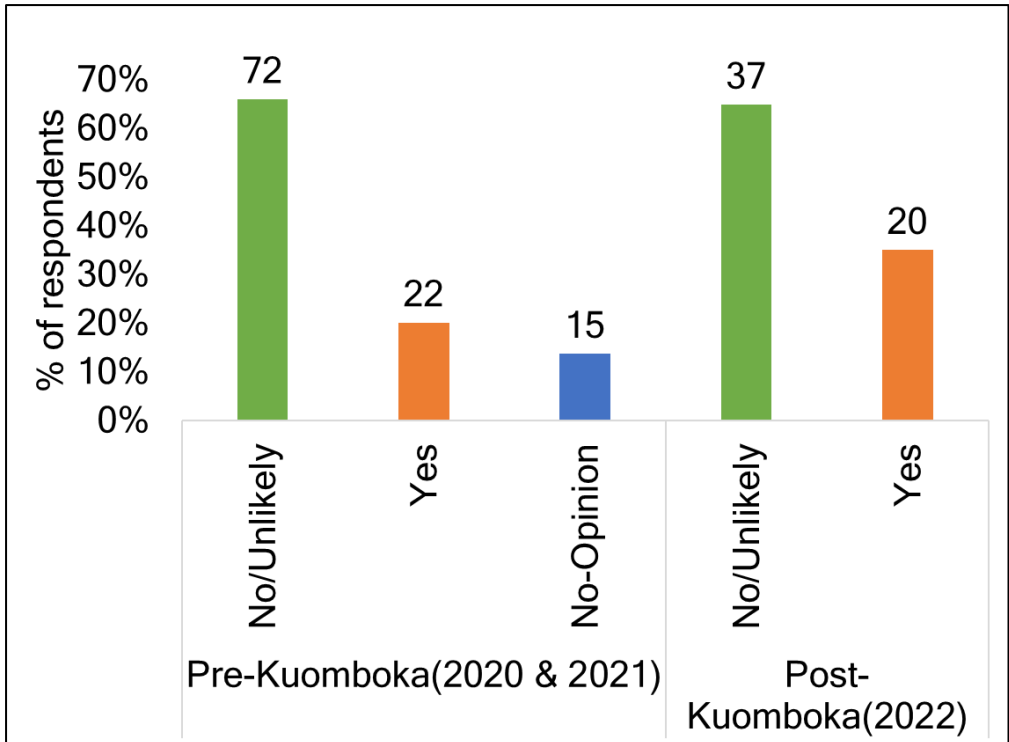


Figure 7: Opinion of paddlers regarding desire to purchase new authentic leopard skins.

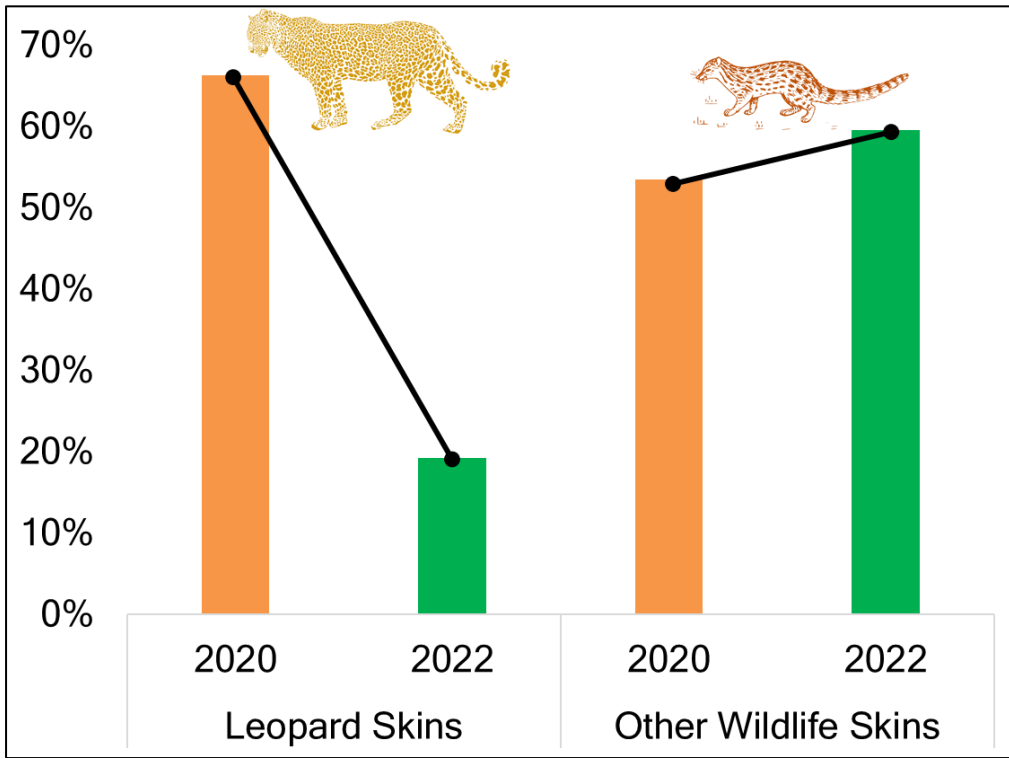


Figure 8: Proportion of paddlers owning authentic skin by species in 2020 compared to 2022.

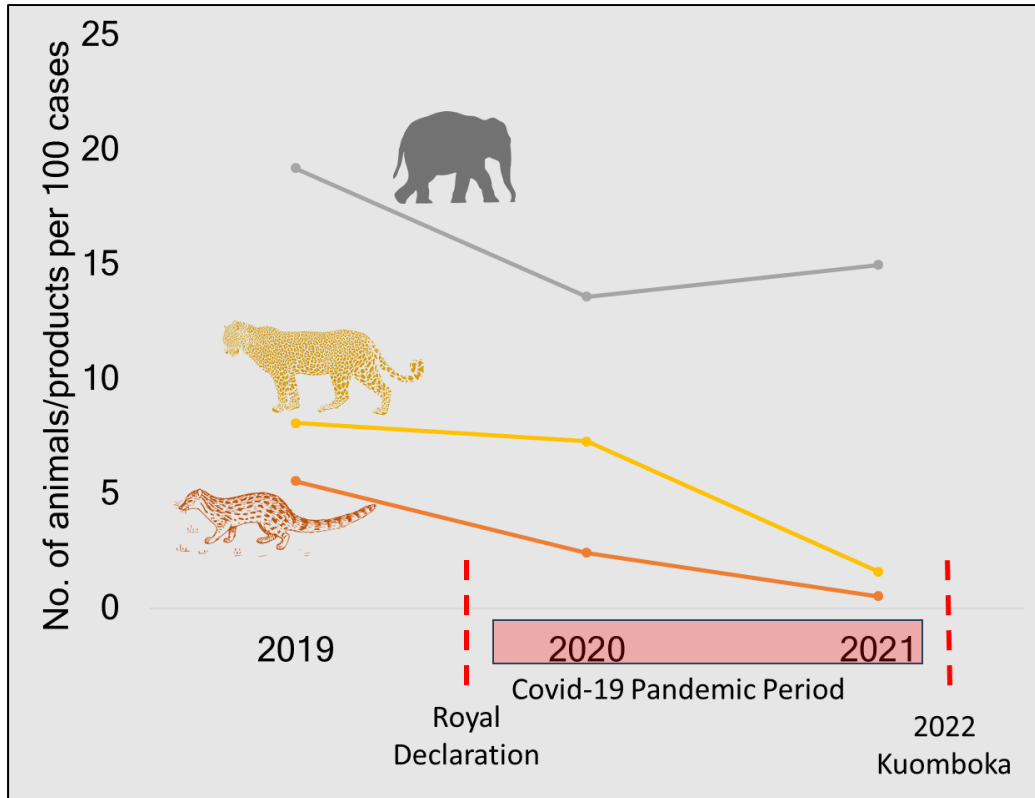


Figure 9: Trend in the trafficking of leopards, other spotted carnivores and elephant ivory cases in Western Zambia from 2019 to March 2021.

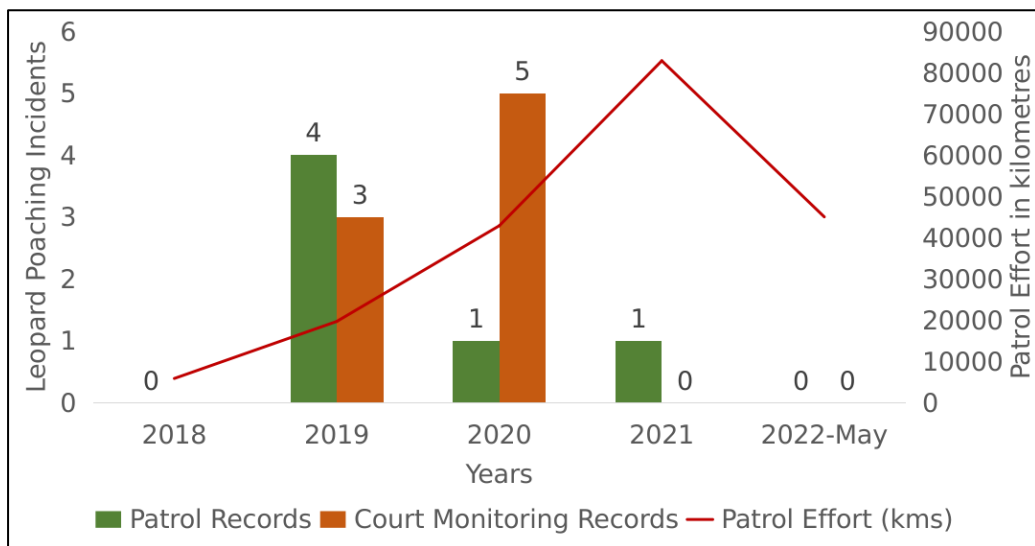


Figure 10: Trend in reported leopard poaching for Kafue National Park.

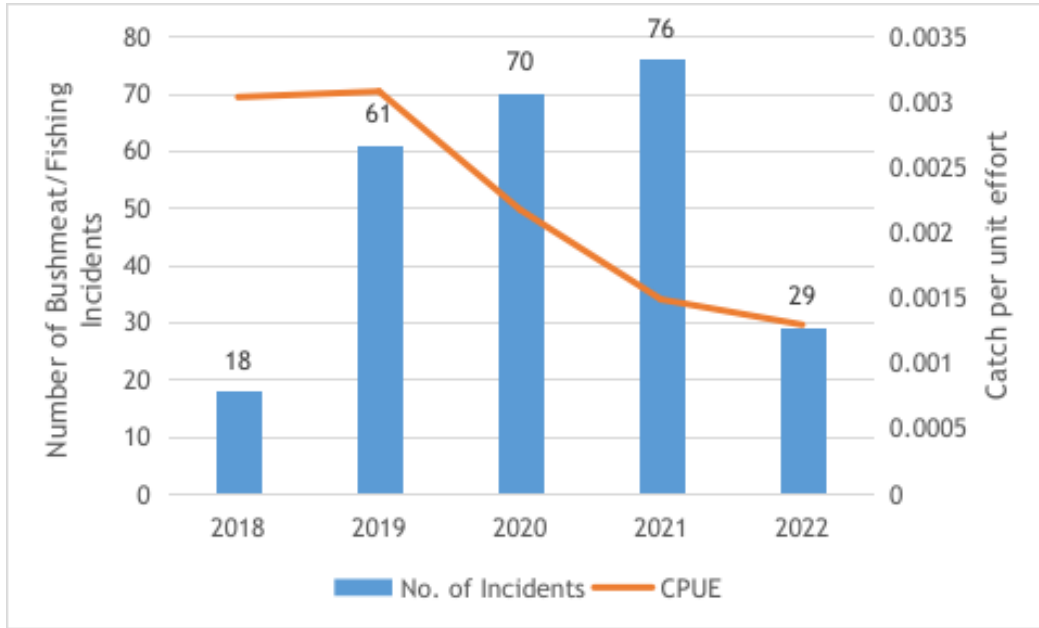


Figure 11: Trend in bushmeat and fishing incidents recorded by ranger patrols in Greater Kafue Ecosystem from 2018 to March 2022

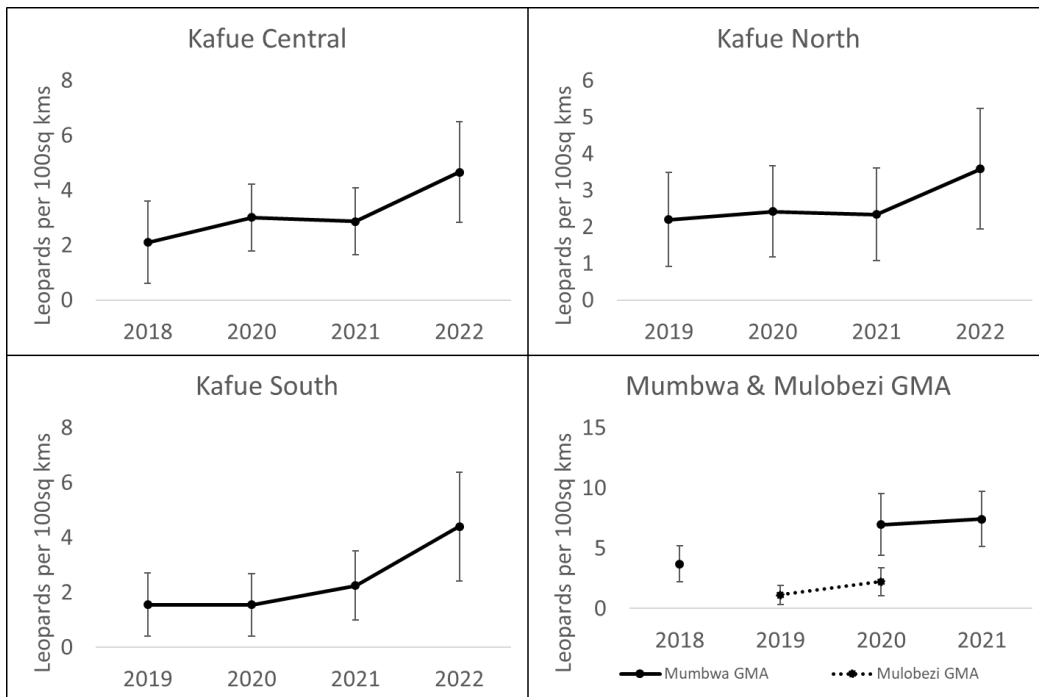


Figure 12: Trend in density of adult leopards in the five monitored sectors in Kafue National Park, Mumbwa and Mulobezi GMAs

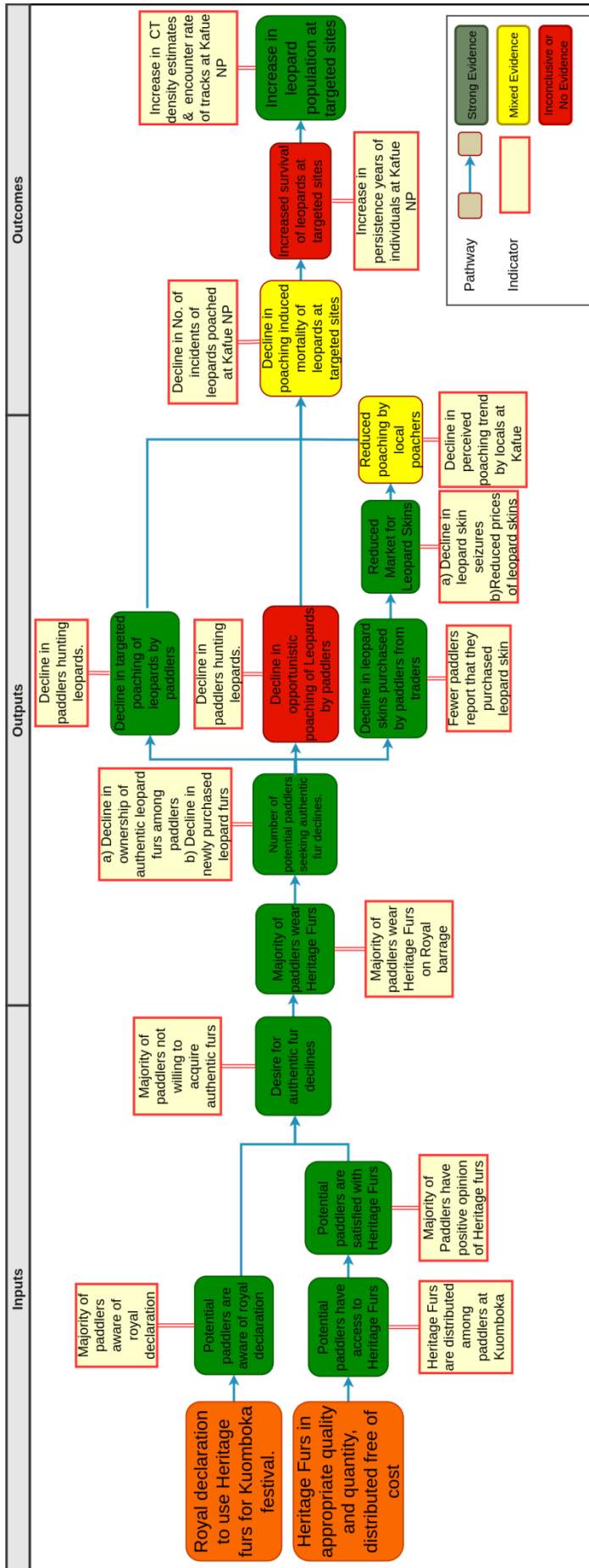


Figure 13: Mechanism for change validated with assessment results.

Appendix II: Tables

Skin use identified through photo captures			
	Heritage	Authentic	Mixed
Count	34	9	2
Percentage	76%	20%	4%
Skin use identified through Post-Kuomboka interviews			
	Heritage	Authentic	Mixed
Count	27	13	4
Percentage	61 %	30 %	9 %

Table 1: Assessment of Heritage Furs and authentic skin use during 2022 Kuomboka ceremony.

I. What is your opinion on Heritage Furs ?				
	Positive/Neutral	Negative		
	80% (69 of 86)	20 % (17 of 86)		
II. How did you acquire leopard skin ?				
Opinion of Heritage Furs	Hunted	Inherited	Purchased	Other/No Response
Positive/Neutral	16%	23%	23%	38%
Negative	53%	0%	12%	35 %
III. Do you wish to acquire authentic leopard skin ?				
Opinion of Heritage Furs	Yes	No	No Opinion	
Positive/Neutral	10%	83%	7%	
Negative	71%	29%		

Table 2: Opinion of paddlers on Heritage Furs and its relationship with hunting and authentic skin use.

Appendix III: Videos

Video 1

Saving Spots, 28th Aug 2019, Panthera, URL: <https://youtu.be/Fbq5swQEKKo>

Video 2

Saving Spots in Zambia, 18th Oct 2019, Panthera, URL: <https://youtu.be/Y-1G8GX5jNc>

Video 3

Saving Sports in Zambia (II), 22nd Jul 2021, Panthera, URL: <https://youtu.be/yTwAnK9kHb0>