

African Vultures SAFE Action Plan for 2018-2020

Background

African vultures play a key role in disease control and waste removal that is critical for the stability of the ecosystems in which they live. In addition to their ecosystem service role, the threats to their survival and their conservation needs also overlap heavily with a number of other key species, such as African elephants and lions, and they are thus an ideal species to focus on for wide-reaching, landscape-level conservation efforts. The plight of African vultures has only recently been recognized, but rapid declines have been noted for almost all species throughout large portions of the African continent. This has led to the up-listing of nearly all the African vulture species on the IUCN Red List with initial up-listing in 2012 and further up-listing in 2015. Denver Zoo, North Carolina Zoo, and San Diego Zoo Global proposed African Vultures as a SAFE program in February 2017, which was accepted in August 2017. This action plan was completed in February 2018.

Conservation Target: Species Included in the Action Plan and their IUCN Status

The following species have been selected as the conservation target for this plan.

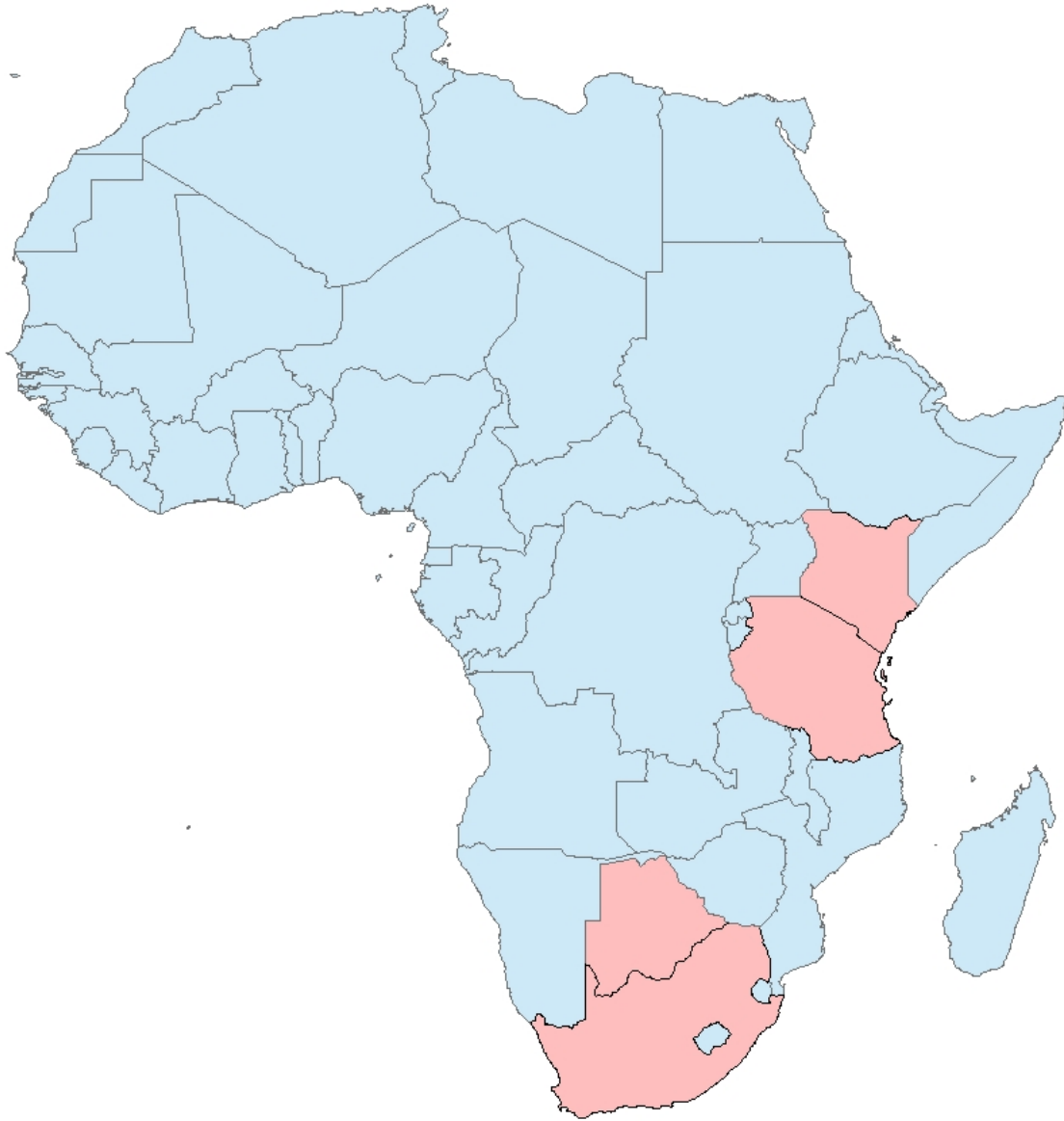
Common Name	Scientific Name	IUCN Status
Cape Vulture	<i>Gyps corprotheres</i>	Endangered
Hooded Vulture	<i>Necrosyrtes monachus</i>	Critically endangered
Lappet-faced Vulture	<i>Torgos tracheliotus</i>	Endangered
Ruppell's Vulture	<i>Gyps rueppelli</i>	Critically endangered
White-backed Vulture	<i>Gyps africanus</i>	Critically endangered
White-headed Vulture	<i>Trigonoceps occipitalis</i>	Critically endangered

All species are considered CITES Appendix II.

African vulture species function as a scavenging guild with each species providing unique adaptations necessary to find and dispose of carrion collectively. As such, it makes more sense to focus conservation efforts on a suite of African vulture species rather than a single species. This subset of African vultures was selected for the SAFE program for a number of reasons. First, these are the most common African vulture species found in AZA institutions. Second, a number of zoos already had conservation initiatives linked to these species at the time of the submission of the proposal for African Vultures as a SAFE program. Finally, these species have a large amount of overlap in their geographic distribution (with the exception of Ruppell's and Cape Vultures) and share similar threats and thus conservation needs. Our program can thus focus on a few key activities that can have a positive effect on all six species considered here.

Our initial target areas are Botswana, Kenya, South Africa, and Tanzania (as highlighted in red in the map below) as these are where current programs from our partners are most active and also represent areas with significant populations of the target species. However we hope to expand and fill gaps in knowledge in other key geographic areas both within the current countries outlined and in new countries as well. In particular, priority countries for expanded

efforts would include Angola, Mozambique, Namibia, Uganda, Zambia, and Zimbabwe, where current information is limited but where significant vulture populations are likely to occur.



Map highlighting currently targeted countries for this action plan

Goals

The goal of this action plan is to improve the population status of all six target species in at least 25% of their African distribution by 2020.

Program Participants

Program Leader: Corinne Kendall, North Carolina Zoo

Vice Program Leader: Graeme Patterson, Denver Zoo

Public Engagement Subcommittee Lead: Jacque Williamson, Brandywine Zoo

Additional Steering Committee Members:

Jenyva Turner, Cheyenne Mountain Zoo

Sprina Lui, Dallas Zoo

Mike Maxcy, Los Angeles Zoo

Michael Mace, San Diego Zoo Global

Gen Anderson, St. Augustine Alligator Farm Zoological Park

Anne Tieber, St. Louis Zoo

Tim Brown, Tracy Aviary

Taylor Rubin, Zoo Atlanta

FCC Liaison: Tim Brown, Tracy Aviary

Raptor TAG advisor: Scott Tidmus, Disney's Animal Kingdom

Field Partners: Raptors Botswana (RB), Kalahari Research and Conservation (KRC), Wildlife Conservation Society (WCS), The Peregrine Fund, Ruaha Carnivore Project (RCP), Frankfurt Zoological Society (FZS), VulPro

Advisors: Andre Botha (IUCN Vulture Specialist Group)

Initial Program Partners: Brandywine Zoo, Cheyenne Mountain Zoo, Dallas Zoo, Denver Zoo, Los Angeles Zoo, North Carolina Zoo, San Diego Zoo Global, St. Augustine Alligator Farm Zoological Park, St. Louis Zoo, Tracy Aviary, Zoo Atlanta

Status of Taxa within AZA Community

The species considered within this program are all a part of the Raptor TAG. The TAG will continue to work with all of our conservation partners to ensure not only a sustained captive program but to address other needs as they may arise from this work. This program will enhance the current Regional Collection Plans by allowing a significant number of species to be focused on rather than an individual program. With this work our goal is to enhance the captive work and knowledge being acquired as well as contribute to the field work for each of these species. The Raptor TAG understands the scope of the need and by enhancing the ex-situ work the species will receive we can share this expertise not only within our zoos but also on a global level. The best part of this will be to bring all these species together under one umbrella and to better use the existing resources on a specific targeted program.

All target species are currently considered red in the SSP, except for Ruppell's vulture, mostly due to the small number of individuals in the collection. However, a number of institutions have already successfully bred several of these species and there is potential to grow these populations. While the total number of institutions currently displaying African vulture species is small, many AZA institutions house vulture or condor species from around the world and there is potential to use these non-African vulture species as ambassadors for the African vulture SAFE program.

Species	Number of individuals	SSP Program Status
Cape Vulture	17.18.0	Red
Hooded Vulture	21.17.2	Red
Lappet-faced Vulture	16.15.0	Red
Ruppell's Vulture	29.31.0	Yellow
White-backed Vulture	6.5.0	Red
White-headed Vulture	2.0.0	No program

AZA Conservation and Public Engagement Activities to Date

AZA institutions have played a critical role in the conservation of other vulture species such as California Condors. While the plight of African vultures has only been recognized in the last decade, there are already several AZA members working to save African vultures. Over 30 AZA institutions already participate in International Vulture Awareness Day, many with a heavy focus on African vultures. Raptor TAG has also been championing the cause of African Vulture conservation for several years and has played a key role in the creation of this program.

From 2014-2016, 21 institutions supported African vulture conservation with 49 institutions supporting vulture conservation in general. AZA members spent over \$100,000 in 2014 and over \$90,000 in 2015 and over \$230,000 in 2016 on African vulture conservation. Several institutions have mobilized large field-based conservation efforts focusing on the conservation of African vultures. These programs have included population monitoring, satellite telemetry, ranger training to reduce poisoning, and awareness building in range countries of significance for African vultures including Botswana, Chad, Kenya, Niger, and Tanzania.

A number of the program partners have already been heavily involved with vulture conservation for several years. We outline some key activities here.

Brandywine Zoo: Brandywine Zoo has been actively involved in the Raptor TAG and is working to support vulture awareness and education activities. In the future, Brandywine Zoo will be helping to create lesson and activity templates related to vultures that can be used for International Vulture Awareness Day by a number of institutions.

Cheyenne Mountain Zoo: Cheyenne Mountain Zoo has been involved in vulture conservation since 2009. They have supported VulPro for various projects relating to monitoring birds and problem power lines, captive breeding (building enclosures), education work among other things and staff have visited VulPro twice. In addition, Cheyenne Mountain Zoo has been involved in International Vulture Awareness Day (IVAD) annually since the event began in 2009 and

continue to celebrate each year. Early on, they were heavily involved in helping spread the word about IVAD to get additional facilities involved in the event.

Dallas Zoo: Dallas Zoo has a long standing history working with a variety of vulture species (currently 7 species). Historically, Dallas Zoo has provided funding and support to Vulpro in South Africa and more recently for telemetry work conducted by North Carolina Zoo and Wildlife Conservation Society in Tanzania. Dallas Zoo will assist in creating and implementing signage as well as developing a media campaign to increase awareness. Dallas will also be participating in the International Vulture Awareness Day (IVAD) and will use the event to both increase awareness and raise funds to support African Vulture SAFE initiatives in the field.

Denver Zoo: For the last five years, Denver Zoo has worked alongside local partners in Botswana implementing a five-pronged approach to vulture conservation. Because vultures here are primarily – and increasingly – threatened by various forms of poisoning, Denver Zoo has led efforts to: 1) understand key aspects of vulture ecology, ranging and poisoning patterns, 2) respond to vulture poisoning events, including recording number of animals, species affected, and suspected cause of mortality, as well as removing vulture carcasses, 3) advocate on related issues such as the problems of use of dangerous pesticides and lead ammunitions, 4) work with community leaders to deliver education, awareness and engagement programs designed to elicit pro-vulture conservation attitudes and behaviors, and 5) develop capacity in Batswana colleagues to achieve our goals, thereby ensuring vulture conservation efforts are sustainable and community-based. To date, Denver Zoo has fitted more than 20 vultures from five different species with satellite transmitter backpacks; three of these species are critically endangered (White-backed, White-headed, and Hooded) and two are endangered (Lappet-faced and Cape). With the help of local staff, students and partners, Denver Zoo has documented over 40 vulture poisoning events and have worked with several communities, reaching hundreds of participants to advocate on poison issues and deliver impactful and action-oriented vulture conservation programs. Moving forward, Denver Zoo plans to design a program that will focus on outreach to help protect Cape vulture colonies in Botswana close to Malapye and in the Mayelanong Hills.

Los Angeles Zoo: To date, Los Angeles Zoo has celebrated International Vulture Awareness Day. Moving forward, Los Angeles Zoo is committed to housing up to 5 pairs of non-releasable Cape vultures imported from South Africa with any offspring being released back into the wild. These birds will be placed on exhibit where new graphics will be erected to share with our annual 1.7 million visitors the current plight of Cape vultures and all African vultures. In addition Los Angeles Zoo will continue to celebrate International Vulture Awareness Day and develop a media campaign focusing on African vulture conservation. They will also continue to make financial contributions to African vulture conservation programs.

North Carolina Zoo: In 2012, vulture experts identified Southern Tanzania as an area likely to be important for vultures, but where little was currently known. To address this gap, North Carolina Zoo in collaboration with the Wildlife Conservation Society conducted the first vulture roadside surveys in southern Tanzania in 2013. Data from Ruaha and Katavi National Park confirmed the importance of this landscape for African vultures, with high vulture abundance and currently low threats. Since 2013, NC Zoo and WCS have established and implemented a collaborative vulture

monitoring program in Ruaha and Katavi, working closely with Tanzanian National Parks (TANAPA) staff. We have conducted two trainings with TANAPA rangers on vulture conservation and have established a protocol for addressing poisoning events. In 2015, we began using satellite telemetry to assess movements of White-backed and White-headed vultures and have tagged 13 vultures to date. Telemetry data provides vital information on mortality rates and causes, population connectivity, and habitat use, which has continued to shape our program efforts. In addition, we have begun lead testing in vultures to assess prevalence of exposure in this landscape. Using population monitoring and telemetry, we are able to assess threats to vulture conservation in the region. To date we have had three mortalities of tagged vultures and there has been one major poisoning incident near Ruaha National Park in May 2016. Ranger capacity building and vulture awareness raising with the local community, including Tanzania's first Vulture Awareness Day celebrated in Tungamalenga in 2017, help to address and reduce the threat of poisoning in this landscape. Corinne Kendall is also an active member of the IUCN Vulture Specialist Group.

San Diego Zoo Global: San Diego Zoo Global is collaborating with The Peregrine Fund and VulPro to save African vultures from extinction in Kenya and South Africa. San Diego Zoo Global are providing expertise, equipment, education materials and funding for vulture conservation. This involves post release monitoring of birds using solar GSM-GPS units and assisting with vulture rehabilitation as well as development of a breeding center in South Africa with VulPro. In northern Kenya, The Peregrine Fund is working to save critically endangered vultures through research, conservation, monitoring and education. We are identifying key habitats and priority areas for conservation efforts by tagging vultures. This data is also invaluable for guiding the placement of wind farms, an oil pipeline, and other infrastructure development projects, which have been targeted for vast areas of northern Kenya. Our Stop Poisoning Now! campaign is training rangers, policemen and community groups in order to identify and respond to poisoning incidents. Importantly, we continue to provide community-based support and this has led to one former trainee intervening to stop the poisoning of a group of lions (and likely vultures as well). We monitor vulture populations using road surveys through key habitats, and we are currently monitoring breeding populations of Rüppell's Vultures through aerial surveys. We record poisoning incidents through the online database *African Wildlife Poisoning Database* that we created with the Endangered Wildlife Trust. Currently, we have post-graduate students in three East African countries working on projects involving vulture conservation.

St. Augustine Alligator Farm Zoological Park: The St. Augustine Alligator Farm Zoological Park shows a long-term commitment of hard work and achievement to long-lived species with low reproductive rates. To ensure the future of these important scavengers, Cape and Hooded vultures require exhibit space focusing on them as the primary species. Over the last 11 years, St. Augustine has worked to continually improve husbandry, especially as it relates to their breeding management and success. A hands-off approach to breeding our African vulture species has historically resulted in very few offspring, so protocols have become more hands-on with each breeding season with more successful outcomes. The above and beyond efforts of the staff from importation, through exhibit modification, and constant attention to vultures at a reptilian-

focused zoo demonstrates the park's passion for the conservation of these species. Per ZIMS, only four hatches globally have occurred in the past 12 months for Cape vultures, two of which were from St. Augustine. Only nine Hooded vulture have hatched globally in zoos and one of those was also from our park. Multiple observation angles enable improved husbandry management and increased opportunities for conservation messaging to guests. Not only has this helped to increase awareness of the plight of the African vultures, but St. Augustine has been able to use this visitor engagement to annually raise funding for supporting in-situ efforts through donations to VulPro and Hawk Mountain Sanctuary. Through this multi-faceted approach, St. Augustine is fully committed as a driving force in saving Cape and Hooded vultures from extinction by aiding in self-sustaining AZA populations and supporting field programs.

St. Louis Zoo: To date, St. Louis Zoo has supported conservation efforts in Niger and Chad to monitor, tag, and reduce threats to endangered vultures found there in collaboration with the Sahara Conservation Fund. In addition, St. Louis Zoo plans to initiate a study on the role vultures play in reducing anthrax and also their potential use as sentinels for monitoring the disease in Kenya. This project is being funded thru our WildCare Center, Institute for Conservation Medicine at the Saint Louis Zoo. The project will span two years, beginning in June of 2018. Sampling of vultures in Kenya will be conducted over a nine-month period until mid-late 2019. Samples will be analyzed concurrently until mid-late 2019. Data analysis and preparation of a peer-reviewed publication will occur until the summer of 2020. It will also promote the establishment of a vulture 'biorepository' to support future research efforts. This project will provide the most comprehensive assessment of anthrax exposure in vultures to date and the first assessment of its kind in East Africa.

Tracy Aviary: Tracy Aviary plans to financially support field conservation efforts and to participate in International Vulture Awareness Day. They will strive to get media attention for the African vulture crisis, raise awareness, and raise funds for field conservation efforts through International Vulture Awareness Day.

Zoo Atlanta: Zoo Atlanta's current and planned vulture activities mostly center on increasing public engagement in vulture conservation. Currently, Zoo Atlanta is in its second year of participating in the Quarters for Conservation program. Through this program, three conservation organizations are chosen each year to be highlighted as the recipients of conservation funding. Guests are able to read about each organization's field conservation efforts and vote via an interactive kiosk for the organization they want to champion. Zoo Atlanta's AZA SAFE program representative, Taylor Rubin, is the champion for one of our current Quarters for Conservation organizations: The Peregrine Fund. Funding raised through the Quarters for Conservation program will go towards the poison rapid response teams in Kenya. This allows Zoo Atlanta not only to fund vulture conservation, but also to educate all of our zoo guests about vultures, the threats facing them, and about ongoing conservation efforts. In addition to the interactive kiosk, teenagers participating in Zoo Atlanta's Volunteer program put together an educational activity about the importance of vultures in their various ecosystems, which they are able to use to interpret to guests. SAFE representative Taylor is also one of the education

advisors for the Raptor TAG. Over the past year, the TAG worked to put together educational materials, activities, and coordinated conservation messaging for zoos and educational facilities to use for International Vulture Awareness Day. In the future, the TAG plans to further this effort, as well to help coordinate the educational efforts for the SAFE program.

Existing Action Plans

This action plan aligns closely with the recently created Multi-Species Action Plan to Conserve African-Eurasian Vultures, which was adopted by the Convention on Migratory Species Parties in October 2017. This plan encompasses all species considered here.

Botha, A.J., Andevski, J., Bowden, C.G.R., Gudka, M., Safford, R. J., Tavares, J. and Williams, N. P. (2017) CMS Multi-species Action Plan to conserve African-Eurasian Vultures. Coordinating Unit of UNEP/Raptors MoU, Abu Dhabi.

Potential Connections to other SAFE Programs and Conservation Initiatives

While African vulture conservation is important for its own sake, as a landscape species and a scavenger, the threats to vultures overlap heavily with those of several other species, particularly African elephants and lions. Vultures can lead rangers to poached elephants and as a result, poachers are poisoning elephant carcasses to try and kill vultures. Reducing elephant poaching is thus important for vulture conservation as well. Similarly retaliatory killings of carnivores in response to livestock predation often leads to pesticide poisoning, which is a major cause of mortality for lions as well as vultures. Using satellite telemetry on vultures, researchers have been able to determine poisoning rates and hotspots, which affect both vultures and carnivores. Reducing human-carnivore conflict is critical not just for lion conservation but for vultures as well. In this way, vulture conservation efforts can be over-arching and linked to the conservation of many other species which AZA institutions currently hold or work with in the field. As such, conservation strategies that affect vultures can also improve outcomes for these species. This provides an important opportunity for collaboration and we hope to work with other SAFE programs, AZA institutions, and conservation partners to achieve shared conservation goals within this plan.

Threats

The primary threat, shared by all six species covered in this plan, is poisoning. Poisoning occurs when carcasses are laced with pesticides or other poisons with the intent to kill vultures or carnivores. Poisoning can be motivated by retaliatory killings for livestock losses, by elephant poachers working to prevent rangers from detecting their illegal activities by killing vultures, and by direct persecution for vulture body parts and trade. Because this is the broadest and most significant threat across the African continent, most of the strategies in this plan aim to address poisoning. In addition to poisoning, there are a number of additional threats to vultures, but the majority of these are minor in magnitude in comparison to poisoning. Of particular significance, for Cape Vultures in Botswana and South Africa and for Ruppell's and other vultures in Kenya, is electrocution and collision with powerlines or wind turbines, which is also considered in this plan.

Strategies Overview

Our main program objectives, actions, metrics, timeframe, and budget are outlined in the chart below. Our number one priority is to address the devastating threat of poisoning. However we also recognize the need to monitor populations both to evaluate our success and also to determine threat levels. As part of this we also hope to continue current monitoring activities and increase knowledge about vulture population status in current gap areas. We hope to increase public engagement in African vulture conservation both among visitors to AZA institutions and within range-country communities, raising awareness about the importance of these critical scavengers. As part of this we will create education/messaging toolkit as well as a marketing plan for these efforts. In particular, we will produce a unified plan for the International Vulture Awareness day that will focus on the African vulture crisis and increase the impact of this event already held at many AZA institutions. We believe IVAD could be an important forum for zoos to share prior success stories for vulture species, such as the conservation of California condors and demonstrate their on-going commitment to African vulture conservation. Finally, this plan will galvanize greater support for African vultures from the AZA community, both financially and through increased participation in field conservation and public engagement activities.

African Vulture SAFE Program 3 Year Strategy (2018-2020)

Strategic Objective 1. Continue and expand population monitoring of target vulture species						
Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Annual Budget
1.1 Conduct roadside surveys to maintain up-to-date information on known populations	a) Surveys completed	Conducted annually	North Carolina Zoo	WCS	Tanzania	\$7000
			Denver Zoo	KRC, RB	Botswana	\$5000
			San Diego Zoo Global	Peregrine Fund	Kenya	\$1500
1.2 Conduct roadside surveys of new populations to assess current gap areas	a) Surveys completed in at least two new priority sites annually starting in second year	Conducted annually	North Carolina Zoo	FZS	Tanzania	\$5000
			San Diego Zoo Global	Peregrine Fund	Kenya	\$5000
			Denver Zoo	KRC, RB	Botswana	See 1.1
			New sites outside current work			\$10000
1.3 Monitor and protect key breeding sites (cliff nests for Cape and Ruppell's Vultures)	a) Monitoring completed b) Efforts established to ensure security of critical sites	Conducted annually with at least two sites secured by end of year 3	San Diego Zoo Global	Peregrine Fund	Kenya	See 1.2
			Denver Zoo	KRC, RB	Botswana	\$2500
			San Diego Zoo Global, St. Augustine	VulPro	South Africa	\$30000
1.4 Aerial monitoring of breeding clusters of tree-nesting vultures	a) Monitoring completed in 2 existing sites b) Monitoring completed in 2 new sites	Monitoring on-going in all sites all three years; addition of one new site in year 2, and one new site in year 3	San Diego Zoo Global	Peregrine Fund	Kenya	\$5000
Strategic Objective 2. Reduce poisoning prevalence						
Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Annual Budget
2.1 Mitigate human-wildlife conflict	a) Demonstrated reduction of human-wildlife conflict b) Demonstrated reduction of poisoning caused by retaliatory killings c) Demonstrated effective response strategy through a reduction of mortalities from incidents	To be conducted every year with assessment at the end of each year	Denver Zoo	KRC, RB	Botswana	\$3500
			NC Zoo	WCS, FZS, RCP	Tanzania	\$5000
			San Diego Zoo Global	Peregrine Fund	Kenya	\$3000

	d) In country training/education with communities on the value of vultures in local ecosystems and their relationship to carnivores					
2.2 Train poisoning response teams	a) Develop consistent training materials to be used across sites b) Train 100 personnel within 2 new sites c) Provided refresher training to 100 personnel in sites that have already received training d) In-country training and feedback system developed	Train at least 100 people annually	San Diego Zoo Global	Peregrine Fund	Kenya	\$5000
			Denver Zoo	KRC, RB	Botswana	\$5000
			NC Zoo	WCS, FZS	Tanzania	\$5000
2.3 Increase patrolling for poisoning	a) Expansion of patrol efforts by 25% in 2 sites b) Support existing patrol efforts	Conducted annually	San Diego Zoo Global	Peregrine Fund	Kenya	\$5000
			Denver Zoo	KRC, RB	Botswana	\$5000
			NC Zoo	WCS, FZS	Tanzania	\$10000
2.4 Track vulture mortality	a) 30 vultures tagged in 5 sites to help establish mortality rates, identify poisoning hotspots, and determine critical habitats b) Poisoning incidents in all areas of study entered into African Wildlife Poison Database	Tag at least 10 vultures each year	San Diego Zoo Global	Peregrine Fund	Kenya	\$10000
			Denver Zoo	KRC, RB	Botswana	\$10000
			NC Zoo	WCS, FZS	Tanzania	\$10000
			New sites outside current work			\$20000
Strategic Objective 3. Improve knowledge of vulture biology						
Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Annual Budget
3.1 Establish population range and lead exposure for significant populations	a) 30 vultures tagged in 5 sites to determine population range b) Test at least 30 vultures for lead exposure and assess threat of lead to vulture health in at least two sites	Tag at least 10 vultures each year	NC Zoo	WCS, FZS	Tanzania	See 2.4
			Denver Zoo	KRC, RB	Botswana	See 2.4
			San Diego Zoo Global	Peregrine Fund	Kenya	See 2.4
			San Diego Zoo Global, St. Augustine Alligator Farm	VulPro	South Africa	See 5.1
3.2 Study and quantify the role vultures have in disease control and waste removal	a) Study completed in 2 sites to investigate the role of vultures in disease control and waste removal	By end of year three	St. Louis Zoo, Smithsonian	ILRI, Liverpool	Kenya	\$5000
			NC Zoo		Tanzania	\$10000

Strategic Objective 4. Monitor and reduce threat of infrastructure collision and electrocutions						
Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Annual Budget
4.1 Monitor number of vultures killed or injured due to collisions and electrocutions	a) Survey at least 100 km of key powerlines on foot in Botswana and South Africa to assess number of vulture mortalities	Annually	Cheyenne Mountain Zoo, San Diego Zoo Global	VulPro	South Africa	\$10000
			Denver Zoo	KRC, RB	Botswana	\$5000
4.2 Minimize threat of collision and electrocution	a) Communicate with local infrastructure companies to flag areas of concern b) Work to prevent construction of electrical lines, wind farms, or other structures of collision risk in known areas of high use c) Implement training workshops to transfer knowledge about addressing energy infrastructure threats to countries outside South Africa		San Diego Zoo Global	VulPro	South Africa	\$500
			San Diego Zoo Global	Peregrine Fund	Kenya	\$500
			Denver Zoo	KRC, RB	Botswana	\$500
Strategic Objective 5. Enhance rehabilitation, breeding, and release of Cape Vultures						
Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Budget
5.1 Rehabilitate, breed, and release Cape Vultures in South Africa with potential expansion to Namibia	a) Rehabilitate injured or poisoned vultures in South Africa b) Captive breeding of non-releasable Cape vultures and release of offspring in South Africa c) Explore potential for and if feasible construct new rehabilitation and release sites in Namibia d) Monitor released vultures to assess success of release programs	Focus on South Africa in year one and two with potential for expansion of these efforts to Namibia in year three	San Diego Zoo Global, St. Augustine Alligator Farm, Cheyenne Mountain Zoo Los Angeles Zoo, NC Zoo	VulPro	South Africa	South Africa: \$10000 annually; Namibia construction one-time cost: \$50000
Strategic Objective 6. Increase Public Engagement in Vulture Conservation						
Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Annual Budget
6.1 Raise awareness, and encourage positive attitudes towards, and improve actions to reduce threat to African vultures in range countries	a) Celebrate International Vulture Awareness Day in 3 range countries b) Increase awareness about vulture conservation among 5000 people in 3 sites	Annually and adding new sites each year	San Diego Zoo Global	Peregrine Fund	Kenya	\$1000
			Denver Zoo	KRC, RB, CCB, BLB	Botswana	\$10000
			NC Zoo	WCS, FZS, RCP	Tanzania	\$5000
			St. Augustine Alligator Farm, Cheyenne Mountain Zoo	VulPro	South Africa	\$10000

6.2 Raise awareness among AZA audiences	a) Increase the number of AZA institutions celebrating Vulture Awareness Day by 3 institutions b) Create consistent messaging about African vulture crisis and the African vulture conservation efforts supported by SAFE program to be used across all AZA institutions celebrating Vulture Awareness Day	Annually with increase by 1 institution each year	Cheyenne Mountain Zoo, Denver Zoo, NC Zoo, Raptor TAG, Brandywine Zoo, Zoo Atlanta, St. Louis Zoo, San Diego Zoo Global, St. Augustine Alligator Farm, Los Angeles Zoo, Tracy Aviary, Dallas Zoo			
6.3 Create and implement consistent signage related to African vulture conservation to be put up in AZA facilities	a) Develop signage b) Implement signage in at least 6 AZA facilities	Annually with new signage in at least 2 facilities each year	Denver Zoo, NC Zoo, Raptor TAG, Brandywine Zoo, Zoo Atlanta, St. Augustine Alligator Farm, Los Angeles Zoo, St. Louis Zoo, San Diego Zoo Global, Tracy Aviary, Dallas Zoo			
6.4 Develop media campaign to include regular newspaper articles, documentaries, etc to increase awareness	a) Recruit marketing staff to assist with the campaign b) Develop at least 10 new materials	Annually	Denver Zoo, NC Zoo, Raptor TAG, Brandywine Zoo, Zoo Atlanta, St. Augustine Alligator Farm, Los Angeles Zoo, St. Louis Zoo, San Diego Zoo Global, Tracy Aviary, Dallas Zoo	VulPro, RB, KRC, WCS		

Strategic Objective 7. Increase Funding Directed at African Vulture Conservation

Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Annual Budget
7.1 Increase AZA institution funding for African vulture conservation	a) At least three new AZA institutions become Program Partners for African Vulture SAFE b) 25% increase in funding from AZA institutions to African vulture conservation (based on AZA Annual Report on Conservation and Science)	Across three years	All partners	N/A	N/A	N/A

Strategic Objective 8. Develop National Action Plans for African Vultures

Action	Metrics	Timeframe	AZA Zoos	Field	Country	Total
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				Partners		Budget
8.1 Develop national action plan for African Vultures	a) Develop 1 National Action Plan and begin conversation on how to create these in other countries where needed		NC Zoo	WCS	Tanzania	\$25000
Strategic Objective 9. Train and mentor in-country nationals in vulture research and conservation						
Action	Metrics	Timeframe	AZA Zoos	Field Partners	Country	Annual Budget
9.1 Work closely with in-country nationals to build local capacity for vulture conservation and research	a) 6 in-country nationals receive training in relevant skills	Work with at least 2 people each year	NC Zoo	WCS	Tanzania	\$5000
			San Diego Zoo Global	Peregrine Fund, VulPro	Kenya, South Africa	\$4600
			Denver Zoo	KRC, RB	Botswana	\$5000
			St. Louis Zoo		Kenya	\$5000