

# Saving Southern Tanzania's Vultures

## Threats

Vultures are currently the fastest declining group of birds globally. Of the nine vulture species found in Africa, four are Critically Endangered and three are Endangered (IUCN Red List, 2015). Declines in avian scavengers have been noted throughout Africa, most recently in East Africa. The primary threats to vultures in southern Tanzania is poisoning. While there are multiple sources of poisoning incidents, the primary reason for poisoning carcasses seems to be retaliation against livestock predation by lions and hyenas, which threatens predators and vultures. With less than 30,000 lions left in the wild, finding ways to protect these big cats is essential.

Elephant poaching has risen dramatically in the last five years and has been particularly devastating in Ruaha-Rungwa ecosystem. Current efforts to reduce poaching will require better park management and monitoring. Several instances of poachers poisoning elephant carcasses have been recorded in the region, particularly in Zimbabwe and Zambia. In these cases, the presumed motivation for poisoning is to intentionally reduce vulture populations, because the birds can help rangers find poached animal carcasses.

Vultures can be canaries in the coal mine for landscape level issues. This project uses information from vultures to assist rangers in finding poached elephants and poisoning incidents.

## Previous Field Research

Wildlife Conservation Society and North Carolina Zoo have been conducting vulture surveys in Ruaha and Katavi National Parks, Tanzania since 2013. Our roadside surveys provide important background information on population status and trends in southern Tanzania that can help guide our conservation efforts.

In addition, we use satellite telemetry studies of the widest ranging species in the region, White-backed vultures, to inform vulture population monitoring and conservation activities for protection of vultures, carnivores, and elephants in southern Tanzania. We will study movement ecology, habitat use, and population range of White-backed vultures by attaching solar-powered satellite transmitters to individuals to follow their movements throughout the day and across seasons.

In 2015, we were the first researchers to tag vultures in Tanzania and we have now perfected our trapping technique for this region. These solar-powered satellite transmitters provide information on velocity, altitude, and location (GPS coordinates) 15 times per day and are expected to last up to two years, thus providing seasonal data as well. Movement data will also provide real time insights to major threats – poaching and poisoning – occurring in Ruaha and Katavi National Park. By overlaying vulture movement locations with GIS layers on tree cover, protection status, wildlife density, livestock density, and human settlement density, we can also gain an understanding of the broader drivers of vulture habitat use. Data from the transmitters will also allow us to quantify range size and seasonal movement patterns, identify nesting sites, determine key areas for monitoring, and assess key causes of mortality.

We currently have 10 vultures tagged with solar-powered satellite telemetry – 9 White-backed vultures and 1 White-headed vulture, 9 of which were tagged in October 2016. We also conducted the first lead tests of vultures in Tanzania and found low lead levels in nearly all vultures tested, but not in Tawny

eagles or Bateleurs, suggesting that foraging in hunting concessions (likely unique to the vultures) may be leading to lead exposure. The broader impacts of this lead exposure are not yet understood and are something we will continue to explore. As of May 2017, 8 units are still transmitting and we have no signs of mortality for the last 7 months, which is very good news as it suggests that poisoning has not occurred, though the large poisoning event in May 2016 and earlier mortalities of tagged birds does demonstrate that poisoning is still occurring in this landscape. The majority of birds have stayed within Ruaha National Park and the surrounding game lands, but several individuals have travelled between Ruaha National Park and Katavi National Park, demonstrating that our two focal areas are indeed connected and contain a single White-backed vulture population.

### **Field Research Plans for 2017**

Building on our success from 2016, North Carolina Zoo and Wildlife Conservation Society will continue our survey work in Ruaha and Katavi National Park, ground-truth and monitor movements of our tagged vultures, conduct follow-up ranger trainings on how to address poisoning events, conduct aerial surveys for nests, raise awareness about the plight of vultures amongst local school children and pastoralists in partnership with Wildlife Connection and Ruaha Carnivore Project, and tag additional White-backed vultures and possibly White-headed and Hooded vultures in Ruaha and Katavi National Parks.

Population monitoring is a critical part of our overall project and we will continue conducting roadside surveys, twice in each season in Ruaha and once in each season in Katavi National Parks. This survey work forms the foundation of our program, allowing us to assess population status and seasonal changes in ranging behavior for three Critically Endangered and one Endangered vulture species.

Vulture telemetry data has provided us with insights on vulture habitat use and threats. We will continue to verify vulture activity by visiting locations used by our tagged vultures to better understand how they use the landscape and assess threats such as poisoning.

In March we conducted a follow-up ranger training to go over vulture identification and how to respond to poisoning events. Success in documenting the large poisoning event and then disposing of the carcass while caring for two sick White-backed vultures, which were eventually rehabilitated and released in May 2016 indicates the success of training conducted in 2014, but with ranger turnover it is important that we have a refresher program.

In 2016, we conducted guide training on vulture identification and have now have an on-going monitoring program to gather information on nesting locations from the guides. In September and October 2017, we will continue aerial surveys and also check locations identified by guides to maximize our coverage of potential vulture nests throughout the large Ruaha National Park. Finally we plan to continue tagging vultures in Ruaha National Park and also supplement this with tagging in Katavi National Park.

Using funding from Disney Conservation Fund, we are planning to begin a large scale awareness raising effort about vulture conservation, threats to vultures, and ways to reduce human-carnivore conflict, which will hopefully help mitigate future poisoning. Using existing school and community video showing conducted by Wildlife Connection and Ruaha Carnivore Project, we will be able to maximize our effort and spread the word about the plight and value of vultures. In September we plan to host the first

Tanzanian Vulture Awareness Day near Ruaha National Park to further raise awareness about the plight of vultures.