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Hygnstrom, Scott E.

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Save Me from the Lion's Mouth: Our Efforts to Promote Human-Wildlife Coexistence in Southern Africa

Scott E. Hygnstrom

Wisconsin Center for Wildlife, College of Natural Resources, University of Wisconsin-Stevens Point, Stevens Point, Wisconsin

ABSTRACT: Wildlife resources in southern Africa are remarkably beautiful, ecologically indispensable, and culturally critical to people of the region. Unfortunately, those who reside in rural areas (veldt) face remarkable risks every day when living and dealing with lions, leopards, elephants, crocodiles, and other creatures that go “bump” in the night. The loss of human life and limb is higher than most would ever think. In addition, loss of livestock and crops to wildlife is widespread and can be locally severe. The significance and severity of human-wildlife conflicts in southern Africa seem to be an order of magnitude greater than in North America. During the last decade, I have had the good fortune to work on several projects, including field research, lectures, symposia, keynote addresses, internships, and a reference book dealing with human-wildlife conflicts in southern Africa. It has been a life-changing experience. This paper provides details on the projects we have established to help resolve human-wildlife conflicts in southern Africa.

KEY WORDS: crops, depredation, human-wildlife coexistence, human-wildlife conflicts, livestock, public health and safety, southern Africa, wildlife damage management

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INTRODUCTION

It was my pleasure to say “dumuela” or “hello” in Setswana, a native African language, to the many participants at the 27th Vertebrate Pest Conference in Newport Beach, California in March 2016. Africa is a world away and often out of the hearts and minds of Americans as we navigate our way through the hustle and bustle of our modern world. Something is happening in Africa, however, that deserves our attention. In 2013, James Clarke published a book entitled *Save Me from the Lion's Mouth: Exposing Human-Wildlife Conflict in Africa*, a fascinating expose on the growing incidence of attacks by wildlife on people in southern Africa. Of greatest concern are the human loss of life and limb to lions, leopards, crocodiles, hippos, elephants, and venomous snakes (Figure 1). Eerily, the value of human life there seems diminished because of how they so routinely face death. Wildlife also threaten human health and safety through transmission of several zoonotic diseases and collisions with vehicles (Figure 2). In addition, a wide range of wildlife species prey on livestock, depredate crops, and destroy personal property in a region of the world in which food, water, and shelter for humans often are in short supply. Unfortunately, the cost of living with wildlife in the veldt often outweighs the benefits they provide, resulting in a devaluation of wildlife and disconnect between native people and the wildlife. Clarke (2013) states, “The challenge to conservationists is no longer simply a case of saving our wildlife heritage. By raising funds to put up fences and aiding zoological research they have done wonders – but little is being done to win the hearts and minds of those outside the reserves so they feel safer; so that they receive compensation for the loss of livestock, crops, and lives to wild animals; so that they perceive wildlife in a positive light and receive tangible benefits from its presence. The responsibility of wildlife professionals and their agencies, organi-

zations, and institutions is to work with people with potentially divergent views to promote sustainable natural resources and if necessary, resolve conflicts between wildlife and human interests that lead to coexistence of humans and wildlife.” During the past decade, I have had the good fortune to work with several remarkable people who strive to conduct research, educate people, and resolve human-wildlife conflicts in southern Africa. This paper will address many of their needs and some solutions.

DISCUSSION

I did not start out on a clearly defined path when first setting foot in southern Africa in 2010. Rather, I traveled with my wife Jan and friends to Winhouk, Namibia to meet with a colleague, Dr. Larkin Powell and his family who were on a 1-year Fulbright Scholarship and sabbatical at the Namibia Polytechnique Institute. We traveled through-



Figure 1. The African lion still is a significant threat to livestock and human health and safety in southern Africa.
(photo by Christiaan Winterbach)



Figure 2. Elephant crossing sign warning vehicle drivers of an imminent threat in northern Namibia.
(photo by Scott Hygnstrom)

out Namibia, saw some of the sights such as the saw some of the sights such as the Namib Desert, Skeleton Coast, Waterburg Plateau, and Etosha National Park. We hunted, fished, photographed, watched wildlife, and thoroughly enjoyed the experience. We visited the Cheetah Conservation Foundation (CCF) in Otjeuarongo, Namibia, met with Dr. Laurie Marker, Director of CCF, and were invited to return. The following May (2011), I was lecturing on wildlife damage management, wildlife diseases, and group dynamics for a class on International Conservation Biology at CCF that included 25 students and professionals from around the world. It was fascinating to learn about the variety of problems they faced, such as rabies outbreaks in Azerbaijan, depredation by cheetah (*Acinonyx jubatus*) in Ethiopia, garden raids by Eurasian brown bears (*Ursus arctos*) in Iran, and attacks on humans by Bengal tigers (*Panthera tigris*) in India. We did our best, at times through interpreters, to provide suggestion on how to resolve their issues. Sometimes we hit the mark, but it always was remarkable to realize the few resources they had available to address their problems. Dr. Marker made arrangements for Jan and me to meet Christiaan and Hanlie Winterbach, two lion researchers from Botswana, and soon we were talking about human-wildlife conflicts across southern Africa and the need for knowledge, research, information, resources, and efforts on resolving those conflicts. It was clear that the needs heavily outweighed the available knowledge and resources, so we started planning a path for the future. The goal was to help resolve human-wildlife conflicts in southern Africa. Specific objectives included:

1. Evaluate the underlying mechanisms of human-wildlife conflicts,
2. Inform and educate managers and government officials about the impacts and significance of human-wildlife conflicts in southern Africa,
3. Develop a “Guidebook for Resolving Human-Wildlife Conflicts in southern Africa,” and
4. Develop materials to help educate people and resolve wildlife damage problems in southern Africa.

These objectives have led to several projects and collaborative efforts to help resolve human-wildlife conflicts in southern Africa.

1. Evaluate the underlying mechanisms of human-wildlife conflicts

Several discussions with leading scientists and managers in southern Africa have led to proposals, research projects, and plans to collaborate on several educational projects in southern Africa. Nearly everything discussed would be fruitful, but garnering necessary resources to get projects off the ground will be a consistent challenge. Christiaan Winterbach, Tau Consultants (Pty) Ltd., led an effort to develop a proposal to study Problem Animal Control (PAC) reports across Botswana and develop a system to increase the efficiency of reporting and utility of the results. The effort would require visits to Ministry headquarters and tribal villages throughout Botswana to verify reports and test a new reporting system. The proposal currently is pending.

Large carnivores [lion (*Panthera leo*), leopard (*Panthera pardus*), spotted hyena (*Crocuta crocuta*), brown hyena (*Hyaena brunnea*), African wild dog (*Lycaon pictus*), and cheetah] are a common source of human-wildlife conflict, especially regarding livestock predation in southern Africa (Winterbach et al. 2012). Persecution of large carnivores because of livestock predation has had negative impacts on predator populations. If an adequate natural prey base exists, conflicts among large African carnivores and humans typically decline. In 2015, Christiaan Winterbach and I initiated a study to estimate the density and biomass of prey species in various areas of northern Botswana. Ultimately, we want to evaluate suitability of habitats for large African large carnivores across the region. During summers of 2015-2017, we placed one Project Assistant and two Student Interns from the University of Wisconsin-Stevens Point in northern Botswana to assist in conducting this research. Our study area in 2016 consisted of the Western Ngamiland portion of Botswana, previously delineated into six different Conservation and Agricultural Zones. The area is important for maintaining ecological connectivity and gene flow among portions of the Kavango-Zambezi Transfrontier Conservation Area (KAZA TCA). We ran roughly 1,500 kilometers of transects by vehicle from early June through early September 2016 to collect ocular distance samples of all ungulate species and spoor (track) counts of all predator and prey species crossing the transects. Estimates of prey density and biomass, especially of larger ungulates such as greater kudu (*Tragelaphus strepsiceros*) and oryx (*Oryx gazella*) were higher in Conservation Zones than in Agricultural Zones where livestock grazing is common. Agricultural Zones still had significant biomass estimates for smaller prey species such as steenbok (*Raphicerus campestris*) and duiker (*Sylvicapra grimmia*). Results indicate that Conservation Zones in Ngamiland may still be suitable for large African carnivores, whereas problems with livestock depredation likely will develop or continue in associated Agricultural Zones.

2. Inform and educate managers and government officials

The countries of Botswana, Namibia, and South Africa have a rich wildlife heritage, and the indigenous people there still live very close to the land. Ecotourism and hunting are among the top three economic drivers in these middle-income developing nations. Boundaries of National Parks in southern Africa raise unique and significant challenges for managing human-wildlife conflicts, largely because of the diverse and often opposing opinions of stakeholders inside and outside of the parks. Many safari operators, concessionaires, and government officials reap the economic benefits of ecotourism associated with wildlife such as lions and elephants (*Loxodonta africana*) within the National Parks. Unfortunately, the same wildlife often cross the boundaries and move outside of the parks. Lions kill livestock and local villagers, elephants destroy gardens and huts, and residents adjacent to park boundaries often have to endure these hardships without resolution, compensation, or government support (Kiiru 1995, Patterson 2004, Patterson et al. 2004, Kolowski and Holecamp 2006, Holmern et al. 2007). Disparity often exists in the distribution of positive and negative impacts among constituents on either side of park boundaries (Newmark et al. 1993, Woodroffe et al. 2005, Lagendijk and Gusset 2008, Sifuna 2010). Management of wildlife along these “hard edges” is complex, arduous, and controversial, whether the boundaries are physical (e.g., fences) or political (Newmark et al. 1993, Treves 2007, Lamarque et al. 2009, Somers and Hayward 2012). This is especially true, given the diversity of public opinion and government responsibilities associated with human well-being, conservation of wildlife, “traditional use,” wildlife harvest, and economic development. In 2012, I worked with Dr. Jerold Belant, Mississippi State University; David Bergman, USDA-APHIS-Wildlife Services, and James Miller, Mississippi State University to develop and host a symposium and panel discussion on *Managing Human-Wildlife Conflicts on the Hard Edges* at the 4th International Wildlife Management Congress in Durban, South Africa. The objectives of the sessions were to discuss issues and identify types and causes of human-wildlife conflicts, reveal associated policy and legal issues, promote potential solutions, and increase communication among interested stakeholders (Hygnstrom et al. 2013). Over 200 people participated in the sessions and considerable information was conveyed about the issues, but solutions still are hard to find.

In March 2015, I was invited to present a keynote address and lead a panel discussion on *Human-Wildlife Coexistence* at the 2015 Botswana Wetlands and Wildlife Conference in Maun, Botswana. The conference included over 150 managers, scientists, and government officials. The address contrasted human awareness, use, and conservation of wildlife in North America and Africa over time. Wildlife management in southern Africa has loosely followed European and agricultural models throughout the last century and most wildlife populations, especially large African carnivores, have been in steady decline. I ended with reflections on the North American Model of Wildlife Conservation (NAMWC, Geist et al. 2001) and piqued

their interest with recent trajectories of wildlife populations in North America.

3. Develop a “Guidebook for Resolving Human-Wildlife Conflicts in southern Africa”

While touring southern Africa, I observed that many government officials, managers, scientists, and relatively wealthy livestock producers have and are quite proud of their extensive personal libraries. After conducting some research, however, we found that there is no primary reference, such as *Prevention and Control of Wildlife Damage* (PCWD, Hygnstrom et al. 1994), for helping people resolve human-wildlife conflicts in southern Africa. I believe there is a need and market for a book such as PCWD in southern Africa, so I initiated discussions with Christiaan and Hanlie Winterbach, David Bergman, and my wife about editing and producing a book to fill this niche. Our primary audience would be people who have access to wealth and resources, such as government officials, landowners, livestock producers, managers, and scientists. The title for such a book was proposed to be *Guidelines for Resolving Human-Wildlife Conflicts in southern Africa* and it would be developed in a manner similar to PCWD in which experts would develop individual chapters and we would serve as content and technical editors. General chapters would include Integrated Wildlife Management, Human Dimensions, Damage Identification, National Laws and Regulations, and Wildlife Diseases. While we hoped to limit the number of species chapters to around 20, we quickly came up with 35 species (from aardvarks to zebras) to which chapters should be dedicated. We proposed to use an MS SharePoint collaborative website to exchange drafts of chapters between authors and editors in Africa and the United States. No timeframe has been developed.

4. Develop materials to help educate people and resolve wildlife damage problems in southern Africa

We will use funds from the sale of the *Guidebook* to leverage external funds to accomplish this objective. Content from the *Guidebook* will be used to develop websites, apps, mobile push technology, picture books, posters, and other high and low technology approaches to transfer information on wildlife damage management to people in the agricultural, rural, and outback regions of southern Africa. We will collaborate with previously mentioned individuals, government agencies, and non-governmental organizations (e.g., World Wildlife Fund, African Wildlife Foundation) to distribute information.

CONCLUSIONS

In my research and travels throughout southern Africa, I have observed that there are limited resources, education, and government support available to the people living on the land. As a result, there is growing anxiety and despair. James Clarke (2013) noted the same and expanded on government policies, many of which are detrimental to both wildlife and rural Africans. Through the many objectives and projects that I have mentioned in this paper, we have developed a program called *Resolving Human-Wildlife Conflicts in southern Africa* that is a feature of the Wisconsin

sin Center for Wildlife (WCW) at the University of Wisconsin-Stevens Point-College of Natural Resources (UWSP-CNR), of which I serve as Director. The mission of the WCW is to “connect students, professionals, and landowners for sustainable wildlife management” (Hygnstrom and Hygnstrom 2017). I believe that our work in southern Africa has already gone a long way in addressing the mission of the WCW and helping people in southern Africa. I hope to expand our programming and increase opportunities for students here and people in southern Africa.

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