Food and Agriculture Organization of the United Nations

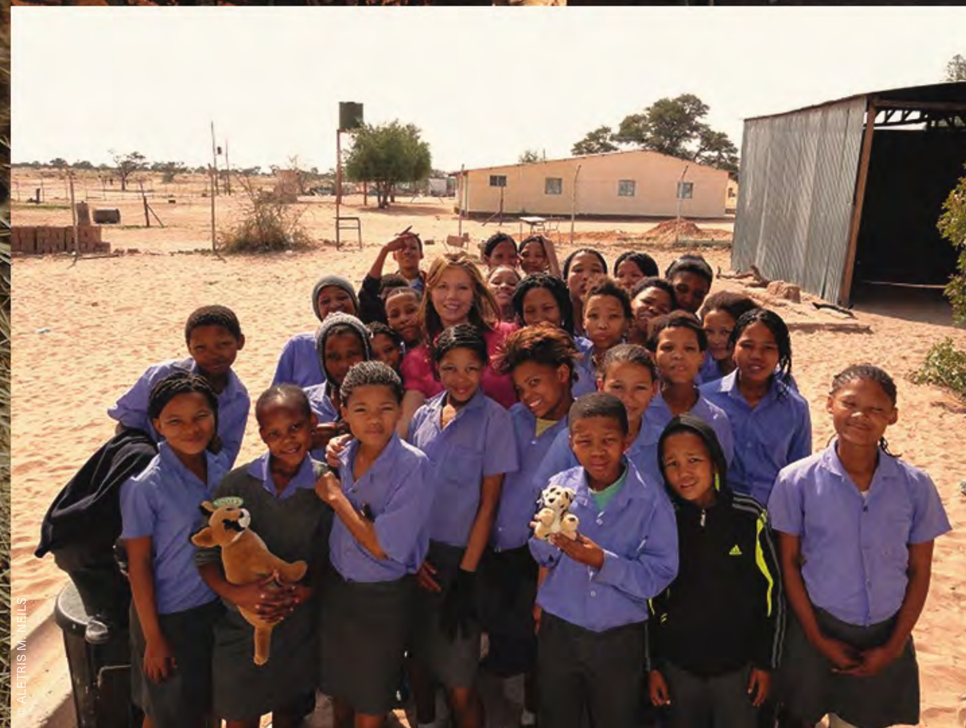
IUCN SSC Human-Wildlife Conflict & Coexistence SPECIALIST GROUP

HUMAN-WILDLIFE CONFLICT & COEXISTENCE
/ CASE STUDIES

LOOKING BEYOND IMPACTS TO FULLY UNDERSTAND A HUMAN-WILDLIFE CONFLICT SITUATION

© UNSPLASH / THOMAS BONOMETTI

© ALETRIS M. NEILS



© ALETRIS M. NEILS

INTRODUCTION

Historically, Namibia boasted a diverse array of predators, including lion *Panthera leo*, leopard P*anthera pardus*, cheetah *Acinonyx jubatus*, hyaenas *Hyaenidae*, and African wild dog *Lycaon pictus*. However, these predators were systematically eradicated due to human persecution and are now restricted mainly to northern Namibia. The arid landscapes of southern Namibia, characterized by private ownership, are predominantly utilized for small livestock production, focusing on sheep and goats.

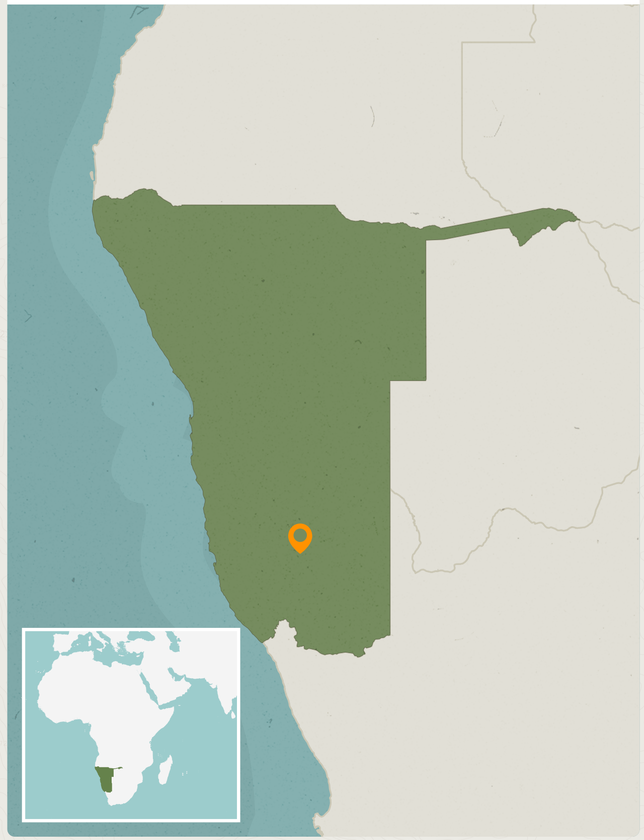
THE PROLONGED HISTORY OF PERSECUTION HAS RESULTED IN THE DISAPPEARANCE OF LARGE CARNIVORES FROM MOST OF SOUTHERN NAMIBIA, LEAVING PRIMARILY TRANSIENT CHEETAHS AND LEOPARDS. NOWADAYS, EVEN THESE REMAINING SPECIES FACE SWIFT REMOVAL WHEN DETECTED ON FARMLAND, ENABLING A SMALLER PREDATOR, THE CARACAL CARACAL CARACAL TO PERSIST AS THE APEX PREDATOR.

KEY INSIGHTS & LESSONS LEARNT
ON PAGE II

© UNSPLASH / JOSHUA KETTLE

KAROO SHRUBLANDS, KALAHARI GRASSLANDS

SOUTHERN ARID LANDSCAPES, NAMIBIA



Source: Free Vector Maps modified to comply with UN, 2020

Free Vector Maps 2022. World Map [online] [Cited 5 January 2022] https://freevectormaps.com/world-maps/WRLD-EPS-03-0001

Very little information is currently available on caracal, and no population estimates exist in Namibia. In response to this critical gap in information, a large-scale research project focussed on collecting baseline ecological data on the caracal was initiated from the south of Windhoek to Namibia's southern border in 2010 by a PhD researcher. It quickly became apparent that the species was being heavily persecuted by humans. The severity of this threat prompted a shift in the research objectives, delving into the underlying reasons behind the prevalent persecution of caracals.

This case study elucidates how the use of a social science approach provided valuable context and interpretation to the research findings obtained through an ecological approach, leading to the development of appropriate solutions to address the predator persecution that was occurring.

© UNSPLASH / GETTY IMAGES

© ALETRIS M. NEILS

PROCESS OF SETTING UP THE PROJECT

When initiating the project in 2010, the researcher attended Namibian Farmers' Association meetings as an observer and approached livestock producers, particularly those who had voiced concerns about caracals. The researcher sought permission to attend instances where predators had killed livestock on their farms, aiming to forensically determine the cause of death. Additionally, the researcher also requested that if a farmer had killed a predator (e.g. caracal, jackal, cheetah or leopard), the carcass should be preserved for sampling to determine the predator's diet.

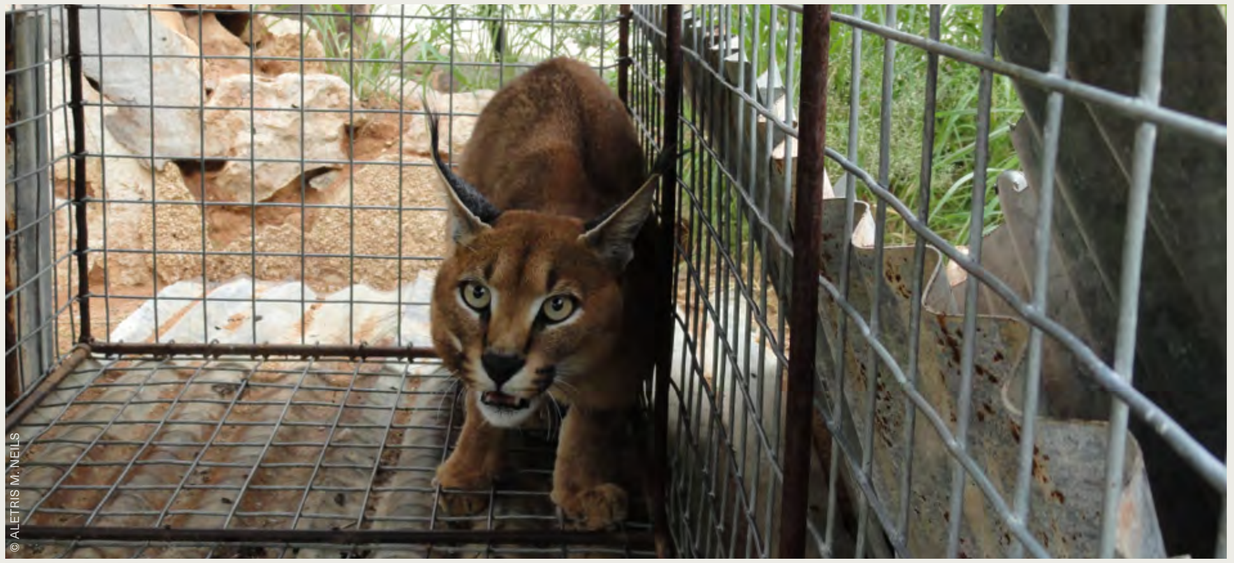
During these visits, the researcher discussed the situation further with the farmers, and the investigations would often be undertaken together, providing an opportunity for shared learning. For example, if the farmer had killed the predator, the researcher would inquire about the effectiveness of this action in preventing further predation. If the farmer reported that the issue persisted, the researcher would delve into the reasons behind the continued challenge.

BY WORKING TOGETHER, THE FARMERS STARTED RECOGNIZING THE RESEARCHER'S COMMITMENT TO FINDING PRACTICAL SOLUTIONS TO RESOLVE HUMAN-WILDLIFE CONFLICT ON THEIR FARMLANDS.

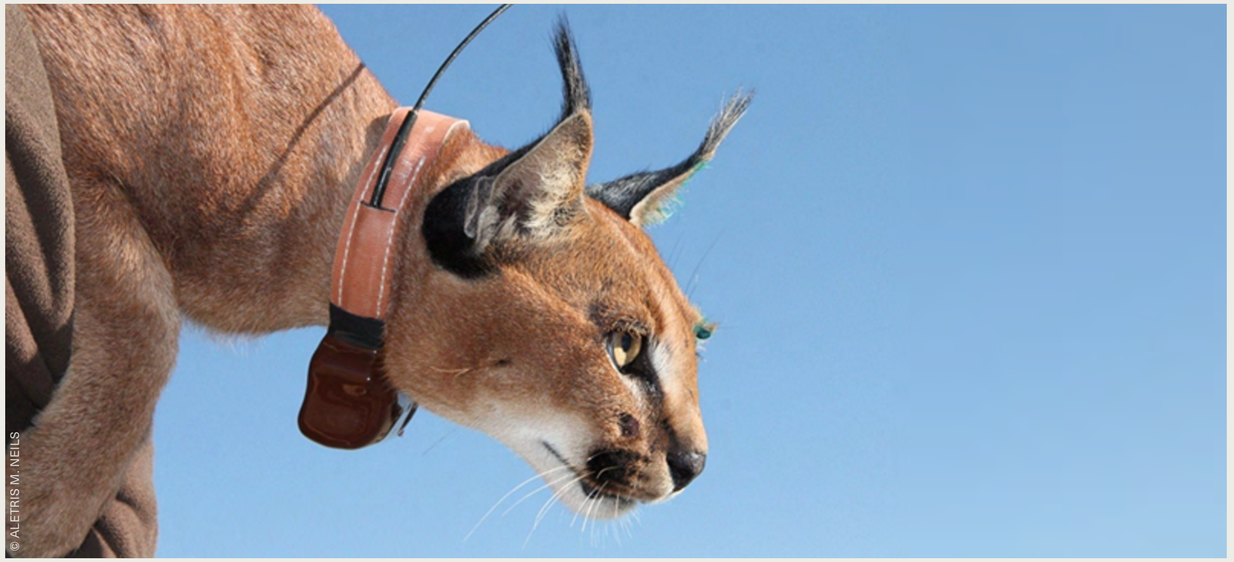
During one of the farmers' association meetings, a disgruntled farmer expressed concern about caracals on their property and mentioned trapping one in a cage. Given the existing tensions between farmers and certain non-governmental organisations (NGOs) in the region, the researcher interpreted this revelation as a form of boasting, possibly aimed at eliciting a reaction. Through discussion with the farmer, it became apparent that they had trapped the caracal due to sheep predation. Contrary to expectations, after the caracal was captured, additional incidents of sheep predation occurred, indicating that the trapped individual might not have been the primary culprit.

Following these discussions, the farmer extended an invitation to the researcher to visit the trapped caracal. Initially, the farmer inquired about the possibility of the researcher relocating the caracal off the farm. Upon clarifying that translocation was not a feasible solution and given the newfound understanding that the caracal was not responsible for the sheep predation, the farmer proposed to radio-collar the caracal and release it back onto their farm. It was agreed that if a cluster of GPS locations were detected from the collared individual, suggesting the caracal was on a kill, the researcher would return with the farmer to determine the nature of the kill. As news of the research circulated, over 200 farmers expressed interest in participating, notifying the researcher whenever a caracal was captured or killed on their property.

INITIALLY, THESE CAPTURED CARACALS WERE EUTHANISED BY FARMERS, BUT FOLLOWING THE RESEARCHER'S INITIAL ATTENDANCE, NO CARACALS WERE KILLED BY THE FARMERS PARTICIPATING IN THE RESEARCH.



© ALETRIS M. NEILS

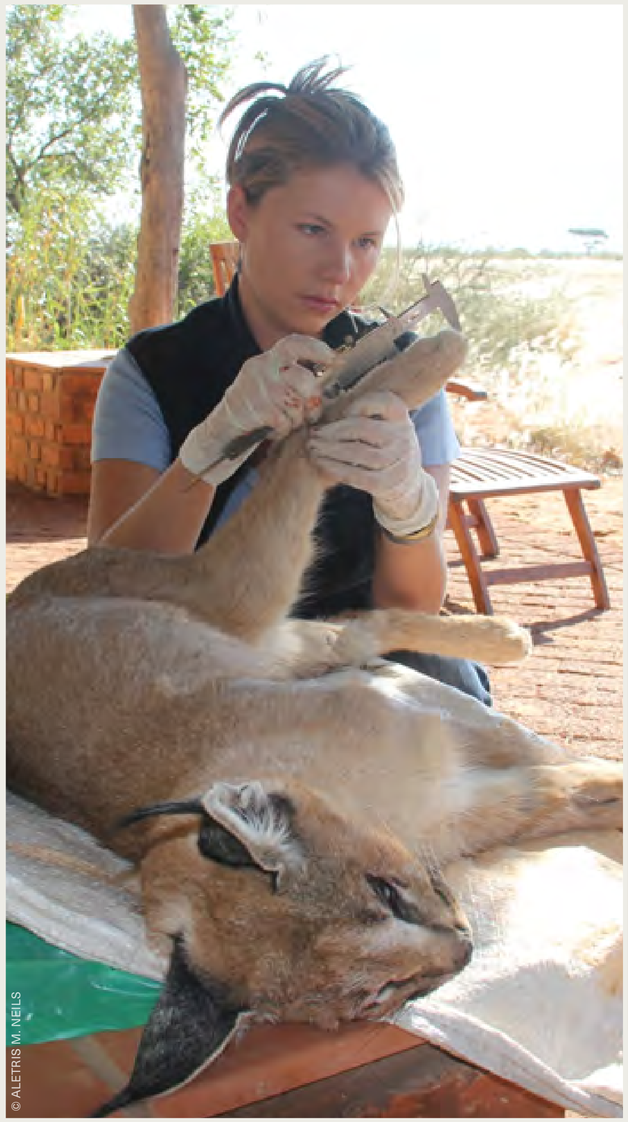


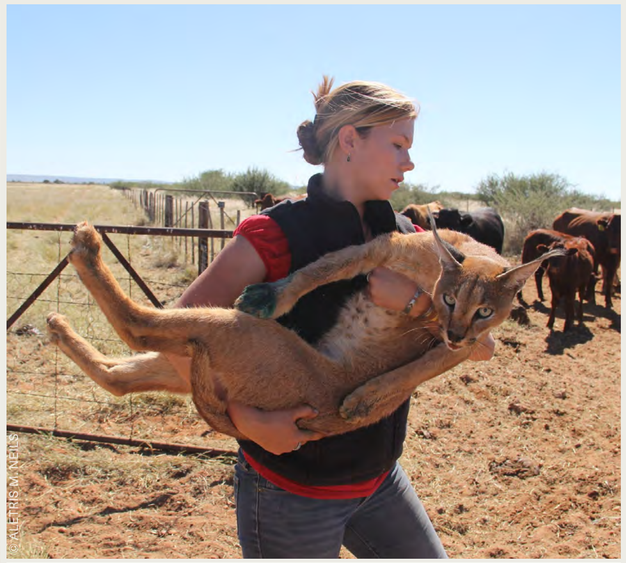
© ALETRIS M. NEILS

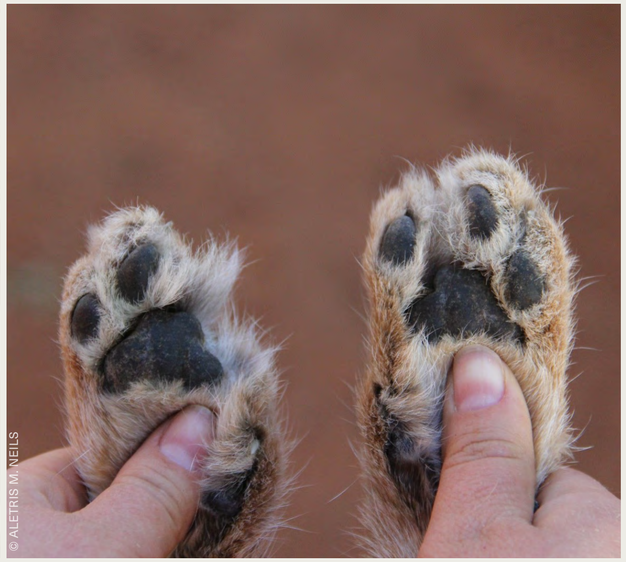
To further understand the root cause of the links between sheep predation and caracals, the researcher employed three distinct methods to examine the diet of caracals: 1) analyzing stomach contents from deceased caracals, 2) inspecting kill sites identified through radio-collared caracals, and 3) conducting analysis of scat. While these approaches were instrumental in understanding the extent of caracal impact on farmers, the researcher also sought to evaluate the reciprocal impact of farmers on caracals. This involved gathering locational information on radio-collared caracals to calculate movement patterns, home ranges and territories, complemented by necropsies to ascertain the causes of their deaths.

PROBLEM ANALYSIS

To analyze their diet, the researcher collected 202 stomach content samples, visited 668 sites where caracals had made a kill, and examined 250 scats from caracals. As the study area was very diverse, it was split into four dominant regions (the Karoo shrublands, Kalahari grasslands, sparse scrublands and woodland regions). The relative percentage of caracal prey items was determined for each of the three above-mentioned methods, in each region. In the Karoo region, hyraxes *Procavia capensis* dominated the caracals' diet, while in the Kalahari region, an emphasis on small and medium-sized ungulates such as steenbok *Raphicerus campestris* and springbok *Antidorcas marsupialis* was observed. The sparse scrublands region exhibited a varied prey spectrum, encompassing lagomorphs (e.g. rabbit and hare) and reptiles. Caracals in the woodland region displayed a generalist tendency, with a primary focus on birds and rodents, complemented by occasional consumption of raptors and amphibians.





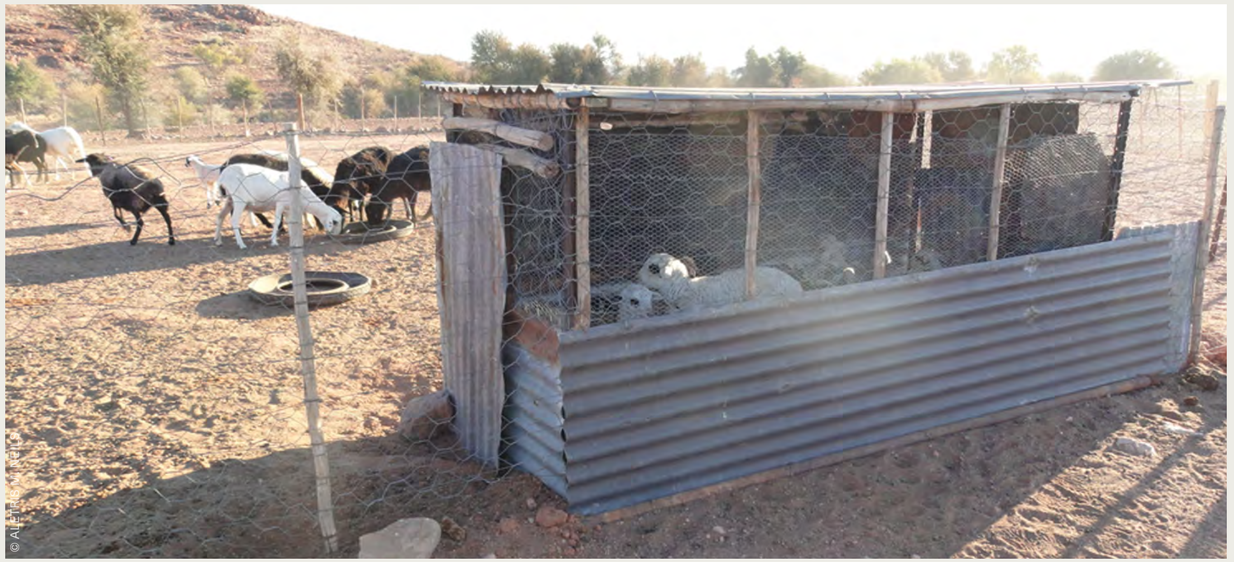


ACROSS ALL METHODS AND EXAMINED REGIONS, THE RESEARCHER FOUND THAT CARACALS CONSUMED 106 SPECIES — MAMMALS CONSTITUTED OVER 83 PERCENT OF THEIR DIET, WITH A GENERAL FEEDING PATTERN OBSERVED.

Only 2.1 percent of the caracal diet comprised livestock in the four regions. However, in some of these regions, this was significantly higher. Data collected on prey abundance in these regions made it possible to determine whether the caracals selected for certain prey based on availability. While varying across regions, caracals typically selected for steenbok and guinea fowl *Numida meleagris*, and even though livestock were the most abundant ungulate across the study area, most caracals actively selected against them.

LIVESTOCK DEPREDATION WAS OFTEN DEPENDENT ON OTHER PREY AVAILABILITY, AND WHILE SOME CARACALS DID KILL LIVESTOCK, THE ONES THAT DID SO CONSISTENTLY WERE TYPICALLY YOUNG, INEXPERIENCED OR INJURED CARACALS.

Data from the collared and necropsied caracals were used to document survival and mortality. Life table statistics were calculated for 208 caracals of known ages showing the probability of caracals living from year one to year two was only 43 percent, and the likelihood of living to five years was 0 percent. It was found that adult caracals survived longer than yearlings and subadults, with subadults having less than a 20 percent chance of surviving one year. All of the collared caracals were eventually killed by farmers not participating in the research, on neighbouring land.



Despite livestock making up a minimal amount of caracals' diets (although, as noted, some caracals did persistently kill livestock), the level of persecution was disproportionate, particularly the amount of time, energy and resources used to remove caracals.

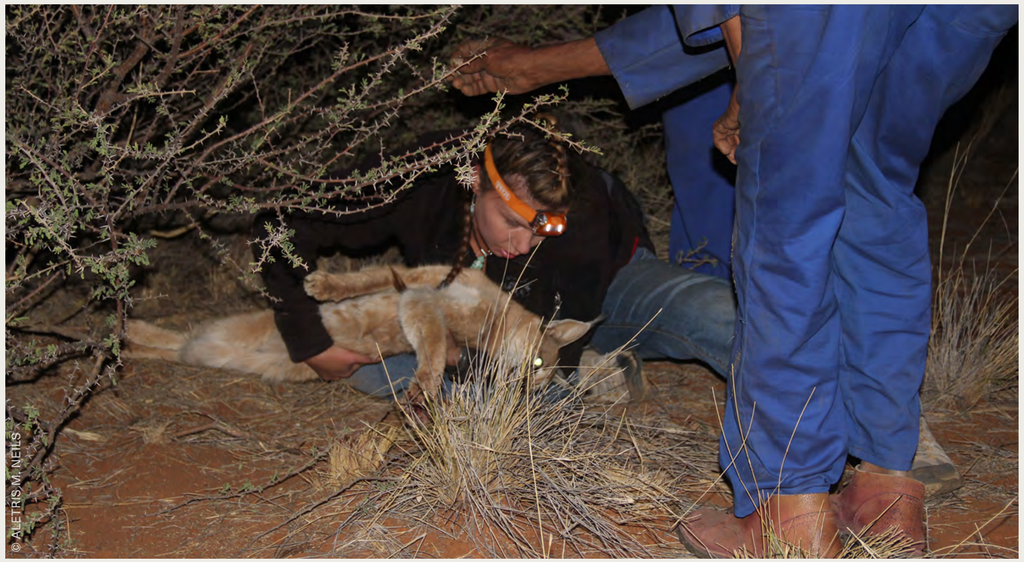
THE RESEARCHER REALIZED THAT THE ECOLOGICAL APPROACH COULD NOT EXPLAIN THIS PERSECUTION AND DECIDED TO RETRAIN IN THE SOCIAL SCIENCES TO INVESTIGATE THE SITUATION FURTHER.

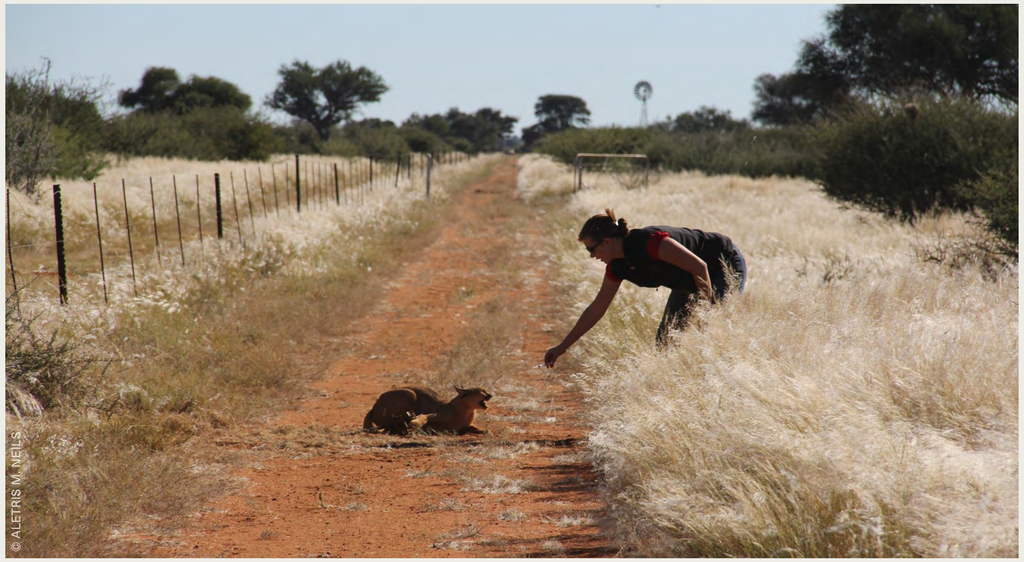
ACTIVITIES

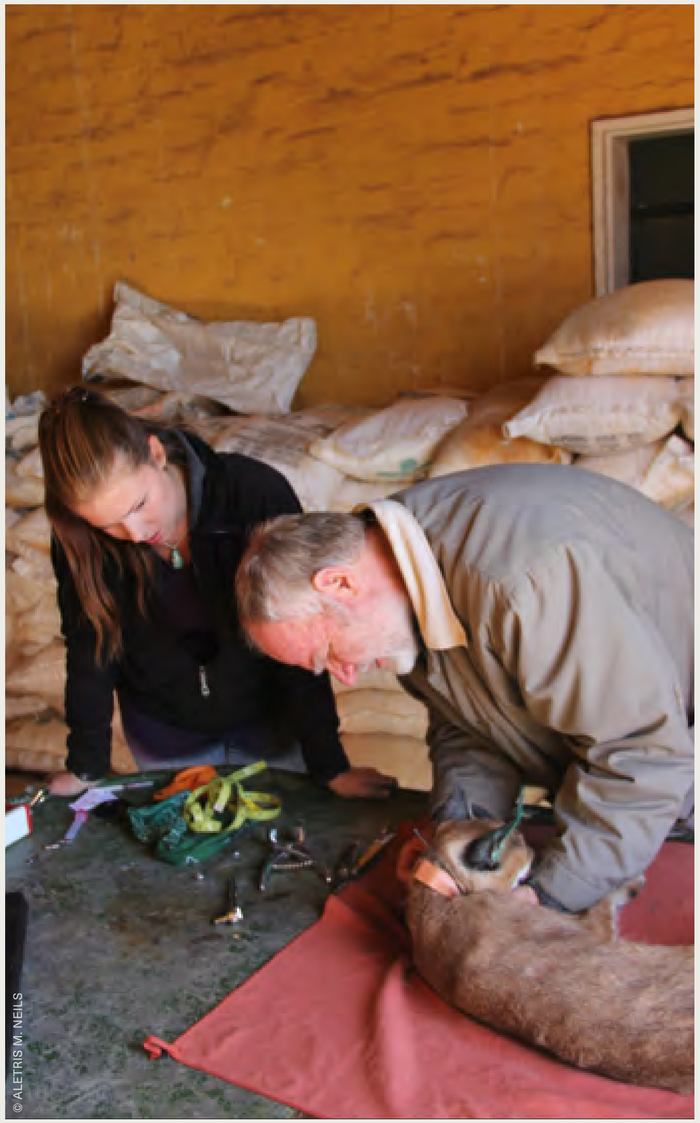
The researcher conducted semi-structured qualitative interviews with 367 farmers, completing 561 interviews (some farmers were interviewed multiple times as new information became established). Farmers who had provided carcasses were primarily interviewed, but some farmers were identified and interviewed following the snowball sampling method whereby interviewed farmers identified other farmers to interview. All of the interviews were recorded, transcribed and coded.

THROUGH THE INTERVIEWS, IT BECAME APPARENT THAT FARMERS WERE KILLING BETWEEN 0 AND 81 CARACALS PER FARM ANNUALLY, BUT DESPITE THIS, MANY FARMERS DID NOT WANT CARACALS TO GO EXTINCT.

The interviews highlighted that the farmers distrusted the NGOs in the region as they felt they did not understand them, nor did they care to. They also felt NGOs “preached” single-minded solutions that often were not even feasible on their farm. Furthermore, the farmers reported that drought was the greatest threat to their livelihoods. The researcher concluded that the persecution of caracals appeared to be motivated by fear, possibly arising from the perception that caracals represented one of the few aspects within the farming system that farmers could exert control over.







One theme that emerged during the interviews was that the conflict centred around the farmed livestock breeds. Almost 90 percent of farmers acknowledged that some livestock breeds were much less susceptible to predation than others, so the researcher analyzed the sheep breeds farmed in the study area. The Karakul sheep is an arid-adapted, multi-purpose breed, smaller than other breeds; therefore, its meat is not exported on a large scale. However, it has a double coat, with the wool used for garment production and carpets. Their global value comes from the coats of neonatal lambs, which were highly desirable to the fashion industry. Karakul sheep flocked, meaning they could be heavily managed and protected from predation through shepherding, guarding animals and corralling them at night. The other breed of sheep typically farmed was the Dorper sheep, which were recently introduced, less adapted to the climate and typically farmed for meat production. Dorper sheep are solitary or move in small groups thwarting heavy management. A hands-off approach was taken by the farmers where the sheep were put out in fenced pasture, making them more vulnerable to predation.

IT WAS REVEALED THAT DUE TO THE DIFFERENT MANAGEMENT APPROACHES NEEDED BETWEEN THE KARAKUL AND DORPER SHEEP BREEDS, THE FARMERS WHO KEPT KARAKUL SHEEP COULD TYPICALLY COEXIST WITH CARACAL AND OTHER PREDATORS AS KARAKUL COULD BE GUARDED, WHEREAS THOSE WHO KEPT DORPER SHEEP REMOVED PREDATORS TO PREVENT PREDATION.

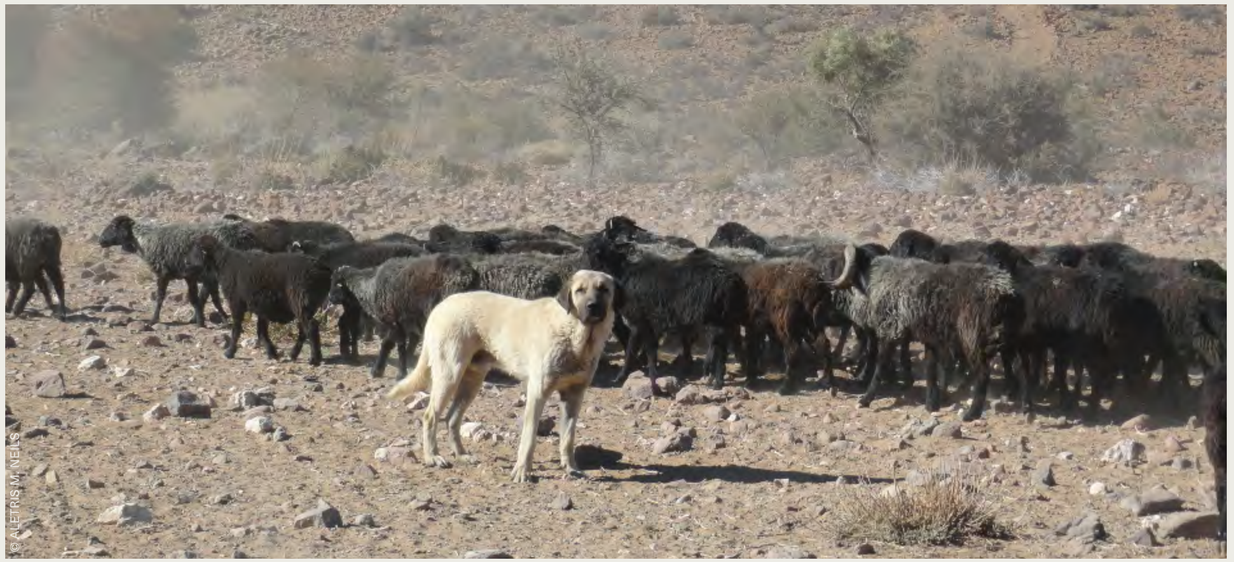
© ALETRIS M. NEILS

The researcher sought to understand the widespread adoption of Dorper sheep farming despite the challenges associated with their management. It became evident that historically, Karakul sheep had been the predominant breed in Namibia. However, a significant shift occurred after a production crash in the 1980s. This crash was triggered by the success of animal rights campaigns and the anti-fur movement, particularly focusing on the demand for spotted cats. The mounting public pressure led to a decline in the demand for Karakul pelts, causing a market crash for these pelts. Consequently, the value of Karakul sheep plummeted rapidly, impacting the livelihoods of farmers. In response, many farmers switched from Karakul sheep to mutton sheep or Dorper sheep. This transition in sheep breeds necessitated a change in management strategies, resulting in a cascade of outcomes. The shift left farmers operating on tight profit margins, making them more risk-averse, with a lower tolerance for predators. This heightened aversion ultimately led to the large-scale removal of predators in an effort to safeguard their flocks.

OUTCOMES

The research findings brought a significant degree of clarity to the researcher's perspective. Had the study solely adopted an ecological approach, there was a risk of drawing the conclusion that the persecution of caracals was unjustified. However, the incorporation of a social science approach offered insights into the underlying reasons for this persecution.

IT BECAME APPARENT THAT, IN INSTANCES WHERE NGOs RECOMMENDED THE USE OF LIVESTOCK GUARDING DOGS TO FARMERS RAISING DORPER SHEEP, THIS APPROACH FACED PRACTICAL CHALLENGES DUE TO THE UNIQUE MANAGEMENT PRACTICES ASSOCIATED WITH THIS BREED. THE IMPRACTICALITY OF SUCH SUGGESTIONS LED TO A LOSS OF RESPECT FOR THE NGOs AMONG THE FARMERS.



© ALETRIS M. NEILS

© ALETRIS M. NEILS

In certain cases, these recommendations even fuelled animosity between the involved parties, with some farmers actively targeting predators as a form of defiance against the organizations. This dynamic highlighted the existence of hidden human-human conflict, further complicating the overall scenario.

To alleviate the caracal persecution, revitalizing the market for Karakul sheep emerged as a crucial solution. The researcher discovered that farmers were open to this proposal but expressed concerns about a potential market crash, emphasising the need for a secure and sustainable market. There is a Namibian brand for Karakul pelts called “SWAKARA”, which incorporates animal welfare guidelines into their regulations. Collectively, the researcher is working with the SWAKARA board to also incorporate predator-friendly regulations, signalling that Karakul pelts sold under their brand originate from farms where lethal control of predators is not employed as a management strategy, and the sheep are farmed in a predator friendly manner. Ultimately, it is hoped that if Karakul sheep farming can be restored, caracal and other predator persecution will be reduced.

LESSONS LEARNT

01 | ENGAGE THROUGH LISTENING AND INQUIRY

When the researcher initiated their project, the situation was not approached by suggesting solutions to the farmers. Instead, the emphasis was on attentive listening and posing relevant questions to gain comprehensive insights into the situation. Recognizing that a thorough understanding was imperative, the researcher refrained from offering premature solutions, acknowledging the potential to inadvertently worsen the situation without a comprehensive understanding.

02 | CULTIVATE TRANSPARENCY AND TRUST

The researcher made a concerted effort to maintain transparency with the farmers concerning the actions of the collared caracal. In instances where a kill site was pinpointed on a farmer's land, the researcher extended an invitation to the farmer to visit the site. Acknowledging the inherent risk, especially given the potential emotional response to livestock losses, this approach was taken to forge a foundation of trust with the farmers.

03 | IDENTIFY PIVOTAL INDIVIDUALS

Instead of exclusively collaborating with like-minded farmers at the outset, the researcher chose to engage with the most vocal individuals to gain a nuanced understanding from their unique perspective. By establishing trust and fostering understanding with these key farmers, a ripple effect ensued, wherein they, in turn, facilitated introductions to other farmers.

04 | PRIORITIZE LONG-TERM SOLUTIONS

Instead of focussing on quick-fix, short-term solutions, the researcher dedicated efforts to comprehend the intricacies of the situation. Delving into the scale, historical context, conflicting parties, and other facets of the problem enabled a comprehensive understanding of why caracals faced persecution. This holistic perspective laid the groundwork for the development of sustainable, long-term solutions.

05 | ACKNOWLEDGE PERSONAL LIMITATIONS

The researcher realized they had limited expertise in social science research and therefore participated in further training before returning to conduct qualitative questionnaires. Collaboration was recognized as crucial to ensure the integration of multi-expert perspectives from every discipline.

06 | TRANSFORM OWNERSHIP

By posing thoughtful questions, the farmers often found themselves drawing conclusions about the issue organically, subsequently offering their own suggestions for the next steps. This approach resulted in a heightened sense of investment from the farmers, empowering them to take ownership of the process. For instance, the idea to release trapped caracals back onto their land with radio collars originated from the farmers, not the researcher.

07 | ENGAGE IN DAILY ACTIVITIES

Rather than merely extracting information from farmers, the researcher frequently volunteered to assist in their day-to-day tasks. This not only fostered stronger relationships but also granted valuable insights into the farmers' priorities and the challenges they faced. These firsthand observations enabled the researcher to pose more relevant and insightful questions during qualitative interviews, contributing to a deeper understanding of the farmers' circumstances.

08 | INSUFFICIENCY OF ECOLOGICAL DATA ALONE

Although ecological data indicated that livestock constituted only 2.1 percent of caracals' diet, the researcher recognized the nuanced nature of the situation. Presenting this statistic to the farmers had the potential to strain their relationship, given that it was an average across many instances and some farmers did, in fact, experience substantial livestock losses.

09 | RECOGNIZE THE ROLE OF ANIMAL SCIENCE

While the farmers were engaged in sheep farming, it was only when the researcher delved into the diverse breeds of sheep that the resistance to certain interventions became clear. Often the focus centres on comprehending wildlife and human dynamics. However, it became evident that without a profound understanding of the livestock and their behaviour, there was a risk of proposing misguided interventions, potentially leading to conflicts among stakeholders.

10 | HISTORIES SHAPE PRESENT REALITIES

The researcher gained a profound understanding of the transition from Karakul to Dorper sheep among farmers. This comprehension became pivotal in collaboratively identifying holistic, long-term solutions, facilitating a potential transition back to Karakul sheep farming with the farmers.

FURTHER INFORMATION

• Conservation CATalyst

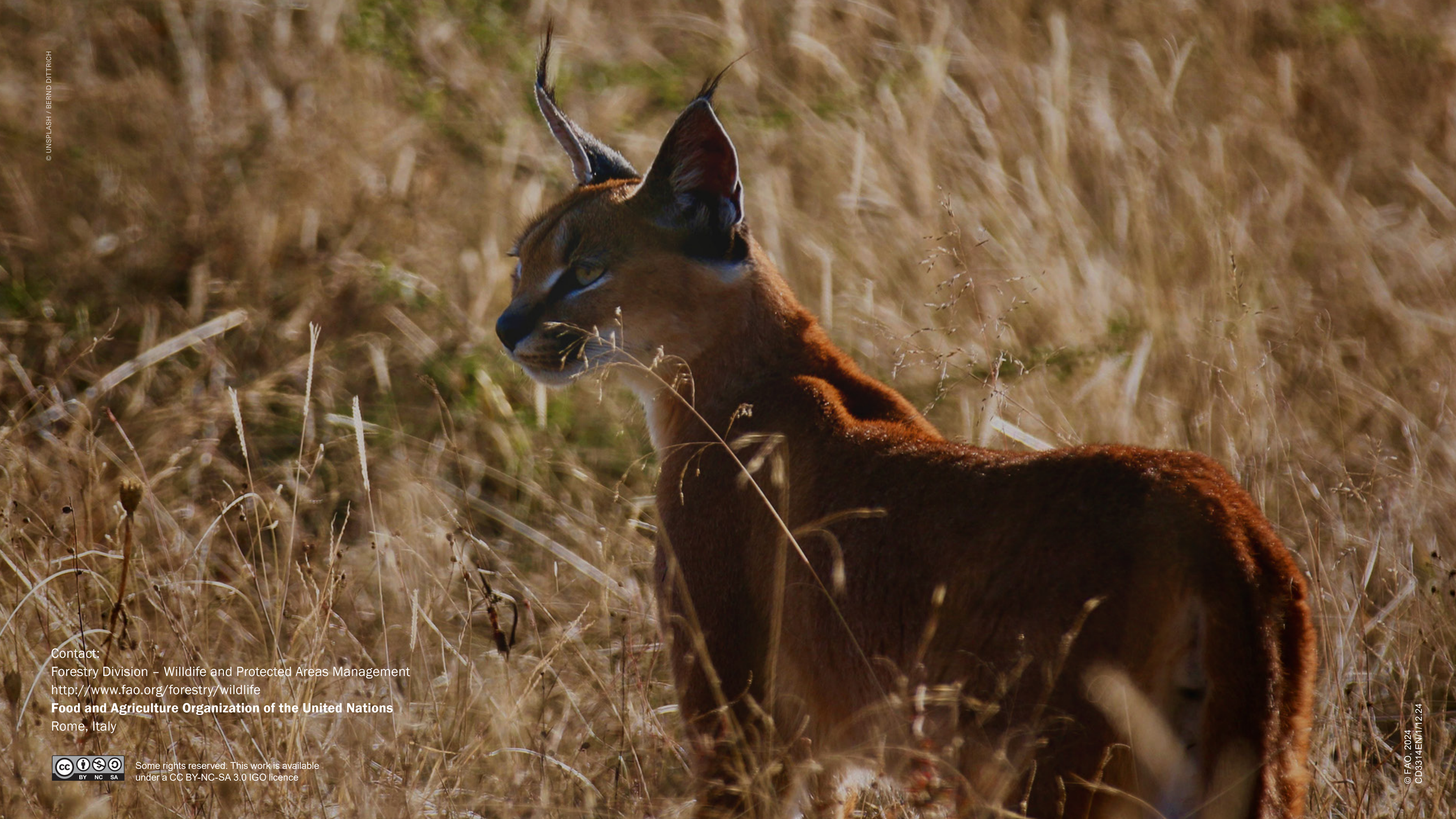
ACKNOWLEDGEMENTS

With thanks to Aletris Neils from Conservation CATalyst, and to James Stevens (Programme Officer, IUCN SSC Human-Wildlife Conflict & Coexistence Specialist Group) for writing the case study. The author would also like to acknowledge the valuable and constructive feedback provided by Alexandra Zimmermann (Chair, IUCN SSC Human-Wildlife Conflict & Coexistence Specialist Group), Kristina Rodina de Carvalho (Forestry Officer, FAO) and Luna Milatović (Consultant, FAO). PRVRT Creative Studio took care of the graphic design and layout.

ABOUT THE CASE STUDIES

The **Food and Agriculture Organisation of the United Nations** (FAO) and the **IUCN SSC Human-Wildlife Conflict & Coexistence Specialist Group** (HWCCSG) have jointly developed a set of case studies with the aim of covering the process projects have taken to manage various aspects of a human-wildlife conflict & coexistence situation. This case study is one of many that will be used to illustrate key components of the **IUCN SSC Guidelines on Human-Wildlife Conflict & Coexistence**. The published case studies can be found in the **Human-Wildlife Conflict & Coexistence Library**.

Required citation: FAO and IUCN SSC HWCCSG. 2024. *Looking beyond impacts to fully understand a human-wildlife conflict situation.* Rome



© UNSPLASH / BERND DITTRICH

Contact:
Forestry Division – Willdife and Protected Areas Management
http://www.fao.org/forestry/wildlife
Food and Agriculture Organization of the United Nations
Rome, Italy

© FAO, 2024
CD3314EN/1/12.24