

The Lion Ranger Program
Kunene, Namibia



LION RANGER TRAINING & OPERATIONS MANUAL

Lion Rangers Training and Operations Manual

Published by the Community Conservation Fund of Namibia (CCFN) in collaboration with the Ministry of Environment, Forestry and Tourism (MEFT) under the Poverty Oriented Support to Community Conservation in Namibia (POSCCIN) Project. Edited 02.2023. Version 1.

Any reproduction in full or in part must mention the title and credit the above-mentioned publisher as the copyright owner.

Prepared for the Lion Rangers Program with support from the Community Conservation Fund of Namibia. Co-financed by the Federal Republic of Germany through the German Ministry for Economic Cooperation and Development (BMZ) via the KfW Development Bank.

Image credits: Alexandra Wattamaniuk, John Heydinger, Mathilde Brassine, NACSO/WWF-Namibia, IUCN Cat Specialist Group, Linus Mbomboro, Philip Stander, Wikipedia, Aging the African Lion, Lion Recovery Fund, Desert Rhino Camp staff, Oliver Adolph, shakricconnection.com, Louis Liebenberg, Wide Horizons Aerial Technologies, Jendery Tsaneb.

This work is made possible in partnership with the Anabeb, Doro !Nawas, Ehi-rovipuka, #Khoadi-//Hôas, Omatendeka, Orupupa, Puros, Sesfontein, Sorris Sorris, Torra, and Tsiseb communal conservancies.

The Lion Ranger program gratefully acknowledges the generous support of Camelthorn Safaris, the Conservation Travel Foundation, Oliver Adolph and Family, Natural Selection, and WWF-Namibia. Administrative support is provided by Tourism Supporting Conservation (TOSCO). Program launching and catalytic funding have been provided by Integrated Rural Development and Nature Conservation (IRDNC), who also partners with the Lion Rangers in human-wildlife conflict support. The Lion Rangers partner with the Namibian Lion Trust in field deployment and human-lion conflict support.

Critical inputs were provided by: Mathilde Brassine, Lise Hanssen, MEFT-DSS staff, Selma Nangolo, and Uakendisa Muzuma.

Written, edited and designed by John Heydinger.





Being a Lion Ranger is an important position. You are a leader in your community. You are not only responsible for helping limit human-lion conflict, but for wildlife conservation and community development. This manual outlines your responsibilities and activities as a Lion Ranger. This manual is a resource. Keep it close by. Keep it tidy and safe.

Lion Rangers are leaders in community conservation; their conservation work supports national lion conservation as well as sustainable community development objectives. Lion Rangers are part of community-based natural resource management (CBNRM) which is important for reducing human-lion conflict in northwest Namibia.

Lion Rangers are the eyes and ears of their conservancies in the field. By assisting MEFT, Lion Rangers also represent the country of Namibia. Take pride in your work. Show this by working hard, presenting yourself professionally, and continuing to learn new approaches for limiting human-lion conflict in your community.

You should be very proud to be a Lion Ranger. We are proud to be leaders of this program and proud of the hard work and dedication of each of you.

Lion Rangers Program Leadership Team
February 2023

LION RANGERS CODE OF CONDUCT

Lion Rangers work for their conservancies to limit human-lion conflict. They are responsible for knowing and monitoring lions in their area and surrounding areas. They work alongside other conservancy members, partnering organizations, and government to facilitate community-based natural resource management for the benefit of their communities and wildlife. They are dedicated, hard-working, honest, fair, and kind. They strive for human safety and livelihood support of conservancy residents. They always act in a responsible, mature, manner and make personal decisions that shine a positive light on the program, their communities, conservancies, and the country of Namibia.



LION RANGERS



Instructions



Do



Ensure human safety first.
Always.



Keep in touch with your
conservancy, community, and
the program.



Keep this manual close and
neat.



Do not



Put yourself or others in danger.



Drink, smoke, or do anything
illegal in uniform.



Share program information
without permission from
program leadership.

Remember: human safety is your number one priority!



Contents

CHAPTER 1 - YOUR JOB AS A LION RANGER.....	8
1.1 - Program Overview.....	9
1.2 - Ranger Responsibilities.....	13
 CHAPTER 2 - KNOWING ABOUT LIONS.....	21
2.1 - Lions in Namibia & Africa.....	22
2.2 - Lion Basics.....	26
2.3 - Aging Lions.....	28
2.4 - Lion Communication.....	32
2.5 - Body Condition Assessment.....	34
 CHAPTER 3 - FIELD SKILLS.....	37
3.1. - Foot- & Vehicle-based Patrols.....	38
3.2 - Spoor Identification & Tracking.....	40
3.3 - Safely Approaching Lions.....	45
3.4 - Understanding GPS & VHF Collars.....	48
3.5 - Assisting with Collaring.....	50
3.6 - Using the SMART Program.....	52
 CHAPTER 4 - HUMAN-LION CONFLICT.....	56
4.1 - The Scope of Human-Lion Conflict.....	57
4.2 - Lion Activity Budget.....	58
4.3 - Anticipating Human-Lion Conflict.....	59
4.4 - Preventing Human-Lion Conflict.....	60
4.5 - Responding to Human-Lion Conflict.....	61
4.6 - Human-Lion Conflict Scene Investigation.....	62
4.7 - Community Support Following Human-Lion Conflict.....	63
 CHAPTER 5 - SUPPORTING SKILLS.....	64
5.1 - Assessing Kraals & Livestock Protection.....	65
5.2 - Conservancy Communication.....	66
5.3 - Farmer Communication.....	67
5.4 - Program Communication.....	68
5.5 - Social Media Expectations.....	69
5.6 - Basic First Aid.....	70



Contents (cont)

CHAPTER 6 - PERFORMANCE EXPECTATIONS & ASSESSMENT.....	71
6.1 - Program Expectations of Ranger Performance.....	72
6.2 - Health, Wellbeing, & Substance Abuse.....	73
6.3 - SMART Reports of Ranger Effort.....	74
6.4 - Conservancy Reporting Overview.....	75
 CHAPTER 7 - CONCLUSION.....	 76



CHAPTER 1 - YOUR JOB AS A LION RANGER





1.1 - Program Overview

Introduction

As a Lion Ranger you have an important responsibility to support your local community, by ensuring the safe and proper monitoring of lions in your area. This includes working with community, government, and NGO partners to limit human-lion conflict.

The job of a Lion Ranger is important and you should be proud to be a Lion Ranger. It is also demanding, it can be dangerous, and requires hard work. This manual will guide you through your roles and responsibilities as a Lion Ranger.



Lion Ranger Manual Objectives



NUMBER 1

To know important information about your job as a Lion Ranger.



NUMBER 2

Learning and developing field skills.



NUMBER 3

Furthering skills development for yourself and to assist your community.



**LION
RANGERS**

MISSION

YOU ARE A LION RANGER!

You are **RESPONSIBLE** for **HUMAN-LION RELATIONSHIPS** in **YOUR CONSERVANCY**.

YOU WORK FOR YOUR CONSERVANCY.

You **ASSIST CONSERVANCY MEMBERS** to limit human-lion conflict.

Through **ACTIVE PATROLLING, COMMUNITY INFORMATION SHARING, TEAM COMMUNICATION, ASSISTING FARMERS**, whole **PROGRAM ASSISTANCE**, and by always showing **PROFESSIONAL BEHAVIOR**, you will help your conservancy, the government, and the Namibian people ensure a future for communities and lions.

YOUR GOALS

- **HUMAN SAFETY IS YOUR NUMBER ONE GOAL!**
- Limit human-lion conflict in your conservancy
- Ensure accurate information sharing with your community
- Communicate accurate information to the Lion Ranger program and government
- Know the lions in your conservancy and neighboring conservancies
- Be a productive, useful, knowledgeable team member
- Model professional behavior at all times



Ministry of Environment,
Forestry and Tourism

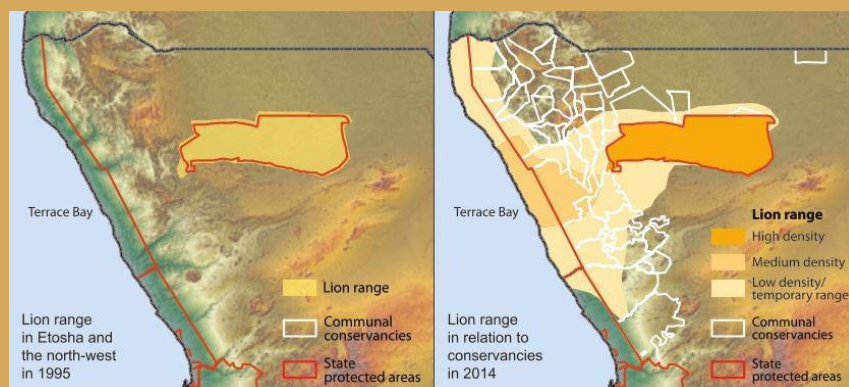
PROGRAM GOALS

- Sustainable management of lions on communal land in the Kunene Region
- Limit human-lion conflict
- Empower local communities
- Improve evidence-base for lion conservation
- Increase the flow of benefits to communities



BACKGROUND

Kunene has free-ranging lions. Human-lion conflict endangers livestock, human livelihoods, and lions. Your conservancies have a small number of lions. But this number has grown since the 1990s. Due to limited grazing for livestock and wildlife, human-lion conflict will continue to be a challenge in Kunene.



Lions now inhabit areas from the Ugab in the south to the Hoaruseb and beyond in the north. From Etosha in the East to Skeleton Coast in the West. There are an estimated 56-60 lions in Kunene, and almost 400 in Etosha.

Namibia is one of the only countries where lion conservation is successful outside of parks.

But human-lion conflict threatens farmers and lions. Lions have killed up to 20% of cattle in certain areas. Since 2000, 89% of lion mortalities on communal land have been due to humans killing lions.

Lions are important for tourism, which creates employment.

Lions also support a healthy ecosystem. They will kill weak and sick prey. They also keep prey numbers low. This allows more grass for livestock.

Responsibilities Overview

Your Job as a Lion Ranger

Active Patrol



Collect Data



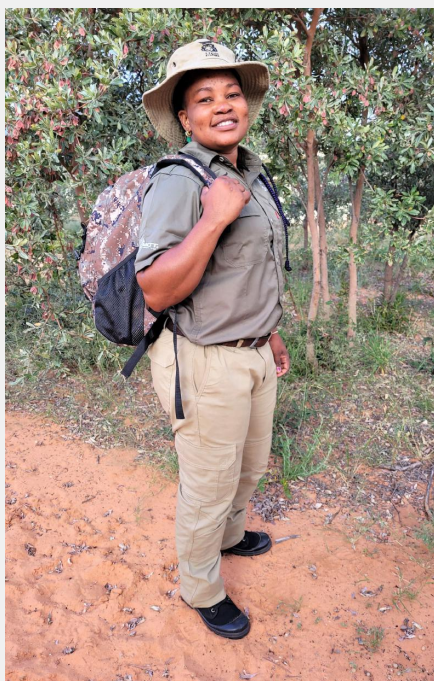
Communication



Assist Farmers



Assist the Program



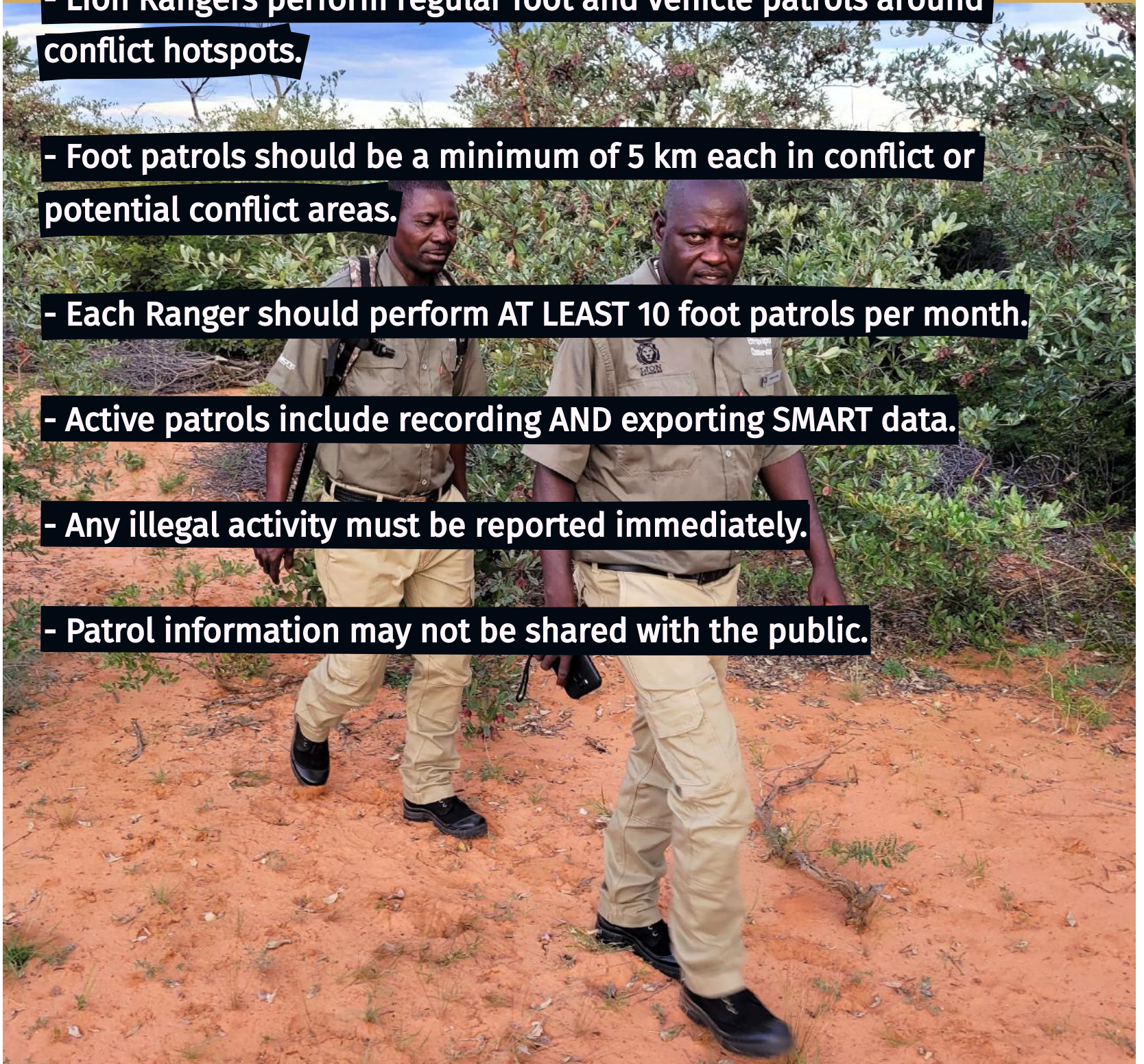
Ranger Dress Code & Equipment

When on duty, Rangers must have a clean uniform or suitable substitute. This includes work shirt with visible logo, and pants, boots, and necessary equipment.

Rangers are responsible for coming to the field with all necessary equipment.

ACTIVE PATROL

- Lion Rangers perform regular foot and vehicle patrols around conflict hotspots.
- Foot patrols should be a minimum of 5 km each in conflict or potential conflict areas.
- Each Ranger should perform AT LEAST 10 foot patrols per month.
- Active patrols include recording AND exporting SMART data.
- Any illegal activity must be reported immediately.
- Patrol information may not be shared with the public.



COLLECT DATA

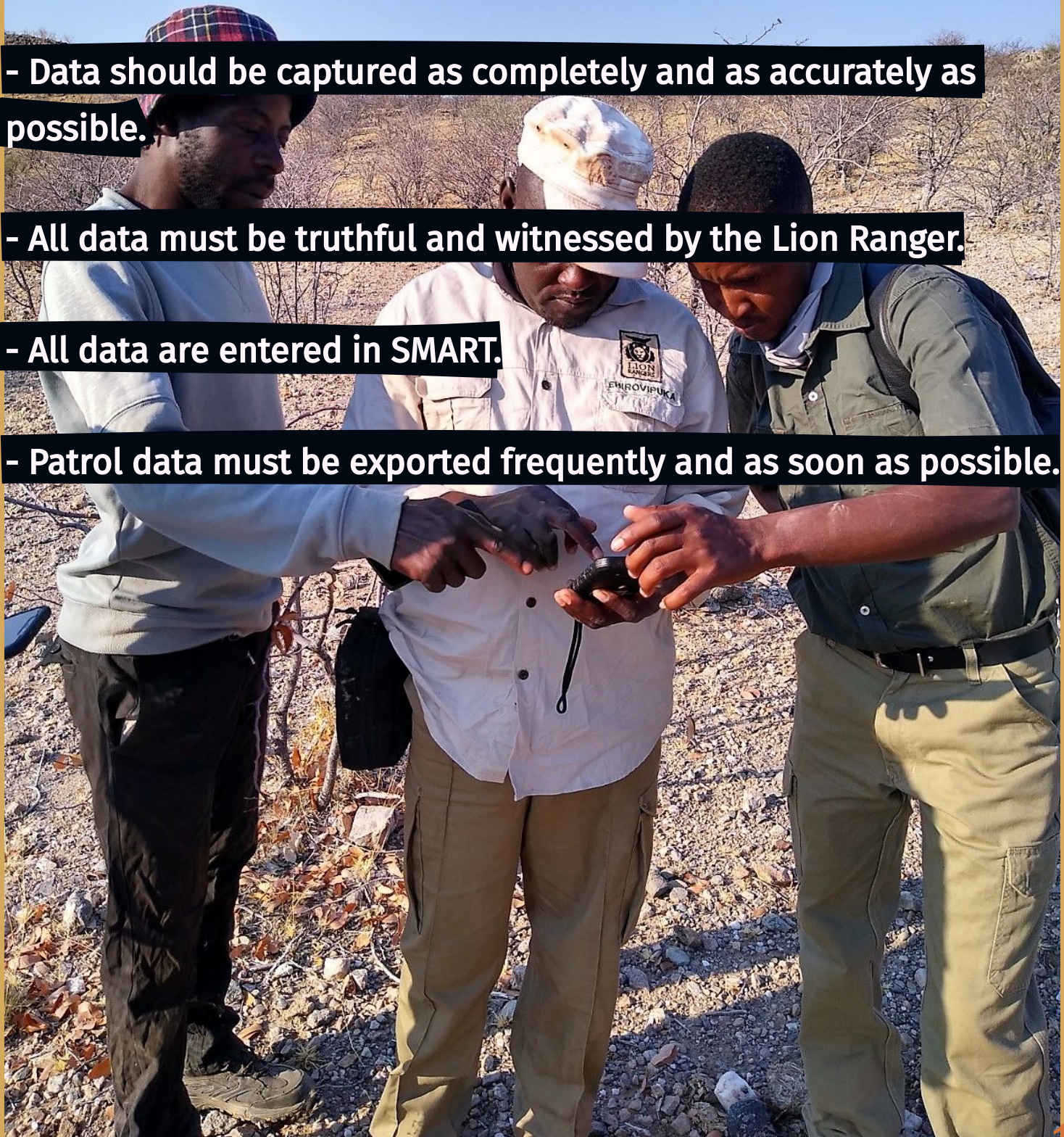
- Lion Rangers collect data on lions and other wildlife, livestock, infrastructure, and related activities within their patrol areas.

- Data should be captured as completely and as accurately as possible.

- All data must be truthful and witnessed by the Lion Ranger.

- All data are entered in SMART.

- Patrol data must be exported frequently and as soon as possible.



COMMUNICATION

LION RANGERS WORK FOR AND REPORT TO THEIR CONSERVANCY.

- 
- Rangers inform farmers of lion and other carnivore movements.
 - When an incident is reported to you, get as much information as possible.
 - Communication must be timely and accurate.
 - Rangers must inform MEFT and police of illegal activities.
 - All communication must be respectful. Good listening is important.

ASSIST FARMERS

- Lion Rangers help keep people and livestock safe.
- Rangers assist with building predator-proof kraals.
- Rangers monitor the proper functioning of Early-Warning Towers and report non-functioning towers as soon as possible.
- Inform farmers of lion and other carnivore movements.
- Assist with moving livestock away from danger when necessary.
- Monitor livestock activity in core wildlife areas.
- Record locations of homesteads and other infrastructure for more proactive monitoring.
- Inform conservancy and Leadership Team of local infrastructure needs.



ASSIST THE PROGRAM

- Lion Rangers assist with program activities such as organizing training, research, and maintenance as requested by Leadership Team.
- Provide feedback from farmers and conservancy committee to Leadership Team.
- Rangers are responsible for maintaining and keeping safe their equipment.
- You should immediately report illegal activity.
- Rangers represent the program at AGMs and other important meetings as requested.
- Lion Rangers are always representing the program. They behave professionally and respectfully towards others at all times.
- Do not share program information without permission.



UNIFORM

All Lion Rangers have been provided with a uniform. This includes: jackets, work shirt and pants, boots, socks, and sun hat. Rangers are expected to be in clean uniforms or similar substitute whenever they are working. **UNIFORMS ARE NOT TO BE WORN OUTSIDE OF WORK.**



EQUIPMENT

Your Lion Rangers program equipment is your responsibility and is intended for work use only. This includes: tent, bedroll, smart phones, headlamps, metal trunks, solar banks, backpacks and first aid kit. Lost, damaged, or stolen equipment is a Rangers' responsibility - the cost of repairing or replacing may be deducted from their pay. Stolen equipment must be reported immediately and police report must be obtained by the Ranger. Equipment will be replaced by the Program in a timely manner, but Rangers are responsible for ensuring it lasts.



CHAPTER 2 - KNOWING ABOUT LIONS



KUNENE LION LANDSCAPE (2023)



CONSERVANCY	HUMAN POPULATION	AREA (km ²)
ANABEB (25 – 2003)	1402	1570
PUROS (10 – 2000)	641	3562
SESFONTEIN (26 – 2003)	1491	2465
EHI-ROVIPUKA (13 – 2001)	1846	1980
OMATENDEKA (17 – 2003)	1985	1619
ORUPUPA (62 – 2011)	2024	1234
≠KHOADI-//HÔAS (3 – 1998)	4308	3364
TORRA (4 – 1998)	1064	3493
DORO !NAWAS (6 – 1999)	1242	3978
SORRIS SORRIS (15 – 2001)	950	2290
TSISEB (12 – 2001)	2415	7913

LION BLOCKS

Based on research and Ranger data, we know individual lions occupy certain parts of Kunene. Conservancies with resident lions and Lion Rangers are organized into "Lion Blocks". These blocks have been agreed-to by conservancy management and are designed for Lion Rangers to work together. The four lion blocks are:

Black Block : Anabeb, Puros, and Sesfontein

Red Block: Ehi-rovipuka, Omatendeka, and Orupupa

Green Block: ≠Khoadi-//Hôas and Torra

Blue Block: Doro !Nawas, Sorris Sorris, and Tsiseb

Rangers work together within their block to perform joint-patrols, share information and resources, and keep up-to-date knowledge of lions and their movements across their Lion Block.

LIONS IN KUNENE

THE KUNENE LION POPULATION IS STABLE

Total numbers estimated: 56-60 adults (non-cubs) (2023).

Density (0.2-0.4 per 100 km sq) is lowest in Africa.



OTHER LIONS IN NAMIBIA

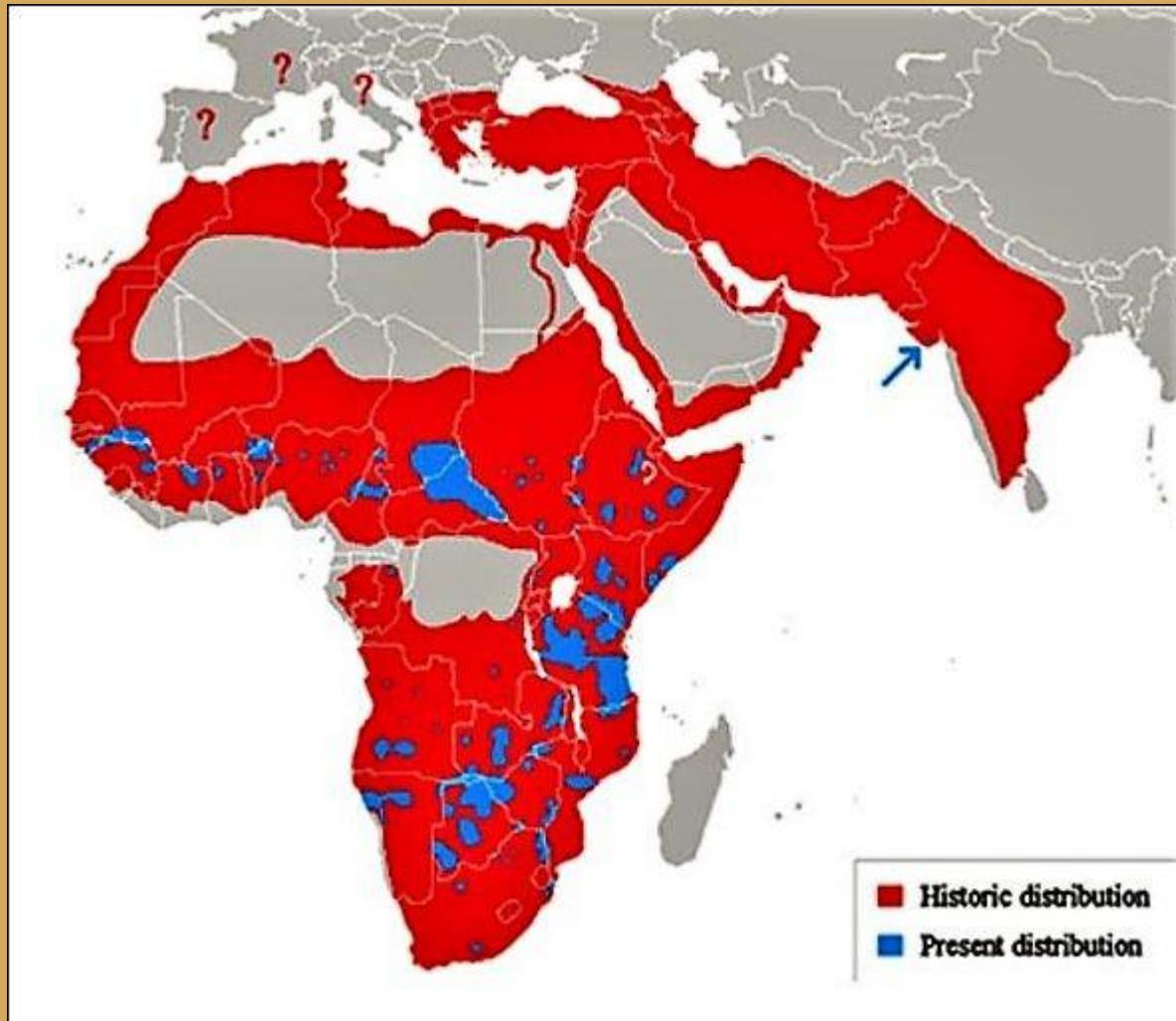
Estimated 350-400 lions in Etosha

Estimated 90-120 lions in NE Namibia

Estimated 800-900 lions in Namibia



LIONS ACROSS AFRICA



ACROSS AFRICA lions numbers have declined by 43% in the last 25 years.

There are currently (2023) 20,000 - 30,000 wild lions in the world.

Lions in Botswana, Namibia, South Africa and Zimbabwe have increased by 12%.

In other countries lions have declined by 60%.

Lions are recently extinct in the following countries: Afghanistan, Algeria, Burundi, Djibouti, DRC, Egypt, Eritrea, Gabon Gambia, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Lesotho, Libya, Mauritania, Morocco, Pakistan, Saudi Arabia, Sierra Leone, Syria, Tunisia, Turkey, and Western Sahara.

LIONS ACROSS AFRICA

OUTSIDE FENCED RESERVES lion numbers dropped by 62% from 1993 to 2014.

Lions INSIDE FENCED RESERVES have increased by 29% from 1993 to 2014.

CAUSES OF DECLINE



HUMAN-LION CONFLICT IS THE #1 THREAT TO LIONS IN KUNENE

IMPORTANT LION INFORMATION

Important terms to know and use properly:

Pride: lions live in prides, consisting of related females and subadult males, as well as attending males,

Group: prides can split into groups consisting of certain pride members or nomads staying together

Nomad: individual or pair, usually subadults or young adults, who have split from their family pride

Pride area: the territory occupied by a pride

Range: the territory occupied by a nomad

Adult: male or female of near full-size and breeding age, usually about 4-5 years or older

Subadult: male or female between the ages of 2-4 yrs

Cub: 0-2 years old



LION BIOLOGY

Lions are the only social big cat.

Adult males are larger than adult females - difference begins as subadults.

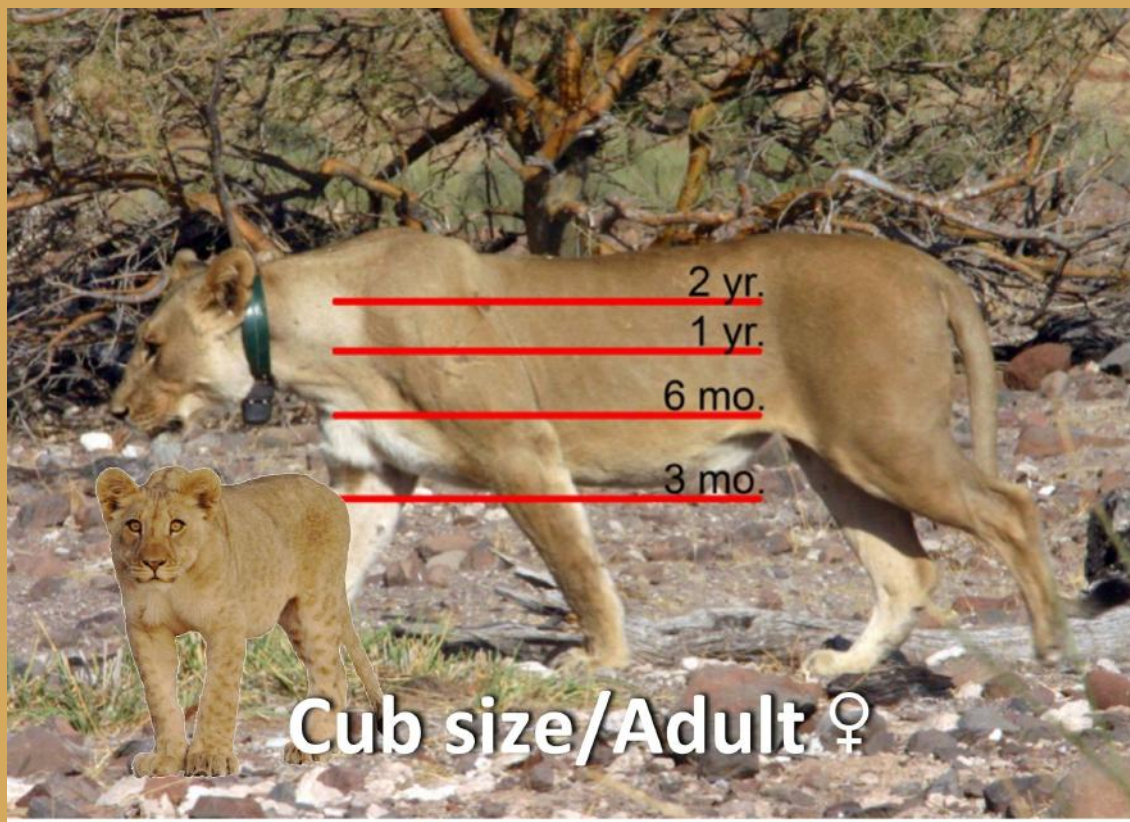
Adult Mass: Males: 150-220kg; Females: 100-140 kg

Lifespan: Males live about 10 yrs; Females live about 14 yrs

Sexual Maturity: 4 yrs

Gestation: 110 days

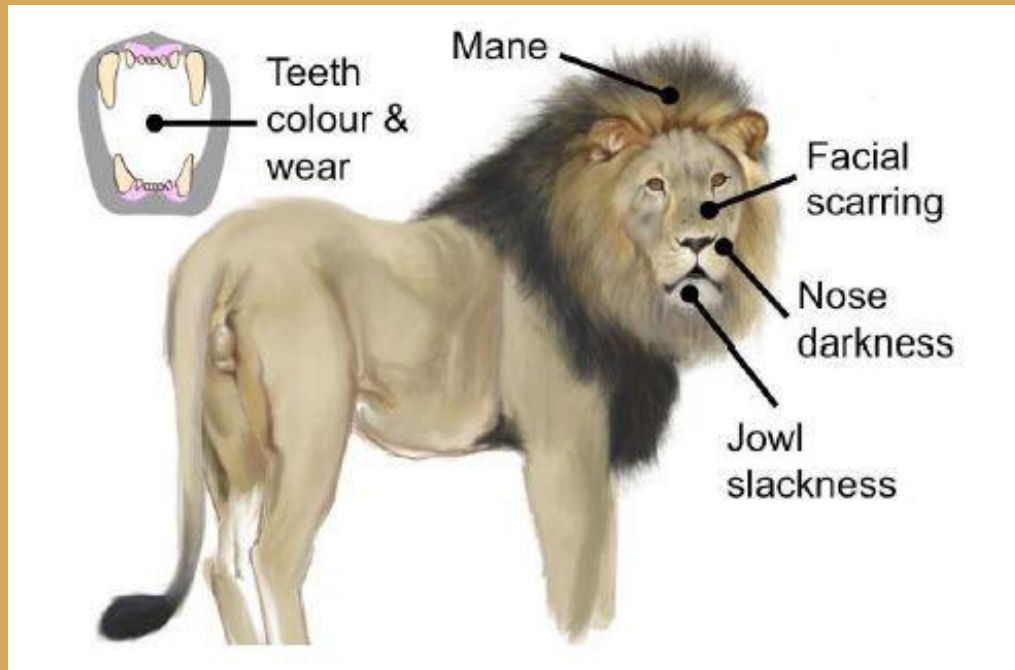
Litter size: 2-3 cubs (can be 1-6)



This chart can help you estimate cub age based on adult female size.

IDENTIFYING LION AGE

Properly identifying (age and sex) lions is important to your job as a Lion Ranger. Communicating accurate lion information is critical to management and limiting conflict.



Pay attention to:

Teeth color and wear.

Facial scarring.

Nose darkness.

Slack jowl.

Mane size (males only).

Teeth Wear

Teeth become more yellow and worn with age.



1-2 years
White, sharp



3-4 years
Light yellow,
sharp or lightly worn



5-6 years
Light yellow,
lightly or heavily worn



≥7 years
Dark yellow, lightly
or heavily worn

Facial Scarring

Lions acquire scarring and pocketing on their faces due to fighting.



1-2 years
No scarring

3-4 years
No or light scarring

5-6 years
Light scarring

≥7 years
Heavy scarring

Nose Color

Lion noses darken from pink to black with age.



1-2 years
Mostly pink
0-30% black

3-4 years
Slightly black
20-60% black

5-6 years
Mostly black
40-70% black

≥7 years
Nearly all black
40-100% black

Slack Jowl

A lion's back lip hangs in about half of individuals older than 7 years.



1-2 years
No slack jowl

3-4 years
No slack jowl

5-6 years
No slack jowl

≥7 years
Slack jowl in
50% of lions in
this age group

Mane (males only)



2.5 years

3 years

4 years

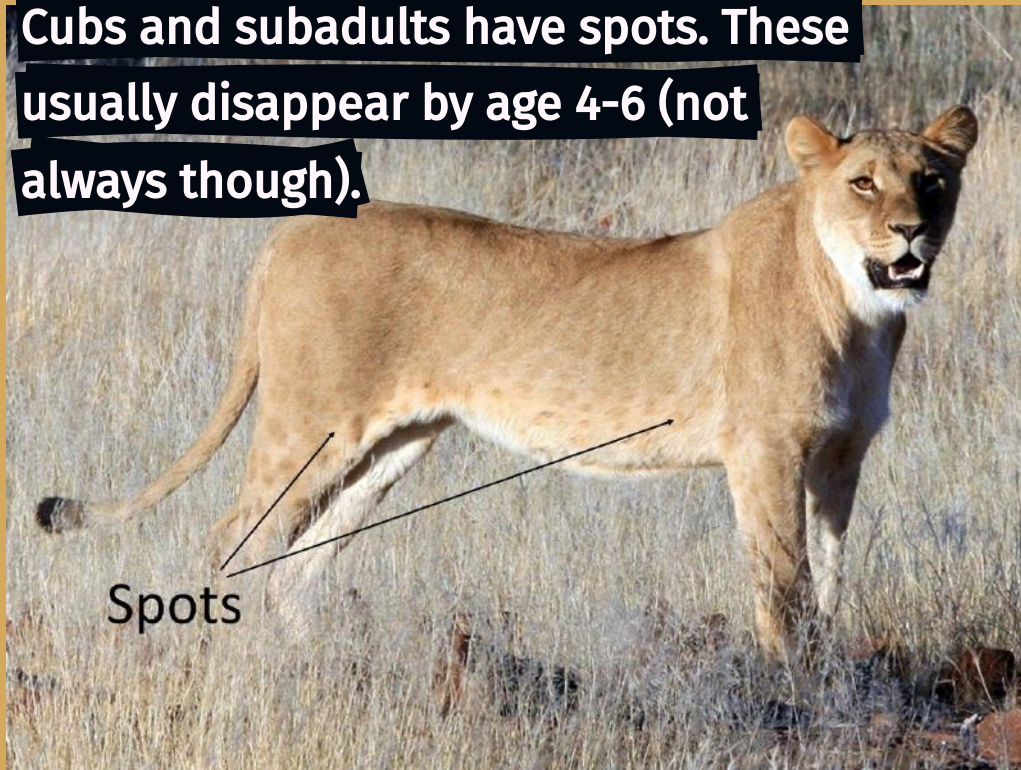
5 years

5 years

8 years

Subadults

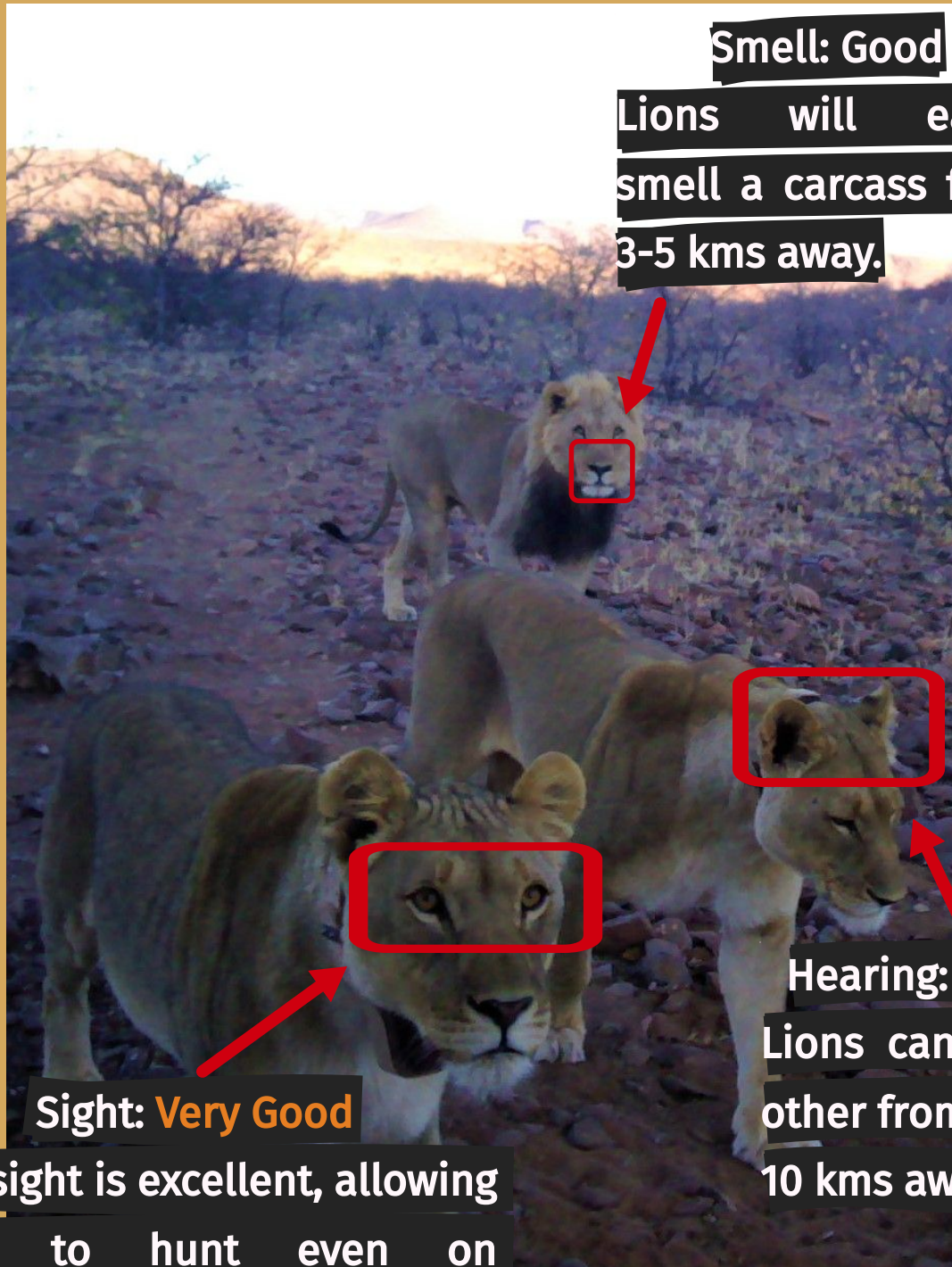
Cubs and subadults have spots. These usually disappear by age 4-6 (not always though).



Heads: By the time they are subadults, male's heads become wider compared to females. Over time they become larger.



LION COMMUNICATION



Smell: Good

Lions will easily
smell a carcass from
3-5 kms away.

Sight: **Very Good**

Lion sight is excellent, allowing
them to hunt even on
moonless nights. **Lions rely on
sight the most.**

Hearing: Very Good
Lions can hear each
other from more than
10 kms away.

Roaring

Used to communicate with other lions. Not to frighten people.



Males and females roar. Can be heard for more than 10 kms!



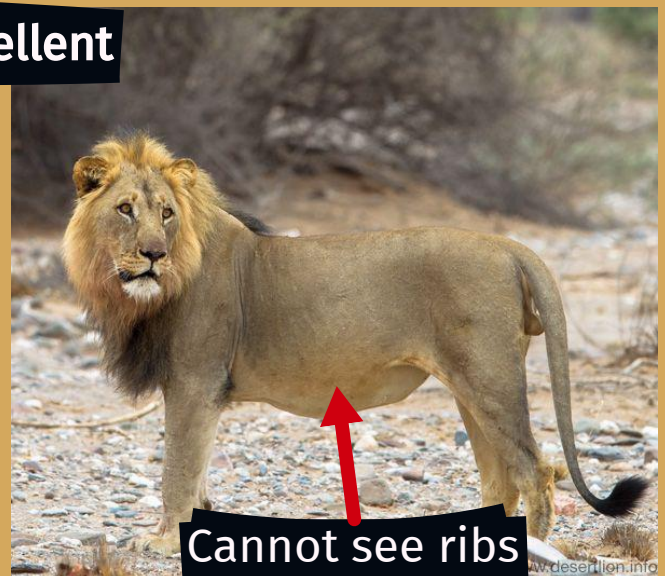
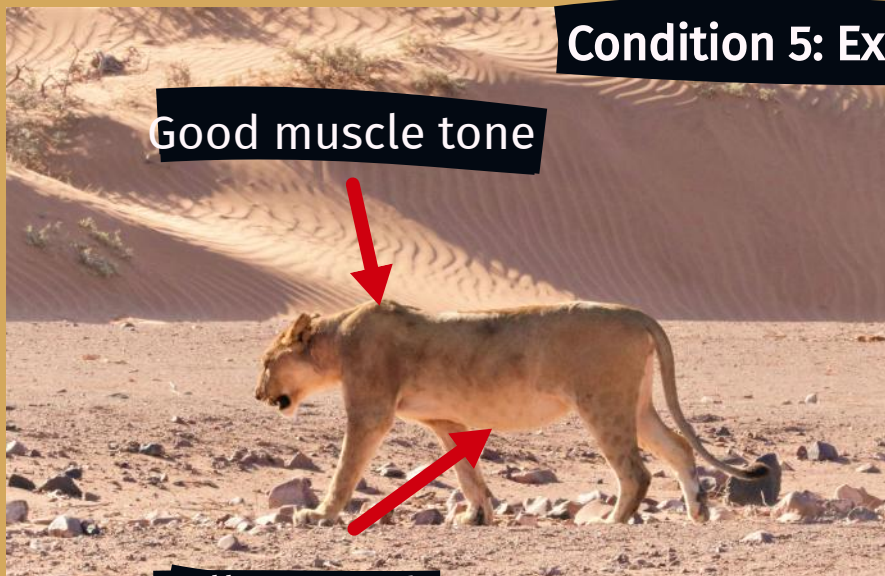
To communicate territory and find others. Like saying, "I am here. Where are you?"



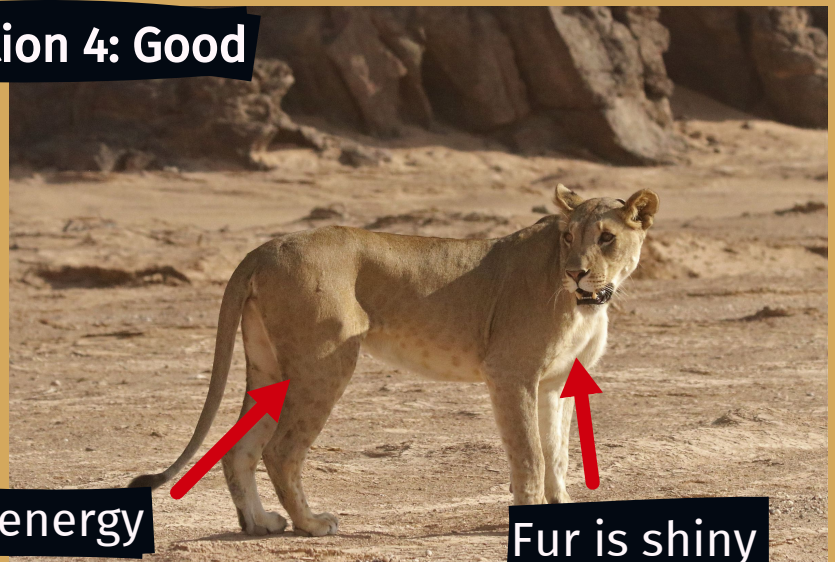
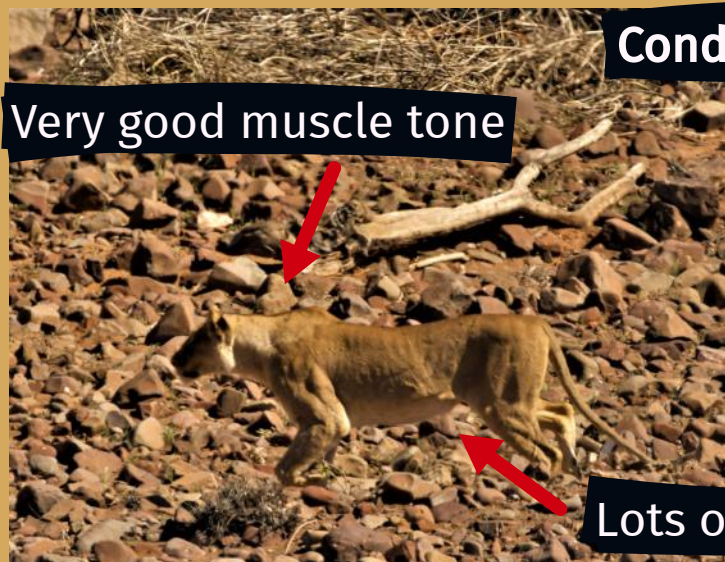
ASSESSING BODY CONDITION

Properly judging a lion's body condition is critical for population management and preventing conflict. Lions in poor condition may struggle to capture their usual prey and switch to easier prey, such as livestock. This causes human-lion conflict.

Condition 5: Excellent

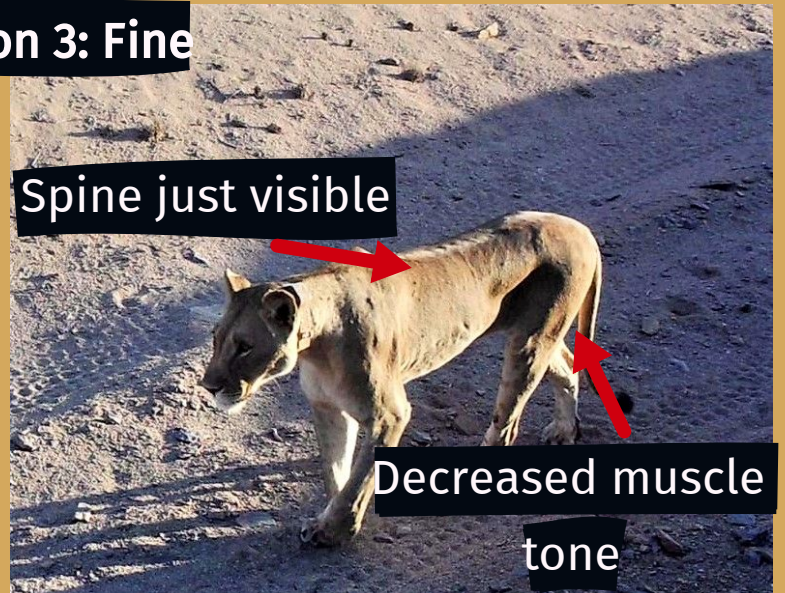
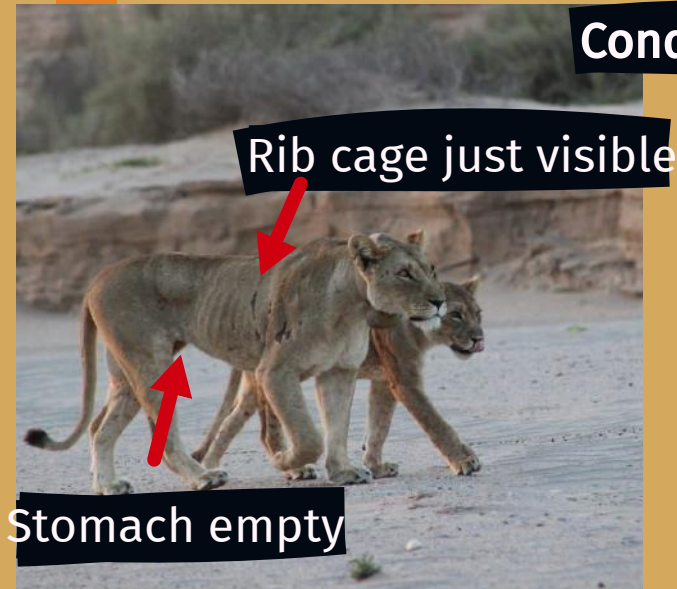


Condition 4: Good

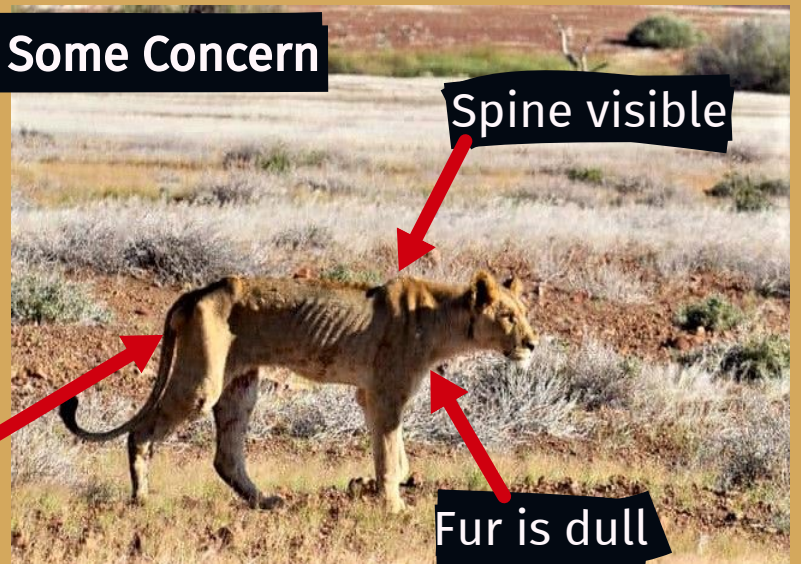
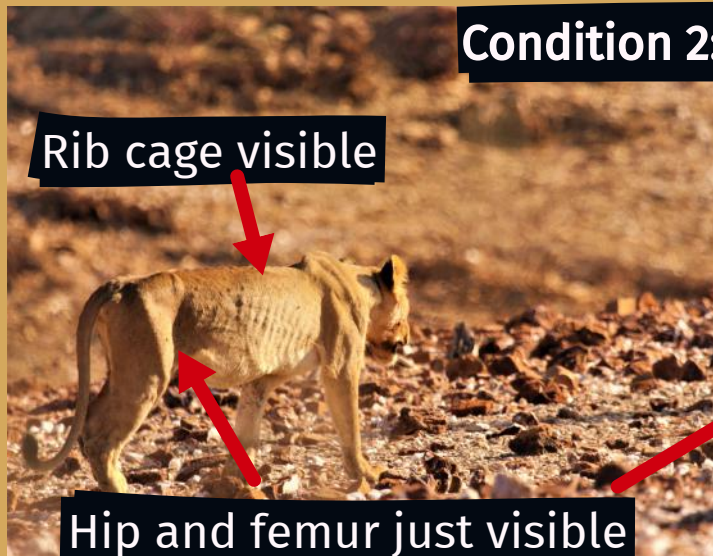


Lion Body Condition Guide

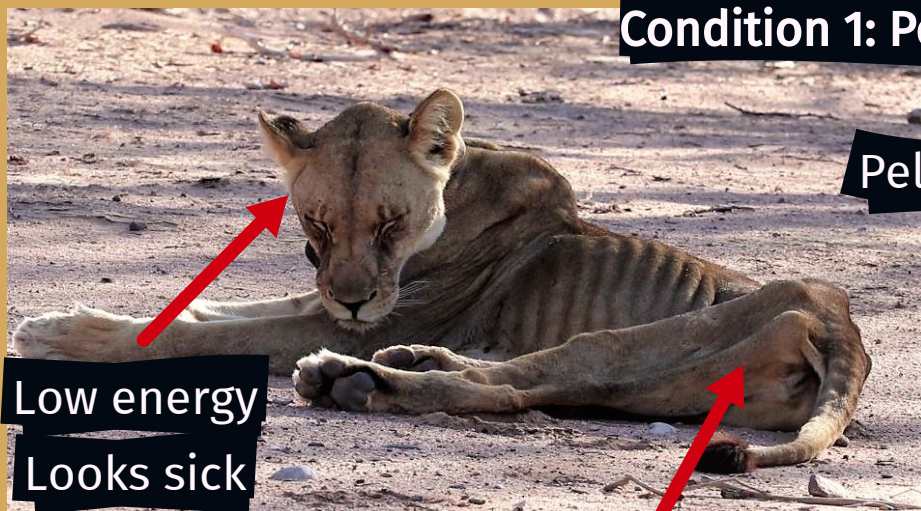
Condition 3: Fine



Condition 2: Some Concern



Condition 1: Poor



Hip very visible

CRITICAL FACTORS WHEN ASSESSING BODY CONDITION

Is there prey in the area? - Lion condition changes based on available prey. Low levels of prey, will cause lions to appear thin, even if they are not starving.

What is the group condition? - Lions together should have similar body condition. If one looks much worse this may indicate injury or illness and should be noted.

What time of year is it? - When prey disperses lion body condition will diminish. During the late dry and early wet season, when prey disperse lions may appear in poor condition for weeks or months.

When did they last eat? - Lions gorge, then may go days or weeks without eating again.

Group or individual? - Solitary lions with poor condition may be in trouble, groups remain resilient.

What age are they? - Adults in their prime should appear healthy. Dispersing subadults and older lions may appear in poorer condition, particularly when prey are scarce.

Are they injured or sick? - If a lion moves strangely it is very injured. Sick animals look sick: they will not avoid sun and may not move away when people are near.

REMEMBER LIONS EAT INFREQUENTLY - Livestock and herbivores graze and forage most days, so their condition does not change quickly. Lion body condition may change quickly, but they are adapted to eating infrequently.

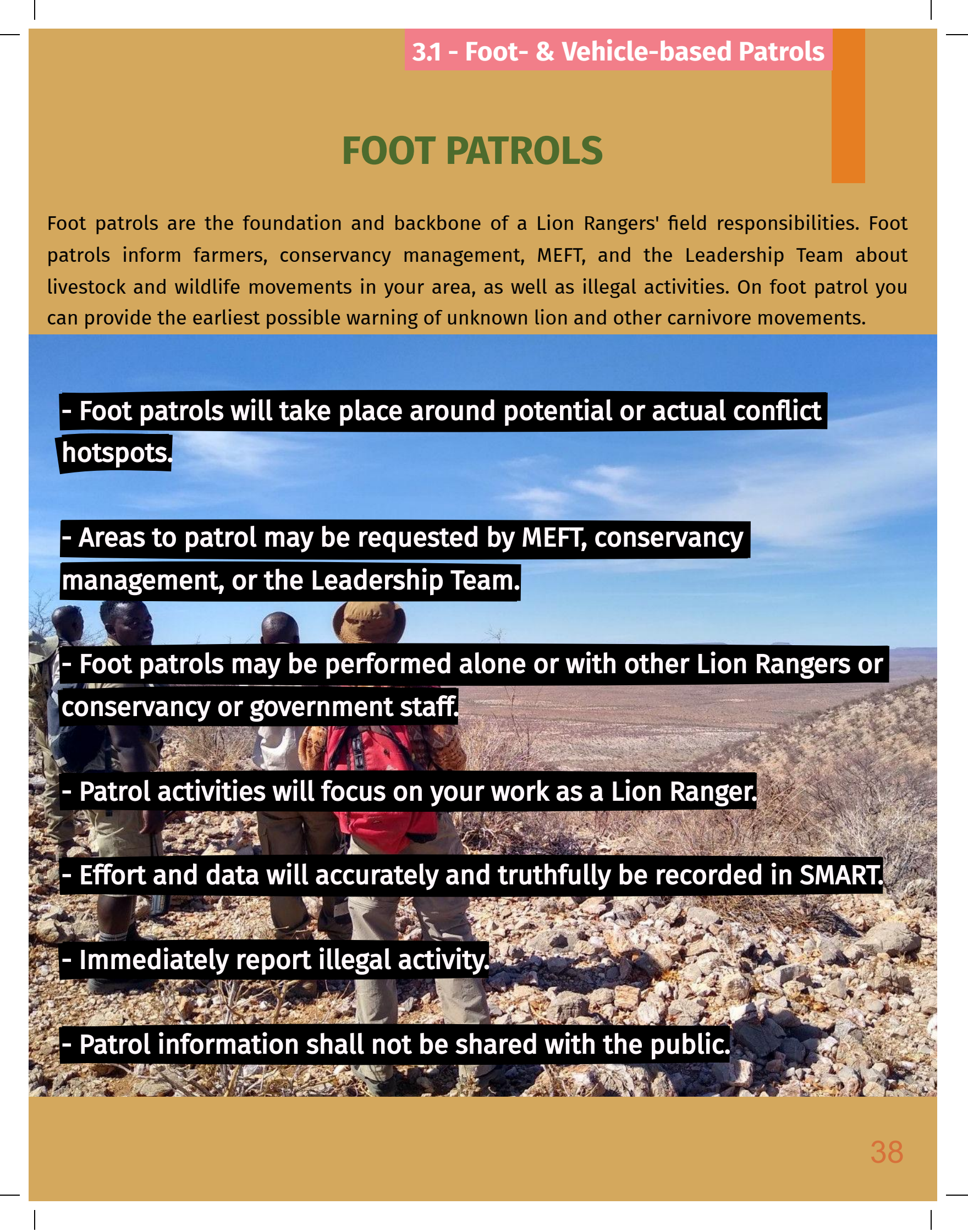
REMEMBER KUNENE LIONS ARE DESERT-ADAPTED - Healthy, adult lions can go for weeks without food. They rarely starve.

CHAPTER 3 - FIELD SKILLS



FOOT PATROLS

Foot patrols are the foundation and backbone of a Lion Rangers' field responsibilities. Foot patrols inform farmers, conservancy management, MEFT, and the Leadership Team about livestock and wildlife movements in your area, as well as illegal activities. On foot patrol you can provide the earliest possible warning of unknown lion and other carnivore movements.

A background photograph showing several Lion Rangers on a foot patrol. They are standing in a dry, rocky, and hilly landscape under a clear blue sky. One ranger in the foreground is wearing a red shirt and a hat. The text is overlaid on the image in black boxes with white text.

- Foot patrols will take place around potential or actual conflict hotspots.

- Areas to patrol may be requested by MEFT, conservancy management, or the Leadership Team.

- Foot patrols may be performed alone or with other Lion Rangers or conservancy or government staff.

- Patrol activities will focus on your work as a Lion Ranger.

- Effort and data will accurately and truthfully be recorded in SMART.

- Immediately report illegal activity.

- Patrol information shall not be shared with the public.

VEHICLE PATROLS

Vehicle patrols enable Lion Rangers to cover remote areas. They help Lion Rangers move quickly across the landscape to assist with monitoring and conflict across their conservancy. Vehicle patrols provide useful addition information to the base of foot patrols.

- Vehicle patrols take place where conflict is most pressing and where it is important to cover large areas.
- Areas to patrol may be requested by MEFT, conservancy management, or the Leadership Team.
- Vehicle patrols will usually take place in partnership with other field staff, such as Conservancy Game Guards, or MEFT staff.
- Vehicle patrols will focus on your work as a Lion Ranger - they are not an excuse to go to town.
- Effort and data will accurately and truthfully be recorded in SMART.
- Immediately report illegal activity.
- Patrol information shall not be shared with the public.

CARNIVORE SPOOR IDENTIFICATION

It is important you are able to accurately identify different spoor, of lions, other wildlife, and livestock. Using spoor to identify carnivore species is an important part of Early-Warning and conflict response. Spoor is often misidentified. Lion Rangers should be able to identify carnivore spoor on the most difficult ground.

LION



12 cm long

SPOTTED HYENA



9-11 cm long

BROWN HYENA



5-7 cm long

LEOPARD



6.5-9 cm long

JACKAL



5 cm long

CHEETAH



9 cm long

OTHER SPOOR IDENTIFICATION

Identifying the spoor of prey species is important to assessing potential conflict. Being able to accurately report what prey species are in the area is an important part of your job. This can also be helpful in your anti-poaching work.

ZEBRA



10 cm long

GEMSBOK



12 cm long

GIRAFFE



19 cm long

KUDU



9 cm long

ELAND



12 cm long

SPRINGBOK



5 cm long

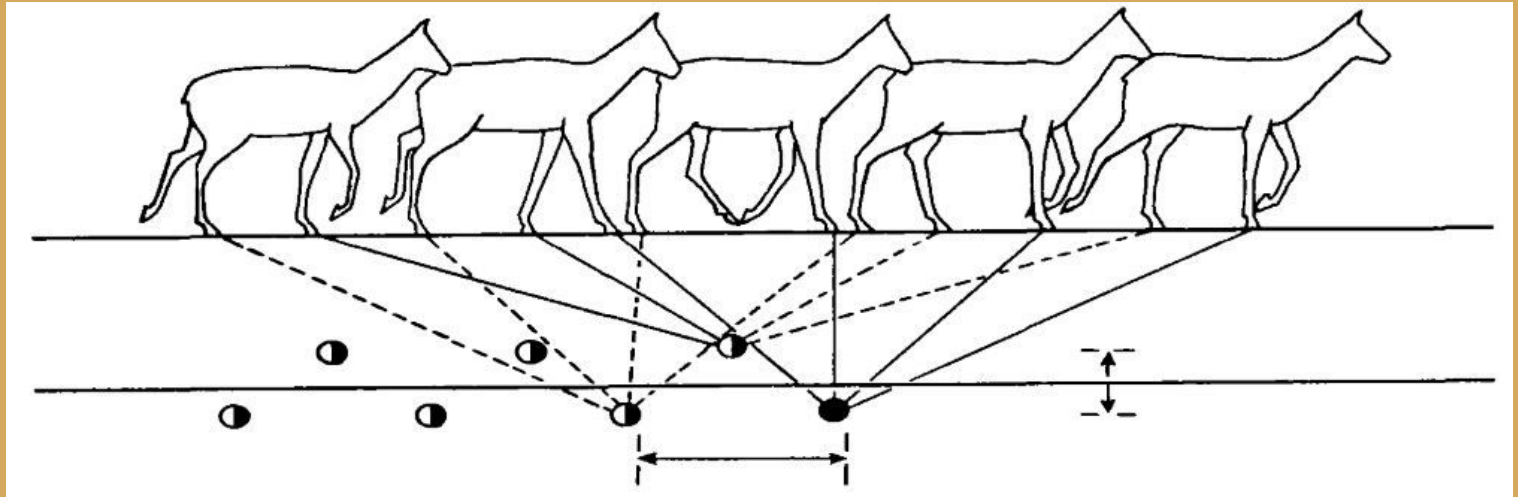
STEENBOK



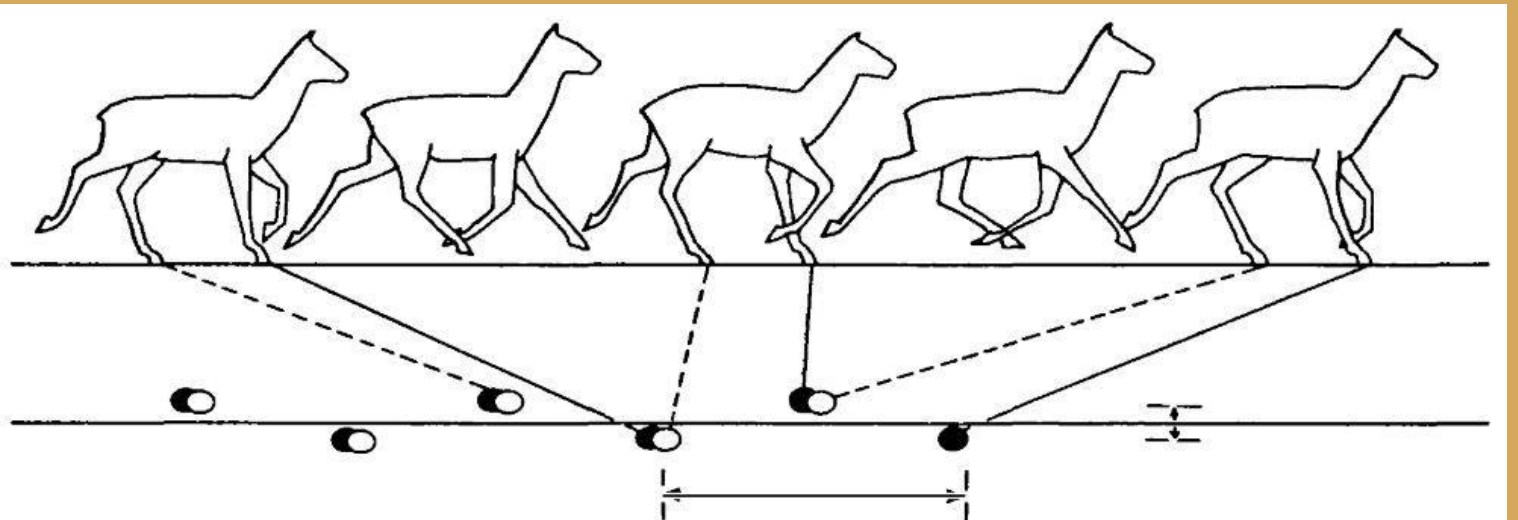
3 cm long

UNDERSTANDING PACE

Wildlife leave different spoor patterns, depending on how fast they are moving. Walking is a normal pace, leaving familiar spoor with some overlap of the rear foot on the front footprint. As pace increases, print overlap decreases while stride increases. Being able to accurately read pace and stride provides information about animal behavior.

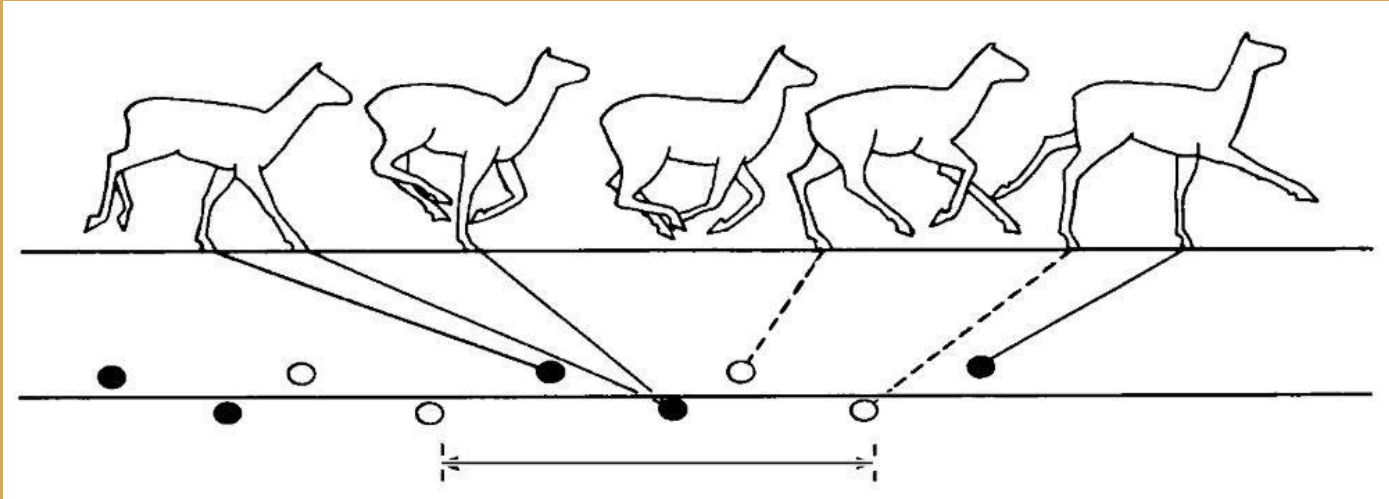


WALKING Rear feet are placed in the same track as the front foot, with great overlap. Opposite feet (front on one side, rear on the other), remain on the ground at approximately the same time. The front feet leaves the ground just before it is replaced by the rear foot on the same side. This is a normal, relaxed pace.

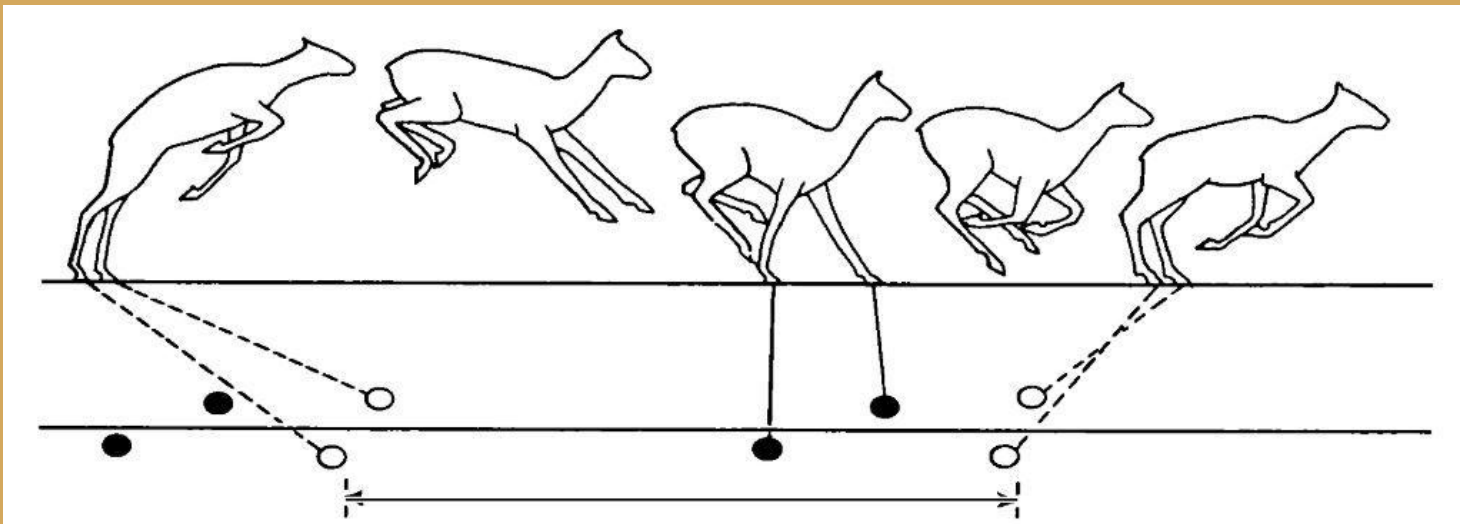


TROTting Rear feet are placed in a similar track to the front, with some overlap. Opposite feet (front on one side, rear on the other), are placed on the ground simultaneously. As the animal strides with opposite feet in unison, it will be entirely in the air. This pace indicates some type of excitement. The faster the trot the greater the stride and smaller distance between right and left.

UNDERSTANDING PACE (cont)



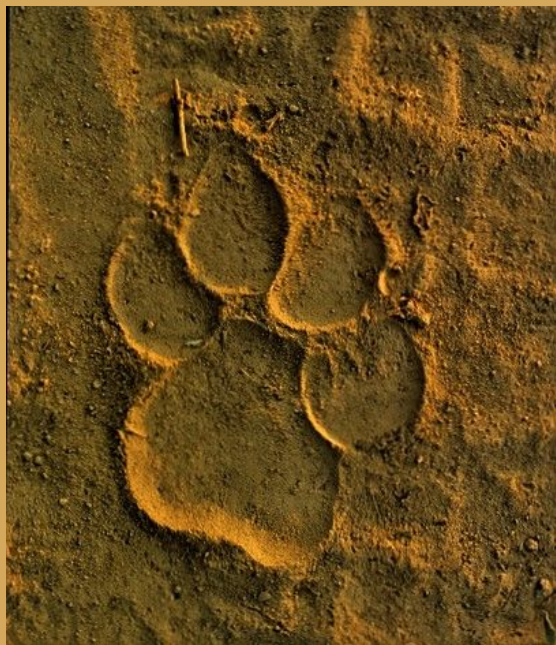
GALLOPING The animal pushes forward with the front legs, shifting weight across its body, while the rear legs are airborne. Once pushing off from the front legs the animal is in the air. This is the fastest gait of most large animals.



JUMPING The animal pushes off from its rear legs, with front legs outstretched before landing. The front legs will land at nearly the same time and leave the ground quickly. When this happens the animal is in the air with all four legs tucked underneath. This is not a normal gait, but indicates avoiding an obstacle.

ESTIMATING AGE OF SPOOR

Different surfaces will affect spoor differently. The harder the surface the more difficult to see, but the longer the spoor may be visible. When estimating the age of spoor think about the effects of wind, rain, and other animals - these can provide clues to help determine the age of spoor.



In sand or silt a track can be very clear, but can disappear quickly. The soft surface allows you to see details about the size of the animal, as well as the position of its foot pads, which, along with its stride can tell you about how it was moving. When details are clear experienced trackers may even be able to identify individuals. This can be a good surface for finding fresh spoor and counting individuals.

Mud and other wet surfaces can keep the shape of a spoor for a long time. As they dry this can make the age of the spoor more difficult to estimate. Because the wet ground may change shape under the animal's weight, estimating relative size can be more difficult.

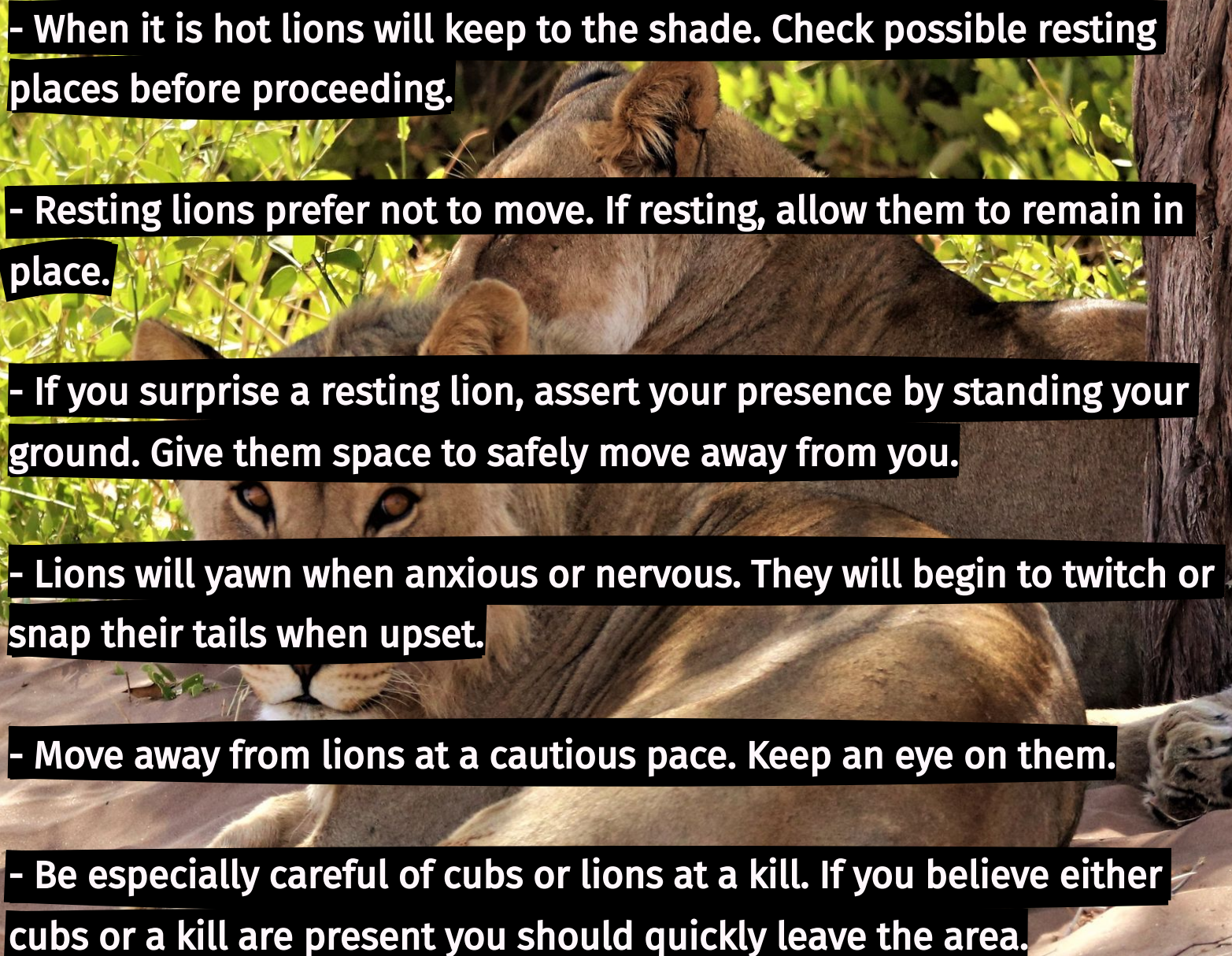


Experienced trackers will be able to find spoor on harder surfaces, including rock. They will look for clear signs such as scrapes and impressions revealing known shapes. This skill takes great practice but can be relied upon as experience builds.

3.3 - Safely Approaching Lions

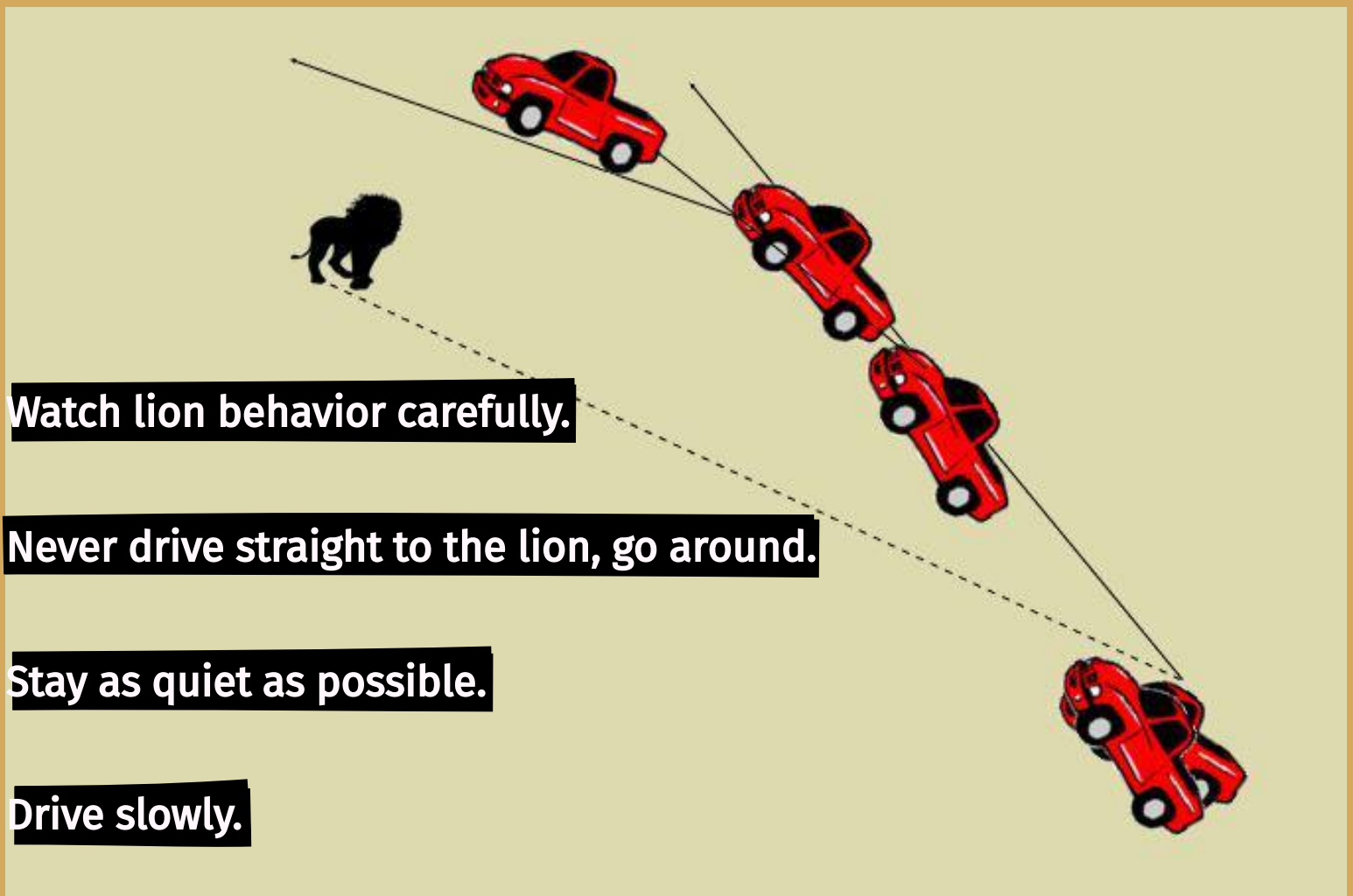
APPROACHING LIONS ON FOOT

Lions can be dangerous. However, when approached with caution, a well-trained person can safely view from a distance. As a Lion Ranger you are expected to perform foot patrols in areas where lions are present. During the day lions will generally avoid humans. Under normal circumstances they will be displaced when seeing humans on foot. At night lions are more bold and should be approached on foot only with extreme caution.

- 
- A photograph of a lioness resting on the ground under a tree. The lioness is lying down, with its head partially visible, looking towards the camera. The background shows green foliage and the trunk of a tree.
- When it is hot lions will keep to the shade. Check possible resting places before proceeding.
 - Resting lions prefer not to move. If resting, allow them to remain in place.
 - If you surprise a resting lion, assert your presence by standing your ground. Give them space to safely move away from you.
 - Lions will yawn when anxious or nervous. They will begin to twitch or snap their tails when upset.
 - Move away from lions at a cautious pace. Keep an eye on them.
 - Be especially careful of cubs or lions at a kill. If you believe either cubs or a kill are present you should quickly leave the area.

APPROACHING LIONS BY VEHICLE

With patience many lions can be safely approached by vehicle. However, as Lion Rangers you should remember that our teams frequently use vehicles to chase lions from conflict areas. We do not want to approach them needlessly by vehicle. Tourists and other guests should not be taken any closer to lions than is absolutely necessary.



Watch lion behavior carefully.

Never drive straight to the lion, go around.

Stay as quiet as possible.

Drive slowly.

If lions react, stop and switch off engine. Allow them to relax.

Never closer than 100 meters.

AGGRESSIVE BEHAVIOR

Lions do not keep secrets: they will let you know if they are upset with your presence. Watch them closely and you will usually be able to see and understand their behavior before it becomes aggressive.



Any lions demonstrating either defensive or snarling behavior should be immediately left alone. It is their way of communicating danger to you.

PROBLEM SITUATIONS

Too close

Injured lions

Defending food

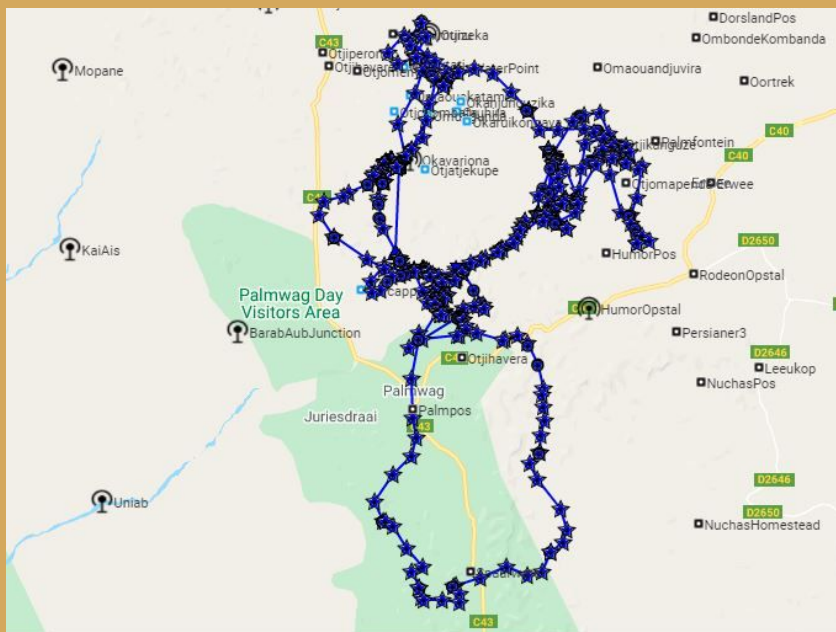
Sick or starving lions

Shade when it is hot

Females with cubs

GPS Collars

Three fire hose nozzles are shown, each with a different pattern of silver-colored rivets. The nozzle on the left has a grid pattern. The middle nozzle has a grid pattern with a black band across the middle. The nozzle on the right has a grid pattern with a black band across the middle. The nozzles are made of a light-colored material, possibly plastic or metal, and are attached to black hoses.



48

VHF Collars

All collars are fitted with a VHF component that emits a unique frequency. This enables program leadership and other personnel to find collared lions in the field.



FACTS ABOUT COLLARS

- Collar batteries last for about 2 years.
- GPS collars weigh about 1.3 kgs. VHF collars weigh about 0.9 kgs.
- Collars become darker, dirtier, and less visible as they age. It may take extended observation to know whether a lion is collared.
- There is no way to look at a collar and know if it is functioning.
- Any collar found in the field should be immediately reported to program leadership.
- Collared lions do not behave differently than other lions.
- Only program leadership and permitted researchers can collar lions.
- COLLAR INFORMATION MUST NOT BE SHARED WITH NON LION RANGERS.

RANGERS' ROLES AT COLLARING

Lion Rangers may assist with collaring operations. These can take many days and nights, requiring Rangers and other partners to work in potentially dangerous situations. However, human safety remains the top priority.



IMPORTANT COLLARING INFORMATION

- Collaring can be dangerous, directions from researchers, program leadership, and veterinary staff must be followed.

- Never assume lions are completely immobilized or asleep - always proceed with caution.

- Immobilized lions remain alert and reactive to light and sound. Keep noise and talking to a minimum.

- No photos or videos of collaring are permitted without a clear directive by program leadership.

- Never share collaring information, photos, or video without a clear directive from program leadership.

PREPARING BAIT AND THE BAIT SITE

Preparing bait is an important part of collaring. Lion Rangers will often help prepare, drag, and properly hang bait to attract lions.

- Bait should always be prepared under the supervision of experienced staff in consultation with program leadership and/or veterinary staff.

- Stomach contents should be exposed for smell while dragging.

- Bait must be monitored at all times.

- Do not urinate or defecate at bait sites - the smell may frighten animals.

- Bait should be securely tied to a tree or other heavy object so it is not dragged away.

- Brush and other objects should be cleared from the bait site.

- Hanging baits in trees can keep them from hyenas. This can also make it more difficult for lions to feed, increasing the time at the bait.

- Once bait has been prepared never consume any of the meat. Veterinary drugs are often put in the bait that can make people ill.



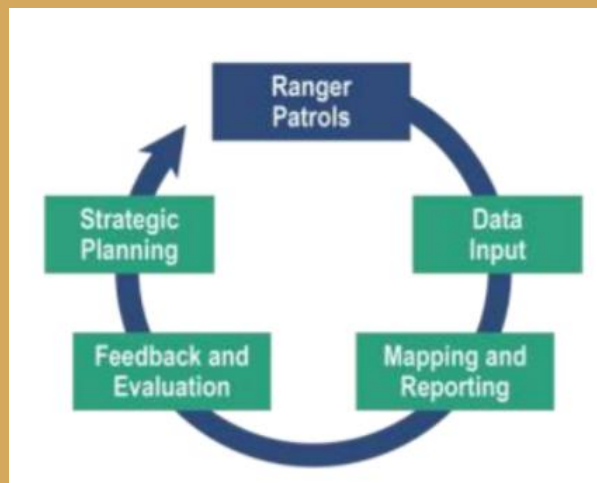
3.6 - Using the SMART Program

SMART

The Spatial Monitoring and Reporting Tool (SMART) is a software for collecting, storing, and reporting wildlife data. Lion Rangers use SMART to record what they see on patrols and while performing other operations. Once data are exported they can be used to assess Ranger performance and wildlife numbers, movements, and activities. This is important for strengthening communal conservancies.



SMART turns your activities into useful program information.



Ranger patrols - On patrol you collect data on where you go and what you see.

Data input - Report your patrol activities by storing data and routes in SMART and exporting your data often.

Mapping and reporting - Data are processed and visualized by program leadership. This helps assess Ranger effort, landscape coverage, and key sightings. This forms the basis of patrol analysis and evaluation.

Feedback and Evaluation - Rangers receive feedback on their efforts based on SMART. This ensures effectiveness of field work.

Strategic Planning - Patrol data are used for adaptive management. Refined approaches enable Rangers to be more effective going forward.

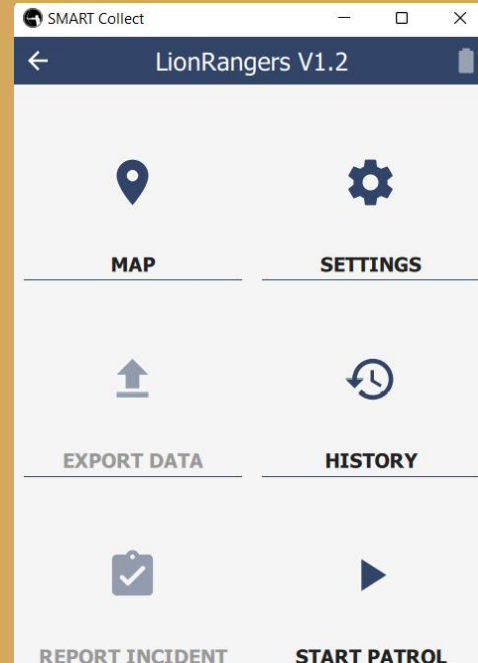
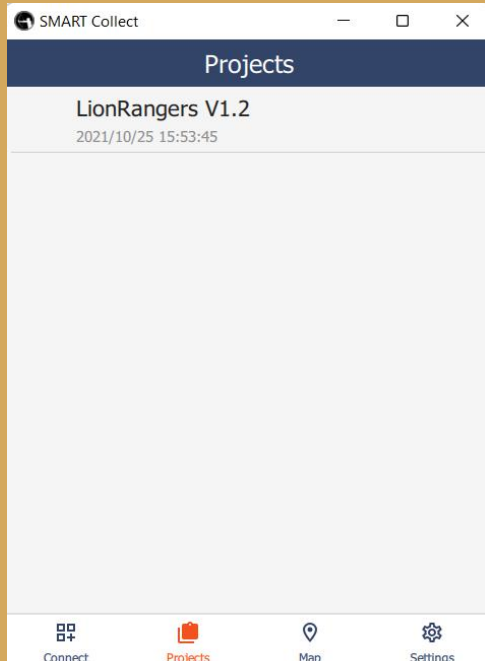
HOW TO USE SMART

1) Ensure phone "Location" is on




2) Open the SMART app and latest version of the LionRangers project (currently V1.2).

3) Start patrol.



4) Use the dropdown menus for each patrol parameter

- **Location** will load if you are in clear sky. If it does not load, press  button.
- **Transport type**: choose bicycle, donkey, foot, other or vehicle.
- **Mandate (aim)**: maintenance, HWC, meeting, patrol, test, veterinary.
- **Comment**: Any additional information, including other patrol members.
- **Employees**: List of possible patrol members, including Rangers, researchers, and Rapid Response. Check the box next to the name of each person. Add the name in the comments if it is not available.

Mathilde Brassine ☒

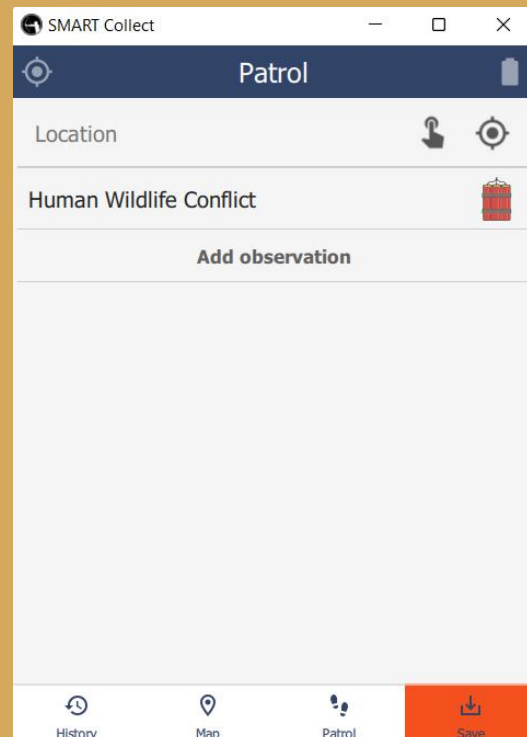
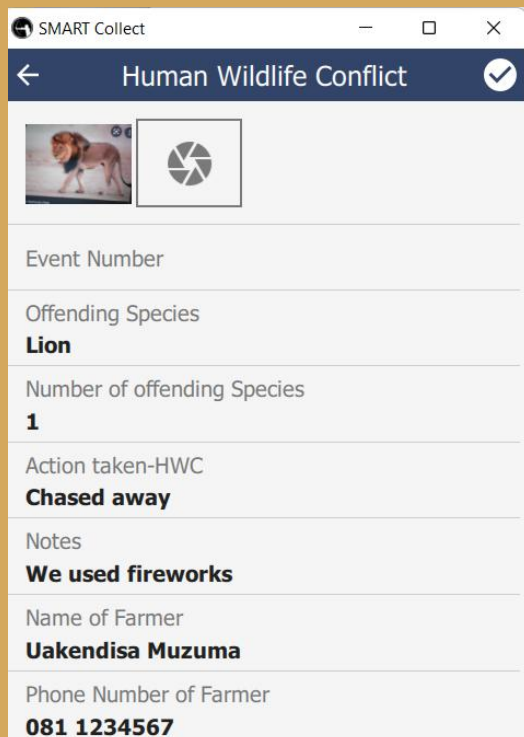
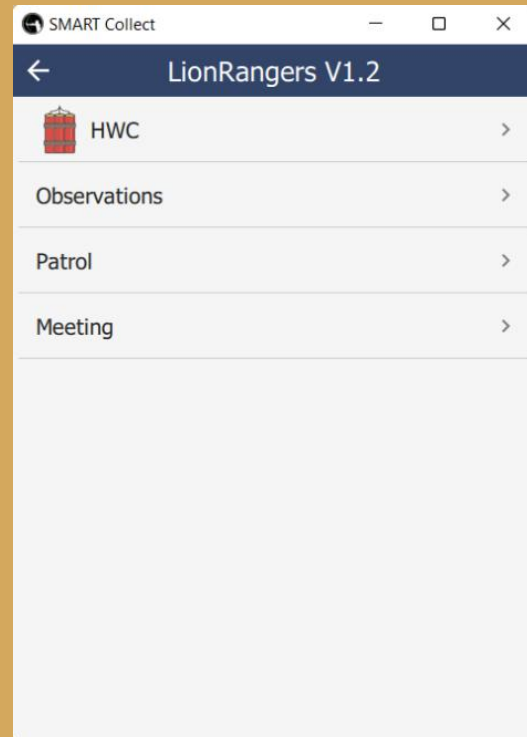
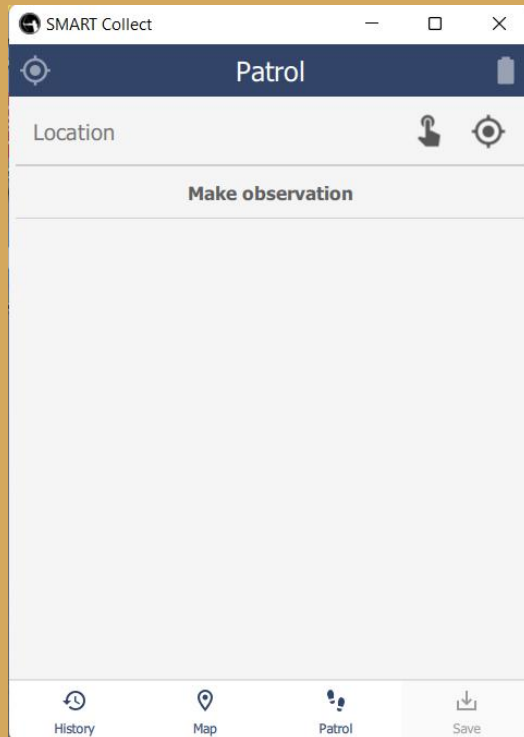
- **Leader**: Person entering the patrol in the phone, not always Team Leader.

- **Confirm** all entries by tapping on



HOW TO USE SMART (cont)

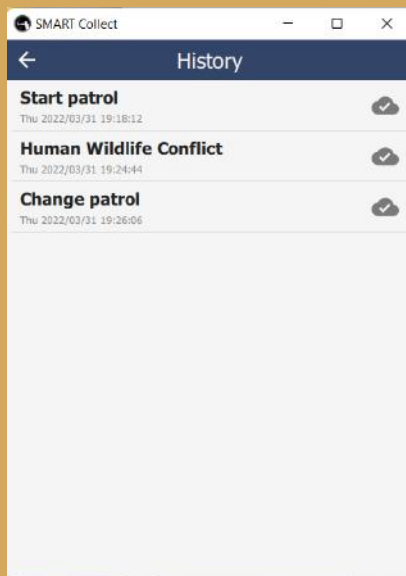
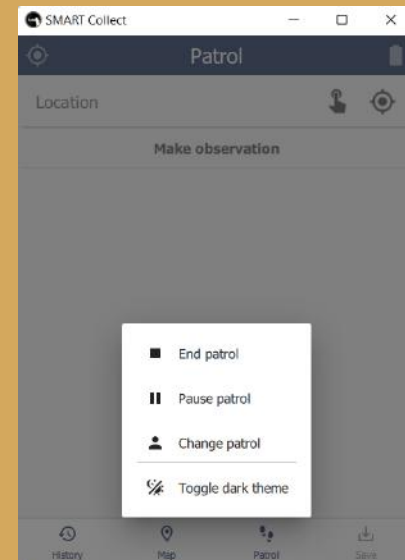
5) **Make observation** - Perform the patrol (you can lock the screen) until you want to enter an observation (tracks, live animal, carcass, etc). All pictures should be important ones. Save each observation before moving so it stores the GPS location. You can check your GPS and observation locations by accessing the **Map** tab. Use the **Topographic Layer** when viewing the map to see land contours (such as valleys and hills).



HOW TO USE SMART (cont)

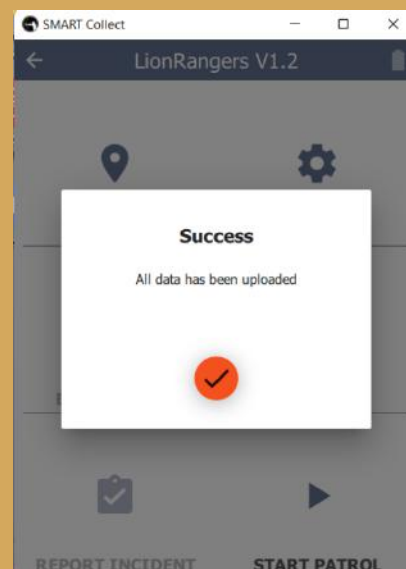
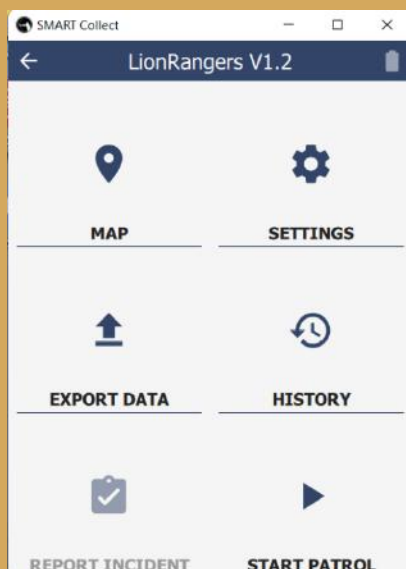
6) **Multi-leg Patrols** - Patrols can be **paused** and **resumed**. **Patrol type** can be **changed** (to change transport type, mandate, employees or leader) while the patrol is in progress. Team name cannot be changed. When paused the track timer is inactive.

MAKE SURE YOU END THE PATROL WHEN YOU RETURN TO HOME/CAMP.



7) **History** - Patrol history (observations recorded) can be viewed during the patrol, when it is paused or stopped. This can help with completing conservancy reports.

7) **Export Data** when you have wifi or network connection. The longer you wait to export the longer this will take (more data takes more time). Once data are exported it is no longer stored in the phone and History is cleared.



CHAPTER 4 - HUMAN-LION CONFLICT



HUMAN-LION CONFLICT

Definition: Human-lion conflict is when lions come into dangerous or violent contact with humans or their property.

HUMAN-LION CONFLICT IS THE NUMBER 1 THREAT TO LIONS IN KUNENE

Each year an average of 15 adult lions are killed due to conflict

2 out of 5 households (40%) will lose livestock to lions

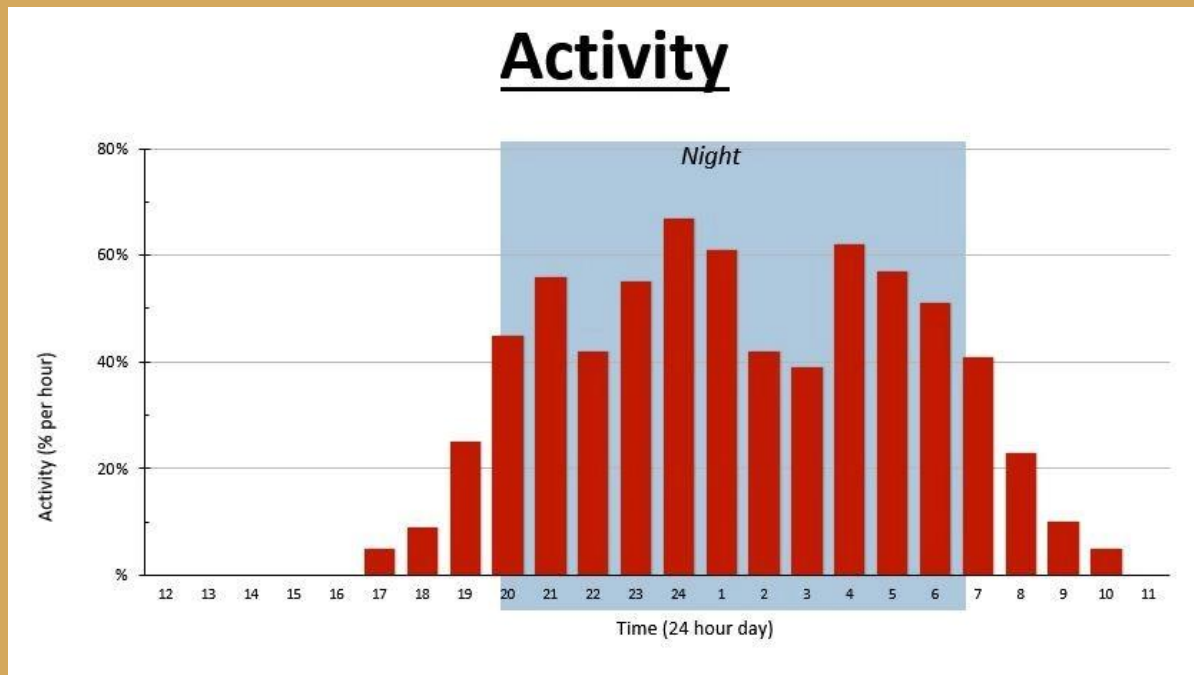
3 out of 5 farmers (60%) have a negative view of lions

As Lion Rangers, limiting
human-lion conflict is
our responsibility!



WHEN ARE LIONS ACTIVE?

Lions are mostly active at night. This is important for understanding human-lion conflict. In Kunene night-time is cooler, which benefits both lions and livestock. Managing human-lion conflict requires both nighttime and daytime work. Human-lion conflict during the day is rare but does occur.



- Lions will normally not move during daytime. It is important to know where lions are early in the morning, to inform farmers about livestock movements.

- Lions in Kunene can cover great distances at night. Do not assume you know where lions will move each night.

- Monitoring at night is difficult: visibility is limited and lions are moving. Do as much work during the day as possible.

- Just like humans, different lions will move earlier or later in the nighttime. Do not assume all lions will start moving at the same time.

- Lion behavior and aggressiveness can be different day or night. Lions are more confident at nighttime.

- Livestock sleeping in the field are in danger. Encourage farmers to kraal livestock.

LIVESTOCK + LIONS = CONFLICT

Human-lion conflict can occur at anytime, but livestock attacks usually happen at night. Lions normally do not seek out livestock, but will attack when they encounter unprotected livestock. Lion Rangers should know lion and livestock movements.



- Lions move over greater distances during the wet season, in search of prey. They are more likely to come into farming areas while moving, particularly into areas they do not know.
- Resident lions know their areas, and will often know the location of dangers and humans. Unknown lions in an area should be considered at risk of conflict.
- Lions often limit the presence of spotted hyena. If hyena are present in large numbers lions are unlikely to be present.
- Weak, sick, and poorly tended livestock are at greater risk for being killed by lions. Rangers should pay close attention to livestock health in their area.
- Lions in poor condition may be more likely to cause conflict.
- Lions do not respect conservancy zonation. But will avoid people. Encourage farmers to graze in farming areas when possible.

4.4 - Preventing Human-Lion Conflict

FIELD WORK AND COMMUNICATION PREVENTS CONFLICT

The most effective way to prevent conflict is keeping farmers informed of lion movements. This means patrolling your area to know where **LION and LIVESTOCK ARE MOVING** and informing farmers and the conservancy.

- 
- Lion Rangers should know where people are farming in their area.
 - If lions are close to farms or grazing areas, inform farmers and conservancy management.
 - Do not assume farmers know where lions are moving. Do not assume farmers can identify lion spoor.
 - Encourage farmers to kraal livestock.
 - When lions are near farming areas, encourage farmers to keep safe fires burning, and to have nighttime livestock guards.
 - Encourage farmers to tend their herds and kraal ALL livestock whenever possible; including donkeys.
 - Communication between Rangers, the conservancy, and farmers is key.



Conflict Response Practices

Even with livestock guarding and active Ranger work, conflict may occur. It is important to respond to conflict quickly and appropriately. This helps farmers and lions.

- Respond to conflict quickly whenever possible. This supports farmers and helps with accurate data collection.

- Listen to farmers' stories, ask questions.

- Conflict is frightening to people and affects their livelihoods. Support farmers through listening.

- Collect important information and report it as soon as possible.

- Provide accurate information to other farmers, the conservancy, and the program. This helps prevent future conflict.

- Do not spread rumors. Confirm what you are told.

- Report suspected illegal activity to MEFT or the police.

- Limit follow-up conflict by performing patrols and communicating with farmers.



4.6 - Human-Lion Conflict Scene Investigation

Scene Investigation Practices

Quick response to conflict is important for supporting farmers and collecting relevant information.

WHEN INVESTIGATING CONFLICT, YOU SHOULD:

- Know what carnivores were responsible, how many of them were present, and where they went.
- Know how many livestock were killed and injured, where this occurred, and when.
- Verify all information - do not just believe people's stories.
- Record all important information.
- Explain to farmers what information you are collecting and why it is important.
- If possible, have another Ranger or Conservancy staff with you to verify your work.
- If you suspect illegal activity, treat the area as a crime scene and inform MEFT and the police. You are not authorized to perform your own criminal investigation.
- Report your findings to the conservancy and the Lion Ranger Leadership quickly and accurately.



Preventing Future Conflict

Human-lion conflict can lead to future conflict in the same area. Lions may become familiar with certain areas and farmers losing livestock may become less tolerant of lions. Continued support to farmers and communities following conflict is important.

- Conflict areas are a priority for follow-up patrols and communication. It is important for farmers to see you working in the area after a conflict incident.

- Talk to farmers after conflict. Tell them how you are supporting them and working to prevent future conflict.

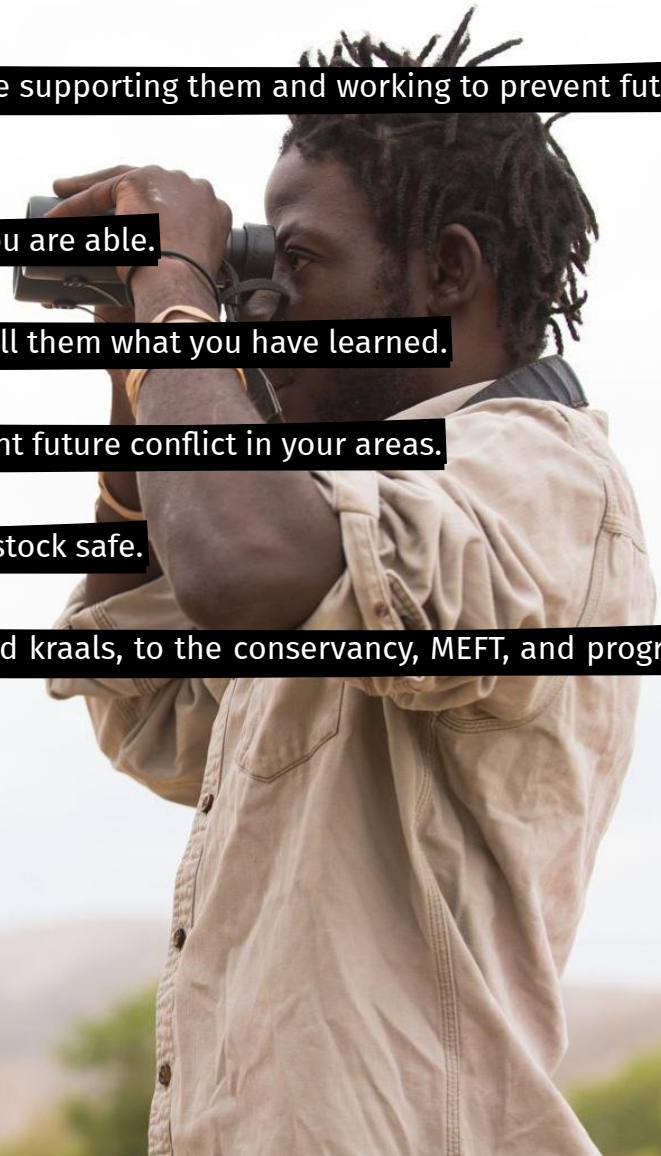
- Assist farmers with filing compensation claims if you are able.

- Share conflict information with the conservancy. Tell them what you have learned.

- Help program leadership understand how to prevent future conflict in your areas.

- Inform farmers of how to avoid lions and keep livestock safe.

- Report infrastructure problems, such as unrepaired kraals, to the conservancy, MEFT, and program leadership.

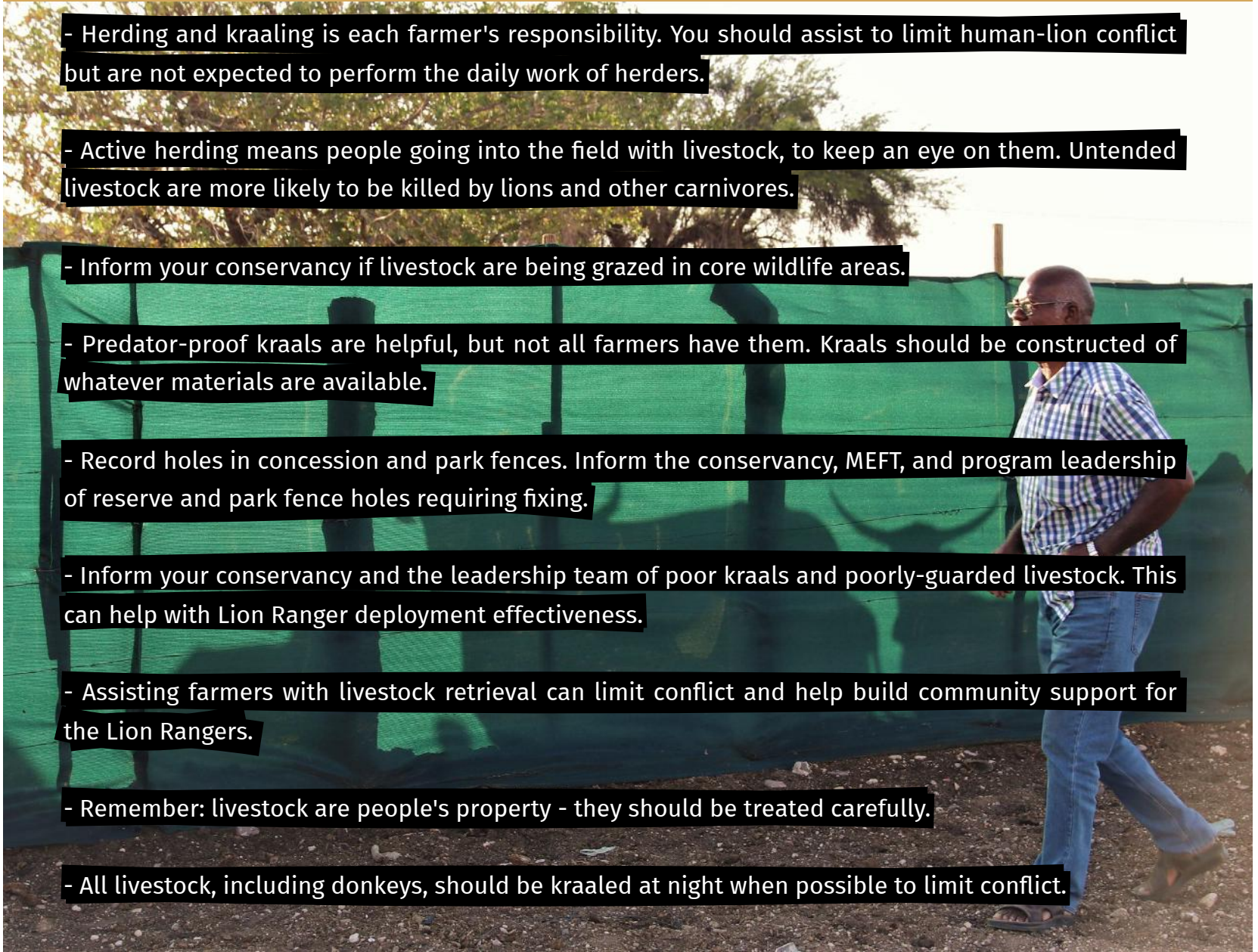


CHAPTER 5 - SUPPORTING SKILLS



Keeping Livestock Safe

Active herding and kraaling are important for livestock safety. As Lion Rangers you know that lions and other carnivores threaten livestock. Work with your farmers to keep livestock safe to limit conflict.



- Herding and kraaling is each farmer's responsibility. You should assist to limit human-lion conflict but are not expected to perform the daily work of herders.

- Active herding means people going into the field with livestock, to keep an eye on them. Untended livestock are more likely to be killed by lions and other carnivores.

- Inform your conservancy if livestock are being grazed in core wildlife areas.

- Predator-proof kraals are helpful, but not all farmers have them. Kraals should be constructed of whatever materials are available.

- Record holes in concession and park fences. Inform the conservancy, MEFT, and program leadership of reserve and park fence holes requiring fixing.

- Inform your conservancy and the leadership team of poor kraals and poorly-guarded livestock. This can help with Lion Ranger deployment effectiveness.

- Assisting farmers with livestock retrieval can limit conflict and help build community support for the Lion Rangers.

- Remember: livestock are people's property - they should be treated carefully.

- All livestock, including donkeys, should be kraaled at night when possible to limit conflict.

COMMUNICATION IS KEY

Lion Rangers work for and report to their conservancies. Community conservation depends on you informing your conservancy of Lion Ranger activities and providing information from the field.

LION RANGERS WORK FOR AND REPORT TO THEIR CONSERVANCY.

- Rangers are responsible for informing conservancy management of operations.
- Rangers must comply with all conservancy reporting requirements.
- Rangers should provide periodic updates to conservancy management.
- Rangers represent their conservancy and should practice professional behavior while working.
- Rangers should represent the program at relevant conservancy meetings, such as quarterly planning meetings, and Annual General Meetings.
- Communication must be respectful. Good listening is important.

RESPECTING & LISTENING TO FARMERS

Farmers are the backbone of community conservation. They conserve wildlife and live alongside it. Farmer support for the Lion Rangers is important. It is every Rangers' task to work with their farmers and communicate with them.

ALWAYS BE RESPECTFUL AND LISTEN TO FARMERS.

- Greet farmers when you are in their area. Inform them of why you are working there.

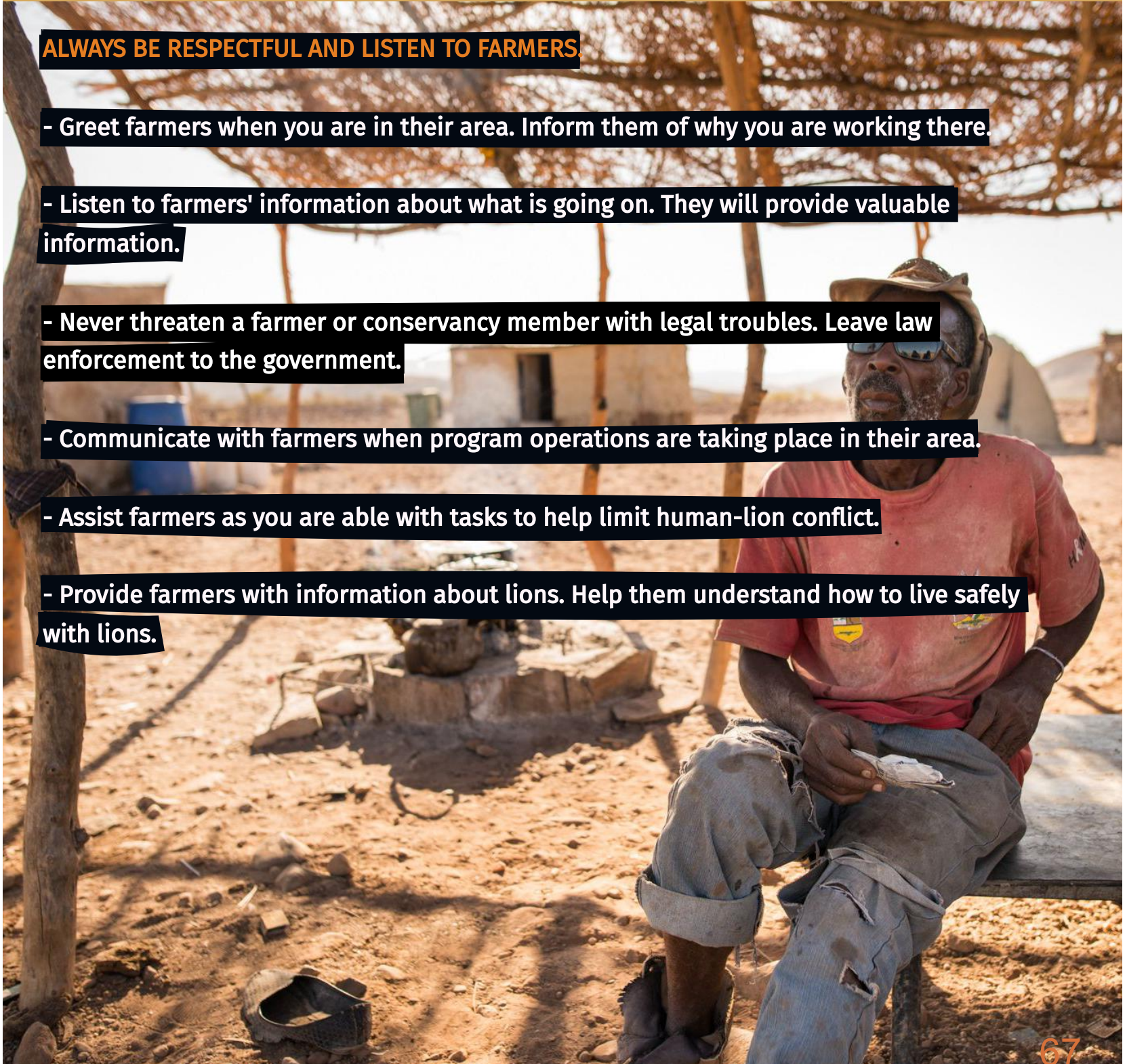
- Listen to farmers' information about what is going on. They will provide valuable information.

- Never threaten a farmer or conservancy member with legal troubles. Leave law enforcement to the government.

- Communicate with farmers when program operations are taking place in their area.

- Assist farmers as you are able with tasks to help limit human-lion conflict.

- Provide farmers with information about lions. Help them understand how to live safely with lions.



STAYING IN TOUCH

Lion Rangers' work is facilitated by the Program Leadership Team, who provide Rangers with information about program operations and feedback on performance.

RANGERS ARE RESPONSIBLE FOR BEING IN TOUCH WITH THE PROGRAM

- Rangers must provide up-to-date information to the program about their movements and availability.
- Program information is communicated through the Lion Rangers WhatsApp group. You must have regular access to the group.
- Inform program leadership if you change your phone or WhatsApp number.
- Rangers serve as the contact point between the program and their conservancy.
- Rangers are responsible for attending all program trainings.
- Potential or actual human-lion conflict should be communicated to the program as soon as possible.
- Rangers are responsible for exporting all data from SMART.

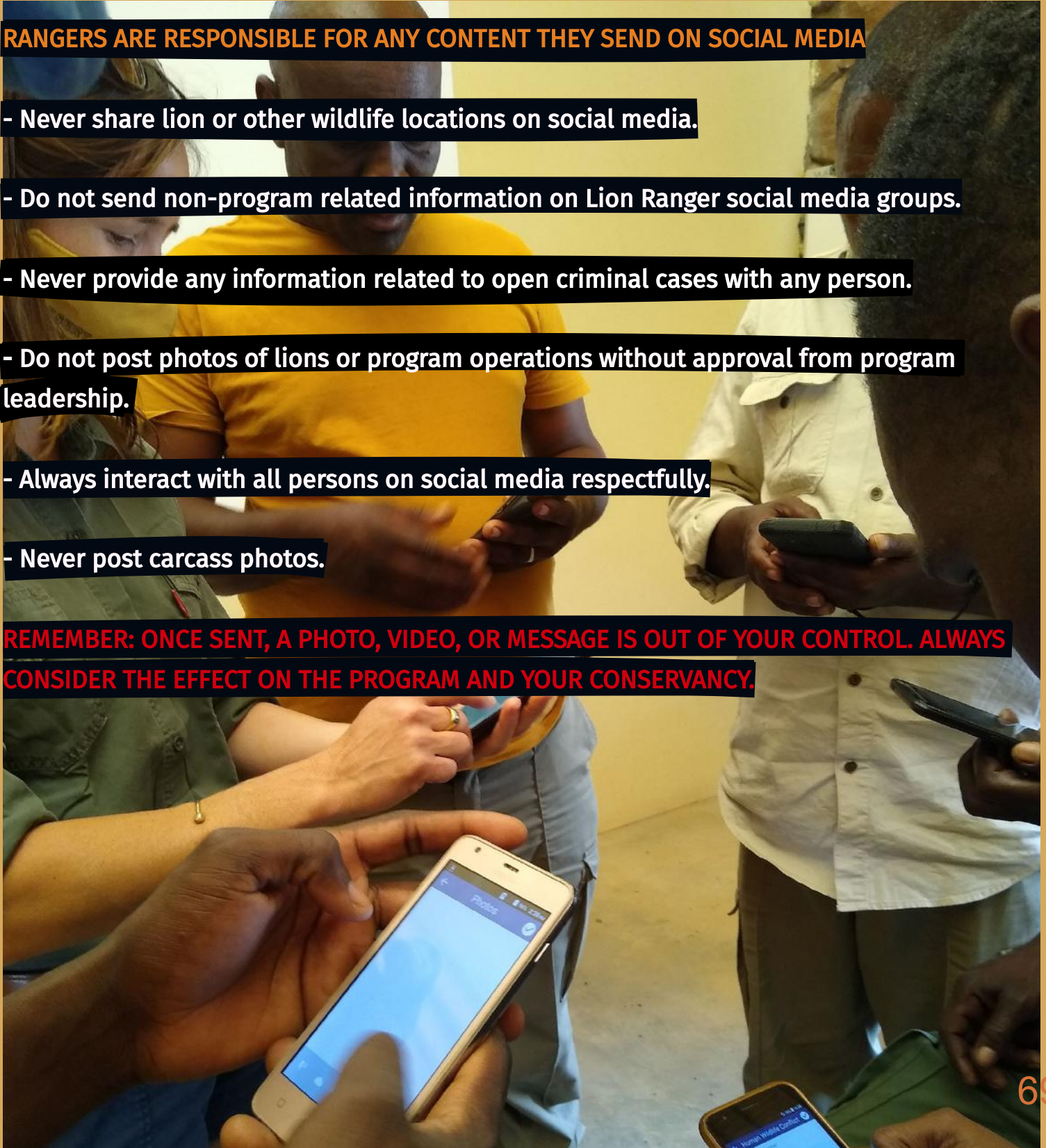
A TOOL TO SUPPORT THE WORK

Social media, such as Facebook and WhatsApp, is important for communication. The Lion Rangers rely on these tools to share information with one another. But social media can also hurt the program if used inappropriately.

RANGERS ARE RESPONSIBLE FOR ANY CONTENT THEY SEND ON SOCIAL MEDIA

- Never share lion or other wildlife locations on social media.
- Do not send non-program related information on Lion Ranger social media groups.
- Never provide any information related to open criminal cases with any person.
- Do not post photos of lions or program operations without approval from program leadership.
- Always interact with all persons on social media respectfully.
- Never post carcass photos.

REMEMBER: ONCE SENT, A PHOTO, VIDEO, OR MESSAGE IS OUT OF YOUR CONTROL. ALWAYS CONSIDER THE EFFECT ON THE PROGRAM AND YOUR CONSERVANCY.



FIRST AID

Lion Rangers are provided with free First Aid Training to limit their danger and support wellbeing in the field. This also serves as an important skill for helping other people in your conservancy.

- Always protect yourself first. Do not put yourself in danger to assist someone else.

- Remember your training ABCs: Airway (nothing blocking the mouth and nose), Breathing (the person is getting air in & out), Circulation (there is no serious bleeding).

- Have your First Aid kit with you in the field.

- Inform program leadership when you need replacement First Aid supplies.

- Practice your First Aid skills to help remember what you learned.



CHAPTER 6 - PERFORMANCE EXPECTATIONS & ASSESSMENT



6.1 - Program Expectations of Ranger Performance

CLEAR EXPECTATIONS FOR SUCCESS

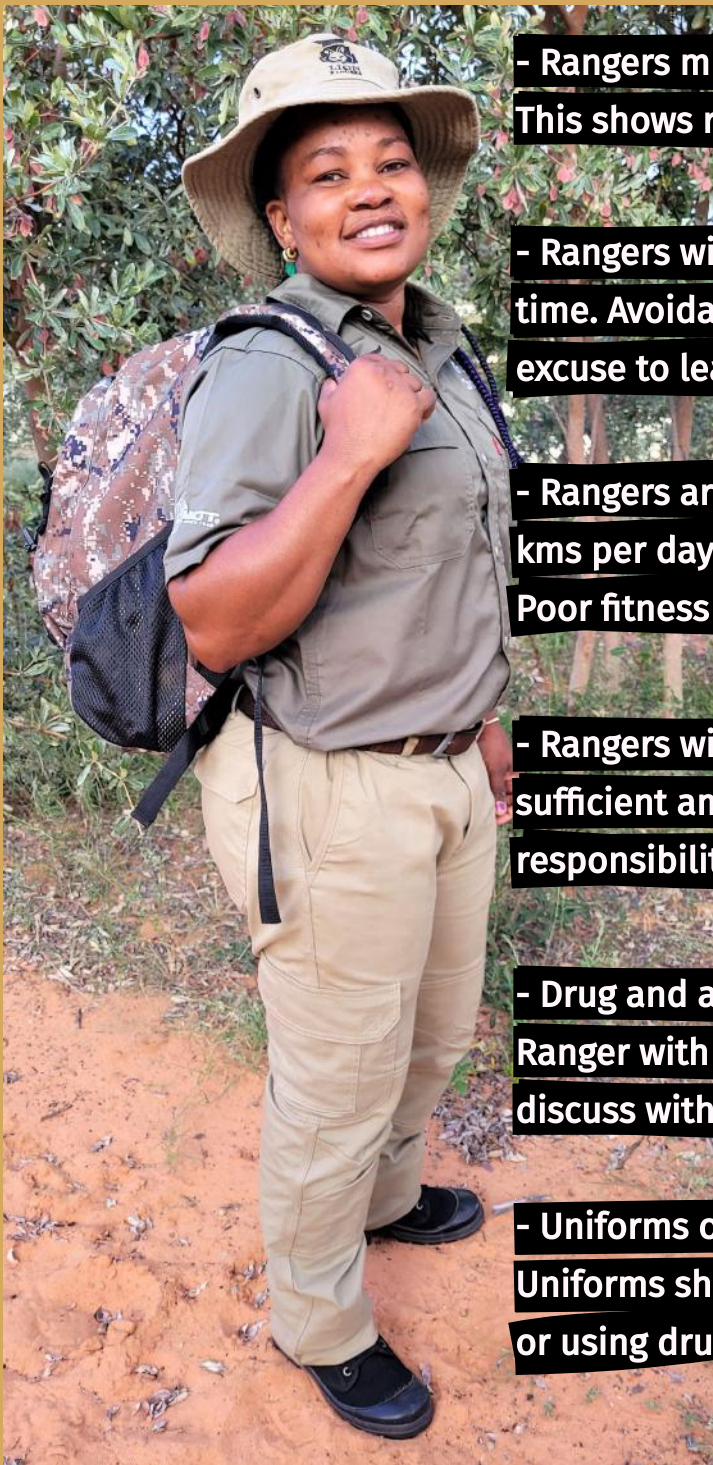
Your performance is primarily measured through information exported through SMART and other information available to the Leadership Team, including reports from Team Leaders and face-to-face experience in the field.

OVERALL PERFORMANCE IS ASSESSED ON:



RESPONSIBILITY & SELF-CARE

Your health and wellbeing are important to your work as a Lion Ranger. It is expected that Rangers are able to work in the field, sometimes for weeks, while performing physically-demanding work. Poor health and substance abuse can keep you from performing your work. If you are consistently unable to perform or violate substance use expectations, you may be removed from the program.



- Rangers must practice cleanliness in their body and uniform. This shows respect for the program and keeps you healthy.

- Rangers will handle personal and health issues on their own time. Avoidable health needs, such as medication refills, are no excuse to leave a patrol deployment.

- Rangers are expected to be physically fit enough to walk 25-30 kms per day, multiple days in a row, in Kunene environments. Poor fitness is no excuse for poor performance.


- Rangers will be provided with nutritious food and water in sufficient amounts to perform their work. Special food is the responsibility of Rangers to procure.

- Drug and alcohol abuse while working is unacceptable. Any Ranger with concerns about drug and alcohol addiction can discuss with Program Leadership without fear.

- Uniforms or a suitable substitute shall be worn while working. Uniforms should not be worn off duty and never while drinking or using drugs.

SMART Reports


SMART Reports are produced by Lion Ranger Program Leadership each month and at certain times during the year. Reports compile all exported data during a certain period. These reports are how Program Leadership assess Ranger patrols, deployment areas, and performance. The reports inform Performance Pay and other rewards for each Ranger. **Data which are not exported will not appear on SMART Reports.**



Lion Rangers Patrol Efforts

From 2022-09-20 to 2022-10-20

Core Lion Range Conservancies, Kunene Region, Namibia



RANGER FOOT PATROLS

TYPE	RANGER	PATROLS	AVG DISTANCE/ PATROL (km)	TOTAL DISTANCE (km)	AVG ACTIVE HRS/PATROL	TOTAL ACTIVE HRS
Foot	Uaroua Kaidue	23	11.4	263.0	3.9	90.7
Foot	Tjango Tjiseua	22	10.1	222.1	3.9	85.2
Foot	Esau Tjeundo	19	8.0	152.5	2.6	49.1
Foot	Rinoveni Tjauira	19	9.3	176.5	2.7	51.1
Foot	Matarakuani Kavetu	18	9.6	172.9	2.7	48.5
Foot	Jendery Tsaneb	17	8.2	139.3	2.7	45.7
Foot	John Hoaeb	17	10.0	169.7	2.8	48.2
Foot	Kandavii Nguezeeta	16	9.1	145.9	3.2	51.5
Foot	Unity Katjirumbu	16	8.5	136.2	2.5	39.7
Foot	Esau Matundu	15	11.5	172.5	3.7	55.6


Ranger monthly performance is primarily assessed through Foot Patrol data. To qualify for monthly **Performance Pay (bonus)**, a Ranger must perform a **MINIMUM of ten (10) foot patrols, of at least five (5) km** during that month. Vehicle patrols do not count towards monthly Performance Pay. Only exported data can be assessed.

Per Lion Rangers' contract, if any Ranger fails to qualify for the monthly Performance Pay for three (3) consecutive months, or six (6) months in a year, Program Leadership may withhold Lion Ranger salary until a disciplinary meeting is held with that Rangers' conservancy or organization management.

6.4 - Conservancy Reporting Overview

Conservancy SMART Reports


Every month and at the end of each year, each conservancy's management receives a SMART report detailing the performance of that conservancy's Lion Rangers. These reports are generated using the same approach and data as the reports presented to the Rangers each month.



Ehi-rovipuka Lion Rangers Patrol Efforts

From 2022-09-21 to 2022-10-20

Ehi-rovipuka Conservancy, Kunene Region, Namibia

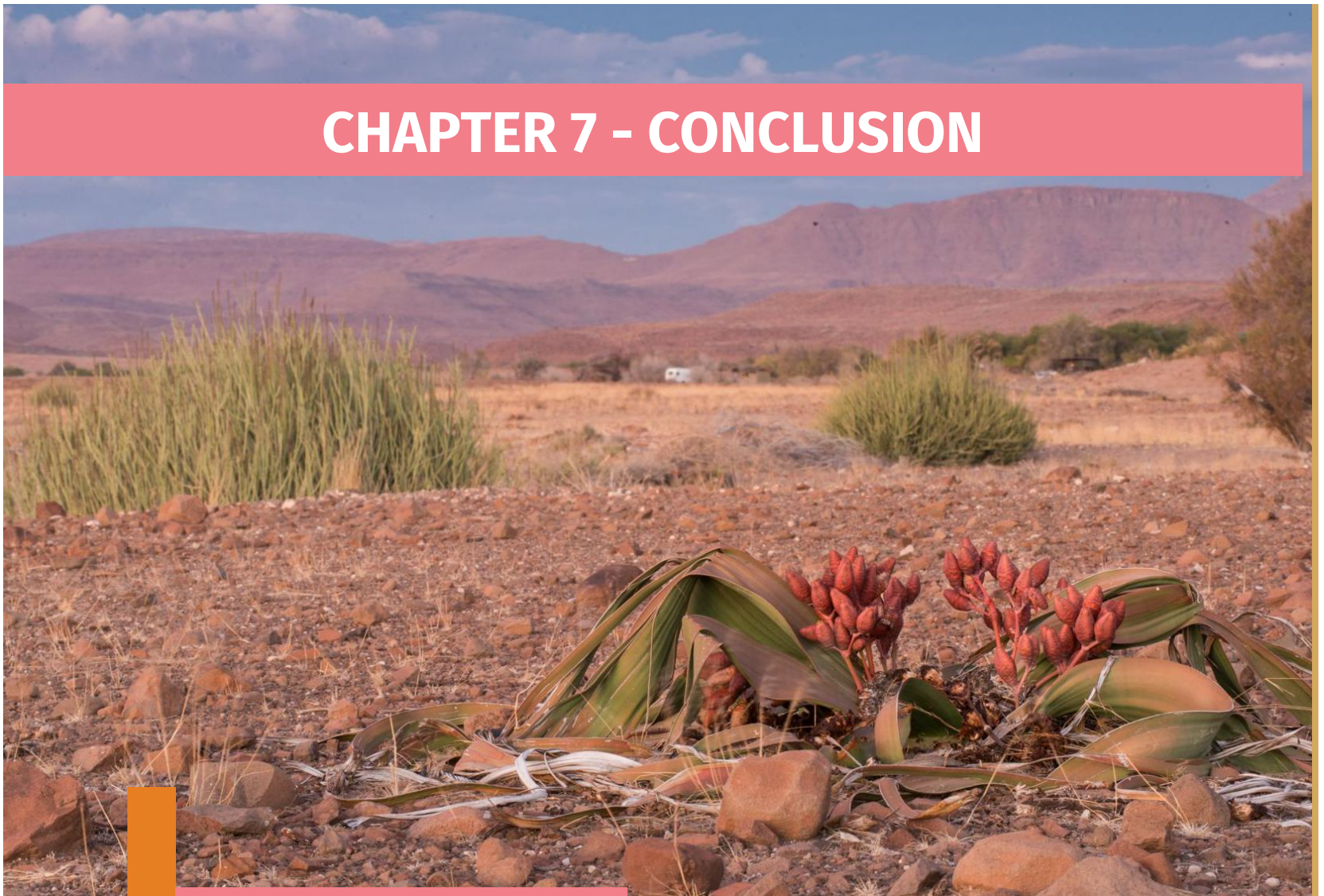


RANGER FOOT PATROLS

TYPE	RANGER	PATROLS	AVG DISTANCE/ PATROL (km)	TOTAL DISTANCE (km)	AVG ACTIVE HRS/PATROL	TOTAL ACTIVE HRS
Foot	Uaroua Kaidue	23	11.5	264.8	4.0	91.6
Foot	Tjango Tjiseua	20	10.2	204.0	3.9	79.0
Foot	Matarakuani Kavetu	18	9.6	172.9	2.7	48.5
Foot	Esau Tjeundo	17	7.9	134.5	2.5	42.9
Foot	Kandavii Nguezeeta	17	9.2	156.0	3.2	54.1
Foot	Tjino Musaso	16	8.1	129.0	2.5	40.6
Foot	Unity Katjirumbu	16	8.5	136.2	2.5	39.7
Foot	Esau Matundu	15	11.5	172.5	3.7	55.6
Foot	Simion Vejorerako	6	8.2	49.1	2.7	16.4
Foot	Kapi Kaipaterue	2	7.5	15.1	2.2	4.4
Foot	Timotheus Zaongara	1	7.7	7.7	4.3	4.3
Foot	Titus Turitjo					
		151	9.1	1441.9	3.1	43.4

Conservancy reports are for informational purposes for each conservancy. A conservancy's Lion Ranger Patrol Efforts report only contains information on Rangers coming from that conservancy - regardless of what organization the Ranger reports to. A similar report is prepared monthly for other supervising organizations, such as TOSCO and NLT.

CHAPTER 7 - CONCLUSION



Your Future with the Lion Rangers

As a Lion Ranger you have a great opportunity to serve your community, contribute to conservation of Namibia's natural resources, and develop your skills and capacity. But with this opportunity comes responsibility.

The Lion Ranger program is not only committed to the success of community conservation of lions, but to your success as well. The choice is yours to make the most of this opportunity, for yourself, your community, and your country.



NOTES

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NOTES

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NOTES

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NOTES

This image shows a full page of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Ministry of Environment,
Forestry and Tourism



FINANCED THROUGH
KFW

