



SOUTH AFRICA'S HYENAS



DEAR EARTHWATCHER,

Welcome to a unique opportunity to be involved with research into carnivore ecology and human-wildlife conflict in South Africa.

Our study focuses on the carnivore species that are typically scavengers in South Africa: the brown hyena and the black-backed jackal. Scavengers play a vital role in the environment by maintaining the balance of ecosystems through their specialized feeding habits; however, they also regularly come into conflict with people. It is estimated that there are now fewer than 1,700 brown hyenas left in South Africa, and black-backed jackals are the most persecuted carnivore in southern Africa.

As part of this Earthwatch team, you will be involved in assessing carnivore populations in areas with different levels of protection and management in order to help develop our understanding of the ecology of these animals, their role within ecosystems, the threats they face, and how they are viewed by locals. Your findings will aid future conservation strategies.

As volunteers you will be involved in many different aspects of the project survey work and educational outreach. In addition to your important work, however, you'll also have the exciting opportunity to experience and learn more about other wildlife, enjoy the local cuisine and traditional activities, and to relax and take in the African sunset.

We are looking forward to welcoming you to South Africa!

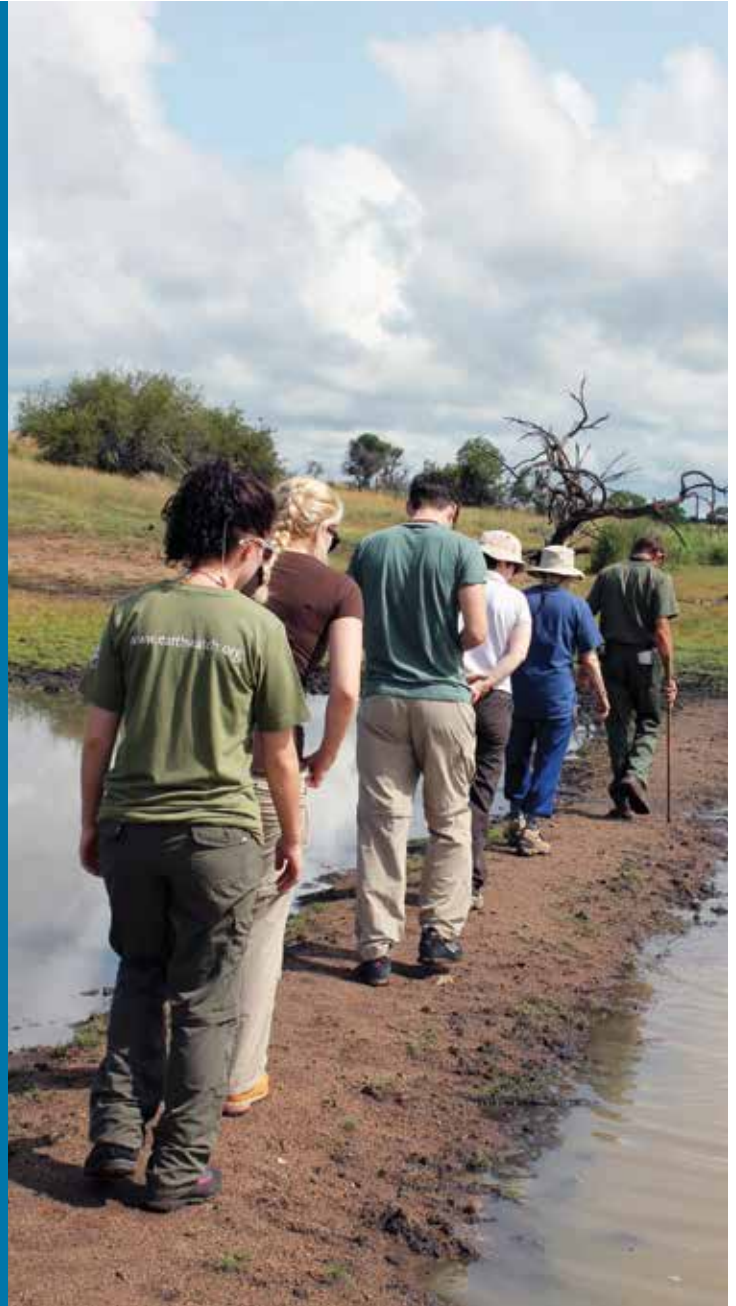
Yours faithfully,

Lynne MacTavish
Dawn Scott, Ph.D.
Richard Yarnell, Ph.D.
Anja Rott, Ph.D.



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GENERAL INFORMATION

SOUTH AFRICA'S SCAVENGER SPECIES



EARTHWATCH SCIENTISTS:

Dr. Dawn Scott, Principal Lecturer,
University of Brighton

Dr. Richard Yarnell, Principal Lecturer,
Nottingham Trent University

Lynne MacTavish, Operations Manager,
Mankwe Wildlife Reserve

Dr. Anja Rott, Principal Lecturer,
University Of Brighton

RESEARCH SITE: Mankwe Wildlife Reserve and
Pilanesberg National Park, South Africa

EXPEDITION DATES

Team 1g (school group): June 11–June 20, 2014

Team 2 TEEN (school group): July 28–Aug. 8, 2014

Team 3 (school group): Aug. 11–Aug. 20, 2014

*Earthwatch Teen Teams are open to 15- to 18-year-olds (18-year-olds may participate if they finished their last year of high school in the previous school year). 16- and 17-year-olds may also participate on standard teams if accompanied by a parent or guardian. See Volunteers Under 18 Years of Age (pg. 15) for traveling advice for minors.

**Complete travel information is not
available in this version of the briefing.**

**Please contact Earthwatch
with any questions.**



TRIP PLANNER

TO DO IMMEDIATELY

- ❑ Make sure you understand and agree to Earthwatch policies and participant responsibilities.

90 DAYS PRIOR TO EXPEDITION

- ❑ Log in at earthwatch.org to complete your volunteer forms.

Note: If you have signed up for an expedition within 90 days of the start date, you must return your fully completed volunteer forms as soon as possible.

- ❑ Pay any outstanding balance on your expedition.
- ❑ Book travel arrangements.
- ❑ If you plan to purchase additional travel insurance, note that some policies require purchase when your expedition is booked (see the Insurance section, pg. 21, for more information).
- ❑ If traveling internationally, make sure your passport is current and obtain a visa for your destination country, if necessary (see the Passports and Visas section, pg. 15, for more details).

- ❑ Make sure you have all the necessary vaccinations for your project site (see the Health Information section, pg. 20).
- ❑ Bring your level of fitness up to the standards required (see the Project Conditions section, pg. 16).

60 DAYS PRIOR TO EXPEDITION

- ❑ Review the packing list (pg. 4) to make sure you have all the clothing, personal supplies, and equipment needed.

30 DAYS PRIOR TO EXPEDITION

- ❑ Leave the Earthwatch 24-hour helpline number with a friend or relative (see pg. 28).
- ❑ Leave copies of your passport, visa, and airline tickets with a friend or relative.
- ❑ Confirm your travel arrangements.

Read this expedition briefing thoroughly. It provides the most accurate information available at the time of your Earthwatch scientist's project planning, and will likely answer any questions you have about the project. However, please also keep in mind that research requires improvisation, and you may need to be flexible. Research plans evolve in response to new findings, as well as to unpredictable factors such as weather, equipment failure, and travel challenges. To enjoy your expedition to the fullest, remember to expect the unexpected, be tolerant of repetitive tasks, and try to find humor in difficult situations. If there are any major changes in the research plan or field logistics, Earthwatch will make every effort to keep you well informed before you go into the field.



EXPEDITION PACKING CHECKLIST

REQUIRED ITEMS

GENERAL

- This expedition briefing
- Photocopies of your passport, flight itinerary, and credit cards in case the originals are lost or stolen; the copies should be packed separately from the original documents
- Passport and/or visa (if necessary)
- Certification of vaccination (if necessary)
- Documentation for travel by minors (if necessary) (see Volunteers Under 18 Years of Age in the Travel Tips section, pg. 15)

CLOTHING/FOOTWEAR FOR FIELDWORK

NOTE: Field clothing must be khaki, earth-toned, or dark colors; white and bright colors will scare animals away.

- Earthwatch T-shirt
- Long-sleeved shirts
- Pants
- Fleece/jumper/sweater or other warm clothes for night work and evenings
- Well broken-in hiking boots
- Wide-brimmed hat to protect face, neck, and head from the strong sun

ADDITIONAL CLOTHING/FOOTWEAR FOR FIELDWORK: JUNE, JULY, AND AUGUST TEAMS

- Lightweight waterproof jacket
- Waterproof footwear

ADDITIONAL CLOTHING/FOOTWEAR FOR FIELDWORK: JUNE, JULY, AND AUGUST TEAMS

- Warm windbreaker or jacket
- Several layers of warm clothing, including thermal under-layers (temperatures can fluctuate quite a bit between day and night)
- Warm hat and gloves

CLOTHING/FOOTWEAR FOR LEISURE

- At least one set of conservative clothing to keep clean for end of expedition
- Shorts
- T-shirts

- Comfortable pants
- Lightweight long-sleeved shirts for sun protection
- Comfortable closed-toe shoes to wear around camp

FIELD SUPPLIES

- Small daypack
- Insect repellent spray
- Two one-liter water bottles
- Flashlight/torch or headlamp with extra batteries and extra bulb for use in the field and for walking round camp at night. A headlamp with a red lamp function is particularly useful for some night work; the red light cannot be seen as easily by animals, and a headlamp allows hands to be free for fieldwork.
- Compass
- Whistle
- Notebook
- Pens or pencils
- Binoculars—we have just a few pairs of project binoculars to lend

BEDDING AND BATHING

Note: A pillow, duvet, and bed sheet will be provided.

- Four-season sleeping bag (June, July, and August teams)
- Towel

PERSONAL SUPPLIES

- Personal toiletries (biodegradable soaps and shampoos are encouraged)
- Antibacterial wipes or lotion (good for cleaning hands while in the field)
- Personal first-aid kit (e.g., anti-diarrhea pills, antibiotics, antiseptic, itch-relief, pain reliever, bandages, blister covers, etc.) and personal medications
- Sunscreen lotion with SPF 30 or higher
- Lotion and lip balm (your skin will be exposed to sun, dry air, and wind)
- Sunglasses
- Spare glasses or contact lenses (if you wear them)

MISCELLANEOUS

- Spending money
- Travel alarm clock



OPTIONAL ITEMS

- Bathing suit for recreational day (November team)
- Camera, film or memory card(s), extra camera battery
- Drybag or plastic sealable bags (good for protecting equipment like cameras from dust, humidity, and water)
- Travel guide
- Books, games, journal, art supplies, etc. for free time
- Memory stick
- Blank CD or DVD for sharing digital photographs at the end of the expedition
- Field guide(s)
- Earplugs and eye mask to help sleep during the day

- Mosquito net
- Money belt
- A small amount of biodegradable laundry soap to wash clothing
- Bandana
- Flip-flops for the shower
- Favorite snacks, if you have specific dietary requirements (note: Please store these in the kitchen tent cabinets when you arrival to avoid attracting small mammals to your sleeping tent)

NOTE: Required and optional items lists are accurate to the best of Earthwatch's knowledge at the time of publication.



THE RESEARCH

SOUTH AFRICA'S SCAVENGER SPECIES



THE STORY

Natural scavengers are essential to the functioning of their ecosystems, though their role in maintaining ecosystems and biodiversity and reducing the prevalence of diseases is little understood. Unfortunately, however, human beings have little respect for scavengers and, in many cases, persecute them heavily or otherwise subject them to ill treatment leading to population declines. The loss of these species could have serious consequences for ecosystem function and biodiversity. The South Africa's Scavenger Species project aims to determine the role and importance of scavengers within human-dominated agricultural systems, to ensure that people recognize their importance, and to aid their long-term survival.

THE RESEARCH

Less than 2.5% of the North West province of South Africa is officially protected, and therefore most scavengers live in unprotected areas where they are subject to persecution by humans. To ensure the long-term survival of these species, we must understand the ecology of wildlife in unprotected landscapes compared with protected areas. This research project focuses specifically on brown hyenas, jackals, and dung beetles living in unprotected areas of the North West province, but will also include other carnivores that live alongside them.

It is estimated that there are fewer than 1,700 free-ranging brown hyenas in South Africa. Many live in unprotected areas where they may be shot, poisoned, trapped, or hunted with dogs. Such activities can drastically reduce hyena numbers, and, for the conservation of this species, we must know how many



hyenas live outside protected areas. Jackals also face human persecution, but we have few estimates of their numbers, the level of persecution they experience, and the effect of persecution on their ecology. Dung beetles play a key role in ecosystems, and can indicate the health of mammal populations in an area; because various dung beetle species have adapted to specialize in feeding and breeding in certain mammals' dung and carrion, their diversity is closely linked with the diversity of mammal species.

So far our research has led to a better understanding of where hyenas are, what factors determine their presence and survival, and how best to survey and monitor them. We will continue elements of the hyena work to bring several questions to conclusion while expanding our research to focus less on individual species and more on how these species interact with other scavengers and carnivores and how they contribute to the health and biodiversity of their ecosystem.

Our objectives are to:

- Determine the distribution and abundance of scavengers and carnivores across the North West province and determine what factors are affecting their distribution patterns;
- Assess and compare scavenger and carnivore presence, abundance, density, diet, breeding, and habitat use in areas with different levels of protection and land use;
- Assess the availability of carrion and other potential food items inside and outside protected areas, and evaluate the levels and types of management employed with respect to scavengers;
- Investigate the effect of mammalian community composition on dung beetle diversity; and
- Promote human-wildlife coexistence through training, educational support, publicity, and promotion via a range of media.

HOW YOU WILL HELP

Typically, all teams will do some carnivore work, but the extent of the focus on dung beetles will vary due to the seasonal nature of these species. You will have the opportunity to take responsibility for different aspects of the fieldwork and to develop your own personal interests within the scope of the research. And although we can't guarantee it, it is likely that we may come across brown hyenas, jackals, lions, and other species.

Research tasks depend on the season in which your expedition takes place.

When we're collecting data on carnivores you may assist with:

- **CAMERA TRAPPING:** This task involves walking or driving around sites to set and check camera traps (automated cameras triggered by animal movement). We'll use these to track animals in the area and to record which species feed on carcasses.
- **SURVEYING FOR AND COLLECTING ANIMAL SCAT (FECES):** You will traverse sites on foot or by vehicle collecting scat to be used for analyzing the diets and sampling the genetics of our scavenger species.
- **SURVEYING ANIMALS AT NIGHT:** This involves sitting in a vehicle with a spotlight on, looking for animals.
- **WALKING MAMMAL TRANSECTS TO ASSESS PREY BASE AND SEARCH FOR DEAD ANIMALS** to provide information about the availability of food for scavengers

In dung beetle studies, you may help:

- **SET UP AND MONITOR** traps for beetles
- **CONDUCT BEHAVIORAL STUDIES**
- **IDENTIFY** beetles and the sources of dung

You will likely have a chance to work on a few more general management and community-oriented tasks:

- At the end of the team, after you have had time to develop your understanding of the project, you may **ASSIST IN EDUCATIONAL PROGRAMS FOR SCHOOLCHILDREN** either at the research site or on visits to the schools. However, these are restricted to times which fit within the school calendars.
- **MONITORING THE CONTROLLED BURNING OF DEAD GRASSLAND:** Reserve management regularly burns areas of the savanna to remove unsuitable grazing and browsing material, mostly between June and August. You may help by watching from a distance to make sure fire does not cross any firebreaks or roads and by alerting the fire team if you spot any crossings. (This activity is entirely voluntary, and you'll only observe, never conduct, any burns. You will receive thorough fire safety training if you choose to participate.)
- **GATHERING EVIDENCE OF POACHING:** Small groups of volunteers assist an experienced tracker to determine if poachers have entered the reserve overnight. The tracker trains the team to look for spoor (tracks and feces) and snares, and then we'll walk about four kilometers (2.5 miles) at a time, removing any snares we see and recording signs of poaching activity to be reported to management. This activity is undertaken when poachers are not typically active in order to avoid confrontation with them.

YOUR DESTINATION

ABOUT SOUTH AFRICA'S NORTH WEST PROVINCE



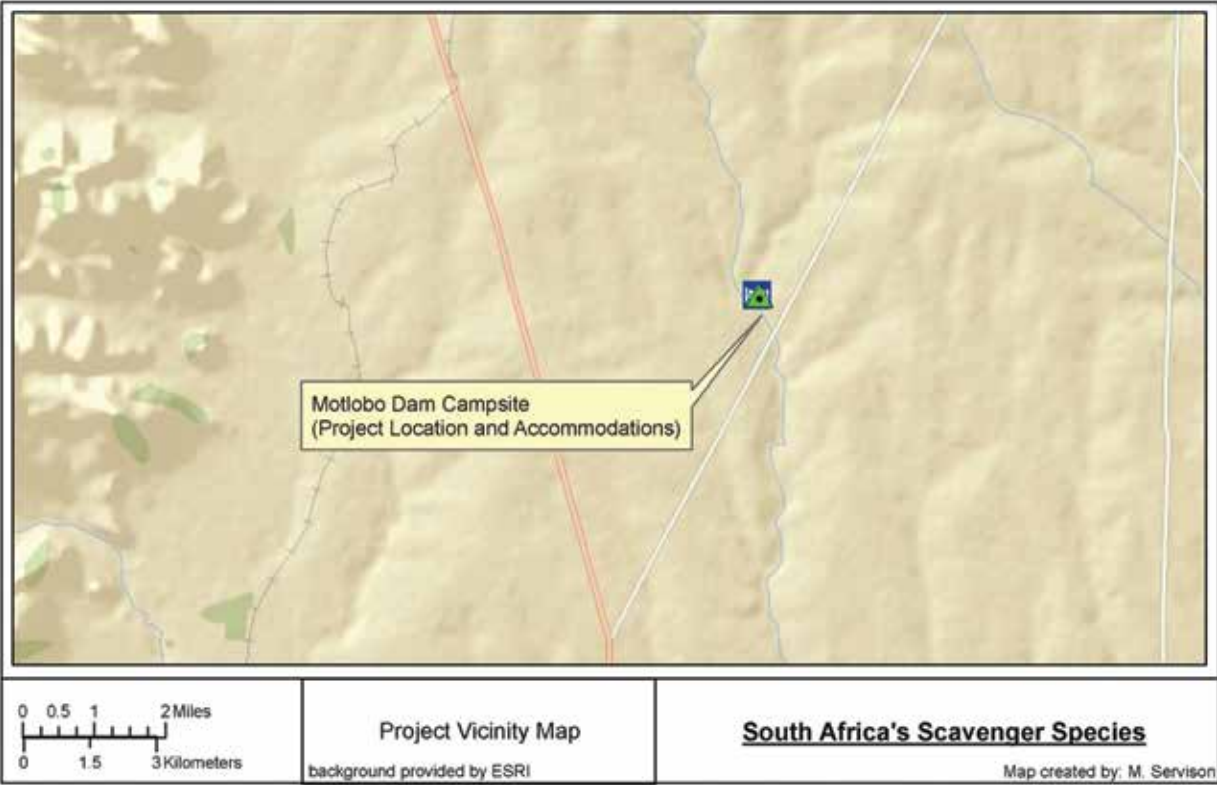
The project's study sites, Pilanesberg National Park and Mankwe Wildlife Reserve, are located within 50 kilometers (31 miles) of the Pilanesberg massif (mountains), northwest of Johannesburg in the North West province. The landscape is part of the Southern African bushveld, a classic African savanna of mixed grasses spotted with trees. For further information on the area's terrain and climate, see the Project Conditions section (pg. 16).

The North West province of South Africa (see map) is exposed to some of the most severe environmental stresses in South Africa due to the conversion of land to agriculture and mining, land degradation, overgrazing, trade in fauna and flora, introduction of exotic species, excessive burning, and the removal of

groundwater. Private owners control most of the province, with less than 2.5% of land designated as protected area. This makes it an ideal location to address questions surrounding the role of wildlife within human-dominated landscapes, and to explore how components such as scavengers contribute to long-term ecosystem functioning.

South Africa is home to people from a great diversity of cultures, each with unique characteristics to appreciate. The country has eleven official languages. About two-thirds of South Africans are Christians, mainly Protestants, who belong to a variety of churches, including many that combine Christian and traditional African beliefs. Your team will be living and working with a group of South African nationals of various ethnic and cultural backgrounds.





DAILY LIFE IN THE FIELD

PLANS AND POLICIES

You'll have one or two days of training in field and survey techniques, use of GPS and field equipment, and identification of mammals (especially carnivores) and the signs they leave behind. Other educational presentations will be offered throughout the expedition, covering topics such as the history of the project; health and safety on site and during fieldwork; carnivore ecology and conservation; human-wildlife conflict in South Africa; methodological theory and practice; spoor (tracks and feces) identification with qualified wildlife trackers; game reserve management; research methodology; basic field skills such as distance estimation, use of GPS, species identification, and more.

Night work can be tiring and will be undertaken by different teams on a rotating basis.



ITINERARY AND DAILY SCHEDULE

Weather and research needs can lead to changes in the daily schedule. We appreciate your cooperation and understanding.

Project activities will also vary seasonally. Below is an outline of what is likely to happen on each team, but the exact schedule will depend on the project's current needs and will be set at the start of each expedition.

PROJECT ACTIVITIES (SUBJECT TO CHANGE)

		Team 1g (June)	Team 2 (July)	Team 3 (August)
Carnivores	Camera trapping	x	x	x
	Spotlighting	x	x	x
	Latrine and sign surveys		x	x
	Setting up exclusion areas	x	x	x
	Ecosystem function monitoring	x	x	x
Community	School visits*		x	x
	Fire management	x	x	x
	Anti-poaching tasks	x	x	x

*We will try to do a school visit for July-August teams, but due to examination periods at the schools it is not always possible.



ITINERARY AND DAILY SCHEDULE

TYPICAL ITINERARY

Day 1	Meet and travel to field site, introduction and orientation drive, down time in the evening
Day 2	Orientation, field training in methodology, identification of carnivore signs, group activities, down time in the evening
Days 3-4	Sign surveys, camera trapping, data collation, night drives at Mankwe
Days 5-7	Sign surveys, camera trapping, night drives at Pilanesberg
Day 8	Possible recreational day with field staff, including an excursion to Pilanesberg National Park in the morning or afternoon and evening and other team activities (park entry fees are covered; meals and snacks are at your own expense)
Days 9-10	Sign surveys, camera trapping, data collation, night drives at Mankwe, possible school visit
Day 11	Data collation, project summary, and sundowner evening at Mankwe
Day 12	A transfer company will pick up the team at 12 p.m. and take you to the airport for departure

TYPICAL RESEARCH DAY

You'll typically have a midday break, during which we encourage you to rest in the shade. The team will also have a full recreational day, usually in the middle of the expedition.

Time	Activity
8:00 a.m.	Rise, eat breakfast
8:30 a.m.	Begin morning fieldwork
12:30 p.m.	Lunch and midday break, daily briefing, data collection talks
2:00 p.m.	Continue fieldwork
6:00 p.m.	Dinner
7:00 p.m.	Evening fieldwork
11:00 p.m.	End evening activities

RECREATIONAL DAY

For safety reasons, the team will spend the recreational day as a group. Following is a typical schedule for the recreational day (schedule may change for reasons beyond our control):

Time	Activity
8:00 a.m.	Rise, eat breakfast
9:30 a.m.	Depart Mankwe
10:00 a.m.	Visit local curios market
11:00 a.m.	Visit KwaMaritane Lodge (game blind and swimming pool)
1:00 p.m.	Lunch (at your own expense, approximately R150/US\$16 per person)
3:00 p.m.	Game drive in Pilanesberg National Park
7:00 p.m.	Return to Mankwe for dinner
8:00 p.m.	Evening around campfire

EARTHWATCH RECREATIONAL TIME POLICY

Project staff will generally accompany participants from the rendezvous to the end of the expedition. For recreational days, when no research activities are scheduled, Earthwatch scientists will offer either a team activity or a range of recreational activities that comply with Earthwatch standards. Participants may also remain at project accommodations. Those who pursue other options must sign a release form.



ACCOMMODATIONS AND FOOD

ABOUT YOUR HOME IN THE FIELD



SLEEPING

During the expedition, your team will be based at Motlobo Dam campsite in the heart of Mankwe Wildlife Reserve at a scenic spot overlooking a dammed lake. You may sleep in a two-room brick house, a wooden cabin, or a walk-in safari tent, depending on the number of team members. The house sleeps up to eight people in two separate bedrooms. There are three tents, each of which sleeps two to four people and has an en suite bathroom with flush toilet, sink, and shower. There are also two wooden cabins with en suite bathroom; the cabins can accommodate up to four volunteers, but are generally kept to two when possible. It may also be possible to accommodate couples or single room requests, depending on group size, on a first-come, first-served basis—please inform Earthwatch if you would like to request either of these options. Beds, pillows, duvets, and sheets are provided, but you must bring your own warm sleeping bag during the winter months (June, July, and August). Sleeping bags are not necessary for the November teams. A camp attendant will sweep up and clean bathroom facilities.

BATHROOMS

Bathroom facilities include hot showers and flush toilets. Hot water is supplied by a wood-fired or gas boiler.

ELECTRICITY

Electric lighting is provided by a generator that is switched on every evening at sunset (usually around 6:00 p.m.) and switched off at 10:00 p.m. The campsite has electrical outlets, so cameras, cell phones, iPods, etc. may be charged while the generator is running. However, please do not bring unnecessary items, such as hairdryers, as they will overload the system. Some equipment (e.g., rechargeable batteries) can be charged at Mankwe Wildlife Reserve with the permission of Operations Manager Lynne MacTavish. We advise, though, that you make sure to bring all batteries required for camera equipment, etc. as it can be very hard to find them locally. Please also bring the correct adaptors for South African plugs if necessary.



INTERNET AND COMMUNICATIONS

The cellphone reception at the camp has greatly improved, so volunteers can use smart phones to gain access to the Internet. Please ensure that you register for international roaming in your own country. SIM cards may be purchased at the Johannesburg airport upon arrival. MTN service provider has the strongest reception in our area. The Internet connection is very slow, so it is impossible to Skype at Mankwe. On the recreational day, you can use the Internet at Kwa Maritane Lodge for about R50 (US\$5.40). You can't connect your own computer to the Internet at camp; in the case of an emergency, Lynne will bring her laptop with Internet connection to the camp. It may be possible for project staff to download photos onto a computer if you bring appropriate cables, etc. If you'd like a copy of photos taken during the expedition, we suggest you bring a memory stick.

FACILITIES AND AMENITIES

The camp has a wooden dining area, including a sink, refrigerator, and cooking utensils, and a washing area with clotheslines. There are two barbeque areas with fire pits and a communal teaching hut with a field library and equipment, as well as two covered outside study areas.

DISTANCE TO FIELD SITE

Mankwe is about a 15-minute drive from Pilanesberg National Park's entrance and about 40 minutes from Kgaswane Mountain Reserve. The team will be transported around Mankwe Wildlife Reserve in open-topped vehicles, but closed vehicles will be used at all other sites and on public roads.

SERVICES AND RESTAURANTS IN WALKING DISTANCE

There are no services within walking distance. The nearest town is Mogwase, a 15-minute drive from camp.

FOOD

A local chef will prepare breakfast, lunch, and dinner. Lunch and dinner will be a mix of international and local cuisine, including traditional South African meals such as poitjiekos (game stews) and braais (barbeques), using free-range game from the game reserve. Unless you want to, you don't need to assist in shopping, food preparation, or clean up. In the occasional event that the team wishes to bring a picnic or braai on a day trip, you may be asked to help prepare your own lunch. Most meals will be eaten communally on site in the eating area. When we are working in the Pilanesberg National Park, a picnic dinner will be eaten at one of the game-viewing hides in the park.

Lynne runs an on-site shop that sells snacks, drinks, postcards, and Mankwe and project merchandise, such as T-shirts and hats. To make purchases at the shop, place your order in the order book provided, and Lynne will bring the requested items that evening or the following day. Your shop bill will be calculated at the end of your stay. Lynne takes British Pounds, U.S. Dollars, and South African Rands; shop accounts may not be paid by traveler's checks or credit cards.

Below are examples of the foods you might expect in the field. Please bear in mind that variety depends on availability. This list is intended to provide a general idea of food types, but it is very important that volunteers be flexible.

BREAKFAST: Cereal, fruit, toast/bread, jam, tea, coffee, occasional hot breakfast

LUNCH: Salad, quiche, soups, bread rolls

DINNER: Braais, stews, pasta, potatoes, vegetables, vegetarian options, dessert

SNACKS/OTHER: Fruit, biscuits, crisps (potato chips), chocolate, etc. may be purchased from the on-site shop at your own expense

BEVERAGES: Juice, cordials (fruit drink concentrate), coffee, tea; Canned soda may be purchased on site at your own expense

WATER: Clean drinking water available on site

SPECIAL DIETARY REQUIREMENTS

Please alert Earthwatch to any special dietary requirements (e.g., vegetarian or vegan diets, diabetes, lactose intolerance, nut or other serious food allergies) as soon as possible, and note them in the space provided on your volunteer forms. Accommodating special diets is not guaranteed and can be very difficult due to availability of food, location of field sites, and other local conditions.



TRAVEL TIPS

SUGGESTIONS FOR THE ROAD

LUGGAGE

LOST AND DELAYED LUGGAGE: If your luggage goes astray, please have the airline send it to: Mankwe Wildlife Reserve AEL Mining Services, Thabazimbi Road, Mogwase, North West Province, South Africa. For assistance call Lynne MacTavish: +27 (0) 83-453-3133 (mobile phone). She must be contacted before the luggage is scheduled to arrive.

GENERAL CONSIDERATIONS: Do not bring more luggage than you can carry and handle on your own. If traveling by air and checking your luggage, we advise you to pack an extra set of field clothing and personal essentials in your carry-on bag in case your luggage is lost or delayed. Many airlines have strict baggage policies. Please check with your airline(s) on baggage weight limits, liquid restrictions, fees for checked baggage, etc.

TRANSFERRING LUGGAGE: If you will be taking an international flight that has one or more connections within the country of your destination, you must collect any checked bags at the airport where you first arrive in the destination country. After proceeding through customs, you will have to recheck your luggage before flying on to your final destination.

MONEY MATTERS

LOCAL CURRENCY: South African Rand (ZAR; symbol R) = 100 cents. Notes are in denominations of R200, 100, 50, 20, and 10. Coins are in denominations of R5, 2, and 1, and 50, 20, 10 and 5 cents.

PERSONAL FUNDS: You will need money to cover any additional snacks or drinks you wish to purchase, along with any souvenirs. Operations Manager Lynne MacTavish can accept and change common currencies, and there are also currency exchange counters at international airports. Cash machines/ATMs can be accessed at Mogwase (the closest village) and Rustenberg. Be cautious when withdrawing money from an ATM. If you see someone who looks suspicious, don't withdraw money; instead, look for another ATM. If anyone asks you for help, do not help him or her or engage in conversation. Again, if you feel suspicious or uncomfortable, just leave the ATM. Keep your cash out of sight and in a safe place.

TIPPING: Most restaurants do not add a service charge to bills, and it is customary to leave a 10% to 15% tip. Parking and gas station attendants may be given whatever small change you have available; this is always appreciated, even though it may seem like a small amount. **NOTE:** Gratuities for the kitchen and camp staff at Mankwe Wildlife Reserve are completely voluntary but much appreciated.

YOUR DESTINATION

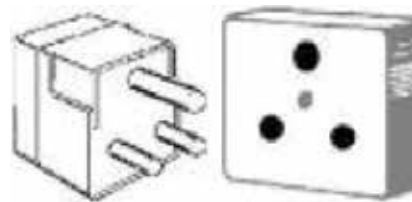
LANGUAGE: Afrikaans, English, and various local tribal and regional languages. All project activities and instruction will be conducted in English.

CULTURAL CONSIDERATIONS: In general, you should not wear skimpy or revealing clothing and particularly when not at Motlobo camp. If you would like to contribute to the local schools, stationery, pens, pencils, etc. are always welcome as they are perennially undersupplied.

ELECTRICITY: 220/230 volts AC, 50 Hz. Most plugs are Type M (three round pins—see image) but some plugs with two smaller pins are also found on appliances. U.S.-made appliances may need a transformer. Please do not bring unnecessary electrical equipment, as the system at the campsite is easily overloaded and charging capabilities will be limited.

For more information, see kropla.com/electric2.htm.

TIME ZONE: GMT + 2 hours. For time worldwide with GMT/UTC, see worldtimeserver.com.



TELEPHONE DIALING CODES: When calling South Africa from another country, dial the country's international dialing code, followed by (27) and the number. When calling within South Africa, omit the (27) and dial (0). When calling another country from South Africa, dial (00), followed by the other country's country code and the number. Note: you should check with your cell phone provider to obtain any carrier-specific dialing codes you may need; many providers have dialing procedures that may differ in whole or in part from these directions. For additional information, see kropla.com/dialcode.htm.



PASSPORTS AND VISAS

WILL YOU NEED A PASSPORT?

All visitors to South Africa must be in possession of a passport valid for at least six months past the date of entry and which must contain at least two consecutive blank (unstamped) pages, not including the “endorsement” pages at the very back. You may be refused entry if you do not comply with these requirements.

WILL YOU NEED A VISA?

Citizens of the U.S., EU, Australia, Canada, and Japan DO NOT need a tourist visa for stays of up to 90 days for entry. Citizens of other countries should check with their travel agent or a visa agency for specific visa and entry requirements.

INFORMATION FOR VOLUNTEERS REQUIRING VISAS ONLY

TYPE OF VISA TO GET: Tourist

The purpose of your visit is for vacation, holiday or travel. Immigration officials do not always understand the concept of a “working vacation” or “volunteering.” Words such as “working,” “volunteering,” “research,” or “scientific expedition” can raise questions concerning the country’s foreign labor laws and about official scientific research permits and credentials, etc., to which volunteers will not be equipped to respond on their own. All required research permits for the project are in place and have been approved by the proper authorities.

WHERE TO GET A VISA: Contact your South African embassy or consulate to find out how to apply. Please note that this process can take weeks or even months. We strongly recommend using a visa agency, which can both expedite and simplify the process.

SUGGESTED AGENCIES

IN THE U.S.: Travia; 212-613-2223; travia.com

IN EUROPE: CIBT, Inc. (UK); info@uk.cibt.com; uk.cibt.com

IN AUSTRALIA: Ask your travel agency if it can send your visa application on your behalf.

REQUIRED INFORMATION: You will need to send your passport (valid for at least six months beyond your stay), a visa application and immigration form, two to four passport-size photos, and payment to the embassy or visa agency (if applicable). Please be sure that your passport is valid for at least six months beyond your stay.

CONTACT INFORMATION: You may need to list this contact info on your visa application and immigration form:

Mankwe Wildlife Reserve

P.O. Box 20784

Protea Park 0305

North West Province, South Africa

+27 (083) 453-3133

mankwe@telkomsa.net

COST OF A VISA: Generally between US\$40 and US\$100, but varies from country to country and can cost up to US\$180. A visa agency will charge an additional fee.

VOLUNTEERS UNDER 18 YEARS OF AGE

In an effort to prevent international child abduction, many governments have procedures at entry and exit points to protect minors. Thus, if a minor will be traveling with only one guardian or alone, he or she may need a notarized letter from all legal guardians stating that the minor may travel unaccompanied or in the presence of a single guardian. If necessary, this letter must give an explanation for why only one parent or someone other than a parent is signing the letter. For example, if one parent is deceased, only one parent has legal guardianship, or someone other than the parents are legal guardians, the letter should state that. Airlines may also have documentation requirements for unaccompanied minors, e.g., a birth certificate or a notarized letter like the one described above.

IMPORTANT: Requirements of specific countries and airlines vary and change frequently. You must keep informed of the requirements on your own to avoid problems at immigration. If the minor is refused entry into a country or onto a flight because of lack of documentation, there is nothing Earthwatch can do to help.



PROJECT CONDITIONS

THE FIELD ENVIRONMENT

CONDITIONS

THE WEATHER IS EXPECTED TO VARY WITHIN THE LIMITS BELOW:

ANNUAL HUMIDITY: 20%-70%

TEMPERATURE RANGE: 6°-35°C/42°-95°F

October/November temperature: Average is 25°C/77°F in the day and 10-13°C/50-55°F at night.

January/February temperature: Daytime temperatures can reach over 35°C/95°F but average 26°C/79°F in the day and 10-15°C/50-60°F at night.

June/July/August temperature: Temperatures can drop below freezing at night and be up to 28°C/82°F in the day.

GENERAL CONDITIONS

The information that follows is as accurate as possible, but please keep in mind that conditions may change.

The climate of the area is sub arid, with an annual rainfall of approximately 650 millimeters (25 inches), mostly falling during summer thunderstorms between October and March. Remember that seasons in the Northern and Southern Hemispheres are reversed.

ELIGIBILITY REQUIREMENTS

All participants must be able to:

- Independently follow verbal and visual instructions
- Consistently and immediately comply with instructions from all staff, field rangers, and guides
- See clearly in daylight and low light (with or without corrective lenses) to a distance of 500 meters (1,640 feet), and see close up to read research instruments
- Enjoy being outdoors all day in all types of weather, often exposed to the sun for long periods of time or to highly variable weather conditions, which may include large temperature differences between night and day and sudden storms or drops in temperature
- Enjoy being outdoors in the potential presence of wild, dangerous animals, including snakes and insects
- Walk over rough, uneven terrain with areas of dense, thorny vegetation, animal holes that can be hard to spot, or rocky and steep slopes for up to four kilometers (2.5 miles) per day and generally up to two hours per day at an average rate of one kilometer (0.6 miles) in 15 minutes, with minimal fatigue
- Tolerate long periods of time in the field; days can be long, and some fieldwork is conducted at night
- Carry personal daily supplies up to five kilograms (11 pounds), such as lunch, water, and some small field equipment (e.g., binoculars)
- Without assistance, get up into and down out of project vehicles, which may include vans, trucks with high beds, and open-topped safari vehicles
- Sit or ride in project vehicles with seatbelt fastened and in close proximity to other team members while traveling over rough and bumpy roads for up to approximately six hours per day. Although the team will take regular breaks, in some research areas you will not be permitted to get out of the vehicle and walk around due to the presence of dangerous animals
- Get low enough to access and collect samples on the ground and in the brush and to access or set up camera traps
- Search for animal signs (scat, tracks) on the ground while moving over rough, uneven, sometimes rocky terrain with areas of dense, thorny vegetation, while steering clear of obstacles and animal holes
- Keep as quiet as possible while working in the bush
- Tolerate some smoke in the air if participating in the controlled-burn monitoring. Those who choose to participate will be placed in areas unlikely to be affected by smoke—but winds can change and it is impossible to guarantee a smoke-free zone.
- Tolerate not having a reliable source of electricity throughout the night for the length of the project





You will receive training in field health and safety at the beginning of the expedition. Team members will all carry whistles and a personal first aid-kit; first-aid kit will also be kept at the field base. All fieldwork will be done in pairs of two or more, within 45 minutes of emergency medical aid.

POTENTIAL HAZARDS

Hazard Type	Associated Risks and Precautions
Transportation	Hazards include fast and reckless drivers, livestock and wildlife in the road, rain, poor lighting, banditry, tire punctures due to thorny brush, and vehicle breakdowns. Traffic moves on the left side of the road. South African road conditions are considered good, particularly in urban areas; however, roads at the study sites can be poor: dirt, gravel, or corrugated and very bumpy and either dusty or muddy and slippery depending on weather conditions. Wear seatbelts whenever they are available and remain seated when the vehicle is in motion. Speeds will be kept at 50 km/hr (30 mph) or below, and will usually be around 30 km/hr (20 mph). Only authorized, insured, experienced staff will drive. Volunteers are not permitted to drive. We will avoid night transportation (though some night drives are part of the research).
Walking/Hiking/ Climbing	Terrain can be rocky, steep, and uneven with thick vegetation, especially in the wet season. There may be animal holes in the ground, covered by grasses and hard to spot. Some areas have dense, thorny acacia scrub. There is a possibility of sprains, bruises, and strains when walking. Walk carefully and attentively, and be aware of your surroundings at all times. We will walk on tracks and paths where possible. Appropriate clothing and footwear (e.g., long trousers, hat, socks, and well-broken-in hiking boots with ankle support) are required for fieldwork. Closed-toe shoes must be worn at night.
Animals at Accommodations	Two domesticated cats live at Mankwe Wildlife Reserve. Those with allergies should note this on their participation forms and bring medication as appropriate.
Perimeter Fence	Mankwe's perimeter fence is electrified because of wildlife. To avoid shock, do not touch this fence.
Project Location	Mankwe has been on land leased from the AEL Mining Services company for over 20 years. Next to the reserve, AEL runs a factory that produces detonators for mining operations, which poses a risk of accident. However, AEL has over 100 years of experience and extensive risk management practices.
Plants	Some plants may be poisonous if eaten or if they come into close contact with open wounds. Several plants, such as acacias, have large thorns that can cause injury. Staff will help you identify harmful plants. Certain plants and pollens may cause allergic reactions (e.g., hay fever) in some volunteers. Those with allergies should bring and carry medication as appropriate and identify themselves to staff.
Large Animals	Many large, potentially dangerous mammals, including lions, rhinos, and elephants, live in the region. All wild animals can be dangerous. Do not approach, antagonize, or tease any animal. Because of wildlife, you may not leave the research camp (as defined by the lawns surrounding the camp, beyond which is tall grass). Teams may travel in open vehicles at sites with no large predators. When traveling between sites or in Pilanesberg National Park, where dangerous wildlife is present, the team will ride in closed vehicles. In Pilanesberg, you are strictly forbidden to lean or climb out of the vehicle windows. You may only exit the vehicle at tourist hides and at the Pilanesberg Visitors Centre. Field rangers will accompany groups in areas with large, dangerous animals and will carry weapons for your protection. Rangers are well trained in weapon use. Volunteers will NOT be permitted to handle weapons at any time. Weapons are kept unloaded unless the teams are walking transects. When with armed rangers, walk in single file and always stay behind the guide. Keep within five meters of the person in front of you, be as quiet as possible, and wear earth-toned clothing. Always obey the guide and be aware of your surroundings.
Monitoring for Evidence of Poaching	While this optional task is scheduled for times when poachers are not typically active, encountering a poacher is always possible. Those who take part in this activity should heed the instruction of the project staff, scouts, and/or trackers at all times. Do not engage with a poacher should one be encountered.
Animal Handling	You may participate in animal handling. Potential risks are bites or scratches. If you do participate, you'll receive instructions and a safety briefing, and be supervised or assisted at all times. You may not handle animals unless under the direct supervision of trained project staff. Protective equipment (e.g., gloves) will be provided. Always wash your hands after handling an animal.





Snakes	Venomous snakes are present, including spitting cobras and vipers. You'll receive training in snakebite prevention and what to do in the event of an incident before fieldwork begins. Snakebite procedures will also be posted at the field base. Wear ankle-high hiking boots in the field and closed-toe shoes at night. Never handle or attempt to catch a snake.
Arthropods	Ants, spiders, flies, mosquitoes, bees, and wasps are present in the field areas. Ticks, which can transmit encephalitis, may also be present. To minimize risk, bring and use insect repellent, check yourself daily for ticks, and wear neutral-colored field attire, including long pants tucked into socks. Ticks that are latched onto the skin should be removed with tweezers; staff can assist. Those with allergies should bring medication (antihistamines, at least two EpiPens, etc.) as appropriate.
Smoke Inhalation	Smoke inhalation is possible during the voluntary controlled burn monitoring. Reduce this risk by covering your nose and mouth with a scarf or mask (dust masks can be provided) and leaving smoky areas immediately. The fire team will place participants in areas deemed unlikely to be affected by smoke, but winds can change, and it is impossible to guarantee a smoke-free zone. Anyone with respiratory problems should not take part in burn monitoring and/or should stay in vehicles only.
Burns	It is possible, though highly unlikely, to sustain burns while monitoring controlled fires. Those who participate are never placed in areas known to be dangerous. At the first sign of danger, monitors will move to a safe area. In the unlikely event of a burn, normal first-aid procedures will be followed. Always follow staff and field-ranger instructions.
Climate/Weather	Risks include heat stroke, heat exhaustion, sunburn, dehydration, and sudden storms or drops in temperature, which may lead to chills. There can be large temperature differences between night and day; it can get quite cold at night, particularly in winter (June, July, and August). Carry at least one quart (about one liter) of water, a sun hat, and sunscreen during fieldwork. Drink plenty of water throughout the day and inform a staff member if you feel tired or ill. Fieldwork will be restricted during the hottest part of the day in the dry season. Bring waterproof and warm clothing; clothing that can be layered is highly recommended. Weather conditions will be monitored via local media during the expedition.
Swimming	There is a swimming pool at the local lodge that the team may visit on the recreational day. There is no lifeguard on duty. Always notify a staff member where and when you will be swimming and never swim alone or at night. The field sites also have several dams and natural water bodies—DO NOT go swimming or wading in any of these due to the risks of drowning and schistosomiasis, a disease caused by a parasite found in standing water.
Political/Social/Cultural	Political tensions in South Africa can often result in demonstrations, protests, strikes, or rallies, usually in urban areas. These events can turn violent. Avoid all protests, demonstrations, etc.
Project Tasks/Equipment	Project staff will instruct you on proper research methodology and safety. Follow staff and field ranger instructions at all times. Wear protective gloves (provided) if collecting scat samples and thoroughly wash your hands after all field excursions.
Personal Security	Most visits to South Africa are trouble free, but crime can be a problem, particularly in cities such as Johannesburg. Use sensible precautions in cities: do not carry money conspicuously; do not walk alone; ignore people who solicit you for donations; do not wear jewelry, "tourist outfits" (e.g., safari clothes, conspicuous cameras and/or binoculars) or revealing clothing; always take a taxi when going out after dark; and use ATMs with caution. There is a small risk of encountering crime when in transit between field sites. We reduce the risk of theft by locking up personal items while in transit and at field sites. We always avoid high-risk areas and will warn the team of any potential risks before entering hazardous areas. Do not bring expensive equipment or jewelry with you; leave unnecessary valuables at home.



SAFETY

HEALTH INFORMATION

PROJECT VACCINATIONS

REQUIRED: If traveling from countries or region where yellow fever is endemic, you must have a certificate of vaccination.

RECOMMENDED FOR HEALTH REASONS: Hepatitis A and B

ROUTINE IMMUNIZATIONS

All volunteers should have the following up-to-date immunizations: DPT (diphtheria, pertussis, tetanus), polio, MMR (measles, mumps, rubella), and varicella (if you have not already had chicken pox). Please be sure your tetanus shot is current.

Medical decisions are the responsibility of each volunteer and his or her doctor, and the following are recommendations only. Earthwatch can only provide details regarding suggested vaccinations, and we are not a medical organization.

ADVICE REGARDING DISEASES

Diseases found in South Africa include malaria, dengue fever, filariasis, leishmaniasis, onchocerciasis, African tick bite fever, trypanosomiasis, schistosomiasis, tuberculosis, and HIV. Traveler's diarrhea also affects many international travelers. Please see the U.S. Centers for Disease Control and Prevention (cdc.gov) or the World Health Organization (who.int/) websites for more information on these conditions and how to avoid them.

A few notes on vaccinations and treatment:

- **MALARIA** is not present at the research site; however, it is found elsewhere in the country. Chloroquine-resistant malaria is prevalent in some of the popular tourist areas of the Limpopo (Northern) Province, Mpumalanga (including Kruger National Park), and parts of KwaZulu-Natal. The risk can be greatly reduced by using malaria prophylactics and taking precautions against mosquito bites (using insect repellent and wearing long-sleeved shirts and trousers in the evening). Speak with your doctor about prophylactics.

- **RABIES:** A rabies vaccination is not compulsory for this expedition; you will not handle any rabies-carrying wildlife. However, you may wish to consult with their health care providers about the vaccine given the prevalence of loose and stray dogs in the region. Avoid stray dogs at all times.

The rabies pre-exposure vaccination consists of three doses over a 28-day period. Please be sure to consult your physician or travel health clinic well before your expedition to ensure that you have time for the full vaccination series. If you have previously been vaccinated, a booster shot may be required. The pre-exposure vaccination does not eliminate the need for post-exposure medical attention and treatment, but it does provide additional protection against the disease in event of a delay in treatment. In addition, bites or scratches should be immediately and thoroughly washed with soap, clean water, and a topical povidone-iodine solution or ethanol.

- **TUBERCULOSIS:** Volunteers returning from developing countries may wish to have a (PPD)-tuberculin skin-test to screen for potential infection.

EMERGENCIES IN THE FIELD

Minor injuries can be treated onsite. If medical advice is required a local doctor is situated 20 minutes away from the Mankwe campsite and from Pilanesberg National Park in Mogwase. There is also a private hospital with an emergency room in Rustenberg, approximately a 45-minute drive from Mankwe and Pilanesberg. If medical evacuation is necessary, Pilanesberg Airport, approximately a 30-minute drive from Mankwe, has the nearest airstrip. Mankwe also has landing permission for an airlift anywhere on site in case of emergency.

If there's an emergency at home for which a volunteer must leave the expedition early, he or she will be transported by vehicle to the Sun City bus terminal to catch a bus to the Johannesburg International Airport. The bus company runs a private shuttle to the airport with three departures a day for approximately R500 (US\$70, €70, £50 as of January 2010) per person one way.



PHYSICIAN, NURSE, OR EMT ON STAFF: Project staff members are not medical professionals.

STAFF CERTIFIED IN CPR AND FIRST AID: Dawn Scott, Lynne MacTavish, Dougal MacTavish, Charles Theron, Sam Schimmel and Lauren Jones.

NEAREST CLINIC:

Dr. Kirsten, Mogwase shopping complex

TEL: +27 (14) 552-1637

20-minute drive from the project site

NEAREST HOSPITALS:

Ferncrest Hospital

Moumo Street, Thlabane, Rustenburg

TEL: +27 (14) 568-4399

FAX: +27 (14) 565-4346

Peglarae Hospital

104 Kock Street, Rustenburg

TEL: +27 (14) 597-2680

FAX: +27 (14) 592-7527

45-minute drive from the project site

INSURANCE

Travel insurance is included in the contribution you pay to Earthwatch. The insurance covers your travel medical risks, including medical expenses and emergency medical evacuation, while you are traveling. It also provides trip cancellation insurance and baggage and personal money insurance. It does not provide personal liability insurance. Earthwatch's insurance is applicable during travel to and from the expedition site and the duration of the expedition, but does not apply to detours for personal vacations made on the same trip. This insurance policy is secondary to your existing health insurance policy.

For more information, please see earthwatch.org/expeditions/travel-insurance. Refer any queries regarding Earthwatch's travel policy to our insurance liaison at +1 (978) 450-1222 or insurance@earthwatch.org.

If you booked through Earthwatch Australia, please contact them at +61 (0) 9016 7590 or earth@earthwatch.org.au for any queries.

EARTHWATCH'S 24-HOUR EMERGENCY HOTLINE (OUTSIDE AUSTRALIA)

Call Earthwatch's 24-hour on-call duty officer in the U.S.:

+1 (978) 461-0081

+1 (800) 776-0188 (toll-free for calls placed from within the U.S.)

HEALIX INTERNATIONAL:

+44-20-3667-8991 (collect calls and reverse charges accepted)

U.S. TOLL FREE: +1-877-759 3917

U.K. FREE PHONE: 0-800-19-5180

EMAIL: earthwatch@healix.com

EARTHWATCH'S 24-HOUR EMERGENCY HOTLINE (WITHIN AUSTRALIA):

+61-0-3-8508-5537

After business hours, leave a message with our live answering service. State that you have an emergency and give the name of your expedition, your name, the location from which you are calling, and if possible, a phone number where you can be reached. An Earthwatch staff person will respond to your call within one hour.

EMERGENCY MEDICAL AND EVACUATION ASSISTANCE

For emergency assistance in the field, please contact Earthwatch's 24-hour emergency hotline number highlighted in the box. You may also contact our assistance provider, Healix International, at the number highlighted in the event of a medical or evacuation emergency or for routine medical and travel advice, such as advice on visas and vaccine requirements.



PROJECT STAFF

YOUR RESOURCES IN THE FIELD



EARTHWATCH SCIENTIST DR. DAWN SCOTT, a principal lecturer at the University of Brighton (U.K.), specializes in mammalian predator and prey ecology. In 2000, she completed her Ph.D. on aspects of the ecology of desert rodents in Jordan. Dr. Scott has over ten years of research experience and expertise in mammal ecology, biodiversity, and behavior. She has worked on research projects on human-wildlife conflict in Jordan, Chile, Zambia, South Africa, Indonesia, and the U.K. **Schedule: To be determined**



EARTHWATCH SCIENTIST LYNNE MACTAVISH has served as the operations manager at Mankwe Wildlife Reserve since 1999. She has worked in the tourist industry for more than eighteen years and is an experienced field guide. She received the UBS African Scientist Programme fellowship award for training in principal investigator responsibilities, scientific training, and support. She has been fundamental in developing this project and its success, and leads the field training, safety assessment, data collection, and field logistics. **Schedule: All teams**



EARTHWATCH SCIENTIST DR. ANJA ROTT is a principal lecturer at the University of Brighton. She earned her Ph.D. researching parasitoid food webs at Imperial College (U.K.). She has more than fifteen years of experience in academic research with expertise in community, population and chemical ecology, and entomological ecology (namely in multi-trophic insect plant interactions and pollination and dung beetle ecology). She has conducted fieldwork in South Africa, India, and Europe. **Schedule: Team 4**

EARTHWATCH SCIENTIST NIALL WALDEN is a postgraduate student at the University of Brighton. He has a BSc in Ecology and has been visiting the field site since 2012. He has been involved with the Scavengers research project since 2013 when he led and conducted research into perceptions and attitudes of South African school children to carnivores. His interests are in ecosystem services and human attitudes towards wildlife. **Schedule: Teams 1-4**

EARTHWATCH SCIENTIST DR. RICHARD YARNELL (Nottingham Trent University) will provide scientific advice and support from the U.K. Other park wardens, staff, and students may also join teams in the field.

NOTE: Staff schedules are subject to change.

AN EARTHWATCH TEEN TEAM FACILITATOR will also accompany your team from the time you step off the plane for the rendezvous until the end of the expedition. If you have any questions or problems, such as issues with another volunteer, homesickness, or an emergency back home, please talk to your facilitator. Follow your facilitator's advice on safety and personal conduct. All facilitators have experience teaching and leading groups of teenagers. Remember, your facilitator is there for you. **[Teen: Facilitator ratio is approx. 6:1]**



RECOMMENDED READING

YOUR RESOURCES AT HOME

RESOURCES

BOOKS

- Carruthers, V. *Wildlife of Southern Africa*. Cape Town: Struik Publishers, 2000. Note: Covers a wide range of wildlife, but not in much detail.
- Mills, G. *Kalahari Hyenas: Comparative Behavioral Ecology of Two Species*. Caldwell, N.J.: Blackburn Press, 2003.

ARTICLES

- Thorn, M., Green, M., Dalerum, F., Bateman, P.W., and Scott D.M. "What drives human–carnivore conflict in the North West Province of South Africa." *Biological Conservation* (150): 23–32.
- Thorn, M., Green, M., Keith, M., Marnewick, K., Bateman, P.W., Cameron, E. Z., and Scott D.M. "Distribution patterns and implications for the status of carnivore populations in northern South Africa." *Oryx* 5 (44).
- Thorn, M., Green, M., Bateman, P.W., Waite, S. and Scott, D.M. "Brown hyenas on roads: Estimating carnivore occupancy and population size using spatially auto-correlated sign survey replicates." *Biological Conservation* 144(6): 1799–1807.
- Thorn, M., Green, M., Bateman, P.W., Cameron, E., Yarnell, R., and Scott D.M.. "Comparative performance of spoor surveys, spotlighting, camera trapping and audio playbacks in a landscape-scale carnivore survey." *South African Journal of Wildlife Research* 40(1): 79–86.

FIELD GUIDES

- Estes, R. *The Behavior Guide to African Mammals*. Berkeley, CA: University of California Press, 1991. **NOTE:** Excellent for large mammal behavior.
- Sinclair, I., Hockey, P., and Tarboton, W. *Guide to the Birds of Southern Africa*. 2nd ed. Cape Town: Struik Publishers, 1998. Note: Essential for birdwatchers.
- Stuart, C. and Stuart, T. *Field Guide to Mammals of Southern Africa*. Cape Town: Struik Publishers, 2000. Note: Good photos for animal identification.
- Stuart, C. and Stuart, T. *Field guide to Tracks and Signs of Southern and East African Wildlife*. Cape Town: Struik Publishers, 2000. Note: Good photos for track identification.

WEBSITES

- **MANKWE WILDLIFE RESERVE:** mankwewildlifereserve.net/
- **PILANESBERG NATIONAL PARK:** tourismnorthwest.co.za/pilanesberg/index.html
- **IUCN HYAENA SPECIALIST GROUP:** hyaenidae.org/about-the-group/richard-yarnell-dawn-scott.html
- **PUBLICITY FILM:** youtube.com/user/EarthwatchInstitute
- **ENCYCLOPEDIA OF LIFE:** fieldguides.eol.org/fieldguide-view.php?guidekey=159

EARTHWATCH SOCIAL MEDIA

- **FACEBOOK:** facebook.com/Earthwatch
- **YOUTUBE:** youtube.com/earthwatchinstitute
- **TWITTER:** twitter.com/earthwatch_org



PARTICIPANT RIGHTS AND RESPONSIBILITIES



This document contains important information concerning Earthwatch Institute policies and participant rights and responsibilities for inclusion in an Earthwatch expedition. Please read this document thoroughly and sign the Liability Release section of your Earthwatch Participation Form to indicate that you understand and accept the risks inherent to your expedition and the policies, rights, and responsibilities enumerated in this document. You will not be permitted to participate in an expedition until Earthwatch has received the signed release form.

INTELLECTUAL PROPERTY RIGHTS

It is permissible to share photos, videos, and stories of your expedition with family, friends, local media, and in a public forum. Sharing your new perspectives and experiences is welcomed and encouraged.

However, please recognize that all information, data, and images shared or gathered in the course of your expedition's field work become the intellectual property of the Earthwatch scientist. Co-opting or plagiarism of data, images, or information gathered during an expedition for use in a scientific thesis, master's, or PhD work, or for profit or for the academic or business use of a third party without the permission of the Earthwatch scientist is strictly prohibited. Please be aware that data gathered during the interviewing of local people become the intellectual property of the Earthwatch scientist. Earthwatch scientists have the right to place additional restrictions on your ability to share data or certain research-related images.

Conversely, an Earthwatch scientist may give written permission to use data and images for academic or profitable activity. Please be sure to ask what is acceptable to the Earthwatch scientist.

Fellows or scholarship recipients are sometimes required to submit a written report reflecting what they have learned on a project, sometimes as a step toward developing a curriculum. Earthwatch scientists have the right but not the obligation to review and edit materials involving information gathered on one of their expeditions.

DISCRIMINATION

Earthwatch does not discriminate on the basis of race, religion, ethnicity, national origin, gender, sexual orientation, or any other reason prohibited by applicable law and respects participants' right to privacy. However, you must be aware that local laws in countries in which Earthwatch operates may not be antidiscriminatory and that the possibility exists that local residents may not have an awareness of preferred practice regarding discrimination.

Discrimination on the basis of race, religion, ethnicity, national origin, gender, or sexual orientation will not be tolerated on Earthwatch teams. Disruptive behavior or verbal, physical, or any other type of abuse or harassment will also not be tolerated. Violation of Earthwatch's nondiscrimination policy is grounds for expulsion from the program without a refund.

INTIMATE RELATIONSHIPS

Earthwatch scientists, their staff, their colleagues, and their associates are prohibited from becoming romantically involved with participants during the entire duration of the period that the team is in the field. Romantic relationships that may otherwise seem permissible may eventually create an unpleasant or unproductive work environment and are therefore prohibited for the duration of an Earthwatch project.

SEXUAL HARASSMENT

Please recognize that the relationship that exists between Earthwatch scientists and staff and participants is analogous to the student-teacher relationship. Therefore, please be aware of the following policies.





Sexual harassment of participants by the Earthwatch scientist or Earthwatch staff is prohibited. Likewise, sexual harassment of other participants, Earthwatch field staff, or local people by participants is also prohibited.

Sexual harassment infringes on an individual's right to an environment free from unsolicited and unwelcome sexual overtones of conduct either verbal or physical. Sexual harassment does not mean occasional compliments of a socially acceptable nature.

Sexual harassment refers to conduct which is offensive, which harms morale, or which interferes with the effectiveness of Earthwatch expedition teams; such conduct is prohibited. Lewd or vulgar remarks, suggestive comments, displaying derogatory posters, cartoons, or drawings, pressure for dates or sexual favors, and unacceptable physical contact or exposure are examples of what can constitute harassment. No one should be touched in areas that would be covered by a bathing suit. It is important to realize that what may not be offensive to you may be offensive to participants, the local population, or Earthwatch field staff.

Any individual who feels subjected to sexual harassment or has any knowledge of such behavior should report it at once to the Earthwatch scientist, Field Team Leader, or other Earthwatch staff member. The Earthwatch scientist or Field Team Leader will notify Earthwatch when an accusation of sexual harassment or abuse is made or when such conduct is witnessed.

All reports of sexual harassment will be handled with discretion and will be promptly and thoroughly investigated. Any participant who is found to have engaged in conduct constituting sexual harassment will be removed from the expedition at his or her own expense. If a minor is involved in allegations of sexual harassment, his or her parents or guardians will be contacted.

DRUGS

Laws on drug use in most countries are severe and may impose lengthy prison terms or the death penalty. The manufacture, possession, use, purchase, or sale of illegal drugs or other illegal substances while on an Earthwatch expedition is strictly prohibited. Prescription drugs may only be purchased and used by the individual indicated on the prescription in keeping with their intended use guidelines.

ALCOHOL

Local statutes, customs, practices, ordinances, and regulations with regard to the use, possession, sale, or purchase of alcohol are applicable to all participants and project staff on Earthwatch expeditions. Participants and project staff on Earthwatch expeditions must comply with the law of the country in which a project is located regarding the minimum age required to consume alcohol. In addition, restriction on the use, possession, sale, or purchase of alcohol may be set by the Earthwatch scientist. Any restrictions on the consumption of alcohol should be clearly outlined by the project staff in the on-site briefing to participants at the start of the project and in the expedition briefing.





Consumption or possession of alcohol or smoking is not permitted on any Earthwatch Teen Team, regardless of local law.

Excessive consumption of alcohol by staff or participants is not acceptable on any Earthwatch project. Intoxication can jeopardize personal safety, in addition to the safety of the team. It can also cause delay and hinder response in the event of a crisis or emergency situation.

Earthwatch staff and the Earthwatch scientist have the discretion to remove individuals from the project who consume alcohol in a time and manner that endanger the safety and/or productivity of the expedition.

MINORS

Earthwatch considers participants less than eighteen (18) years of age to be minors. Minors are not permitted to participate on any of Earthwatch's standard teams unless accompanied by a parent or legal guardian, in which case the minimum age is fifteen (15). Guardians accompanying minors on standard teams must be 21 years of age or over. Minors on standard teams do not receive additional guidance or supervision from Earthwatch beyond what is offered to the adult participants. The total number of minors on standard teams may be limited on a project by project basis; this will be noted in the expedition briefing. A maximum of two minors may accompany each parent or guardian on a standard or Family Team. Earthwatch has

developed teams specifically for 15-, 16- and 17-year-olds ("Teen Teams") as well as teams specifically for families ("Family Teams") with children as young as 10 years. These teams focus on the same research activities and have the same expectations as our regular teams, but with more facilitation and support. Exceptions for some projects may be made at the discretion of Earthwatch and the Earthwatch scientist. Due to a more in-depth screening process for certain programs that select candidates based on school year rather than age, there may be 18-year-olds fielding on the same team as 15-, 16- and 17-year-olds. Please be aware that some Earthwatch projects do not allow participation by minors in any circumstance.

PARTICIPANTS AND DRIVING

Participants are not allowed to drive project vehicles (including motorcycles or all terrain vehicles) or aircraft during an expedition. In select circumstances, participants may be able to drive boats under the direct supervision by project staff. These circumstances are predetermined by project staff in collaboration with Earthwatch. Participants must respect the restrictions for boat driving in place for each project.

If a project environment is such that participants can drive their own vehicles to the rendezvous, those who have driven themselves to the project may not drive their own vehicles to, from, or for project activities, including the transport of project equipment after arriving at the site.



Participants who have driven themselves to the project may choose to utilize their own vehicles during recreational time, but project staff will brief them on any driving restrictions. All driving during recreational time is done at your own risk.

Please be advised that the only exception to the above driving restrictions is emergency situations.

Riding in other participants' vehicles is not covered under the participants' insurance policy for the expedition. Riding in another participant's vehicle is done at a participant's own risk.

IN THE EVENT OF AN EMERGENCY

In the event of emergencies, judgments must be made by Earthwatch field staff and participants. While Earthwatch makes an effort to ensure that qualified people make the most informed decisions possible, occasionally first aid may be administered and other immediate steps taken by expedition participants who are not licensed medical providers.

Each Earthwatch expedition has safety protocols and emergency procedures in place. Earthwatch encourages team members (the field staff and participants) to exercise their best judgment with regard to their own safety and the safety of other team members. Other participants may perform "Good Samaritan" actions, or actions taken to assist fellow participants during emergency situations in the field. However, Earthwatch does not encourage or expect you to jeopardize your own safety or that of others in attempting to rescue or assist your fellow team members.

RIGHT OF REFUSAL

Earthwatch reserves the right to refuse an applicant's participation in an Earthwatch project at any time and to terminate any work being done by a participant and require the participant to vacate the project site if the Earthwatch scientist, Field Team Leader, or other Earthwatch staff member in his or her absolute discretion considers it appropriate. In this event, the participant (and his or her parents or guardians, if appropriate) will be responsible for arranging and paying for any accommodation, travel, or other arrangements which may be necessary following the termination of a participant's involvement in a project, for whatever reason, and will not be eligible for a refund.

Earthwatch may not refuse an applicant's participation in a project for discriminatory reasons (race, religion, ethnicity, national origin, gender, sexual orientation, or any other reason prohibited by applicable law). However, an application may be denied in the interest of team compatibility or due to logistical limitations. Earthwatch will make reasonable efforts to accommodate participants with disabilities, and the organization endeavors to find appropriate expeditions for those participants who have physical limitations. Refusal of an applicant is an unusual event and is generally done either because of an applicant's failure to meet the essential eligibility requirements of a particular project or in the interest of team compatibility. In the event that an applicant is refused participation for health reasons, Earthwatch will refund in full any deposit or payment made toward the expedition.

Earthwatch scientists have the right to refuse special requests, such as visits by media (film, photography, or print), special groups, or teams (students, donors, etc.), if they conflict with Earthwatch scientist schedules, safety, research objectives, or general performance of the team.

Any participant found in violation of any of the policies described in this document ("Participant Rights and Responsibilities") is subject to removal from the team at his or her own expense. By signing the Liability Release section of your Earthwatch Participation Form, you are indicating that you have read and understand the policies in this document. Removal of a participant from a team is at the discretion of the Earthwatch scientist, Field Team Leader, or other Earthwatch staff. In addition, Earthwatch will support the right of the Earthwatch scientist, Field Team Leader, or other Earthwatch staff to send a participant away from a project once in the field should his or her behavior compromise the safety, research objectives, or general performance of the team, or if the participant has violated a stated policy. In the event that a minor is dismissed from a project, Earthwatch will contact the participant's parents or guardians prior to his or her dismissal. Should a participant be removed from a team, he or she is responsible for any and all costs associated with departure from the team and will receive neither refund of the minimum contribution for the expedition nor any expenses incurred by participation on the expedition.

(November 2012)



COMMUNICATIONS

CONTACT INFORMATION

EMERGENCY COMMUNICATIONS

Many mobile phone networks can be used on the reserve, and coverage is generally good. All staff members will have mobile phones with them. VHF radios are also available during fieldwork. These phones are for project and emergency use only, and may not be used by volunteers for any other communications.

Complete travel information is not available in this version of the briefing.

Please contact Earthwatch with any questions.

The 24-hour duty officer contact at Earthwatch in the U.S. is +1 (978) 461-0081 or +1 (800) 776-0188 (see the box for calling instructions).

PERSONAL COMMUNICATIONS

There is no public phone on site, but it may be possible for volunteers to make limited calls during the expedition from the office's landline phone. Prepaid calling cards can be used with this phone, but these are not readily available to buy. Please try to make any essential calls while you are in Johannesburg, before the rendezvous. There is also generally good coverage if you wish to use your own mobile phone. Many networks will let you use your mobile phone abroad; please check with your network in advance. It is also possible to rent a mobile phone at the airport in Johannesburg. There is limited access to charging electrical equipment, including mobile phones, and this is usually done overnight. Mobile phones may not be used during project work or activities, especially while in the field.

Postcards and stamps can be bought from Lynne MacTavish to send mail home.

Personal communication with outsiders is not always possible while participating in an expedition. Earthwatch encourages volunteers to minimize outgoing calls and immerse themselves in the experience; likewise, family and friends should restrict calls to urgent messages only.

EARTHWATCH'S 24-HOUR EMERGENCY HOTLINE (OUTSIDE AUSTRALIA)

Call Earthwatch's 24-hour on-call duty officer in the U.S.:

+1 (978) 461-0081

+1 (800) 776-0188 (toll-free for calls placed from within the U.S.)

HEALIX INTERNATIONAL:

+44-20-3667-8991 (collect calls and reverse charges accepted)

U.S. TOLL FREE: +1-877-759 3917

U.K. FREE PHONE: 0-800-19-5180

EMAIL: earthwatch@healix.com

EARTHWATCH'S 24-HOUR EMERGENCY HOTLINE (WITHIN AUSTRALIA):

+61-0-3-8508-5537

After business hours, leave a message with our live answering service. State that you have an emergency and give the name of your expedition, your name, the location from which you are calling, and if possible, a phone number where you can be reached. An Earthwatch staff person will respond to your call within one hour.

If necessary, volunteers can be reached via the contact information below.

ADDRESS: Mankwe Game Ranch

P.O. Box 20784

Protea Park 0305

North West Province, South Africa

Mail can take over two weeks to arrive and is not recommended for communicating with volunteers during the expedition.

PHONE: + 27 (0) 83-453-3133/+ 27 (0) 83-380-1914

These numbers are for emergency purposes only. If calling from within South Africa, drop the "27" and start dialing with the "0." Calls from outside South Africa do not include the "0."

EMAIL: mankwe@telkomsa.net

This address is for emergency purposes only.



MESSAGE FROM EARTHWATCH

DEAR EARTHWATCHER,

Thank you for joining this expedition! We greatly appreciate your decision to contribute to hands-on environmental science and conservation.

As an Earthwatch volunteer, you have the opportunity to create positive change. And while you're out in the field working toward that change, we are committed to caring for your safety. Although risk is an inherent part of the environments in which we work, we've been providing volunteer field experiences with careful risk management and diligent planning for over 40 years. You're in good hands.

We hope this expedition will inspire you to get more involved in conservation and sustainable development priorities—not just out in the field, but also when you return home. We encourage you to share your experiences with others, and to transfer your skills and enthusiasm to environmental conservation efforts in your workplace, community, and home.

If you have questions as you prepare for your expedition, contact your Earthwatch office. Thank you for your support, and enjoy your expedition!

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Mason", with a long horizontal flourish extending to the right.

Larry Mason
President and CEO



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Phone: 81-0-3-6686-0300
Fax: 81-0-3-6686-0477