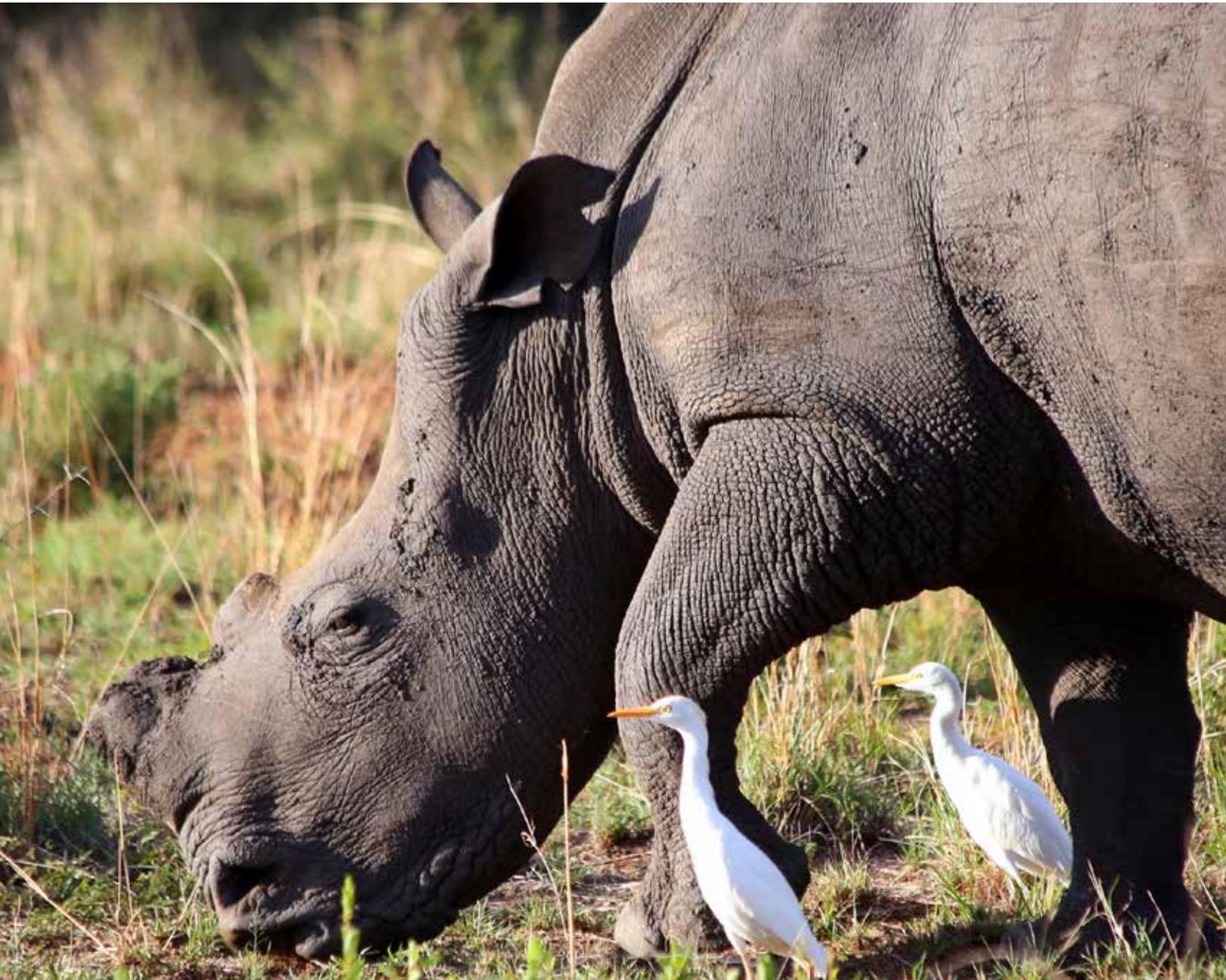




CONSERVING ENDANGERED RHINOS IN SOUTH AFRICA



PLANNING CHECKLIST

PLANNING CHECKLIST

IMMEDIATELY

- Make sure you understand and agree to Earthwatch's **Terms and Conditions** and the **Participant Code of Conduct**.
- If you plan to purchase additional travel insurance, note that some policies require purchase at the time your expedition is booked.

6 MONTHS PRIOR TO EXPEDITION

- Log in at earthwatch.org to complete your participant forms.
- If traveling internationally, make sure your passport is current and, if necessary, obtain a visa for your destination country.
- Bring your level of fitness up to the standards required (see the Project Conditions section).

90 DAYS PRIOR TO EXPEDITION

- Pay any outstanding balance for your expedition.
- Book travel arrangements (see the Travel Planning section for details).
- Make sure you have all the necessary vaccinations for your project site.

60 DAYS PRIOR TO EXPEDITION

- Review the packing list 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 parent, relative, or friend.
- Leave copies of your photo ID and flight reservation number with a parent, relative, or friend.

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.

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NOTE FROM THE PI

DEAR EARTHWATCHER

Welcome to a unique opportunity to be involved with research that aims to help to conserve rhinos in South Africa.

The current extent of poaching and consequential declines in rhino populations throughout Africa is shocking. On average more than three rhinos are illegally killed every day in Africa and at the current rate this species may go extinct in the next 10–20 years. Our project aims to help conserve rhino population by providing evidence of the impacts of different management on the behavior of rhinos and investigating how they are essential to support other biodiversity.

As part of this Earthwatch team, you will be involved in monitoring the rhino movements and recording their behavior as well as assessing bird and vegetation biodiversity associated with rhinos and their habitats and assessing the effectiveness of a selection of conservation tools for managing rhinos. Helping to collect evidence to protect and value these animals for the future.

As volunteers you will be involved in many different aspects of the project survey work and education side. But for all of our hard work, there will also be exciting opportunities 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.

Angelo Pernetta, Ph.D.

Rachel White, Ph.D.

Maureen Berg, Ph.D.

CONNECT

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AT [YOUTUBE.COM/
EARTHWATCHINSTITUTE](https://www.youtube.com/earthwatchinstitute)





THE RESEARCH

CONSERVING ENDANGERED RHINOS IN SOUTH AFRICA



THE STORY

Rhino populations are in crisis due to the high value of rhino horn combined with widespread poaching. In the past decade, there has been an exponential increase in poaching of both white rhinos and black rhinos in South Africa (Pernetta, 2014), which contains 74% of the world's remaining rhino population. Between 2010 and 2015 4,843 rhinos have been poached in South Africa, with 1,175 deaths in 2015 alone. This amounts to an average of three individuals per day (Pernetta, 2014). Even with a reduction in the losses to poaching since 2014, it is estimated at the current rates of poaching rhinos in South Africa may be extinct within the next 10–20 years. Poaching is predominantly driven by illegal trade of rhino horn in South East Asia; on the black markets of Southeast Asia rhino horn is reported to be worth more than gold (Milliken & Shaw, 2012).

This situation requires immediate action not only to reduce the levels of poaching but also to investigate 1) the impacts of anti-poaching management land and animal management (such as horn trimming rhinos) on the animals themselves and to 2) determine the impacts of the loss of this megaherbivore on ecosystems to help quantify their functional role and alternative economic value for conservation initiatives.

The goal of the project is to provide information that will help to conserve and manage rhinos in South Africa. We share information with rhino owners on the behavioral and welfare implications of horn trimming and provide supporting evidence on land management practices that may help to identify and reduce poaching risk. In addition we will demonstrate how rhinos support biodiversity and ecosystem functions, and in so doing, provide further evidence of their inherent value in ecosystem support.



RESEARCH AIMS

The research has the following objectives and will address these research questions:

- 1) To evaluate the locations and timing of white rhinos using different parts of the landscape in the game reserve and to determine what might drive those “decisions” in the rhinos.
- 2) To investigate white rhino habitat use and spatial behaviours, as well as changes in vigilance and social interactions pre and post horn trimming (or dehorning).
- 3) To investigate the biodiversity-supporting role of white rhinos, including assessing which birds and herbivorous ungulates benefit from their associations with the rhinos via feeding interactions in order to evaluate the potential impact of localized loss of this megaherbivore on avian communities.
- 4) To identify which deterrents might be deployed to prevent rhinos from using areas of high risk (with respect to poaching) within the reserve.
- 5) To determine what is the most effective, accurate and cost-effective approach for locating poachers following incursions into private game reserves.
- 6) To determine the impact of direct and indirect experience on rhino conservation on an individual’s knowledge, opinion and action towards rhino conservation.



HOW YOU WILL HELP

Research tasks volunteers will be involved with:

- Finding and recording locations of individual rhinos every day for group composition, spatial distribution and habitat use assessment.
- Behavioral observations of rhinos on foot and from vehicles; Observe and record their behavior over set periods to time to determine habitat use, foraging activity, interactions between individuals of different ages and genders, and determine the extent of behavior to indicate vigilance in relation to perceived threats.
- Recording foraging signs of rhinos and assessing foraging behavior from visual, observational and vegetation surveys.
- Bird and mammal transects and point counts. Determine rhino species associations by surveying birds and mammals to assess their species richness and populations in areas where rhinos are and are not present.
- Conduction of vegetation surveys: When the animals move off of foraging sites, record the vegetation in the area to assess habitat use
- Walkover surveys for habitat mapping.
- Behavioral analysis of rhinos at inaccessible sites from camera trap videos.
- Helping set up deterrent experiments and monitoring rhino responses to those deterrents.
- Assisting with simulated poacher incursions, both acting as poachers, and assisting in on-foot and drone-based surveys.



DAILY LIFE IN THE FIELD

PLANS FOR YOUR TEAM



You'll have one or two days of training in field and survey techniques, behavioral methods, use of GPS and field equipment, and identification of mammals and birds. Other educational opportunities will happen throughout the expedition, covering topics such as the history of the project; health and safety on site and during fieldwork; rhino ecology and conservation; rhino conservation and management in South Africa; methodological theory and practice; bird and mammal identification with qualified staff; game reserve management; research methodology; basic field skills, distance estimation, use of GPS, species identification, and more.

ITINERARY

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.

ALL TEAMS:

Rhino monitoring, behavioral studies, camera trapping, rhino hotspot mapping

RAINY SEASON (DECEMBER–MARCH—WEATHER DEPENDENT):

Habitat mapping and vegetation assessment foraging studies, bird and mammal associations

DRY SEASON (MAY–JULY)

Possible assistance with horn trimming

WHEN POSSIBLE:

Local school visit



ITINERARY AND DAILY SCHEDULE

TYPICAL ITINERARY

DAY 1

Meet and travel to field site, introduction and orientation drive, downtime in the evening.

DAY 2

Orientation, field training in methodology, identification of mammals/birds, group activities, downtime in the evening

DAYS 3–7

Rhino monitoring, behavioral observations, habitat mapping/surveys, biodiversity assessments.

DAY 8

Recreational day with 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

Rhino monitoring, behavioral observations, habitat mapping/surveys, biodiversity assessments.

DAY 11

Data collation, project summary, and sundowner evening at field site.

DAY 12

A transfer company will pick up the team at 12:00 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
6:00 a.m.	Rise, quick breakfast
6:30 a.m.	Begin early morning fieldwork
9:00 a.m.	Breakfast
10:00 a.m.	Morning fieldwork
12:00 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 data check, summary/discussion

RECREATIONAL DAY

For safety reasons, the team will spend the recreational day as a group. You will have the option to stay at the accommodations to rest, but you CANNOT leave camp or go off on your own if you choose this option. 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 field site
10:00 a.m.	Visit local curios market
11:00 a.m.	Visit Kwa Maritane Lodge (game hide 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 field site for dinner
8:00 p.m.	Evening around campfire



ACCOMMODATIONS AND FOOD

ABOUT YOUR HOME IN THE FIELD



During the expedition, your team will be based at campsite in the heart of a private wildlife reserve at a scenic spot overlooking a dammed lake.

SLEEPING

There are three different accommodations at the reserve. 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 and the gender makeup of the team. The house sleeps up to eight people in two separate bedrooms. There are three tents that sleep two to four people and have an en suite bathroom with flush toilet, sink, and shower. The two wooden cabins have an en suite bathroom, and can accommodate up to four volunteers, but are generally kept to two when possible. Most people will share a sleeping area with one or two others of the same gender. Although not guaranteed, it may 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 teams during the South African summer (October–January 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

The electricity at the site is generated by solar power. It is 220/230 volts AC, 50 Hz. Most plugs are Type M (three round pins) but some plugs with two smaller pins are also found on appliances. U.S.-made appliances may need a transformer. The campsite has electrical outlets, so cameras, cell phones, iPods, etc. may be charged during the day. Please do not bring unnecessary electrical equipment, as the system at the campsite is easily overloaded and charging capabilities will be limited. This will help preserve energy for other camp necessities. Some equipment (e.g., rechargeable batteries) can be charged at the 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.



PERSONAL COMMUNICATIONS

The cellphone reception at the camp has greatly improved, so volunteers can use smartphones 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 the reserve. 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 barbecue areas with fire pits and a communal teaching hut with a field library and equipment, as well as two covered study areas outside. There is also a small shop on site where you can purchase snacks, project clothing/souvenirs and on adult standard teams only, some alcoholic refreshments. (Alcohol is not permitted on teams with minors.) The shop accepts USD, GBP (British Pounds), and South African Rands. All proceeds go towards the anti-poaching efforts on the reserve.

DISTANCE TO THE FIELD SITE

The reserve 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 the Wildlife Reserve in open-topped vehicles, but closed vehicles will be used at all other sites and on public roads. There are no services in walking distance. The nearest town is Mogwase, a 15-minute drive from camp.

FOOD AND WATER

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 *potjiekos* (game stews) and *braais* (barbeques), using free-range game from the game reserve. You don't need to assist in shopping, food preparation, or clean up, unless you want to. 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 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 Great Britain Pounds, U.S. Dollars, and South African Rand; shop accounts may not be paid by traveler's checks or credit cards.

Alcohol consumption is not permitted by minors or on teen teams regardless of local law. It is permitted on adult teams, and available for purchase at the camp.

The following are examples of foods you may find in the field. Variety depends on availability. We appreciate your flexibility.

TYPICAL MEALS

Breakfast	Cereal, fruit, toast/bread, jam, tea, coffee, occasionally hot breakfast
Lunch	Salad, quiche, soups, bread rolls
Dinner	Braais, stews, pasta, potatoes, vegetables, vegetarian options, dessert
Snacks	Fruit, biscuits, crisps (potato chips); chocolate, etc. may be purchased from the on-site shop at your own expense
Beverages	Clean drinking water available on site

SPECIAL DIETARY REQUIREMENTS

Please alert Earthwatch to any special dietary requirements (e.g., diabetes, lactose intolerance, nut or other food allergies, vegetarian or vegan diets) as soon as possible, and note them in the space provided on your volunteer forms.

We can accommodate vegetarian, vegan, gluten free, nut free and lactose free diets but very specialized diet accommodation is not guaranteed and can be very difficult due to availability of food, location of field sites, and other local conditions. You have special dietary needs; it is recommended that you bring supplemental snacks.

PROJECT CONDITIONS

THE FIELD ENVIRONMENT

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.

GENERAL CONDITIONS

The following are averages. Please check weather resources for your team dates for more accurate weather predictions. Projects have experienced unseasonable weather at all times of year.

HUMIDITY: 20%–50%

TEMPERATURE RANGE: 42° F–95° F (0° C–35° C)

October/November temperature: Average is 86° F (30° C) in the day and 50° F–55° F (10° C–13° C) at night.

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

June/July/August temperature: Temperatures can drop below freezing at night and be up to 79° F (28° C) in the day.

ESSENTIAL ELIGIBILITY REQUIREMENTS:

All participants must be able, independently or with the assistance of a companion, to:

- Take an active role in your own safety by recognizing and avoiding hazards if and when they arise (including, but not limited to, those described in Earthwatch materials and safety briefings). Comply with project staff instructions and recommended safety measures at all times.
- Be able to effectively communicate to the staff if you are experiencing distress or need assistance.



- Be able to get along with a variety of people from different backgrounds, often in close proximity, for the duration of your team.
- Be comfortable being surrounded by a language and/or culture that is not your own.
- Consistently and immediately comply with instructions from all staff field rangers, and guides.
- See clearly (with or without corrective lenses) to a distance of 500 meters (1,640 feet), and see close up to read research instruments. We may go out in the evening or for a night drive, so the ability to see in low light is also a must.
- Enjoy being outdoors all day in all types of weather, often exposed to the sun for long periods of time or 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 five kilometers (3.0 miles) per day and generally up to three hours per day 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.
- Without assistance, climb in and out of project vehicles, which may include vans, trucks with high beds, and open-topped safari vehicles.
- Sit or ride in project vehicles with seat belt fastened and in close proximity to other team members while traveling over rough and bumpy roads or have to sit still during behavioral observations for up to approximately five 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 and identify plants on the ground and in the brush and to access or set up camera traps.
- Keep as quiet and still as possible while observing animals and 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 (only applicable to May–August teams).
- Tolerate not having a reliable source of electricity throughout the night for the length of the project.



POTENTIAL HAZARDS

CONSERVING ENDANGERED RHINOS IN SOUTH AFRICA

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 seat belts 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 (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 the Wildlife Reserve. Those with allergies should note this on their participation forms and bring medication as appropriate. Several types of snakes are present in the reserve, including venomous snakes.
Perimeter Fence	The reserve perimeter fence is electrified because of wildlife. Do not touch this fence to avoid shock.
Project Location	The reserve 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.
Biting insects (ticks, mosquitoes, scorpions, flies and wasps) and vector-borne diseases	Trypanosomiasis, leishmaniasis, chikungunya, tick bite fever, dengue, and West Nile virus are present in this region. Participants are advised to use insect repellent (20–30% DEET) and wear neutral-colored field attire with long sleeves and long pants tucked into socks. Participants with potential for allergic reactions to insect bites should bring appropriate medications (antihistamines, at least two Epi-Pens as necessary). Volunteers will be informed about where ticks may be more prevalent in the field and how to avoid them. Participants and staff will be reminded to thoroughly check their skin and clothes for ticks daily. If a tick is found, participants will be instructed how to remove it properly (it will be removed using fine-point tweezers, grasping the tick as close to its mouth as possible, slowly pull the tick straight out. The area will be immediately washed with soapy water). Malaria is not present at the research site; however, it is found elsewhere in the country, including chloroquine-resistant malaria.
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 pollen 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, buffalo, 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 instructions of the project staff, scouts, and/or trackers at all times. Do not engage with a poacher should one be encountered.
Animal Handling and Rabies	You may participate in animal handling. Potential risks are bites or scratches. If you 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. Animals known to carry Rabies will not be handled, however, you may wish to consult with their healthcare providers about the vaccine given the prevalence of loose and stray dogs in the region. Avoid stray dogs at all times.
Firearms	Field staff may carry firearms during research and non-research activities. The firearms are mainly for firing warning shots in the event of an animal encounter. This is standard practice in a bush environment. Only trained field staff will handle firearms. Volunteers will not hold or use firearms while on this project.



HEALTH & SAFETY

CONSERVING ENDANGERED RHINOS IN SOUTH AFRICA



EMERGENCIES IN THE FIELD

Project staff members are not medical professionals. Minor injuries can be treated onsite. If medical advice is required a local doctor is located 20 minutes away by vehicle from the 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 the reserve and Pilanesberg. If medical evacuation is necessary, Pilanesberg Airport, approximately a 30-minute drive from the reserve, has the nearest airstrip. The reserve 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 emergency assistance in the field, please contact Earthwatch's 24-hour emergency hotline number on the last page of this briefing. Earthwatch is available to assist you 24 hours a day, 7 days a week; someone is always on call to respond to messages that come into our live answering service.

IMMUNIZATIONS & TRAVEL VACCINATIONS

Please be sure your routine immunizations are up-to-date (for example: diphtheria, pertussis, tetanus, polio, measles, mumps, rubella and varicella) and you have the appropriate vaccinations for your travel destination. Medical decisions are the responsibility of each volunteer and his or her doctor, and the following are recommendations only. Visit the [cdc.gov](https://www.cdc.gov) or [who.int](https://www.who.int) for guidance on immunizations.

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

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](https://www.cdc.gov)) or the World Health Organization ([who.int](https://www.who.int)) websites for more information on these conditions and how to avoid them.



TRAVEL TIPS

SUGGESTIONS FOR THE ROAD



YOUR DESTINATION

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

TIME ZONE: GMT + 2 hours.

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

LOCAL CURRENCY: South African Rand (ZAR; symbol R) = 100 cents. There are currency exchange counters at Johannesburg airport. Cash machines/ATMs can be accessed at Mogwase and Rustenberg (communities close to the research site). You will need money to cover additional snacks, drinks, and your souvenirs. Operations Manager Lynne MacTavish can often accept and change common currencies.

COUNTRY AND PROJECT ENTRY REQUIREMENTS

Entry visa requirements differ by country of origin, layover, and destination, and do change unexpectedly. For this reason, please confirm your visa requirements at the time of booking and, again, 90 days prior to travel. Please apply early for your visa (we recommend starting 6 months prior to the start of your expedition). Refunds will not be made for volunteers cancelling due to not obtaining their visa in time to meet the team at the rendezvous. You can find up to date visa requirements via the following site:

www.travisa.com

If a visa is required, participants should apply for a TOURIST visa. Please note that obtaining a visa can take weeks or even months. We strongly recommend using a visa agency, which can both expedite and simplify the process.

Generally, passports must be valid for at least six months from the date of entry and a return ticket is required.

Minors have special entry requirements for South Africa. Details can be found at:

<http://www.dha.gov.za/index.php/statements-speeches/621-advisory-new-requirements-for-children-travelling-through-south-african-ports-of-entry-effective-1-june-2015>

CONTACT INFORMATION

You may be required to list the following contact information on your visa application and immigration form, or if your luggage does not make it to baggage claim at your destination:

Lynne MacTavish
P.O. Box 20784
Protea Park 0305
Northwest Province, South Africa
+27 (083) 453-3133

TRAVEL PLANNING

RENDEZVOUS AND DEPARTURE INFORMATION

COMPLETE TRAVEL INFORMATION IS NOT INCLUDED IN THIS PUBLIC VERSION OF THE BRIEFING..

Please find the complete briefing, available only to project participants, in your Earthwatch Portal. The version in your Portal will include all of the travel information for you to book appropriate flights. Please DO NOT book flights without referring to this information.





EXPEDITION PACKING CHECKLIST

WHAT TO BRING

EXPEDITION PACKING CHECKLIST

GENERAL

- This expedition briefing
- Your travel plans, rendezvous details, and Earthwatch's emergency contact information
- 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)

CLOTHING/FOOTWEAR FOR FIELDWORK

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

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

ADDITIONAL CLOTHING/FOOTWEAR FOR FIELDWORK: NOVEMBER TEAM

- Lightweight waterproof jacket
- Waterproof footwear

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

- Warm windbreaker or jacket
- Several layers of warm clothing, including thermal under-layers
- Warm hat and gloves

CLOTHING/FOOTWEAR FOR LEISURE

- At least one set of clothing to keep clean for end of expedition.
- Shorts
- T-shirts
- Comfortable pants
- Lightweight long-sleeve shirts for sun protection
- Comfortable closed-toe shoes to wear around camp

FIELD SUPPLIES

- Small daypack to keep your personal items together and dry
- Sunscreen lotion (We encourage biodegradable reef/fish-friendly products like those from [Stream2Sea](#). **Get 10% off with promo code 'Earthwatch'**)
- Insect repellent spray
- Two one-liter water bottles
- Flashlight/torch or headlamp with extra batteries and extra bulb this is used for walking around camp at night.
- 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 (for June, July, and August teams only)
- Towel
- Mosquito net if you are sensitive to insects or insect bites



EXPEDITION PACKING CHECKLIST

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 (We encourage biodegradable reef/fish-friendly products like those from [Stream2Sea](#). **Get 10% off with promo code 'Earthwatch'**) and medications
- Spending money

OPTIONAL ITEMS

- Camera and/or memory card(s), extra camera battery
- Hardware for sharing digital photographs at the end of the expedition
- Books, games, etc. for free time
- Earplugs for light sleepers
- Comfortable shoes to change into after conducting fieldwork
- Bathing suit for recreation day (If warm enough)
- Dry bag or plastic sealable bags (e.g. Ziploc) to protect equipment like cameras from dust, humidity, and water
- Travel guide
- Field guide(s)
- Mosquito net
- Money belt
- A small amount of biodegradable laundry soap to wash clothing
- Flip-flops or sandals for the shower
- Favorite snacks, if you have specific dietary requirements (**NOTE:** Please store these in the kitchen tent cabinets when you arrive to avoid attracting small mammals to your sleeping tent)

NOTE: 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.



PROJECT STAFF

YOUR RESOURCES IN THE FIELD

NOTE: The specific staff scheduled to run your team is subject to change.



EARTHWATCH SCIENTIST PROF. DAWN SCOTT, a professor in Mammal Ecology and Conservation at Keele University (U.K.), specializes in mammal ecology and conservation biology. In 2000, she completed her Ph.D. on aspects of the ecology of desert rodents in Jordan. Prof. Scott has over 20 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.



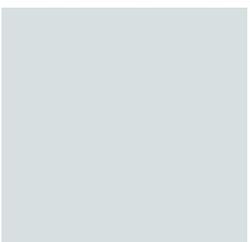
EARTHWATCH SCIENTIST LYNNE MACTAVISH has served as the operations manager at the Wildlife Reserve since 1999. In 2018 Lynne was awarded an Honorary Doctorate of Science by The University of Brighton in recognition of her major contribution to wildlife conservation in South Africa. She has worked in the 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. RACHEL WHITE is a senior lecturer at the University of Brighton. She has a PhD in Biodiversity Management on the Global biogeography of traits and extinction risk in birds from Durrell Institute of Conservation and Ecology (DICE), University of Kent. She also has an MSc in Conservation Science and has undertaken research on the impact of tourist development on birds of conservation concern. She has conducted fieldwork in South Africa, St Lucia, Ascension Island and Europe.



EARTHWATCH SCIENTIST DR. ANGELO PERNETTA is a principal lecturer at the University of Brighton. He earned his Ph.D. researching the impact of habitat fragmentation on smooth snake populations at University of Southampton (U.K.). His research interests are focused on the consequences of anthropogenic impacts on ecological communities and populations. He has conducted fieldwork in South Africa for over 6 years.



EARTHWATCH SCIENTIST MELISSA DAWSON has a BSc in Biology and MSc by research from Durham University, UK. She has conducted field work in South Africa since 2014, having previously studied the effect of burning on invertebrates in the savannah. Melissa now works at Mankwe Wildlife Reserve as Volunteer Coordinator and is also registered for a PhD at Brighton University researching rhino behaviour and conservation.



EARTHWATCH SCIENTIST SAMUEL PENNY is a postgraduate student and lecturer at the University of Brighton. He has a BSc in Biology and MSc by research from Bristol University, UK. He has an interest in behavioral ecology having previous researched acoustic behavior of amphibians in Madagascar and gibbons in Thailand.



RECOMMENDED READING

YOUR RESOURCES AT HOME

RESOURCES

ARTICLES

- Du Toit, R. & Anderson A., (2013). Dehorning rhinos. *Wildlife Ranching*. Autumn: 82-85
- Milner-Gulland, E.J., Leader-Williams, N., Beddington, J.R. (1993) Is dehorning African rhinos worthwhile?. *Pachyderm* 17: 52-58.
- Waldrom, M.S., Bond, W.J. & Stock, W.D. (2008) Ecological engineering by a mega-grazer: White rhino impacts on a South African savannah. *Ecosystems*, 11, 101-1
- Hempson, G.P., Archibald, S., Bond, W.J., Ellis, R.P., Grant, C.C., Kruger, F.J., Kruger, L.M., Moxley, C., Owen-Smith, N., Peel, M.J.S., Smit, I.P.J. & Vickers, K.J. (2014) Ecology of grazing lawns in Africa. *Biological Reviews*. doi:10.1111/brv.12145
- Penny, S. White, R. Scott, D., McTavish, L & Pernetta, A. (2019) Using drones and sirens to elicit avoidance behaviour in white rhino as an anti-poaching tactic. *Proceedings of the Royal Society B* <https://doi.org/10.1098/rspb.2019.1135>
- Pernetta, A (2014) A disappearing drylands icon? White rhinoceros conservation and the need for public private Partnerships. *BIODIVERSITY*, 2014 Vol. 15, Nos. 2 , <http://dx.doi.org/10.1080/14888386.2014.931248>

BOOKS

- Anthony, L. & Spence, G. *The Last Rhinos*. 2013 Pan Publisher.
- Rademeyer, J. *Killing for a profit: Exposing the illegal rhino horn trade*. 2012. Zebra Press.

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.

PROJECT-RELATED WEBSITE

- **PILANESBERG NATIONAL PARK:** tourismnorthwest.co.za/pilanesberg/index.html
- **PUBLICITY FILM:** [youtube.com/user/EarthwatchInstitute](https://www.youtube.com/user/EarthwatchInstitute)
- **SAVE THE RHINOS:** https://www.savetherhino.org/rhino_info/issues_for_debate/de-horning.

EARTHWATCH SOCIAL MEDIA

- **FACEBOOK:** [facebook.com/Earthwatch](https://www.facebook.com/Earthwatch)
- **TWITTER:** twitter.com/earthwatch_org
- **INSTAGRAM:** [instagram.com/earthwatch](https://www.instagram.com/earthwatch)
- **BLOG:** blog.earthwatch.org/
- **YOUTUBE:** [youtube.com/earthwatchinstitute](https://www.youtube.com/earthwatchinstitute)

LITERATURE CITED

- Pernetta, A (2014) A disappearing drylands icon? White rhinoceros conservation and the need for public private Partnerships. *BIODIVERSITY*, 2014 Vol. 15, Nos. 2 , <http://dx.doi.org/10.1080/14888386.2014.931248>
- Milliken T & Shaw, J, 2012. The South Africa-Vietnam rhino horn trade nexus: A deadly combination of institutional lapses, corrupt wildlife industry professionals and Asian crime syndicates. *TRAFFIC*, Johannesburg.



EMERGENCY NUMBERS

AROUND-THE-CLOCK SUPPORT



EMERGENCY NUMBERS NOT INCLUDED IN THIS PUBLIC VERSION OF THE BRIEFING.

The version in your Portal will include all of the necessary emergency numbers..



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. It is volunteers like you who fuel our mission and inspire our work.

While at Earthwatch, I've had the opportunity to field on a few expeditions, most recently in Kenya with one of my daughters. Each expedition has touched me deeply, and made me proud to be able to roll up my sleeves alongside my fellow volunteers and contribute to such meaningful work.

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 nearly 45 years. You're in good hands.

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

Sincerely,

A handwritten signature in black ink that reads "Scott Kania". The signature is written in a cursive, flowing style.

Scott Kania
President and CEO, Earthwatch



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