



# Organization for Tropical Studies



## African Ecology & Conservation in South Africa

*Undergraduate Semester Study Abroad Program  
Orientation Packet*

**Siyakwemukela!**  
(Welcome!)

We would like to welcome you to the OTS African Ecology and Conservation program in South Africa! We are confident that this semester will be one of the highlights of your college career. You will visit great places, see beautiful animals and plants, meet wonderful people from different cultures, and have lots of fun! Our group consists of students from the United States and South Africa, as well as six staff and faculty members. During the semester, invited faculty (experts in their field) will visit us for lectures and field exercises. You will have the opportunity to plan, develop, present, and write your own independent field projects and participate in many other academic and cultural activities. Our group will be diverse and we expect that, with sensitivity to other people's backgrounds and perspectives, you will learn a tremendous amount and develop strong and lasting friendships.

This Orientation Packet contains very important information to help you prepare for your semester in South Africa. Please **read it carefully** and follow the recommendations and suggestions we provide. If you have any questions, please contact the OTS South Africa communications manager Nicolette Davids-Petersen

([nicolette.davids-petersen@tropicalstudies.org](mailto:nicolette.davids-petersen@tropicalstudies.org)) or the program director, Dr. Laurence Kruger ([laurence.kruger@tropicalstudies.org](mailto:laurence.kruger@tropicalstudies.org)). Also, feel free to contact OTS Enrollment Management at 919-684-5155 or [undergraduate@tropicalstudies.org](mailto:undergraduate@tropicalstudies.org) at the OTS North American Office in Durham, NC.

We are extremely excited about having you in our program!

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# OTS AFRICAN ECOLOGY AND CONSERVATION PROGRAM OVERVIEW

## Program Dates

Program dates vary depending on the term and year. For the most accurate and up-to-date schedule, contact OTS Enrollment Management at [undergraduate@tropicalstudies.org](mailto:undergraduate@tropicalstudies.org). You should plan to arrive at Johannesburg, South Africa O.R. Tambo International Airport on the day the program begins by **11:00 am**. The program ends at approximately **5:00 pm** on the last day of the program. Students should select departing flights (from Johannesburg) **no earlier than this time**. OTS is not responsible for students who arrive earlier than the program start date or later than the end date. *Dates and times are subject to change.*

## Program Focus and Design

The OTS African Ecology and Conservation program was launched in 2004 in Kruger National Park, South Africa. Since the beginning, we have focused on providing students with a hands-on experience in field ecology culminating in independent research. We have been fortunate to be based at Kruger National Park, which not only is one of the premier wildlife parks in Africa but also has an excellent research support and biodiversity management systems in place. Our research projects are typically focused on addressing data needs to help inform the management issues identified by the park and other conservation agencies. This provides you with the opportunity to learn how to conduct field research that has the potential to inform critical wildlife and ecosystem management decisions.

We will start at the Pullen Nature Reserve, the site closest to your arrival point in Johannesburg, for orientation and all the introductory work (introduction to South African ecosystems, approaches to field-based research) before traveling north to Kruger National Park in the northeastern region of South Africa. During our first leg in Kruger National Park, you will be exposed to the iconic wildlife and savanna landscapes of the southern section of the park, and provided with the opportunity to participate in an established long-term research project. Next up, we will explore the more arid regions of HaMakuya, Mapungubwe and the northern section of Kruger National Park. This will also be the leg where you will engage in the History through Culture module of the course. We will then head to the Western Cape Province on the the south-western tip of the African continent, where you will enjoy your midterm break. Here you will subsequently be introduced to the unique fynbos biome in the Cape Floristic Region, and marine ecosystems in a variety of national parks and protected areas. We will also explore the Cederberg mountains and freshwater ecosystems in the Western Cape. For the final leg of the course, we will return to Skukuza in Kruger National Park to carry out capstone research projects. A brief description of the sites and potential research topics follows.

## Descriptions of Sites and Research Themes

The program is different every semester but below is an overview of all the sites. Please consult your course guide for specifics on the sites that you will visit during your semester. In short, you may visit Pullen, Nylsvley, Skukuza, Cape Town, Cederberg (“Krom River”), Tshulu Bushcamp in HaMakuya and Punda Maria.

### Introduction/Preparatory Period

You will arrive in Johannesburg where you will spend the first night of the program. The following day, we will visit an important apartheid memorial to provide an introduction to the recent history of South Africa before traveling to the Pullen Nature Reserve. At this first site, you will cover the basics of science, data analysis techniques and savanna ecology. Orientation to South Africa and the OTS program will also be held here. You will spend time with all of the resident faculty members and get to know all of your fellow classmates.



**Pullen Nature Reserve** is a 250 hectare reserve in the Krokodilpoortberge mountains in the middlelevel of South Africa. It is a few hours drive from Johannesburg near a town called Nelspruit. Although it is home to many species of wild animals, it is free of larger more dangerous species and consequently a great place to start the program. Pullen has walking paths and wonderful savanna landscapes. This is an ideal site to adjust to the time and weather change, to stretch your legs after the long transatlantic flight, and to jump into the program. Clothing layers are recommended, as Pullen is 300 meters (1,000 ft.) higher than Nelspruit and the climate is cool. Sturdy walking shoes, sunhats, fleece tops, t-shirts, cotton trousers, swimming costumes are all recommended. The facilities at Pullen have been built to accommodate student groups and you will be living in rooms of about five people. There is no town or shop nearby and, unfortunately, no telephone or internet service. We will ensure that everyone has a chance to contact his or her family and friends in the US before we leave Johannesburg.

**Nylsvley Nature Reserve** is one of the most intensively studied savannas in the world. It is two hours north of Johannesburg near a town called Modimolle (previously called Nylstroom). It is home to giraffe, warthog, blue wildebeest, kudu and many species of reptiles and birds, but is also free of dangerous species. It is located in the Highveld (high elevation grassland and savanna) so, shouldn't be too hot. Nylsvley has plenty of space for moving around and you can explore the reserve on foot. This is



also an ideal site to recover from jetlag and get used to the African climate. The facilities at Nylsvley have been built to accommodate student groups and you will be living in dormitories. There is no town or shop nearby and, unfortunately, no telephone or internet service.

At the start of the program, you will participate in a basic teaching/workshop-driven crash course in the basics of science to ensure that students from different backgrounds and majors are all on the same page.

- **Science workshops:** These workshops are designed to help you understand the nature of science and the scientific method. We will discuss differing approaches to science, effective research design, statistics, and the hallmarks of being a good scientist. Most importantly, we will also discuss the current role of scientists in society; i.e., understanding the context for what it is to be a good scientist in this day and age.
- **Introduction to the ecology of South Africa:** Before we start any in-depth focus on academic themes, we introduce you to the broader ecology of South Africa. We will discuss African biomes, the evolution of the southern African landscape and explore plant and animal diversity.
- **Conservation issues in southern Africa:** South African ecosystems are home to an incredible diversity of fauna and flora including the world's hottest hotspot, the Cape Floristic Kingdom. In the initial phases of the program, we deal with the threats to biodiversity and provide South African context for conserving these diverse systems inside and outside of protected areas.
- **Natural history workshops:** We use natural history as a platform for teaching ecological concepts by providing workshops on the identification, capture, and handling of small mammals, birds, and insects as well as plant identification workshops.

### North Sites and Research Themes

You will spend time in the savannas of the north, traveling from the mesic savannas of Nylsvley through to the more arid portions in the Kruger National Park, HaMakuya district and potentially Mapungubwe National Park. Each site is selected to focus on key research topics and ecological highlights of the area. The major themes we cover include patterns and drivers in savanna systems, disturbance ecology and the ecology of Megaherbivores (e.g. the effects of the loss of rhinoceros as ecosystem engineers; the effect of changing vegetation structure/density by elephants on faunal communities) as well as conservation outside of protected areas.

#### 1. **Skukuza: long-term research in Kruger National Park (KNP).**

The last month of the semester will be spent in KNP. Skukuza is the main camp in Kruger, the Park's headquarters, and, by far, the largest camp in the Park. The main OTS South Africa offices are also situated in Skukuza. Here, you will have access to computers, a scanner, telephones, and email. At Skukuza, you will find a post office, a full-service bank (including an ATM) and a general store where you can buy books, newspapers, souvenirs, snacks, basic drugstore items, and film. Skukuza also has restaurants. You can make use of the tourist camp to relax and get out of the dorms in your free time.



Kruger National Park sees approximately one million tourists every year, many of whom spend time at Skukuza. You will be in frequent contact with tourists who will probably ask you what you are studying. Please be courteous at all times and willing to explain who you are and what the OTS program is all about. The continuation of this program in South Africa depends upon maintaining good relations with the staff and guests at Kruger National Park.

Our accommodations in Skukuza are at the Skukuza Science Leadership Initiative campus. These accommodations consist of 2 large dormitories, a kitchen, dining, and lecture area. You will have access to the tourist camp to shop, swim, make calls, or do laundry. During the day, you can walk (in groups of three or more) to our offices to use the Internet. Skukuza is in a malaria area. As the mosquitoes are more active

between sunset and sunrise, you will have to avoid the mosquito problem by not swimming after 6:00 pm. At night, you should be covered and liberally sprayed with insect repellent.

There are many animals and plants to be seen in and around Skukuza. Inside the camp, you might spot different birds, lizards, and thick-tailed bush babies. Warthogs, impala, baboons, vervet monkeys, and banded mongooses also like cruising through the camp during the day. Unfortunately, without a game guard, we will not be allowed out of our vehicles anywhere in the park. Large predators, elephants, hippos, buffaloes, and rhinos are too dangerous for us to even think about relaxing this rule. There will, however, be frequent opportunities to go on game drives during which you are sure to see many of the animals you associate with African savannas.

Following 12 years of research experience, we have focused our research on projects aligned with the research goals of the KNP researchers. These Kruger Long-Term Research Initiative projects may include the following:

- **The demography and dynamics of big tree species.** Globally, we are losing large trees at an unprecedented rate. In KNP, the combined effects of the feeding of elephants and fires exacerbate this loss. We are also particularly concerned about the impact that the change in vegetation structure has on resident faunal communities. Allied to this work is assessing the efficacy of the use of chilies and honeybees as a barrier to elephant movement.
- **Light pollution impacts.** Light pollution is excessive, misdirected, or obtrusive artificial light from anthropogenic sources but mainly from electrical grid infrastructure. It may impact the environment by altering ecosystem function via changes to local assemblage structure. The scope and number of papers documenting the impacts of light pollution on biodiversity are increasing globally. Using local scale observational and manipulative studies, we aim to assess the impacts of local light pollution on birds, bats, and insects.
- **Functional Trait Ecology.** “We will never understand the unraveling of ecosystems if we do not first understand how they are built,” said Ricklefs. Functional ecology is not so much interested in what species are but what they do in ecosystems and how that influences community composition. We use observational and manipulative studies, usually using a species trait-based approach, to study fundamental questions in community assembly patterns, and what happens when such traits are removed from ecosystems, and why that occurs.
- **The spread of invasive species (plants and animals).** Invasive species are a major concern globally, and often have negative impacts on indigenous species and ecosystems. A number of long-term research projects have been conducted looking at the spread of plants and animal species in Kruger National Park.

2. **Tshulu Bushcamp, HaMakuya, Limpopo Province: community conservation at work:** HaMakuya, Venda, is the site selected where you will engage with communities abutting Kruger National Park. Situated



in the Vhembe district of the north of the country, HaMakuya offers the opportunity to become immersed in the rich culture of the Venda people. Apart from lectures and workshops on community-based natural resource management and the importance of ecosystem integrity for public health support, you will also go on three days of homestay with Venda families. This experience forms an integral component of the History through Culture program and you will also participate in research with a focus on community livelihoods within the area.

3. **Punda Maria or Shingwedzi Rest camps:** Located in the far north of the Kruger National Park, this region is characterized by elephants, buffalo and lots and lots of Mopani Trees and unique assemblages of plants and birds. The area is hot and remote; less frequently visited by tourists, and represents the wildest part of the already wild Kruger Park. It contains some of the most spectacular landscapes, dotted with impressive baobab trees. Punda Maria is also near 'Thulamela', a stone walled site is situated in the Far North region of the Park and dates back to approximately 450 – 500 years before present (BP). This late Iron Age site forms part of what is called the Zimbabwe culture, which is believed to have started at Mapungubwe.

In the north of the KNP we typically carry out biodiversity collections across a range of taxonomic groups, to expose you to different field techniques when sampling different species. Alternatively, we invite leading Faculty members to run a range of scientific projects, with topics ranging from the impact of termite mounds on small mammal distributions to the bird community associations with vegetation structure.



#### 4. **Mapungubwe National Park:**

Mapungubwe NP is situated in the far northern region of South Africa. It is located in a hilly region in prime baobab country. The camp is one of the most charming and beautiful of all the SANParks camps. We will stay in three-person stone chalets. From here, we will have access to see the Limpopo River, which separates South Africa from Zimbabwe and Botswana. Not far from here is the

Mapungubwe archaeological site. This is a partially restored "Zimbabwe Ruins"-type habitation dating back centuries and occupied by a sizeable community of people who traded ivory and animal skins down the Limpopo River for goods brought from the Far- and Middle-East regions. The bird fauna in the northern end of the Park is quite extraordinary and many migrants may be seen during the summer months. Research topics can include:

- the effects of animals on big trees
- dynamics of mopane worms and their host, mopane trees
- research on local reptile communities
- conduct general biodiversity surveys of the region

### **South Sites and Research Themes**

Much of the work for the OTS group in the Cape focuses on key conservation issues in *Fynbos* in the Western





Cape, the hottest of the world's Hotspots (<http://whc.unesco.org/en/list/1007>) and freshwater systems. Topics may include the effect of invasive taxa on the ecology of local systems (marine and terrestrial), understanding the impact of invasive fish in our freshwater systems, pollination ecology of many *Fynbos* plants, and understanding the determinants of diversity in intertidal rocky marine systems. During your time in the Cape, your research may focus on a range of different subjects and/or techniques. There is huge diversity in plant, bat, and rocky intertidal communities and, of course, you can expand your work to extend beyond ecological research.

1. **Soetwater, Cape Point Nature Reserve:** This site is located within Table Mountain National Park, a conservation area surrounded by an urban fringe. This area encompasses a large number of vegetation types such as *fynbos*, vegetated dune systems, and mountain scree slopes, as well as a coastline that includes both sandy and rocky shores. This area is also one of the only undeveloped stretches of coastline along the peninsula. For this reason, it forms an important component of the City of Cape Town's Biodiversity Network and is included in the Cape Peninsula Protected Natural Environment. Here, you will learn about ecological dynamics in a mega-diverse system conservation areas abutting hard, urban fringes. Your research will focus on a range of long-term projects relevant to the South African National Parks (SANParks). These could potentially include:

- **Small vertebrates and fire regimes:** Fire regimes vary across small spatial scales and we are interested in assessing how fire history might influence invertebrate and small vertebrate diversity, population dynamics and ecology. For instance, we have some long-term records of terrestrial rodents, snakes, and frogs at Cape Point Nature Reserve, and, by using both active and passive trapping techniques, we will monitor the change in these communities over time.
- **Rocky intertidal ecology:** Cape Point has two coastlines (one warm and the other cold) with vastly different ecologies. We will conduct a range of intertidal projects in order to understand the dynamics of these systems. Allied to this is our work for SANParks on threatened taxa such as *Turbo samarticus*, a seafood delicacy heavily utilized by poachers.
- **Long-term monitoring of post-alien tree clearing:** Invasive tree species are one of the key threats to biodiversity in the Cape Peninsula. Alien pine trees have long been recognized as particularly damaging invaders in the region. In collaboration with SANParks, we monitor the soil's physical and chemical properties, faunal diversity and vegetation composition across post-clearing restoration plots in the Tokai region.

2. **Cederberg Wilderness Conservation District (Krom River Valley).** As one of the most pristine (i.e., untransformed) areas in the western Cape Province, these mountainous areas feature a rich variety of fauna and flora. Vegetation types include both the *fynbos* and *renosterveld*. The Cederberg will offer you the opportunity to engage in a very broad range of research. However, we will focus our research on topics of particular importance to Cape Nature Conservation:



- The riverine systems in the Western Cape are under threat from invasive fish species, particularly rainbow trout and large-mouthed bass. OTS is working with local freshwater ecologists and conservation authorities in the collection of river health monitoring data, including species inventories of in stream

fauna and flora. These data are used to assess the distribution of invasive fish populations in the area and evaluate the effectiveness of non-native fish removal projects. You will be exposed to a range of techniques involved in freshwater surveys, including the use of GoPro cameras for underwater biodiversity sampling.

3. **West Coast National Park (WCNP):** WCNP is the largest reserve in the center of the West Biosphere reserve. The reserve encompasses a variety of terrestrial and aquatic ecosystems, including the only non-estuarine tidal lagoon in South Africa (Langabaan Lagoon). Projects in the past have included the following:

- Sea grass communities are key elements of estuarine and other coastal systems globally and are, for example, particularly important in supporting dugong and manatee populations. However, these ecosystems are fragmenting and diminishing rapidly and scientists are unsure why. Your research would provide insight into the local drivers of sea grass community dynamics in the Langebaan Lagoon.
- The Langebaan-Saldanha lagoon is home to a large diversity of fish and bird communities. It is a key breeding and feeding ground for both which allows you to explore a range of different faunal communities. The playing field is broad and varied! In particular, we are interested in the population dynamics and the importance of prey taxa like sand prawns.
- We encounter a huge diversity of frogs given the range in ecosystems within the park from the permanent water in the lagoon through to the ephemeral pans. Little is known about the anuran communities, so there is scope to engage in plenty of novel research.



4. **Cape Town:** Your semester break will be organized around Cape Town. Cape Town, situated in the Western Cape, in one of South Africa's premier tourist destinations and is known for its landmarks, including Cape Point and Table Mountain, and all-around exquisite coastlines. Other attractions include the Victoria and Alfred Waterfront, the Cape Whale Coast, and wine routes. We will spend five nights in Cape Town at a charming local backpackers' lodge. We will cover the cost of your accommodations. However, you are expected to cover the costs of your meals and activities during the semester break. Using Cape Town as our base, we will have several exciting expeditions to places such as to Robben Island (where Nelson Mandela was imprisoned for nearly two decades), the Kirstenbosch Gardens, Cape Point, Boulders Beach (home of the threatened African Penguin), and the University of Cape Town campus.



## Summary of Sites and Facilities Available

Site	Description	Accommodations	Shops	Phone	Email	Recreation
<b>Nylsvley</b>	Game Reserve and RAMSAR Site, situated 3 hours north of Johannesburg. Amazing bird diversity and home of tsessebe and other plain ungulates.	Dormitories 2-4 people sharing per room Keep clean and consider others	None close by	No public limited cell service	Limited	Free to wander around Game drives Running and bird/game watching at bird hides
<b>Pullen Reserve</b>	250 hectare nature reserve with a strong research focus. About 4 hours from Johannesburg. The reserve boasts 33 reptile and 15 amphibian species, many arthropods, mammals and birds.	Main house sleeps up to 34 in eight rooms. Bunk beds. 3 to 6 people sharing.	Closest shops in Nelspruit	Limited	Limited	Free to wander around Game drives, bird watching
<b>North Sites</b>						
<b>HaMakuya</b>	Located in the North near the northern section of Kruger National Park. Very remote, near the beautiful and friendly village of HaMakuya.	Homestays for 3 nights, 4 people to a household sleeping on grass mats... prepare to challenge yourselves! Remaining time at lovely research camp situated on the Mutale river in very comfortable en-suite tents (6 to a tent)	Only local village shops but we will stop at shops on the way to HaMakuya	No	No, also no electricity. Power via a generator.	Soccer with the local team Running Walks along the river Plenty of space to explore and go for long walks around the camp
<b>Punda Maria/Shingwedzi</b>	Northernmost camps in the KNP. Very remote camp situated on a sandstone hill surrounded by mopane landscapes.	Staying at tourist camp 2-3 to a beautiful cottage	Yes, stock the basics.	Pay phone and limited cell	No	Swimming pool Bird Walks Game Drives
<b>Mapungubwe</b>	Situated in Limpopo province at the confluence of the Limpopo and Shashi river marking the borders between S.A, Zimbabwe and Botswana.	Staying at main camp  Two to three to a beautiful chalet	Nope – stock up on goodies before	No	No	Swimming pool Running
<b>Skukuza</b>	Skukuza Leadership Centre – research accommodation situated in Skukuza Camp, southern KNP. All facilities available in the tourist camp including post office and banks/ATMs	Large group accommodation 2-6 per dorm room/hut	Shops at the tourist camp and in staff village that stock most things: drinks, snacks, and toiletries. Restaurant and take-aways at	Public phones in tourist camp & cell phone reception	Limited Wi-Fi available.	2 recreational swimming pools in camp 25m swimming pool in village Soccer, tennis, frisbee, game drives Can run around the village in groups

			main camp			before dusk ONLY Restricted movement due to the abundance of dangerous game
<b>South Sites</b>						
<b>Soetwater/ Glencairn</b>	Situated on the coast in Table Mountain National Park in the Cape Peninsula	Dormitories with larger groups sharing	Trips can be arranged	No public phone	No	Go for walks/runs along beach front Bird watching
<b>Cederberg</b>	Situated on the banks of the Krom River in the magnificent Cedarberg Mountain Range	Cottages of 3-6 people sharing	Small gift shop at the restaurant.	Public phones, no cell	Limited WIFI	Go for walks, runs or swims. Rock art hiking trail
<b>West Coast National Park</b>	Situated on the Langebaan lagoon, 2hrs north of Cape Town	Small shared rooms Plenty of room to roam	None in the vicinity, but can be arranged	No public phone, good cell reception	Limited	Go for walks/runs or bird watching from the bird hide. Sand dunes
<b>Cape Town</b>	Back Packers	Dorm rooms	Yes	Yes	Yes	Own scheduled activities Table Mountain hike, VA Waterfront shopping, Cape Point, Cape penguins, etc.

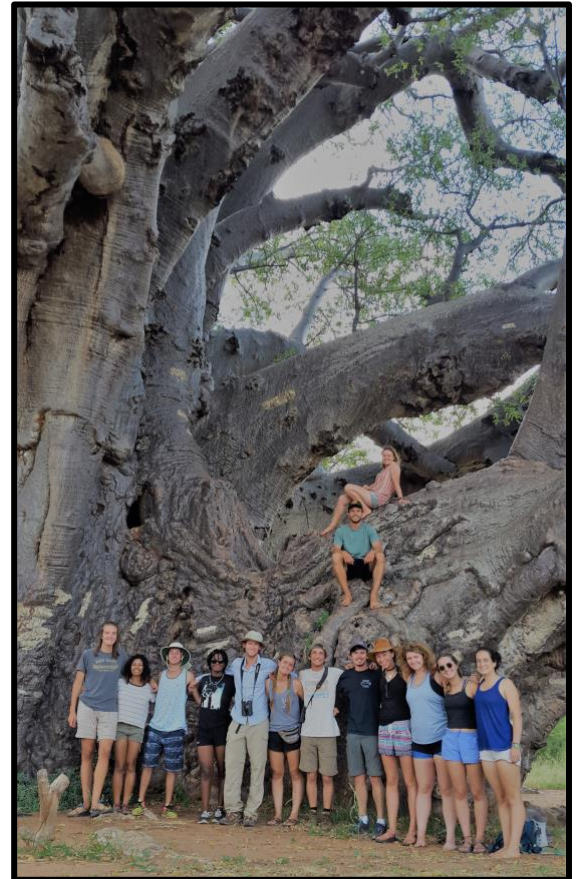


## Academic and Student Life on the Program

You will no doubt have many questions about what student life will be like during the program. We will endeavor to answer most of your questions here. But please also check out the FAQs (Frequently Asked Questions) and if you still seek clarity on any issues, please feel free to contact our South African office ([ots.s.africa@gmail.com](mailto:ots.s.africa@gmail.com)) or Nicolette Davids-Petersen ([nicolette.davids-petersen@tropicalstudies.org](mailto:nicolette.davids-petersen@tropicalstudies.org)).

For most of the program, you will be living with other students in large dormitory rooms, chalets with four to six students, or smaller bungalows with two students per room. Because of these group living situations, we all have to be conscious of other people's comfort and convenience. We must keep our personal space organized (so keep your baggage to a minimum) and make sure that our comings and goings at night and in the early morning disrupt our companions as little as possible. We will try to schedule short periods of time each day when you will be free to go for a run, play soccer or Frisbee, take a swim, amble over to the grocery store, write postcards, or catch up on your reading and studying. The intent, when possible, is to give you one free day each week to 10 days with no scheduled events. You may use this time to catch up on work or to take a mental break.

The semester will be an **intense** academic and social experience and we expect everyone will have ups and downs. We will schedule times for students to meet individually and in groups with the faculty in order to receive feedback on their course work and to express their concerns. Because of the rigors of the academic schedule and the constraints of group living, we will not be able to tailor this program to meet everyone's individual needs and desires.



## Meals and Dietary Restrictions

Meals are provided by our caterers, Shadreck and Co., who refers to themselves as AggyShadow Catering Company. The food is fantastic and regularly cited as one of the highlights of the program. Therefore, we warn you in advance about the possibility of expanding waistlines!! The menu is highly varied and usually dinners consist of a variety of choices of side dishes. The program caters for those of you with dietary restrictions (i.e., vegetarians, vegans, celiacs) or some food allergies but **please list all such restrictions/allergies on the OTS Medical Form** so that Shadreck can prepare accordingly.

## Preparing for the Program

As you are aware, this program is designed for students with a basic background in ecology and biology. Below is a list of some specific topics and/or terms that we think are particularly important for you to know or review:

- Natural history
  - Major groups of plants and animals
- Ecology
  - Population growth and regulation
  - Species interactions (co-evolution, competition, predation, symbiosis, herbivores, seed dispersal)

Community organization (trophic levels, food webs, niches, guilds)

Nutrient cycles

- Landscape Ecology
  - Bottom up versus top down controls of ecosystems
  - Disturbance and other ecosystem drivers
  - Hierarchical patch dynamics
  - Heterogeneity
- Conservation issues
  - History of conservation
  - Systematic Conservation Planning
  - Policies affecting global conservation

If you need to brush up on these topics, we highly recommend you look at basic textbooks on biology, conservation and ecology.

### **Preparation for Research Projects**

During the semester, you will design, implement, analyze, and present an independent project. These projects are a great opportunity to be imaginative and develop skills in research design, data analysis, and presentation (written and oral) of scientific results.

Prior to this, you will work on two other research projects. The first of these is a Long-Term Research Project during which staff will present you with a list of research questions that are of particular interest to scientists in the system you are working in. You will be able to choose, implement, analyze, and write-up results to answer this question. This can be a memorable experience that could change the way you see ecological work, particularly in the context of an African Savanna or Fynbos system. Following this, there will be a series of Faculty Field Projects led by guest faculty. These projects will explore a variety of topics and all students will be able to participate in all of them. However, you will only be involved in the analysis and write up of one topic.

The Capstone Project (CP), the highlight of the course, will be run at the end of the program. This is an opportunity for you to choose your own topic of research (within reasonable limits that we are able to support academically and logistically). These CPs will test a valid, justifiable, and interesting hypothesis or answer questions that are relevant and feasible to answer. Whether you choose to test this hypothesis through manipulative or observational experiments will depend on the constraints of time and the biological system within which you decide to work. While it is challenging to choose a project without knowing the specific constraints, the more you think about CPs ahead of time, the more you will be able to take advantage of the time and resources available. Speak to your faculty well in advance during the program! We may guide you away from studying lion hunting behavior in order to ensure that you have enough data for your project. But be assured that we will still provide frequent opportunities for those experiences.

CPs can take several forms:

- a project that tests an idea in the ecology literature
- a project based on an interesting observation in the field
- a project that addresses a specific ecological/conservation concern in South Africa

With all CPs, we encourage students to think about the larger picture of the systems that they are studying. We have a large and growing library of references. However, if you already know you are interested in certain types of questions, it would be a good idea to bring a few of your own reference articles with you.

Some of the CP topics from students on the previous programs include:

- How do Acacia thorns protect against herbivores?
- Do different species of savanna trees recover after elephant damage?
- What is the composition of savanna grasses near artificial waterholes?

- How does change in vegetation structure affect the composition of the small mammal communities?
- Is there a relationship between wing morphology and the echolocation calls of bats?
- Do individual dung beetles have a preferred orientation for rolling their dung balls?
- How does parasite load vary between species of birds?

### Additional Readings

You may want to do some advance reading about South Africa. For quick and easy reference, we suggest you look at one (or more) of the following guidebooks:

- Lonely Planet Guide to South Africa, Lesotho, and Swaziland
- Let's Go South Africa

For current literature coming out of South Africa, the following is a list of books on the shelves in South Africa now that can also be found at Amazon.com:

- Disgrace, J.M. Coetzee (who won the Nobel Prize for Literature in 2005 and his novels are widely available in the U.S. and South Africa). **This will be a prescribed book on the course. We STRONGLY recommend you read it before arrival.**
- “The Quiet Violence of Dreams” by K. Sello Duiker
- “Dance with a Poor Man’s Daughter,” “Frieda and Min,” and “People Like Ourselves” by Pamela Jooste
- “Country of My Skull” by Antjie Krog
- “Ways of Dying,” “The Heart of Redness,” and “The Sculptors of Mapungubwe” by Zakes Mda
- “Welcome to Our Hillbrow” by Phaswane Mpe

For nonfiction and a great summary of the rise of the African National Congress during the Apartheid era, Nelson Mandela’s “Long Walk to Freedom” is highly recommended. A couple of older classics are Rian Malan’s “My Traitor’s Heart” and Alan Paton’s “Cry, the Beloved Country.” For an interesting evaluation of different regions of Africa by a leading U.S. African Studies professor, see Henry Louis Gates, Jr.’s “Wonders of the African World”, John Reader’s “Africa: A Biography of the Continent” and Martin Meredith’s “The State of Africa: A History of 50 Years of Independence.”

All of these books are in our OTS library, so if one or more of them look interesting but you do not have the time to read them now, the opportunity will arise again. You will have full access to this library, so you can also read our copies.

Recommended reading for Conservation Biology is “**Conservation Biology for All**”. Edited by Navjot S. Sodhi and Paul R. Ehrlich”. It’s free online, Google it! It is also the prescribed book for the Conservation Module. For preparation on the ecology sub-tropical savannas and fynbos, we recommend you browse through recent issues of ecological journals. We have extensive papers available to you, so please contact us ahead of time if you would like further suggestions.

## Travel Information

### Passport and Visitor’s Visa Information

If you have not already obtained your passport, you apply for one **immediately**. You will be asked to provide this information to OTS on several registration forms. **You must ensure that your passport has two facing blank pages. This is really important, as students without blank pages in their passports HAVE been turned away at the border.** Also, make sure that your passport is valid for at least six months after the end date of the program.

**You will also need a visitor’s visa to enter South Africa if you are not a South African citizen.** OTS will provide you with information about applying to the South African Consulate for your visitor’s visa. This

information will only cover the time period in which you will be with the OTS program. For detailed instructions on how to apply and what documentation you will need, please visit the South African Consulate's website (<http://www.southafrica-newyork.net/homeaffairs/visitorsvisa.htm>). You will be applying for an extended visitor's visa. **PLEASE READ THE INSTRUCTIONS CAREFULLY!**

**Note:** You will need to apply to the Regional South African Consulate Office for your home state (which you will find on the website listed above). If you plan to travel elsewhere in South Africa after the program ends, you must check with the South African Consulate for appropriate visitor's visa requirements. If you intend to stay and travel after the program ends, you must apply for a visa that lasts longer than the duration of the program. Many students change their minds about staying on after the program ends (i.e., they decide to stay longer), and you can extend your visa in South Africa, but you will need to do so 8 – 12 weeks in advance and it is pricy! **Therefore, it is a good idea to apply for a visa that enables you to stay in the country at least two or three weeks past the program end date. We have also had students choose to stay longer to do research after the program ends (either through IRES or an internship).** If you think you might be interested in getting involved in something like this, do not hesitate to contact Laurence or the academic staff. If you are not traveling on a U.S. passport, please contact the South African Consulate immediately to find out what will be required for you to obtain a visitor's visa. Apply as soon as possible. Requirements can and do change, so we strongly encourage you to stay on top of the visa process and pay attention to the details. If you have questions, please ask us.

### **Airline Reservations**

Students are responsible for making their own flight arrangements to and from Johannesburg, South Africa. It is important that you purchase a round-trip ticket. **Many of the flights coming in from the U.S. arrive late in the evening. We ask that students book flights that get them to South Africa early in the day. This allows us to organize our logistics efficiently and safely. Please book a flight that lands before or around 11:00 am on the day that the program begins and leaves after 6:00 pm on the day that the program ends.** By arriving in the morning, you will have a bit of time to recover from the long flight before the program begins and that also allows us to arrive at our first site at a reasonable hour. Please note that if you choose to arrive earlier or depart later than the scheduled dates, you must make your own arrangements for transportation and lodging. For students arriving a day or more early, we recommend staying at the Airport Lodge-Emerald Backpackers (<http://www.airportlodge.co.za/>) or the City Lodge Hotel (<http://www.citylodge.co.za/>) located about 4 km (or 2.5 miles) from the airport. Many students choose to arrive a day earlier to allow some time to start getting over their jetlag. It is easy stay at either of the hotels listed above. Please contact OTS Enrollment Management, Nicolette Davids-Petersen, or Laurence Kruger if you have any questions.

### **Money**

Please do plan to have enough money for personal expenses. You will be required to pay for health care, mail, sodas, souvenirs, and other personal expenses. It is hard to set a standard here for you to follow but keep in mind the following (the exchange rate recently has been around R14 = \$1.00):

- A can of soda is about R12.00;
- A bottle of water is about R 12.00;
- Phone card: R50 (you can call the US for 15mins or so)
- Average meal at a restaurant is between R75-R120

Souvenirs are not expensive but, after a few, they do add up to quite a bit. A nice, mid-sized Zulu basket will cost about \$15 in a store. Beautiful wire and bead key chains and animals can be purchased from the craftspeople directly for a couple of dollars. They make wonderful gifts and their purchase also helps support the local economy.



Please Note!!! During the midterm break in Cape Town, your accommodations are paid for but **you will be required to pay for your own meals and refreshments** as well as your activities and transportation. These activities can include skydiving, cage diving, wine tasting, surf lessons, and trips up Table Mountain. So, be prepared for the expenses of this leg of the program.

In addition, most places where we stay have cleaning staff that make beds, clean bathrooms, and sweep the areas in which we live in on a daily basis. Often, these hard-working individuals are paid a very meager salary and it is customary to show our appreciation by leaving tips behind at the end of our stay at each site. Generally, we encourage students to leave about R5 per day but we understand that not everyone can afford to do so. Tipping is optional but whatever you can contribute will go a long way for these people.

## Healthcare

### *Medical Services*

**If you do not already have health insurance, you need to arrange for coverage during the program.** If you do have health insurance, please make sure that your health policy covers medical expenses while you are here in South Africa. You **must** have proof of health insurance with international coverage to participate in the program. Please be aware that medical service providers often require payment when services are rendered. So, you should be prepared to make a credit card or cash payment and obtain detailed receipts for reimbursement. Check with your insurance company as some may require timely notice of emergency treatment to be eligible for reimbursement of expenses. You will be responsible for **all** of your medical expenses.

Before coming to South Africa, please make sure that you are up to date with all your immunizations. Check with the travel health clinic at your college or university for current recommendations. During the program, you will also be visiting malaria-risk areas. Please also check with your travel health clinic about anti-malarial medication for this period. To help you and your doctor plan, we will be in malarial zones (at Kruger and surrounding areas) for 51 days, and then again (28 days later) for another 21 days; so a total of 72 days split into two sections of 51 and 21 days, respectively. It is wise to use insect repellent and to cover your feet, ankles, arms, and legs at the dawn and dusk periods while mosquitos are most active.

The OTS program will be traveling with a complete first aid kit. **You must, however, bring adequate supplies of any prescription drugs that you will need (headache tablets, anti-inflammatories, Band-Aids, sunscreen, and after sun).** If your doctor advises against taking a large supply of medication with you, s/he should provide a written diagnosis and the suggested prescription to facilitate proper dispersal by a South African doctor. It is possible that the same drug that you are taking is not available on the South African market. Therefore, a similar drug will be administered to you by South African doctors.

**Please Note:** In addition, bring supplies of pain relievers or medication(s) that you would usually use if you are prone to headaches, ear aches, allergies, cramps, intestinal disorders, yeast infections, etc. Anti-fungal/athlete's foot cream will also be handy as well as hydrocortisone (for itchy bites). Some things that are really important to bring to South Africa are mosquito repellent spray, sun block, and hats. Other useful insect deterrents are candles with citronella for those times that you would like to sit outside and relax after sundown. These items can also be purchased in South Africa and are generally available at all of the Kruger National Park camp shops.

Traveler's diarrhea is a common ailment. If you are susceptible to changes in gut flora, you should bring something to combat diarrhea or relieve discomfort. This ailment is quite common but of short duration. One way to prevent transmission from person to person is to ensure you do not share drinking cups, cans of soft drinks, or water bottles. We will be traveling quite a lot. So, if you are susceptible to motion sickness, you should bring appropriate medication (such as Dramamine).

In the event of a serious illness or injury, good medical care is available. There are two doctors that are based at Skukuza. Both very good at diagnosing malaria and tick bite fever. They also have their own dispensary which eliminates the need to go to town for medication. If the medication that you need is not available at

the doctors' office in Skukuza, they can either order the medicine or a member of the OTS staff will go into one of the nearby towns of Nelspruit or Hazyview (the two closest towns) to pick up the medication.

If you are not feeling well or have suffered an injury, be sure to let our staff know immediately so that we can be sure to tend to your health needs.

### ***Counseling Services***

Issues in emotional health may arise during a study abroad experience. Being new to a country and a program can expose you to unexpected stress that can detract from your overall experience. There are many types of professionals that will be able to help with various types of stress-related problems. Please let our staff know if you are struggling so that they are in a position to assist you.

### ***Immunizations***

Check with your personal physician immediately for professional advice regarding immunizations. In addition, you should check the [Centers for Disease Control's Traveler's Health Website](#) for the latest updates on diseases in South Africa and recommended vaccinations. However, please consider the following:

- **Booster shots:** Make sure you are up to date on all your immunizations.
- **Tetanus:** This is good for 10 years; however, we advise you to consider having a booster shot if your last one was more than 5 years ago.
- **Diphtheria:** Boosters should be taken every 10 years. They are typically administered together with the tetanus shot. This is called the Td vaccine.
- **Typhoid:** Please make sure you are up to date with this immunization.
- **Hepatitis A:** This may afford protection against this highly infectious disease.
- **Hepatitis B:** Highly recommended for everyone.

Optional vaccination:

Rabies: You may have the opportunity to work on small mammal studies with bats. Students who are interested in handling bats **must** have the three-shot rabies vaccination series. Note that this is an optional vaccination but please check with your doctor.

### ***Recommended Medication***

Anti-malarials: Malaria is quite a significant risk in the Kruger National Park, Mapungubwe National Park, and HaMakuya (where much of our time will be spent). Please bring anti-malarial medication with you. There are several different malarial prophylactics available. Consult your physician or travel clinic about the appropriate prescription for the areas that you plan to visit and to ensure that the prophylactics are administered correctly. According to the physicians in Skukuza who deal with malaria, the best product is Malarone. To repeat: To help you and your doctor plan, we will be in malarial zones (at Kruger and surrounding areas) for 51 days, and then again for another 21 days; so a total of 72 days split into two sections. It is wise to use insect repellent and to cover your feet, ankles, arms, and legs at the dawn and dusk periods while mosquitos are most active.

## **Important Names and Numbers**

OTS is a non-profit consortium of over 60 institutions in the U.S., Costa Rica, Australia, Mexico, Peru, and South Africa that has been involved in training and education in tropical biology and resource management for over 50 years. OTS has two administrative centers relevant to its programs in South Africa:

The **North American Office (NAO)** is located in Durham, NC.

Organization for Tropical Studies  
408 Swift Ave  
Durham, NC 27705 USA  
Tel.: (919) 684-5155  
Fax: (919) 684-5661  
Email: [undergraduate@tropicalstudies.org](mailto:undergraduate@tropicalstudies.org)

The **Kruger Office (KO)** is situated in the Kruger National Park, Mpumalanga.  
Organization for Tropical Studies  
P.O. Box 33  
Skukuza, 1350  
South Africa  
Tel.: (+27) 13 735-5301  
Mobile: (+27) 82 422-6225 [Laurence Kruger]  
(+27) 84 585-6034 [Nicolette Davids-Petersen]  
E-mail: [laurence.kruger@tropicalstudies.org](mailto:laurence.kruger@tropicalstudies.org)  
[nicolette.davids-petersen@tropicalstudies.org](mailto:nicolette.davids-petersen@tropicalstudies.org)

Both incoming and outgoing mail will pass through KO. Staff answering the OTS phone numbers at KO speak English.

### **Telephone Access**

Telephones available at Skukuza. These are pay phones and both local and international phone cards can be bought at the camp shops. Any incoming calls that you receive will have to be made to the OTS office at Skukuza. You will then be directed to return the phone call. It might be worth acquiring a South African mobile phone upon arrival in order to stay in touch (ask our advice when you arrive!). Although, generally speaking, we travel in areas with reasonable landline access.

### **E-mail and Internet Access**

You will have e-mail and internet access at the Skukuza camp and at internet cafés during our town breaks. Because **internet access is extremely limited for the duration of the course**, you will need to plan for it (e.g., students often struggle to enroll in courses for the next semester, so you may want to take care of this with your institution's Registrar's Office before you leave). You may also struggle to write up your project when you are in areas with limited or no internet. Staff will advise you of what you should be preparing for while you are in areas with internet access. Please listen to their advice. We also have a comprehensive library of books and academic papers that do not require internet access. Share this information with your family and friends so they will not worry when they don't hear from you for a while. We have emergency communication capabilities while visiting all of the sites.

### **Letters and Packages**

Letters and packages can be mailed directly to the Kruger Office (KO). Please also note that large packages require a post office/customs processing/handling fee of anywhere between R25 and R200. Letters, however, are a nice way to stay in touch during those times when you will be too busy or without internet access. Letters can be left at all the reception areas of the camps and they will be mailed from there for you.

Your address while you are in the Kruger National Park will be:

*Your Name*  
OTS Undergraduate Program  
c/o Laurence Kruger  
P.O. Box 33

## General Information About Travelling in South Africa

### Weather

South Africa's climate is variable. So, be prepared for wet and or cold conditions in the Cape. In the north (Skukuza and Limpopo), the days can be very hot (up to 105 ° F) but evenings can be very chilly later on in the semester. Temperatures depend on our location with sites in the northern part (e.g., HaMakuya) of the country being much drier and hotter than Skukuza or the Cape. A good rainproof jacket is a must and you may want to consider a thick jacket too. Polartec/polar fleece and other quick drying items of clothing that can be layered also always work well.

### Safety

Your safety is one of our main concerns. We will do everything possible to make you aware of the risks and appropriate precautions at all sites. The major risks within the Park are wild animals and diseases. To minimize the risk of encounters with wild animals, we will travel in the field with armed game guards at all times while we are in Kruger. Students must not leave the group when they are in the field and they must obey the instructions of the program staff and the game guards at all times. There will also be a guard on duty at the main gate of each camp. The camps are all surrounded by electric fencing to keep out large animals like elephants, hyenas, and leopards. You will be informed of all relevant rules and instructions once you are in the Park. Heed them closely and stay alert in the field at all times.

Diseases such as malaria and tick bite fever are treatable but it is much better to prevent these diseases rather than to treat them. We have strict procedures regarding keeping screens on windows and doors closed, using mosquito repellent, and covering up arms and legs during evening and night hours. It is also extremely important that you report any unusual symptoms (especially headaches and fevers) to the faculty immediately. The doctors at Skukuza are excellent at recognizing and treating the most common ailments presented by the 1 million tourists that pass through Kruger National Park every year. Nearby clinics are modern and well equipped. Hundreds of game rangers, park staff members, and their families have lived for years in Kruger without contracting diseases or being confronted by dangerous animals. You will likely be unaccustomed to the particular challenge presented by this environment, however, and we strongly urge you to take all recommended precautions.

As you all know, South Africa is a country undergoing a transition from minority white rule to a majority political system. Many issues of power, wealth, and politics are in a state of flux. In part, because of this, South Africa also has a high crime rate, especially in urban centers. To minimize the risk of encountering criminal activity, we will avoid urban areas as much as possible. Violent crime is not considered to be a problem within Kruger National Park and the other sites we visit.

When you are outside the Park, you should take precautions similar to those you would take in any heavily populated area in an unfamiliar country.

- Always carry a photocopy of your passport and keep the original in a safe place (it can be stored in the OTS safe in Skukuza).
- Never carry more cash than what is absolutely necessary.
- Do not wear expensive jewelry and watches.
- Keep a tight hold on your belongings at all times in public areas.
- ALWAYS travel in groups.
- Always carry the phone numbers of the faculty with you. (Provided at the beginning of the semester)
- Do not engage in reckless or risky behavior.

- Always inform the faculty where you will be and where we can find you, even if you are going on a brief jog around the inside perimeter of the camp fence.
- Inform faculty immediately of any situation or person that causes you to feel in any way uncomfortable or threatened.
- Do not drink to excess. Stay in control and be aware of your surroundings.
- If you take illegal drugs, you will be expelled.

The phone number for the U.S. Consulate in Pretoria is (+27) 12 342-1048. You will be registered with the U.S. Consulate and they will have a copy of our itinerary. We also advise that you register with the STEP program (<https://step.state.gov/step/>).

Please check out the following website before coming to South Africa: <http://travel.state.gov/>. Here, you will find tips on safety and travel before you depart. Your safety is our **first** priority.

### **OTS Sexual Harassment Policy**

We are committed to maintaining a healthy and productive work environment. OTS has a strong policy against sexual harassment. Sexual harassment is defined as all sexual conduct that is undesired by the person(s) to whom it is directed and provokes negative effects or impacts an individual in the following cases:

- Conditions of academic standing – these are actions that may occur in the context of the student-teacher relationship, such as grade alteration, dismissal from the program, or modifications of student evaluations.
- Productivity – these are actions that may affect the normal development of academic and field activities and result in lack of motivation, low efficiency, absenteeism, etc.
- General personal well being – these actions may negatively affect your ability to participate in daily activities in the field or in the classroom.

Both overt and subtle forms of sexual harassment are strictly prohibited at all OTS facilities and during all OTS-sponsored activities. If you have any questions, complaints, or find yourself in need of any other assistance in this regard during your stay in South Africa, you are strongly urged to contact a member of staff with whom you feel comfortable discussing your concerns. If, for any reason, you do not feel comfortable discussing concerns about sexual harassment with faculty, we have a designated safe person who you can contact, Karen Vickers at [vickerskaren@hotmail.com](mailto:vickerskaren@hotmail.com). Further, you could also contact OTS' Chief Administrative Officer, Jennifer Kelley at [jennifer.kelley@tropicalstudies.org](mailto:jennifer.kelley@tropicalstudies.org).

## **Overall Expectations**

The OTS experience provides you with a fantastic opportunity to learn about field biology in a way that is not likely available to you at your home institution. You will have the chance to interact with resident and visiting faculty on both professional and personal levels. The interactive nature of the program provides an amazing learning experience. However, because the four courses are run simultaneously and deliverables overlap, the program is very intense academically. Unlike the structured schedules you may be used to on your campus, this program relies heavily on student commitment and personal time management skills. We hope not to intimidate you but rather to excite you about the challenges and learning opportunities that await you. Come with a curious and motivated attitude and you will be well rewarded. Much of the success of the semester depends upon you and recognizing that the **more you put into it, the more you will get out of it!**

Many students who have participated in the OTS programs in South Africa have reported that they are life-changing experiences. Not only do we hope to leave you with a greater understanding of biological systems and ecological interactions but you will also have numerous cultural and personal experiences and interactions with classmates and faculty that will create lasting memories. You will likely gain insights into who you are as a person and will make friendships that will last a lifetime.

It is best that you come with very few expectations (outside of the academic ones). The best way to prepare yourselves is to read, and re-read all the material we send you and then open your mind to a completely

unique learning experience. You and your classmates will come from different backgrounds and academic experiences and it is difficult to design a program that tailors to each of your needs. However, the OTS staff in South Africa is committed to facilitating both your academic and personal experiences and we are sure you are in for a great semester!

## What to Bring

This section includes 3 checklists to help you in packing for the semester:

1. Clothing and Personal items
2. Essential Field Equipment
3. Almost Essential Field Equipment

As a general rule, **travel as light as possible. So below 20kg as that is the limit on local flights.** It is hard to dictate the optimal numbers and kinds of bags you should bring but here are some useful hints. Avoid bringing large, hard suitcases. Please. You will make your life hell. Ideally, bring a single canvas bag. However, you may bring two smaller bags if you prefer. In your luggage, you should definitely bring one small backpack to take into the field. You can use it to carry your water bottle, thirst quenchers, some snacks, and data records, as you need to be able to move fast and have your hands free. Expect any bag(s) you bring to get dirty. You are responsible for carrying your own bags, often across rough terrain – so **PLEASE PACK LIGHT!** Most shops have everything you could desire, from washing powder to toiletries to foods.

For clothes, do not bring things that will cause you to overheat. Try cotton or cotton blends. Label all your clothes, as this will make it easier to identify your own things if clothing do get mixed up. South Africa is thorn bush country and the clothes that you will wear in the field are in for a rough time. Plan to bring some clothes for relaxation after you come in from the field. You will be in a wonderful area and it is marvelous to sit outside at night – just make sure that you have long pants and long sleeves to keep the mosquitoes at bay. It can get very hot here in the summer – between 36° and 45° C (96°-113° F) – so please ensure that the clothes you bring for sleepwear are cool as well.

You will be fully equipped if you bring all the items listed on the following 3 checklists. Nonetheless, your own personal habits (e.g., whether you prefer to be over-prepared or would rather “make do”) and research interests should be considered in deciding what to bring. Previous students have advised us that they might not have packed enough of the following: aspirin, bandanas, vitamins, contact lenses, alarm clocks, comfortable non-field work clothes, and **city clothes**.

If you have any questions about what to bring, please contact Nicolette Davids-Petersen or Laurence Kruger.

## General Packing Checklist

	<b>Valid Passport.</b>
	<b>Credit Card, Money, and/or Traveler's Checks.</b> Typically students find it easier to use their credit cards in SA. Please note that Skukuza is the only camp in Kruger with a full-service bank. Most other camps have ATM machines. There are full-service banks in Cape Town and Johannesburg. It will be wise to always have some cash with you. If your card has a chip, you need a PIN number!! It is advisable to have a card that requires a PIN number. When you arrive <b>DO NOT ACCEPT ANY HELP FROM STRANGERS AT THE ATM.</b>
	<b>Shirts.</b> 3 for trips into the cities, 3 for wearing in the field, and a few t-shirts for non-field days. Women may want to consider bringing a few tank tops for the hot days in the city. It really is worth considering long sleeved nylon blend shirts for the field! Less insect bites, less sunburn!
	<b>Pants.</b> 2-3 pairs. Sturdy, loose-fitting pants are best for the field because of the thorns and thick bushes. Many students prefer a pair of nylon pants; e.g., North Face pants. You will need a pair of Jeans for those cooler evenings and to wear in the cities. A pair of sweat pants has been described as a must have.
	<b>Shorts.</b> 3-4 pairs. Women may want to bring a few skirts. We also encourage women to bring a skirt that hits below the knee to wear during your homestay.
	<b>Warm Clothing.</b> Although most areas we visit will be warm, the weather can change rapidly and it can be quite chilly in the Cape. So, at least 1 warm jacket is essential (e.g., a polar fleece jacket). 1-2 sweaters may also be useful. Warm hats would be useful.
	<b>Clothing for Towns.</b> Bring a few sets of clothing for the trips to Cape Town and Johannesburg (i.e., going out in the city). These clothes will also be useful for your final presentations and final dinner.
	<b>Rain Jacket or Poncho.</b>
	<b>Swimsuit.</b>
	<b>Wide-Brimmed Hat.</b>
	<b>Underwear.</b> 10 pairs should be enough.
	<b>Socks.</b> 5-7 pairs. Bring a few that can be pulled up to your knees for the field to protect yourself from ticks.
	<b>Light Hiking Boots.</b> Hiking boots are optional. Heavy boots are not necessary and most fieldwork can be done in sneakers/running shoes. However, many students do appreciate having a pair. (Approach shoes have also been described as useful)
	<b>Sneakers or Tennis Shoes.</b>
	<b>Comfortable Shoes to Use For Leisure.</b>
	<b>Teva/Chaco-type Sandals</b> These prove to be very useful for the hotter days in the field. If you wear sandals in the field, they <b>MUST</b> be strap on. If charged (by rhinos, etc.), you will need to be able to run and climb trees effectively.
	<b>Flip-flops</b> are always useful. You will not be allowed to wear flip-flops in the field but you can wear them at other times.
	<b>Towels.</b> Towels are available at some of the camps but it is still advisable to bring 2 towels with you for those places that do not provide them. You may also want to consider bringing an easy dry towel.
	<b>Personal Toiletries.</b> Most items are available at the camp shops. Women should note that tampons and sanitary pads are mostly available but it is worth stocking up when we travel through the main centers. If you have a favorite brand, you should bring a supply for the entire semester in case you are unable to find that brand in South Africa.
	<b>Personal Medical Supplies.</b> The program has a first aid kit but you should bring your own vitamins, aspirin, antiseptic, hydrocortisone cream, Band-Aids, etc. You will be able to purchase most of these things once we get to Kruger National Park, but you should pack enough of these items for our first two weeks at Nylsvley.
	<b>Extra Pair Eyeglasses or Set Of Contact Lenses and Prescription.</b> Bring extras in case yours get broken or lost. You should also bring extra contact lens solution (as brands may differ in South Africa).
	<b>Sunglasses.</b> A must if you want to prevent headaches and eye damage.
	<b>High-Rated Sunscreen.</b>

	<b>Sewing Needles, Strong Thread, Extra Buttons, Safety Pins, and Shoe/Boot Laces.</b>
	<b>Insect Sting Kit.</b> If you are allergic to bee stings, please bring an emergency adrenalin kit. <b>PLEASE inform the faculty of your allergy.</b>
	<b>Something to Read.</b>
	<b>Photos</b> of your family, college, hometown, etc. This is so that we can all get to know each other better.
	<b>Sleeping bags.</b> These are required at some of the camps we visit. We will inform you of which ones when you are here. Also, a <b>pillow</b> is optional, as some sites do not provide pillows.

### Essential Field Equipment Checklist

	<b>Binoculars.</b> Even if you are not a bird enthusiast, these are essential for numerous field projects. Most leopards and cheetahs are also only detected through these.
	<b>Flashlight.</b> These are essential, especially to make sure there are no nighttime encounters with snakes and scorpions.
	<b>Headlamps</b> are essential.
	<b>Batteries.</b> These should either be NiCd or Alkaline or rechargeable. If you use rechargeable batteries, please bring your charger with you, as none are available at the camps.
	<b>Pocketknife.</b> The Swiss Army-type with the multiple functions is best. Pack your knife in your checked luggage and not in your carry-on bag. If you plan on bringing a knife, you are only allowed to bring folding-style pocketknives or multi-tool knives. The blade of the knife must be no longer than the width of your palm and must either have a single-button locking mechanism or no blade lock at all. Fixed blades and switchblades are not allowed (which includes Bowie knives, butterfly knives, hunting knives, etc.).
	<b>Travel Alarm Clock.</b>
	<b>Wristwatch.</b>
	A <b>backpack</b> for daily field use. This must be big enough to hold a water bottle, notebooks, and snacks and a warm jacket while out in the field.
	A <b>smaller travel bag</b> for sites where you will spend shorter amounts of time
	<b>Insect Repellent and Good Anti-Itch Cream.</b>
	<b>Tick Repellent Spray or Lotion.</b>
	<b>Lecture and Field Notebooks.</b> You are attending 4 courses, so some students like to bring 4 notebooks; others take all their notes in 1 book. These can also be purchased in Hazyview or Nelspruit, but far better to come prepared.
	<b>Laptop Computer.</b> It is strongly advisable that you bring your own laptop. Check to see whether your computer and camera are covered on your (or your parents') homeowners' insurance policy. <b>OTS will not assume responsibility in case of damage, loss, or theft.</b> However, safety of your equipment (from theft AND damage) is our highest concern. We will try our best to ensure that computers are safe while traveling. Please e-mail us if you do not own your own laptop
	<b>Several Pencils and Ballpoint Pens.</b>
	<b>Water Bottle/Canteen.</b> YOUR MOST IMPORTANT ITEM!
	<b>Lunch Box</b> to carry your packed lunches to reduce the amount of plastic used.
	<b>Plastic Folder.</b> You will use this to store handouts.
	<b>Sense of Humor.</b> A must for long, hot days in the field when nothing is going as planned!



### Almost Essential Field Equipment Checklist

	<b>Camera.</b> It's a good idea to also remember a UV-filter or a haze filter to protect your lens. If you bring a digital camera, make sure you have the cable to download your photos onto a computer.
	<b>Watertight, Plastic Bags</b> to store your camera, flash, film, and calculator.
	<b>Music</b> for the long trips between sites (bring an iTrip/ AUX cables to assist in the sharing of music in the cars).
	<b>Musical Instruments.</b> If you can play one, <i>please don't forget it!</i>
	<b>Field Guides.</b> The program's library has quite a few guides but, if you would like to have your own, remember to bring money to purchase them. Typical field guides run anywhere from R140 to R300 (\$20-\$40). There are also several excellent inexpensive guides published by Kruger Park.
	<b>Flash Drive and/or External Hard Drive.</b> Advisable to help with transfer of information. An external drive is essential if you take a great deal of photographs.
	<b>Statistical Software</b> such as Statistica, R, or whichever you are comfortable with.
	<b>Up-to-date antivirus software.</b> This is very important for all PC users.