African Wildlife & Community Conservation Research

MAY 28 – JULY 30, 2016
INTRODUCTION

Wildtrax Explorations (Wildtrax) creates opportunities for people to journey with purpose by building personal connections with natural and human resources through education and action. Our Passion is to inspire people to take action in making a difference within themselves and throughout their environment. We achieve Our Vision by promoting opportunities to learn and experience the complex interactions between humans and nature.

Following our vision, we have teamed up with the only wildlife monitoring organizations in Africa, Wildlife Africa Conservation Team (Wildlife ACT), to provide students access to sustainable research and monitoring projects. Their mission is to save our planets’ endangered and threatened wildlife and wildlands from extinction and Wildtrax wants to create opportunities for students to be part of this mission. Both entities identify science and education as key components to the sustainable utilization and management of wildlife resources; thus, our collaboration achieves a comprehensive study abroad program in the Okavango Delta and Chobe Enclave Region of Botswana.

Wildlife ACT has two main research initiatives in Botswana, implementing a standardized biodiversity monitoring protocol for Botswana’s Department of Wildlife & National Parks and conducting human-wildlife conflict studies and implementing mitigation strategies with the University of Botswana’s Okavango Research Institute (ORI).

The 9 week course objectives are to equip students with an ability to decipher and adapt applicable research techniques to field studies. Overviews of research theory, hypothesis construction, methods, field sampling techniques, data management and analysis techniques are included in a 1-week lecture series presented by ORI and Wildlife ACT. The course includes both scientific and social aspects to data collection in an attempt to prepare students for their interactions with communities and different cultures. Students are then placed for two 4-week periods at different research sites where they apply their new skills, completing mini-research projects on the data they collect. The programs’ objectives will be fulfilled through students’ participation in Wildlife ACT’s two main research focuses and thus provide a constructive feedback system for successful conservation efforts in Africa.

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PROGRAM OBJECTIVES

The program objectives are to:

- Learn valuable wildlife management and conservation principles
- Understand the challenges facing wildlife conservation & community based natural resource management
- Observe the ecological organization and biodiversity of the Okavango Delta and surrounding ecosystems
- Develop advanced field research techniques and associated skills
- Understand the social aspects of conservation science
- Train future conservationists in understanding and applying research in the field through:
  - Research design & methodologies
  - Data collection & analysis
  - Application and implementation of data
  - Long-term sustainable conservation management projects

Our Vision is to provide students with research and learning opportunities and to facilitate and manage practical research contributing towards management interventions and developing biodiversity conservation in Africa.

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RESEARCH FIELD SKILLS

Students will learn and be competent in the following skills before they leave:

• Create a predator identikit
• Conduct a predator spoor (animal tracks) transect
• Set up a camera trap, collect photos, review & enter data
• Complete large herbivore transect & enter data
• Identify all habitat types in the study area
• Conduct a bird survey
• Conduct an invertebrate survey
• Determine coordinates with GPS
• Create a map in ArcGIS
• Identify and determine ungulate herd demographics
• Determine species richness and large herbivore and predator abundance of an area
• Identify different types of grass, shrub and tree species in the study area
• Conduct a vegetation sampling survey
• Conduct a community questionnaire survey
• Assist with human-wildlife conflict mitigation strategies
• Identify and report poaching incidences
• Identify and report predator attacks on domestic animals
• Create a scientific poster from your research

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University of Botswana’s Okavango Research Institute

ORI is an institution for the study and conservation of one of the world's largest and most intact inland wetland ecosystems - the Okavango Delta - as well as other southern African wetlands, river basins, watersheds and surrounding dry lands. ORI is situated near Maun, Botswana on the fringe of the Okavango Delta and has over 50 research and development projects in progress in a wide range of scientific fields, many in collaboration with international partners. ORI has a library, a herbarium and laboratories for biology, chemistry and Geographic Information Systems, which hosts the Okavango Delta Information System, a geospatial data repository covering the Okavango Delta and Basin.

ORI Research Field Training Courses
The courses will utilize ORI’s comprehensive knowledge and unique location to focus the political, managerial, and practical dimensions of development and conservation. Based on a thorough theoretical grounding, the students will gain first-hand experience through case studies, practical assignments, excursions and discussions with stakeholders.

Required Pre-departure Courses

Discover Botswana
This discovery course explores the ecology, people and wildlife of Botswana.

Introduction to Dangerous Wildlife Behavior
An introduction to dangerous wildlife you will encounter and how to deal with them from a vehicle and on foot. The course also includes understanding vital warning signals from these species and how best to respond to these signals, ensuring your safety while in the field.

Understanding Elephant Conservation in Southern Africa
Elephant conservation is a ‘hot-topic’ in Africa at the moment, with many different views and opinions on what to be done about over-population in some areas and intensive poaching in others. In this publication Prof Rudi van Aarde, from the University of Pretoria, addresses some of the less than factual generalizations that dominate discussions on elephant management.
## COURSE DETAILS

### SCHEDULE

| Week 1 | Monday | Course Day 1 | Morning | Introduction to Botswana & Course Overview  
African Wildlife Conservation - Current status & issues (Gap between management & research)  
| | Afternoon | |  |
| Tuesday | Course Day 2 | Morning | Carnivore Ecology, Conservation & Research Techniques  
| | Afternoon | Herbivore Ecology, Conservation & Research Techniques  
| Wednesday | Course Day 3 | Morning | Effective Conservation of Large Herbivore Biodiversity in Africa  
| | Afternoon | Introduction to GIS & its application  
| Thursday | Course Day 4 | Morning | Human-Wildlife Conflict & Community Conservation  
| | Afternoon | Standardized Natural Resource Monitoring in Botswana  
| Friday | Course Day 5 | Morning | Field Research Projects Overview  
| | Afternoon | Select projects, topics & supervision working on assignments  
(Questions, Hypotheses, objectives, variables, lit review)  
| | Saturday | | Weekend Activity - Game Drive into Chobe National Park  
Day Off - Work on Assignments  
| | Sunday | |  
| Week 2 - 5 | | | Group Split  
| | | | Group 1: Human Wildlife Conflict in Chobe - includes a boat tour on the Chobe River  
| | | | Group 2: Wildlife Monitoring in Khwai - includes a traditional dugout canoe (Mekoro) trip  
| | | |  
| Week 6 | | | Group Swop over & Week Activity - Trip to Victoria Falls or Maun  
| | | |  
| Week 6 - 9 | | | Group Split  
| | | | Group 1: Human Wildlife Conflict in Chobe - includes a boat tour on the Chobe River  
| | | | Group 2: Wildlife Monitoring in Khwai - includes a traditional dugout canoe (Mekoro) trip  
| | | |  
| Weekend 9 | | | Regroup - Final course closure, presentations & departure  

### Suggested Course Grading

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Completion of pre-departure assignments</td>
<td>10%</td>
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<tr>
<td>Satisfactory performance in the 1 week lecture series</td>
<td>25%</td>
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<tr>
<td>Field journal, assignments &amp; discussions</td>
<td>15%</td>
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<tr>
<td>Internship participation &amp; research project (Scientific Poster presentation/3-page report)</td>
<td>35%</td>
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<tr>
<td>Reflection paper (6 pages)</td>
<td>15%</td>
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### Field Course

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<thead>
<tr>
<th>Activity</th>
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<tr>
<td>Understanding &amp; using GPS</td>
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<tr>
<td>VHF tracking</td>
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<td>Camera trapping</td>
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<td>Predator identikits</td>
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<td>Tracking &amp; understanding wildlife signs</td>
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<td>Predator spoor transects</td>
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<td>Herbivore drive survey transects</td>
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<td>Vegetation sampling</td>
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<td>Bird surveys</td>
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BIODIVERSITY MONITORING

Standardized Natural Resource Monitoring Protocol (SNRMP)

This protocol was developed with funding from USAID by the Southern Africa Regional Environmental Program (SAREP), under the guidance of the DWNP and the University of Botswana. The protocol follows guidelines set by the Convention on Biological Diversity and the IUCN for protected area management which includes monitoring the fluctuations of group dynamics; specifically demographics, recruitment, mortality and movement, in addition to changes in the ecosystem conditions. This will, for the first time, provide a standardized approach to long-term wildlife monitoring at a regional and national level. Standardized monitoring improves our understanding of processes that drive wildlife fluctuations over large areas and facilitates efficient management of wildlife meta-populations.

The monitoring protocols are currently being rolled out in all wildlife management areas in northern Botswana, with a nationwide implementation objective fulfilling the final stage of the initiative. Responsibility to fulfill this protocol's requirements is legally placed on the management authority of each wildlife area, whether it be a community or a private tourism operator managed area. By providing clear objectives through the monitoring protocol, as well as a legal obligation to fulfill its requirements, the DWNP has initiated a constructive feedback system between management and governing entities, allowing informed decisions to be made by DWNP with regards to conservation management at a national level.

Students on the Study Abroad course will be trained on research methodologies within the SNRMP and play an active role in collecting, analyzing and implementing the data. The monitoring is implemented continuously with some survey work conducted bi-annually.
Human – Wildlife Conflict (HWC) Project

Wildlife ACT will be assisting the ORI with research on human-wildlife conflict, which is a complex management and conservation issue in Botswana. Few studies have been conducted to fully understand the ecological and social patterns and underlying processes of human-wildlife interactions in arable agro-ecosystems in Botswana. Yet, information on spatial patterns, environmental predictors and socio-economic aspects of HWC are required in order to devise effective mitigation and adaptation strategies.

This proposed project will concentrate investigations in HWC ‘hotspot’ areas of northern Botswana, namely the Okavango Delta in Ngamiland District, Chobe Enclave in Chobe District, and Makgadikgadi Pans in Boteti district. A country-wide assessment of status and trends of HWC will be made by exploring data compiled by the Department of Wildlife and National Parks over the past three decades. Additional data will be collected to validate the data previously collected by DWNP. Data from this project will contribute crucial information to the Government of Botswana about the processes and underlying patterns of HWC in hotspot areas. Such information will be useful in designing effective HWC mitigation strategies and suggesting alternative land use plans to reduce HWC, which is essential for the success of national and regional conservation strategies, such as the Kavango Zambezi (KAZA) Transfrontier Conservation Area. The activities outlined will build capacity in the local communities, which will help to raise community awareness and responsibility for HWC situations.
Human – WILDLIFE CONFLICT RESEARCH

Human – Wildlife Conflict (HWC) Project

The Okavango Delta Management Plan, under the DWNP, stated that HWC incidents appear to be increasing and identified HWC ‘hotspot’ areas in Botswana, where research and mitigation efforts should be focused. Our research feeds directly into the management objectives of the DWNP and we will be working together on the ground. The overall objective is to establish a greater understanding of the patterns and underlying processes of human-wildlife interactions in the dynamic arable agro-ecosystems of northern Botswana.

Wildlife ACT actively assists in the following HWC objectives:

1. Determine the current status and trends in incidents of HWC and map the spatial-temporal distribution of HWC.
2. Investigate the socio-ecological patterns and underlying processes of wildlife crop raiding.
3. Monitoring livestock deprivation from predators.
4. Investigate the socio-economic impact of wildlife crop-raiding.
5. Explore the effectiveness of current mitigation techniques for elephant crop-raiding as well as predation on livestock, to then develop and test innovative techniques.
6. Investigate the extent of illegal hunting around protected areas and compare locations throughout Botswana facing these issues.

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FIELD SITES & ACCOMMODATION

CHOBE ENCLAVE

The region on which we will be focussing our first HWC project site is in the Chobe Enclave. This diverse concession lies within the Chobe National Park and Chobe Forest Reserve, with the Linyanti and Chobe River creating its northern boundary with Namibia. This area is zoned as an agricultural, pastoral and wildlife management area creating complex human-wildlife conflict dynamics. This important wildlife corridor has a number of communities residing in it that are impacted by elephant, lion, leopard, hyena and other wildlife species.

Chobe Research Camp

Chobe students are based at the Van Thuyne Ridge Research Centre, which is located on a few tree islands nestled within the thatch grass vleis that the area is well known for. Student’s stay in twin dome tents or twin rooms and have communal toilet and laundry facilities. Meals are served in an open communal dining area shared with other scientists and researchers carrying out studies within the area. This area also boasts a small library and social area around the characteristic African campfire. A fully functional lab and computer room are also available at the camp with satellite internet connection.
FIELD SITES & ACCOMMODATION

OKAVANGO DELTA

Wildlife ACT has established a research camp to implement the standardized monitoring protocol in the Moremi Game Reserve, which forms the heart of the Okavango Delta. The area is zoned as an exclusive wildlife management area and forms the heart of Botswana's eco-tourism activities, with thousands of visitors coming to the region every year. The region is home to important populations of endangered predators and threatened wildlife species, with population baseline monitoring data needed.

Okavango Khwai Research Camp

Okavango students will be based at Wildlife ACT’s Khwai Research Camp. The camp is situated on a small island in the swamps, accessed by a walkway bridge. Students stay in canvas walled rooms with thatched roofs which have en suite toilets and showers. It is important for students to realize that the conditions are simple with limited solar electricity supplies. Hot water is provided via solar geysers. Communal laundry facilities are available to students with detergent for hand-washing clothes provided. There is a communal kitchen and dining area, shared with other scientists and researchers carrying out studies at the institute. Meals will be prepared together with other Wildlife ACT students, with students taking turns in preparing meals and cleaning up. Food for three basic meals each day will be provided along with drinking water. We can cater for vegetarians, however NOT for vegans. If you have any other special dietary requirement you will be responsible for purchasing those food items.
STUDY ABROAD FEES

DATES

May 28 – July 30, 2016

COSTS

Included: Student participation fees cover orientation, lectures & course materials, accommodation, transportation, 3 meals a day while you are at the Wildlife ACT camps and participation on the projects research and monitoring activities and training.

Excluded: Luxury food items, including soda drinks, alcohol, sweets and chocolate are for your own account. All travel costs to Maun or Kasane, Botswana, are for students to cover.

The following additional activities are included:
• Game Drive into Chobe National Park
• Game Drive to Linyanti River
• Boat trip on the Chobe River into the Chobe National Park
• Traditional Dug-out canoe (mekoro) day trip in the Okavango Delta
• Four day excursion to Victoria Falls

Course participation fees
Given in US Dollars - $7,300