**Tswalu Foundation Projects:**

**1. INVESTIGATION OF NESTING ASSOCIATION BETWEEN THE SOCIABLE WEAVER AND PYGMY FALCON.**

Institution: Department of Biology, University of Turku, Finland

Inception: September 2011

Duration: 3 years

This project investigates the nesting association between the Southern African endemic sociable weaver and pygmy falcon, a system where the 'predator', not prey, makes the active association choice. However, the true nature of the relationship in this association (mutualism, commensalism or parasitism) is unclear, and the system is largely unstudied.

**2. CLIMATE CHANGE: THERMOREGULATION IN THE AARDVARK**

Institution: Apes, University of Witwatersrand

Inception: August 2011

Duration: 3 years

This projects aims to document adaptations of the **aardvark** for survival in the Kalahari with the challenges facing this species with the ever increasing threat of climate change. The assessment and understanding of **thermoregulatory** behaviour in aardvark in response to varied climatic conditions is key.

**3. CONSERVATION OF NAMAQUA & BURCHELL'S SANDGROUSE IN SOUTH AFRICA**

Institution: AGRED

Inception: September 2011

Duration: 2 years

This project investigates the conservation status of Namaqua and Burchell's sandgrouse on Tswalu Kalahari. There is a need to understand the population dynamics, ecology and recruitment of young of these species in the Kalahari, as well as the assessment of the impact of non-exclusive factors, such as food availability, predation and water availability, which may also control sandgrouse populations.

**4. HOME RANGE AND TERRITORIALITY IN THE PANGOLIN**

Institution: Department of Zoology, University of Pretoria

Inception: September 2011

Duration: 2 years

This project involves gaining a better understanding the diet, home-range sizes and refuge site selection of one of South Africa most secretive and elusive animals, the Pangolin. The animals will be tracked using VHF transmitters and their general behaviour, interactions with other individuals as well as with other species will be recorded..

**5. DIVERSITY AND ABUNDANCE OF SCORPION FAUNA**

Institution: Scorpion Adventures cc

Inception: October 2011

Duration: 2 years

This project centres around surveying the scorpion fauna on Tswalu Kalahari. Location records are being gathered in order to map out scorpions distributions on the property. From collection records, abundance, distribution within the reserve, ecological requirements, and associations with specific habitat, ecological and vegetative zones with is recorded.

**6. APEX AVIAN PREDATORS IN ARID ENVIRONMENTS: LAPPET FACED VULTURE & SECRETARY BIRD ECOLOGY**

Institution: Apes, University of Witwatersrand

Inception: December 2012

Duration: 2 years

The main focus of this project is raptor conservation in the southern Kalahari, through assessing the effects of land use practices in defining heterogeneity across an arid landscape and the importance of this for avian raptors. This includes niche partitioning of raptors on Tswalu Kalahari.

The project aims to assess the breeding biology and post-fledgling period of a terrestrial foraging raptor, the Secretary Bird. This study will address a number of questions relating to the biology of this large raptor species, in particular, breeding biology, post-fledgling inter-and intra-specific competition, and food selection.

### 7. INVESTIGATION OF REPTILE FAUNA

Institution: Apes, University of Witwatersrand

Inception: October 2011

Duration: 5 years

Despite snakes being among the most abundant predators of vertebrates in most environments, very little is understood regarding their biology or foraging ecology. The study plans to investigate the foraging ecology of several species of snakes at Tswalu, including Cape Cobras and Puff adders (both large, charismatic species). Aside from answering questions regarding the basic ecology of these animals, the answer to questions regarding the ways in which snakes utilise prey species that vary in their spatial and temporal availability will be sought. This work will also dove-tail with other proposed projects at Tswalu such as the work on predation-risk facing sociable weavers. This work is unique in that it has potential to integrate conservation-orientated ecological research with ecotourism through guests being able to observer naturally behaving wild snakes.

### 8. WHITE BROWED SPARROW WEAVER – UNDERSTANDING COOPERATIVE BEHAVIOUR

Institution: Centre for Ecology and Conservation, University of Exeter

Inception: June 2007

Duration: 5 years

The core aim of the project is to advance our understanding of the causes of variation in cooperative behaviour in animal societies, using the colonial white-browed sparrow weaver on Tswalu Kalahari as a model system. The project focuses in particular on investigating two poorly understood mechanisms through which variation in cooperative motivation may arise.

### 9. "HOT BIRDS" – CLIMATE CHANGE AND BIRDS

Institution: Department Zoology, University of Pretoria

Inception: January 2010

Duration: 2 years

This project, entitled "Taking the heat – predicting the responses of Kalahari Desert birds to climate change", assess rising temperatures and more frequent heat waves associated with climate change that are predicted to severely impact birds inhabiting hot desert habitats. This project investigates temperature-dependence of various avian behavioural and physiological traits on Tswalu Kalahari.

**10. ASSESSMENT OF THE ANTLION FAUNA**

Institution: Department Zoology, University of Pretoria

Inception: January 2009

Duration: 5 years

Tswalu Kalahari Reserve is a unique ecosystem that harbours a rich fauna of ant-lions and other lacewings, which all belong to the insect order Neuroptera. The intrusion of the Korannaberg hills into a typical Kalahari dune-field system provides many habitats in addition to those of the characteristic Kalahari sand-dwellers. Of the 13 families of Neuroptera that occur in South Africa, five have already been recorded from Tswalu, and a further five families could be expected with more intensive exploration, making Tswalu a major hotspot for Neuroptera.

**11. TUNNEL FARMING**

Institution: Tswalu Kalahari Social Responsibility

Inception: Spring 2011

Duration: Ongoing

Tswalu Kalahari is continuously looking at ways to reduce our ecological footprint and the sourcing of local produce is an ideal to which we strive. However, the Kalahari is a water stressed environment and the production of fresh produce is a difficult undertaking and Tswalu needs to source fresh produce from a long distance away. With the assistance of the Tswalu foundation, a system of tunnel farming by recycling water from the laundry is being developed. Apart from providing fresh produce for the tourist operation, it is envisaged that the gardens will supply nutritious green produce to assist in addressing malnutrition problems in the area, particularly among children and people with compromised immunity.

**12. TSWALU COMMUNITY CLINIC**

Institution: Dr and Mrs Ludwig Focking, South African Department of Health and Tswalu Kalahari Social Responsibility

Inception: 2001

Duration: Ongoing

This project arose through the concern of a visiting doctor from Germany. Dr Ludwig and Eva Focking have championed the development of the Tswalu clinic and now together with the Tswalu Foundation and with the assistance of the State run Health Care services, the clinic provides an important Health Care and Education service to this remote part of the country. The clinic now attracts medical professionals who are willing to share their expertise while enjoying a stay at Tswalu. The dental clinic is now well established and an eye-care facility is planned in the next phase.

**13. TSWALU CRECHE**

Institution: Tswalu Kalahari Social Responsibility

Inception: 2001

Duration: Ongoing

Tswalu encourages staff to stay with their families on the property. Children in remote areas such as Tswalu may not have the same developmental opportunities as children in more urban areas. In order to ensure that the Tswalu pre-school children are not left behind by their urban counterparts, Tswalu provides a crèche for local children. The children benefit from interaction with other children as well as having access to a range of early learning opportunities under the eye of a qualified teacher.

**14. TSWALU ADULT TRAINING FACILITY**

Institution: Tswalu Kalahari Social Responsibility

Inception: 2001

Duration: Ongoing

The rural areas of the Northern Cape have an extremely high incidence of adult illiteracy. One of the benefits of a developing tourist product such as Tswalu Kalahari is the many opportunities for growth and development for the local people. The first step to growing local people into the range of work that tourism offers is to ensure that they can read and write. This training, together with developing various life skills, empowers the people of the region to benefit directly from tourism and grow within the industry.

**PAST PROJECTS**

**15. ASSESSMENT OF THE DUNG BEETLE FAUNA**

Institution: Department Zoology, University of Pretoria

Inception: January 2008

Duration: 3 years

This project developed an inventory of the dung beetle fauna of Tswalu Kalahari. The surveys also determined dominant spatial patterns and examined food type associations. In terms of abundance, Five different patterns of food type association were demonstrated for the dung beetle fauna.

**16. ADAPTIVE RESOURCE USE IN A RE-INTRODUCED BLACK RHINOCEROS POPLUATION**

Institution: Apes, University of Witwatersrand

Inception: January 2003

Duration: Thesis

This projects main aim was to assess the adaptive resource use by black rhino (*Diceros bicornis bicornis*) on Tswalu Kalahari. The analyses of seasonal diet content and chemical composition of key woody plant species indicates that adaptive resource use, specifically consumption of semi-evergreen Acacia haematoxylon, averted a decline in diet quality during the critical dry periods. Seasonal variation in resource availability was incorporated in a meta-physiological model to estimate habitat capacity for black rhino on the reserve.