UNIVERSITEIT VAN PRETORIA
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YUNIBESITHI YA PRETORIA

Photo 1: D.Wunderlich

Photo 3: D.Wunderlich

Photo 2: D.Wunderlich

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Photo 4: D.Wunderlich

Photo 5: D.Wunderlich

Photo 6: D. Wunderlich

Conclusion

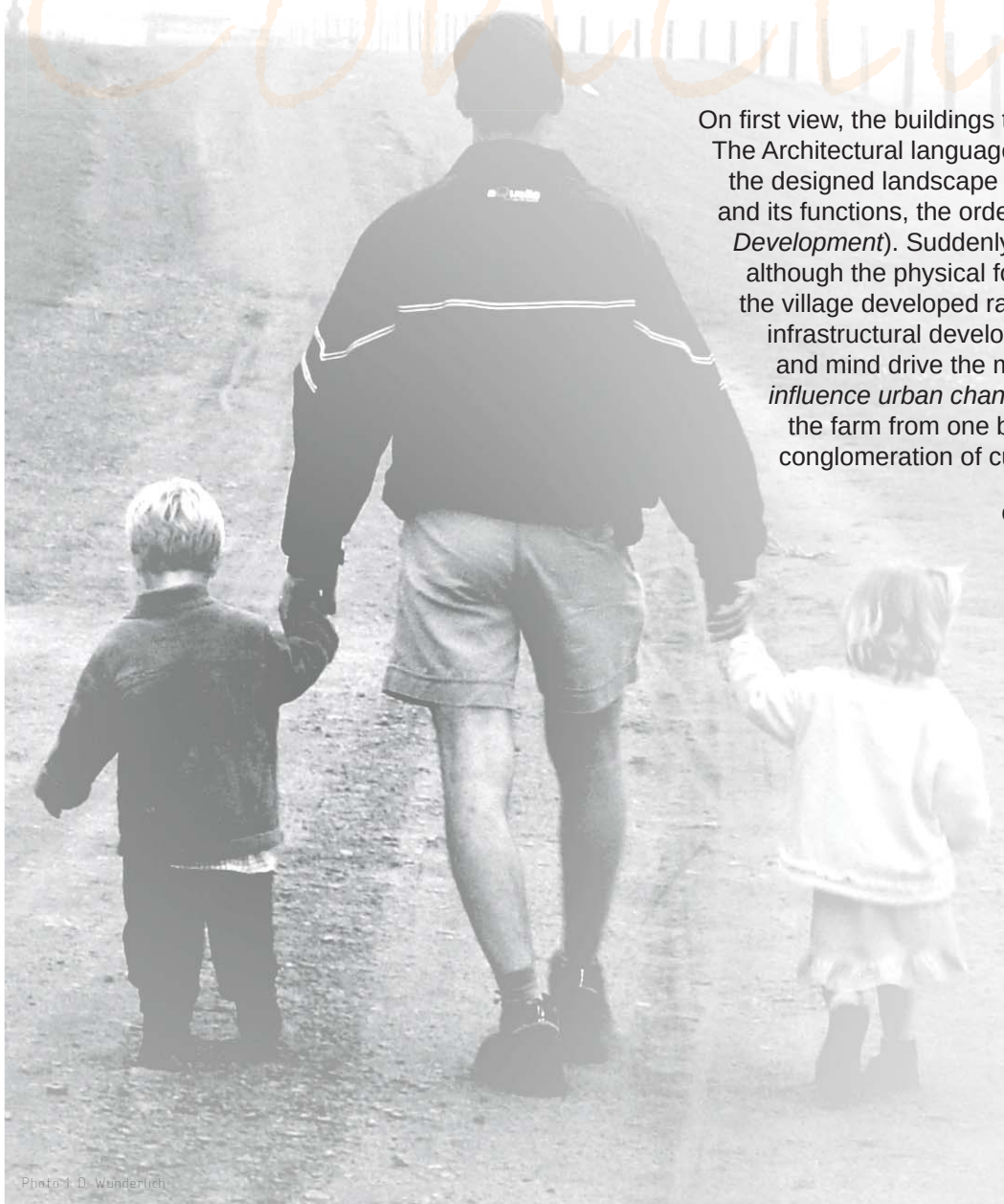

Photo 1 D. Wunderlich

On first view, the buildings that form the settlement on the farm Kwasizabantu, seems to be scattered over the site. The Architectural language does not speak of an expressed identity and the natural landscape is neglected while the designed landscape only starts to emerge. As I met the people and documented the history of each project and its functions, the order was revealed and the forces that shaped it started to emerge (see appendix *Historical Development*). Suddenly the buildings have a reason, a history, a specific function and a character to preserve, although the physical form does not necessarily correspond to its neighbour building. Due to the social needs the village developed rapidly and the economical misery of the Umvuti municipality manifest in the independent infrastructural development of the mission station. Internal forces of innovation born out of a renewed heart and mind drive the mission larger and larger. Bunchoten writes that *proto-urban conditions simultaneously influence urban change in many places*, and *lead to new form* (p32). These proto-urban conditions changed the farm from one building to a village with many people. As new people with their ideas are added to the conglomeration of cultures, the site's function, as well as the village's physical form and character changes.

Assessment of change, dynamics, and cause and effects are at the heart of thinking and explanation. To understand is to know what cause provokes what effect by what means, at what rate." - Georges Perec, Especces d'espace (Bunchoten, 2001, p77).

I see our role as Landscape Architects as the enhancer of peoples and environments' lives, not limited to the solving of the defined needs of both, but the adventurous exploring of the undefined needs to answer the unasked questions in which character expression, relationship structuring and artistic expression is all part of.

"we *are among the very few people today capable of revealing the rich complexity of sites and situations where other specialists see only chaos."* Michel Desvigne

Design can be good as far as it does good (Newton, 1957, p200).

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References

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Appendix

Photo 4: D.Wunderlich

Photo 5: D.Wunderlich

Photo 6: D.Wunderlich

Time	Building	Why/History	Emperical Information
1966	Small existing building.	The farm was bought with the one building, which was used for the services. It is now a hospital, or place where the sick is cared for.	
	Mud house for youth services.	The mud building was built where the switchboard building stands today. It was built for services, mostly for Zulu people, since it is only later that other cultures started to join.	The building soon becomes too small to accommodate all the people who attend the services, and a tent is used for the services.
1967			
1968			
1969			
1970	Technical workshop.	The workshop was started to cater for the needs that arose on the mission, and is still mainly used for the mission.	
1971	Uncle Erlo's house.	A bedroom and kitchen were built for the director of the mission; this house was also used to accommodate visitors, but soon became too small.	The house is used today as the home of the director of the mission station and his family, with other families living there. This is also the place where special guests, such as Mangusuto Buthelezi, are accommodated when they visit the mission.
	Switchboard building.	Accommodation for co-workers, one part for the men, the other part for women; youth services were conducted in the top room, but eventually they needed bigger spaces.	It is now being used for offices as well as sleeping quarters for the co-workers. The first floor, which was used for the conducting of services, is now being used as sleeping quarters for women.

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
Straw mattresses are made on which youth visitors can sleep.	The building was later demolished, and in its place the switchboard building was erected where the services were held on the first floor.	Not applicable.	Not applicable.	Demolished and replaced.
	Reactive growth.	Input: Electrical equiptment. Output: Electrical quiptment, oil, grease.	Close to other workshops; in need of open space to be able to service the heavy vehicles.	Technical workshop.
Uncle Friedel (one of the people who were part of the mission from the beginning and is today in charge of the European branches of the mission) slept in a caravan when the mission started.	The house forms part of the history of the building and, as such, will be kept as part of the heritage of the settlement and used for the accomodation of special geusts.	Input: Household products. Output: Household waste.	The house will stay as it is with the garden that surrounds it, which is used when many guests dine together (which happens quite frequently).	House for a few families.
	More accomodation for residents and visitors is needed.	Input: Household and office needs. Output: Household and office waste.	The building is ideal for accomodation.	Rooms, offices and switchboard.

Time	Building	Why/History	Emperical Information
	Wooden shop opposite existing building.	For the sale of products produced on the mission.	This shop was replaced with the shop that is now in use.
1972			
1973	Extension of original building.	Original building was extended to accommodate the number of people attending the services.	This building, as previously mentioned, is now used for a hospital.
1974	First trip overseas: Europe.	The people of the mission were invited to Germany to go and tell them of what is happening on the mission.	The connections with European countries, and later many other countries around the world, necessitates communication systems on the station. A Telkom tower was later erected, and the mission station implemented an internet server. Due to travel via aeroplane to and from the station, the landing strip was constructed.
1975			
1976	Uncle Erlo's house extended with extra wing.	For the accommodation of European visitors.	
	Kitchen.		
	Oversea's visitors start to come.	See 'First trip overseas: Europe', 1974.	
	Uncle Kjell's house (co-worker).	House was built for the co-worker and his family; also to accommodate visitors.	
1977			

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
	Was demolished and replaced with a shop just opposite the place where the old shop had stood.	Not applicable.	Not applicable.	Does not exist anymore.
		Input: Medicine, food etc. Output: Chemicals, human waste.	Expansion of the building necessary; access of vehicle close to building is important. Outside spaces for specific use for the ill can be considered.	Hospital.
Mama Lydia, a Zulu lady, recalls her experience: the European people found her hair and skin colour very strange and wanted to touch the black people. Europeans were surprised when she or her friends laughed or showed any emotion and would comment on it.	There are many visitors from other countries, and so more accomodation is needed. Then the legibility of the settlement must be improved, because it is quite difficult, on first-time arrival, to know where to go.	A regular movement of visitors in and out of the station.		
A blind man was involved in the building of the kitchen.				
		Input: Household needs. Output: Household waste.	House.	

Time	Building	Why/History	Emperical Information
1978	Bokamer developed - gathering place for co-workers.	The 'bokamer' was built for the co-workers to gather and conduct meetings.	The 'bokamer' is the room on top of the kitchen. The amount of co-workers are increasing, thus more room is needed to accommodate them. There are approximately 160 co-workers, but not all of them are stationed on the mission station.
	Landing strip - used for uncle Kurt Koch (doctor in psychology).	Dr Kurt Koch was a well known German psychiatrist during this time. He wrote many books that were published in mainly German, but English and Afrikaans and other languages as well. He visited many contries and flew regularly. His wife is still living on Kwasizabantu.	It is now being used by the Red Cross approximately once a month. Irrigation organisations used it during certain times of the year as needed by the farmers. For the mission station it is not used regularly. Maintenance costs are high, and it is being considered to disuse it as a landingstrip it for time being. It is also used by the children to play on.
1979			
1980	First part of existing shop built.	The shop is used to provide in the daily needs of the local people and the produce of mission is sold here.	A small portion of the products made in the factories on the farm are sold in the shop, together with products to provide in everyday needs.
	Construction on auditorium commenced.		
1981			
1982	Electrical workshop developed.	The electrical workshop was started to provide in the electrical maintenance needs of the rondavels.	Approximately four men are working here and provide in the missions needs for any electrical reparations or work as well as maintenance of the electrical infrastructure.

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
	In need of a larger room.	Input: Office needs. Output: Office waste.	Specific gathering space for co-workers that can accommodate the amount of people and provide in the needs of a prayer room.	
	Shouold be either upgraded to meet the standards for landing strips, or demolished and, if needed, built elsewhere.	Input: Mowing of lawn and maintenance of lights; enough precipitation and thus no need for irrigation. Output: Grass cuttings.	The landing strip is a prominent landscape feature that divides the settlement in two.	
	The shop provide in the needs of the people on the farm, but also for the people living in the Traditional Authority areas. More defined spaces for different uses, such as Telkom phones, post boxes, butchery, bakery etc., is needed that will be accessable, but secure.	Input: Basic services. Output: Waste of product packing-materials, food and produce that have expired.	Expansion, planning and defining of the space as the economical heart of the settlement; the village centre.	
	In need of more space.	Input and outputs: Electrical parts.	Expansion of existing building.	Electrical workshop.

Time	Building	Why/History	Emperical Information
	Rondavels built for visitors.	The rondavels were initially built for the many visitors that stayed on the mission for a while. They are now converted into homes, with families of up to six people living in one rondavel.	As the different families require more space, the rondavels are built up as double storeys.
1983	(Approximately at this time) houses for Germans built.		
1984	(Approximately at this time) reception and VIP rooms built.	The buildings were built to accommodate important people that came to visit the mission. Today it is being used as the reception of visitors and also as offices.	
	Uncle Friedel's house built.		Many people dine here, and house is used for families that stay there, or for visitors.
1985	(Approximately at this time) two dormitories built close to dinning hall.		These dormitories are used for single people living on the mission, as well as sleeping quarters for visitors.
	Accommodation for men: half for men and other half for "boeties", or co-workers.		

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
	The rondavels are part of the history and identity of the place, but better suit the function of accomodating visitors. Parking, communal spaces and children's play areas must be added.	Input: Household products. Output: household waste.	Parking, public spaces, children's play area added to area. Rondavels as part of the historical identity will be kept.	Houses.
		Input: Everyday needs for a family. Output: Water, sewerage, household waste.	Parking .	Houses.
Kurt Koch decided to build it.	Waiting room for a group.	Input: Office needs Output: Office waste	Needs to be relocated or emphasised to be easy to find on arrival. Reception overflow into landscape; parking area for visitors on arrival.	Reception area and offices.
Uncle Friedel is the manager of the oversea's branches of the mission.		Input: Household inputs. Output: Household waste.	Remain as is.	House.
	More accomodation for single women living on mission necessary.	Input: Household input. Output: Household waste.	More accomodation; mass accomodation.	Dormitories.
	More accomodation for single men living on mission necessary.	Input: Household input. Output: Household waste.	More accomodation; mass accomodation.	Dormitories.

Time	Building	Why/History	Emperical Information
1986	Carpentry workshop started.	To supply the needs of the mission.	Two people employed, and also about four volunteers man the workshop. Wood is supplied, some by the mission, but mostly from farmers in the surrounding areas that are mostly part of the congregation. They make, as far as possible, all the wooden products on the mission: wardrobes, kitchen units, tables, chairs, benches for the auditorium, roof trusses, etc.
	School constructed.		A creche, primary and secondary school.
1987			
1988	Bakery started.	The mission received all its bread from Sasko, but sometimes the bread came late, or was difficult to obtain and then became old etc. It became necessary to produce their own bread. At the same time a German man, who lives in Australia, wanted to get rid of his oven and moulder, and asked the mission if they wouldn't want the machines, since he would be willing to send it at his own cost. At the same time, a lady who had studied bakery in Switzerland felt led to start a bakery on Kwasizabantu, but due to the fact that there was no bakery or any equipment on the mission, was unsure whether she whould go through with it and leave her country. At that time the German man of Australia visited Europe for some reasons. One night the lady visited some friends just to find the German man there, who then told her of his mission to take bakery machines to Kwasizabantu (not knowing of her struggle concerning starting a bakery in Kwasizabantu). The lady decided to follow the German man to Kwasizabantu, where he spent a while in order to teach the people to work with the machines. They started the bakery under the leadership of this lady, Godron, who now lives on Kwasizabantu. The first building utilised was situated next to the existing dininghall, but moved to be close to the shop and the coffee shop. They bake 2000 bread loaves every day, as well as different pasteries for markets, the mission's shop and to those who place orders.	Dependent on generators for electricity due to the inconsistency of electricity received from Escom. The bakery is also part of the new coffee shop, and is used to provide what is necessary in the coffee shop.

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
	Reactive growth.	Off-cuts of wood go to boiler, which is used to heat the water for the mission. Shavings go to the pigs and chickens.	Working well at the moment.	Carpentry.
	Reactive growth.	Input: Office needs. Output: Office waste.	Parking and play area to be designed; location in relation to school buildings.	School.
	Reactive growth.	Kitchen input and waste.	Working well at the moment.	Kitchen for dining hall.

Time	Building	Why/History	Emperical Information
	Prefabricated houses built.	For accommodation.	
1989	Dormitories for girls and boys built between 1989 and 1990.		
1990	Auditorium finished.		
	Tabitha Adult School started.	The school was started for the education of adult people in reading, writing, learning new languages (Afrikaans, English, Zulu and German), computer skills and needlework. The building is located close to the entrance of the site to facilitate access for the people not living on the station.	Tabitha Adult School has 145 students and seven full-time teachers. Classes are given 12-13pm and 15-16pm. They have three classrooms, but are in need for more.
	Dairy moved.	Moved from building workshop to the one they now occupy	The cows stay on a farm 100km from the mission station, and the 4000-5000 liters of milk are transported to the mission everyday. They sell the processed products within a radius of 150km from the mission station. The factory workers are mostly people working on contract from outside areas.
1991			

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
				Houses.
	Play areas.	Household and kitchen inputs and wastes.	Working well at the moment.	
	In need of more facilities	Input: Office needs Output: Office waste	Expansion of building or extra buildings. Close to entrance for ease of movement for the people not living on the mission.	Adult school.
	The business is growing, and more space is needed for storage.	Input: Milk, water. Outputs: Mixed yoghurt, produced when machines are cleaned for new flavour, are sent to the kitchen (approximately 60kg of "waste" yoghurt a day); all waste water is collected and sent through a fat seperator before channeled to the septic tanks.	Expansion of building.	Dairy factory.

Time	Building	Why/History	Emperical Information
1992	Agricultural tunnels installed.	It was started when a man from Germany asked if he couldn't give his glass tunnels/hothouses to the mission. Although unskilled in the management and working of tunnels, they accepted it. He sent the tunnels, packed in three ship containers, over to South Africa. Of the three, one container was converted to the management office. At the beginning the growth of green peppers was developed/learned through trail and error. Eventually they got a man of Holland who was willing to help them. (Holland is the country with the most successes in the use of tunnels for crop production.) Today the tunnels are fully automatic, based on an Israeli program, and all peppers produced are sold to Woolworths.	It is important for the tunnels, firstly, to be rotated according to the sun for the optimal usage of the sun, and secondly, according to the wind for ventilation through the tunnels to reduce the heat (hothouse effect) and the supply of CO2. The peppers that are grown in the tunnels are very sensitive, and if any person enters the tunnels, he/she must first sterilise his/her feet. Anybody that smokes can't enter due to the influence of nicotine on the plants. There is a circulation of plants every five months. Some of the tunnels are used for the production of the plants. Coconut hair and wooden shavings are used as growthmedium. Coconut hair needs to be imported, and, while a small amount of wooden shavings of the carpentry can be utilised, the rest must be bought.
1993	Teacher's college built.		A four-years' teacher's degree is given in compliance with the Teachers College of Potchefstroom University.
1994			
1995			
1996	Recording studio (later Radio Kwezi) started.	Started with the recording of the Zulu choir for Radio Pulpit, but changed to a radio station to reach more people locally.	
1997			
1998	aQuelle started.	The existing water supply was brownish and tasted very bad, so it became necessary to bore for fresh water. According to geographic signs (cracks in the earth), they bore two holes to find the water. Later a chemical engineer who work with water purification came up with the idea to test it to see if they could bottle it. The water is of a very high quality, and in 1998 they started bottling in a small building with machines they received from Italy. Within a year or two they were in desperate need of upgrading. Today, they have 9, 30 ton lorries to distribute the bottled water. The area where the borehole is located, is changed to a conservation area and wild animals were introduced.	Work three shifts, twenty-four hours a day, seven days a week. Run according to ISO standards; UPS (batteries) connected to system; (generators ?). Borehole is 66m deep.

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
All profits are used to feed Aids orphans. Twenty-nine Zulu chiefs asked to help in the caretaking of the Aids orphans in their area, where they actively help with providing food for the orphans.	Pressure for more production.	All the water used for irrigation leads to kikuyu fields that were previously used for the pastures of the milking cows used. However, due grazing space, the cows are now on another farm.	More tunnels are needed to comply to the demand.	Tunnels for peppers and chillies.
		Input: Household and office needs. Outputs: Household and office as well as lab chemicals.		Teacher's college.
	They receive many visitors, but due to a lack of space it can become very crowded and difficult to walk around.	Input: Office needs. Output: Office waste.	Expansion of building. Building cannot be moved or relocated.	Radio station.
The borehole is under a sandstone layer, which is of the best purifying substrates.	aQuelle is growing extremely fast. It produce 25% of South Africa's bottled water. It is always on the lookout for expansion space. They are in the process of converting the area above the groundwater into a game and bird sanctuary.	The waste water is relatively clean, with only sugar, which comes from the left-over water in the tanks, when the tanks are cleaned, and chlorine, which is used for purify the water. The waste water is left to flow down the hill to the dam in the valley. Lots of waste plastic is produced that form part of the missions' waste that is dumped at a specially prepared waste point.	Expansion of building.	aQuelle water bottling factory.

Time	Building	Why/History	Emperical Information
	Weaving	The materials and instruments to weave were received from people from Germany.	There are three ladies that are weaving. Workshops are given to people who want to learn.
	Artemesian production started.		The plants are imported from China, because of its valuable medicinal properties. Areas of approximately 3,5ha are used for production. The production areas need to be rotated every third year. The plants are grown from cuttings on the mission, but they need to get new plants after twelve generations. The plants must be harvested just before they flower in March, when the artemesian content is the highest. The plants are harvested in the morning and left for drying in the sun from 10am-3pm. From there the plants are left over-night for drying. Old ship containers are used to make the ovens.
1999	Bakery moved to new building.		Closer to shop where the products are sold, and the coffee shop, for which it serves as kitchen.
2000			
2001			
2002			
2003			
2004			
2005			
2006	Care house for people suffering from HIV/Aids.		Any Aids sufferer is welcomed here. This is a place to stay and receive healthy food. Some medicine is provided.

Something Interesting	Vision/ Needs	Input and Output	Spacial Implications	Used for now?
	Artemesian and its medicinal value is still unknown by the majority of people and thus the growth of the small "factory" is not that fast. It is used to treat malaria with great success.	A very small amount of dried leaves and sticks are wasted (only the parts that fall on the floor during drying and processing).	Drying area needed.	Artemesian drying.
	Reactive growth.	Previously discussed.	Previously discussed.	
	Vast amount of accomodation space and caring facilities needed.	Household and medical inputs and outputs.	Accomodation, social and caring facilities needed.	Care house.

KwaZulu

Fig. 1 http://www.kznwildlife.co.za/

KwaZulu-Natal is characterised by increasing human populations, often with heavy reliance on natural resources for their livelihoods.
The use of renewable natural resources is fundamental to the economy, culture and well being of the people of KwaZulu-Natal.
Ezemvelo KZN Wildlife is mandated to conserve biodiversity for the benefit of all the people of the province and of the country.
For these reasons, “sustainable use” is advocated to achieve the objectives of improving and maintaining human welfare while maintaining or increasing our rich biodiversity.

KwaZulu-Natal has an astonishing array of wildlife. This province has diverse and spectacular landscapes with a wealth of plant and animal species to match.
Encompassing the sub-tropical abundance of the swamp forests, the mangroves and some of the highest forested coastal dunes in the world; evocative dry sandforest and bushveld; lakes and wetlands; grasslands, mistbelt forests and montane species living on the slopes of the Drakensberg Mountains.

Within 160 km the topography ranges from sea level to over 3000m in the Drakensberg - the moisture catching escarpment deeply incised by rivers, more rivers than any comparable area in southern Africa, that flow to the coast and the warm Mozambique current.
Sub-tropical conditions prevail in the northern coastal areas, frost and mist in the KwaZulu-Natal midlands and snow and ice in winter on the mountain peaks. Rain falls mostly in summer.
KwaZulu-Natal offers varied wildlife experiences ranging from wilderness trails in the Imfolozi Game Reserve (walking in White Rhino country), to sitting quietly in a hide at Mkhuze Game Reserve watching the natural world parade past. The Greater St Lucia Wetland Park, where your trail takes you into the territories of the hippopotamus and crocodile, has been internationally recognised for its species diversity.
You can be part of the scents, sights and sounds of the African bush from the comfort of your vehicle, on foot in the wilderness or from the verandah of your well-appointed chalet.

Wildlife List

Aardwolf
African Wildcat
Banded Mongoose
Blackbacked Jackal
Black Rhino
Blesbok
Black Wildebeest
Bat-eared Fox
Blue Duiker
Brown Hyena
Buffalo
Burchell’s Zebra
Bushpig
Bushbuck
Cape Fox
Caracal
Cheetah
Clawless Otter
Civet
Common Reedbuck
Dwarf Mongoose
Eland
Elephant
Giraffe
Grey Rhebuck
Grey Duiker
Hippopotamus
Impala
Klipspringer
Kudu
Large-spotted Genet
Leopard
Lion
Mountain Reedbuck
Nyala
Oribi
Red Duiker
Ratel
Red Hartebeest
Roan
Serval
Sidestriped Jackal
Small-spotted Genet
Springbok
Steenbok
Striped Polecat
Striped Weasel
Sable
Slender Mongoose
Spotted Hyena
Spotted-neck Otter
Suni
Turtle Green
Turtle Leatherback
Turtle Loggerhead
Tsessebe
Waterbuck
White Rhino
Warthog
Water Mongoose

Wild Dog
Yellow Mongoose

Wildlife Management

Technical Manuals

The sustainable use of natural resources in KwaZulu-Natal has grown exponentially in the past forty years and now generates both substantial income and a significent number of jobs.
This ranges from non-comsumptive use such as photography, hiking and wilderness trails to the consumptive use of plant and animal resources for, among other things, hunting, the capture and sale of live game, to the production of curios and traditional medicines.

In support of the use of natural resources, Ezemvelo KZN Wildlife has produced a series of technical manuals to help private and commercial landowners to manage their land and its resources to maximise the benefits to both biodiversity and sustainability.

Technical Manuals

1. Antelope Abundance
2. Habitat Preference Of Game Mammals
3. Blesbok Management
4. Common Reedbuck Management
5. Impala Management
6. Oribi Management
7. Blackbacked Jackal Caracal Bushbuck Management
8. Managing For Otters
9. Guinea Fowl Management
10. Alien Plant Threats
11. Trout Stream Management
12. Trout Dam Management
13. Constructing Dams For Waterfowl
14. Creating A Bird Garden
15. Wildlife Conservancies
16. Forest And Bush Restoration
17. Replanting A Degraded Watercourse
18. Grass Carp For Weed Control
19. Warm Water Fish Production

Fig. 2 http://www.kznwildlife.co.za/

Birding

Fig. 3 http://www.kznwildlife.co.za/

The birds of KwaZulu-Natal(KZN) are probably the best known in Africa. Many of the early birders worked here, the reason that more than a few African birds have natalensis as the second half of their scientific name. KZN has a long bird list, about 470 species being regularly recorded, and another 200 less regularly. This diversity reflects the number of habitats in KZN.

The coastal plain is influenced by the warm Mozambique current, with the result that a number of tropical birds push to their southernmost extremity there.
Some of these are species absent from the rest of South Africa.
Other tropical species spread south on a broader front, sometimes occupying the whole of KZN. None of these is a South African endemic, but a few are endemic to the coastal plain, just extending into Mozambique.
Many are breeding migrants, retreating to equatorial Africa in winter.
The KZN interior is structurally diverse - forests, woodlands, grasslands, wetlands - although these habitats are not unique to KZN.
Here the tropical birds mingle with species spreading from the western half of southern Africa. These latter are year-round residents, although some migrate short distances to lower altitude in winter.
Most of the widespread species come from the southern and western Cape.
KZN's alpine species are a mixture of Karoo birds at their easternmost limit, and species confined to high altitude. Many of these are endemics.
A number of north-western KZN birds are more typically associated with the Kalahari or highveld.
Much of the diversity of KZN is accounted therefore by its unique position at the crossroads of two, and by some definitions four avifaunas.
It also receives a substantial proportion of the Palaearctic migration that graces Africa each summer.
One consequence of KZN's crossroads position is that no species is endemic to the province.
The importance of KZN in conserving South Africa's birds is reflected in the number of Red Data species present. Of the 62 species currently listed, 49 occur regularly in KZN, and KZN makes a major, or the only contribution towards the conservation of 26 of them.

Bird Lists

Grey-winged Francolin
Natal Spurfowl
Swainson's Spurfowl
Crested Giumeafowl
White-faced Duck
Egyption Goose
Spur-winged Goose
African Pygmy-goose
Yellow-billed duck
Acacia Pied Barbet
Crested Barbet
Southern Yellow-billed Hornbill
Southern Ground-Hornbill
African Hoopoe
Nrina Trogon
Malachite Kingfisher
African Pygmy-Kingfisher
Giant Kingfisher
Giant Kingfisher
Pied Kingfisher
Burchell's Coucal
Purple-Crested Turaco
Barn Owl
Grass Owl
African Scops-Owl
Southern White-faced Scops-Owl
Cape Eagle-Owl
Pel's Fishing-Owl
African Wood-Owl
Marsh Owl
Black-bellied Bustard
Grey Crowned Crane
Blue Crane
Wattled Crane
African Finfoot
Black Crake
African Purple Swamphen
Red-knobbed Coot
Common Greenshank
Common Sanpiper
Little Stint
Greater Painted-snipe
African Jacana
Water Thick-knee
Spotted Thick-knee
Kittlitz's Plover
Collared Pratincole
Grey-headed Gull
African Fish-Eagle
Bearded Vulture
White-backed Vulture
Cape Vulture
Lappet-faced Vulture
White-headed Vulture
Lizard buzzard
Jackal Buzzard
Verreaux's Eagle
African Hawk-Eagle
African Crowned Eagle
Lanner Falcon
African Darter
Reed Cormorant
White-breasted Cormorant
Black Heron
Little Egret
Great Egret
Grey Heron

Goliath Heron
Green-backed Heron
Black-crowned Night-Heron
Dwarf Bittern
Hamerkop
Greater Flamingo
Lesser Flamingo
Glossy Ibis
Hadeda Ibis
African Spoonbill
Great White Pelican
Pink-backed Pelican
Yellow-billed Stork
Woolly-necked Stork
Saddle-billed Stork
African Paradise-Flycatcher
Black-crowned Tchargra
Bokmakierie
Cape Crow
Pied Crow
Dark-capped Bulbul
Yellow-bellied Greenbul
Cape Rock-Thrush
Pale Flycatcher
White-browed Scrub-Robin
Familiar Chat
Cape Glossy Starling
Southern Red Bishop
Thick-billed Weaver
Orange-breasted Waxbill
African Quailfinch
Cut-throat Finch
Grey Waxbill
Blue Waxbill
Green-winged Pytilia
African Firefinch
Village Indigobird
Yellow-fronted Canary

Endemic Bird Lists

Southern Bald Ibis
Cape Vulture
Forest Buzzard
Jackal Buzzard
Black Harrier
Grey-wing Francolin
Blue Crane
Blue Korhaan
Knysna Turaco
Ground Woodpecker
Knysna Woodpecker
Melodious Lark
Rudd's Lark
Botha's Lark
Thick-billed Lark
Grey Tit
Bush Blackcap
Cape Rock-Thrush
Sentinel Rock-Thrush
Buff-streaked Chat
Sickle-winged Chat
Chorister Robin-Chat
Drakensberg Rockjumper
Brown Scrub-Robin
Knysna Warbler
Cape Grassbird
Karoo Prinia
Fiscal Flycatcher
Fairy Flycatcher
African Rock Pipit
Mountain Pipit
Yellow-breasted Pipit
Southern Tchagra
Pied Starling
Southern Double-collared Sunbird
Greater Double-collared Sunbird
Cape White-eye
Cape Weaver
Swee Waxbill
Forest Canary
Drakensberg Siskin

Red Data Bird Lists

Near-threatened:
Great White Pelican
Black Stork
Woolly-necked Stork
African Openbill
Marabou Stork
Greater Flamingo
Lesser Flamingo
African Pygmy-Goose
Secretarybird
Bat Hawk
Ayres' Hawk-Eagle
African Crowned Eagle
Pallid Harrier
Black Harrier
Peregrine Falcon
Lanner Falcon
Blue Korhaan
Black-bellied Bustard
Lesser Jacana
Greater Painted-snipe
Black-winged Lapwing
Collared Pratincole
Black Coucal
Half-collared Kingfisher
Knysna Woodpecker
African Broadbill
Bush Blackcap
Orange Ground-Thrush
Broad-tailed Warbler
Rudd's Apalis
Woodwards' Batis
Black-throated Wattle-eye
Cape Longclaw
Red-billed Oxpecker
Neergaard's Sunbird
Pink-throated Twinspot
Lemon-breasted Canary
Vulnerable:
Pink-backed Pelican
White-backed Night-Heron

Southern Bald Ibis
Cape Vulture
White-backed Vulture
Lappet-faced Vulture
White-headed Vulture
Tawny Eagle
Martial Eagle
Southern Banded Snake-Eagle
Bateleur
African Marsh-Harrier
Lesser Kestrel
Blue Crane
Crowned Crane
Corn Crake
Striped Flufftail
African Finfoot
Denham's Bustard
White-bellied Korhaan
Caspian Tern
Eastern Bronze-naped Pigeon
African Grass-Owl
Pel's Fishing-Owl
Swamp Nightjar
Mangrove Kingfisher
Southern Ground-Hornbill
Green Barbet
Shorttailed Pipit
Yellow-breasted Pipit
Yellow-billed Oxpecker
Critical:
Eurasian Bittern
Wattled Crane
White-winged Flufftail
Rudd's Lark
Blue Swallow
Endangered:
Saddle-billed Stork
Bearded Vulture
Hottentot Buttonquail
Cape Parrot
Botha's Lark
Spotted Ground-Thrush

Fig 4 http://www.kznwildlife.co.za/

Flora

Fig. 5 http://www.kznwildlife.co.za/

The landscapes of this region are spectular, from the Usutu river on the Mozambique border in the north, to the Umtamvuna river on the border of the Eastern Cape in the south; from the Indian Ocean on the east to the Drakensberg, the highest mountain range in southern Africa on the west. Within 160 km the topography ranges from sea level to over 3000m, with moisture catching escarpments deeply incised by rivers , more rivers than any comparable area in southern Africa

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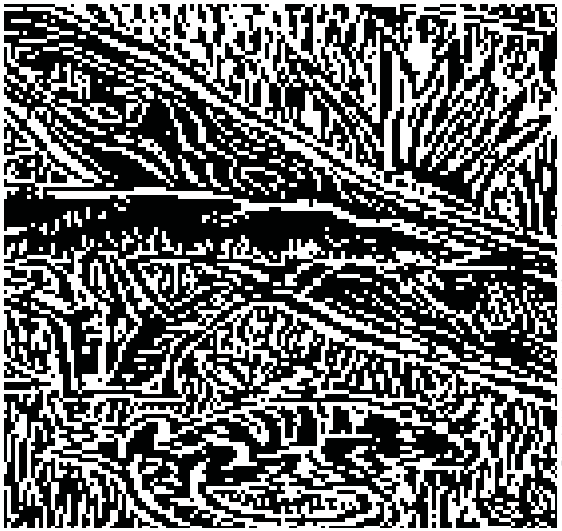

Fig. 6 http://www.kznwildlife.co.za/

The warm Mozambique current brings sub-tropical conditions to the northern coastal areas, whereas frost and mist can be found in the Natal midlands and snow and ice on the mountain peaks. Rain falls mostly in summer.

The plant life matches this varied landscape with its richness and diversity of species, from the sub-tropical abundance of the swamp forests, the mangroves and some of the highest forested coastal dunes in the world, to the evocative dry sandforest and bushveld, lakes and wetlands, grasslands, mistbelt forests and to the montane species clinging to the slopes of the Drakensberg. The flora of KZN is rich from several perspectives. It is home to over 6 000 vascular plant species and 1 258 genera (70% of the genera in southern Africa).The region is home to almost two thirds of South Africa's tree species--over 750 species. It has 11 times as many tree species as the whole of Europe.

Approximately 16% of the flora is endemic and 11% is rare and threatened. Southern Africa* has the highest known concentration of threatened plants in the world (Hilton-Taylor 1996) and is the most species-rich temperate flora in the world with over 24 000 species. (*The area to the south of the Kunene, Okavango and Limpopo Rivers excluding Mozambique.)

(With thanks to Elsa Pooley's Trees of Natal and Rob Scott-Shaw's Rare and Threatened Plants)

In the many protected areas in KwaZulu-Natal are to be found pristine examples of these plant communities, from the Themeda and Festuca grasslands of the Ukhahlamba Drakensberg Park to the huge canopy trees of the Ongoya and Nkandla forests, from the Acacia savannahs of Zululand with their fever trees and umbrella thorns to the Lala palm covered coastal plains of Maputaland with ancient dunes greened with sandforest and wetlands holding vast reedbeds and primeval swampforests. In these areas are wonderful and rare plants, some with strange growth forms, others with brilliant flowers in colours that overwelm the senses.

A floral kingdom that has to be experienced!

Grasslands

Grasslands are found chiefly on the high central plateau of South Africa, and the inland areas of KwaZulu-Natal. The topography is mainly flat and rolling, but includes the escarpment itself. Altitude varies from near sea level to 2 850 m above sea level. Grasslands (also known locally as Grassveld) are dominated by a single layer of grasses. The amount of cover depends on rainfall and the degree of grazing. Trees are absent, except in a few localized habitats.

Forbs and specifically geophytes are often abundant and more species rich than the grasses. Frosts, fire and grazing maintain the grass dominance and prevent the establishment of trees.

There are two categories of grass plants. Sweet grasses have a lower fibre content, maintain their nutrients in the leaves in winter and are therefore palatable to stock. Sour grasses have a higher fibre content and tend to withdraw their nutrients from the leaves during winter so that they are unpalatable to stock. At higher rainfall and on more acidic soils, sour grasses prevail, with 625 mm per year taken as ,the level at which unpalatable grasses predominate.

Grass plants tolerate grazing, fire, and even mowing, well, most produce new stems readily using a wide variety of stratagies.

The Grassland Biome is considered to have an extremely high biodiversity, second only to the Fynbos Biome. Rare plants are often found in the grasslands especially in the escarpment area. These rare species are often endangered, comprising mainly endemic geophytes or dicotyledonous herbaceous plants. Very few grasses are rare or endangered. The scenic splendour of the escarpment region attracts many tourists. Protected areas with good examples of grassland are the Ukhahlamba Drakensberg Park, Spioenkop, Chelmsford and the Umfolozi section of the Hluhluwe Umfolozi Park.

With grateful thanks to Elsa Pooley's Trees of Natal and Wildflowers of KwaZulu-Natal, Rob Scott-Shaw's Rare and Threatened Plants and Tainton, Bransby and deV. Booysen's Common Veld and Pasture Grasses of Natal.

Grassland Plant List

Aristada junciformis
Acacia sieberiana
Cymbopogon excavatus
Erythrina zeyeri
Eucomis autumnalis
Gerbera aurantiaca
Hyphaene coriacea
Hyparrhenia hirta
Rhynchelytrum repens
Themeda triandra
Watsonia densiflora

http://www.kznwildlife.co.za/

date visited 17 May 2006

Riparian Fringe Plant List:

Buddleja salviifolia
Crinum bulbispermum
Duvernoia adhatodoides
Gladiolus sp.
Hypoestes aristata
Plectranthus fruticosus
Rhamnus prinoides
Rhamnus prinoides

Trees:
Acacia xanthophloea
Calodendrum capense
Psychotria capensis
Cyathea dregei
Calodendrum glabrum
Commiphora harveyi
Dovyalis caffra
Dombeya rotandifolia
Erythrina lysistemon
Protorhus longifolia
Ptaeroxylon obliquum
Vepris lanceolata

Wetland Plant List:

Cyperus papyrus
Gomphostigma virgatum
Gunnera perpensa
Hesperantha coccinea
Juncus effusus
Typha capensis
Zantedeschia aethiopica

Fig 7 http://www.kznwildlife.co.za/