

# Expedition Briefing



The Canning Stock Route in the Gibson Desert (photo DEC). Insets (from left) releasing a mulgara (*Dasyercus cristicauda*); removing buffel grass at Well 26 in 2008; establishing Elliott traps; *Brunonia australis* (photos - DEC).

## Desert Tracks

Plants and Animals of the Canning Stock Route

Canning Stock Route

19–31 July 2009

### Leaders:

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With staff from the Western Australian Herbarium, DEC Science Division, Kensington

### Logistics:

Keith and Sally Capewell Aussie Off Road Tours, Broome

*This expedition is offered by LANDSCOPE, the Department of Environment and Conservation's (DEC's) quarterly magazine devoted to wildlife, conservation and environmental issues in Western Australia. LANDSCOPE Expeditions are run in association with UWA Extension, The University of Western Australia.*

LANDSCOPE Expeditions - Working at the Frontier of Discovery



Department of  
Environment and Conservation

Our environment, our future



in association with

UWA EXTENSION



THE UNIVERSITY OF  
WESTERN AUSTRALIA

**Desert Tracks**  
**Plants and Animals of the Canning Stock Route**  
 Kimberley Region  
 19 – 31 July 2009

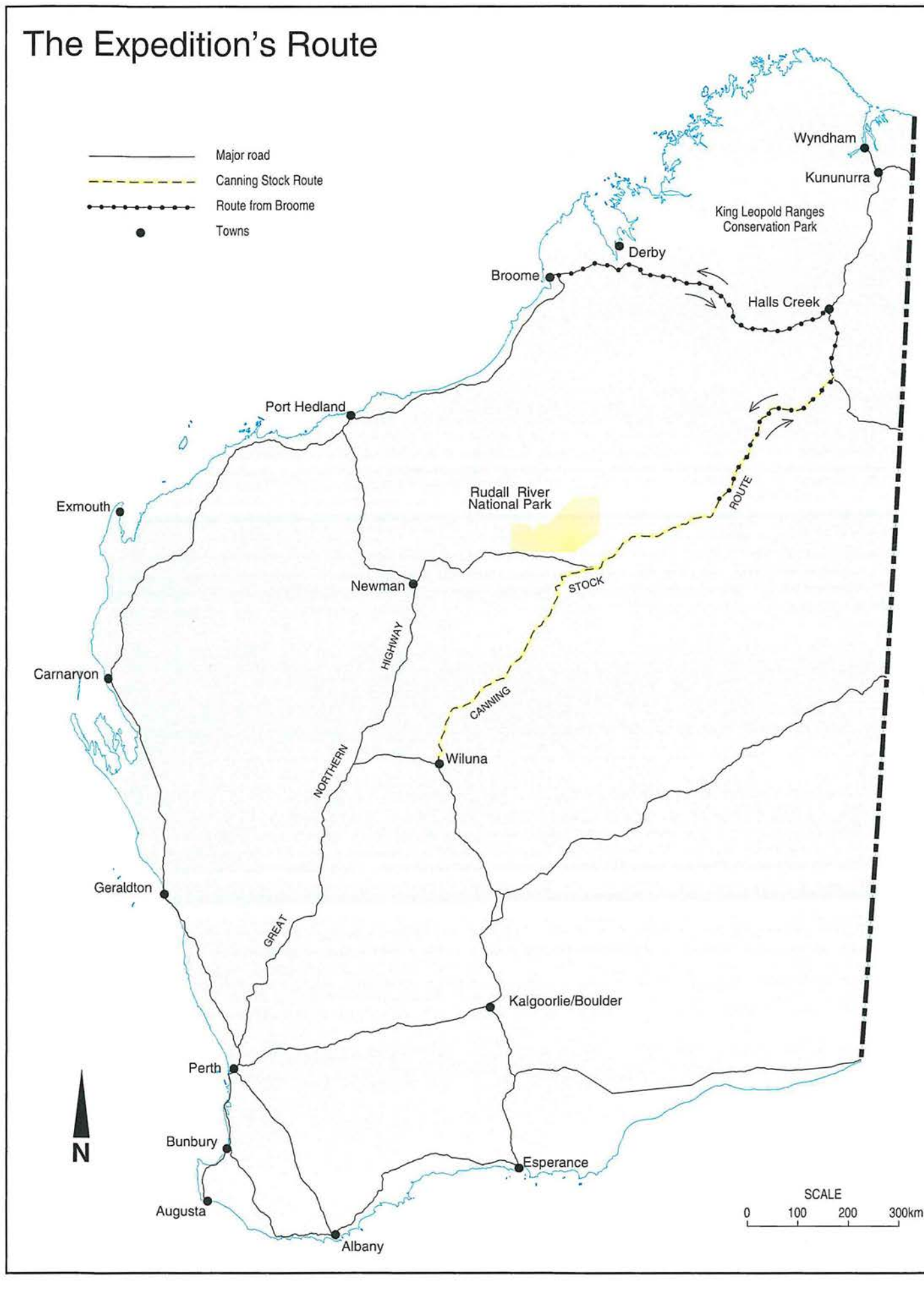
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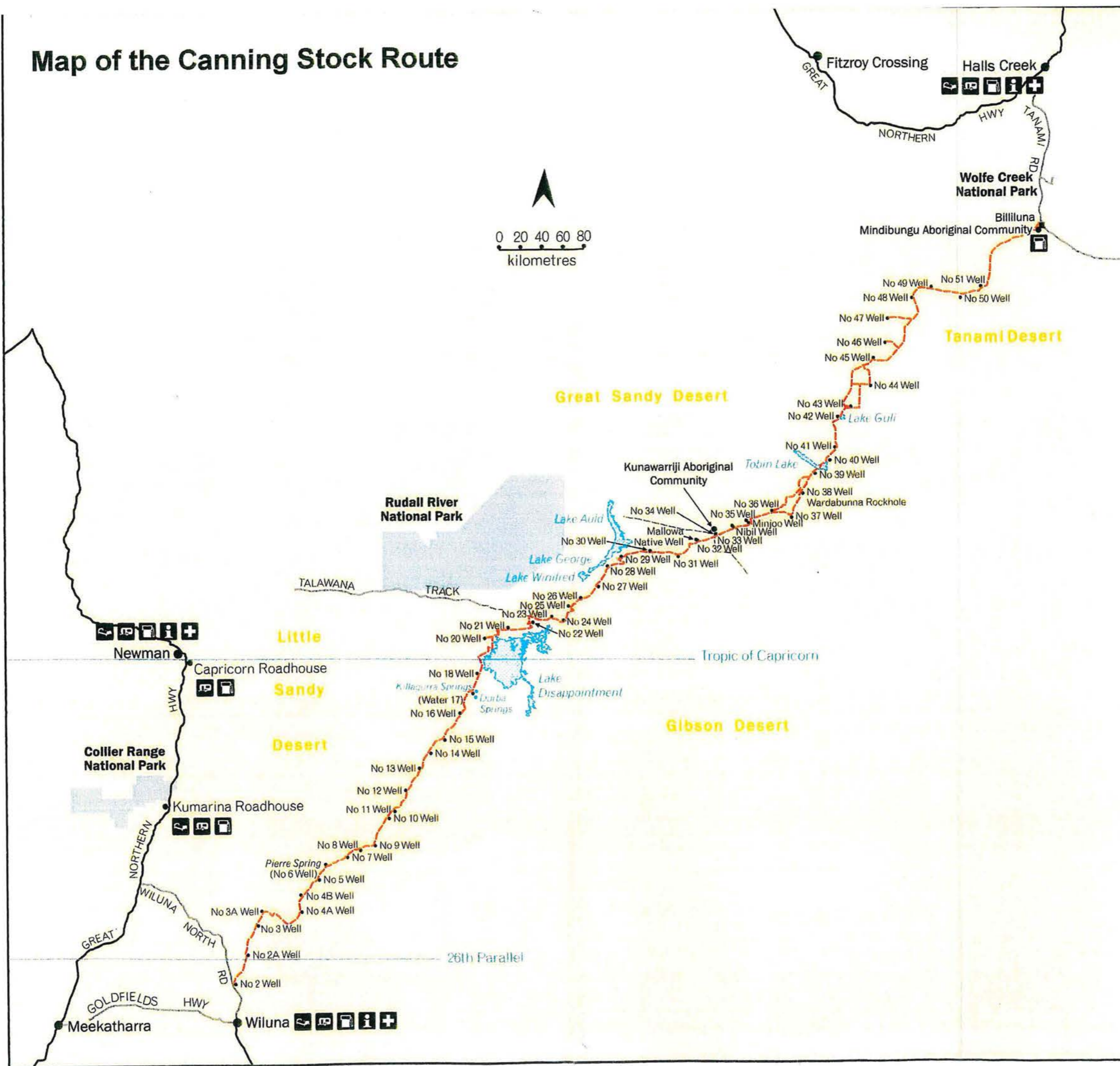
**RESEARCH  
PROJECT**

# The Expedition's Route

- Major road
- - - Canning Stock Route
- Route from Broome
- Towns



# Map of the Canning Stock Route



## RESEARCH LOCATION

The Canning Stock Route (CSR) traverses the northern Goldfields, Pilbara and Kimberley regions of Western Australia. The routes length is approximately 1850 kms and it runs north east from the centre of Western Australia to the Kimberley (see map page 4). The CSR is surrounded by pastoral leases and land owned traditionally by the Wiluna, Birriliburu, Ngalia, Martu, Ngurrara and Tjurabalan people.

Wiluna, at the southern end of the CSR is approximately 750 kms north east of Perth and is the starting point for most expeditions along the CSR. The northern point of the stock route is at Halls Creek, approximately 2000 kms north east of Perth. The CSR traverses four different deserts along its path and displays an array of different desert landscapes, flora and fauna.

The south western section of the stock route from Wiluna to near Rudall River National Park passes through the Little Sandy Desert and the Gibson Desert which is typified by red dune fields and sand plains with sandstone ranges and lateritic uplands. *Acacia*, *Grevillea* and *Hakea* shrubs over spinifex grasses occur on sandy plains with spinifex dominating the stony hills. Rivergums and grasslands occur near or within drainage lines.

Further to the north east, the CSR crosses the Great Sandy Desert and in the far north, the Tanami Desert. These areas are characterised by grasslands of spinifex with scattered *Acacia*, *Grevillea* and bloodwood (*Corymbia* spp.) trees on red longitudinal sand dunes overlying sandstone. The sandstone is commonly uncovered creating rocky upland areas. Stands of desert oak (*Allocasuarina decaisneana*) occur on sandy areas in this region, and are more prevalent to the east. Many blocked paleo-drainage lines exist in the area creating extensive salt lake chains with associated *Melaleuca* and samphire shrublands.

A number of native animal species occur across the area. However, it is believed that the numbers of many of these animals are in decline due to the presence of introduced species. Cats and foxes have placed many of them at risk of extinction. Some of the species that were once widespread in the area that are now considered vulnerable or endangered include the bilby (*Macrotis lagotis*), mulgara (*Dasymercus cristicauda*), marsupial mole (*Notoryctes caurinus*), woma python (*Aspidites ramsayi*), great desert skink (*Egernia kintorei*), the grey falcon (*Falco hypoleucos*). The Australian bustard (*Ardeotis australis*), whilst not considered vulnerable or endangered, is in need of monitoring.

## THE CANNING STOCK ROUTE – A BRIEF HISTORY

The Canning Stock Route is the longest and most remote stock route in the world.

At the beginning of the 1900's, the population of Western Australia was growing rapidly in both the south west and in the Goldfields and there was a growing market for beef reared in the Kimberley to be sold in the burgeoning southern region. At the time, cattle were transported south by ship on a gruelling sea journey during which the cattle either lost condition or perished. Once the cattle arrived they had to compete on the market against southern reared cattle in much better condition. An additional problem was red fever tick, which regularly prevented stock from the north being transported south.

It was believed that if an overland route could be opened up to the rail head at Wiluna, this would provide a means of getting the cattle to market in much better condition. It was also thought that the red fever tick would fall off and die during the journey. As a result, in May 1906, Alfred Canning set off to see if it were possible to create a route from the Kimberley to the goldfields

During 1906 and 1907 Canning conducted a full survey from Halls Creek in the north to Wiluna in the south and established a route. From 1908 to 1910, Canning retraced the route from south to north and sunk fifty two wells approximately a days walk apart (25 kms). The stock route was used in 1911 for the first time.

By the late 1920's, since its opening in 1910, only eight mobs of cattle had used the route. The main reason given for not using the route was "fear of attack from aboriginal people". During this time, the wells had deteriorated due to poor maintenance and vandalism. In 1929 William Snell was commissioned to refurbish the wells but was unable to complete the task and the route remained unusable. Canning, now seventy, was asked if he would complete the work and recommission the wells. He did so and the route was once again open for use.

With the outbreak of World War II, the CSR was further upgraded and wells refurbished once more to allow the CSR to act as an emergency evacuation route from the Kimberley in the event of an invasion. However, after the war, when Wyndham harbour was reopened, cattle were once again transported south by ship as transport conditions had greatly improved and the CSR once again became rundown.

The CSR was used a further twenty times after Canning had refurbished the wells. Only twenty eight mobs of cattle had been driven along the route since it was first opened in 1910, with the last being in 1959.

In 1963, a survey team made the first complete traverse of the stock route by vehicle and paved the way for this long distance trail to become a destination for travellers, adventurers and more recently 4WD enthusiasts.

One of the more famous attempts to travel the stock route was in 1973 when Murray Rankin and John and Peter Waterfall tried to walk the CSR. The trolley that they used to transport their equipment was abandoned near Well 15. John Waterfall turned back early and Peter Waterfall and Murray Rankin made it to Lake Disappointment. Rankin then proceeded with the aid of a food drop and completed the journey in two months. In 2005, Polish adventure cyclist Jakub Postrzygacz rode a specially constructed mountain bike from Halls Creek to Wiluna. Walkers, joggers, motor cyclists and camel treks have travelled the CSR and it has become a popular 4WD travel adventure with new pressures and threats.

In 2002, the Martu people were granted 136 000 square kms in the Western Desert region through which much of the CSR passes. Martu people hold native title over the land from approximately Well 15 to Well 40 and although access along the CSR is unrestricted, permission is required to venture off the Stock Route into Martu land.

Over the past 100 years the CSR has evolved from a route designed to satisfy an economic need to an iconic adventure travel destination. Despite the improvements in equipment,

communications and safety, travelling the CSR still requires careful planning and preparation which is a testament to those who constructed it all these years ago.

### PROJECT BACKGROUND

The region that the Canning Stock Route traverses is an area in which minimal biological research has been undertaken, primarily due to its remoteness and size. It is an area that has had minimal direct human impact and should provide excellent representative samples of arid flora and fauna.

There have been limited biological surveys conducted in this region in the past. Otto Lipfert from the Western Australian Museum made collections of birds and some observations of mammals during the expedition led by William Snell in 1930 – 1931. Currently there is research being undertaken by the Threatened Species Network looking at endangered species and DEC researchers are currently studying rock wallabies in the Calvert Range to the east of the CSR. There is also research being conducted on fire and a number of projects assessing and documenting indigenous heritage and sites.

At the present time, knowledge regarding the flora and fauna and fire regimes of this area is poor. Whilst some survey data exists, it needs to be augmented with further data to enhance the knowledge of these areas. As these areas are relatively untouched by development and have had limited habitat destruction they provide an insight into the past and to what plants and animals occurred throughout the state.

Despite the remoteness of this region, introduced species have still had a significant impact upon native animal species and their habitats. Many native animals have been reduced in numbers due to predation by cats, foxes and dogs and habitat destruction by camels. The data regarding introduced species in this area is also limited and requires further study to determine their impact on desert fauna.

In 2007 a *LANDSCOPE* Expedition surveyed the CSR between Wells 9 and 23. Several species of plant that were not previously recorded in this area were found along with a new species of spider. In 2008 the area between Wells 23 and 35 was surveyed. The highlight of this trip was the discovery of a mulgara (*Dasycercus cristicauda*), a small carnivorous marsupial that has not been seen in this area for over 70 years. In 2009 the expedition will survey the area north of Well 45 and will complete a trilogy of expeditions on the CSR.

### THE PROJECT

LANDSCOPE Expeditions has conducted two research trips along the CSR to coincide with the centenary of the routes construction. In August 2007 and August 2008, expeditions conducted biological surveys, made opportunistic observations of flora and fauna and mapped fire scar boundaries. This research will help identify what animals and plants occur in the region and determine the fire regimes that operate in the desert bioregions. The 2009 expedition will be the third and final expedition on the CSR.

Each expedition has undertaken research as outlined below:



- make opportunistic collections of flora and conduct fauna trapping and searching in a region of the state that is poorly surveyed
- assess density of introduced predators (cats and foxes) and camels at specific sites of interest along the CSR
- map fire scars and fire boundaries along the CSR to determine fire scale and variety of fire regimes in the desert bioregions
- collect and record from selected sites the distribution and life forms of desert cryptogams (mosses, lichens etc.)

The 2009 expedition will continue this research and specifically, the expedition will:

- conduct trapping with Elliott and collapsible cage traps. (2-3 lines of 25 traps per line)
- make opportunistic observations of native animals and feral animals
- undertake introduced feral animal track counts (camels, foxes, cats etc.)
- search for native animal diggings, tracks and scats (in particular bilby)
- collect plant specimens in flower (or fruit) as well as cryptogams
- record and document priority listed flora
- record birds, especially raptors
- plot fire boundaries
- record any other wildlife and make natural history observations

## **VOLUNTEER ASSIGNMENTS**

### **Conservation Volunteers**

Being a volunteer allows you to discover first hand what the DEC is doing. You will be part of a force of 3,439 people involved in a wide range of activities that include tree planting, trail building, interpretation and assisting with scientific projects. If you wish to be involved with future DEC Volunteer projects, please contact DEC's Community Involvement Coordinator, Margaret Buckland, on (08) 9334 0251 on your return. The Department relies very much on its volunteer work force. In 2007/2008 volunteers supplied 424,500 hours of effort. Volunteer assistance with remote area work, such as this expedition plans to carry out, is especially helpful.

### **Field Tasks**

Volunteers will assist with the following research activities in the field:

- daily checking of cage and Elliott traps for small mammals and reptiles (when traps are set)
- identification and measurement of captured animals
- surveys for priority listed flora
- identifying feral animal tracks
- opportunistic bird surveys
- identification and collection and data recording of plant and cryptogam specimens
- assist with the identification and location of fire scar boundaries

### Base Camp Tasks

- Assist in compilation of data at the end of the day
- Confirm identification of small vertebrates
- Plant and cryptogam identification and processing for drying and transport
- Summarise trapping data sheets
- Write up notes

### Base Camp Maintenance

- Set up/strike camp when necessary
- Assist with general camp maintenance
- Assist with meal preparation and clean up

### FIELD TRAINING

In addition to orientation, there will be briefings on safety, research procedures and objectives. There will also be informal talks, daily reviews of progress, and sharing of participants' discoveries.

Team leaders will be available to discuss aspects of their work with expedition members, and are looking forward to a shared learning experience.

### APPLICATION OF RESULTS

This type of research is fundamental in documenting and monitoring the biodiversity values of Western Australia. Importantly, reference collections made here will be lodged with the WA Museum and the WA Herbarium where they contribute in the broader context to our understanding of biogeography throughout WA and Australia.

### EXPEDITION LEADERS

**Graeme "Tub" Liddelow** is a senior Technical Officer with DEC at Manjimup. He has been involved in both Project Eden and Desert Dreaming since the inception of Western Shield, which aims to rid the state of feral cats and foxes. He has been involved in forest ecology and management for more than 25 years and with desert and arid land ecology projects for more than 15 years.

**Dr Kevin Thiele** is the Curator of the Western Australian Herbarium, a position he took up in 2006. He studied the evolution of banksias for his PhD at the University of Melbourne, followed by a period working on the plant family Rhamnaceae at the Australian National Herbarium in Canberra. For more than a decade before moving to Western Australia he lived with his wife and family on a small, organic farm in far eastern Victoria, where he worked via satellite internet at the University of Queensland. He is the designer of a software program – Lucid – that has been used throughout the world to create computer-based keys to organisms as diverse as eucalypts, orchids, corals, flies and the body parts of beetles recovered from owl pellets in Namibia.

**Karin Carnes** is the Regional Nature Conservation Officer for the Kimberley region based in Kununurra and has been in this position since November 2005. Her role involves the planning and implementation of the Kimberley Regional Monitoring Program, including flora, fauna and invertebrate sampling, as well as the coordination and support of weed and feral animal control. Karin has a Postgraduate Certificate in Tropical Land Management from Charles Darwin University, and has carried out numerous roles within the Department including the Natural Resource Management Biodiversity Facilitator for the Kimberley region in 2004 and acting Project Coordinator for the Cane Toad Initiative in 2005. Karin has lived and worked in the Kimberley region for over 10 years and has a strong passion for the diverse Kimberley flora, fauna and landscape.

#### **EXPEDITION DIARY AND REUNION**

A copy of the expedition diary will be provided soon after the conclusion of the expedition.

A reunion for all 2009 participants will be held in December in Perth. As this will be the final *LANDSCOPE* Expeditions reunion, it will also be a celebration and farewell after 17 years of *LANDSCOPE* Expeditions. This gathering will provide the opportunity for you to catch up with old friends.

# FIELD LOGISTICS

**RENDEZVOUS**

Full fee paying expedition members will rendezvous on Sunday 19 July 2009 at **1900 hrs at Mercure Inn Continental Broome, Weld St Broome (Hotel Ph: 08 9195 5900)**. Check in after 1400 hrs. **An expedition briefing will be held at 1900 hrs before an expedition dinner at 2000 hrs at Mercure Inn Continental Broome.**

*If you are delayed for any reason on the evening of the rendezvous, please contact Graeme 'Tub' Liddelow on 0408 717 111*

The expedition will depart Broome on Monday 20 July 2009 at **0700 hrs sharp** and travel via The Great Northern Highway to a campsite near Hall's Creek.

**Tag-alongs** are required to meet the expedition at this point and attend the expedition briefing at **1900 hrs at Mercure Inn Continental Broome, followed by dinner (included in your contribution) at 2000hrs.**

Transport, meals and camping equipment for full fee paying participants will be provided by Aussie Off Road Tours. Transport will be in a 12 seat air conditioned Landcruiser Arkana and three other four wheel drive vehicles. All meals and camping equipment, including small tents, swags, sleeping bags and pillows will be provided by Aussie Off Road Tours.

**EXPEDITION ROUTE** (see map page four)

The expedition will depart Broome and travel east along Great Northern Highway to an overnight campsite near Halls Creek. The expedition will then head south along the Tanami Road to Billiluna and the northern end of the Canning Stock Route. We will spend the next ten days conducting field research on the Canning Stock Route where we will travel as far south as Well 45. We will stop at two sites for extended periods to conduct more detailed research. The expedition will retrace the route to return to Broome. Time permitting, a visit will be made to Wolfe Creek Meteorite Crater.

**ITINERARY**

<b>Day 1</b>	<b>19 Jul</b>	<b>Sun</b>	<b>Expeditioners arrive in Broome. Rendezvous 1900 hrs at Mercure Inn Continental Broome</b> (depending on flight arrivals). Overnight accommodation, dinner and breakfast provided as part of your contribution. An expedition briefing and dinner will be held at this location on this evening
<b>Day 2</b>	<b>20 Jul</b>	<b>Mon</b>	<b>Depart for CSR</b> Meet at 0700 hrs for departure after breakfast Overnight camp near Halls Creek
<b>Day 3</b>	<b>21 Jul</b>	<b>Tue</b>	<b>Halls Creek – CSR</b> Depart Campsite and head to CSR via Billiluna Arrive CSR near Well 49 in the Breeden Hills O/N Breeden Hills

Day 4	22 Jul	Wed	<b>CSR Biological Survey</b> Establish base camp and set traps O/N Breeden Hills
Day 5	23 Jul	Thu	<b>CSR Biological Survey</b> Check traps, conduct searches for flora, animals and introduced predator tracks O/N Breeden Hills
Day 6	24 Jul	Fri	<b>CSR Biological Survey</b> Check traps, conduct searches for flora, animals and introduced predator tracks O/N Breeden Hills
Day 7	25 Jul	Sat	<b>CSR Biological Survey</b> Check, close and collect traps, conduct searches for flora, animals and introduced predator tracks Strike camp, depart for new survey site near Well 45 Establish new base camp and set traps O/N Well 45
Day 8	26 Jul	Sun	<b>CSR Biological Survey</b> Check traps, conduct searches for flora, animals and introduced predator tracks O/N Well 45
Day 9	27 Jul	Mon	<b>CSR Biological Survey</b> Check traps, conduct searches for flora, animals and introduced predator tracks O/N Well 45
Day 10	28 Jul	Tue	<b>CSR Biological Survey</b> Check traps, conduct searches for flora, animals and introduced predator tracks O/N Well 45
Day 11	29 Jul	Wed	<b>CSR Biological Survey</b> Check traps, conduct searches for flora, animals and introduced predator tracks. Depart campsite Well 45 and travel north to campsite Near Well 51
Day 12	30 Jul	Thu	<b>CSR to O/N Campsite</b> Travel to overnight campsite – Location to be confirmed
Day 13	31 Jul	Fri	<b>O/N Campsite to Broome</b>

Return to Broome late afternoon - End of Expedition.  
 Informal dinner with leaders and expeditioners if desired  
 (not an official LE dinner)

*This itinerary is provisional and may be varied at the discretion of the expedition leaders. Please note that we cannot guarantee the arrival time in Broome at the end of the expedition. While we will make every effort to return on time, there may be events out of our control that impact upon travelling and arrival times. Once we do return, please be aware that there is a full contingent of volunteers and leaders to take care of with regard to unpacking and that this may take some time. Please make allowances for these when planning your departure from Broome.*

#### DAILY SCHEDULE

0600 hrs	Arise and have breakfast
0700 hrs	Briefing on the days travelling and activities Check traps if set previous evening
0830 hrs	Pack camp and depart for new study site (if relocating that day) Undertake field work if not changing site
1030 hrs	Morning tea
1100 hrs	Continue travel or fieldwork
1230 hrs	Lunch
1315 hrs	Continue travel or fieldwork
1500 hrs	Afternoon tea
1600 hrs	Arrive at camp – Set up camp. Complete data entry
1700 hrs	Dinner preparation / washing / campsite chores
1800 hrs	Dinner
1900 hrs	Discuss day's events, complete pressing of plants, record keeping, plant notes

#### TEAM DEVELOPMENT

Team spirit will initially be built by travelling together in the expedition convoy to the CSR. There will be regular stops, and team members will be rotated between vehicles. Travelling along the CSR as a convoy and having meals together, sharing in preparation and clean-up, working and living together in the remote outback, and being involved with this exciting project will enhance team spirit.

#### ACCOMMODATION

Full fee paying participants will be accommodated at the **Mercure Inn Continental, Weld St Broome** on Sunday 19 July, the first night of the expedition. **An expedition briefing**

**and dinner will be held at Mercure Inn Continental Broome on this evening for ALL participants.** After that, conditions will be basic. We will be camping in bush camps for eleven nights in isolated locations with no facilities. The expedition will be accommodated in swags, with tents being available if required. A covered area will be set up in sites where we are camping for more than one night, under which research work will be completed. At some sites a pit toilet may be available. In other sites, bush toileting will be required.

Drinking water will be carried in the expedition vehicles. Water for other purposes (cooking, dishwashing, showers etc) will be collected from the Wells along the route. As water will be at a premium, there may not be the opportunity to have a shower for extended periods. A bush shower will be set up a couple of times during the expedition if water supplies are adequate. Please make provisions for an alternative method of maintaining personal hygiene. For more information, please see 'Personal hygiene' in the 'SAFETY AND HEALTH' section of this document.

Full fee paying volunteers should have two items of luggage – **your LANDSCOPE Expeditions duffel bag and a daypack.** Bag labels are provided, however, as all the bags look the same, you may wish to mark your bag with a coloured ribbon, or something else that helps you spot your bag quickly. You may also wish to bring a large, plastic, heavy duty garden bag with ties to protect your bag from damp, dust, or rain. Sleeping bags and pillows will be provided by Aussie Off Road Tours.

**Tag-alongs: PLEASE READ THE TAG ALONG GUIDELINES CAREFULLY.** All transport, fuel, meals, water and camping gear are your own responsibility during the expedition. Nothing is provided. You will need to arrange your own accommodation at the beginning and end of the expedition. The rest of the group will be staying overnight at the **Mercure Inn Continental Broome** on Sunday 19 July. Tag-alongs should note that for this expedition it is essential to fit a UHF-CB radio to your vehicle. Tag-alongs are required to travel with the DEC convoy from Broome on Monday July 20. **PLEASE NOTE: Your Tag-along contribution includes the Expedition Dinner to be held on the evening of Sunday 19 July at the Mercure Inn Continental Broome** (see page 13).

## FOOD AND DRINKS

Food will be provided by Aussie Off Road Tours and participants and organisers will share in the preparation of meals each day on a rotation basis. Please advise Cheryl Tonts immediately if you have special dietary needs (Work 08 9334 0319 or email: [landscapeexpeditions@dec.wa.gov.au](mailto:landscapeexpeditions@dec.wa.gov.au)).

After we leave Broome there will be very limited opportunity for you to restock your personal supplies, so we recommend you bring all you need with you at the start of the trip. If you like to have "something extra" to enjoy with your evening meal, we recommend that you bring a **small supply** (as space in the vehicles is very limited) with you. You may also wish to bring a small supply of lollies, snacks or "trail mix" to your liking. Aussie Off Road Tours has a license which allows them to sell alcoholic beverages, but as space is at a premium, the supply will be limited.

As we are in a remote environment with few facilities, meals will be prepared in camp conditions. You will be required to assist the expedition leaders with the preparation and clean up of meals



**Tag-alongs;** All meals, snacks and drinks are your responsibility. **Nothing** is provided by the expedition. Please ensure that you have meals prepared and finished in good time so that you can join the nightly information and “Meet the Scientist” sessions. As mentioned previously your Tag-along contribution includes the Expedition Dinner to be held on the evening of Sunday 19 July at the Mercure Inn Continental Broome.

### **Rubbish/Waste Disposal**

All rubbish will be removed by the expedition. Rubbish must not be buried in holes as animals can dig it up. Do not put rubbish down toilet holes. **Tag-alongs are responsible for the removal of their own rubbish, so please bring a supply of strong plastic bags with ties.**

### **PHYSICAL CONDITION**

The expedition will not demand an elite level of fitness. However, some level of physical fitness is required to service the traps and make opportunistic observations each day. You should be prepared to cope with warm days and very cold nights. There will be as much walking, exploring and searching as you want, so ensure that you have comfortable, solid boots. You will maximise your enjoyment of the activities by ensuring a reasonable level of fitness in the weeks leading up to the commencement of the expedition.

### **ENVIRONMENTAL CONDITIONS**

**Climate:** At this time of year in this area, average daytime temperatures are 26°C, although you can experience much warmer and much cooler daytime temperatures (mid teens to mid 30's). Average night time temperatures are around 12°C, but temperatures can drop to near freezing. The lowest temperature recorded in this area at this time of year is 3.5°C. The average rainfall in July is 8 mm.

**Terrain:** Walking through the desert landscape will be an essential part of the field work during this expedition. The ground in the desert region is a mix of sandy and rocky surfaces. Many of these areas are covered with small rocks or pebbles (gibber plain). The land surface is generally flat with parallel sand dunes (up to 20 m high) and some higher rocky areas. Interspersed throughout the area are remnant rocky ranges that stand above the surrounding plains. The vegetation is predominantly *Acacia*, *Grevillea* and *Hakea* shrubs over spinifex.

### **SAFETY AND HEALTH**

Your safety, health and comfort are of paramount importance.

**Sunburn:** Is possibly the greatest medical problem that arises. You must guard against it. Loose-fitting, long-sleeved shirts, full-brimmed hats, sunglasses, sunscreen lotion, and lip-block are all essential.

**Dehydration:** Is a significant issue particularly in high temperatures, even during the evenings. It is vital to always ensure you drink plenty of water. You must keep water bottles (minimum of 2 litres) with you in your daypack. **This is essential.**

**Safety Mates:** To improve volunteer safety in the field, expeditioners will be assigned a ‘safety mate’ for the duration of the expedition. At all times, you should know where your

'safety mate' is. If you cannot locate your mate and are concerned as to their whereabouts, please advise a leader. This system is designed to improve safety in the field. Leaders will explain the 'safety mates' protocol on Day 1.

**Snakes:** Several highly venomous snakes are present in the desert region. The king brown or mulga snake, the western brown snake or gwarda and the desert death adder inhabit the region through which we are travelling. For safety reasons, volunteers are not to handle snakes. Two elastic pressure bandages should be carried with you at all times as a first aid treatment for snakebite. When moving around at night, a good head torch and a spare, small, back-up torch are recommended.

**Clothing and footwear:** Long pants and boots that protect your ankles are recommended. If you prefer wearing shorts, bring some Gore-Tex<sup>®</sup> gaiters or leggings. Shorts leave your legs susceptible to sunburn, insect bites, scratches, and spinifex spines often break off under the skin, leading to small but painful infections. The spines are very hard and sharp, and can penetrate all but the strongest materials. The open fabric of many running shoes is no barrier to spinifex spines, and leather boots with ankle protection (well worn in to avoid blisters) suitable for walking around in desert conditions are recommended. You will need comfortable light shoes to wear in camp and in the evenings and a pair of thongs for use during bush showers will be helpful. Warm clothing and a beanie for the evenings will be essential as the desert nights can be very cold. Canvas garden gloves may be used to protect the hands when in the field. Although rainfall is unlikely, it can occur and it is advisable to bring some form of rain protection. A plastic poncho, available from camping and outdoor stores is a cheap, lightweight alternative to a bulky raincoat or jacket.

**Insect pests:** Insects can be problem in the outdoors. Repellents and creams are advised if you are particularly susceptible to insect bites. Your doctor can prescribe any necessary antihistamines. Make sure that you shake any clothing out before putting it on in the morning in case any insects or animals have taken up residence. Put your boots into a plastic bag at night time so that nothing crawls into them. *Please familiarise yourself with the enclosed brochures from the Health Department of Western Australia.*

**Medications:** Check that you have any required prescriptions filled beforehand and make sure that you bring an extra supply in case of damage or loss. If you think you may need antihistamines for possible allergic reactions, see your doctor and obtain appropriate medication.

**Personal hygiene:** Peter G's liquid soap is a good soap to use in hard water. Medicated soaps such as gamophen, or sandalwood, which is natural to the bush, are also good choices. Baby wipes can be used for washing in the absence of water and a small tube of sanitising hand gel (e.g. Dermasoft) is also a useful item to bring. On this expedition a bush shower will be available if water supplies are adequate. It would be useful to bring a small container (such as an ice cream container) and a small washer to help you maintain your personal hygiene on this trip.

**Wilderness survival:** Please familiarise yourself with the enclosed Wilderness Survival Card and carry it at all times in your day pack along with water bottles, a whistle, compass, signal mirror, torch, matches and elastic bandages at all times in your daypack. It is very easy to become disoriented when walking away from tracks, vehicles and campsites in the desert. It all looks very much the same and is often featureless and vast. Take careful note of any landscape features to guide you back to the vehicle, campsite or study area. If you do

become lost, follow the instructions on the wilderness survival card. Light a fire only as a last resort and be sure to clear an area to prevent a wildfire.

**First Aid Kit:** The expedition will carry a comprehensive first aid kit. Minor cuts and scratches should be attended to promptly as they can become infected in the outdoor environment. Please bring some of your own bandaids and personal first aid supplies for your own convenience.

**Avian Influenza:** Wild birds in Australia pose a negligible avian influenza risk to humans at the present time, however, all birds, particularly water fowl (ducks, geese, swans) are potential carriers of the disease. As there may be some contact with birds on expeditions, volunteers are advised that they are not permitted to handle birds, especially those that appear sick or dead. For further information please refer to the following website on Avian Influenza.

[http://www.health.gov.au/internet/main/publishing.nsf/Content/health-avian\\_influenza-index.htm](http://www.health.gov.au/internet/main/publishing.nsf/Content/health-avian_influenza-index.htm)

**Bats:** Expedition members are not to handle bats due to the possible presence of lyssavirus, a potentially fatal rabies like virus. Should you come across a sick or injured bat, do not attempt to handle or 'rescue' it. Avoid it and advise expedition leaders.

**Dingoes:** Be alert to the presence of dingoes and do not encourage them in any way. Dingoes have been known to attack humans.

#### FIELD COMMUNICATIONS

Satellite phones and HF (RFDS) radios will be carried in DEC vehicles to be used for regular contact with the DEC office in Broome and for use in the case of an emergency. UHF radios will be utilized for intra expedition communications. An EPIRB will also be carried by the expedition in case of emergency.

The expedition will be in regular contact with the DEC office in Broome. If you need to be contacted urgently while you are away, *LANDSCOPE* Expeditions administration has facilities to contact DEC's office in Broome, **but only in an emergency**. The office will in turn contact the expedition. It is most likely that any messages will only be passed on during scheduled contacts which maybe up to 24 hours after *LANDSCOPE* Expeditions has been contacted.

Telephone *LANDSCOPE* Expeditions on (08) 9334 0401

Mobile phones do not work in this area.

#### CRISIS / EMERGENCY MANAGEMENT

The expedition, in consultation with the Royal Flying Doctor Service (RFDS) has developed a crisis management plan in case a medical or other emergency should arise.

**ADVANCE  
PREPARATION**

**FIELD SUPPLIES**

*Check each item carefully.* Swags with mattresses, a small pillow and sleeping bag will be provided by Aussie off Road Tours. We recommend that you bring everything you need with you from Perth or purchase them in Broome prior to rendezvous. Once we have left Broome, there will be extremely limited opportunities to obtain supplies.

<b>Check List</b>
<input type="checkbox"/> sturdy, comfortable, worn-in walking boots or shoes with good tread <input type="checkbox"/> light shoes for around camp <input type="checkbox"/> thick walking socks <input type="checkbox"/> underwear <input type="checkbox"/> long trousers, loose and tough <input type="checkbox"/> long-sleeved, loose-fitting shirts <input type="checkbox"/> casual clothes for travelling and around camp <input type="checkbox"/> t-shirts <input type="checkbox"/> jumper, warm jacket, or 'polarfleece' <input type="checkbox"/> warm beanie or cap to wear at night <input type="checkbox"/> cord or scarf to anchor hat (if not using your volunteer's hat) <input type="checkbox"/> lightweight rain jacket or plastic poncho <input type="checkbox"/> sunglasses <input type="checkbox"/> fly net (essential - drops over hat) <input type="checkbox"/> gaiters – essential to protect legs from spinifex <input type="checkbox"/> canvas garden gloves <input type="checkbox"/> sleeping bag inner sheet / liner - protects the bag and adds warmth (Sleeping bags are provided on this trip) <input type="checkbox"/> mosquito net and plastic ground sheet if you plan to sleep under the stars <input type="checkbox"/> 2 X 1-litre water bottles, leak-proof <input type="checkbox"/> personal toiletries, including tissues <input type="checkbox"/> towel <input type="checkbox"/> moisturised wipes & sanitising hand gel (e.g. Dermasoft) <input type="checkbox"/> Small container and washer/flannel for washing <input type="checkbox"/> insect repellent and sunscreen <input type="checkbox"/> 2 elastic pressure bandages (for snake bite first aid) - essential <input type="checkbox"/> personal first aid, prescription medicine and spectacles <input type="checkbox"/> matches or lighter <input type="checkbox"/> head torch ( leaves hands free) plus spare batteries and globe <input type="checkbox"/> small robust torch as a back up, plus spare batteries and spare globe <input type="checkbox"/> small daypack to carry camera, water bottle, snacks, etc <input type="checkbox"/> camera, spare batteries, memory card (film if necessary) <input type="checkbox"/> binoculars (field glasses), and field guides if you have an interest in the local bird life <input type="checkbox"/> hand lens if you have an interest in botany <input type="checkbox"/> notebook and pencil <input type="checkbox"/> Compass, whistle and signal mirror (available at camping stores) <input type="checkbox"/> small clothesline and a few pegs <input type="checkbox"/> pocket knife <input type="checkbox"/> lots of enthusiasm and smiles



*LANDSCOPE* Expeditions will supply a canvas bag for your gear, a luggage tag, a wide brimmed volunteer's hat, a stubby holder and a thermal mug.

## REFERENCE MAPS

The following maps will be useful

*Australia's Great Desert Tracks*. NW Sheet, 3<sup>rd</sup> Edition. HEMA Maps. ISBN 1-86500-159-7. Purchase online at [www.mapsdownunder.com](http://www.mapsdownunder.com)

*The Canning Stock Route*. 3<sup>rd</sup> Edition. Westprint. ISBN 0-646-18223-4. Purchase online at [www.westprint.com.au](http://www.westprint.com.au)

The CANNING and WARBURTON 1:1 000 000 Australian Topographic Map sheets cover the region.

## REFERENCE LIST

Burrows, Dr. N. and Christensen, Dr. P. 'A Survey of Aboriginal Fire Patterns in the Western Desert of Australia', in proceedings of Fire and the Environment: Ecological and Cultural Perspectives, an International Symposium, March 20 – 24, 1990, pp 297-305.

Carnegie, D.W. *Spinifex and Sand*, Hesperion Press, Victoria Park, Perth 1989

Christensen, Dr. P and Burrows, Dr. N. 'Project desert dreaming: experimental reintroductions of mammals to the Gibson Desert, Western Australia' in Reintroduction Biology of Australian and New Zealand Fauna, Ed. M. Serena, Surrey Beatty and Sons, Chipping Norton, 1994, pp 199 – 207.

Gard, E. and Gard, R., *Canning Stock Route – A Travellers Guide*. 3<sup>rd</sup> edition. Western Desert Guides, Wembley Downs, Perth, 2004.

Slee, J., *Canning, Alfred Wernam. (1860 - 1936)*, Australian Dictionary of Biography, Online Edition, <http://www.adb.online.anu.edu.au/biogs/A070563b.htm> Australian National University, access online December 28, 2006.

Stanton, J., (ed) *The Australian Geographic book of the Canning Stock Route*. Rev. ed. Terry Hills, N.S.W. Australian Geographic Pty Ltd, 1998.

### **LANDSCOPE magazine articles** (in chronological order of publication)

Burbidge, Dr A. et al 'Vanishing Desert Dwellers', *LANDSCOPE*, Winter 1987

Burbidge, Dr A. 'Desert Bigfoot', *LANDSCOPE* Summer 1989/90

Pearson, D. 'Dragons of the Desert' *LANDSCOPE* Winter 1991

Cooper B., and Gough, D. 'She'll be right, mate!' *LANDSCOPE* Autumn 1992

Christensen, Dr. P and Liddelov, G. 'Ninu Magic' *LANDSCOPE* Winter 1992

Christensen, Dr. P. and Thompson, C. 'Back in the Outback' *LANDSCOPE* Summer 1992/93

Burrows, N. and Christensen, Dr. P. 'Hunting the Hunter' *LANDSCOPE* Summer 1994/95

Clews, M. 'A Track Winding Back', *LANDSCOPE*, Spring 1998

Burrows, Dr. N. 'Restoring the Red Centre' *LANDSCOPE* Summer 2003/04

Scanlon, M. Cocking, J. McCrae, J. and Barron, H., 'Beasts of the Underworld' *LANDSCOPE* Autumn 2006

Leighton, K. '100 years of the Canning Stock Route', *LANDSCOPE*, Autumn 2007 (included in your briefing package)

#### WEB SITES

[www.naturebase.wa.gov.au](http://www.naturebase.wa.gov.au)

Department of Environment and Conservation website

[www.environment.gov.au/parks/nrs/ibra](http://www.environment.gov.au/parks/nrs/ibra)

Commonwealth Department of Environment and Water Resources information on Interim Biogeographical Regionalisation of Australia

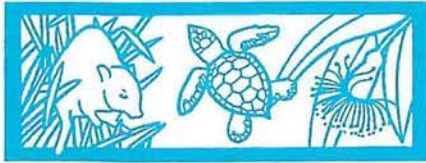
There are numerous websites that contain information on the Canning Stock Route. A recommended site is:

[www.exploreoz.com/TrekNotes/WDeserts/Canning\\_Stock\\_Route.asp](http://www.exploreoz.com/TrekNotes/WDeserts/Canning_Stock_Route.asp)

NOTES



# APPENDICES



# LANDSCOPE Expeditions 2009

## Lend your body to research...

*LANDSCOPE* Expeditions are non-profit, self-supported study and research projects. Since its inception in 1992, the program has been offered by the Department of Environment and Conservation's (DEC's) *LANDSCOPE* magazine, a quarterly publication devoted to wildlife, conservation and environmental issues in Western Australia. The expeditions are offered in association with UWA Extension, a department of The University of Western Australia (UWA).

DEC is responsible for the management and sustainable use of WA's more than 27 million hectares of national parks, conservation parks, marine parks, State forests and timber reserves, nature reserves and marine nature reserves. It is also responsible for conserving the State's rich diversity of plants and animals.

UWA Extension has been operating as a public outreach arm of UWA since 1913. It is a Centre for Continuing Education and promotes community awareness in a variety of ways, including educational travel.

DEC scientists and regional staff identify the research projects and lead the expeditions, which DEC and UWA administer. Private businesses and local communities are contracted to provide logistical support.

*LANDSCOPE* Expeditions answer the need for research to protect the environment and respond to the demand for first class interpretation by scientists and specialists. They provide paying volunteers with an opportunity to work alongside scientists and promote wider cooperation in addressing conservation and land management challenges in WA. Anyone can be involved subject to fitness and provided they are over 13 years of age.

The expeditions give you the opportunity to visit and gain an understanding of remote places and natural ecosystems and take part in important wildlife recovery programs. You can have the satisfaction of knowing you have contributed to our knowledge of threatened environments and endangered species. Unique photo opportunities and close encounters with unusual animals are a bonus.

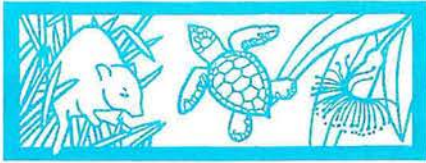
Participants are not the only ones who benefit. The community also profits from the enriched lives of its members and from the benefits that flow on from research findings and outcomes. Future generations benefit from the natural and cultural resources that volunteers help to identify and conserve. And, on a global scale, *LANDSCOPE* Expeditions help to perpetuate cultural and biological diversity.



Expeditioners collecting scat samples at Binbinjano Rockhole on the Canning Stock Route.  
Photo — Alison McGilvray/DEC

### DEC VOLUNTEERS

When you sign up for a *LANDSCOPE* Expedition you are automatically registered as a volunteer. You will be given a volunteer's hat and will receive copies of *Environment and Conservation News*, DEC's monthly newsletter. You are also entitled to take part in a range of other volunteer activities. Being a volunteer gives you the opportunity to develop a greater awareness and understanding of nature conservation and to play an active role in managing the conservation estate. Volunteer activities are available in the areas of information, research, management, maintenance and campground hosting.



# LANDSCOPE Expeditions 2009

## Distant places, close encounters... of the scientific kind

Western Australia covers almost a third of the Australian continent, stretching from the tropical Kimberley to temperate areas west of Albany. The coastline alone is nearly 13,000 kilometres long. Of Australia's 80 recognised natural biogeographic regions, 26 occur in WA – more than in any other state. These biogeographic regions are defined principally by landform, soils and vegetation types. They range from the monsoon forests (rainforests) and savannas of the northern Kimberley through the diverse desert regions and the mulgas and mallees of arid inland WA to the tall karri forests of the Warren Region in the south-west. Coastlines cover a similar diversity of environments from the extensive coral reefs, mudflats and mangroves of the tropical Kimberley through the shallow sandy embayments of the west coast to the granite promontories and islands in the ocean off Albany and Esperance to the south.

These extensive land and seascapes provide a magnificent natural setting for a vast array of plant and animal species. It is in this huge natural laboratory, that scientists can pursue their research interests. However, such a diverse and extensive State also poses a formidable hurdle for scientists in determining the first among many questions that are essential to effective research and conservation – what occurs where? A major emphasis of the scientific research undertaken by *LANDSCOPE* Expeditions is directed toward answering this intriguing and pivotal question.

In the sparsely populated western third of the continent, the distribution of most plant and animal species is very poorly known and many *LANDSCOPE* Expeditions focus on trying to improve scientists' understanding of species' distributional patterns. Detailed records and prudent collections are made of many species, using the most scientifically acceptable methods and techniques, so that biologists from many institutions can carry out more detailed studies. Such documentation and collection helps define the distribution of many botanical and zoological species and facilitates research by State herbaria and museums on the level of variation within species. Studies of specimens and records of species from a wide geographic area are often the precursors to the description of species new to science.

WA's conservation reserve system aims to be comprehensive, adequate and representative. However, many land surface types and their associated wildlife are not represented in reserves, or are very poorly represented. This pattern was documented in the 1995 'Interim Biogeographic Regionalisation for Australia (IBRA) Report', which demonstrated that many of Australia's major bioregions are poorly served by the existing conservation reserve system. While some land systems may have been well represented within reserves, others remain completely unrepresented. Bioregions provide a framework for identifying gaps in the reserve system. Conservation reserves should protect representative samples of each bioregion. *LANDSCOPE* Expeditions help identify which areas should be included to protect and enhance the State's biodiversity.

*LANDSCOPE* Expeditions encourage the public to travel to distant places for close encounters of the scientific kind. You are a vital partner. Join us and be part of scientific team – record observations, collect, prepare and identify specimens. Many conservation goals are difficult to achieve by scientists working alone – your support can make the difference.



Expeditioners collecting plant samples at Lake Disappointment.  
Photo – Graeme Liddelow/DEC

# You can make a difference



When you travel with *LANDSCOPE* Expeditions, you help in a variety of ways:

## FUNDING

You and your financial contribution make the research possible. This alone is a significant factor in making the expedition a success.

## SCIENTIFIC DISCOVERY

You can help by collecting key information. Although some interpretations will be made in the field, much of the synthesis takes place back in the laboratory, where final identifications and analyses are made and results prepared for publication. You will discover that fieldwork can be repetitive and time consuming as it has to be done in a systematic way. Outcomes are not always obvious at first – but there's always the chance of that surprise discovery.

Extra pairs of hands and eyes are of great benefit in helping to achieve goals, as fieldwork is very intensive. Leaders will maximise time spent on fieldwork but will provide instruction in techniques as time permits.

You may be asked to collect plant specimens and make animal sightings to increase our knowledge of the distribution of species. However, with plants, only representative specimens will be kept. Do not be disappointed if some are discarded as redundancy is often part of the scientific process. With bird observations, it is the collective experience that confirms the sighting and produces advances in our knowledge.

## YOU DON'T NEED TO BE A SCIENTIST

Anyone can help – be assured that your assistance will make a contribution to nature conservation in WA. Remember scientists and leaders have spent many years developing their level of expertise – they welcome your questions and are there to guide you.

Your point of view or personal expertise may help in unexpected ways. Please feel free to share your ideas.

Expect to return home with a broader understanding of the natural world, the role of scientific methods, the value of nature conservation and the rewards of knowing you have contributed to pioneering studies in remote areas. *LANDSCOPE* Expeditions aims to whet your appetite for nature, give you a taste of scientific discovery, and provide an experience that may not otherwise be a part of your life.

## IT'S NOT ALL SCIENCE

Many elements combine to make an expedition successful, not just the scientific activities. An affinity for team work, a flexible approach and a willingness to help in whatever way you can, help to create the best results for nature conservation.

**Plant list for the Canning Stock Route provided by the Western Australian Herbarium, 25 March 2009.**

Abutilon leucopetalum (F.Muell.) Benth.  
Acacia ? dictyophleba (Wispy variant)  
Acacia ? kempeana  
Acacia abrupta Maiden & Blakely  
Acacia adoxa Pedley var. adoxa  
Acacia anaticeps Tindale  
Acacia ancistrocarpa Maiden & Blakely  
Acacia aneura var. ? macrocarpa  
Acacia aneura var. ? tenuis  
Acacia aneura var. argentea (short phyllode variant)  
Acacia aneura var. microcarpa Pedley  
Acacia aneura var. microcarpa (short phyllode variant)  
Acacia aneura Benth. var. aneura  
Acacia bivenosa DC.  
Acacia burkittii Benth.  
Acacia colei Maslin & L.Thomson var. colei  
Acacia cuthbertsonii subsp. linearis R.S.Cowan & Maslin  
Acacia cuthbertsonii Luehm. subsp. cuthbertsonii  
Acacia dictyophleba / melleodora  
Acacia dictyophleba F.Muell.  
Acacia elachantha (Hairy variant)  
Acacia grasbyi Maiden  
Acacia helmsiana Maiden  
Acacia hilliana Maiden  
Acacia inaequilatera Domin  
Acacia jensenii Maiden  
Acacia ligulata Benth.  
Acacia ligulata x sclerosperma subsp. sclerosperma  
Acacia maconochieana Pedley  
Acacia maitlandii F.Muell.  
Acacia melleodora Pedley  
Acacia minutissima Maslin  
Acacia monticola J.M.Black  
Acacia pachyacra Maiden & Blakely  
Acacia platycarpa F.Muell.  
Acacia rhodophloia Maslin  
Acacia sabulosa Maslin  
Acacia sericophylla F.Muell.  
Acacia spondylophylla F.Muell.  
Acacia steedmanii subsp. borealis Maslin  
Acacia stellaticeps Kodela, Tindale & D.A.Keith  
Acacia stipuligera F.Muell.  
Acacia tumida var. kulparn M.W.McDonald

*Acacia tysonii* Luehm.  
*Acacia walkeri* Maslin  
*Acacia wanyu* Tindale  
*Acacia wiseana* C.A.Gardner  
*Allocasuarina decaisneana* (F.Muell.) L.A.S.Johnson  
*Aluta maisonneuvei* (F.Muell.) Rye & Trudgen  
*Aluta maisonneuvei* (F.Muell.) Rye & Trudgen subsp. *maisonneuvei*  
*Alyogyne pinoniana* (Gaudich.) Fryxell  
*Amyema gibberula* (Tate) Danser var. *gibberula*  
*Amyema miquelii* (Miq.) Tiegh.  
*Amyema miraculosa* subsp. *boormanii* (Blakely) Barlow  
*Amyema preissii* (Miq.) Tiegh.  
*Amyema sanguinea* (F.Muell.) Danser var. *sanguinea*  
*Angianthus tomentosus* J.C.Wendl.  
*Anthobolus leptomerioides* F.Muell.  
*Arthrocnemum* sp.  
*Atriplex flabelliformis* Paul G.Wilson P3  
*Bauhinia cunninghamii* (Benth.) Benth.  
*Bergia trimeria* Fisch. & C.A.Mey.  
*Bonamia rosea* (F.Muell.) Hallier f.  
*Brachyscome blackii* G.L.Davis  
*Brachyscome* sp.  
*Calandrinia pleiopetala* F.Muell.  
*Calandrinia reticulata* Syeda  
*Calocephalus* sp. Pilbara-Desert (M.E. Trudgen 11454) PN  
*Calotis hispidula* (F.Muell.) F.Muell.  
*Calotis* sp. Carnarvon Range (D.J. Edinger & K.F. Kenneally D 2708 K 12243) PN  
*Calytrix carinata* Craven  
*Calytrix exstipulata* DC.  
*Cassytha capillaris* Meisn.  
*Casuarina obesa* Miq.  
*Cenchrus ciliaris* L.  
*Cenchrus setiger* Vahl  
*Cephalipterum drummondii* A.Gray  
*Chamaecrista symonii* Pedley  
*Cheilanthes sieberi* Kunze subsp. *sieberi*  
*Chrysocephalum eremaeum* (Haegi) Anderb.  
*Cleome oxalidea* F.Muell.  
*Cleome uncifera* subsp. *microphylla* Keighery  
*Cleome viscosa* L.  
*Clerodendrum* aff. *tomentosum*  
*Clerodendrum floribundum* var. *coriaceum* Moldenke  
*Clerodendrum tomentosum* (Vent.) R.Br.  
*Clerodendrum tomentosum* (Vent.) R.Br. var. *tomentosum*  
*Codonocarpus cotinifolius* (Desf.) F.Muell.  
*Comesperma pallidum* Pedley P3

Corymbia aspera (F.Muell.) K.D.Hill & L.A.S.Johnson  
Corymbia candida subsp. dipsodes K.D.Hill & L.A.S.Johnson  
Corymbia candida K.D.Hill & L.A.S.Johnson  
Corymbia chippendalei (D.J.Carr & S.G.M.Carr) K.D.Hill & L.A.S.Johnson  
Corymbia deserticola (D.J.Carr & S.G.M.Carr) K.D.Hill & L.A.S.Johnson subsp.  
deserticola  
Corymbia opaca (D.J.Carr & S.G.M.Carr) K.D.Hill & L.A.S.Johnson  
Corynotheca micrantha var. divaricata R.J.F.Hend.  
Crotalaria cunninghamii R.Br.  
Crotalaria ramosissima Roxb.  
Cullen martinii (F.Muell.) J.W.Grimes  
Cullen pustulatum (F.Muell.) J.W.Grimes  
Cyanostegia cyanocalyx (F.Muell.) C.A.Gardner  
Cyperus bulbosus Vahl  
Cyperus vaginatus R.Br.  
Dampiera atriplicina Rajput & Carolin P2  
Dampiera candicans F.Muell.  
Dampiera cinerea Ewart & O.B.Davies  
Dampiera ramosa Rajput & Carolin  
Daviesia eremaea Crisp  
Dicrastylis cordifolia Munir  
Dicrastylis doranii F.Muell.  
Dicrastylis exsuccosa (F.Muell.) Druce  
Diplopeltis stuartii F.Muell. var. stuartii  
Dodonaea coriacea (Ewart & O.B.Davies) McGill.  
Dodonaea petiolaris F.Muell.  
Dodonaea rigida J.G.West  
Dodonaea viscosa subsp. mucronata J.G.West  
Duboisia hopwoodii (F.Muell.) F.Muell.  
Duperreya commixta (Staples) Staples  
Dysphania kalpari Paul G.Wilson  
Dysphania plantaginella F.Muell.  
Dysphania rhadinostachya (F.Muell.) A.J.Scott subsp. rhadinostachya  
Elytrophorus spicatus (Willd.) A.Camus  
Enchylaena tomentosa R.Br. var. tomentosa  
Enneapogon polyphyllus (Domin) N.T.Burb.  
Eragrostis cumingii Steud.  
Eragrostis dielsii Pilg.  
Eragrostis eriopoda Benth.  
Eragrostis falcata (Gaudich.) Steud.  
Eragrostis lanicaulis Lazarides P3  
Eremophila aff. gilesii  
Eremophila citrina Chinnock  
Eremophila exilifolia F.Muell.  
Eremophila forrestii subsp. viridis Chinnock P3  
Eremophila forrestii F.Muell.

*Eremophila gilesii* F.Muell.  
*Eremophila glabra* subsp. Inland Salt Lakes (B. & B. Backhouse PN  
*Eremophila glabra* subsp. *tomentosa* Chinnock  
*Eremophila latrobei* subsp. *glabra* (L.S.Sm.) Chinnock  
*Eremophila latrobei* F.Muell.  
*Eremophila latrobei* F.Muell. subsp. *latrobei*  
*Eremophila pallida* Chinnock P2  
*Eremophila platycalyx* F.Muell.  
*Eremophila platycalyx* F.Muell. subsp. *platycalyx*  
*Eremophila platythamnos* Diels  
*Eremophila* sp.  
*Eremophila spuria* Chinnock  
*Eremophila tietkensis* F.Muell. & Tate  
*Eremophila youngii* F.Muell.  
*Eremophila youngii* F.Muell. subsp. *youngii*  
*Eriachne lanata* Lazarides  
*Eriachne obtusa* R.Br.  
*Erythrophleum chlorostachys* (F.Muell.) Baill.  
*Eucalyptus eremicola* subsp. *peeneri* (Boomsma) D.Nicolle  
*Eucalyptus gamophylla* / *odontocarpa*  
*Eucalyptus gamophylla* F.Muell.  
*Eucalyptus gypsophila* D.Nicolle  
*Eucalyptus kingsmillii* Maiden & Blakely subsp. *kingsmillii*  
*Eucalyptus leucophloia* Brooker subsp. *leucophloia*  
*Eucalyptus odontocarpa* F.Muell.  
*Eucalyptus pachyphylla* F.Muell.  
*Eucalyptus socialis* Miq.  
*Eucalyptus* sp. Little Sandy Desert (D. Nicolle & M. French DN 4304) PN  
*Eucalyptus victrix* L.A.S.Johnson & K.D.Hill  
*Euphorbia australis* Boiss.  
*Euphorbia coghlanii* Bailey  
*Euphorbia drummondii* Boiss. subsp. *drummondii*  
*Ficus brachypoda* (Miq.) Miq.  
*Frankenia cinerea* A.DC.  
*Genus* sp.  
*Glycine canescens* F.J.Herm.  
*Gomphrena cunninghamii* (Moq.) Druce  
*Gonocarpus eremophilus* Orchard  
*Goodenia armitiana* F.Muell.  
*Goodenia azurea* subsp. *hesperia* L.W.Sage & Albr.  
*Goodenia heterochila* F.Muell.  
*Goodenia macropectra* (F.Muell.) Carolin  
*Goodenia nuda* E.Pritz. P3  
*Goodenia prostrata* Carolin  
*Gossypium australe* F.Muell.  
*Grevillea eriostachya* Lindl.



Grevillea juncifolia Hook. subsp. juncifolia  
Grevillea pyramidalis subsp. leucadendron (R.Br.) Makinson  
Grevillea refracta R.Br. subsp. refracta  
Grevillea spinosa McGill.  
Grevillea stenobotrya F.Muell.  
Grevillea wickhamii subsp. aprica McGill.  
Grevillea wickhamii subsp. hispidula Makinson  
Gyrostemon ramulosus Desf.  
Gyrostemon tepperi (H.Walter) A.S.George  
Hakea divaricata L.A.S.Johnson  
Hakea lorea subsp. cf. suberea  
Hakea lorea (R.Br.) R.Br. subsp. lorea  
Hakea macrocarpa R.Br.  
Hakea rhombales F.Muell.  
Halgania cyanea var. Allambi Stn (B.W. Strong 676) PN  
Halgania solanacea var. Mt Doreen (G.M. Chippendale 4206) PN  
Halgania solanacea F.Muell.  
Halgania solanacea F.Muell. var. solanacea ms  
Haloragis odontocarpa F.Muell.  
Haloragis uncatipila Orchard  
Halosarcia halocnemoides (Nees) Paul G.Wilson  
Halosarcia halocnemoides (Nees) Paul G.Wilson subsp. halocnemoides  
Harnieria kempeana subsp. muelleri (R.M.Barker) R.M.Barker  
Heliotropium glanduliferum Craven  
Heliotropium sp.  
Heliotropium transforme Craven  
Hibiscus coatesii F.Muell.  
Indigofera georgei E.Pritz.  
Indigofera monophylla DC.  
Indigofera sp.  
Ipomoea costata Benth.  
Iseilema vaginiflorum Domin  
Jacksonia aculeata W.Fitzg.  
Kennedia prorepens (F.Muell.) F.Muell.  
Keraudrenia katatona C.F.Wilkins P3  
Keraudrenia velutina subsp. elliptica C.F.Wilkins ms  
Lamarchea sulcata A.S.George  
Lawrencella davenportii (F.Muell.) Paul G.Wilson  
Lawrencia cinerea Lander  
Lawrencia glomerata Hook.  
Lawrencia viridigrisea Lander  
Lepidium muelleri-ferdinandii Thell.  
Lepidium phlebopetalum (F.Muell.) F.Muell.  
Lepidium pholidogynum F.Muell.  
Leptosema chambersii F.Muell.  
Leucochrysum fitzibbonii (F.Muell.) Paul G.Wilson

Leucochrysum stipitatum (F.Muell.) Paul G.Wilson  
Levenhookia chippendalei F.L.Erickson & J.H.Willis  
Lomandra leucocephala subsp. robusta A.T.Lee  
Lysiana murrayi (F.Muell. & Tate) Tiegh.  
Macgregoria racemigera F.Muell.  
Maireana aff. planifolia  
Maireana melanocoma (F.Muell.) Paul G.Wilson  
Maireana pyramidata (Benth.) Paul G.Wilson  
Maireana triptera (Benth.) Paul G.Wilson  
Marsilea sp.  
Melaleuca ? glomerata  
Melaleuca glomerata F.Muell.  
Melaleuca lasiandra F.Muell.  
Melaleuca leiocarpa F.Muell.  
Micromyrtus flaviflora (F.Muell.) J.M.Black  
Mollugo molluginea (F.Muell.) Druce  
Monotaxis luteiflora F.Muell.  
Myriophyllum verrucosum Lindl.  
Neobassia astrocarpa (F.Muell.) A.J.Scott  
Newcastelia cephalantha F.Muell.  
Newcastelia cladotricha F.Muell.  
Newcastelia roseoazurea Rye  
Newcastelia spodiotricha F.Muell.  
Nicotiana benthamiana Domin  
Nicotiana occidentalis subsp. obliqua N.T.Burb.  
Nicotiana occidentalis H.-M. Wheeler  
Nicotiana simulans N.T.Burb.  
Oldenlandia pterospora F.Muell.  
Otion simplicifolium (F.Muell. & Tate) Crisp & P.H.Weston ms  
Owenia reticulata F.Muell.  
Paspalidium sp.  
Peplidium muelleri Benth.  
Peplidium sp.  
Persoonia falcata R.Br.  
Petalostylis cassioides (F.Muell.) Symon  
Phyllanthus erwinii J.T.Hunter & J.J.Bruhl  
Pimelea ammocharis F.Muell.  
Pityrodia loricata (F.Muell.) E.Pritz.  
Pityrodia loxocarpa (F.Muell.) Druce  
Pluchea dentex Benth.  
Pluchea rubelliflora (F.Muell.) B.L.Rob.  
Podaxis pistillaris  
Podolepis kendallii (F.Muell.) F.Muell.  
Polygala isingii Pedley  
Prostanthera albiflora B.J.Conn  
Prostanthera wilkieana F.Muell.

*Psydrax latifolia* (Benth.) S.T.Reynolds & R.J.F.Hend.  
*Pterocaulon sphacelatum* (Labill.) F.Muell.  
*Ptilotus aphyllus* Benl  
*Ptilotus arthrolasius* F.Muell.  
*Ptilotus astrolasius* subsp. *astrolasius*  
*Ptilotus axillaris* (Benth.) F.Muell.  
*Ptilotus calostachyus* F.Muell.  
*Ptilotus clementii* (Farmer) Benl  
*Ptilotus drummondii* (Moq.) F.Muell.  
*Ptilotus exaltatus* Nees var. *exaltatus*  
*Ptilotus helipteroides* (F.Muell.) F.Muell.  
*Ptilotus latifolius* R.Br.  
*Ptilotus macrocephalus* (R.Br.) Poir.  
*Ptilotus marduguru* Benl P2  
*Ptilotus obovatus* (Gaudich.) F.Muell.  
*Ptilotus obovatus* (Gaudich.) F.Muell. var. *obovatus*  
*Ptilotus polystachyus* (Gaudich.) F.Muell. var. *polystachyus*  
*Ptilotus stipitatus* Benl  
*Pycnopus coccineus*  
*Rhodanthe tietkensis* (F.Muell.) Paul G.Wilson  
*Rulingia loxophylla* F.Muell.  
*Rulingia luteiflora* E.Pritz.  
*Salsola tragus* L.  
*Samolus* sp.  
*Santalum acuminatum* (R.Br.) A.DC.  
*Santalum lanceolatum* R.Br.  
*Sauropus arenosus* J.T.Hunter & J.J.Bruhl P3  
*Sauropus huntii* (Ewart & O.B.Davies) Airy Shaw  
*Scaevola amblyanthera* var. *centralis* Carolin  
*Scaevola collaris* F.Muell.  
*Scaevola parvifolia* Benth.  
*Scaevola spinescens* R.Br.  
*Schoenia ayersii* (F.Muell.) J.M.Black  
*Schoenia cassiniana* (Gaudich.) Steetz  
*Schoenoplectus dissachanthus* (S.T.Blake) J.Raynal  
*Schoenoplectus subulatus* (Vahl) Lye  
*Sclerolaena clelandii* (Ising) A.J.Scott  
*Senecio gregorii* F.Muell.  
*Senecio magnificus* F.Muell.  
*Senna artemisioides* subsp. *helmsii* (Symon) Randell  
*Senna artemisioides* subsp. *oligophylla* (F.Muell.) Randell  
*Senna glaucifolia* (Randell) Randell  
*Senna glutinosa* (DC.) Randell subsp. *glutinosa*  
*Senna notabilis* (F.Muell.) Randell  
*Senna sericea* (Symon) Albr. & Symon  
*Senna venusta* (F.Muell.) Randell

*Sida platycalyx* Benth.  
*Sida* sp. *Excedentifolia* (J.L. Egan 1925) PN  
*Sida* sp. *Watarrka* (D.E. Albrecht 8672) PN  
*Solanum centrale* J.M.Black  
*Solanum chippendalei* Symon  
*Solanum diversiflorum* F.Muell.  
*Solanum gilesii* Symon  
*Solanum lasiophyllum* Poir.  
*Sporobolus actinocladus* (F.Muell.) F.Muell.  
*Stackhousia megaloptera* F.Muell.  
*Stackhousia* sp.  
*Streptoglossa macrocephala* (F.Muell.) Dunlop  
*Stylidium desertorum* Carlquist  
*Stylidium humphreysii* Carlquist  
*Stylidium* sp.  
*Stylobasium spathulatum* Desf.  
*Swainsona elegantoides* (A.T.Lee) Joy Thomps.  
*Swainsona kingii* F.Muell.  
*Swainsona microphylla* A.Gray  
*Swainsona pterostylis* (DC.) Bakh.f.  
*Swainsona* sp.  
*Swainsona unifoliolata* F.Muell.  
*Swainsona villosa* J.M.Black  
*Synaptantha tillaeacea* (F.Muell.) Hook.f.  
*Tecticornia auriculata* (Paul G.Wilson) K.A.Sheph. & Paul G.Wilson  
*Tecticornia halocnemoides* (Nees) K.A.Sheph. & Paul G.Wilson  
*Tecticornia indica* subsp. *bidens* (Nees) K.A.Sheph. & Paul G.Wilson  
*Tecticornia indica* subsp. *leiostachya* (Benth.) K.A.Sheph. & Paul G.Wilson  
*Tecticornia laevigata* K.A.Sheph.  
*Tecticornia* sp.  
*Tecticornia verrucosa* Paul G.Wilson  
*Tephrosia arenicola* Maconochie  
*Tephrosia rosea* var. *clementii* Domin  
*Tephrosia* sp.  
*Tephrosia uniovulata* F.Muell.  
*Themeda* sp. Mt Barricade (M.E. Trudgen 2471) PN  
*Thinicola incana* (J.H.Ross) J.H.Ross  
*Thryptomene naviculata* J.W.Green  
*Tinospora smilacina* Benth.  
*Trachymene oleracea* (Domin) B.L.Burt  
*Trianthema oxycalyptra* F.Muell. var. *oxycalyptra*  
*Trianthema pilosa* F.Muell.  
*Trianthema triquetra* Willd.  
*Tribulus astrocarpus* F.Muell.  
*Tribulus occidentalis* R.Br.  
*Tribulus platypterus* Benth.

Tribulus sp.  
Tribulus suberosus R.M.Barker  
Trichodesma zeylanicum (Burm.f.) R.Br.  
Trichodesma zeylanicum (Burm.f.) R.Br. var. zeylanicum  
Triodia basedowii E.Pritz.  
Triodia melvillei (C.E.Hubb.) Lazarides  
Triodia plurinervata N.T.Burb.  
Triodia pungens R.Br.  
Triodia schinzii (Henrard) Lazarides  
Triodia sp.  
Triraphis mollis R.Br.  
Triumfetta deserticola Halford  
Typha domingensis Pers.  
Velleia connata F.Muell.  
Velleia hispida W.Fitzg.  
Velleia sp.  
Waltheria virgata Ewart & Cookson  
Wurmbea deserticola T.Macfarlane  
Yakirra australiensis (Domin) Lazarides & R.D.Webster  
Zygophyllum compressum J.M.Black  
Zygophyllum eremaeum (Diels) Ostenf.  
Zygophyllum iodocarpum F.Muell.

**Plant list from the 2007/2008 *Desert Tracks Expedition* including new records, tentative new species, priority taxa and range extensions for the Canning Stock Route. Compiled by Rob Davis, Western Australian Herbarium.**

Acacia maitlandii  
Acacia minutissima  
Acacia sabulosa  
Acacia stellaticeps  
Allocastrum decaisneana  
Aluta maisonneuvei  
Anthobolus leptomerioides  
Calandrinia pleiopetala  
Calandrinia reticulata  
Calotis sp. (undescribed taxon)  
Dampiera atriplicina (priority taxon (P2))  
Dampiera cinerea  
Dampiera ramosa  
Eremophila aff gilesii (observed growing with true E. gilesii without intergrades, distinct species)  
Eremophila exilifolia  
Eremophila forrestii  
Eremophila gilesii  
Eremophila platycalyx (possible undescribed subspecies)  
Eremophila platythamnos  
Frankenia cinerea  
Goodenia heterochila  
Goodenia nuda (P3) Range extension ca 200 km SE.  
Goodenia prostrate  
Grevillea stenobotrya  
Gyrostemon ramulosus  
Gyrostemon tepperi  
Hakea rhombales  
Halgania solanacea  
Halosarcia halocnemoides ssp. halocnemoides  
Halosarcia aff. halocnemoides (collection thought to be a new taxon, a part of a species complex (pers comm. Kelly Shepherd))  
Halosarcia aff. leptoclada (collection thought to be a new taxon, a part of a species complex (pers comm. Kelly Shepherd))  
Halosarcia indica  
Heliotropium chrysocarpum  
Heliotropium transforme (range extension south)  
Hibiscus coatesii  
Kennedia procumbens  
Lepidium phlebopetalum  
Lepidium pholidogynum  
Leptosema chambersii  
Leucochrysum stipitatum  
Levenhookia chippendalei  
Maireana pyramidata  
Micromyrtus flaviflora

Newcastelia cladotricha  
Newcastelia roseoazurea  
Nicotiana benthamiana  
Nicotiana occidentalis  
Pimelea ammocharis  
Pluchea dentax  
Pluchea rubelliflora  
Prostanthera albiflora  
Ptilotus aphyllus  
Ptilotus astrolasius ssp. astrolasius  
Ptilotus obovatus  
Ptilotus stipitatus  
Rhodanthe tietkensis  
Sauropus arenosus (Priority species (P3), range extension, only third collection of this species)  
Scaevola collaris  
Scaevola parvifolia  
Scaevola spinescens  
Sida platycalyx  
Solanum gilesii  
Stackhousia sp. (undescribed taxon)  
Stylidium humphreysii  
Stylobasium spathulatum  
Swainsona elegantoides  
Swainsona kingii  
Swainsona microphylla  
Swainsona pterostylis  
Tecticornia verrucosa  
Themeda sp. Mt Barricade (range extension, east)  
Thinicola incana  
Trichodesma zeylanicum  
Zygophyllum eremaeum  
Zygophyllum iodocarpum

# One hundred years of the CANNING STOCK ROUTE

by Ken Leighton

It is 100 years since the Canning Stock Route was first surveyed by Alfred Wernam Canning. This 2000-kilometre track that crosses four deserts is a journey through remote, breathtaking country: the breakaways, springs, giant salt pans, mysterious rocky outcrops and endless dunes that have made the 'Australian outback' legendary to the rest of the world.



**1959**

The last cattle drive leaves Billiluna at the northern end of the stock route

**1963**

A survey party took five weeks to travel the length of the route by four-wheel drive

**1977**

First commercial operator takes tourists along the Canning Stock Route

**2002**

Access rights for Canning Stock Route travellers preserved by a native title ruling

**2007-10**

Centenary of Canning Stock Route celebrations



In 1906, the State Government, under pressure from Kimberley pastoralists, agreed to investigate the viability of establishing a stock route to bring live cattle to southern markets. David Carnegie had explored the area further east in 1897 but suggested the scheme was “absolutely impracticable”. However, a decade later, Alfred Wernam Canning proved him wrong. He found a viable route that has since become known as one of the world’s premier four-wheel drive adventures.

### A problem and its solution

The Kimberley cattle industry had its beginnings in the 1880s, following marathon overland droving trips from the New South Wales and Queensland cattle areas. The expanding gold mining industry in Kalgoorlie and Coolgardie lay more than 2000 kilometres to the south. The hungry miners provided a ready meat market but the Kimberley cattle were being increasingly affected by ticks and were quarantined from being transported south. The cattlemen reasoned that a 2000-kilometre, well-watered stock route through the centre of the State—and the change of climate along the way—would see the ticks drop off and the cattle arrive in good condition.

Hence, in 1906, an expedition led by Canning set out to survey an inland stock route to the Kalgoorlie Goldfields. Canning, an accomplished surveyor with the Department of Lands and Surveys, had just finished the epic construction of the 1850-kilometre No. 1 Rabbit Proof Fence. With his able deputy Hubert Trotman, Canning spent months preparing for the trip. They amassed an enormous quantity of gear and stores for two years. All had to be transported by camels. They hired well builders, cameleers and general hands and, by May 1906, were ready to leave Day Dawn near Cue with eight men, 23 camels, two horses and the cook’s new dog. Ahead of them was the unknown: about 2000 kilometres of sometimes thick bush, spiny spinifex, some 900 soft sand dunes often up to 15 metres high, blazing hot days, freezing nights, scurvy from an inadequate diet and a cantankerous and vindictive cook.



*Previous page*

**Main** Durba Hills shine red in the sun along a stretch of the Canning Stock Route.

*Photo – David Bettini*

**Insets**

Early expeditions along the Canning Stock Route.

*Photos – Courtesy of Landgate*

**Above** Red sand dunes adorn the arid inland of the Canning Stock Route.

*Photo – Jiri Lochman*

**Left** Camel tracks in Lake Disappointment in the Little Sandy Desert.

*Photo – Marie Lochman*

Canning knew that locating a suitable stock route would depend on the ready availability of water. The water had to be potable, at a reasonable depth and at intervals not exceeding a fair day’s droving distance (about 25 kilometres). To this end he enlisted local Aboriginal people to act as guides. Often, his wells were sunk alongside or on an Aboriginal waterhole. Canning reasoned that if the Aboriginal well was replaced there was less likelihood of vandalism or pollution by the locals. In 1906, there was little or no Aboriginal cultural awareness. Canning would have been unaware that he himself was committing cultural vandalism and that the consequences would be exacted on some unfortunate future travellers along the route.

Parts of the central Western Australian desert had previously been crossed by a series of dedicated explorers. In his quest for a stock route, Canning crossed the routes of Warburton (1873), John Forrest (1874), Ernest Giles (1876), Laurence Wells of the Calvert Expedition (1896) and David Carnegie (1897). Collectively, they identified key topographic features such as Joanna Springs, Weld Springs, Calvert Ranges, Breaden Hills and Sturt Creek. Canning used this scant knowledge to guide him through the deserts but none had travelled extensively along his prospective route. Canning’s own intuition and skills as a surveyor and bushman got the route through, together with a lot of help from local Aboriginal people.



It took five months, about 100 years ago, for Canning and his team to traverse the harsh wilderness of central WA to the Kimberley. After spending Christmas in a rough bush camp in the far north of WA and having sat out the northern summer and replenished their supplies, the team left the Kimberley to retrace its route to Wiluna in February 1907. On this trip they located more wells and test bored potential sites. Two months on, at No. 40 Well, a skirmish between a local Aboriginal man and Michael Tobin, who was employed with his brother as a well sinker, saw both men die in what an investigation deemed was more likely a misunderstanding than a malicious act. These were the first recorded deaths on the Canning Stock Route, but would not be the last.

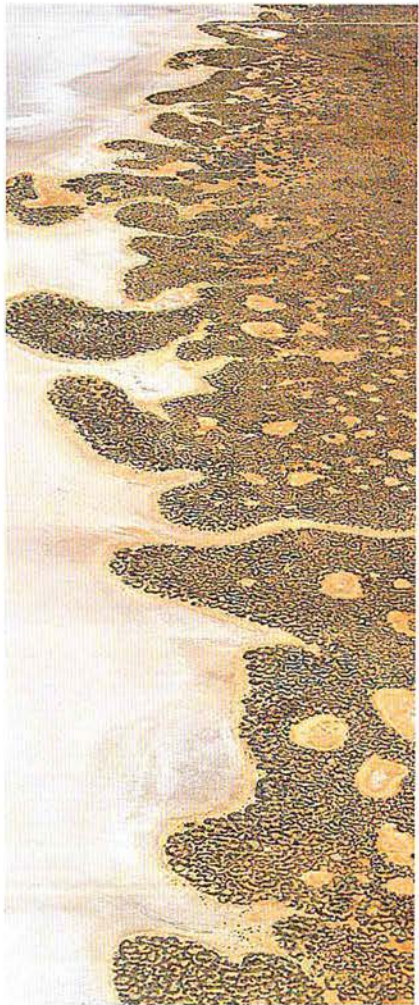
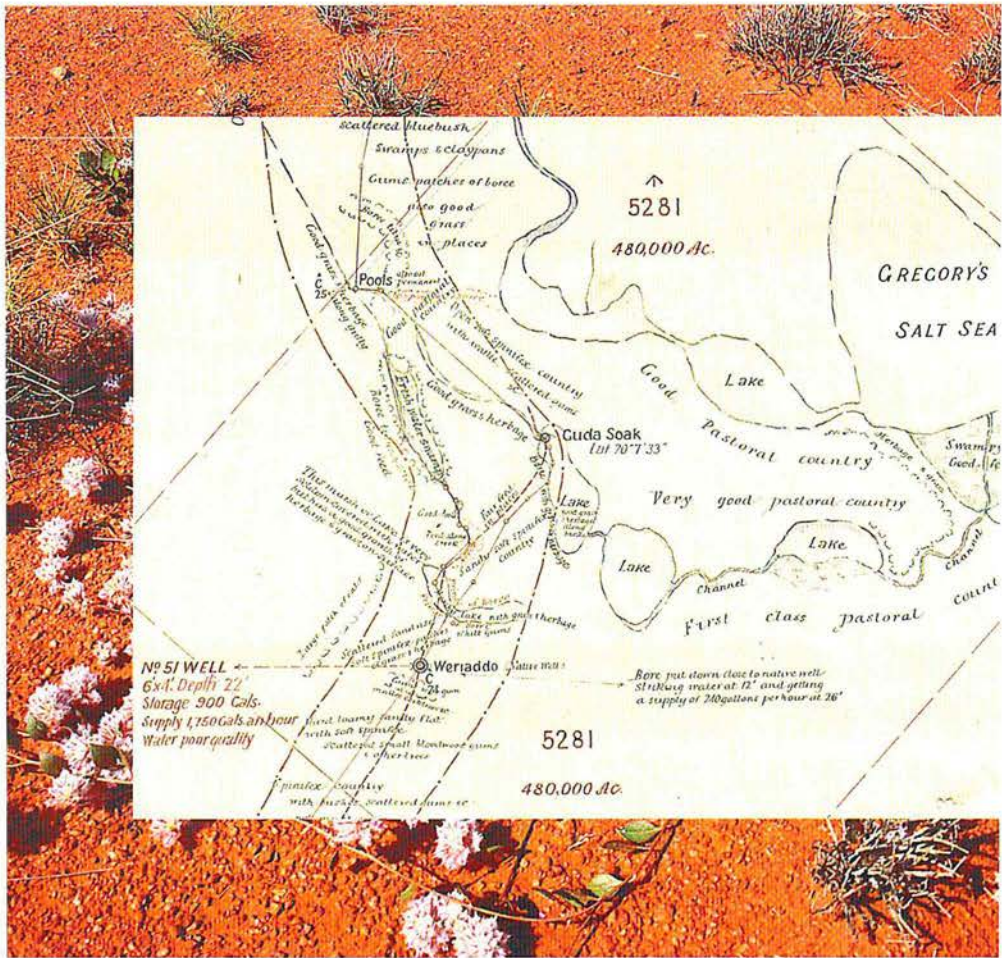
**Boring wells**

Canning’s enthusiastic report to the State Government was widely acclaimed, especially by the Kimberley cattlemen. So by March 1908 Canning had again recruited a team of hardy souls to embark on the construction of a series of 52 permanent wells. This was to be a two-year project, again of epic proportions. Canning used 70 camels and four wagons to transport 100 tonnes of food and equipment, and 267 goats were herded for meat and milk. The construction team consisted of 30 men, who operated in three groups. The first preceded the others and bored for water, which was then ‘on tap’ for the second and third teams, which leap-frogged each other and sunk the well around the bore casing.



**Above** Remains of No. 10 Well.  
*Photo – Ken Leighton*

It was a very efficient operation and the teams averaged one well every 15 days on the northward journey.



Each well was equipped with 13 metres of galvanised trough, a whip pole, pulley, a hand-operated windlass on supporting legs and two 45-litre buckets. All this had to be carried by camel for the entire route—there would be no resupply mission. The wells were timbered from trees found locally, the most common and durable being the stately desert oak (*Allocasuarina decussata*). By April 1910 Canning and his team were back in Wiluna, having completed this extraordinary task.

**Droving days**

The first commercial drover on the Canning Stock Route appears to be George McIntyre in October 1910. He took 42 horses from Pine Creek in the Northern Territory to Coorow in WA. Only nine survived. Next, in December 1910, William Mayberry drove 77 head of horses south, and 13 died along the way. In January 1911, Shoemith, Thomson, Chinaman and maybe three other Aboriginal stockmen left Halls Creek with a mob of 150 bullocks. From Thomson’s diary entries it appears that on or about 26 April they were murdered at No. 37 Well. Cole and Pennefather discovered the bodies on 29 June 1911 while droving a substantial mob of 350 bullocks south.

Despite these difficulties, the concept behind the route worked. The ticks indeed dropped off and died along the way, the cattle flourished, calves were born and all generally arrived in better shape than when they left the Kimberley.

The immediate decline in use of the route has been attributed to fear of attack from Aboriginal people. By the mid-1920s, the wells had become so badly deteriorated—as a result of fire, termites and vandalism—that it was imprudent to drive cattle along the route. In 1929, the State Government contracted a reconstruction team, led by William Snell of Leonora, to refurbish the wells. Snell sank three new wells (3a, 4a, 4b) and erected six windmills and tanks, becoming the first person to make limited use of a motor vehicle along the stock route. However, he failed to complete the refurbishment. In 1930 the State Government asked Canning (now aged 70) to complete the job. For 16 months Canning and his crew systematically resurrected the wells, including most of those previously attended to by Snell. Canning rarely agreed with Snell over the siting of wells and resolutely resited those that Snell had shifted. Between 1911 and 1931 only eight mobs of cattle had used the stock route.

**Above left** Part of Canning’s six-metre-long detailed survey map, prepared in 1907. Photo – Courtesy of Landgate

**Above** Lake Disappointment from the air. Photo – Jiri Lochman

With the advent of World War II and the bombing of Wyndham Harbour—the port by which most cattle were now being shipped south—the then Public Works Department commissioned further renovation of the wells. By 1944, however, Wyndham Harbour had reopened and the more efficient southern shipping trade resumed. Again the Canning Stock Route languished. In the period 1932 to 1959 only 20 mobs completed the journey. The last cattle drive left Billiluna at the northern end of the stock route in 1959.

## Route reborn

By this time the Canning Stock Route lay neglected, destined to become a fading dotted red line on maps and at risk of becoming lost forever. The route had served only 30 cattle drives. All that energy and the lost lives hardly seemed worth the effort! Then, in 1963, a survey party took five weeks to travel the length of the route by four-wheel drive. The Canning Stock Route was reborn. By 1977, the first commercial operator was taking wide-eyed tourists along a track on which only cattle and horses and few men had trodden before. More vehicles than cattle have now travelled the length of the Canning Stock Route. It has become an international icon of adventure, but not all have come in four-wheel drives. Beach buggies, a Citroen 2CV, the ill-fated Murray Rankin trolley, motorcycles, camels, walkers, joggers and a helicopter have all conquered the challenge—where the journey itself is the main attraction rather than any destination.

One hundred years ago Canning faced challenges presented by the terrain and carrying enough supplies to sustain him and his party. Today, even in the comfort of a four-wheel drive, the corrugations along the track pose a serious test for any vehicle but the sand dunes are not so formidable for the new breed of four-wheel drive. Information to help prepare for the journey is readily available through the internet and good publications. Thorough preparedness is the key to safely enjoying the serenity and history of the desert environment.

The track offers extremes in scenic diversity. The pastoral country in the south and the ancient salt-lake systems blend into the rugged Durba Hills and the hidden treasures and unlikely permanent waters of Durba and Killagurra springs. Just north, the sand dunes start and the vegetation changes dramatically. After summer rains the spinifex plains produce an abundance of wildflowers and majestic desert oaks provide picturesque campsites. At dawn and dusk, nature seems to be at its most intense. The colours are more dramatic and the wildlife more inquisitive. At any time you would be unlucky not to have a close encounter with the camels, dingoes, kangaroos, emus,

bustards, parrots and a great diversity of reptiles that inhabit the route. Contrary to its name, Lake Disappointment will not disappoint. This enormous, usually dry, lake has unique shimmering salt crystal formations and is so hostile in terms of surface roughness and its ability to draw moisture from tissue because it can get so hot, that insects and small animals often die trying to cross it. Often their skeletal remains are preserved by the salt. Its sheer size and purity commands respect. It should not be driven on as it is significant to the traditional Aboriginal owners and its unique ecosystem can be damaged easily.

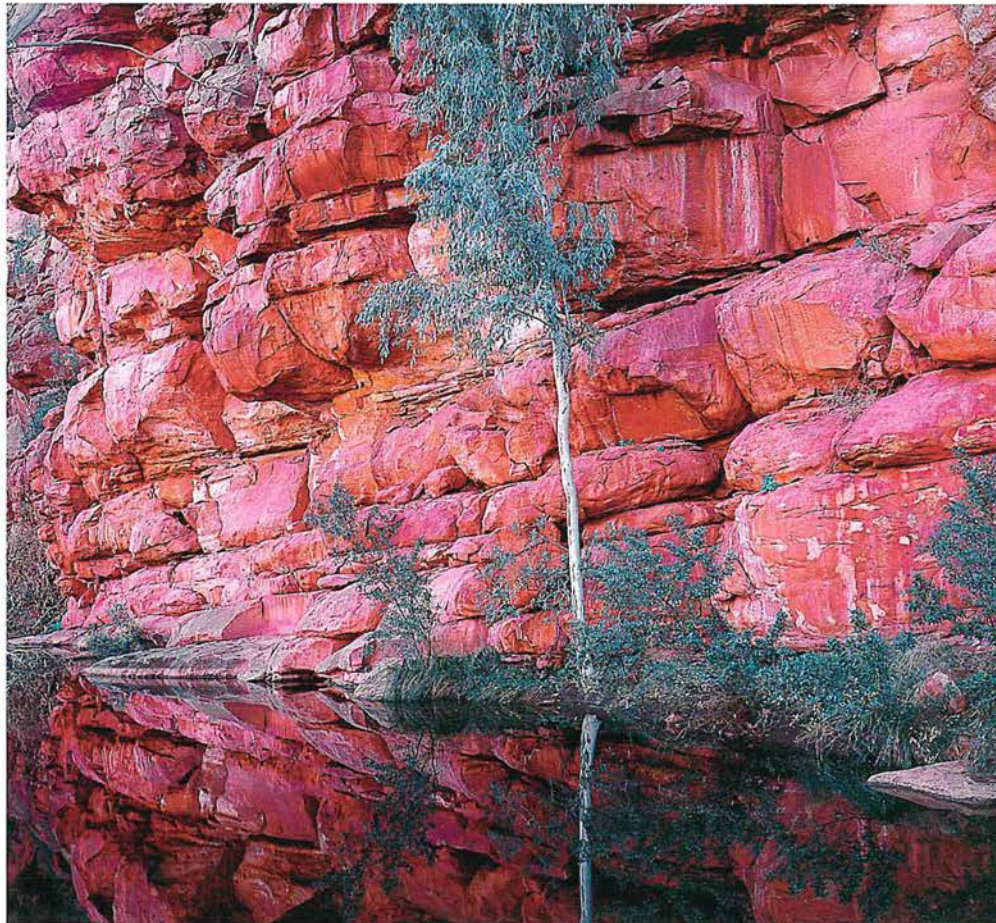


**Left** Euros are a common sight on the Canning Stock Route.

*Photo – Jiri Lochman*

**Below** Durba Spring provides a scenic setting along the route.

*Photo – David Bettini*





**Above** Salt flats on Lake Disappointment.  
*Photo – David Bettini*

**Right** The Canning Stock Route now serves as an exciting tourist attraction.  
*Photo – Ken Leighton*



## Centenary celebrations

It has been 100 years since Canning and his team set out into the unknown. Can the culture and heritage of the Canning Stock Route be preserved for the next 100 years? To celebrate its centenary a program of events has been compiled by Landgate (formerly the Department of Lands and Surveys and Canning's employer). A number of State and local government agencies, TrackCare, private industry, Aboriginal interest groups and research and tourism groups have been invited to take part in the program of events through to 2010. The public will be invited to become involved through a number of Department of Environment and Conservation *LANDSCOPE* Expeditions over the ensuing years. For more information on the *LANDSCOPE* Expeditions visit [www.naturebase.net](http://www.naturebase.net).

The program of celebration will be divided into four streams: *science*, incorporating the *LANDSCOPE* Expeditions and geographic studies; *history and heritage*, to audit, register and help preserve heritage assets, record oral histories and produce various publications; *art and culture*, to facilitate access and participation in community events; and *tourism*, to develop tourism strategies through education programs involving local Indigenous communities. The centenary initiative is still in its early stages and events have yet to be properly scheduled. However, it has become apparent that sustainable management of the Canning Stock Route into the future will involve local Aboriginal communities with strong ties to the area (see box).

There has never been a time in the Canning Stock Route's history that didn't present a challenge to those who sought to travel along it. The centenary project is not a publicity campaign to get more people on the track. The route doesn't need more people. It needs more informed people, better management and a mindset change for the outback tourist. This is already beginning, with more responsible attitudes to removing rubbish and leaving campsites in better condition than they were found. Encouraging travellers to show temperance in lighting up the traditional romantic campfire is a challenge that has a way to go, but the biggest cultural change will be acceptance of and respect for native title and all that it entails.



**Above** Trees reflect from the waters of Durba Springs.

**Below right** Camels are common along the route.

*Photos – Jiri Lochman*

Access rights for those wishing to travel along the Canning Stock Route were preserved in the native title determination by Justice French in 2002. However, the native title claimants have what amounts to common law title over areas along the route. For some time, traditional owners have been concerned about uncontrolled access to their significant sites and about them being photographed, published, and, in extreme instances, vandalised. Although the Aboriginal heritage along the route is of interest to tourists and an integral part of the cultural narrative, until such time as access permissions can be negotiated, the traditional owners have requested that people respect their heritage and refrain from visiting significant sites. Further information on access restrictions to significant areas can be obtained from the Ngaanyatjarra Council in Perth (phone 1800 189 936).

The Canning Stock Route's rich history—starting with Canning's epic journeys of discovery and well construction, and embracing the tough Kimberley cattlemen and drovers, the Aboriginal stories and, much later, its morphing into a tourist attraction—has ensured the dotted red line on the map will last well into the future. The centenary projects over the next four years will help to preserve the many unique qualities of the route for the next generation of adventurers.

## The Old Bullock Road – Warntarri Purlumanupurru

The Canning Stock Route, or Warntarri Purlumanupurru, crosses the traditional lands of the Walmajarri and Wangkajunga people to the north of the Percival Lakes and the Martuwanga people to the south to Wiluna. These were the nomadic Aboriginal people who Canning used to guide him through the deserts. Collectively they form part of a wider Western Desert community who long ago left the desert lifestyle behind, ironically travelling along the stock route to settle in established communities like Fitzroy Crossing, Billiluna, Mulan or Jigalong, Punmu and Kunawarritji (No. 33 Well) and Parngurr (Cotton Creek) to the south.

These Aboriginal people had never seen a white man or clothes before nor a horse or camel. These were alien things in their lands that disrupted their solitude. And they wanted the most precious of their resources, their water. It is little wonder that the Aboriginal people in these areas were often aggressive to approaches by the explorers.

After a rapport had been struck, however, Aboriginal people would accompany the exploration team and show them where to find water. Some were probably coerced into the role but others stayed on voluntarily with their wives after they finished acting as guides and continued to draw on the rations they received. Canning was adamant that without the help of the local Aboriginal people he couldn't have completed his task and issued them with team medals when they left. However, despite a Royal Commission investigating the claim of a disgruntled cook exonerating Canning of ill treatment, many Aboriginal people were not well treated 100 years ago.

After the completion of the Canning Stock Route and the 52 wells, the guaranteed supply of water about every 25 kilometres meant Aboriginal people could more readily move about the deserts. The water also attracted wildlife, making it easier to gather food.

Today the senior men and women who were born (to parents who would have known Canning's survey and construction teams) and raised in this area never knew their land without the drovers and other transient non-Aboriginal people, or without the introduced camels and the feral cats and foxes that displaced so many of the native species. They had to adapt to European culture and accommodate neighbouring linguistic groups who were displaced from their hunting grounds by Europeans.

Their traditional ties with country were recognised by Justice French in his determination of the Martu Native Title claim over the mid-section of the Canning Stock Route. Significant sites along the route remain important to Aboriginal culture. As part of the centenary celebration programs proposed over the next four years, organisations such as the Australian Institute of Torres Strait Islander Studies intend to rigorously document the traditional culture and art. The Alice Springs-based Desert Knowledge Cooperative Research Centre has also instigated a program to seek opportunities for desert communities to take advantage of the burgeoning tourist market, such as active participation in desert guide programs and co-management arrangements for the Canning Stock Route.

It is hoped that such programs will benefit Aboriginal communities and all who wish to experience the unique qualities of the Australian outback.

For more information on the celebration of the centenary of the Canning Stock Route contact Ken Leighton, Project Manager, Geographic Services Branch, Landgate, PO Box 2222 Midland 6936, phone (08) 9273 7130 or email [ken.leighton@landgate.wa.gov.au](mailto:ken.leighton@landgate.wa.gov.au).





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Executive Editor: Kaye Verboon. Editor: Rhianna King. Designer: Grant Fuller

**Above**  
Ranji bush (*Acacia pyrifolia*).  
Photo – Ken Leighton

**1897**

A long distance stock route to service  
Kimberley pastoralists was deemed unviable

**1906**

An expedition led by Alfred Canning set out to survey  
an inland stock route to the Kalgoorlie Goldfields

**1907**

Canning's team leaves the Kimberley to retrace  
its route to Wiluna and locates more wells

**1908**

Canning recruits team to construct a series of 52 permanent wells

**1910**

First commercial drove on Canning Stock Route

**1911**

Drovers murdered at No. 37 Well

**1920s**

Wells deteriorate from fire,  
termites and vandalism

**1929**

Government contracts William Snell to refurbish wells

**1931**

Canning completes refurbishment

**1940s**

Following bombing of  
Wyndham Harbour,  
Government commissions  
further renovation  
of the wells

# WOLFE CREEK METEORITE CRATER

This spectacular meteorite crater, measuring 850 metres across, is the second largest in the world from which fragments of a meteorite have been collected.

The largest crater in the world is Meteor Crater in Arizona. The Wolfe Creek crater formed about 300,000 years ago when an iron meteorite weighing thousands of tonnes crashed to earth. It was not until 1947 that Europeans recognised the crater when it was observed by geologists during an aerial survey.

## Where is it?

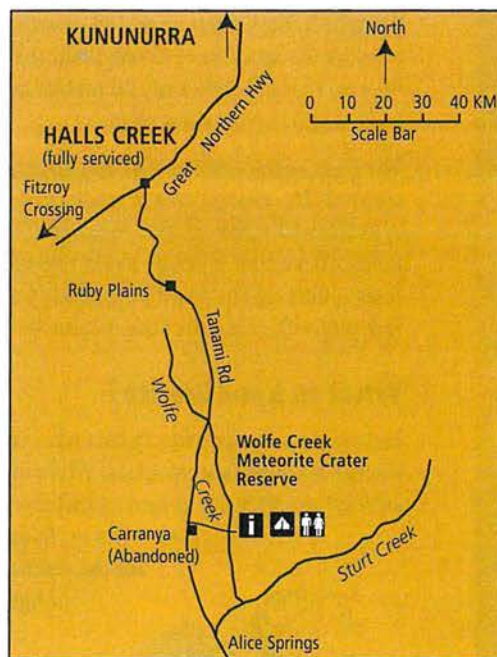
It lies on the edge of the Tanami Desert, about 100 kilometres south of Halls Creek. It can be accessed via the Tanami Road which is signposted on the Great Northern Highway, 18 kilometres west of Halls Creek. The turn-off to Wolfe Creek is 112 kilometres south along the Tanami Road. It is 22 kilometres from the Tanami Road to the crater.



Jaru and Walmajarri Aboriginal people call the crater *Gandimalal* and have known of its existence for thousands of years. A Jaru story tells of two rainbow snakes moving across the land to form *Jurabalarn* (Sturt Creek) and *Ngurriny* (Wolfe Creek). *Gandimalal* is the place where one of the snakes came out of the ground.

## Caution

The Tanami Road is gravel and only accessible to conventional vehicles during the dry season (May to November). Roads may be closed during the wet season (December to April). Check road conditions with Main Roads Western Australia (phone 1800 013 314) or the Shire of Halls Creek (phone (08) 9168 6007).



DEPARTMENT OF  
**Conservation**  
AND LAND MANAGEMENT  
Conserving the nature of WA

PO Box 942, Kununurra WA 6743  
Phone (08) 9168 4200  
Fax (08) 91682179

APPENDIX 4



## Travelling time

Between two and two and a half hours driving from Halls Creek.

## Facilities

An information shelter, table and toilets are located at the carpark.

## Camping

Camping is permitted only at the designated camping area. Use gas stoves for cooking. Fires are not permitted as wood is scarce and is essential for wildlife habitat. There is no water supplied in the reserve; bring sufficient water for your needs. Please take your rubbish with you as there is no rubbish collection facility.

## Pets

Pets are not allowed in the reserve.

## What to do

Sightseeing, walking, photography, nature observation.

## Crater walk

The 400 metre return walk to the top of the crater rim involves a steep, rocky climb. It is not recommended to climb down into the crater because the steep terrain and loose rocks make it dangerous.

## About the crater

The walls of the crater stand up to 35 metres high and the crater floor is more than 50 metres below the rim. The crater is thought to have been up to 120 metres deep, but wind blown sands have slowly filled the crater floor so that it is now only 20 metres below the level of the surrounding plain.

The floor of the crater is flat and largely sand covered. The central area is made of porous gypsum and is pierced by a number of sink holes. These sink holes lie along two intersecting lines reflecting the position of stress fractures formed by the impact of the meteorite.

## What is a meteorite?

Meteorites are solid objects that have fallen to the earth's surface from space. While in the atmosphere they are known as meteoroids.

Meteorites or 'falling stars' are the visible streaks of light as they

burn up on entering the earth's atmosphere. If part of the meteoroid survives to land on earth, the remnant is known as a meteorite.

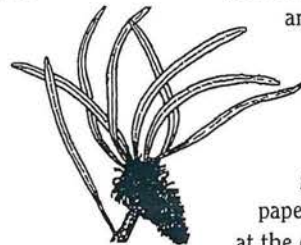
All meteorites found in the Western Australia are legally protected as public property under the Museum Act 1969-73 with ownership vested in the Western Australian Museum.

## Where is the meteorite now?

Travelling at 15 kilometres per second and weighing more than a 50,000 tonne battleship, the meteorite punched a large hole in the ground, pulverising the underlying rocks. On impact the explosion scattered the few remaining fragments of the meteorite. They have been found about four kilometres from the crater.

## Plants and animals

Wolfe Creek crater is located on the margin of the Tanami Desert. The plants and animals found here have adapted to survive the dry conditions and extreme variability in rainfall. Many of the plants such as spinifex grasses, hakeas and grevilleas have needle-like or narrow leathery leaves. The low surface to volume ratio minimises moisture loss.



The central area of the crater collects rain and sediments. Evaporation concentrates the salts in the water. Only salt tolerant plants such as the salt wattle (*Acacia ampliceps*) and the roly-poly (*Salsola kali*) grow there. The moisture loving paperbark (*Melaleuca lasiandra*) grows at the edge of the saline area.

Many birds of the arid areas are nomadic moving to where food and water are available. Honey eaters are attracted to the nectar rich flowers of grevilleras and hakeas. Major Mitchell cockatoos come to feed on the seeds of the salt wattle growing on the crater floor.

The dry conditions restrict the number of animals found in the area. Reptiles are most likely to be seen, because they are well adapted to arid areas.

Their impermeable skins minimise water loss and their urinary wastes contain very little water.

## Nearest Department of Conservation and Land Management office

Kimberley Regional office, Messmate Way, Kununnurra. Phone (08) 9168 4200.





**LANDSCOPE EXPEDITIONS**  
Working at the Frontier of Discovery

Dear Volunteer

***LANDSCOPE Expeditions:***

***Desert Tracks – Plants and Animals of the Canning Stock Route – 19 – 31 July, 2009***

Congratulations on your decision to join *LANDSCOPE* Expeditions and assist in this worthwhile research project. The briefing for this expedition is enclosed with this letter. If requested it will also include some (or all) of the following:

- a *LANDSCOPE* Expeditions duffel bag
- a DEC volunteer's hat
- thermal mug, stubby holder and luggage tag

The briefing is designed to answer any questions you may have at this stage about your part in the project, and contains advice on what to bring. The briefing contains a detailed itinerary on **Page 13**.

**Tag-alongs** are asked to advise the *LANDSCOPE* Expeditions office of your intended rendezvous with the expedition (time, date, place) if you are not departing from Broome with the main group.

Please read your briefing thoroughly and direct any questions you may have to the *LANDSCOPE* Expeditions office: Phone 08 9334 0401 or 9334 0319; Fax 08 9334 0498; e-mail [cheryl.tonts@dec.wa.gov.au](mailto:cheryl.tonts@dec.wa.gov.au)

This is an exciting conservation research project that will give you the opportunity to study the birds, animals, and plants of the desert region of Western Australia. You will also have the opportunity to take part in a range of activities with leaders from DEC. During the expedition the leaders will provide participants with interpretive information, however; research work will be the main focus of activities. The expedition should provide you with a broad appreciation of the plants, animals and conservation requirements of the region.


Accommodation on this trip consists of camping under the stars in isolated bush camps. Volunteers will be provided with, sleeping bags, pillows and swags. As the desert nights are cold (to freezing), please ensure that you have adequate warm clothing. If you are bothered by insects you should bring a mosquito net to sleep under, alternatively Aussie Off Road Tours will provide a small tent. Bring a piece of black plastic or something similar to stand on outside your swag when you are putting your boots on, or to place your bag on. It is advisable to always shake clothes and check footwear that has been left outside overnight for any unwanted 'intruders'. You may also wish to bring a couple of heavy-duty plastic garden/garbage bags with ties, to keep dust and dew off your duffel bag.

A head torch is an essential item for expeditions for the evenings, and for moving about the camp at night. Batteries will run down quickly, so take plenty of spares. A head torch is recommended as it leaves both hands free for other tasks. A small back-up torch is useful for around the campsite.

The expedition will carry some field guides, as well as other research equipment. However, if you have a specific interest you will need to bring your own field guide. Bring your binoculars for bird watching, and a hand lens for botanical work.



Department of  
Environment and Conservation

Our environment, our future 

In association with  
UWA Extension, The University of Western Australia.




Photography: Please be sensitive when you encounter Aboriginal people/sites. There are rules about the display and publication of photographs with Aboriginal content—permission to publish is required from the Department of Indigenous Affairs.

We *strongly* encourage you to obtain travel insurance to cover you for cancellation due to illness, trip cancellation, luggage loss, and all other contingencies—all the usual items covered by such a policy. This is a point we *particularly* emphasise.

As a registered volunteer, you are entitled to purchase Department of Environment and Conservation publications at a discount of 20%. This discount is only available at DEC's Kensington headquarters, e.g. *Bush Books* are available at the staff price of \$5.20 each. Please bring your Expedition name tag as proof of entitlement. The discount does not apply to *LANDSCOPE* magazine. Volunteers may also use the Department's libraries but do not have borrowing rights. Hats are supplied to all volunteers. If anyone sees you working in the field, these identify you, and you are recognised as being engaged in authorised activities with appropriately licensed leaders. Volunteers who work a certain number of hours are also entitled to a free **park pass**. Different passes are available according to the number of hours worked. The Department very much appreciates your work on its behalf and wishes each volunteer a very enjoyable trip.

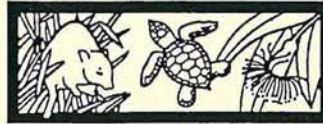
Thank you for deciding to contribute to conservation and research in Western Australia. Come prepared for rewarding new experiences as you help with a range of exciting activities. The leaders look forward to meeting and working with you.

Yours sincerely



**Professor Kevin Kenneally AM**  
Scientific Coordinator  
*LANDSCOPE Expeditions*

May 12, 2009



## PROCEDURE FOR ROADSIDE VEHICLE ASSISTANCE IN REMOTE AREAS

Due to a disturbing increase in unpleasant encounters for travellers offering assistance to other travellers in trouble in remote regions of Australia, it has become necessary to formulate guidelines to avoid harm or potential violence towards the "Good Samaritan". However, these guidelines can apply to assistance rendered in any locality.

*LANDSCOPE* Expeditions recommend travellers adhere to the following protocols when encountering other travellers requesting roadside assistance, ie being flagged down, or encountering a situation where you believe you may be of assistance:

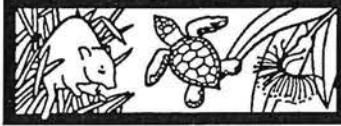
- ◆ Of paramount importance is your own safety. If at any point you consider yourself to be at risk or in danger, it is appropriate to remove yourself from the scene.
- ◆ If it is obviously a road accident, and there are injured people at the scene, render all necessary assistance as per standard First Aid training, and radio for help.
- ◆ If the situation is unclear as to why assistance is being requested, we recommend the following course of action:
  - Never stop alongside the vehicle/s requiring or requesting assistance (VRA). Instead, slow down, assess the situation, and stop 50 metres past the scene. This applies even if someone stands in the middle of the road to flag you down. Ensure your windows are up and doors locked.
  - At all times observe road safety and your personal safety before proceeding (eg activate your hazard lights, ensure you are not in the path of any other vehicles that may be on the road, keep off the road as much as possible).
  - If travelling in convoy, radio the registration details and a description of the colour, make and model of the VRA, and the number of people involved at the scene, to other convoy members.
  - Have a driver remain with your vehicle, in the driver's seat, with the motor running and keep the windows wound up, and the doors locked.
  - Re-assess the situation from your vehicle before deciding to proceed with the next step. Do not get out of the vehicle until you are certain there are no other people who could be hiding out of view.
  - Have a passenger alight and request that the person/s needing assistance walk towards your vehicle. During this procedure, the driver must be able to observe the entire scene in the rear or external mirrors.
  - Make sure anyone approaching you has their hands in full view, and that they are not carrying or attempting to conceal anything that can be used as a weapon.

- If you have any concerns at this point, get back in your vehicle and leave the scene.
- If you choose to continue to provide assistance, immediately advise the people from the VRA that you have radioed their vehicle details to other convoy members (even if you have forgotten to do so, or have been unable to do so).
- Establish what type of assistance is required, and whether you can provide it.
- Only approach the other vehicle when you are completely satisfied that your safety is not at risk.
- At any time you feel uncomfortable with the situation, get back in your vehicle and leave the scene. Make a written record of all details you have observed.
- Advise other convoy members that you are uncomfortable and that you have left the scene. Alternatively, you can wait for additional convoy members to arrive at the scene.
- At the first possible opportunity, notify authorities of your concerns, providing as much detailed information as possible from your notes.

The Aussie habit of helping travellers in distress is a wonderful tradition and we encourage that this generosity of spirit be able to continue; the above guidelines have been formulated to ensure your safety and preparedness in times of demonstrating goodwill towards your fellow travellers.

**We wish you happy and safe travelling**

## LANDSCOPE EXPEDITIONS



Working at the Frontier of Discovery

### REQUIREMENTS AND GUIDELINES FOR LANDSCOPE EXPEDITIONS TAG-ALONGS

#### **Desert Tracks** **Plants and animals of the Canning Stock Route** **19 – 31 July 2009**

#### **Rendezvous point for tag-alongs to join the main expedition party:**

1900 hrs on Sunday 19 July 2009 at Mercure Inn Continental Broome, Weld St, Broome.

An expedition briefing and dinner will be held on this evening. It is essential that you attend this briefing. The expedition dinner is included as part of your contribution.

Departure at 0700 hrs Monday 20 July from the Mercure Inn Continental Broome, Weld St Broome.

All tag-along participants are required to report to leaders on arrival at the rendezvous point.

Do not hesitate to liaise with *LANDSCOPE* Expeditions if you have any queries regarding these guidelines.

#### **Vehicles**

This expedition is *not suitable* for light weight 4WD vehicles or “soft roaders”(eg: Toyota Rav 4, Mazda Tribute, Ford Territory, Subaru Forrester and the like). The expeditions travel to very rugged region and vehicles must be capable of handling long stretches of rough and corrugated 4WD tracks. In addition, wide track vehicles (eg; OKA’s or Isuzu 4WD’s) are not permitted on most expeditions.

Trailers are generally not permitted on expeditions, but please liaise with the expedition leaders if you are considering bringing a trailer. Please contact us for further information.

It is essential that all vehicles be in good mechanical order before you start on the expedition. It is advisable to make your party self-sufficient as far as your vehicle is concerned. All vehicles must be checked by a reputable workshop one week prior to departure. Special attention needs to be paid to all suspension components, ball joints (steering and universals), constant drives, water pumps, alternators, power steering pump seals, and timing belts (replace if over 95 000 km).

Vehicles should be four wheel drive (4WD) with 500 kg upward carrying capacity.

#### **Fuel**

Please ensure that you have planned sufficient fuel for the trip, allowing extra for the conditions as well as for use during the study period. Fuel is generally calculated at 5 km per litre to allow

**for heavy conditions. You may need to make provision for the transport of several jerry cans of fuel. There are generally no fuel outlets close to where we conduct research.**

On this expedition the last available fuel will be at Billiluna at the northern end of the Canning Stock Route (CSR). From there you will need to have sufficient fuel to cover the distance as far south as Well 40 and return, a distance of approximately 800kms. You will need to also allow for some extra running around. The total distance to be travelled including the section on the CSR is approximately 2600kms (not including extra incidental running)

**Please note the following vehicle standards and requirements:**

- Two spare wheels, in good condition, plus tubes.
- A No. 2 Tip-top tyre repair kit.
- For the conditions we will encounter, your vehicle should be equipped with split rims. Standard 10 or 12 ply best, or radials with steel walls. Sand tyres and soft walls are not suitable. No Pirelli Dakars or Kelly Radials. (**Tip:** before departure, break the beads and smear the rims with a light coat of rubber grease. In the event of a puncture this makes breaking the beads much easier).
- A suitable jack in good working order (a high lift jack – kangaroo jack – is recommended), and a solid base for the jack. We recommend a 70 cm plough disc as a base.
- A good tow rope.
- A snatch strap.
- A set of jumper leads.
- Compressor (Good quality – not a cheap base model)
- Tool kit, including tyre repair tools and grease gun.
- A spare set of belts, hoses and coil, spark plugs and points.
- A set of fuel and oil filters.
- Oil for one engine change; 4 litres of gear oil; 0.5 litres brake fluid; a 0.5 kg tin of Plasti-Bond
- A 2 kg general purpose fire extinguisher.
- Flywire radiator protection plus an under-cover and sufficient 80% knitted shade cloth to fit your roo bar, for extra protection from spinifex seeds. Another suggestion is air-conditioning filter material (available cut to size from air-conditioning outlets)
- Vehicle loadings should not exceed 90% of load capacity
- A de-watering agent such as WD 40 or CRC
- Petrol vehicles are to carry a copy of a workshop manual instruction page for a limp-home mode in case of electronic ignition failure.
- Suitable footwear to be worn by all participants (thongs and sandals not permitted).
- A long-handled spade and an axe.
- Table and chairs.
- Camping gear.
- A UHF CB radio is **compulsory**.
- A first aid kit appropriate for remote area travelling.
- A sand flag to warn other vehicles of your approach over sand dunes. Should be at least three (3) metres in height and attached to the front of your vehicle (roo bar or front bumper)
- A GPS and a winch are optional but extremely valuable items to have on board.

**Cautionary note:** Petrol vehicles with catalytic converters fitted to the vehicle's exhaust should be aware that there is an extreme danger of fire due to the accumulation of highly flammable spinifex grass under the vehicle. **Frequent** checking is required.

#### **Accommodation**

*Nothing* is supplied by the expedition (apart from specific scientific equipment), and you will need to take your own swags, tents and camping equipment to use on the expedition. If you wish to break your journey and stay somewhere en route, you will need to depart prior to the expedition departure date and meet the expedition at one of the pre determined rendezvous sites.

### **Cooking/Food/Beverages**

Tag-alongs are *not* catered for on this expedition, and you will need to provide your own food and cook your own meals. You will also need to bring your own beverages. Ample supplies of essential foods for emergencies, preferably canned rather than dehydrated, should be carried with you. Please organise your meals so that you can be present at "Show and Tell" which is at 7.00 pm each evening at base camp.

It is essential that you carry gas or similar cooking equipment for the places where the lighting of fires may be prohibited. When using an open fire, this should be kept small, for cooking purposes only and, if practical, shared with other tag-along members. Firewood should be collected opportunistically before reaching the evening camp site, to prevent depletion of firewood in one concentrated area. Collect only wood that has fallen. Make sure fires are out, remove traces of campfire scarring, clean up your site and leave it in as natural a state as possible before departure.

### **Water**

You must carry an adequate supply of drinking water for each person in the vehicle with you. Water is usually calculated at 4 litres per person per day. You should also bring water purification tablets or a mechanical water filter in the event that you run out of clean drinking water.

### **Hygiene/Waste disposal**

You should always carry a shovel and/or trowel and toilet paper. Select a place well away from natural water sources and campsites. All toilet waste should be well buried.

You must remove your rubbish from any camp site. Burn it or carry it out with you, but do not burn plastics. Burying rubbish in holes is not permitted – it can be dug up by feral animals/wildlife. Do not put rubbish down toilet holes. Bring a good supply of strong garbage bags with ties for your rubbish.

### **General**

- Pets are not permitted on the expedition.
- Minimal impact principles should be adhered to by all participants.
- Select a level campsite with adequate water run-off. Where possible, select a site that has already been used, to eliminate further damage to the bush. Choose your site thoughtfully and use it lightly, leaving it in as natural a state as possible.
- Be considerate of others. Keep noise to a minimum – value wilderness areas as places to renew the human spirit and to escape the pressures of 21<sup>st</sup> century living.

### **Briefings/Information Exchange/Show-and-Tell**

At base camp during the expedition there will be opportunities for social interaction for all expedition members. Tag-alongs are invited to contribute to the trip diary, which will be circulated amongst all expeditioners.

### **Travelling in Convoy Procedure**

#### **Rendezvous**

All tag-along vehicles should rendezvous as arranged. When there is more than one tag-along vehicle, positions will be drawn for the first day and a "tail end Charlie" rostered for each day, and all positions rotated from then on.

#### **CB radios**

Please turn on your CB radio and check communications with the expedition leaders vehicle before departure

#### **Radio schedules**

All tag-along vehicles should leave their radios on at all times, for regular contact with the convoy and leaders.



### **In transit**

To ensure that regular contact is maintained between the convoy vehicles following protocols will apply:

- Before leaving, take note of the vehicles both in front of and behind your vehicle.
- In transit regularly monitor the vehicle behind you.
- When a change of direction is required stop and wait for the following vehicle to catch up. **When this vehicle has caught up, signal the change of direction and then proceed as required.** The vehicle that has been following must then wait for the next vehicle and so on.

**As long as the procedure outlined is followed no vehicle will be separated or lost from the convoy.**

Drivers have a responsibility to keep up with the other vehicles, but at the same time should maintain a safe distance between vehicles. If two or three vehicles are travelling together, please leave at least 400 metres between each vehicle. When driving in convoy, always keep the vehicle behind you in view. It is recognised that at times, for instance on a dusty road, vehicles may wish to fall back to avoid unpleasant conditions. Whenever the convoy is on a main road, be sure to allow room for other traffic to pass. If you wish to stop to make an observation, take a photograph, etc, wave through the vehicles following and fall onto the end of the convoy. **Do not delay the convoy unnecessarily.**

### **“Tail-end Charlie”**

Should there be more than one tag-along vehicle, one vehicle will be rostered to be the “tail-end Charlie” each day. In the event of an accident or delay you must advise the leaders. The lead party will carry a comprehensive first aid kit, but may be out of CB radio range, so each vehicle **must** carry a first aid kit.

### **Gates**

Any gates encountered are to be left as found.

### **Maps and websites.**

The following maps and website will be useful

*Australia's Great Desert Tracks*. NW Sheet, 3<sup>rd</sup> Edition. HEMA Maps.

ISBN 1-86500-159-7. Purchase online at [www.mapsdownunder.com](http://www.mapsdownunder.com)

*The Canning Stock Route*. 3<sup>rd</sup> Edition. Westprint. ISBN 0-646-18223-4. Purchase online at [www.westprint.com.au](http://www.westprint.com.au)

The CANNING and WARBURTON 1:1 000 000 Australian Topographic Map sheets cover the region.

[www.exploreoz.com/TrekNotes/WDeserts/Canning\\_Stock\\_Route.asp](http://www.exploreoz.com/TrekNotes/WDeserts/Canning_Stock_Route.asp)

#### **PLEASE NOTE:**

- No responsibility or liability will be taken by *LANDSCOPE* Expeditions, the Department of Environment and Conservation, UWA Extension or their associates for breakdown expenses or recovery of vehicles. All reasonable assistance will be rendered.
- Please check your insurance policy carefully for appropriate and adequate cover when travelling in in remote areas.



Working at the Frontier of Discovery

## Desert Tracks

### Plants and Animals of the Canning Stock Route

#### VOLUNTEER PROFILES

*(please note: if you would like your profile modified before publication in the final report, please contact – Cheryl Tonts on 9334 0319 or via email [cheryl.tonts@dec.wa.gov.au](mailto:cheryl.tonts@dec.wa.gov.au))*

**Josephine Bell** from North Fremantle in Western Australia loves the Kimberley and is interested in biological research. Jo is looking forward to exploring part of the Canning Stock Route. A retired veterinarian, she was born and raised in country Victoria and lived in rural South Korea for 5 years before spending 23 years in Kojonup. Now living in North Fremantle, she is enjoying the proximity to the river and the beach, but still prefers the bush.

**Kevin Bell** is from North Fremantle in Western Australia. Kevin is a lecturer in Animal Science at Murdoch University having completed a degree in Veterinary Science in Melbourne and a PhD from Murdoch University. He spent 5 years undertaking voluntary work in South Korea before returning to Australia and moving to Kojonup where he worked as a sheep farming consultant. He then moved to Perth to his current teaching role at Murdoch University.

**Laraine Brindle** is a medical practitioner from Gidgegannup in Western Australia. Laraine would like to get more experience in scientific fieldwork and is interested in post retirement volunteer work in science and ecology. Laraine describes herself as young at heart with a love of the outdoors. She will give most things a go if there is a challenge involved. Laraine last travelled with *LANDSCOPE* Expeditions to Middle Island in the Recherche Archipelago in 2008.

✓ **Fiona Dallas** is from Fremantle in Western Australia. Fiona has previously participated in a birding trip to Rudall River National Park and is keen to experience the desert regions of Western Australia again, this time in more detail. Originally from Scotland, she trained as a nurse and moved to Australia in 1963. She settled in Attadale and later Fremantle where she worked as a nurse until 1996.

**Kay Fry** from Benger in Western Australia travelled with us to the Canning Stock Route in 2008. As she thoroughly enjoyed last years *LANDSCOPE* Expedition, she is keen to explore and help study the last section of the track. Kay has spent most of her life farming beef cattle in the south west of WA and for the last six years has been competing in horse drafting. She is on the committee of the South West District Agricultural Show which puts on a display at the Perth Royal Show. She loves camping and travelling.

**Barbara Harvey** is from Mosman in New South Wales. Barb has travelled on many *LANDSCOPE* Expeditions, including to the Canning Stock Route last year. She has enjoyed them all and says that they have added immeasurably to her knowledge. Barb describes herself as an amateur natural historian and is a volunteer at the Australian Museum in Sydney. Barb chose this expedition as she is looking forward to seeing 'whatever we may find', but she is particularly keen on seeing a princess parrot which have been previously sighted in the area.

**Anne Lyneham** hails from Popanyinning in Western Australia. Anne has a great interest in everything outdoors and wants to experience as much as possible with knowledgeable people. A semi-retired nurse, Anne has a great interest in birds, flowers and wine and has been on many caravan and camping trips within Australia.

**Libby Manuel** from Mosman in New South Wales has wanted to travel on the Canning Stock Route for over 15 years and is very keen on the scientific aspects of the trip. She is very eager to assist conservation research by gathering vital ecological data. A registered nurse who is currently a co-director of a property management and investment company, Libby has travelled extensively within Australia and overseas.

**Frank Pritchard** is a farmer from Kojonup in Western Australia. Frank is especially interested in assisting with the collecting of data relating to desert regions of Western Australia to compliment his knowledge and experience in outback Western Australia. After farming for 40 years, Frank moved into the town of Kojonup and is currently a shire councillor and assists with a restoration group for year six and seven boys at the local school. He is very interested in early exploration in Western Australia.

**Jansie (Jane) Slobbe** joins us from Mt Nasura in Western Australia. Jane is keen to travel to this area as she has not been there before and is very interested in the wildlife of the area. She describes herself as on a journey through our wonderful State. She has spent time in the Kimberley region but is particularly looking forward to the Pilbara and the Canning Stock Route. Jane travelled to Neale Junction Nature Reserve with *LANDSCOPE* Expeditions in 2008.

~~**Courtney Wheatley**~~ joins us from Mount Hawthorn in Western Australia and is currently an honorary wildlife ranger on Rottnest Island. Courtney enjoys outback travel and camping and has a great interest in birds, mammals and reptiles. He undertakes frog research and is involved in multi day reptile trapping on Rottnest. He has worked as stockman on stations in the Kimberley, Gascoyne and was a cattle overseer at a station near Esperance. He has worked as a wool buyer and established a sheep classing and livestock breeding consultancy. He has spent the last ten years running a family engineering technology company along with his work at Rottnest.

**Jonathon Wilson** is a retired accountant and entrepreneur from Mindarie Keys in Western Australia. Jon has long wished to travel to the interior of Australia having travelled extensively the Africa, South America and Europe. He has spent time with South American Indians, the Pygmies of Zaire and experienced the power of nature at Niagara, Iguassu and Victoria Falls. He lived in Hong Kong from 1985 – 1997 where he built up a company, sold it and emigrated to Australia.

**Dr Patricia Woolley** is a retired zoologist and Emeritus Professor from Doncaster in Victoria. Pat taught and carried out research at La Trobe University. She has a particular interest in *Dasyercus* sp. (mulgara or Canning's little dog) and has previously conducted biological research in remote locations throughout Australia. Pat was part of the 2007 and 2008 trip along the Canning Stock Route and on the 2008 trip, captured a *Dasyercus*, which had not been seen in the area for over 70 years.

#### **TAG – ALONGS**

**Beverley Boyle** from Applecross in Western Australia is travelling with the expedition to experience a new adventure and to pursue her interest in plants and animals. Beverley is a retired clinical nurse specialist trained at PMH. She worked for several years in London and 25 years at Kaleeya Hospital, East Fremantle. She enjoys travelling in Australia and during 1988 joined a camel trek for 14 days travelling west to east across the centre of Australia.

**Richard Boyle** joins us from Applecross in Western Australia and is seeking to enhance his knowledge of plants and animals. Richard is a semi retired civil engineer who started his own construction company in 1979. His company built over 40 bridges in the State, many of which are in the Pilbara and Kimberley. Richard enjoys travelling, especially in Australia and participated in a camel trek for 14 days travelling west to east across the centre of Australia in 1988.

**Dorothy (Dot) Nickson** travels from Beenleigh in Queensland to join this expedition. Dot has travelled to this area previously and is keen to return to learn more about the flora, fauna and Aboriginal culture of the region. She has a love for the environment and would like to see desert areas left in their natural state. Dot also has a great interest in a number of crafts and travelled with *LANDSCOPE* Expeditions to the Gibson Desert and Lorna Glen in 2003.

**David Nickson** is from Beenleigh in Queensland. David travelled on the Canning Stock Route in 1993 but was unable to complete the journey as Lake Gregory was 60 km wide at the time. This trip will enable him to fill in the 'missing link'. David started working on the land in Victoria and Queensland before moving to Brisbane with his young family. David spent 25 years in the Queensland Fire and Rescue Service years before retiring in 2001. He enjoys bushwalking, four wheel driving and travelling to interesting places with like minded people. David travelled to the Gibson Desert and Lorna Glen with *LANDSCOPE* Expeditions in 2003.

## CASUALTY ACTION

Leave a minimum of two members with the casualty while a team of no less than two members continues to the aid station with a written casualty report containing:

1. Designation of group.
2. Name of ALL group members.
3. Name of CASUALTY.
4. Nature of problem.
5. Assistance required.
6. Map edition and GPS reading giving location of casualty.
7. Food/water state of group.



## PATIENT MANAGEMENT ORDER OF URGENCY

1. Protection of the patient from further injury (safety).
2. Restore breathing and heart beat (CPR).
3. Stop bleeding.
4. Minimise pain.
5. Reassurance of patient.
6. Seek further aid (transport to hospital).



INFORMATION COURTESY OF WA POLICE SERVICE

## LANDSCOPE EXPEDITIONS



# WILDERNESS SURVIVAL CARD

## DO NOT PANIC

- ▶ If lost, do not leave your vehicle.
- ▶ On foot, make for high ground.
- ▶ Assess your needs for water, shelter, warmth and food.
- ▶ Make a plan.

## REMEMBER

**S**ize up the situation.  
**U**ndue haste makes waste.  
**R**emember where you are.  
**V**anquish fear and panic.  
**I**mprovise.  
**V**alue living.  
**A**dopt a positive attitude.  
**L**earn and then lean on basic skills.

# EMERGENCY SIGNALS

## FIRES

A smoking fire will aid searchers by day or night.  
Beware of fire danger.

## WHISTLE/TORCH CODE:

**Lost party:** 3 blasts/flashes

**Search party:** 1 blast/flash repeated regularly

**Acknowledgement of distress signal:** 2 blasts/flashes

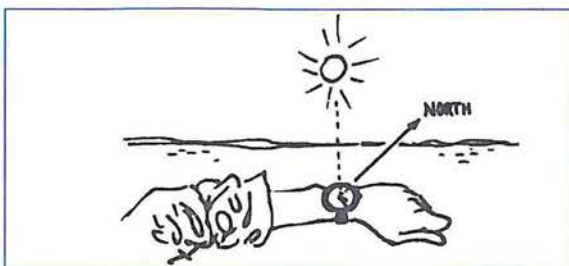
**Recall for search parties:** 4 blasts/flashes repeated regularly

The same codes apply for gun shots (fire into soft ground only; DO NOT fire into the air) or mirror flashes. Don't forget the mirrors available on your vehicle.

# DIRECTION FINDING BY DAY

## watch method

To find north hold your wrist watch horizontal. The figure 12 pointing at the sun, bisect the angle between the hour hand and 12 o'clock positions. The line indicates north.



**NOTE:** This method will not apply to areas north of the Tropic of Capricorn during midsummer.

# GROUND-AIR VISUAL CODE

Require assistance	v
Require medical assistance	x
Proceeding in this direction	↑
If in doubt use international symbol	sos

# STANDARD AIRCRAFT ACKNOWLEDGEMENTS

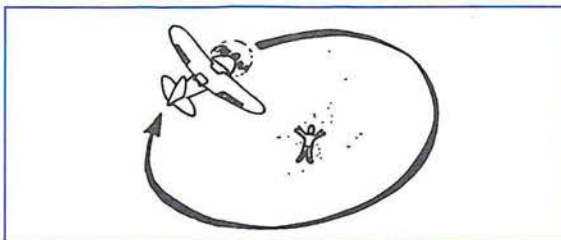
## Message Received and Understood

Aircraft will indicate that ground signals have been seen and understood by rocking from side to side (day or moonlight), or making green flashes with signal lamp (night).



## Message Received and Not Understood

Aircraft will indicate that ground signals have been seen but not understood by making a complete right hand circle (day or moonlight), or making red flashes with signal lamp (night).



## Emergency Protocols Checklist

### In the event of an accident/incident the following information will be required:

1. Advise expedition staff immediately of the nature of the accident/incident and give details – how, when and what actions have been taken.
2. Has the patient/s been evacuated? By what means? From where and to where?
3. Was the patient accompanied by a LANDSCOPE expeditions leader? If so, who?
4. If volunteer is hospitalised, leaders are to keep expeditions staff informed of patient's medical status.
5. Is the expedition going to continue? Liaise with expeditions staff to jointly assess situation.
6. Contacting next of kin – expeditions staff will contact families.\*
7. The expeditions staff will reassure families of those not involved that all is okay.
8. If the accident is serious it is likely to attract media attention. The expeditions staff will advise the Director General and Corporate Executive.
9. Leaders should not respond to media without liaising with the expeditions staff who will contact the principal media person regarding a media strategy and/or media release.
10. Expeditions staff will arrange for a contact number for friends and relatives to ring to obtain more information.
11. Expeditions staff will arrange counselling of staff and/or participants if appropriate.
12. Expeditions staff will advise Volunteer Coordinator of nature of the accident.

### In the event of a sudden death

1. Expedition leaders to ensure that instructions contained in the 'Procedures and Operations' Manual (Duty of Care section) have been carried out as follows:
  - They have sought medical advice.
  - They have contacted the police or local authorities and followed their advice
  - They have asked everybody in the group to take careful notes of the date, time, location, who was present and the circumstances surrounding the death as this will assist the police in preparing a report to the coroner.
  - They have made a list of any valuables and equipment belonging to the deceased person and have had the list witnessed. They have given all personal items of value to the police and obtained a receipt.
2. Expedition staff will contact next of kin.\*

\* Emergency contact numbers for all volunteers are kept at Kensington. The leaders have copies in the field. The DEC Volunteer Coordinator also has a copy.



**LANDSCOPE EXPEDITIONS**  
Working at the Frontier of Discovery

## EXPEDITION LEADERS

### Customer service procedures checklist

- LANDSCOPE Expeditions is a customer-focussed program and although we refer to people joining the expeditions as 'volunteers' they are in reality paying clients.
- LANDSCOPE Expeditions relies on client satisfaction for its continuing success.
- On expeditions we are judged by how you treat our clients.
- We must make it easy and a pleasure for our clients to do business with us.
- Our service will ensure clients choose the expeditions program and remember us.
- Our clients' safety is paramount at all times.



Department of  
**Environment and Conservation**



**Reliability:**

- Always do exactly what you have said you will do for a client - if not more.

**Efficiency:**

- Make eye contact with visitors within 30 seconds of their arrival and greet them as soon as possible. Introduce yourself and use their names if appropriate. Make sure you are wearing your name badge for the duration of the expedition.
- Explain at all times what is happening.

**Presentation:**

- Good grooming and personal cleanliness are expected at all times.
- Presentation should be neat and appropriate and voice presentation should portray relaxed professionalism and confidence.

**Professionalism:**

- Accuracy and knowledge of your subject, combined with a customer-focussed attitude, will ensure you maintain professionalism while building client relations.

**Courtesy and tact:**

- Always treat clients with respect and courtesy. Avoid too much familiarity and monitor their reaction to your approach. Thank them for joining the expeditions program and make them aware that you appreciate their support - both financially and physically.
- Share your attention evenly among the group.

**Flexibility and convenience:**

- Maintain a 'can-do' attitude. Even if the request is unusual, think about how you can either satisfy their request or provide other options.

**Communication:**

- Keep customers well informed about things that affect them. Let them know if there are delays and be apologetic if they are inconvenienced. Make sure they know you are concerned about their experience. Build a rapport without intruding and communicate with other staff to ensure messages are consistent. Also, find out what your clients needs are.
- Leaders should sort out differences of opinion/organisational details amongst themselves and never in front of the clients.

**Attentiveness:**

- Be aware of each client's needs and ensure they have all of the information they require. Be sensitive to clients' religious and ethnic backgrounds. Avoid jokes that may be inappropriate in these situations.
- Remember you are a representative of the LANDSCOPE Expeditions program and need to stay focussed on the clients' needs at all times.

**Credibility:**

- Do not promise what you cannot deliver. Be sincere and make a genuine effort to fulfil the customer's expectations. Follow up and confirm satisfaction.

**Understanding the client:**

- Make an effort to 'read' the clients and their reactions. Are they relaxed and comfortable? Do they feel anxious? Are they confused? Once you are aware of any uncertainty, ask questions and put them at ease.

**In addition:**

- Clients do not like to be told they are wrong - be diplomatic.
- Lack of information creates uncertainty - provide as much information as possible when circumstances require a client's understanding.
- 'Follow-up' often precludes a problem arising - recognise signs of dissatisfaction and do something about it.
- Remember, we want the expedition to be a meaningful experience for all our clients and leaders.