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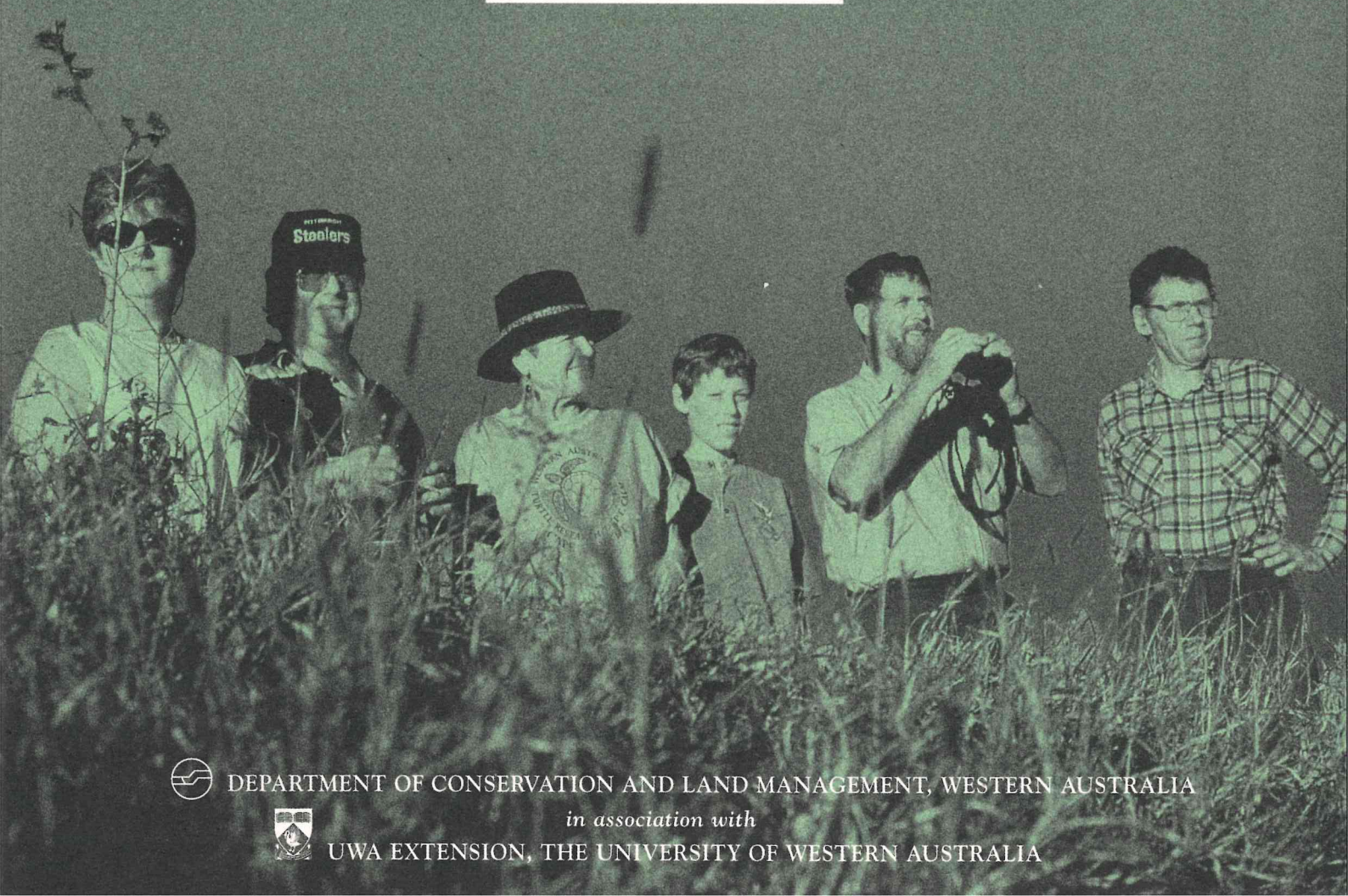
Department of Biodiversity,
Conservation and Attractions

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1998

LANDSCOPE EXPEDITIONS PROGRAM

We have
a place for
you at the
frontier of
discovery



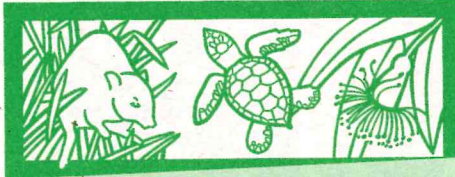
DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT, WESTERN AUSTRALIA



in association with
UWA EXTENSION, THE UNIVERSITY OF WESTERN AUSTRALIA

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LANDSCOPE Expeditions



LANDSCOPE

W.A.'s CONSERVATION, FORESTS AND WILDLIFE MAGAZINE

Dear Friends,

Welcome to the 1998 program of *LANDSCOPE Expeditions*.

Come with us and join scientists and regional staff from WA's Department of Conservation and Land Management (CALM) in field-based study and research projects in remote parts of the State. You'll make new friends while you work on important conservation projects and see things that your family, friends and neighbours have never seen and may never see except on a *LANDSCOPE Expedition*. The expedition contribution you pay will make the study and research possible. Your enthusiasm, commitment and ideas will make it all happen.

The 1998 expeditions provide you with an opportunity to be part of the largest wildlife conservation project in Australia; to study birds and plants in the remote Tanami and Little Sandy Deserts; to journey to the rainforest, gorges and rugged sandstone ranges of the far north Kimberley; to collect plants in a remote area renowned for its spectacular spring wildflowers by day and to work with the State's leading astronomer studying the skies of the Murchison by night; to voyage to the Abrolhos Islands; and much, much more.

And if you're a repeat expeditioner, we'll give you a 10% discount on this year's expeditions (see page 9).

You don't have to be a scientist to join a *LANDSCOPE Expedition*. These experiences are open to people from all walks of life, and the only qualifications are good health, an interest in nature conservation, an enthusiasm to be part of a team, and a sense of humour.

Won't you go bush with us in the cause of nature?

Ron Kawalilak
EXECUTIVE EDITOR, *LANDSCOPE*

P.S. For more information on *LANDSCOPE Expeditions* visit CALM's natureBase at <http://www.calm.wa.gov.au>. Even if you can't join us on an expedition just now, you can still be part of the conservation and management of WA's unique natural heritage by becoming a subscriber to CALM's award winning *LANDSCOPE* magazine. See the back cover for more details.

 DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT
Locked Bag 29, Bentley Delivery Centre, Western Australia, 6983.

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C O N T E N T S

Expeditions

EXPEDITIONS

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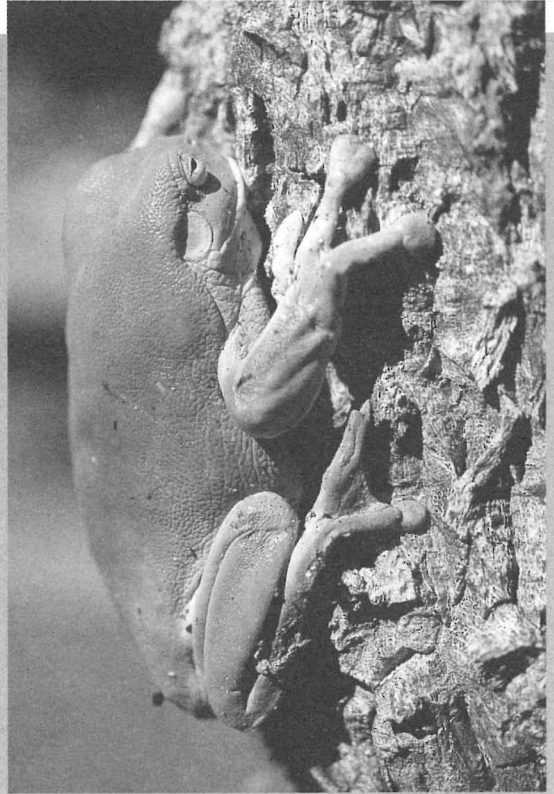
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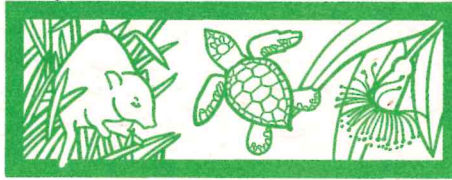




Above: Osprey Nest, Abrolhos. Top left: Tamar Wallaby, Abrolhos. Photos - Kevin Coate. Top right: Kimberley green tree frog. Photo - Kevin Kenneally.

1 9 9 8

LANDSCOPE Expeditions



Lend your body to research...

LANDSCOPE Expeditions are non-profit, self-supported study and research projects. Since their inception in 1992, the expeditions have been offered by the Department of Conservation and Land Management (CALM) publication *LANDSCOPE*, a quarterly magazine devoted to wildlife, conservation and environmental issues in Western Australia. They are offered in association with UWA Extension, a department of The University of Western Australia.

CALM is the Western Australian Government agency responsible for the management and sustainable use of the State's 20 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 native plants and animals throughout the State.

UWA Extension has been operating as a public outreach arm of The University of Western Australia since 1913. It is a Centre for Continuing Education and promotes community awareness through a variety of means, including educational travel.

CALM scientists and regional staff identify the research projects and lead the expeditions. CALM and UWA administer the expeditions. The private sector and local communities are contracted to provide logistical support.

LANDSCOPE Expeditions answer the need for research to protect the environment, while they respond to the demand for first class interpretation by scientists and specialists. They provide paying volunteers with an opportunity to work alongside scientists and to promote wider cooperation in addressing conservation and land management challenges in Western Australia. Any member of the general public can be involved subject to fitness. You must be 13 years of age or over to be registered as a CALM volunteer.

You can visit and gain an understanding of remote or inaccessible places. You can have the satisfaction of knowing you have contributed to our knowledge of threatened environments and endangered species. Unique photo opportunities and the chance to see and handle unusual animals are a bonus.

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

UWA EXTENSION TRAVEL AGENT'S LICENCE NO. 9TA00454

DON'T MISS OUT – BOOK EARLY

Most expeditions are limited to 12 people. Please book as soon as possible so you don't miss out on the expedition of your choice. Flights and accommodation in the north-west are in high demand—another good reason to make your travel plans early.

CALM VOLUNTEERS

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

1 9 9 8

Beyond the Dreaming—Project Eden

Peron Peninsula, Shark Bay World Heritage Area, Western Australia. March 28—April 5

Dr Per Christensen, Consulting Research Scientist

Graeme Liddelow, Senior Technical Officer

Keith Morris, Senior Principal Research Scientist

Science and Information Division, CALM

This is your chance to be part of one of the most exciting wildlife conservation projects anywhere in the world. If successful, Peron Peninsula could become the largest area in Australia in which large numbers of endangered animals roam freely. Already some of the surviving wildlife is beginning to recover. The Shark Bay thick-billed grass wren, a subspecies confined to this area, is becoming more numerous on the Peninsula and spinifex hopping mice are being caught in greater numbers. Enjoy close encounters with native mammals and reptiles, assist in the reintroduction of endangered species, and track their deadly enemies: feral cats.

Project Eden is a bold plan which aims to remove virtually all feral cats and foxes from a massive 1050 square kilometre area of the Shark Bay World Heritage Area, noted for its natural beauty and in particular for the diversity of its land and sea scapes.

The first part of the project, the erection of the feral animal proof fence across the narrow neck of the peninsula and the control of foxes has been achieved. Feral sheep and goats have also been controlled under a World Heritage plan. The numbers of feral cats have been reduced to the point where some native species are now being reintroduced, the first of which are woylies and malleefowl.

FIELD WORK

Thousands of visitors from all over the world are attracted to this region every year but few, if any, are privileged to engage in the hands-on experiences that this expedition makes possible. See and handle native wildlife. Participate in radio tracking of released woylies and malleefowl. Help researchers trap woylies to check their breeding status. Also, trap small native mammals and reptiles using both pitfall and Elliott techniques and handle, identify and record data on captured animals. At night, spotlight for larger mammals and reptiles. There will be ongoing work on feral cat control. This will provide information on cat biology, home ranges and other data that will be valuable for future control. If you would like to help collect data through daily bird counts, please bring

your binoculars along. Participants will also help to photograph, collect, press and record plants of the Peninsula. We will also make time to meet the famous dolphins of Monkey Mia.

CONDITIONS

Travel from Perth will be in a 14 seat, air-conditioned, 4WD Oka vehicle with meals and camping gear provided. The study site is on Peron Peninsula at Shark Bay, 800 km north of Perth. We will be camping on the former Peron Pastoral Station, 10 km from Denham, and 20 km east of Monkey Mia. Meals will be provided but participants are expected to assist with camp chores. Conditions include basic showers and laundry facilities, as well as the nearby 'hot tub' (an artesian bore). One night will be spent camping on the beach at Cape Peron. The weather at this time of the year can be quite warm with temperatures ranging from 20 to 30 degrees Celsius. On average, there are two wet days in April and the lowest April minimum on record is 14 degrees Celsius.

RELATED INTERESTS

Observation skills and an interest in wildlife ecology, photography, bird watching and botany.



Monitoring vegetation. Photo - Graeme Liddelow

DEPARTURE POINT

The expedition starts and finishes in Perth, Western Australia.

INCLUSIONS

Pre-trip briefing, transport, meals, research equipment and supplies, duffel bag, volunteer hat, written briefing, camping and field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

NOT INCLUDED

Some refreshments en route.
Alcoholic beverages and other personal expenses.
Medical treatment or emergency evacuation expenses.

CONTRIBUTION

\$1595

1 9 9 8

Craters and Creatures of the Tanami Desert

Tanami Desert and South East Kimberley region, Western Australia. May 1—12

Kevin Kenneally, Coordinator, LANDSCOPE Expeditions

Daphne Edinger, Honorary Research Scientist, CALM

Kevin Coate, Naturalist and Ornithologist

Journey to where the Great Sandy and Tanami Deserts meet the southern Kimberley on the first *LANDSCOPE Expedition* to study this area. See diverse scenery including ancient ranges of the Devonian Reef system, elaborate cave systems, red sand dunes, freshwater springs, and eroded gorges and creek systems of the Gardner Range. A highlight will be a visit to Wolfe Creek Crater—the second largest meteorite crater in the world.

From Broome we will travel along the Great Northern Highway, camping at Mimby Caves before proceeding into the Tanami Desert via Wolfe Creek Crater. Explore the diverse habitats encountered along the way—investigate Talbot and Maurice Springs in the Denison Ranges, walk the scenic gorges and view some of the oldest rock art in the Kimberley. The expedition will traverse the Gardner Range before heading north to Kununurra where the trip ends.

Few biological studies have been conducted in this remote region and this expedition will collect information on plants and animals encountered during our journey. There will be an opportunity to investigate the status and geographical range of pebble mound mouse colonies, only recently discovered in the Gardner Range. Plants associated with the sandplains of the Tanami Desert and the creek systems of the Gardner Range will be collected. Checks will be done on the status of the rufous-crowned emu-wren at the most northerly extension of its range, as well as other bird species that overlap from the Kimberley and the Pilbara at this location.

FIELD WORK

Participants will gather information on desert dwellers such as the pebble mound mouse and the rufous-crowned emu-wren. Help collect, press and document plants, record vegetation communities, observe birds and make natural history observations at a variety of locations in the Tanami Desert. The expedition will provide much needed biological knowledge of this poorly known area, and the data collected will be used to make recommendations for management of the area.

CONDITIONS

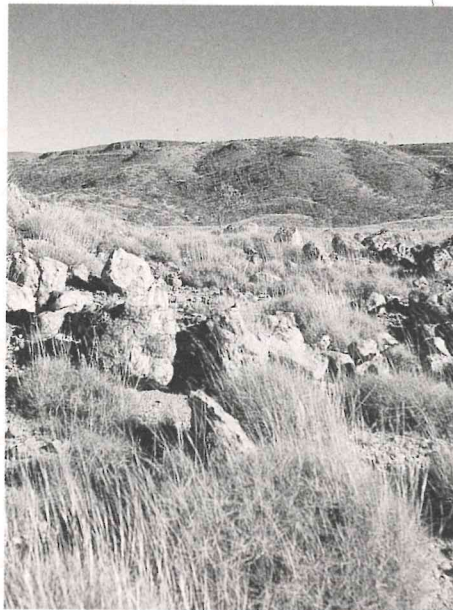
The expedition will begin in Broome, where the first night will be spent in a resort, and end in Kununurra. We will travel in a 14 seat air-conditioned 4WD Oka vehicle, mostly on unsealed tracks. Some tracks through the Gardner Range may be very rough. On site there will be opportunities for exploration. There will be a range of activities to suit differing levels of fitness among volunteers. After leaving Broome we will be camping under the stars in bush camps with no facilities. Meals and camping gear will be provided but you will be expected to help with camp chores. At times, water may be limited. The weather at this time can be warm with day time temperatures ranging from 18 to 35 degrees Celsius. Nights can be cold with temperatures as low as 8 degrees Celsius. There will be daily radio communication with CALM's Kununurra office.

RELATED INTERESTS

An interest in bird watching, wildlife ecology, botany, photography and adventure travel will be useful.

DEPARTURE POINT

The trip starts in Broome and finishes in Kununurra, Western Australia.



Gardner Range. Photo - Kevin Coate

INCLUSIONS

Pre-trip briefing, shared resort accommodation in Broome, ground transport, camp fees, meals, research equipment and supplies, duffel bag, volunteer hat, written briefing, camping and field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

NOT INCLUDED

- Travel to departure point.
- Medical treatment or emergency evacuation expenses.
- Some refreshments en route.
- Alcoholic beverages and other personal expenses.

CONTRIBUTION

\$2725

1 9 9 8

World of the Wandjina— Natural Wonders of the Kimberley

Kununurra to Broome via Drysdale River National Park, North Kimberley, Western Australia. May 16—26

Kevin Kenneally, Coordinator, LANDSCOPE Expeditions
Daphne Edinger, Honorary Research Scientist, CALM
Kevin Coate, Naturalist and Ornithologist

The wild and rugged Kimberley region is still a last frontier for new discoveries in natural history. Travel the famous Gibb River Road and help to document the birds and plants of the rainforests, gorges and rugged sandstone ranges of the far north, an area rich in Aboriginal rock art and culture. Some time will be spent surveying plants and animals in the Drysdale River National Park. Highlights will be visits to Parry Lagoons Nature Reserve, Mount Hart Station and Windjana Gorge.

See and experience a broad range of Kimberley scenery and habitats. After leaving Kununurra we will make a brief visit to Parry Lagoons Nature Reserve and spend the first night camping at Miners Camp Pool on the Drysdale River. We then travel through Theda Station to the Drysdale River National Park where we will camp and explore aquatic and swamp environments. There will be an opportunity either to work from a base camp or backpack for two days. In the Park, traditional Aboriginal presence is reflected in rock art galleries featuring ancient Wandjina and Bradshaw paintings. We will then travel through savannah woodlands and rugged sandstone country to Mount Hart Station. En route to Broome the expedition will visit Windjana Gorge in the renowned Kimberley Devonian Reef system.

The rivers and creeks are fringed with dense vegetation and form important biological corridors. Special emphasis will be given to studying the rich herblands in seepage areas adjacent to rivers and creeks. An inventory will be made of birds using these habitats, including studies on the purple-crowned fairy-wren. These birds are usually restricted to thickets fringing waterways. Their distribution has declined as a result of habitat disturbance by cattle. Searches will also be made for the spectacular Gouldian finch, which has declined dramatically across northern Australia.

FIELD WORK

Participants will collect, press and document plants, record vegetation communities, observe birds and make natural history observations at Miners Camp Pool on the Drysdale River, Theda Station, Drysdale River National Park, Mount Hart Station and Windjana Gorge. The data collected will be used to describe new species of plants and

make recommendations for nature conservation. It will also build on previous knowledge, to provide interpretive information for visitors to the North Kimberley.

CONDITIONS

The expedition will begin in Kununurra, where the first night will be spent in a hotel, and end in Broome. We will travel in a 14 seat, air-conditioned, 4WD Oka vehicle, mostly on unsealed, stony tracks. Some sections of the Gibb River Road may be very rough. There will be a range of activities to suit differing levels of fitness among volunteers.

After leaving Kununurra we will be camping under the stars, mainly in bush camps with no facilities. Showers and toilets will be available at some locations. One night will be spent enjoying the hospitality of a homestead stay at Mt Hart Station. The weather at this time can be warm with day time temperatures ranging from 18 to 32 degrees Celsius. Nights can be dewy and cold with temperatures in some areas as low as 5 degrees Celsius. There will be daily radio communication with CALM's Kununurra office.

RELATED INTERESTS

An interest in bird watching, botany, wildlife ecology, photography, backpacking and adventure travel will be useful.

DEPARTURE POINT

The expedition starts in Kununurra and finishes in Broome, Western Australia.

INCLUSIONS

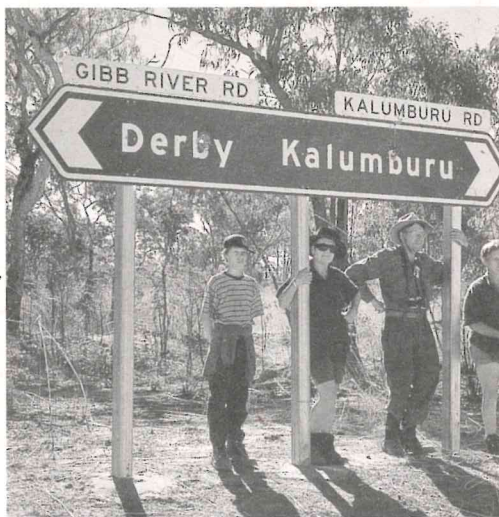
Pre-trip briefing, shared motel accommodation in Kununurra, ground transport, camp fees, meals, research equipment and supplies, duffel bag, volunteer hat, written briefing, camping and field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

NOT INCLUDED

- Travel to departure point.
- Medical treatment or emergency evacuation expenses.
- Some refreshments en route.
- Alcoholic beverages and other personal expenses.

CONTRIBUTION

\$2675



Gibb River Road. Photo - Kevin Kenneally

1 9 9 8

LANDSCOPE Expeditions

How to Apply

1. Complete the attached application form.
2. Enclose your \$200 initial contribution to secure your place.
Please consult the application form for detailed instructions on how to pay.
3. Mail to: *LANDSCOPE Expeditions*
UWA Extension
The University of Western Australia
NEDLANDS WA 6907
AUSTRALIA

We will then send you a receipt, forward your details to the project leader and advise you of the next stage.

PLEASE READ ON BEFORE SENDING YOUR APPLICATION.

GENERAL INFORMATION

WHY JOIN AN EXPEDITION?

You care about the environment. You care about sharing the world with all other species in a sympathetic, non-threatening way. You care enough to want these vital research expeditions to take place. Without your contribution, much research would not take place. You care enough to want to take part. *We* care enough to want *you* to have the satisfaction of helping our environment in a direct, practical way, by joining scientists in the field and contributing, both by your donation and your work involvement, to these very necessary projects. We also care that you have a lot of fun and personal satisfaction along the way!

LOYALTY DISCOUNT

A ten percent discount is offered to repeat expeditioners (and to new expeditioners who book on more than one trip in this brochure).

WHO CAN PARTICIPATE?

Most research expeditions do not require previous training or experience—only a willingness to work and learn. Limited places are available and are usually allocated in order of receipt. However, if the expedition is over-subscribed, the final choice of participants will be made in conjunction with the principal researchers, to ensure the best possible research outcomes for each expedition. Wilderness experiences, skills in observation, drawing, photography and skills and qualifications such as first aid, 4WD competence, outback safety and bushcraft can be very helpful.

WHEN IS MY FULL CONTRIBUTION DUE?

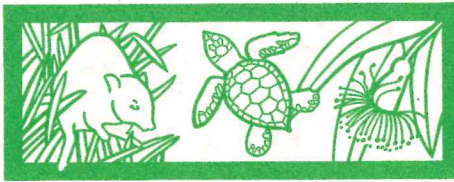
Your full contribution is due 60 days prior to departure. After this time, spaces held by applicants with outstanding balances are subject to forfeiture and become available to new and wait-listed applicants. Late applicants should submit the full contribution when applying for a place.

WHAT DOES MY CONTRIBUTION COVER?

Your financial contribution makes the research possible. It covers costs incurred at all stages of the research project, and includes funding of scientific staff, field camps, expedition vehicles, food, accommodation, equipment, instrumentation, fuel and freight plus follow-up work. One hundred percent of funds received flow directly back into the study and research projects.

WILL I NEED A DOCTOR'S CERTIFICATE?

It's very important that you realistically evaluate your own ability to meet the physical and emotional requirements of the project. Most expeditions will not require a medical certificate, but the case may be different for individual expeditions. However, if you are over 60, a doctor's certificate of fitness is mandatory.



WHAT HAPPENS IF I'M NOT ACCEPTED FOR A PROJECT?

Once the review process has been completed, you will be notified of the results of your application. If we are unable to place you on the expedition of your choice, you may remain on the waiting list or withdraw your application and your \$200.00 will be refunded.

IF MY PLANS CHANGE, MAY I CANCEL?

If cancellation in writing is received by *LANDSCOPE Expeditions* more than 60 days prior to departure we assure a full refund (less an administrative fee of \$50). For cancellations received between 30 and 60 days prior to departure we will refund 50% of your contribution. If a cancellation is received less than 30 days prior to departure your entire contribution is non-refundable. We regret that we cannot make exceptions to the cancellation policy for any reason, including personal emergencies. In the event of late cancellation, your contribution may be claimed as a tax deductible donation to research.

WHAT IF THE PROJECT IS CANCELLED?

If *LANDSCOPE Expeditions* cancel the expedition prior to departure, your contribution will be refunded in full. However, we are not responsible for non-refundable airline or other tickets or payments, or any such similar penalties that may be incurred due to the cancellation of an expedition. If, after departure, a trip has to be terminated due to unforeseen circumstances, no refunds will be made. To avoid such penalties, we strongly recommend the purchase of trip cancellation insurance.

TRAVEL TO THE POINT OF DEPARTURE

Travel to the point of departure for the expedition (this varies with each project) is entirely your responsibility. However, for the purposes of coordination, please forward a copy of your travel itinerary to *LANDSCOPE Expeditions*.

EXPEDITION CONDITIONS

Research expeditions are located in various parts of the State of Western Australia. Many will be based in remote locations where you will experience wilderness conditions. Accommodation styles will vary from outback camps, where you will sleep in swags or tents, to research centres, to modest hotels/motels. Please refer to the expedition brochure for more details about the area you are interested in visiting. You may be some distance from medical facilities, however, radio contact will be maintained through the Royal Flying Doctor Service. If you have special needs (e.g. vegetarian diet) please advise us in your application, and be prepared to bring your own private supplies. Field research inevitably involves unforeseen situations, and flexibility and cooperation are essential.

TRAVEL INSURANCE

We strongly encourage you to obtain travel insurance to cover you for such contingencies as lost or stolen baggage, personal liability, cancellation due to illness, termination due to illness or death at home, and emergency assistance as a result of accident, illness or rescue operation. *LANDSCOPE Expeditions*, UWA Extension and their associates will not be liable for damage, losses or additional expenses incurred. Emergency transport, medical or hospital costs resulting from illness or accident during the expedition are entirely the responsibility of the person receiving such care.

UWA EXTENSION TRAVEL AGENT'S LICENCE NO. 9TA00454



Observing flood debris in the Kimberley. Photo - Kevin Kenneally

1 9 9 8

LANDSCOPE Expeditions

Application

Tell us about yourself...

Title Given name Surname

Address

..... Postcode

Telephone number (home) (business) (fax)

Preferred name for name badge.....

Expedition choice:

1 Dates

2 Dates

Date of birth Sex Height Weight

Occupation (indicate if retired)

Education/occupational background

Contact in case of emergency..... Relationship

Address

..... Postcode

Telephone number (home) (business)

I HAVE EXPERIENCE IN

- First Aid
- Camp cooking
- Boat handling
- Swimming
- Snorkelling

- Hiking
- Back packing
- 4WD vehicle driving
- Surveying
- Map reading

- Sketching/illustration
- Photography/video
- Computing/electronics
- Vehicle maintenance
- Experience with other cultures

INTEREST IN EXPEDITION

Please tell us why you chose this project. What are your expectations? How can your experience help?

Please supply a short description of yourself which will be included in the participant list sent to other team members.



How did you find out about this expedition?

1 9 9 8

Botanical Treasures of the Pearl Coast

Dampier Peninsula, Kimberley region, Western Australia. May 30—June 7

Kevin Kenneally, Coordinator, LANDSCOPE Expeditions

Daphne Edinger, Honorary Research Scientist, CALM

Philippa Nikulinsky, Botanical Artist

Members of the Broome Botanical Society

Travel to the famous pearling port of Broome, the southern gateway to the Kimberley, where red earth meets the surreal aquamarine sea. From Broome we will head north on the Dampier Peninsula to uncover some of the best kept secrets in the Kimberley.

Stay at "Nature's Hideaway" at Emeriau Point and view stunning sunsets from the sandstone sea cliffs. See outstanding coastal scenery, beachcomb on pristine white sands, walk the reefs at low tide and discover the prolific and colourful marine life. Visit an ancient Aboriginal stone fish trap. Observe one of Australia's premier botanical artists as she paints plants and flowers. Travel on to Cape Leveque and One Arm Point, home of the Bardi Aboriginal people and visit Cygnet Bay, said to be the landing place of famed British buccaneer and navigator William Dampier in 1688.

For the past decade the Broome Botanical Society and CALM have conducted collaborative research with Aboriginal communities into traditional values and uses of plants on the Dampier Peninsula in an attempt to bring together the botany of European and Aboriginal cultures. This has resulted in the publication of *Broome and Beyond—Plants and People of the Dampier Peninsula*, a guide to the landscape and conservation values of the Peninsula seen from different cultural viewpoints.

FIELD WORK

Volunteers will help to collect plant specimens, examine plant communities and make natural history observations between Broome and Cape Leveque. Visit patches of sub-coastal rainforest (classified as vine thicket) and work in small groups with the leaders, assisting with plant pressing and photography. You will also have the opportunity to try your hand at the art of botanical illustration. At times we will interact with local Aboriginal communities. Data collected will be used to make recommendations for management of the Peninsula.

CONDITIONS

Transport will be in a 14 seat, air-conditioned, 4WD Oka vehicle, mostly on unsealed sandy tracks. The research area lies between Broome and Cape Leveque which is approximately 200 kilometres from Broome at the northern tip of the Dampier Peninsula. Day time temperatures should be between 29 to 35 degrees Celsius and nights could be cold and dewy with temperatures as low as 5 degrees Celsius. Apart from the first night at a Broome resort, we will be bush camping, spending four nights at Middle Lagoon, and three nights at Cape Leveque. Meals and camping gear will be provided but you are expected to help with camp chores. There are basic laundry facilities, bush showers and toilets at both camping areas.

RELATED INTERESTS

Observation skills and an interest in plants, wildlife coastal ecology and botanical illustration. Photography, map reading and bushcraft skills would be helpful. Participants should be comfortable walking and camping in a bush setting.



Pandans at Emeriau Point. Photo - Kevin Kenneally

DEPARTURE POINT

The expedition starts and finishes in Broome, Western Australia.

INCLUSIONS

Pre-trip briefing, shared resort accommodation in Broome, ground transport, camp fees, meals, research equipment and supplies, duffel bag, volunteer hat, written briefing, camping and field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

NOT INCLUDED

Travel to departure point.
Medical treatment or emergency evacuation expenses.
Alcoholic beverages and other personal expenses.
Art equipment and supplies.

CONTRIBUTION

\$2295

1 9 9 8

Buckshot and Breakaways— Plants and Animals of the Gibson Desert

Gibson Desert Nature Reserve, Western Australia. September 2—13

Dr Per Christensen, Consulting Research Scientist
Graeme Liddelow, Senior Technical Officer
Science and Information Division, CALM

So much of Australia's culture and history is based on the outback. Yet most of us live on the perimeter of the continent and know little about our vast heartland. Our deserts are not vast areas of sand, but contain many different landforms and vegetation types which are home to a myriad different and unique animals. Explore the buckshot and breakaways, mulga and spinifex of the Gibson Desert under the guidance of scientists who have worked in the arid zone for many years.

Experience the vastness and isolation of this remote region and see animals and plants that few people ever view. For more than a decade, CALM scientists have been collecting information on this vast area. Over the past few years *LANDSCOPE Expeditions* have been vital in this work. The complex interaction of the animals, the harsh desert environment, fires started by lightning storms and predation by introduced cats and foxes are a central part of the studies. This information is essential to the ongoing effort to re-establish our vanishing desert fauna. CALM's long term aim is to establish viable colonies of mammals which have become extinct from the Australian mainland.

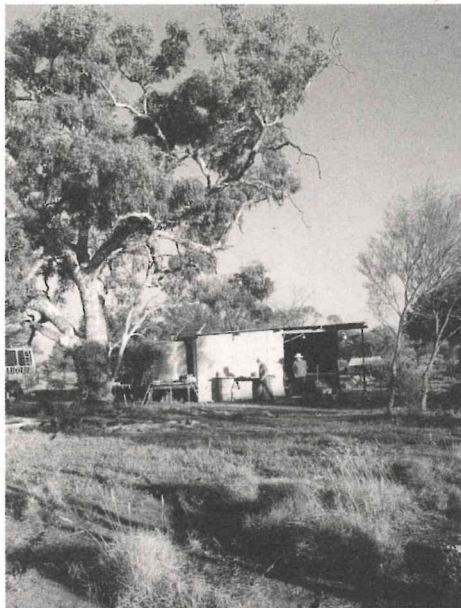
FIELD WORK

Volunteers will assist with tracking cats and foxes and help to pit trap native animals. Help to handle and identify small mammals and reptiles, search for animals in different habitats and identify birds. Research is also being carried out on the bilby. Little is known of the habits of this fascinating desert animal. Desert flora is also being studied and plant specimens from different habitats will be collected for later identification.

CONDITIONS

The research area is 600 kilometres east of Wiluna and covers 1.8 million hectares. It includes vast, undulating spinifex plains, interspersed with mulga. In places there are salt lakes, claypans, temporary freshwater lakes, spinifex-covered sand dunes and low rocky ranges with occasional breakaways. Access is via the Gunbarrel Highway and we will travel from Perth in a 14 seat, air-conditioned,

4WD Oka vehicle. En route we will stay for one night at Nallan Station and one night at remote Carnegie Station. Once in the desert eight nights will be spent camping under the stars at Eagle Bore Camp. Meals and swags are provided but you will be expected to help with camp chores. Bush showers and basic laundry facilities are available at the main camp but it is planned to spend one night at Alexander Springs and another south of Mount Worsnop in bush camps with no facilities. Expect warm days and cold nights. The final night will be spent at a motel in Coolgardie.



Eagle Bore Camp. Photo - Cleve Hassell

RELATED INTERESTS

Observation skills and an interest in wildlife ecology. Photography, map reading and bushcraft skills would be helpful. You should be comfortable walking and bush camping under desert conditions.

DEPARTURE POINT

The trip starts and finishes in Perth, Western Australia.

INCLUSIONS

Pre-trip briefing, shared accommodation at Nallan Station, Carnegie Station and a motel in Coolgardie, ground transport, meals, research equipment and supplies, duffel bag, volunteer hat, written

briefing, camping and field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

NOT INCLUDED

- Medical treatment or emergency evacuation expenses.
- Some refreshments en route.
- Alcoholic beverages and other personal expenses.

CONTRIBUTION

\$2295

Mallee, Mulgara and Thorny Devils— Exploring the Little Sandy Desert

Little Sandy Desert, Western Australia. September 17—26

Stephen van Leeuwen, Dr Tony Start, Research Scientists, CALM

Bob Bromilow, Phil Fuller, Technical Officers, CALM

Brad Maryan, David Robinson, Honorary Technical Officers

Follow in the footsteps of explorer Ernest Giles on an expedition to the Little Sandy Desert, deep in the heart of Western Australia. See spectacular wildflowers, secretive marsupial mammals, abundant birdlife, elusive skinks, nocturnal geckos and remarkably contrasting scenery dominated by red sand ridges and blue sandstone peaks.

The expedition will also camp at other remote and isolated sites like Dreamtime Gully and Giles' Red Ridge—sandstone breakaways with permanent gnamma holes supporting diverse assemblages of flora and fauna. These sandstone ridges are also plentiful repositories of Aboriginal history.

The Little Sandy Desert was recognised in 1969. Limited biological investigations have been carried out in this poorly known region. The first was undertaken by Ernest Giles during his 1876 expedition, when he collected the original specimen of *Eucalyptus rameliana*, a large-leaved, reddish-cream flowered mallee with affinities to the spectacular Rose Mallee (*Eucalyptus rhodantha*). In subsequent decades, particularly the 1970s and 1980s, Giles' collection provided the stimulus for one of Australia's greatest botanical mysteries, the location in the wild of Giles' mallee. Numerous expeditions searched the ranges and dunefields beyond the Alfred and Marie Range, the locality provided on Giles' specimen, but to no avail. These failures intrigued and frustrated many botanists, horticulturalists and naturalists involved in the searches, and deepened the enigma of this holy grail of Australian botany. In 1991, however, the mystery was resolved when a keen naturalist rediscovered Giles' mallee in the Little Sandy Desert some 500 kilometres beyond the Alfred and Marie Range!

This rediscovery provided the impetus for CALM to carry out a biological survey of the southern Little Sandy Desert, and many remarkable, interesting and unusual discoveries have since been made. Botanical highlights include the collection of Giles' mallee from another 30 populations, representing several thousand plants; the discovery of a bizarre samphire, new to science and unlike any other species in the genus *Halosarcia*; and the collection of *Stemodia linophylla*, another of Giles' poorly collected plants.

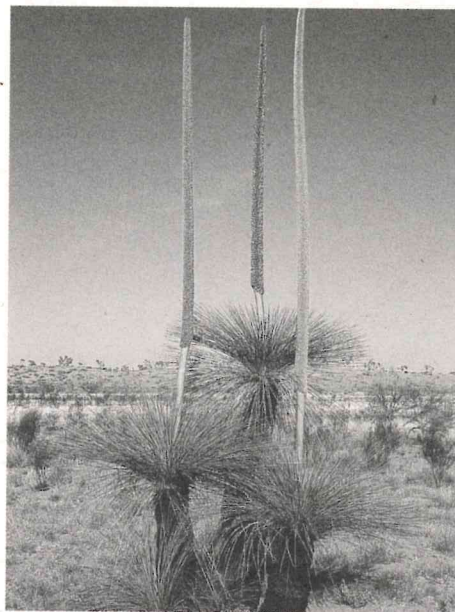
FIELD WORK

Volunteers will help to sample and collect data on the biota in the southern Little Sandy Desert. This will be achieved by establishing quadrats, installing pit-fall traps, burning of spinifex, use of ultrasonic bat detectors, nocturnal spotlighting and opportunistic collecting. Emphasis will be placed on documenting the flora and fauna of habitats not previously sampled by CALM.

CONDITIONS

We will travel in an air-conditioned, 14 seat, 4WD Oka vehicle. The expedition begins in Perth, and travels the Great Northern Highway through Wubin, Paynes Find, Mt Magnet and Cue, then heads west to the Wilgemia Ochre Mine where we will camp on the first night. We then travel via Tuckanarra and Meekatharra, and Kumarina and Beyondie Stations to arrive at our Willie Soak camp. Bush camps, with no facilities, will be in mulga and sheoak woodlands and occasionally spinifex. Leaving Willie Soak, we will travel through trackless terrain over dunefields to the remote and expansive Yanneri Lake and associated floodouts of Ilgarari Creek.

Sites will be reached by travelling across country and along the abandoned No. 1 Vermin Proof Fence surveyed and constructed under the supervision of Alfred Canning in 1905-06, before the establishment of the Canning Stock Route. Meals and camping gear will be provided, but you will be expected to help with camp chores. Water supplies will be limited to drinking and cooking requirements: showers and washing water will be unavailable for seven days. Days will be warm, but nights can be very cold. On the final night we will camp and have dinner at Kumarina Roadhouse before travelling to Perth.



Desert Grass Trees. Photo - Stephen van Leeuwen

RELATED INTERESTS

An interest in desert and wildlife ecology, botany, bird watching, herpetology, photography, Aboriginal archaeology, early and modern-day Australian explorers, bush walking and outback driving would be useful. You should be comfortable camping and working under primitive desert conditions in remote isolated areas.

DEPARTURE POINT

The expedition starts and finishes in Perth, Western Australia.

INCLUSIONS

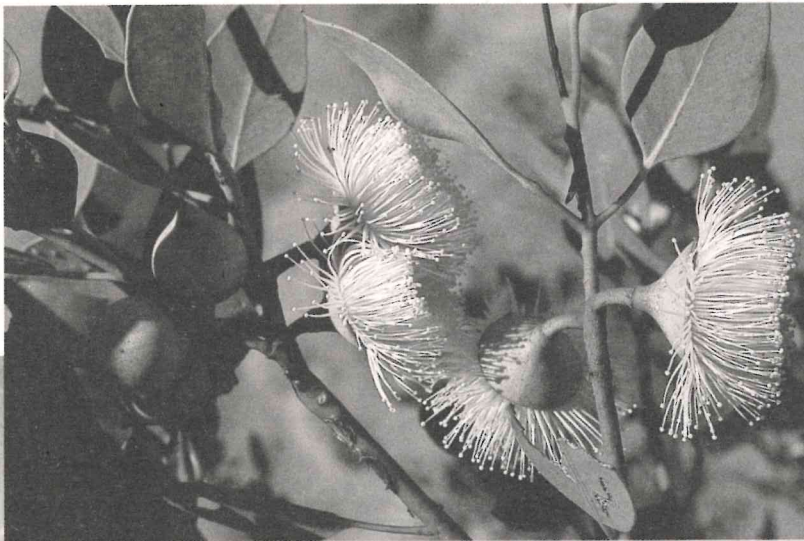
Pre-trip briefing, camp fees, ground transport, meals, research equipment and supplies, duffel bag, volunteer hat, written briefing, camping and field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

NOT INCLUDED

- Medical treatment or emergency evacuation expenses.
- Some refreshments en route.
- Alcoholic beverages and other personal expenses.

CONTRIBUTION

- \$2195



Left and Below:
Giles' mallee (*E. rameliana*).
Photos - Stephen van Leeuwen



1 9 9 8

New Moon Over the Murchison— Encounters with Plants and Planets

Burnerbinmah Station, Shire of Yalgoo, Western Australia. October 17—24.

Dr James Biggs, Government Astronomer, Perth Observatory, CALM

Sue Patrick, Senior Research Scientist, CALM

Daphne Edinger, Honorary Research Scientist, CALM

Join CALM scientists on a multi-purpose expedition involving astronomy and botany. Our base will be Burnerbinmah Station in the Murchison. There, far away from the major population centres, we will view the night sky in all its stunning majesty. We will also visit two meteor impact sites during the expedition to see the results of earth's dramatic encounters with rocks from outer space. In the day time, enjoy the profusion of wildflowers in this renowned area—and possibly discover a plant that has never been collected before.

Extend a plant survey started in September 1996 as part of the Wildlife Management Program for Declared Rare and Poorly Known Species in need of special protection in the Geraldton District. This has identified many poorly known plant species in the pastoral region, many of which are not known from conservation reserves.

Burnerbinmah Station covers about 59 908 hectares in the Shire of Yalgoo, at the headwaters of the Lake Monger wetland complex, approximately 270 kilometres due east of Geraldton. Its vegetation is mainly representative of the arid zone flora but it is close to the eastern limit of the South West Botanical Province. In 1995, the former pastoral lease was transferred to CALM. Landforms include breakaways, granite hills and exposures, salt lakes and calcareous plain. One gorge has permanent fresh water and there is also representative spinifex sandplain. Broad vegetation types include low mulga woodlands, acacia shrublands on shallow soils associated with granite exposures, open mulga with bluebush and saltbush, as well as bluebush, saltbush and samphire shrublands associated with the salt lakes. Range extensions and new populations of poorly known species have been found on previous *LANDSCOPE Expeditions*. It is hoped that the 1998 expedition will produce similar successful results.

FIELD WORK

En route to Burnerbinmah, we will visit the rather indistinct Yallalie Basin impact crater, and take an excursion north of Yalgoo one day to visit the crater on Dalgara Station. At Burnerbinmah, an astronomer

from the Perth Observatory will give you a guided tour of the night sky, explain constellations and inform you about the latest astronomical theories on many objects visible through portable 10" and 8" telescopes, or your own binoculars. The plant survey aims to find, record and survey populations of rare and poorly known species on the pastoral lease. Thorough sampling of the plants has been started by establishing quadrats in various plant communities. We will recollect in existing quadrats and may establish more in other areas.

CONDITIONS

We will travel from Perth to Burnerbinmah Station in a 14 seat, air-conditioned, 4WD Oka vehicle. We will be camping in the former shearers' quarters. Conditions are basic but there are showers and toilets. Meals and camping gear will be provided, but you are expected to help with camp chores. The average day time temperatures range from 10 to 30 degrees Celsius but could be higher on some days. The nights may be quite cold. The terrain is not rugged, though there are some breakaways and granite exposures.

RELATED INTERESTS

An interest in astronomy, geography, botany, photography, wildlife conservation and bush camping

will be useful.

DEPARTURE POINT

The expedition starts and finishes in Perth, Western Australia.

INCLUSIONS

Pre-trip briefing, camp fees, ground transport, meals, research equipment and supplies, duffel bag, volunteer hat, written briefing, camping and field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

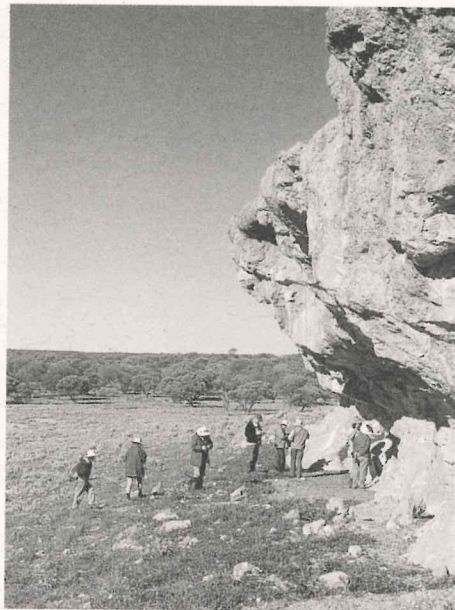
NOT INCLUDED

Medical treatment or emergency evacuation expenses.
Some refreshments en route.

Alcoholic beverages and other personal expenses.

CONTRIBUTION

\$1475



Single Cliff, Burnerbinmah. Photo - Daphne Edinger

1 9 9 9

An Astronomical Experience and Abrolhos Odyssey

Geraldton, Greenough and Abrolhos Islands, Western Australia. February 15—20, 1999

Dr James Biggs, Government Astronomer, Perth Observatory, CALM
Kevin Coate, Naturalist and Ornithologist

Observe and photograph a rare and spectacular annular solar eclipse with the Government Astronomer. Then undertake a four day voyage to the islands of the Houtman Abrolhos Archipelago, renowned for their marine environment, birdlife and history. Learn about shipwrecks, snorkel in the crystal waters, and make bird observations. In the evenings, hear tales of the islands' 'angry ghosts' and study the starry canopy as did shipwrecked sailors before you.

Few natural events are as dramatic as a solar eclipse. In February 1999 an annular solar eclipse will be visible along a 30 kilometre wide path starting in the Atlantic Ocean, then dodging below Southern Africa, and eventually heading out across Australia, crossing the coast between Dongara and Geraldton. We will observe the eclipse from the historic settlement at Greenough, south of Geraldton. A solar eclipse is a reasonably rare event that occurs when the sun, moon and earth all line up in space, and an annular solar eclipse occurs when the moon is relatively far from the earth and thus doesn't quite block out all the sun. During this eclipse 99.3% of the sun will be obscured, leaving a perfect ring of sunlight around the moon that will last for just 40 seconds.

Accompanied by the Government Astronomer and one of WA's best known naturalists we will then voyage to the Abrolhos Islands. The first European account of the Abrolhos was in 1619 by Commander Frederick de Houtman of the Dutch East India Company, who almost ran aground. From this may have come the name Abrolhos, derived from the Portuguese expression *Abri vossos olhos* or "Keep your eyes open!" This warning was not heeded on 5 June 1629 when the *Batavia* ran aground shipwrecking the 300 people aboard. The tragic episodes and heroism that followed the shipwreck have become part of the State's rich maritime history. The shelters which remain are the first European structures built in Australia.

The low, windswept limestone islands are surrounded by a maze of reefs and channels. The vegetation is primarily saltbush, beach spinifex and dwarf coastal shrubs. The Abrolhos is home to many varieties of tropical marine life,

carried there by the warm waters of the Leeuwin current. Reptiles thrive and the tammar wallaby and Abrolhos bush rat are found on some islands. Marine mammals include Australian sea-lions, dolphins and whales. Some 95 bird species occur on the islands, and accumulations of guano were mined up until the 1920s. Rock lobsters are fished commercially from March to June.

FIELD WORK

Astronomy: Observe and photograph the annular solar eclipse at Greenough. At the Abrolhos, the Government Astronomer will give you a guided tour of the night sky, explain the constellations and inform you about the latest astronomical theories on many objects visible through portable telescopes or your own binoculars. Should conditions allow, he will explain the basics of astronavigation.

Natural history: The Abrolhos islands are a precious resource and conservation, fishing and tourism uses need to be maintained in a sustainable way. There will be opportunities to snorkel in the crystal clear waters, for bird watching and natural history observations. Information gathered by the expedition will be made available to the government

authorities responsible for managing the islands.

CONDITIONS

The expedition will commence in Geraldton where the first night will be spent in a motel. Volunteers will be transported by road to Greenough to view the annular solar eclipse, then spend a second night in Geraldton before boarding the charter vessel for the voyage to the Abrolhos. The islands are about 60 kilometres west of Geraldton. Volunteers will sleep on board for three nights while at the Abrolhos, as camping on the islands is not permitted. Visits ashore to several of the islands will be made during the course of the expedition. Meals are provided but you are expected to help with some duties.

RELATED INTERESTS

Astronomy, bird watching, snorkelling, photography, small boat handling, historical research, island biogeography.



Australian sea-lions. Photo - Kevin Coate

DEPARTURE POINT

The expedition starts and finishes in Geraldton, Western Australia.

INCLUSIONS

Pre-trip briefing, ground transport from Geraldton to Greenough and return, two nights accommodation and meals at the Batavia Motor Inn, Geraldton, four days ocean-going transport on a charter vessel, meals, research equipment and supplies, duffel bag, volunteer hat, written briefing, field gear (except for personal items such as sleeping bags and binoculars), expedition diary and report, reunion.

NOT INCLUDED

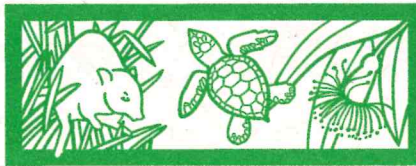
Travel to departure point.
Medical treatment or emergency evacuation expenses.
Alcoholic beverages and other personal expenses.

CONTRIBUTION

\$1595

Fishing camp, Abrolhos Islands. Photo – Kevin Coate





LANDSCOPE Expeditions

BOOKINGS

LANDSCOPE Expeditions
UWA Extension
The University of Western Australia
Nedlands WA 6907
AUSTRALIA
Tel: (08) 9380 2433
Fax: (08) 9380 1066
Email: extension@uwa.edu.au

RESEARCH & PROJECT DETAILS

Kevin Kenneally
Coordinator-LANDSCOPE Expeditions
Tel: (08) 9334 0561
Fax: (08) 9380 0498
Email: kevin@calm.wa.gov.au

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