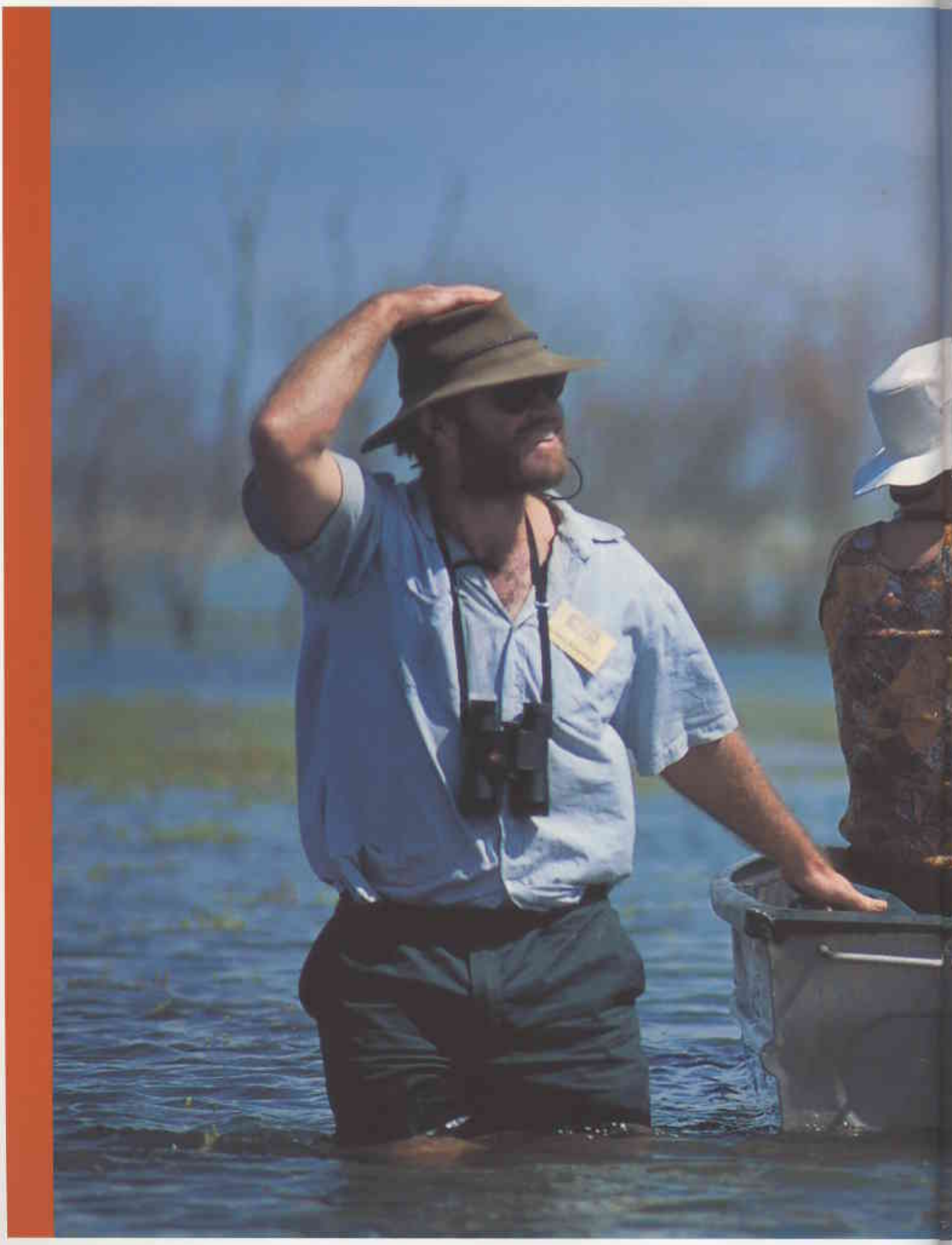
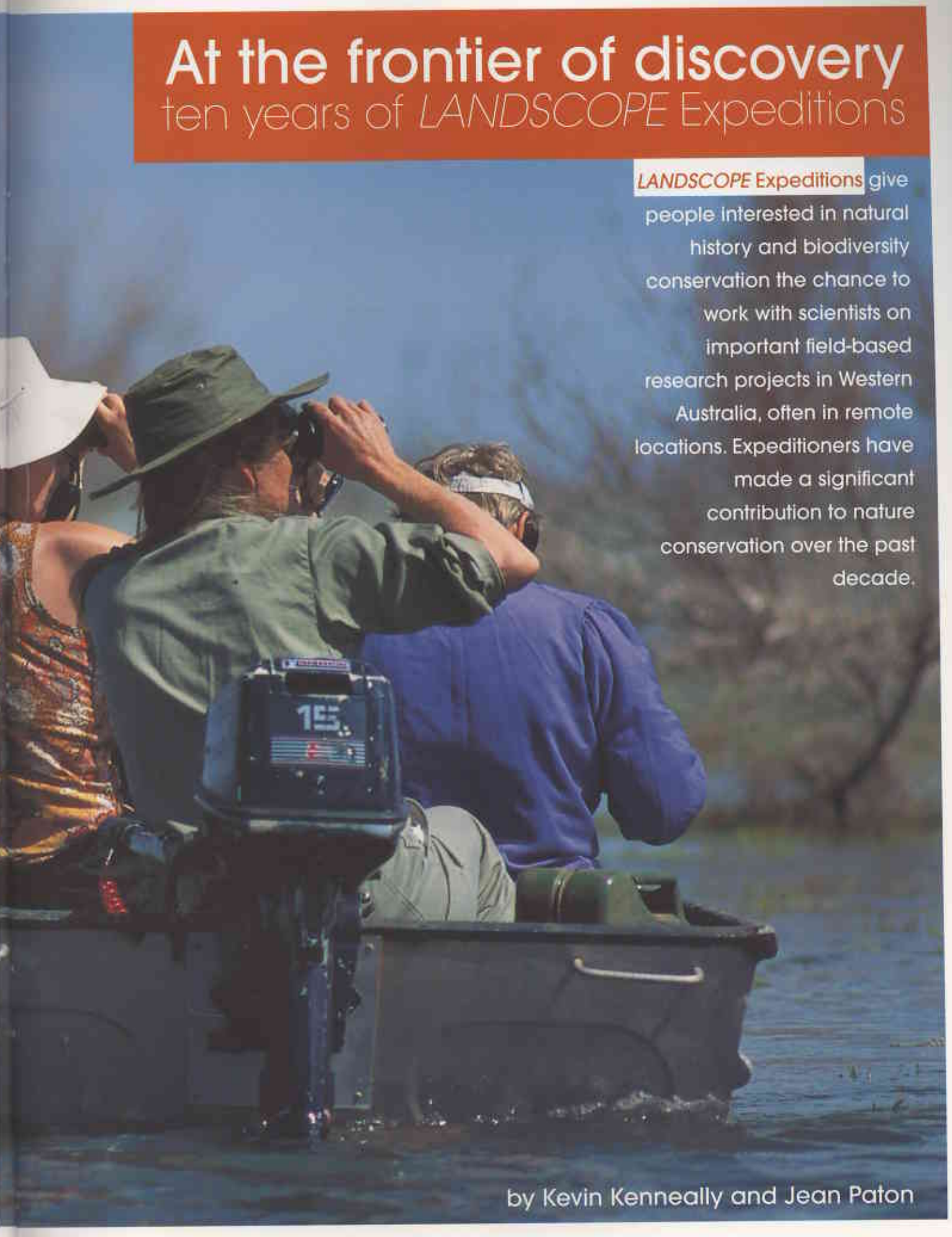


At the frontier of discovery
ten years of *LANDSCOPE* Expeditions



LANDSCOPE Expeditions give people interested in natural history and biodiversity conservation the chance to work with scientists on important field-based research projects in Western Australia, often in remote locations. Expeditioners have made a significant contribution to nature conservation over the past decade.

by Kevin Kenneally and Jean Paton

Between September 1992 and December 2001, participants in 49 expeditions collected information from destinations all over Western Australia, from Kimberley rainforests to desert heartlands and offshore islands.

LANDSCOPE Expeditions evolved in the early 1990s as an innovative and creative response to community demand for opportunities to do 'real' biodiversity conservation work with scientists. The program was developed by the Department of Conservation and Land Management, together with UWA Extension, at The University of Western Australia. A major attraction of the expeditions has been the rich learning experiences they provide.

Previous page
Surveying waterbirds during the 1993 Lake Gregory Expedition.
Photo – Tom Keating

Left: Tony Raudino pressing plant specimens during the 1993 Mitchell Plateau Expedition. Tony now works for the department as a forest ranger.
Photo – Kevin Kenneally

Below left: Spinifex and termite mounds in the Gibson Desert Nature Reserve.
Photo – Graeme Liddelow

ANSWERING A NEED

In the decade since their inception, these non-profit, self-supported study and research projects have given people interested in nature conservation the chance to work alongside scientists on projects of their choice, knowing that the work they do would benefit the environment, as well as present and future generations. Much research simply would not be possible without the support of *LANDSCOPE* volunteers.

Most expeditions take place in remote parts of Western Australia—areas where research is expensive to conduct and where the volunteers' financial and labour contributions allow scientists to stretch scarce research dollars. Volunteers benefit by visiting remote and unusual destinations and experiencing close encounters with wildlife.

Western Australia covers almost a third of the Australian continent, stretching from the tropical Kimberley to the temperate south coast. The coastline alone is nearly 13,000 kilometres long. Of Australia's 85 recognised natural biogeographic regions, 26 occur in Western Australia—more than in any other State. The conservation reserve system should ideally protect representative samples of the flora and fauna from each bioregion. *LANDSCOPE* Expeditions have helped identify which areas should be included in the reserve system in order to protect and enhance the State's biodiversity.

WHEN A BUTTERFLY FLAPS ITS WINGS...

Any tourism, including ecotourism, causes impact. Meteorologist Edward Lorenz pointed out in the 1960s that just a small change in the initial conditions could drastically change the long-term behaviour of a system. This phenomenon is commonly known as 'the butterfly effect'. Ecotourism should be based on sustainability, and its aim should be to limit any negative impact. However, impact can, to some extent, be balanced by the collective knowledge gained from the experience. Over the past decade, the main aim of *LANDSCOPE* Expeditions has been to gather much needed knowledge on Western Australia's biodiversity. This knowledge can be used to preserve the fragile balance between natural ecosystems and competing forces.

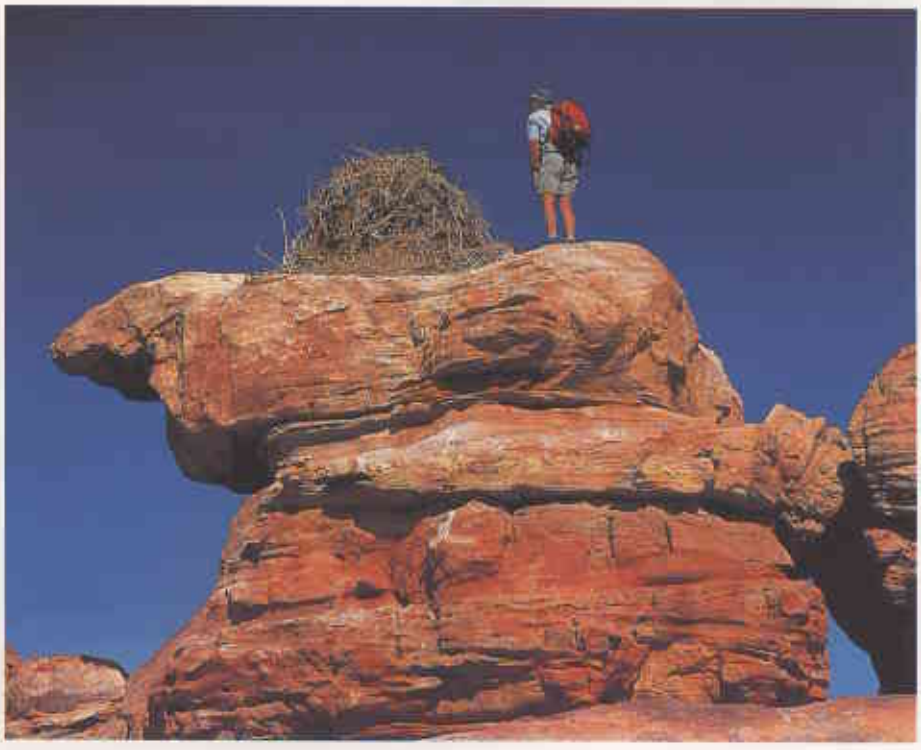
The State's extensive land and seascapes provide a magnificent natural setting for a vast array of plant and animal species. However, in order to effectively manage such diversity, and protect it from negative impacts, scientists have a formidable hurdle to overcome—finding out what occurs where. A major emphasis of the scientific research undertaken by the expeditions program is directed towards answering this intriguing and pivotal question—with the help of volunteers. Involving community members promotes wider cooperation in addressing conservation and land

management challenges in Western Australia. Volunteers are a vital part of this balancing act, funding research and helping scientists get to grips with questions before lasting harm is done.

In a team atmosphere, volunteers on *LANDSCOPE* Expeditions working alongside scientists also gain a broader understanding of the natural world, the role of scientific methods and the value of nature conservation. In the field, day-to-day experiences are backed up each evening with fireside summaries and briefings on the following day's activities. In this way, day-to-day work is related to the bigger research picture.

Expedition achievements have included collecting plants new to science; investigating the impact of fire and feral animals on native plants and animals; contributing to recovery programs for threatened species; making recommendations for conservation reserves; and conducting much-needed biological surveys of little-known or threatened habitats. The information collected flows on to the wider community by way of field guides, bush books, reports and scientific papers.

The expedition program has contributed to Western Shield, a major long-term native fauna recovery program. *LANDSCOPE* volunteers have also assisted with 'Desert Dreaming' in the Gibson Desert and 'Project Eden' at Shark Bay. Both projects are investigating the interaction of animals in their natural environment and predation by introduced animals such as cats and foxes. The volunteers have helped to release and monitor animals such as woylies (*Bettongia penicillata*), malleefowl (*Leipoa ocellata*), bilbies (*Macrotis lagotis*), banded hare-wallabies (*Lagostrophus fasciatus*) and mala (*Lagorchestes hirsutus*).



Above: Base camp for the 1994 turtle tagging expedition to Cape Domett in the north Kimberley.
Photo – Tom Keating

Right: Kevin Coate inspecting an osprey's nest.
Photo – Kevin Kenneally

Most importantly, the expeditions program has allowed biological surveys to be carried out in remote areas where little or no previous work has been conducted. Each survey provides a baseline against which further research can be compared. Biological surveys enable scientists to monitor changes in animal populations or flowering patterns. They are windows on nature that reveal biological processes taking place in an area at a particular time. For example, an expedition to the Mitchell Plateau revealed that feral cattle and repeated burning were having the dramatic effect of reducing rainforest patch size. Patches of rainforest have since been fenced to exclude cattle, and protective burning of surrounding woodland is being trialed. A *LANDSCOPE* Expedition to the plateau this year will continue to gather information crucial to conserving the ecological integrity of these threatened rainforest communities.

The collection of biological material on expeditions allows researchers to apply new molecular techniques, thus enabling a clearer understanding of species boundaries. The expeditions program has provided biological material to both Australian and international scientists. The importance of such material was demonstrated by a tissue sample collected from a pebble mound mouse on a *LANDSCOPE* Expedition to the Tanami Desert. Research showed that this population was genetically distinct and may represent a new species of this delicate mound-building rodent.

THE CHANGING FACE OF TOURISM

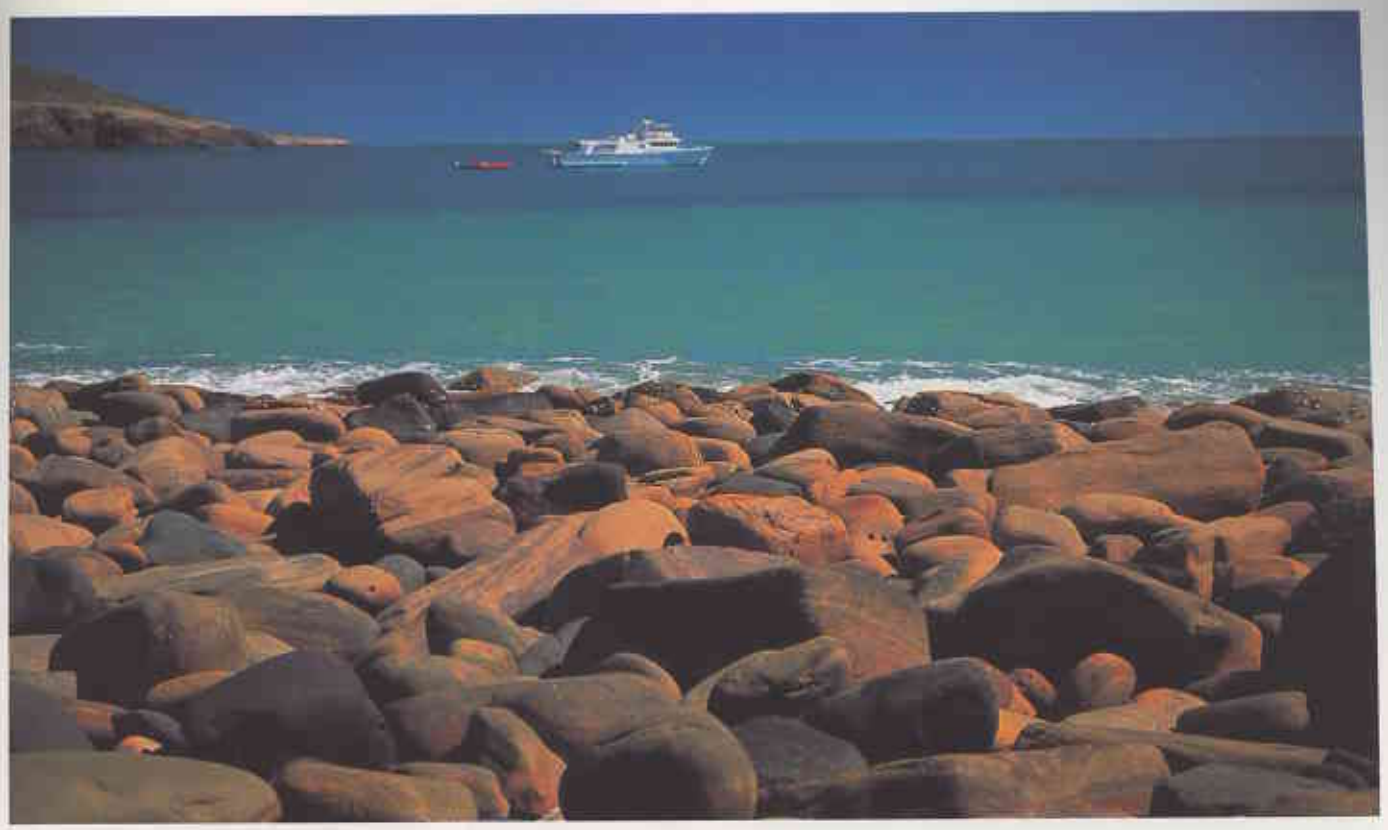
Increasingly, people have different expectations about what they want from the tourism experience. Those who offer nature-based tourism are designing tours accordingly, in response to the demand for small-scale, specialist, sustainable tourism experiences. *LANDSCOPE* Expeditions cater for a niche market—people interested in the preservation, encouragement and promotion of biodiversity conservation. A sense of community lies at the heart of the expeditions program.

Above: Artwork by Margaret Leavesley from her visual diary during the 'Awash with Colour' expedition in 2000.

Top left: A black-headed python rescued from the Gibb River Road.

Above left: Flowers and pods of the tropical matchbox bean (*Mucuna gigantea*) collected in 1995 from coastal swamps in the Kimberley.
Photos – Kevin Kenneally

Left: Stephen van Leeuwen and volunteer Val Talbot cataloguing plant specimens on the 2000 Nullagine River expedition.
Photo – Peter Kendrick



The sense of community is fostered through involvement before and after each expedition. Each person is provided with a clear idea of what to expect from the detailed brochure and a comprehensive written briefing package. When it's all over, participants receive a copy of the trip diary and the expedition report, which highlights the research outcomes. In this way, anticipation and recollection become important aspects of the total experience. An annual reunion allows volunteers to socialise and share their special experiences.

Those who seek out *LANDSCOPE* Expeditions are typically active, intellectually curious, and socially and ecologically aware. They are looking for depth of experience, not just covering territory and collecting notches on the suitcase handle. In fact, some expeditioners go back to the same destination over and over again. They care deeply about that particular place and the plants and animals that live there.

Above: Bat Island on the Kimberley coast, with the expedition research vessel in the distance.

Right: On a reef at One Arm Point in the Kimberley, observing traditional food gathering with members of the Bardi Aboriginal Community.
Photos – Kevin Kenneally

The expeditions program works closely with departmental regional offices and with local communities. For example, collaboration with Kimberley, Pilbara and desert Aboriginal communities provides valuable links between traditional knowledge and contemporary scientific methods. This type of collaboration is contributing to the development of cooperative strategies in natural resource management.

SUCCESS STORIES

In the decade since the expeditions began, some young people who participated in early expeditions now have careers in nature conservation.

Kellie Agar was a volunteer on the 1995 Gibson Desert expedition while a biology student at Curtin University. Kellie went on to graduate with an honours degree in biology, and then completed the Department of Conservation and Land Management's graduate program. In 2000, she was awarded the department's Seamus Mulholland postgraduate scholarship, which enabled her to complete a Graduate Diploma of Business Management at Edith Cowan University.

Kellie worked for five years in Bunbury on dieback interpretation and is currently parks and visitor services officer in the department's Swan Region.

Tony Raudino was 15 years old when he accompanied his father as a volunteer on the 1993 expedition to the Mitchell Plateau. During this trip he became interested in triggerplants and, over the intervening years, he and his father made important plant collections from the Denmark and Albany areas. In 1999, Tony graduated from Edith Cowan University with a Bachelor of Environmental Management. He completed the department's graduate program in 2000 and has worked on dieback interpretation in the Bunbury area and taken part in fieldwork in the Goldfields measuring tree canopy density as part of the carbon credits program (see 'Farming Carbon' *LANDSCOPE* Spring 1998).

UNEXPECTED REWARDS

Expedition leaders can benefit in unexpected ways from their involvement with volunteers. Scientist Stephen van Leeuwen has led three expeditions in the Pilbara region. 'The most obvious benefit to scientists is that projects would not get done if it were not for *LANDSCOPE* Expeditions. And if there are funds left over after expedition expenses are met, we can go back and continue the work,' he said.

Also important to Stephen were some of the intangible benefits. 'Sharing your knowledge with interested participants is very rewarding, and that's the biggest thrill for me. Many of their questions are quite challenging and I enjoy the intellectual stimulation. I like to think that they go home with a far better understanding of nature and conservation issues, which they can then share with the wider community.'

Top left: Expedition leaders at the Great Victoria Desert base camp.

Centre left: Expedition members checking pit traps in the Queen Victoria Spring Nature Reserve.

Left: Setting up a telescope to explore the night sky at Burnerbinmah Station in the Murchison.

Photos – Daphne Edinger

Another benefit from the program was the friendships that developed when volunteers worked with a scientific team over a period of years. 'One volunteer who comes regularly has built up his own expertise and he is now able to assist with other research activities in the region, in addition to those offered through the expeditions program. He has become a friend and a valued colleague,' Dr van Leeuwen said.

BODY, MIND AND SPIRIT

A major difference between the mass tourism experience and a research expedition experience is that the latter forges deeper, more meaningful connections between the participant and the environment visited. People extend their personal boundaries in the process. In these close encounters with nature, the whole person is engaged in the experience—body, mind and spirit.

The body is exposed to new stimuli through the senses: viewing extraordinary landscapes far from the cities, with names like Dreamtime Gully, Echidna Chasm and Serpents Glen; hearing the nocturnal howl of a dingo or a bird cry such as the mournful, high-pitched wail of a stone curlew; smelling aromatic spinifex gum or sandalwood; tasting freshly-baked damper served with golden syrup and billy tea; or touching a velvet-skinned gecko.

The mind is provided with an ongoing intellectual feast, through high-quality interpretation by scientific leaders in the field, and from the published results—the expedition reports that each person receives when the information gathered has been synthesised.

The spirit is also nurtured. The experience of sleeping on the ground, under the stars, and of reconnecting with nature provides a simple and holistic experience, which is a healing balance to most participants' complex, frenetic, city-based lifestyles.

NEW FRONTIERS

In 2002, nine exciting expeditions will provide opportunities to work at the frontier of discovery. You can voyage to Dirk Hartog Island and monitor the most endangered species of turtle that nests in the Australian region; travel to the Pearl Coast and study migratory waders with international experts; or fly from Broome to the Mitchell Plateau and seek insights into the plants and animals of the Kimberley. You may explore the rugged Barlee Range in the Pilbara; paint and botanise your way through the Murchison; help with the Desert Dreaming project in the Gibson Desert; see Western Australia's spectacular wildflowers and seek out rare plants on Muggon Station for the WA Herbarium; voyage to the Lacepede Islands north of Broome to help conserve green turtles; or help to create a lasting haven for native animals as part of Project Eden at Shark Bay.

On a *LANDSCOPE* Expedition, lending one's body to research is an unforgettable experience. Why don't you join us in the International Year of Ecotourism?

SPECIAL MOMENTS

Photo – Kevin Coate

We walked up Piccaninny Creek and watched a water monitor catch a spangled perch from a small pool, and then sun itself on the warm stone. The creek cut through wonderful beehive formations of all shapes and sizes. Beneath our feet the creek bed was formed of a glorious mosaic of siltstone. We came across enormous potholes that had been made by tumbling pebbles trapped in eddies—going round and round, wearing away the soft sandstone. I perched myself very carefully on the edge to take a photo. They were surprisingly deep and I didn't want to fall in. Elsewhere, long parallel flutes in the creekbed had been formed by pebbles rolling downstream in swiftly flowing floodwater. It must have taken centuries to create them. It was a timeless landscape and I felt in awe of the forces of nature.

Lisette Vis: Secrets of the Sandstone—The Osmond Range and Bungle Bungles, May 1999.

Late afternoon. Cloudless sky. The sun dipping to the west over Broome's Cable Beach. A light breeze. Beyond the rapidly receding tide, the amazing aqua blue of Roebuck Bay. At the beach, near the observatory, the brilliant red pindan scarp surmounted the golden sand below. Shimmering mudflats. Birds everywhere. Suddenly a shadow above! A single white-breasted sea-eagle on reconnaissance.

Panic! Turnstones wheeling left. Plovers and stints in formation cascading right. Sandpipers darting away. Formations of knots and godwits darkening the sky with the whimbrels, curlews and herons limbering off. The flats were suddenly deserted.

As I retraced my steps towards a rocky headland, there, not far from the high water mark, lay a little stint in its death throes. As I ran my finger along its tiny breast its heart fluttered, then stopped. In its mad scramble to get aloft it must have clipped a rock and broken something. This beautiful little creature, just a few grams, had recently flown non-stop from the Siberian tundra, across China and over the seas for its summer feast. Now it was to become a feast itself for the flesh-eating snails of the Broome mudflats.

There, squatting in the mud of this splendid location came the revelation that I had found what I sought: an intriguing hobby for my retirement years—the study of the natural history of waterbirds.

Lawrie Bartlett: Flying For a Feast—Shorebird Heaven on the Eighty Mile Beach, October 1999.

Kevin Kenneally is the Scientific Coordinator of *LANDSCOPE* Expeditions. He can be reached on (08) 9334 0561 or by email (kevinke@calm.wa.gov.au).

Jean Paton is the Administrator of *LANDSCOPE* Expeditions. She can be reached on (08) 9334 0401 or by email (jeanp@calm.wa.gov.au).

Kevin and Jean acknowledge the continuing support of everyone who has contributed to the *LANDSCOPE* Expeditions program over the past decade. We thank Dr David Webb of DIWA and Lorna Charlton for access to anecdotal material collected from expedition volunteers.

Winner of the Alex Harris Medal for excellence in science and environment reporting.

LANDSCOPE

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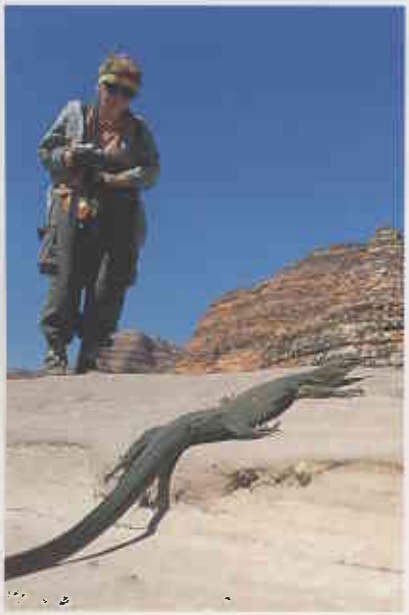
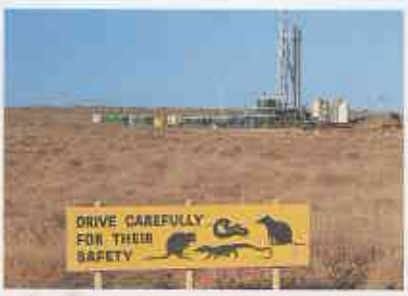
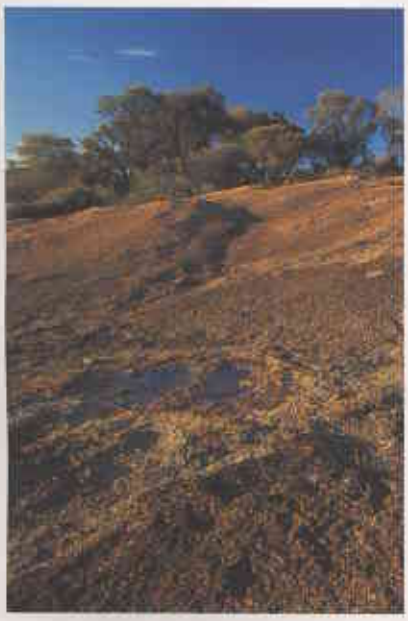


During the past decade more than 500 people have contributed to science projects in WA by joining a LANDSCOPE *Expedition (see page 34).*



Since the 1960s Barrow Island's animals have shared their island paradise with the oil industry. Read how the mammals are being monitored and protected. See page 18.

Georgiana Molloy made a major contribution to the early botanical knowledge of the south-west. Read about this remarkable woman on page 43.



The Goldfields Woodlands National Park protects the region's best examples of eucalypt woodlands (see page 28).

Collecting seeds is one way in which we are helping to conserve biodiversity. Join the 'Hunters and Gatherers for Conservation' on page 49.

FEATURES

REGULARS

COVER

There's something going on in our schools. Students are voluntarily taking an active interest in conserving their local environments. They are visiting forests, beaches and wetlands to study native wildlife. And they are having fun! What is happening and why? See 'EcoEducation—winning over school communities' on page 10.

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Conserving the nature of WA