EXPEDITION BRIEFING

Mallee, Mulgara and Thorny Devils

Exploring the Little Sandy Desert

September 12 – 21, 1999

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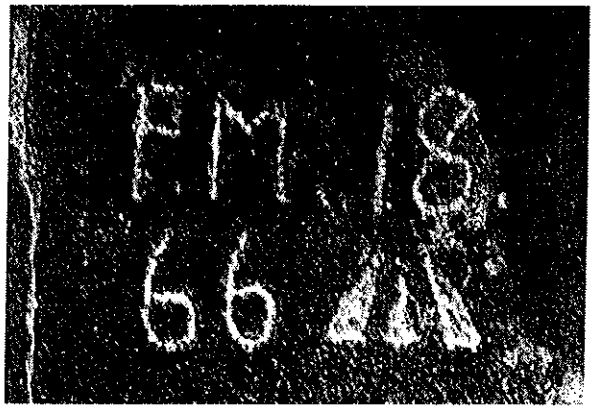
LANDSCOPE Expeditions - Working at the Frontier of Discovery

MALLEE, MULGARA AND THORNY DEVILS

EXPLORING THE LITTLE SANDY DESERT



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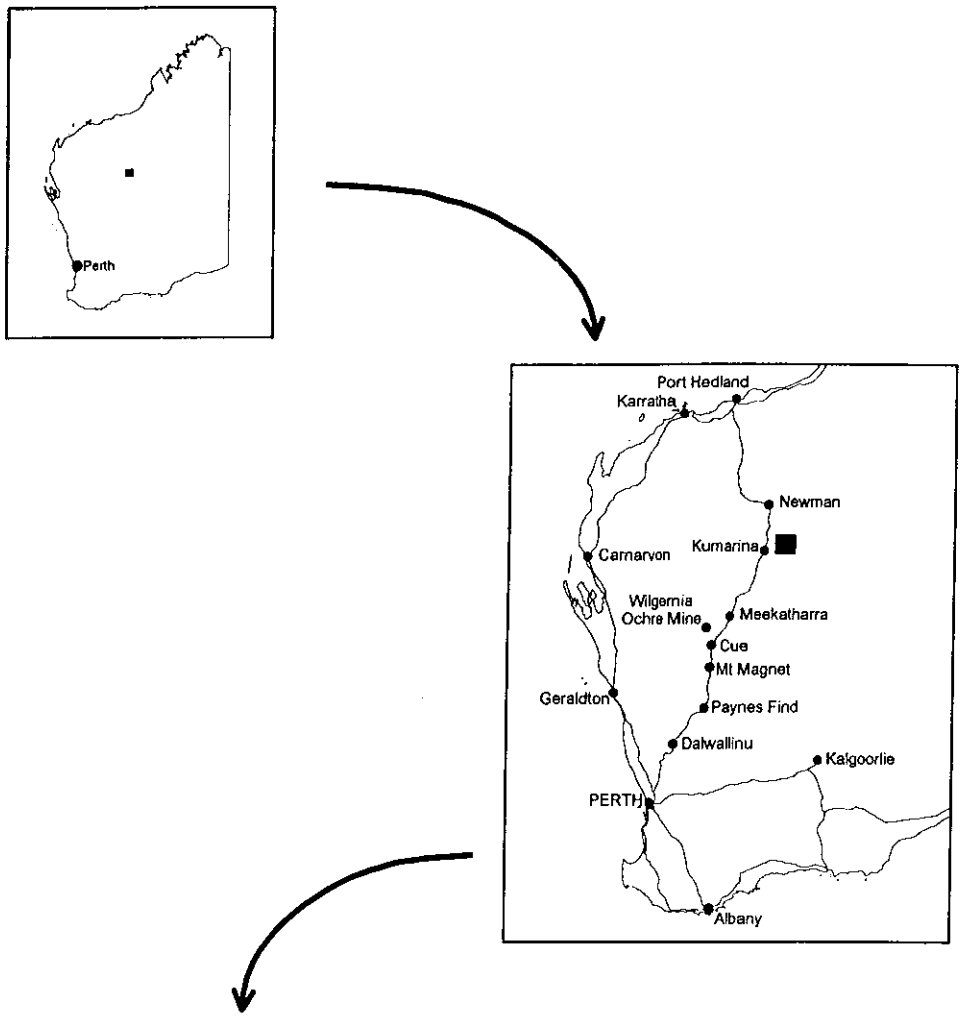


Map 1 Regional setting of the expedition's study area.

THE PROJECT

The *LANDSCOPE Expedition, 'Mallee, Mulgara and Thorny Devils - Exploring the Little Sandy Desert'* is being undertaken as a supplementary sampling trip to the Department of Conservation and Land Management's (CALM) Biological Survey of the Southern Little Sandy Desert. This biological survey is part of the National Reserve System Surveys program being undertaken by the Biodiversity Conservation Group of the Science and Information Division within CALM. The principal aim of the Southern Little Sandy Desert Biological Survey is to provide a comprehensive inventory of the biological values within the study area thereby facilitating an assessment of the region's nature conservation values and providing justification for the implementation of reserve proposals. The project is predominantly funded by Environment Australia (formerly Australian Nature Conservation Agency) through the auspices of the National Heritage Trust's National Reserve System Program.

The principal aim of this expedition is to collect additional information on the flora and fauna of the study area. The expedition will visit several localities which have not previously been sampled in detail. At these localities the flora and fauna will be sampled using standard survey techniques complemented by opportunistic collecting and recording. Targeted biota include vascular plants, birds, mammals, reptiles and amphibians. Information collected during the expedition will contribute to the inventory of biota recorded from the study area and enhance CALM's understanding of how the biota is partitioned into communities throughout the landscape. Additionally, this information will further enhance the State's appreciation of biological and nature conservation values within the Little Sandy Desert.

The overall Biological Survey of the southern Little Sandy Desert will culminate in the presentation of documentation which catalogues the flora and fauna of the region and describes the biotic assemblages and communities into which they are partitioned. This data, its interrogation and subsequent analysis, will enable a quantitative assessment of the regional significance of the southern Little Sandy Desert and will facilitate a similar assessment of the nature conservation values of the entire natural region. This document will highlight and delimit those taxa and communities which are of nature conservation significance and make recommendations for their management. Information obtained during the biological survey, together with data and recommendations presented in the final document will facilitate informed debate on the need and justification for nature conservation reservation in the Little Sandy Desert. The information obtained during the biological survey will also assist in assessing the environmental impacts and possible consequences of future developments, particularly mineral exploration, mining and pastoral expansion, on the biological values identified in the study area.

BACKGROUND

The expedition study area is located approximately 950 km NNE of Perth in the southern portion of the Little Sandy Desert and is centred on Ilgarari Creek-Yanneri Lake (Map 2). The study area is within the Little Sandy Desert Biogeographical Region, a region of approximately 10.9 million sq km. This region has previously been identified as poorly known biologically and inadequately represented on the

shrubs over an understorey dominated by hummock grasses (spinifex), particularly *Triodia* species. Scattered emergent bloodwood trees (*Corymbia chippendalei*), eucalyptus mallees (*Eucalyptus gamophylla*, *E. rameliana*) and woodlands of mulga (*Acacia aneura*) are also commonly encountered throughout the study area, particularly on the crests of dunes, along intermittent watercourses, on alluvial fans and on the fringing aprons of small ephemeral lakes and depressions. Extensive grasslands dominated by hummock grasses with scattered tussock grasses (*Eragrostis* species) are also ubiquitously distributed across the region, particularly throughout the dune fields. Bottlebrush thickets (*Melaleuca* species) with woodlands of Sheoak (*Allocasuarina decaisneana*, *Casuarina cristata*) are also prominent communities in the study area, particularly along Ilgarari Creek and fringing the margins of the larger ephemeral lakes. The floral and faunal elements which dominate these communities are mostly ubiquitous species of the Western Australian deserts and arid zone, although elements typical of more mesic southern climates are also present (e.g. *Xanthorrhoea thorntonii*, *Moloch horridus*).

The biota and the biological communities of the study area have received little scientific attention. The study area is biologically one of the most poorly known regions in the State, if not Australia. This claim-to-fame is emphasised by the fact that the Little Sandy Desert was only proposed as a distinct natural region, different from the Great Sandy and Gibson Deserts, in 1970. The official adoption of this proposal, which did not occur until 1987, together with the realisation that the underlying geological formation, the Savory Basin, was not recognised until 1992, further emphasises the deficiencies in our knowledge and comprehension of this natural region.

The only biological investigations undertaken in the study area, apart from those conducted in conjunction with this biological survey, are associated with the explorer Ernest Giles and his final expedition of discovery in 1876. During this trip Giles collected numerous plant specimens for the Victorian government's botanist Baron F. von Mueller. Among the specimens was the enigmatic Giles' mallee, *E. rameliana,* which for many years had the dubious status of being Australia's only presumed extinct eucalyptus. Giles' mallee is now known, through the diligent endeavours of naturalist Nic Foote and CALM's biological survey program, to be reasonably abundant, although geographically restricted to the southern Little Sandy Desert. The species is no longer on the State schedule of Declared Rare Flora being represented by at least 35 known populations and in excess of 20 000 plants. The mallee is so abundant that at many localities it is the dominant species in the associated vegetation community. The prevalence of Giles' mallee in the study area, despite the interest and intrigue it created as the 'holy grail' of Australian botany among botanists, horticulturalists and naturalists alike in the 1970s and 1980s, fortifies the assertion that the study area is poorly known. Similarly, the collection from three localities of *Stemodia linophylla*, another species which was only known from Giles' collection prior to the commencement of this biological survey program, also highlights the inadequacies in our biological knowledge of the study area. Indeed, prior to the commencement of this biological survey program no information was available on the fauna of the study area.

The biological attributes and nature conservation values of the study area have slowly been unveiled since the commencement of biological investigations during the late 1980's, particularly since the initiation of CALM's biological survey program in 1995.

- Pitfall trapping of small mammals and reptiles, including the installation of trapping grids;
- Hand searching and foraging for reptiles and amphibians;
- Head-torching for nocturnal reptiles;
- Spotlight and acoustic surveys for bats;
- Collection of plant specimens within permanently marked quadrats, including establishing the quadrats;
- The ongoing opportunistic collection of plant specimens throughout the landscape;
- Identification of flora and fauna specimens;
- Maintenance of field notes and logs; and
- Maintaining a photographic record of the expedition (At the completion of the expedition participants may wish to contribute photographs to the Landscope magazine).

Expedition participants will also be expected to assist with general camp duties, including:

- Camp establishment and decommissioning;
- Meal preparation and clean up; and
- Vehicle and generator maintenance.

FIELD TRAINING

Apart from the orientation at the expedition briefing, familiarisation on research procedures and activities will be conducted daily throughout the expedition. These familiarisation sessions will cover issues such as camp procedures, emergency and first aid-injury reporting protocols, safety awareness, daily work schedules and the outlook for the coming days. At the conclusion of each day an informal synopsis of the days activities will be presented highlighting outcomes and achievements. There will undoubtedly also be numerous informal discussions and information exchanges around the camp fire before retiring at the end of the day.

APPLICATION OF EXPEDITION FINDINGS

Information collected during this *LANDSCOPE Expedition* will augment the body of scientific, especially biological knowledge, available on the Little Sandy Desert. Results of the research undertaken will contribute to our knowledge of the biota of the region, how this biota is arranged into communities and how these communities are positioned across the landscape. Results from the expedition will also increase our understanding of desert ecology and the processes which influence the biota. Information from the expedition will assist with natural resource management, particularly the identification of areas of high biological and nature conservation value, which in turn will assist with the development of reserve proposals.

Without the involvement of *LANDSCOPE Expeditions* this investigation of the Little Sandy Desert would not be feasible owing to practical and logistical considerations. Assistance provided by participants will address these inhibiting considerations and

FIELD LOGISTICS

RENDEZVOUS

Expedition participants will meet at The University of Western Australia at 0630 on Sunday 12 September 1999. The group will be transported to the southern Little Sandy Desert in a 14-seater, 4WD Oka which will depart from the car park adjacent to UWA Extension's offices, Clifton Street (off Stirling Highway), Nedlands. You will be met by *LANDSCOPE Expedition's* Jean Paton and the expedition leaders. Prior to departure there will be access to toilets and a telephone if required. The vehicles will be loaded with personal gear and the expedition will depart at 0700 for the Little Sandy Desert study area via Dalwallinu, Paynes Find, Mt Magnet, Cue, Wilgemia Ochre Mine, Meekatharra and Kumarina (Map 1). If you are delayed for any reason, please phone Kevin Kenneally (0407 986 227) or Jean Paton (0411 029 045).

ITINERARY

Day 1 12/9/99 Sunday

Depart Perth to Wilgemia Ochre Mine

Depart Perth, travel via the Great Northern Highway (GNH) to Wubin and the Mt Gibson/Paynes Find area for lunch. Everlastings should be in abundance. After lunch travel through to Mt Magnet and Cue departing the GNH at Cue Hill and travelling westerly to the Wilgemia Ochre Mine. Arrive at Wilgemia mid-late afternoon and set up an overnight camp. Participants can explore this interesting historical site with Aboriginal and early European significance. After dark the opportunity may exist to assist with bat survey work.

Day 2 13/9/99 Monday

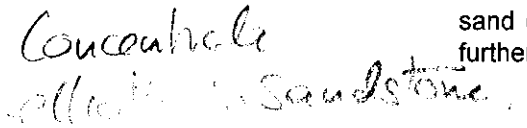
Wilgemia Ochre Mine to Willie Soak via Kumarina

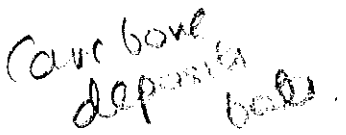
Travel east from Wilgemia to the site of old Tuckanarra on the GNH and then north through Meekatharra to Kumarina Roadhouse arriving mid-late morning. After refuelling, rewatering and refreshments travel east on station tracks through Kumarina Station and the abandoned Beyondie pastoral lease onto the western apron of the Little Sandy Desert (LSD) (back of Beyondie!). Arrive at first camp, Willie Soak, mid-late afternoon and establish camp. Open pitfall traps which are already in place and generally explore the mulga woodlands around camp. At night go spotlighting and head-torching for animals and work the bat detector. Assist with plant processing.

Day 3 14/9/99 Tuesday

Willie Soak

Check and empty traps in the morning and help search for animals and collect plants from selected sand dune and sandstone sites. After lunch travel further east into the desert to inspect a population of





this spectacular sandstone breakaway with its numerous cliffs and caves. Collect, record and process the flora and fauna encountered. Visit interesting Aboriginal and European historic sites.

Day 9 20/9/99 Monday

Smoky Soak to Kumarina

Break camp and travel west to the abandoned No 1 Vermin Proof Fence. Once on the fence turn south towards Ilgarari Creek stopping at interesting sites to observe flora, fauna and places of cultural/historical significance. Once past Ilgarari Creek re-enter Kumarina Station and travel west to Kumarina Roadhouse, arriving late afternoon. Spend night at roadhouse enjoying final evening together.

Day 10 21/9/99 Tuesday

Kumarina to Perth

Participants depart Kumarina early (0600) in the morning for Perth. Arrive back in Perth at UWA Extension late in the evening.

DAILY SCHEDULE (IN STUDY AREA ONLY AND DEPENDENT ON WEATHER)

0530	Wake up - Breakfast and briefing on day's activities
0700	Begin day's activities (Participants interests in bird work may begin earlier)
1200	Lunch
1300	Afternoon activities
1730	End of daylight activities, prepare for evening meal
1930	Start of evening activities
2100	End of evening activities and daily synopsis
2130	Bed

TEAM DEVELOPMENT

Team spirit will be established by travelling together in the Oka to the study area. The opportunity will also exist for participants to travel as passengers in one of the three CALM Toyota Landcruisers accompanying the expedition. A roster will be arranged to facilitate changes in seating and ensure everybody has the opportunity to travel with some of the expedition leaders. On site team spirit will be enhanced by having meals together and through sharing in the preparation of meals and subsequent clean-up. Working and living together and being involved with this exciting project will also promote team spirit.

STUDY AREA

The study area is located approximately 950 km NNE of Perth in the southern portion of the Little Sandy Desert and is centred on Ilgarari Creek-Yanneri Lake (Maps 1 & 2). The nearest settlement, apart from isolated homesteads on Weelarrana and Marymia stations is Kumarina Roadhouse on the Great Northern Highway. The roadhouse is

MEDICAL CONDITION

Sunburn is possibly the most common medical problem that could arise. You must guard against it. Loose fitting, long-sleeved shirts, full brimmed hats, sunglasses, sunscreen lotion, and lip-screen sunblock are essential. Remember slip, slop slap and wrap. Suitable trousers may also be desirable, especially if spinifex spines and scratches are a concern.

Sandshoes and joggers are fine around the camp but sturdier footwear will be more suitable when working in the field, e.g. leather boots. Boots should be worn in prior to the expedition to avoid blisters. The type of footwear is important as spinifex is sharp and easily penetrates the soft, loose knit fabric of joggers. Leather boots are recommended. Gaiters or spats can also be worn to reduce the affects of spinifex, especially on the lower regions of the leg.

Insect repellent and fly nets for your hats will make it more pleasant as flies can be a nuisance during the day. An insect screen (mosquito net) may also be an advantage at night if mosquitoes and midges become a problem. Nets can be provided by the tour operator if notice is given in advance.

FIELD COMMUNICATIONS

Both the Oka 4WD and the CALM vehicles will be equipped with Royal Flying Doctor Service (RFDS) radios capable of relay through Meekatharra, Kalgoorlie and Jandakot.

Expedition leaders will be in contact with the Karratha Regional Office daily as a safety precaution and for the transfer of messages. The CALM Pilbara office telephone number is 08 9143 1488. In an emergency situation messages may be relayed through the CALM Pilbara office during normal office hours (Monday to Friday, 0800 - 1700). Outside office hours please contact Kevin Kenneally (0407 986 227), Jean Paton (0411 029 045) or Peter Moore (08 9185 1812).

LANDSCOPE Expeditions administration (08 9334 0561) also has facilities to contact the expedition leaders direct, but only in emergency situations.

A satellite telephone will also be carried by expedition leaders for use in emergency situations only.

All expedition vehicles will also be equipped with VHF radios to facilitate communications between drivers, especially while working away from camp and negotiating rough terrain.

ADVANCE PREPARATION

FIELD SUPPLIES

You should bring enough changes of clothing to last at least 5 days. No laundry facilities will be available in the desert. Remember it is important to bring the appropriate clothes for protection against the sun.

It is impossible to run to the local convenience store if you have forgotten anything. CHECK EACH ITEM CAREFULLY AND ENSURE THAT YOU HAVE EVERYTHING YOU NEED.

A warm jacket for the evening would be handy, along with a light weight raincoat if the weather turns inclement.

Don't forget to bring your camera and plenty of film. Binoculars and field guides are recommended for those with an interest in bird life. Plastic bags can be useful for dirty clothes, dust protection, etc.

CHECK LIST

- ☐ Sturdy, comfortable, worn-in walking boots or shoes with good tread
- ☐ Socks, thick, for walking
- ☐ Underwear
- ☐ Long trousers, loose and tough
- ☐ Shorts
- ☐ Shirts, cool, long-sleeved and loose fitting
- ☐ Casual clothing for around camp and for travelling
- ☐ T-shirt to wear and a spare for night
- ☐ Jumper or jacket or track suit
- ☐ Warm beanie or cap for night work
- ☐ CALM volunteer hat
- ☐ Strap or scarf to anchor hat
- ☐ Sunglasses
- ☐ Fly net (drops over hat) (essential)
- ☐ Leggings (gaiters or spats-optional) (useful protection if you like wearing shorts)
- ☐ Canvas garden gloves
- ☐ Joggers and thongs for around camp
- ☐ Sleeping bag (loan bags available if required)
- ☐ Sleeping bag sheet, protects the bag and adds warmth
- ☐ Small pillow
- ☐ Water bottle, leak proof, 1 litre
- ☐ Toiletries
- ☐ Towel
- ☐ Hand towel, Chux and Wet Ones
- ☐ Self-closing (zip-lock) small plastic bags
- ☐ Insect repellent and sunscreen
- ☐ Personal first aid, including bandaids and moleskin for tender feet
- ☐ Prescription medicine, spectacles, etc.
- ☐ Matches or lighter
- ☐ Torch and batteries, small and light weight (spare batteries and globes are essential). A **head torch** is preferable (Petzl brand or similar) as it leaves both hands free.