YIWARRA KUJU
THE CANNING STOCK ROUTE

form.
building a state of creativity

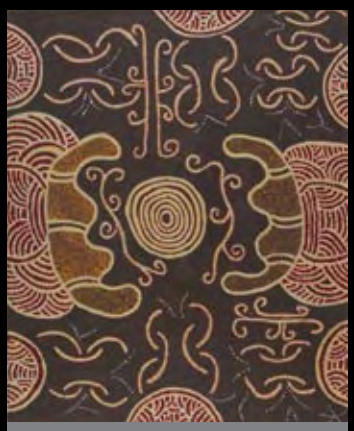
Education at the NATIONAL MUSEUM OF AUSTRALIA CANBERRA

Ngurra: Country

The desert environment

Home is like your house, but home to us is like our Country. No matter where we go we'll always come back to that tribal Country, where old people used to walk around and used to hunt. That's another way of home. And wherever you go you'll always come back and you'll always have a sense of belonging to that place.

Curtis Taylor, 2009



1 ***My Country***, 2007, by Georgina Brown, Birriliburu Artists, Tjukurba Gallery, National Museum of Australia

2 Family in the desert, 1976, photo by Harrly Leaver from *Born in the Desert*, Hesperian Press, 2009

3 ***Jila***, 2007, by Nyuju Stumpy Brown, Mangkaja Arts, National Museum of Australia

1 *In this cheerless and waterless region we marched from August 22nd until September 17th seeing no lakes, nor creeks, nor mountains; no hills even prominent enough to deserve a name, excepting on three occasions. Day after day over open, treeless expanses covered only by the never-ending spinifex.*

David Wynford Carnegie, 1898

2 Where early explorers saw 'the most dismal heartbreaking country it is possible to travel over' Aboriginal people saw *ngurra* or home. It provided them with food and water and a strong spiritual connection to Country which is maintained today.

What is a desert?

The term 'desert' has been used to describe many different regions. Generally, it is an area of low rainfall and high evaporation, surface run-off or seepage deep into the soil, resulting in high water loss. A region that receives less than 100 millilitres a year is considered a true desert. Areas receiving 250 millilitres or less are considered arid and areas receiving up to 500 millilitres but with high temperatures and evaporation rates can be considered semi-arid or with arid like conditions.

Deserts do not have to be hot places. Antarctica is considered a desert, even though it is the coldest place on the planet. Some deserts can be found in mountainous regions higher than 4000 feet above sea level. The Great Basin Desert of California is such a desert.

Coastal deserts are found on the west coast of continents and are often called cool deserts, with warm summers and cool winters. The Namib Desert of south-western Africa and the Atacama Desert of South America are examples of cool deserts.

Hot deserts are often located near the equator. Day temperatures can reach up to 38°C but the nights can be very cold. Deserts can form when they are sheltered from the winds that bring the rain clouds from the coast, either by distance from the ocean or by mountains. As clouds that blow in from the ocean rise over a mountain, rain falls. The air that is left is dry with no further rain to release. This is the reason most Australian deserts are dry.

What type of deserts exist in Australia?

Almost half of Australia is arid country. Within this arid zone are many different regions, each with its own character. Sand dunes dominate the Simpson, Tanami, Great Victorian and Great Sandy deserts. The Nullarbor Plain and Barkly Tableland are flat and smooth while the Gibson Desert and Sturt Stony Desert contain low rocky hills. Much of the Australian desert region is covered in spinifex and acacia shrubs. The western tip of the Tanami, the Great Sandy, the Gibson, the Little Sandy and the western half of the Great Victorian deserts make up what is referred to as the Western Desert. With the exception of the Great Victorian Desert in the south, this is the area that was bisected by the Canning Stock Route.

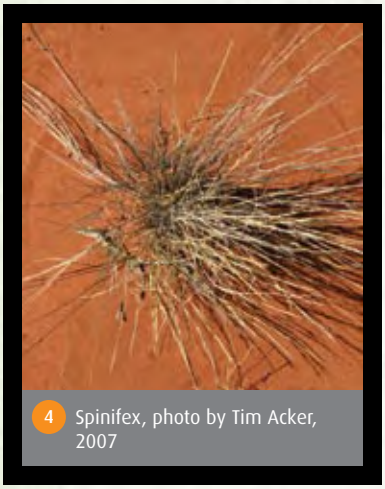
3 ### How does water affect life in the Western Desert?

Desert regions have no continuous flowing supply of water. Irregular rain may be heavy, causing floods, but it is followed by long dry periods. Surface water fills claypans or follows wide flood plains usually ending in salt lakes, such as Lake Disappointment. Underground water sources feed springs and soaks. Permanent springs are considered 'living' waters and are known as *jila* by many of the Aboriginal people of the Great Sandy Desert. While water sources exist they are uncertain and often widely spaced.

In the desert areas surrounding the Canning Stock Route there are distinctly seasonal rainfall patterns. During the summer rains there can be an abundance of water and correspondingly an increase in both plant and animal activity. This is then followed by a long dry period when people rely more on permanent water sources. If the rainfall is sparse during the summer season then the dry period is even more difficult. Water is a scarce resource which must be carefully harvested through long dry periods.

We walked around in this area and would go to the permanent waterholes. After the surface water dried up, we would go back to the permanent water holes. Later on, after more rain fell, when there was lots of surface water, we would go back to where all the water was lying and hunt around in that area. When the surface water dried up we would go back to the large permanent rock holes.

Ngumarnu Norma Giles, 2008



4 Spinifex, photo by Tim Acker, 2007

An added complication is that salt in desert environments is plentiful. Animals and plants have developed strategies to cope with high temperatures and long hours of sunlight, long periods without rain and water and the large amounts of salt.

How do plants and animals survive in the Western Desert?

Despite the popular image of deserts as rolling sandhills with little or no vegetation, the Western Desert is well vegetated, many plants having adapted to desert conditions. These plants have evolved ways of conserving water and efficiently using all available water.

Ephemerals are short-lived plants appearing when there is abundant moisture following good rains. They germinate, grow, flower and set seed all within a very short time while the desert soil remains moist. After rain in the Australian desert, members of the daisy family, notably the paperdaisies, carpet the landscape.

Endurers have adapted to cope with low and infrequent rainfall. They do this by getting as much water as possible from the soil and at the same time they reduce evaporation of water from their leaves by having small openings called stomata. The Australian mulga is one of the most common wattles in the Australian deserts. It has an arrangement of leaves and branches that channel water to the stem and onto the ground where the roots are able to access it. It has a very long taproot. Spinifex is a tussock grass common across much of the Australian desert. The silvery leaves, which are very sharp and spiky, reflect sunlight reducing water loss and its clumping growth creates a cool micro environment which is home to many desert animals.

Succulents are plants with fleshy leaves or stems that are able to store water. The boab tree stores water in its trunk giving it a distinctive bottle shape. Saltbush is covered with small succulent leaves that store water and tolerate high levels of salt by secreting salt onto the leaves' surface. This allows it to grow in salty soil conditions that would kill most other plants. It has widespreading roots that soak up water over a large area.

People of the Western Desert ate a wide variety of plants. The desert sweet potato, with tubers that could grow to several kilograms was a dependable source of food, as were the tubers of the *yalka* that had a long season of use. Some desert fruits remain edible long after they have fallen from the trees. Desert or rock figs were collected and made into a paste before eating. Seeds from plants such as the nardoo fern and other grasses were ground into flour.

Plants were also used as medicine to treat fever, congestion, headache, skin sores and other conditions. The leaves of the emu-bush (Eremophila), large shrubs found in the Western Desert, are used to make a tea which is drunk to relieve stomach disorders, colds and fever.

4 Spinifex leaves and stems are pounded to obtain resin which is used to make glue in the production of spears and adzes. Spinifex resin is also used in medicinal treatments for cold-sickness and stomach ailments. Bark from the bird flower bush (*yakapiri*) is used to make cord and string as well as sandals.

Desert animals have evolved in ways that allow them to cope with the problems of desert life. These animals must find enough water to function effectively and prevent dehydration, cope with hot days and cold nights and also find sufficient food. Like desert plants, desert animals have evolved a number of strategies.

Expiring during long periods of drought enables some species of desert animals to survive. These animals, like the ephemeral plants, complete their life cycle in very short periods of very good conditions. Before death they produce thousands of eggs which are capable of surviving many years of dryness and heat. Shield shrimps are tiny crustaceans that are found in puddles and lakes on claypans after heavy rains. They hatch, grow to about 3 centimetres long and lay hundreds of eggs all in about 12 days. As the water on the claypan vanishes they die in large numbers. The eggs remain dormant until the next rainfall.

Evaders leave when conditions become difficult. Many bird species migrate and return only in good seasons. Many species can change their behaviours to reduce the effects of heat and evaporation. These behaviours may include changing their hunting patterns, flying only during the cool of the morning or afternoon, avoiding fighting with other birds and active elaborate mating rituals.

5 Thorny devil, photo by Tim Acker, 2008

5 **Endurers** live permanently in the desert regions of Australia. The spinifex hopping mouse obtains water by eating succulent green plants, but can also survive extremely dry periods by living off dried spinifex or grass seeds. When the animal breaks down these seeds to produce energy, water is produced. The thorny devil can capture rain and dew drops in the tiny grooves that run between its scales, leading to the corners of its mouth. The thorny devil can suck the water towards its mouth by gulping. In the warm and active months the thorny devil's skin is patterned yellow and red but when cold it turns a dark olive green. It can also change colour very quickly when it's alarmed. Many desert animals avoid the heat of the day by living underground or sheltering in vegetation. At night the desert comes alive as these animals emerge in search of food.

Although animal food was highly desirable and men hunted emu, kangaroo and wallaby, hunting was less predictable and less certain than gathering plants. Women's activities provided most of the food eaten.

How do Aboriginal people make a living in the desert?

Just as plants and animals have evolved ways of surviving in the desert environment, Aboriginal people living in the Western Desert have developed strategies which have enabled them to live for thousands of years in this harsh environment. In the past they have led a highly mobile existence, leaving some areas in times of prolonged drought and reducing mobility when the climate became wetter.

When people went hunting hill kangaroo, the first one would be gutted there where it was speared and then the other hill kangaroos would smell the stomach contents and come down from the rocks to investigate. They would think that it was fresh grass that they could smell. Sure enough a couple would come down and also get speared. People speared the hill kangaroos when they came down for water.

Katapi Pulpurru Davies, 2008

Over thousands of years Aboriginal people knew the Country in which they lived, not just in an economic sense but in a deep spiritual sense. Water and the location of water sources is central to the spiritual beliefs and practices of Western Desert people.

There were little birds that [would] come before the rain to the waterhole. Old people used to sing for the rain and the birds would come down.

Manmarr Daisy Andrews, 2007

6 ***Ngapawarla Jila***, 2007, by Nyuju Stumpy Brown, Mangkaja Arts, National Museum of Australia

6 Respect for the ancestral beings that inhabit *jila* is still strong today and correct protocols must be followed such as camping at a distance from the spring. Strangers must be respectfully introduced to *jila* otherwise the powerful ancestral beings that inhabit them are said to rise up in anger. Rain-making ceremonies involving song and dance are important to ensure the balance of water is maintained.

We have to look after this water. If the water go, everything will be finished. Life gone. Spirit gone. People gone. The country will have no meaning.

John Dudu Nangkiriny, *Country: Visions of Land and People,* p. 45

This deep spiritual belief, an intimate knowledge of their Country and a strict social organisation allowed Aboriginal people to live in an extremely difficult environment. Contact with settlers through such ventures as the Canning Stock Route moved them into fringe settlements and disrupted a way of life that had been successful for more than one hundred generations.

Questions and activities to share with your students

1. Using an atlas or a map locate the Western Desert Region of Australia.
2. What are the main features of these desert regions? Does the name give you a clue?
3. What towns or rivers are found in or near these desert regions?
4. Choose one town in the region and collect weather data for that town. The data may be collected over a week, month or longer.
5. What is 'adaptation' as it is applied to plants of the Western Desert?
6. What are some of the ways animals prevent water loss when living in the desert?
7. Why were Aboriginal people able to live successfully in the Western Desert region?
8. How would the disruption of their lives by Europeans have affected the way they lived and their capacity to life successfully in this region?

(front image) Young boys dancing at the end-of-bush-trip celebration, photo by Tim Acker, 2007