

GROUNDWATER AND THE DREAMTIME

The purpose of this casestudy

The purpose of this cultural case study is to provide insight into Aboriginal knowledge about groundwater. The case study focuses on understanding cultural perspectives and the value of Dreamtime stories.

The context

Australia is flat and dominated by ancient, heavily eroded floodplains. The climate is predominantly hot and dry with fluctuating periods of drought and flood. Australia has no permanent ice or snow, and few natural deep lakes. Groundwater is the quintessence of Australia's natural water security.

Aboriginal people have lived in this landscape for somewhere between 50 000 and 120 000 years. This duration in the Australian landscape is only possible if people had confident knowledge of secure water sources. Aboriginal landscape awareness, and confident knowledge of groundwater availability were highly prized by early Australian explorers (Bandler, 1999).

Going further

What evidence would convince you of the length of Aboriginal prehistory in Australia?

Aboriginal culture and science cultures

Aboriginal water knowledge has developed over thousands of years. Survival relied on knowledge about water. This information needed to be accurate and respected, both for water sources irregularly visited, and those subjected to quality stresses from regular use.

Hydrogeology represents a scientific cultural history (White, 2010). Hydrogeology is generally considered a highly specialized topic. In this culture, it is a matter of professional standing that information is accurate and respected, as some information is context specific and prone to misuse, while others can be generalized with minimal risk.

In both cultures, the type of information shared is indicative of levels of trust and sense of contextual responsibilities and confidantialities.

Going further

It is often easier to recognise other cultures than our own. What profile do you think groundwater has in Australia's multi-cultural society? What profile do you think it should have?

Does your community pass information down between generations? How effective do you think that knowledge transfer is?

Storytelling

One of the main ways Aboriginal elders pass on traditional knowledge was through Dreamtime stories. These stories often tell of journeys of landscape creation by spiritual beings or animals.

Embodying information about key natural resources in stories makes the information easy to remember. The link between stories and resource knowledge would have been reinforced through experience and when travelling through the relevant landscapes. Many Dreamtime stories represent concise oral maps of natural resources and traditional lands. Water is a dominant theme in Dreamtime stories.

Moggridge (2005) provides an introduction to a range of Aboriginal Dreamtime stories that feature groundwater.

Going further

What evidence would convince you of the length of Aboriginal prehistory in Australia?

The Rainbow Serpent

The Rainbow Serpent is a spiritual entity that is recognised by Aboriginal people across Australia (WA, NT, NSW). The Rainbow Serpent is generally credited with having been the creator of the Australian landscape.

Regional mapping work undertaken in the Northern Territory (Zaar et al. 1999) provides one of the best accounts of mutually rewarding information exchange between Traditional Owners and non-indigenous management. At the conclusion of the compilation of available knowledge from all sources, information posters for were produced as diptychs of scientific knowledge and traditional knowledge for each map area. It was noticed that the outline of the major regional aquifer in central Arnhem Land resembled the rainbow serpent.



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From the Aboriginal base of knowledge, the rainbow serpent relates to the creation of springs, creeks and wetlands; from the scientific base of knowledge, the major perennial rivers in central Arnhem Land emerge from the dolomite aquifer. Producing a scientific map showing the image of the serpent generated great interest amongst traditional owners in the region. It also generated mutual interest in how different cultural sources of information could complement each other.

Going further

Consider the attributes of the Rainbow Serpent, and describe what you think it represents.

Other Aboriginal records of knowledge

In addition to Dreamtime stories, Aborigines recorded and transferred information through art, ceremonies and scarring.

Going further

How would you get someone to remember something?

Groundwater management and Tribal laws

Tribal laws can offer insight into the practical ways Aboriginal people manage groundwater. A significant part of this relates to the sharing of information about water sources. Other tribal laws relate to the way known sites are used.

Zaar et al. (1999) describes a water study trip to the ventured to the northern tip of the Wessel Islands. Here, a Dhalnganda elder explained law regarding the waterholes in the area. High tides caused the fresh water in the coastal soak to rise and the low tide caused the water level to fall. At this site were a number of soaks belonging to different clans. When clan members visited they used only their soak. Dhalnganda was concerned about the site degradation of young people coming and digging waterholes anywhere.

Going further

Aboriginal people needed to remember a particular kind of information. Modern communication is much noisier, but we do not have the same requirement to remember. When you think about acquiring a good knowledge of natural resources, which cultural communication do you think is more efficient, and why?

Realising different languages: similar knowledge

Australian water management frameworks have inherited the European perspective of surface water as the primary water security of a landscape. Aboriginal knowledge provides opportunity to see how management practices have evolved from an understanding of groundwater as the base water security of a landscape.

Investigations that have sought to recognise Aboriginal knowledge of groundwater have consistently confirmed a remarkable depth to indigenous understandings. Challenges exist in knowing what information may be culturally available to share, and how to interpret knowledge that is more organically presented than non-indigenous people are used to.

Unfortunately, many Aboriginal records in Dreamtime stories have been geographically displaced over recent generations. Without the correct contextual cues of country, story details can be forgotten or change, resulting in decay of embedded resource knowledge. For this reason, it is particularly important that the recruitment and use of indigenous knowledge proceeds with respect and sensitivity: an interest in Aboriginal knowledge about groundwater should be accompanied by a desire to acknowledge those whose expertise has gone before us.

Opportunity to interpret and preserve the resource knowledge that Aboriginal people are willing and able to share is one of the privileges of working in groundwater in Australia.



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Reference:

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