

# Protecting “Living Water”: involving Western Australian Aboriginal communities in the management of groundwater quality issues

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**Abstract** Groundwater has a special cultural and spiritual significance for Western Australian Aboriginal communities beyond the “beneficial use” management concept used by western regulatory agencies. All water bodies were believed to have been created in the Dreaming by large water snakes known as *Tjila*, *Kunian*, *Wanambi* or *Wagyl*, and groundwater represents the underground tracks and home of these creatures. Many contaminated sites are located near sites of cultural significance that may be affected by groundwater contamination. Difficulties in managing such sites are minimised by involving Aboriginal communities at an early stage in the development of a remediation program.

**Key words** consultation; contaminated sites; Aboriginal; groundwater quality; Western Australia

## INTRODUCTION

Contaminated sites usually involve people. People who become aware that they living on or near a contaminated site often become very angry with regulatory agencies and suspected polluters, and the anger often masks underlying anxieties about the affect of the site on the health of their families, or (very commonly) concerns about the impact that the stigma of contamination will have on the value of their properties. These factors are usually taken into account in risk communication programs that are carried out when developing remediation strategies for contaminated sites (e.g. Meek, 1996). However, the communication normally takes place with a specific cultural context, and underlying the conflict there is often an assumed understanding of how land and water are viewed and valued in our society, and even of how abstract concepts such as “time” are perceived. These assumptions may not be valid when dealing with people from other cultures, and can lead to significant communication difficulties.

In western societies, the value of a groundwater resource is often defined by the “beneficial use” concept: that is the value of the resource is defined on its suitability for *supporting* potable use, crop irrigation, ecosystem maintenance, passive recreation etc., but the water is not seen to have any particular value in its own right. However, in many indigenous cultures, particularly in arid or semi-arid areas, groundwater is seen as having specific cultural and spiritual values which form an important part of

the belief systems of those cultures. Similar cultural values were attached to water from wells in Europe in pre-Christian times, and relicts of these beliefs can still be seen in such rituals as the seasonal well-dressing ceremonies that still take place in some villages in the Peak District in Great Britain.

Because of strong cultural links to water, indigenous people are often important stakeholders who need to be consulted and participate in decision-making on the assessment and remediation of contaminated sites, despite the fact that they may no longer live near a specific site. Failure to do so may lead to prolonged and unnecessary conflict, may breach statutory law in some jurisdictions, and may breach basic human rights and the principle of inter-generational equity. This is particularly the case with Aboriginal communities in Western Australia who maintain a strong “custodianship” of land and water through strong spiritual ties to particular areas.

This paper outlines the cultural values of groundwater to Aboriginal communities in Western Australia, and demonstrates how the presence of, and the assessment and remediation of contamination can affect those values. An example of consultation at a contaminated site in a culturally sensitive area is presented, not because it is necessarily a good model of how consultation should be carried out, but because it highlights some of the issues that can arise at such sites. An alternative consultation model which may help manage some of these issues is also presented.

## **CULTURAL VALUE OF GROUNDWATER FOR ABORIGINAL COMMUNITIES IN WESTERN AUSTRALIA**

Western Australia is the largest State in Australia, covering an area of about 1.8 million square kilometres. Before European colonisation in the early 1800s, there were about 100 distinct Aboriginal cultural groups outside of the central desert areas with distinct languages and cultural traditions. However, there are broad similarities in how these communities view water resources across the State.

In traditional times the location of water determined the movement of Aboriginal people around their country (Macintyre & Dobson, 1998). Water sources (rivers, creeks, soaks and rockholes) were believed to have been created in the Dreaming or *Tjukurrpa* (Western Desert language) by the mythological Ancestral Beings that shaped the land and created all life forms. These water sources were ritually cleaned and maintained by the custodians responsible for that land to ensure the survival of humans and other species.

Rivers, lakes, wetlands, springs, groundwater resources, and in some cases claypans, were believed to have been created by large snakes (pythons or carpet snakes) known as *Tjila*, *Kunian* or *Wanambi* (Western Desert language) or *Wagyl* (or *Waugal*) in Nyungar, or southwestern cultural group terms. The surrounding bushland formed part of these mythological tracks.

Groundwater was believed to be the link between the wetlands through which the mythological snake travelled. These mythological tracks above and below ground represented attempts to explain in pre-scientific terms the complexity and direction of water flow within and between regions. In the Western Desert these “water charts” were represented in song and diagrammatically on ceremonial boards. The cultural values and environmental values attached to water resources by Aboriginal communities are best summed up by the Western Desert term *Ngapa Kunangkul* or “Living Water” (Yu, 1999).

Some of the more contemporary views and fears expressed by Aboriginal people on the management of rivers, wetlands and groundwater resources are indistinguishable from those subscribed to by conservationists and members of the Green movement. It is impossible to determine the extent to which Aboriginal people have been directly or indirectly influenced by the Green movement. However, what is clear is that an Aboriginal indigenous viewpoint has been consolidated and in fact re-affirmed by some Green perspectives.

## **CONSULTATION WITH ABORIGINAL COMMUNITIES**

*“All those white people do is talk at us. Most of the time we don't understand a word they are sayin'. They don't talk with us, they talk over us.”*

*“It doesn't matter what we say, they always do what they like.”*

(Aboriginal views on consultation cited in Macintyre & Dobson, 1998)

Under Western Australian Aboriginal Heritage legislation, it is an offence to disturb sites of special cultural significance to Aboriginal communities, and these generally include land near springs, groundwater-dependent wetlands and waterways. All construction that is likely to break the ground surface (including the construction of groundwater wells) or development that could cause groundwater contamination could potentially disrupt such sites. It is therefore a requirement for all major development proposals to ensure that adequate consultation has taken place with relevant Aboriginal communities, including local custodians who are able to “speak for the land”.

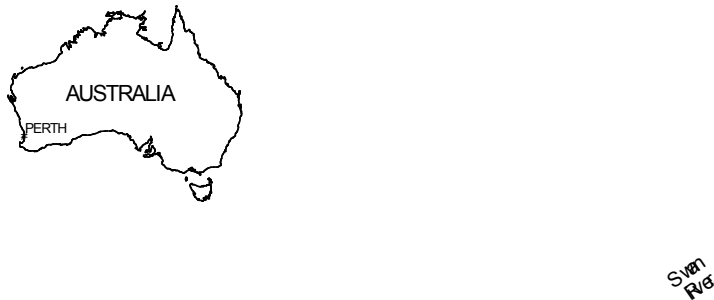
However, on most projects where large scale development is proposed, local Aboriginal people generally feel that such development is a *fait accompli* and that the major decisions have already been made by proponents and government agencies. Often the consultation process is viewed as nothing more than tokenism or the fulfilment of a proponent's decision to consult with Aboriginal people in accordance with the WA Aboriginal Heritage Act. In such instances Aboriginal people feel that whatever they say will make no difference. This view has been substantiated in numerous Aboriginal communities throughout Western Australia where it was pointed out that developers, and white people in general, never listen to Aboriginal people (Macintyre & Dobson, 1998).

## **CONSULTATION AT THE MINIM COVE CONTAMINATED SITE**

### **Type of contamination and remediation strategy**

Minim Cove is located on the Swan River foreshore about 14 km to the west of the centre of Perth (Fig. 1). Land in the area was formerly occupied by a fertiliser manufacturing plant which operated from 1909 to 1961. The plant imported pyrite which was roasted onsite to make sulfuric acid, and some gold was also extracted from the pyrite using cyanide and mercury. Large amounts of roasted pyrite cinders were left onsite, and there was widespread soil contamination by heavy metals, and localised groundwater contamination by cyanide. Pyritic wastes were also disposed of along embankments adjacent to the river, and contaminated material has fallen into the river

and onto a fringing beach. Extensive sediment, water and aquatic fauna sampling (Swan River Trust, 1996) indicated that contamination on the beach posed a health risk to users, but that there was a negligible impact on aquatic organisms in the river.



**Fig. 1** Location of Minim Cove

Contamination at Minim Cove occurred before the current Environmental Protection Act came into force, and the area became an “orphan” site. Because of the absence of specific legislation to manage contaminated sites in Western Australia, many site remediation programs are driven by land values. Real estate values are high near Minim Cove because of its location near the beach and the river, and therefore there have been considerable incentives to redevelop the land. Despite strong opposition from local residents, the proposal finally agreed to by State Government was to encapsulate 300 000 cubic metres of contaminated soil into a 20 m deep containment cell excavated into limestone beneath the site, with the base of the pit being 5 m above the water table.

The original encapsulation proposal did not consider wastes located on the river foreshore, and State government agencies successfully lobbied to have this material incorporated into the remediation program. Land adjacent to the foreshore has significant Aboriginal heritage value, and work could not proceed in this area until extensive consultation had taken place.

### **Aboriginal heritage issues at the Minim Cove foreshore**

Traditional life of the Nyungar people near Minim Cove ended in the 1870s due to the expansion of urban areas around Fremantle, and the enactment of a series of laws restricting Aboriginal people “not in lawful employment” from urban areas (Gibbs, 1988). Despite this, fringe dwellers used the caves around Minim Cove as recently as the early 1970s (Venz *et al.*, 2000).

The foreshore area near Minim Cove is significant for the Nyungar people because of its association with the *Wagyl*, which created the Swan River and the limestone cliffs along the foreshore in this area (considered to be the hardened excrement of the *Wagyl*). The area is of particular significance because the *Wagyl* is believed to have slept underground here after it caused the great flood that submerged the land between

*Wadjimup* (Rottnest Island) and the coast (Colbung in Venz *et al.*, 2000).

Ethnographic (Lord Cottesloe, 1985; Gibbs, 1988; Venz *et al.*, 2000) and archaeological evidence (Clarke & Dortch, 1977) suggests that the Minim Cove area has been extremely important to Aboriginal people for the last 10 000 years.

From an Aboriginal perspective, land around Minim Cove has been desecrated and severely degraded since Europeans were first seen in the area in January 1697 (Playford, 1998) and permanent settlement commenced in 1829. Apart from being a fertiliser factory, since 1829 land in the area has been used as:

- a limestone quarry with the complete removal of seven hills (known as the “Seven Sisters” by early colonists) which were also closely associated with the *Wagyl*;
- a dairy farm;
- a motocross track; and
- a landfill site that has contaminated some groundwater seeps with leachate.

The construction of an exclusive residential development at the site is not generally seen as an improvement in land use by the Nyungar community.

### **Consultation process**

Consultation for the foreshore remediation commenced in May 1996 with a site visit by four Nyungar Elders, and a second visit took place in August after concerns were raised by some government agencies and Aboriginal groups that there was not a fair representation of the Nyungar community. At the initial site meetings, there was considerable anger expressed about the degradation of the Minim Cove area caused by European development (“*don’t expect thanks from us for cleaning it up*”), but after considerable discussions there was support for the clean up proposal, although the Elders were adamant that all the contaminated soil should be removed from the foreshore area. Further site meetings were arranged by consultants, and ongoing dialogue was maintained on an informal basis with Nyungar Elders.

The protection of environmental values in the river in the river was seen as being of paramount importance by the Nyungar groups, and consequently the sinking of monitoring bores to assess groundwater contamination impacts on the river was supported despite the sensitivity of the area, although drilling sites were carefully assessed by Elders before bores were installed. The issue of stormwater discharge to the river from the new development was of particular concern to the community, and they requested a very high level of treatment and regular monitoring to ensure the discharge did not cause environmental impacts. In addition, the Nyungar community requested that public open space along the river foreshore be revegetated with local native species, that a memorial be established to indicate the Aboriginal heritage of the area, and that they be provided with all monitoring data and have the opportunity to discuss the relevance of the results.

Although the consultation process for the foreshore cleanup went well, the Nyungar community did not feel they had much ownership over planning decisions that took place at the foreshore and the adjacent residential development. From their point of view, the consultation was very much about ticking off the appropriate approvals boxes in the development process.

## THE WAY FORWARD – “CO-ACTIVE” MANAGEMENT

Co-activism is a means of resolving conflict before it happens by mutually respecting the positive contributions that Aboriginal people can make to contaminated site remediation and subsequent development. The success of this approach relies on Aboriginal consultation at the earliest possible stage of the planning process. The co-active approach includes the following components:

- the proponent arranges an on-site meeting at the initial planning stage to discuss the proposed development with relevant Aboriginal groups,
- Aboriginal people are encouraged to give input on minimisation of the project's impact on the natural environment,
- an agreement is reached which enables the Aboriginal people to conduct an environmental and heritage survey of the area from an indigenous perspective in the company of a consultant anthropologist,
- an on-site meeting is held with the proponent and Aboriginal groups where the results of the ethnographic, archaeological and environmental surveys are discussed and Aboriginal ideas are incorporated into the final plan,
- towards the completion of the project Aboriginal people are invited to inspect the development to ensure that all heritage and environmental concerns have been addressed. This is a gesture of good faith by the proponent.

Co-activism is not a token gesture towards indigenous involvement in major project planning but rather it is a process of working together with indigenous people and respecting and incorporating their views on heritage, design and environmental impact. This is an integral part of the consultation process which recognises Aboriginal people's culture, history and expertise.

Most importantly, the co-active approach acknowledges that Aboriginal culture and tradition is inseparable from the land and water. When natural features are destroyed or severely contaminated, a large part of Aboriginal history and culture is also destroyed. The reality is that not only are Aboriginal people losing their physical space, but they are also losing the physical manifestations of their history, culture and identity - and they have no voice. Without active involvement in land use planning, who can they appeal to?

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