ENDANGERED!

Herbaceous assemblages on Bentonite lakes

What do drilling mud, grouting material, bleaching agents, cosmetics and kitty litter have in common? Many contain bentonite: a grey clay mineral that is crumbly when dry and slippery when wet. There are few deposits of bentonite in Western Australia, and saponite, a magnesium-rich form of bentonite, is found only on a number of temporary playa lakes and claypans in the Watheroo-Marchagee area, 180 kilometres north of Perth.

What do marsh grass (*Puccinellia stricta*), camel grass (*Angianthus tomentosus*), *Trichanthodium exile* and prickly arrow grass (*Triglochin mucronatum*) have in common? They are four of a handful of herbaceous plants that can grow on these bentonite lakes. Although these herbs (only marsh grass is a true grass) are found elsewhere in WA, they are not found together anywhere else. The community they form dominates these perched freshwater lakes. Not all of the herb species are found on every lake though—each lake may only contain one or a combination of two or more. Some lakes also have a number of trees and shrubs including swamp sheoak (*Casuarina obesa*), gorada (*Melaleuca lateriflora*) and *Acacia ligustrina*. It is interesting that two lakes lying side-by-side may contain different suites of herbs in one year, but the same suite in another year.

The Department of Conservation and Land Management's Threatened Species and Communities Unit (WATSCU) has been interested in the bentonite lakes and their plants for a number of years. With a grant from the BankWest *LANDSCOPE* Conservation Visa Card trust fund, WATSCU was able to confirm that the suite of plants is restricted to the bentonite lakes. Consequently, they were assessed as an Endangered Threatened Ecological Community.

There are 33 known bentonite lakes varying from 0.3–24 hectares, although most are less than two hectares. Sixty per cent of these lakes occur in Watheroo National Park and Pinjarrega Nature Reserve, with the rest on private properties. Mining is a major threatening process, and there have been a number of applications to mine on the conservation estate—one of the largest lakes was excised from the national park in the 1990s for a mining tenement. Other threats include draining of saline water into the lakes, rising groundwater, weed invasion and feral animal activity (grazing, trampling and defecating). Only a handful of the lakes remain in pristine condition and it is thought that these won't remain so for very long as regional groundwater processes threaten them and have the potential to destroy them.

WATSCU has been collaborating with the Moore River Catchment Group, the Department of Environment, Water and Catchment Protection and Agriculture WA to better understand the processes affecting the lakes. At the same time, WATSCU has been working with mining companies and landholders to encourage them to appreciate the value of the lakes, and to assist in managing them. An Interim Recovery Plan has been written—with input from mining companies and landholders—and recovery actions are being implemented.

by Sheila Hamilton-Brown
photos by Bruce A. Fuhrer
& Sheila Hamilton-Brown

Winner of the 1998 Alex Harris Medal for excellence in science and environment reporting.

LANDSCOPE

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The first stage of a long-distance mountain bike trail, that will ultimately lead from Mundaring to Albany, is now open. See page 49.

Discover the underwater wilderness of the Geographe Bay, Leeuwin-Naturaliste, Hardy Inlet area, a potential marine conservation reserve, on page 18.

Little was known about the distribution of the dalgyte, or bilby, in the south-west forests until scientist Ian Abbott interviewed old timers. Turn to page 28.

Older piles of the Busselton Jetty are crowded with marine life, but it was not always so. How do marine animals gradually colonise the piles? See page 34.

The Stirling Range National Park experiences many extremes of weather, from snow falls to bushfires. Find out why on page 10.

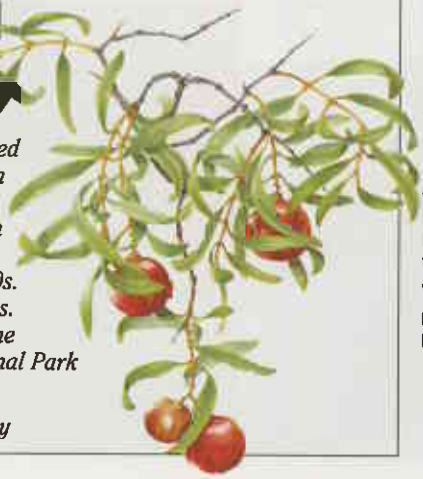
FEATURES

REGULARS

COVER

Quandong (Santalum acuminatum) *is one of the most widespread plants in Australia. This small, upright tree is most easily recognised by its bright red fruits, which are edible and also contain a nutritious nut. It belongs to the same genus as the famous sandalwood, which was one of Western Australia's major exports in the late 1800s and early 1900s. Members of this genus are root parasites. Quandong grows in dense stands in some areas within the Woodman Point Regional Park (see story on page 42).*

Cover illustration by Philippa Nikulinsky



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