

Bacterial solution to arsenic pollution

Researchers from the CRC for Contamination Assessment and Remediation of the Environment (CARE) and the University of South Australia have discovered a natural soil bacterium that 'eats' arsenic.

The bacterium could provide a safe, efficient method for cleaning up hundreds of thousands of arsenic-contaminated sites globally, such as old stock-dip sites, gold-mines and tailings dumps.

In Bangladesh, India, China and South-East Asia – where an estimated 100 million people drink arsenic-contaminated well water every day – the microbe may offer a low-cost, chemical-free way to help save lives.

The bacterium – identified by chance after the researchers had screened thousands of soil samples from old stock-dip sites – takes in a highly toxic form of arsenic (arsenite), and oxidises it to the much less dangerous and more easily immobilised arsenate form.

The researchers are developing large-scale cultivation techniques and also hope to develop a gene-based tool that will rapidly test for arsenic-contaminated soil or water.



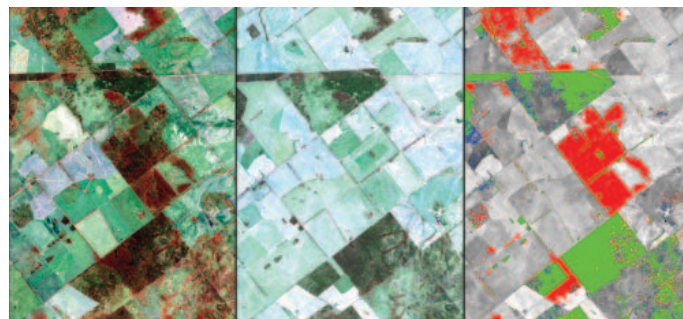
CRC CARE researchers identified the microbe by chance after screening thousands of soil samples from old stock-dip sites.

CRC CARE

Australian technology chosen for Clinton climate project

Australia's National Carbon Accounting System (NCAS) – an advanced monitoring system for accurately measuring greenhouse gas emissions – is the key element of a partnership between the Australian Government and the Clinton Climate Initiative, set up by former US President Bill Clinton.

The Minister for Climate Change and Water, Senator Penny Wong, said the partnership will help develop a global carbon monitoring system that can assist in recognising the contribution of sustainable forest management and reforestation within global carbon markets.



Vegetation changes in farmland near Nyngan, NSW, as monitored by the NCAS system. CSIRO

CSIRO worked with the Australian Greenhouse Office (now the Department of Climate Change) to develop the NCAS platform, by establishing technologies that could transform large archives

of data from Landsat satellites into usable information. The foundation of the NCAS is a series of high-resolution maps showing how vegetation cover has changed in Australia from 1972 to 2002.

CSIRO initiative

CSIRO has set up an Office of Indigenous Engagement (OIE) to promote more participation by First Australians in its activities.

'CSIRO has not always shown responsiveness to the particular needs of indigenous Australians,' says Steve Morton, the CSIRO executive who initiated the idea. 'Yet the organisation has the capacity to contribute to indigenous well-being by undertaking research that may be of benefit, as well as by boosting understanding and employment of indigenous people.' The OIE's Greg Davison says the real test for CSIRO will be 'its readiness to venture into areas it hasn't before – in terms of community capacity building, and geographically'. The office's first project is a National Indigenous Science and Research Roundtable in the Kimberley, WA, in July to be co-hosted by Professor Mick Dodson from the ANU and CSIRO Chief Executive, Geoff Garrett. The office is planning another three national roundtables this year.



The shallow lagoon at Nikumaroro, one of the Phoenix Islands, is an important nursery for young sharks. Greg Stone, New England Aquarium

Small Pacific nation becomes global conservation leader

The small Pacific island nation of Kiribati has created the world's largest protected marine reserve – the 410 500-square-kilometre Phoenix Islands Protected Area (PIPA), one of the planet's last intact coral archipelagos currently threatened by over-fishing and climate change.

The reserve – which includes eight coral atolls, two unsur-

veyed submerged reef systems, seamounts and tuna spawning grounds – is located in a sparsely populated region with abundant marine and bird life. Located between Hawaii and Fiji, the Phoenix Islands archipelago is one of three island groups that make up the Republic of Kiribati, the largest atoll nation in the world, with a total of 33 islands.