

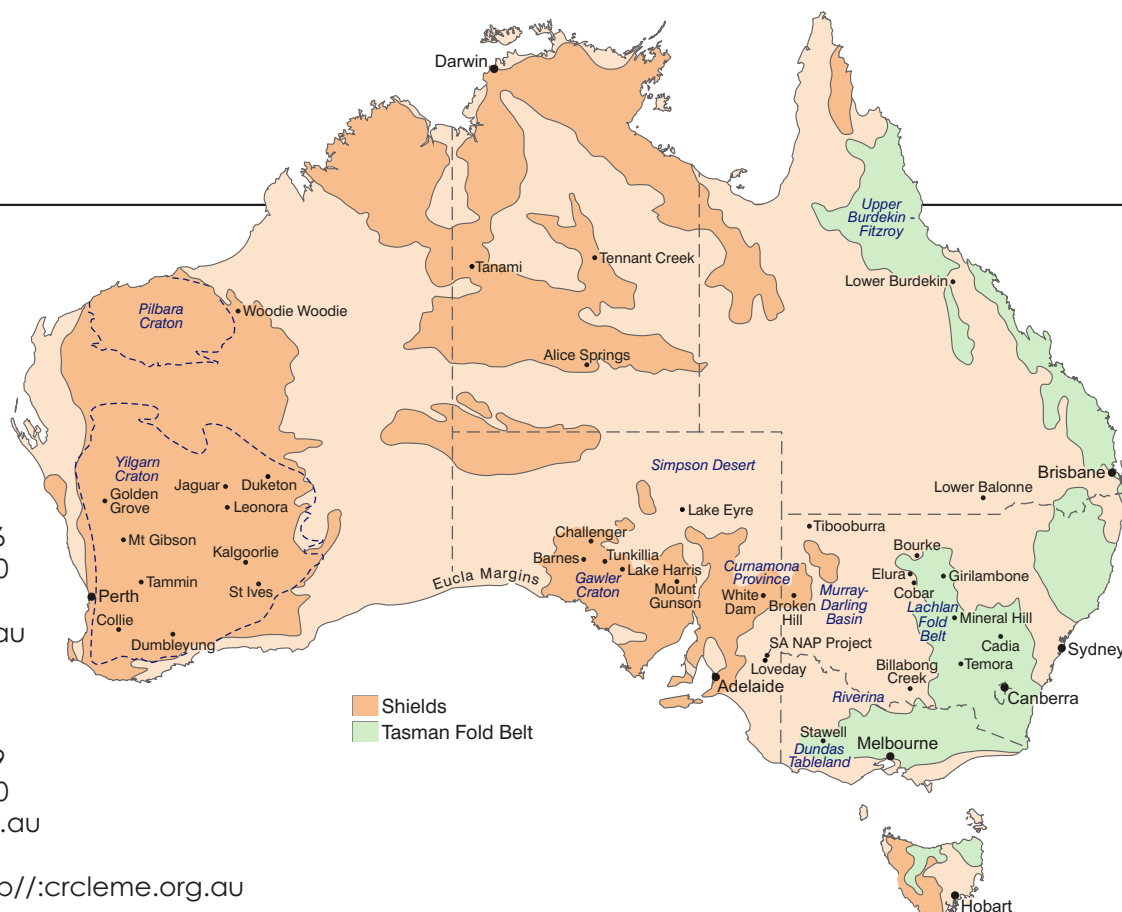
## Where are we?

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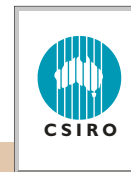
Or visit our website at: <http://crcleme.org.au>



## CRC LEME Head Office

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CRC LEME is the cooperative research centre for regolith geoscience with some 130 contributing researchers from eight Core Parties around Australia. We generate and apply regolith knowledge for mineral exploration and environmental management.



Your organisation can benefit from CRC LEME expertise.

<http://crcleme.org.au>

## USING REGOLITH SCIENCE TO PROVIDE BREAKTHROUGHS IN MINERAL EXPLORATION AND NATURAL RESOURCE MANAGEMENT

### Our Vision:

*Is of an economically and environmentally sustainable Australia where innovative regolith geoscience plays a fundamental role in mineral discovery and environmental management.*

### Our Mission:

*Is to create breakthroughs in mineral exploration and environmental management through the generation and application of new regolith knowledge. In doing so, CRC LEME and its core parties will emerge as global leaders in regolith research and its application to mineral exploration and natural resource management.*

### Our Objectives:

- Provide the mineral industry with world leading breakthroughs in exploration in Australia's extensive area of transported cover
- Provide essential multi-disciplinary knowledge of Australia's regolith environments, to deliver this knowledge in readily useable forms and ensure transfer into practice in the minerals industry and environmental management
- Provide high-quality geoscience-based education for those entering the minerals industry, land-care and environmental fields and to provide continuing education for those already involved
- Inform and guide decision makers in the Federal and State policy arenas about the relevance and contribution of the Centre's research to Australia's future.

### Who We Are:

The Cooperative Research Centre for Landscape Environments and Mineral Exploration (CRC LEME) is an unincorporated joint venture between

- Geoscience Australia
- CSIRO (represented by the Divisions of Exploration & Mining, and Land & Water)
- Australian National University
- Curtin University of Technology
- Adelaide University
- NSW Department of Primary Industries
- Primary Industries and Resources of South Australia and
- Minerals Council of Australia

established and supported under the Australian Government's Cooperative Research Centres Program.



*Breakaways, Coober Pedy. Dissected weathered Cretaceous marine silty and sandy shale capped by silcrete.*



## How Is CRC LEME Helping Australia?

CRC LEME through its studies in regolith geology, geochemistry, geophysical mapping, dating and weathering is improving the knowledge of Australian landscape evolution.

The Centre aims to develop and deliver scientifically robust, innovative, multi-disciplinary and multi-party research, through access to world class facilities in core party organisations, which focuses on addressing the needs of its stakeholders within the team spirit of a Cooperative Research Centre.

CRC LEME achieves its objectives through five Program Areas:

- Regolith geoscience
- Mineral exploration under cover
- Environmental applications of regolith geoscience
- Salinity mapping and hazard assessment
- Education and training.

## How can we help you?

CRC LEME actively contributes to scientific publications and generates a large selection of Open File Reports, regolith-landform maps, thematic volumes, case studies and other publications that cover more than a decade of regolith science research. These publications have proven to be great reference material for mineral explorers and natural resource managers and are available as digital downloads, CD-ROMs or hardcopy purchases.

CRC LEME researchers have highly developed skills and expertise in geology, 2 and 3D regolith landform mapping, geochemistry, hydrology, hydrogeochemistry, geophysics, plant geochemistry, microbial biogeochemistry and microbial molecular biology.

CRC LEME in collaboration with partners in the commercial mineral exploration industry, Australian Federal and State Government minerals environmental and agriculture agencies undertakes regolith science research projects throughout Australia aimed at finding new ways to search for hidden mineral deposits and better manage environmental risks such as salinity, acid drainage and acid sulphate soils.

## We undertake:

- Centre funded research
- Collaborative research with other university and public sector scientific organisations
- Co-investment projects with commercial and government partners
- Consultancies.



Soil sampling to test spectral anomalies in search of shallow kimberlite near Pine Creek, SA

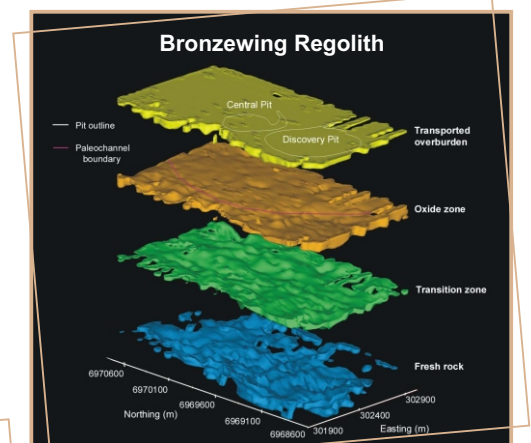
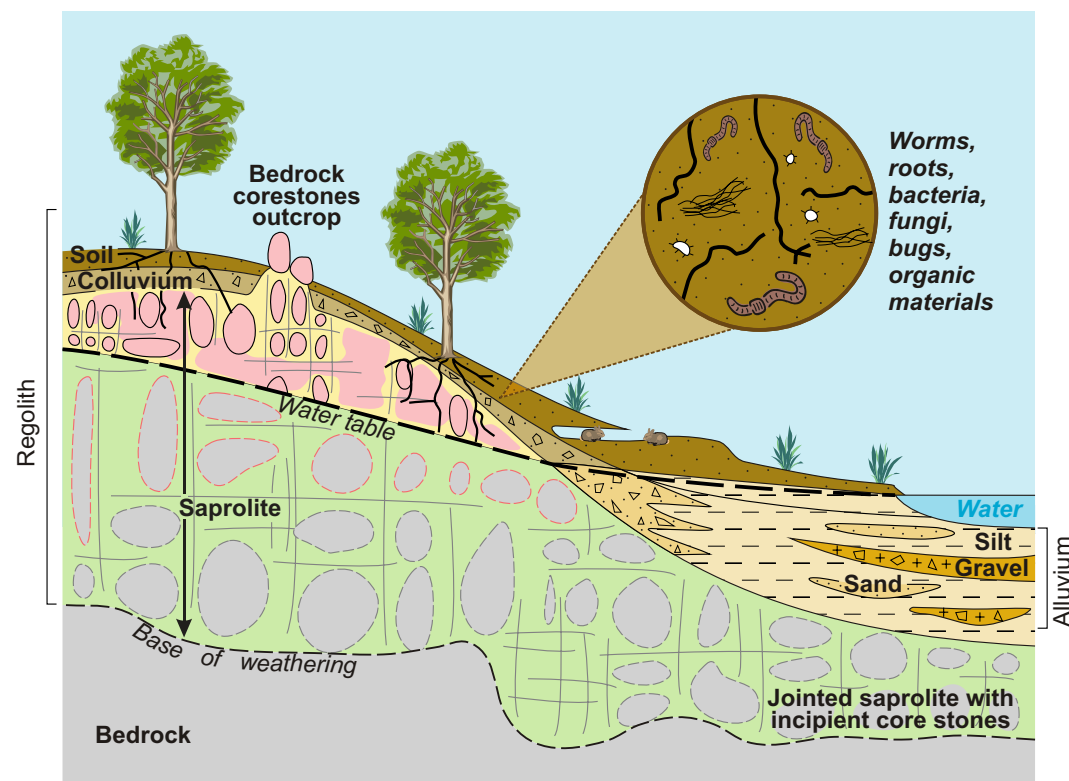
## Achievements

Since its inception in 2001, some of the major achievements by CRC LEME have been:

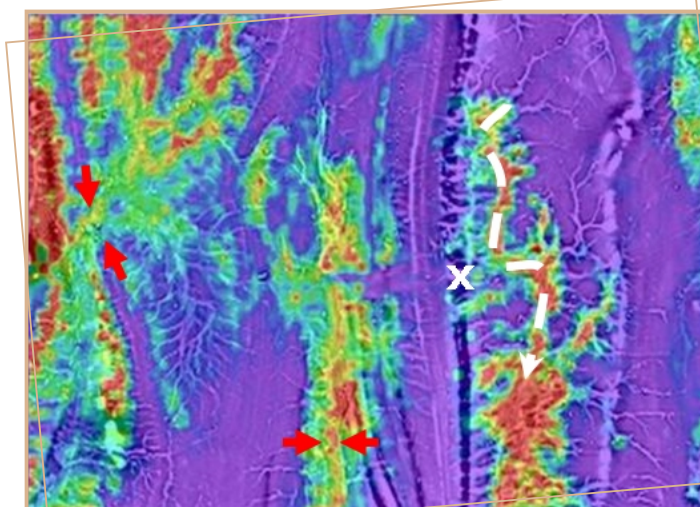
- Enabling the resources sector to use the geochemistry of Australian biota to located mineralisation below areas of transported cover
- Creating an innovative aerial geophysical technique to assess salinity risk in the West Australian Wheatbelt
- Creating an Atlas of Regolith Materials of the Northern Territory with the Northern Territory Geological Survey
- Improving the understanding of how groundwater geochemistry can be used in the search for new mineral deposits.

## What is regolith?

**Regolith is the blanket of soil, sediment and weathered rock that covers the earth's surface.**



Regolith profile of the Bronzewing Gold Deposit, Western Australia



Airborne electromagnetic data (AEM) define subsurface water flow and groundwater distribution in the northern agricultural regions of South Australia – areas prone to salinity