Capability Statement

Desert Knowledge
Cooperative Research Centre
The Desert Knowledge Cooperative Research Centre is a research organisation established as part of the Australian Government CRC Programme.

The Desert Knowledge CRC is made up of 28 partner organisations around Australia. Each participating organisation contributes resources to the centre to facilitate world class research in desert Australia.

The Desert Knowledge CRC links local desert knowledge and Aboriginal traditional knowledge with the advances of science in order to generate new economic options for desert Australia.

We pursue this outcome through the establishment of quality research teams throughout desert Australia with a focus on the following objectives:

i. Sustainable livelihoods for desert people
ii. Sustainable remote desert settlements and
iii. Thriving desert regional economies
iv. Increased human and social capital of desert people"

The Desert Knowledge CRC applies a social science insight into these areas and has a strong education and training program across its research program.

The Capability Statement demonstrates how we work and what we can achieve together working in the desert.

Our research looks at how we can do things differently …
About the Desert Knowledge CRC and its research

Cross-sectoral

The major Desert Knowledge CRC research efforts contain teams of diverse participants. Teams include biophysical scientists, social scientists, Aboriginal people, industry representatives, government representatives and key industry partners. The breadth of the teams allows the Desert Knowledge CRC to perform cross-disciplinary research which is of major benefit to government departments, Aboriginal communities and other key stakeholders.

Cross-sectoral research is difficult to facilitate and coordinate, but remains the best way to tackle the major cultural and societal issues facing Australia. The Desert Knowledge CRC uses the cross-sectoral teams to create innovative solutions to desert problems.

Cross-jurisdictional

Our teams operate within the boundaries of the desert, not within state borders. This gives our research a true desert perspective and offers quality information to all stakeholders. The Desert Knowledge CRC is the only desert research institution based in the Australian desert.

The Desert Knowledge CRC is able to provide research outcomes that apply to the entire desert or support research sites throughout Australia because of the support of local, state and federal governments.

Multi-industry

Our research across industries allows the Desert Knowledge CRC to create linkages between industries and offer innovative solutions to difficult problems. The interaction between government, industry and the scientific community takes significant effort, but can deliver outstanding research that is useful to all stakeholders.

The Desert Knowledge CRC also links Aboriginal communities and Aboriginal organisations to government, academic institutions and business. These relationships deliver enormous benefit to desert Australia and to Australia as a whole.

... to suit the arid and semi-arid environments.
Desert Knowledge CRC expertise

- Understanding desert livelihoods, employment, and staff retention
- Analysing resource demand and supply policy in desert settlements
- Engaging with Aboriginal people and organisations
- Contracting and making agreements with Aboriginal organisations and businesses, including benefit sharing approaches
- Practically applying Intellectual Property management to Aboriginal situations
- Managing sensitive Aboriginal traditional knowledge and its interaction with scientific approaches
- Creating diverse cross-sectoral teams including social scientists, ecologists, economists, geographers and engineers
- Applying social and biophysical science to complex problems
- Using participatory research approaches
- Using a systems approach to data gathering and analysis of large-scale problems
- Using supply-chain approaches to analysis and strengthening of desert industries
- Using an adaptive learning approach to organisational structuring
- Mentoring Aboriginal businesses by bringing people together
- Managing data and metadata systems
How can we help you?

- Evaluation of Regional Partnership Agreements
- Management of research IP
- Commercialisation of research IP
- Literature reviews
- Desktop research about the desert
- Collaborative research workshops
- Engagement with and development of Aboriginal researchers
- Cultural exchanges with Aboriginal organisations
- Analysis of VET programs and their impact on Aboriginal communities
- Consultancies to understand measurement of research impact
- Creation of culturally relevant field manuals and educational resources
- Facilitation of workshops and conflict resolution
- Creation of inter-disciplinary, inter-sectoral contract research teams
- Desert-based industry strengthening and development
- Staff and research management in dispersed and virtual organisations
Core research

The Desert Knowledge CRC has committed the majority of its research funds to eight core project areas. The core projects are all large individual research projects that deliver outcomes which align with the four objectives of the Desert Knowledge CRC.

Livelihoods inLand™

Livelihoods inLand™ helps government and industry to understand how to appreciate and capture the value of managing public goods, such as natural and cultural heritage, including the appropriate institutional arrangements - helping to achieve more targeted investment in remote areas.

Bush Products

Research into Bush Products empowers Aboriginal people to gain livelihoods in the bush foods industry by providing additional opportunities for participation in this growing industry, pursuing the horticultural development of the bush tomato, and examining ways to strengthen the marketability of desert products.

On Track™: 4WD Tourism

On Track™: 4WD Tourism shows how desert people can translate the potential of the ‘off-road’ experiences market into sustainable livelihoods. The project has developed an understanding of 4WD tourism markets, their motivations, trip preferences and behaviour and has also designed guides for interested communities, ‘safe travel’ protocols, impact assessment and forecasting models, and education and training resources.

21st Century Pastoralism™

21st Century Pastoralism™ has created a desert pastoral research collaboration that spans desert regions across Australia as well as the extensive variety of scientific disciplines relevant to the whole pastoral industry to solve key industry challenges. The project aims to increase the economic sustainability of desert pastoral enterprises and improve the engagement of Aboriginal pastoralists.

We coordinate teams of cross-sectoral, cross-jurisdictional researchers ....
Desert Biz™

Desert Biz™ aims to understand and overcome the constraints on remote businesses and to make small desert-based businesses more resilient, profitable and able to engage with the wider economy, with an emphasis on the involvement of Aboriginal communities.

Sustainable Desert Settlements

Sustainable Desert Settlements helps remote desert communities from small outstations to regional centres like Alice Springs to understand what will make their settlement more sustainable and to inform the debate about the viability of sustainable desert settlements. The preconditions for a sustainable remote community include the institutional and governance frameworks that most clearly express demand for services.

Desert Services that Work

Desert Services that Work will improve access to services and reduce the public costs of service provision to desert settlements. This includes a non-welfare approach to facilitating access to services, reducing costs and increasing efficiencies, new models for business and institutional structures, and for policy and investment responses.

Science of Desert Living

This project consolidates desert issues – variability in climate; natural resource management; markets and policies outside the control of local people; sparse and often mobile populations – into an integrated, inter-sectoral new discipline. The Science of Desert Living will help consolidate the research effort in desert lands, and develop a solid theoretical basis for developing solutions to applied desert living problems more rapidly and confidently, to generate understandings not possible within the one scientific discipline.

... to perform research with real outcomes based in the desert.
Contract research

Clients and contract research projects (2007–2008)

Through the Natural Heritage Trust Program:

- People, Communities and Economies of the Lake Eyre Basin – their characteristics and trends, and the role of their institutions in sustainable natural resource management in the basin
- Cross-jurisdictional management of feral camels to protect NRM and cultural values
- Total grazing pressure in the rangelands
- Biodiversity monitoring in the rangelands
- Australian Collaborative Rangeland Information System (ACRIS)
- Best practice sustainable water management in the rangelands
- Criteria for defining areas of high conservation value in the rangelands

Through the national component of the National Landcare Program:

- WaterSmart Pastoral Production™ in the Rangelands
- Rangelands grazing management strategies for improved economics and resource sustainability

Through the Solar Cities Program:

- Knowledge management, monitoring and evaluation for the Alice Springs Solar City project

Through the Rural Industries Research & Development Corporation:

- Using stories inLand (linked to core research project Livelihoods inLand™) to communicate information among Aboriginal land managers.

Through the Minerals Council of Australia


Through the National Centre for Vocational, Education and Training Research and Evaluation Program

- Growing the desert: effective educational pathways for remote Indigenous peoples
Our clients and the kinds of research required by them vary. These case studies show the breadth of our expertise.

**Evaluation of the Indigenous Pastoral Program in the NT and Review of Indigenous Employment initiatives across northern Australia**

It is imperative that we better understand how Indigenous people can further contribute to the pastoral industry by exploring ways to make sure a skilled workforce can meet current and future industry requirements.

DKCRC has been awarded the contract to undertake the above evaluation and review from a detailed proposal to Meat & Livestock Australia and the Indigenous Land Corporation. The IPP evaluation (IPPE) will consist of participatory interviews and workshops with Indigenous landholders at four Aboriginal communities in the NT. Communities will be chosen to reflect the range of differing pastoral development capacity and economic scale of the enterprises.

The Indigenous pastoral employment review (IPER) project team will identify all initiatives, past and present, across northern Australia. The team will interview all relevant sector providers, undertake on-site assessment of identified initiatives, conduct interviews with those involved in on-ground delivery of the programs and design an instrument to measure the effectiveness of the various programs and models.

**Cross-jurisdictional management of feral camels to protect NRM and cultural values**

It has been estimated that there are 300,000 feral camels in inland desert regions, with numbers growing at 9.3% per year. A multifaceted, collaborative and cross-jurisdictional management strategy is needed to control this increase.

This project will design and develop a strategy that will seek to protect biodiversity, improve natural resources, improve landholder capacity, and lead to more effective and efficient use of resources in the management of feral camel populations. It will also generate quality baseline information and explore the range of options for feral camel management by reviewing existing camel management efforts and activities, initiating necessary surveys and monitoring, assessing the camel impact, and analysing the feasibility of different approaches to camel management. This will be achieved through a collaborative approach between land managers (Aboriginal and pastoral), the private sector and agencies which protect NRM values.

**The Australian Collaborative Rangeland Information System (ACRIS)**

ACRIS reports and interprets change in the rangelands based on information from state, territory, and Australian Government agencies, and from other sources. ACRIS reports to the Audit Advisory Council on issues of information, and to the Natural Resource Policies and Programs Committee on issues of policy. ACRIS management recognised the need for greater cooperation across jurisdictional boundaries, and the need for a more inclusive and nationwide approach to rangelands management, and in 2003 the Desert Knowledge CRC was awarded the first contract to manage this process. We have continued to hold this contract since then.

ACRIS is now close to finalising a report which will document change for a number of biophysical and socioeconomic themes across the entire rangelands for the period from 1992 to 2005.
Desert Knowledge CRC results

Full text of reports available at:

Population and Mobility in the Town Camps of Alice Springs

- A research collaboration with Federal and Territory funding commitments for infrastructure and services which found that in 2004/05 the town camp population was more than double that reported in the 2001 Census. A number of the Aboriginal researchers trained and mentored have continued in research, and the foundation is laid for further development of Aboriginal researchers in central Australia.

Plants for people

- A ground-breaking community development project which documents and protects Aboriginal knowledge about bush medicines, provides research training, and investigates the plants’ medicinal properties and commercial potential

Research Nintiringtjaku initiative

- Research training workshops, in collaboration with Waltja Tjutangku Palyapayi Aboriginal Association, provide skills development and recognition for Aboriginal people who facilitate research in their remote communities. The workshops have also created guidelines and protocols for western scientists and students on appropriate research practices in remote Aboriginal communities.

Thermal performance of public housing

- A scoping study of design and thermal performance in the desert built environment showed that simply positioning a house 90° anti-clockwise from north, with the long axis pointing east, would result in energy saving of almost 7% per year over a house that is not oriented this way, even before considering other energy saving measures, such as insulation, roof colour and wall design.

Telecommunications for remote areas (Sparse Ad-hoc Networks for Deserts project)

- An ongoing project that will develop wireless telecommunication network systems based on UHF radio infrastructure that can significantly improve access to phones for Aboriginal community outstations, create flexibility in telecommunications infrastructure for remote mining sites, and provide a system for pastoral enterprises to reduce costs of vehicle use at the same time as increasing frequency and precision of information on the condition of stock.

The Desert Knowledge CRC works collaboratively with its partners ...
Water quality management in Aboriginal settlements
• This highly-regarded project has enabled Aboriginal people to develop water management plans for their remote settlements and empowered them to accomplish minor maintenance and repairs thus heading-off risks of water-supply failure. The methods used in the project are to be replicated in larger scale government programs.

Water use in Aboriginal settlements
• The study was motivated by the National Water Initiative (NWI) and was co-funded with the Government of SA (DPC), Australian Government (FaHCSIA), the CRC for Aboriginal Health, and United Water. It looked at the requirement for more efficient use of water with consideration of economic and environmental sustainability of water supplies. In the Aboriginal settlements studied in SA, it was found that most water is used in evaporative air conditioners and leakage from main water pipes. Most families are unable to pay for higher water prices, nor is the community able to pay for water infrastructure repairs and upgrades.

Desert Fire
• The Desert Fire research team have delivered fire history maps for desert Australia that show periodic patterns of wildfire and frequency at which different areas burn. This allows managers to understand fire impacts and be better prepared to protect natural and man-made resources. The project team also explored case studies of fire management on pastoral, conservation and Aboriginal land in the southern Tanami region of the Northern Territory.

Growing the desert
• This research project funded by NCVER (see page 10) found that Aboriginal people in remote settlements study VET courses mostly for personal and community development reasons, and that their participation has had little impact on their transition from Community Development Employment Projects to real jobs.

Buffel grass
• Research found that buffel grass threatens the habitat of precious alluvial zones, where plants and animals survive in prolonged drought, and which are often sacred to Aboriginal people. The hybridisation of varieties of buffel grass leads to greater local adaptation across desert regions.

DustWatch
• Since 2002, the DustWatch team has charted 15 dust events which exceeded safe breathability health limits. All the events speak of lost topsoil, lost nutrients, and the land being stripped away. An understanding of the environmental implications for desert Australia and early warning systems are being developed.

Staff attraction and retention to desert settlements
• Financial incentives alone are not sufficient to attract and retain professional staff in remote settlements. Instead, factors such as appealing housing, satisfactory provision of utilities (power, water, telecommunications) and services are key elements in the decision by skilled workers to relocate and work in settlements remote from near-coastal urban situations.

... to achieve outstanding research results.
Partners

Core partners

Central Land Council
Charles Darwin University
Commonwealth Scientific and Industrial Research Organisation
Curtin University of Technology
Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), Australian Government
Desert Peoples Centre
Government of Western Australia
Griffith University
James Cook University
Murdoch University
Newmont Australia
Northern Territory Government
University of South Australia

Associate partners

Department of Primary Industries, NSW
Flinders University (Centre for Remote Health)
South Australian Department of Water, Land and Biodiversity Conservation
Southern Cross University
The Australian National University
The University of Adelaide
The University of Queensland
The University of Western Australia
University of Wollongong

Affiliate partners

Australian Institute of Aboriginal and Torres Strait Islander Studies
Indigenous Australian Foods
Robins Foods
Tangentyere Council
Tapatjatjaka Community Government Council
Waltja Tjutangku Palyapayi