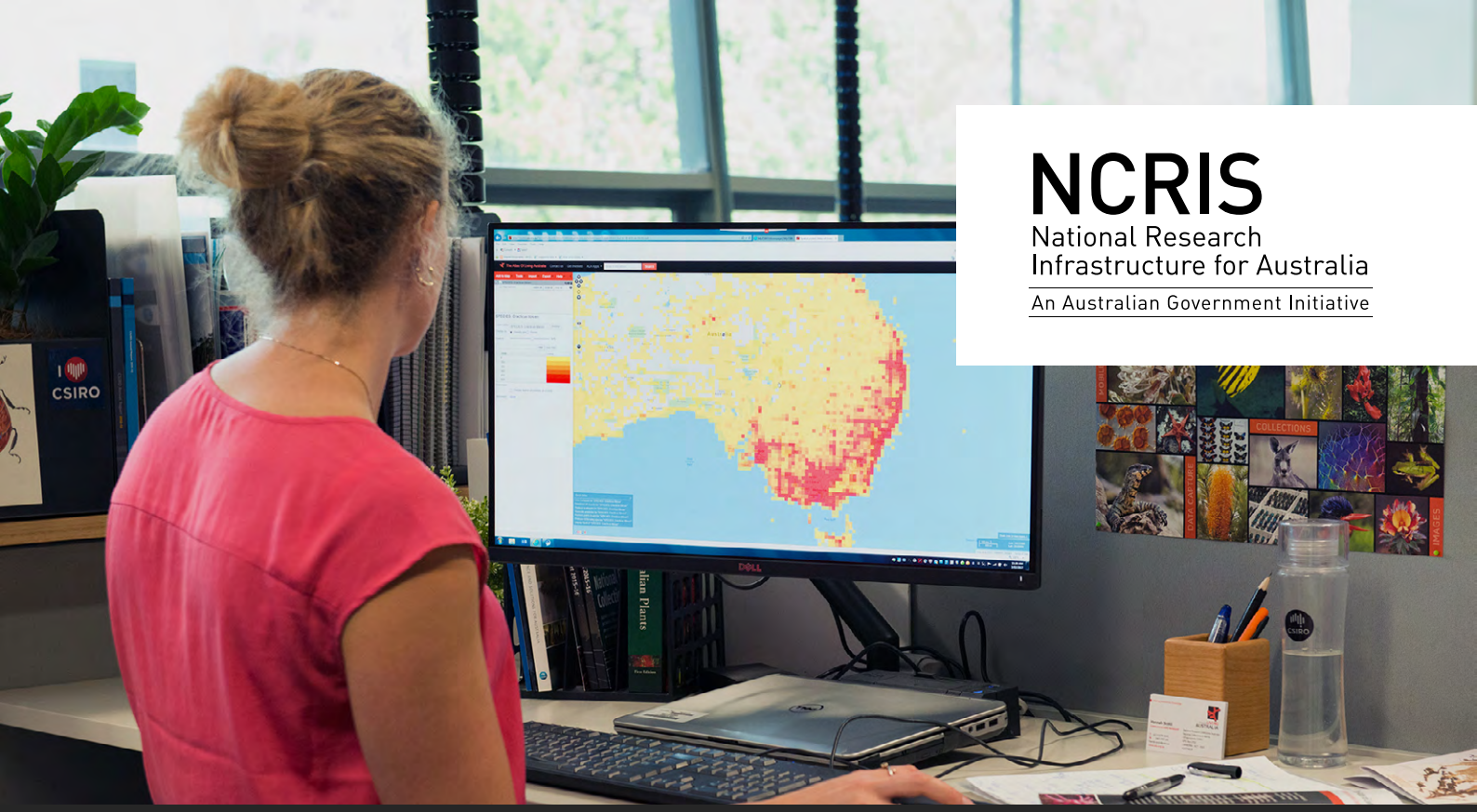

NCRIS
National Research Infrastructure for Australia
An Australian Government Initiative

The impact of NCRIS

SUPPORTING RESEARCH AND INNOVATION THROUGH DATA ACCESS

The Australian Government's National Collaborative Research Infrastructure Strategy (NCRIS) supports data access that leads to practical solutions for research, government and industry.

Facilities funded by NCRIS provide services that enable new fields of research and innovation through common elements:

- providing aggregated, interoperable and standardised data
- developing mechanisms to allow interoperability of data from different disciplines, domains or areas
- developing or supporting tools and infrastructure that allow users to easily collect, access, visualise and analyse data
- being global leaders through providing open infrastructure that enables reuse of software and services from different domains and countries.

The impact of NCRIS-supported data access is new discovery and innovation for Australia, and better evidence-based decision making.

NCRIS IN NUMBERS

35,000
Australian and international researchers using NCRIS facilities

222
Universities and other research institutions involved in the NCRIS network

1700+
Technical experts, researchers and facility managers supported by NCRIS

Stories of NCRIS impact through data access

Many NCRIS capabilities provide access to unique research data to those who need it - either through online portals or directly to researchers in their domain. Sometimes that data is used for further research, other times it can directly support a new discovery. The four stories here represent just a snapshot of the impact that NCRIS projects have through the provision of data access, looked at from four different angles.

ATLAS OF LIVING AUSTRALIA (ALA)

Working with the community to collect data on raptors

Effective biodiversity research and management relies on comprehensive information about the species or ecosystems of interest. By bringing together biodiversity data from multiple sources and making it freely available and usable, the ALA helps researchers access data to discover answers to their questions.

An example is the Coastal Raptor Nests project in Redland City. Raptors are vulnerable to threats such as climate change, pollution and urban development.

The project utilised community members to help observe and identify raptor nests. ALA tools were then used to collect and make the observations accessible. Data from Terrestrial Ecosystem Research Network (TERN) was used to create species distribution models for each raptor species through the Biodiversity and Climate Change Virtual Laboratory (BCCVL).

The resulting models looked at both current and future climates.

The ability to collect and analyse data using several of the connected NCRIS facilities has allowed Redland City Council to create an informed raptor management plan to help ensure longevity of the species in Redland City.

ASTRONOMY AUSTRALIA LTD (AAL)

Providing a platform for new solar farm innovation

AAL supports a range of projects to ensure Australian astronomers have access to the best astronomical research infrastructure.

Start-up company Fulcrum-3D has had a number of commercial successes that can be traced directly or indirectly to the time its founder, former UNSW PhD student Colin Bonner, worked on the AAL supported PLATO project. The company now employs 12 people and produces a sonic radar which it sells in 10 countries. It is one of only three manufacturers to meet international standards for a calibrated sonic instrument.

Fulcrum-3D recently used a $1M ARENA grant to design and produce an instrument called CloudCAM that has delivered 4-5% improvements in power output from solar farms, with 90% reduction in battery usage, by providing real-time forecasting and predicting when diesel backup needs to come on-line. Fulcrum-3D is in the process of lodging several patents for this device and is exploring a possible collaboration with the UNSW PLATO team for remote power systems in Turkey.

AUSTRALIAN URBAN RESEARCH INFRASTRUCTURE NETWORK (AURIN)

Using the AURIN data portal to answer real-world questions

AURIN is a valuable resource for policy-makers and researchers who seek to understand the spatial distribution of demographic, socio-economic, health, and productivity factors across Australia. AURIN has over 2000 different datasets available which are accessed by almost 8000 people and 95% of Australian universities.

Amongst its many projects, AURIN's data, analytical and visualisation capabilities - within the AURIN Portal - were used to investigate the reasons why parents take their young children to emergency departments for non-urgent presentations. A direct input to this work was the Health Direct National Health Services Directory dataset which provides data on all healthcare providers across Australia.

Enabling researchers, government and industry access to open datasets (licensed under Creative Commons) is a priority for AURIN. One way this is made possible is via AURIN's newly developed Open API. The Open API is currently being used as a resource connecting public health practitioners, clinicians and policy-makers with datasets of value. It allows them to contextualise their resource delivery within a wider demographic and socio-economic landscape. A demonstration of how policy makers can realise this potential is The Well, an initiative led by the Outer East Primary Care Partnership.

AUSTRALIAN NATIONAL DATA SERVICE (ANDS)

Upskilling the research sector through data training

ANDS adds value to research data for researchers, institutions and the nation. One way it does this is to enhance data skills and data access in the research sector through events, training and specialist advice about managing, sharing and reusing data.

In 2016, ANDS ran a highly successful self-guided online development course - called 23 (research data) Things - which provided training to over 1500 people. The training led to improved data practices in Australian institutions, according to feedback from participants, with many planning to use the skills and knowledge gained to enhance and augment services to their own research communities.

By the end of the course more than 80% of respondents regarded themselves as 'knowledgeable' or 'very knowledgeable' about Research Data Management - up from just over 10% at the beginning.