

ARDC and ADSN

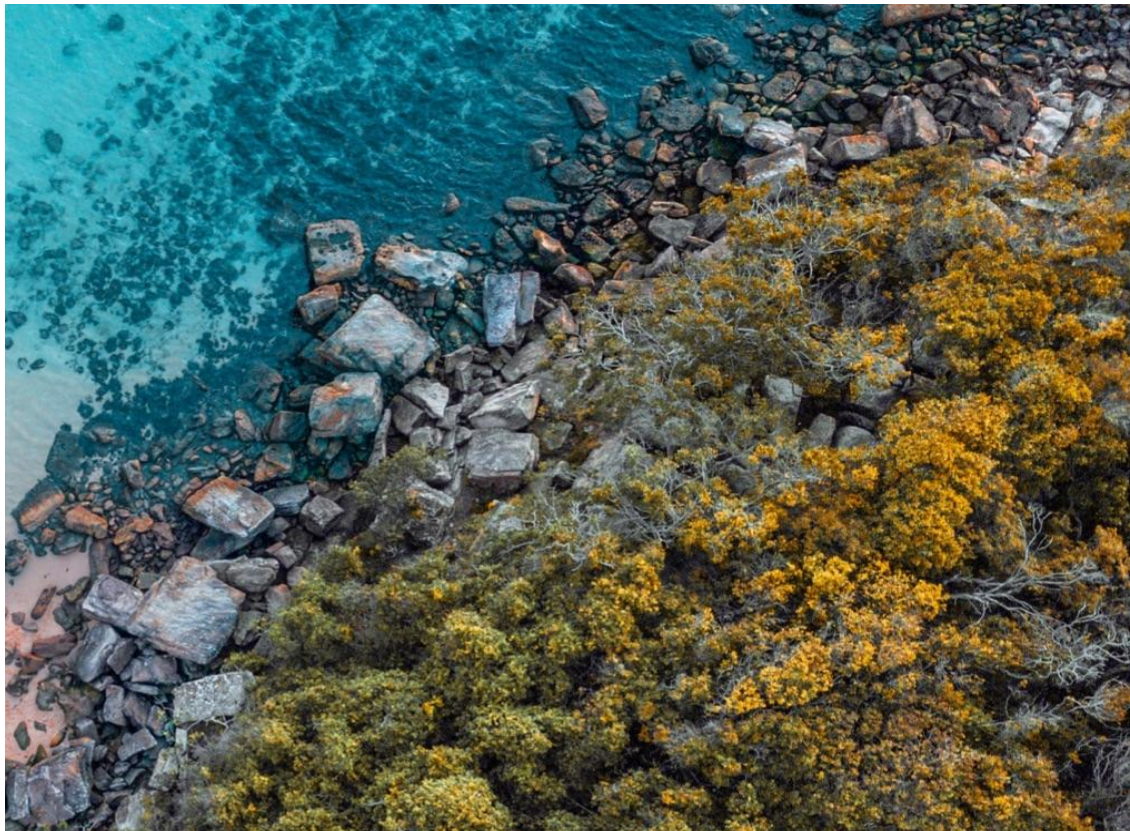
Date 9 Sept
2022

PRESENTED BY

Keith Russell
Manager, Engagements & Expertise

ACKNOWLEDGEMENT OF COUNTRY

We acknowledge and celebrate the First Australians on whose traditional lands we meet, and we pay our respect to their elders past, present and emerging.





AGENDA

- Overview of the ARDC
- ARDC Services
- Communities and Support
- Future Plans
- Discussion on Research Infrastructure for Data Science

Overview of ARDC





Supporting
NCRIS Capabilities



MEMBERS



Australian
National
University



Curtin University



Federation
University



Flinders
UNIVERSITY



MACQUARIE
University
SYDNEY, AUSTRALIA



MONASH
University



THE UNIVERSITY
of ADELAIDE



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA



UNSW
SYDNEY



University of
South Australia



THE UNIVERSITY OF
SYDNEY



THE UNIVERSITY OF
WESTERN
AUSTRALIA



UNIVERSITY of
TASMANIA



UNIVERSITY
OF WOLLONGONG
AUSTRALIA



Host institutions



WHAT IS A RESEARCH DATA COMMONS?

A research data commons brings together people, skills, data, and related resources such as storage, compute, software, and models to enable researchers to conduct world class data-intensive research.

ARDC STRATEGY



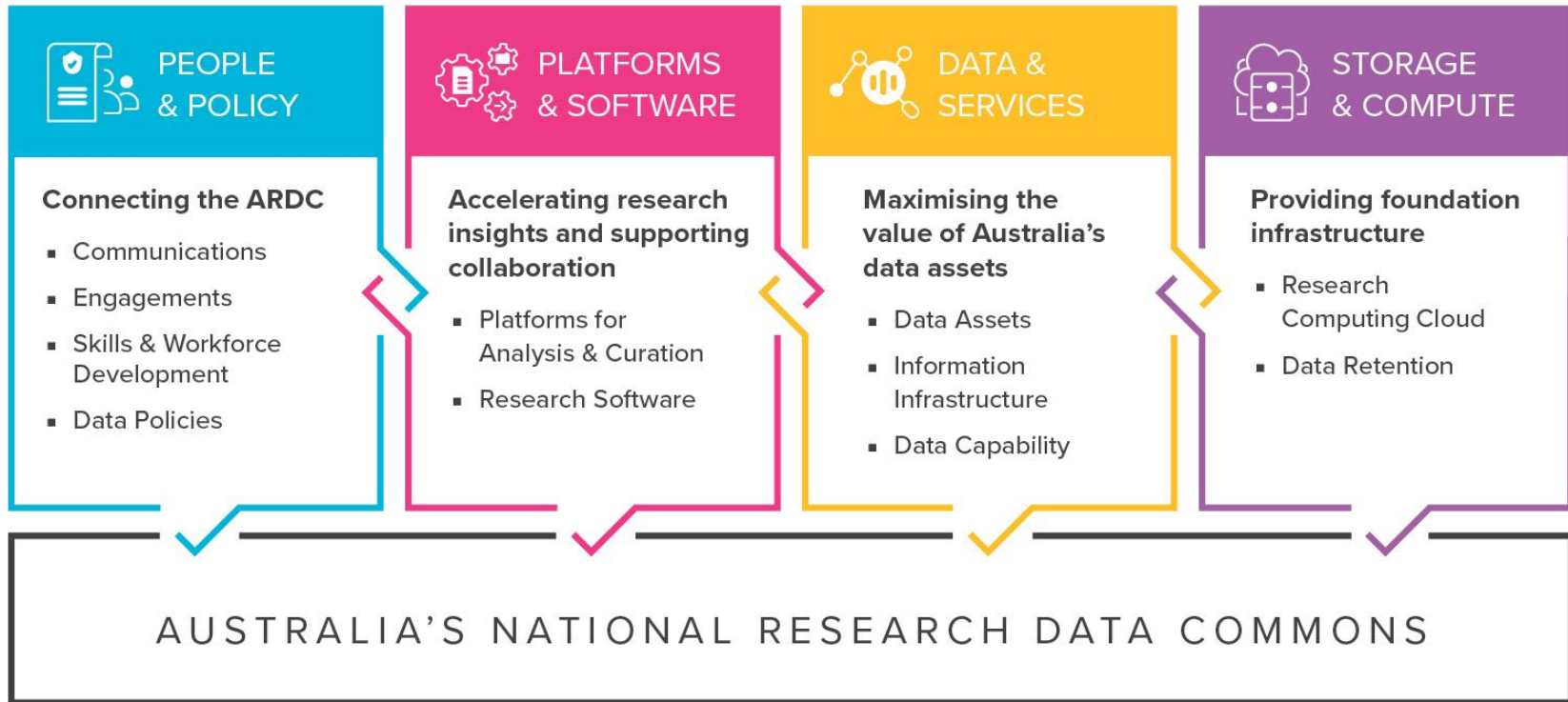
PURPOSE

To provide Australian researchers with competitive advantage through data.



MISSION

To accelerate research and innovation by driving excellence in the creation, analysis and retention of high-quality data assets.



ARDC Services



SUPPORTING AUSTRALIAN RESEARCH SINCE 2012



18

ARC Centres of Excellence



20

Cooperative Research Centres and Projects



9

ARC Industrial Transformation Hubs and Training Centres



15

NCRIS Capabilities



4

Medical Research Institutes



35

Australian Universities



28

Research Platforms / Virtual Laboratories



5,009

Research Projects



50,000+

Researchers supported



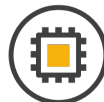
186

National Health and Medical Research Council Grants



2,875

Research Papers



1.2 million

Virtual-Machine Instances

In 2020/2021 ARDC Nectar Research Cloud supported:



21,401

Active users



1935

Projects



414

ARC & NHMRC Grants



All

Research Fields



358

Collaborative Multi-Institutional Projects



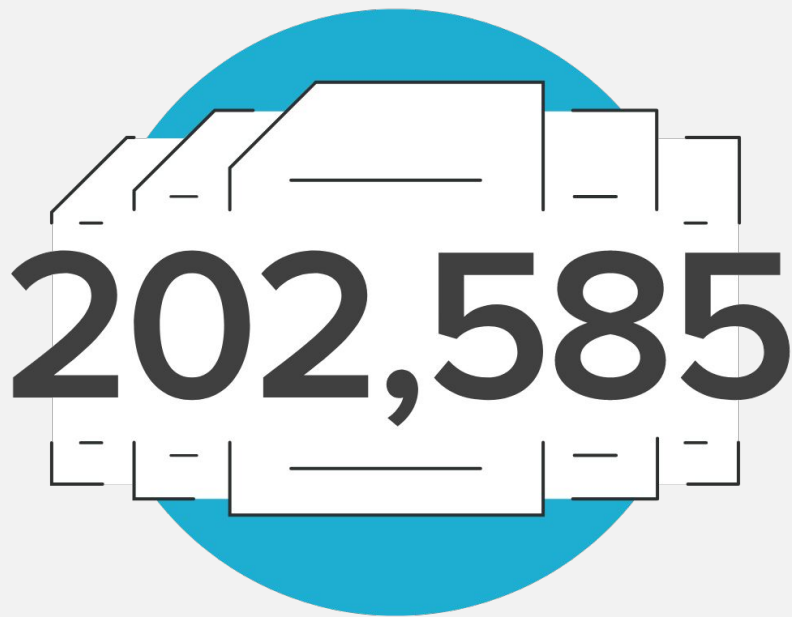
AARNet & ARDC ARE COMPLEMENTARY ORGANISATIONS

CloudStor - store, share and sync files
using AARNet network

Mount **CloudStor** storage volume into
researcher's **Nectar** virtual machine

**SWAN (Service for Web-based
Analysis) - AARNet service**

Perform interactive data analysis using
Jupyter Notebooks (small/medium
scale analysis)



Research Data Collections



Research Data Australia
is Australia's a portal to find
research data and associated
projects, researchers,
and data services.



Research Vocabularies



Research Vocabularies Australia is Australia's digital portal to help you find, access, and reuse vocabularies for research.

PERSISTENT IDENTIFIERS (PIDs)

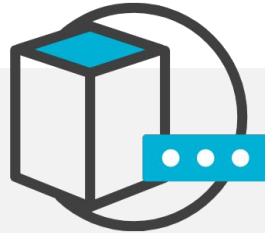
Linking the Elements of the Research Community



PIDs for People

(researchers)

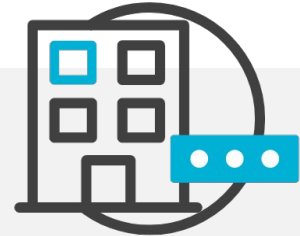
include ISNIs and ORCID iDs



PIDs for Things

(research outputs/inputs like grants, reviews, preprints, projects, etc.)

include Crossref and DataCite DOIs, IGSNs, RAiDs, and more



PIDs for Places

(research organisations)

include GRID and ROR



Image — Framestock - 245023951 / STOCK.ADOBE.COM

DATA RETENTION

The Data Retention program partners with the research sector to increase the impact of investment in data storage infrastructure for important data collections

RESEARCH PLATFORMS



Domain-oriented online environments that draw together research data, models, analysis tools and workflows to support collaborative research across institutional and discipline boundaries.

Communities and Support



HUB OF EXPERTISE: HELP TACKLING YOUR DATA CHALLENGES



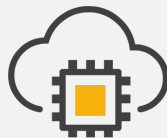
POLICY & PROCEDURES

Data Governance
Sensitive Data
Data Retention
Data Management
Maturity



ARCHITECTURE & SYSTEMS

Systems
Architecture
Data Architecture
Data Management
Planning tools
(Trusted) Data
Repositories



COMPUTE & ANALYSIS

Research software
AI/Machine
Learning & Data
Cloud Compute
Containerising Data
& Code



FAIR DATA PRINCIPLES

Findable Data
Persistent IDs
Metadata
Interoperable Data
Vocabularies
Data Licensing
Data Quality



SKILLS DEVELOPMENT

Skills Frameworks
Learning Design &
Evaluation
Training Materials
Development
Community Building



Platforms for information exchange,
problem solving, peer support and
development of best practice

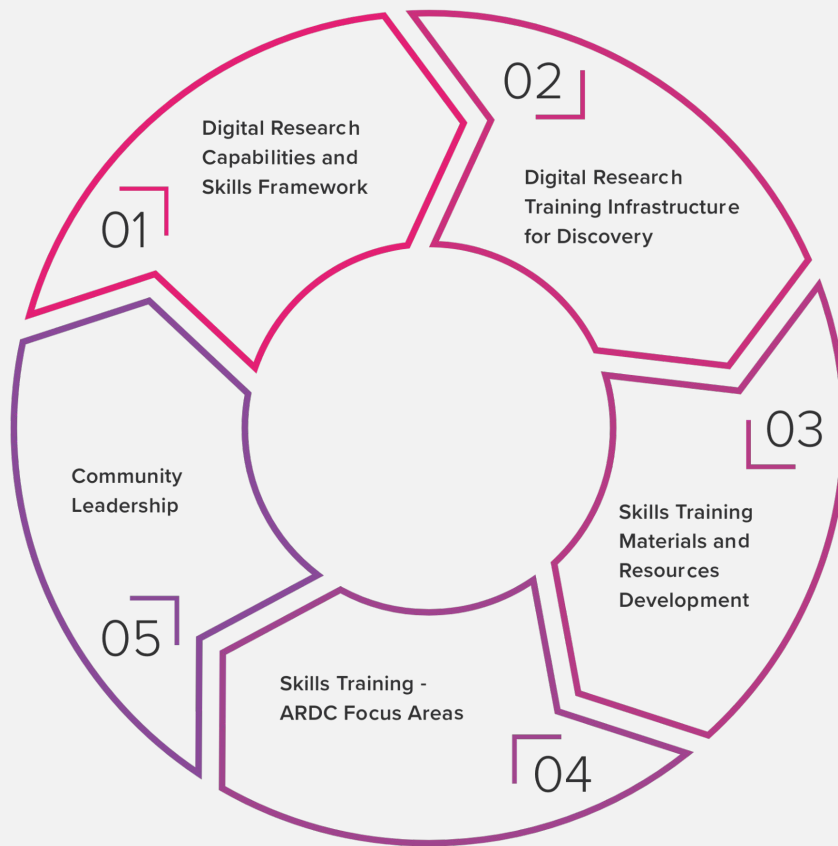
COMMUNITIES OF PRACTICE

- Machine Learning Community of Practice for Australia (ML4AU)
- Data Quality Interest Group
- Sensitive Data Community
- Identifiers for Instruments in Australia
- Australian Research Data Management Community
- Australian Research Containers Orchestration Service (ARCOS)
- And many more

RESEARCH SOFTWARE

Our National Agenda for Research Software aims to see research software recognised as a first-class output of research, alongside publications and research data. We are making this vision a reality by leading concerted, coordinated action with the Australian research community.

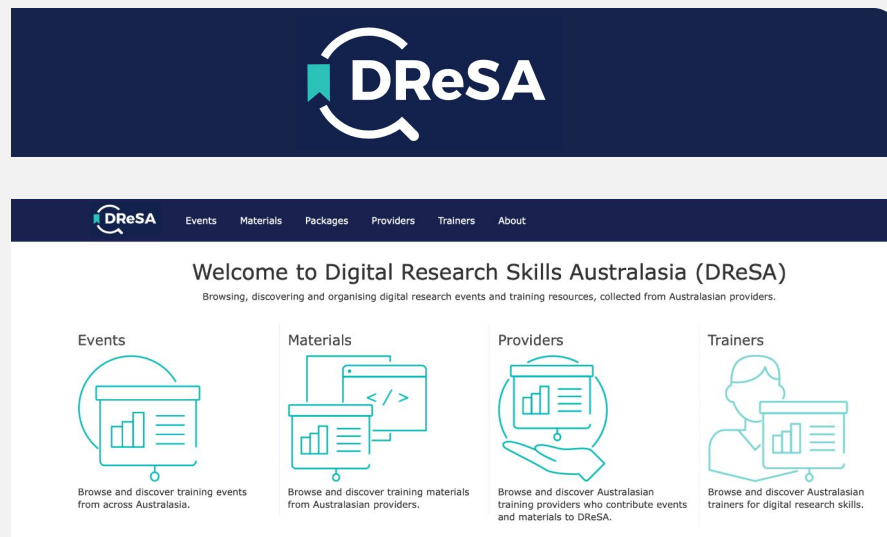




THE ARDC DIGITAL RESEARCH SKILLS AGENDA: A National Approach

Our approach addresses 5 key areas. Fundamental to all is the Digital Research Capabilities and Skills Framework.

PEOPLE & POLICY - SKILLED RESEARCHER WORKFORCE



Upcoming assets



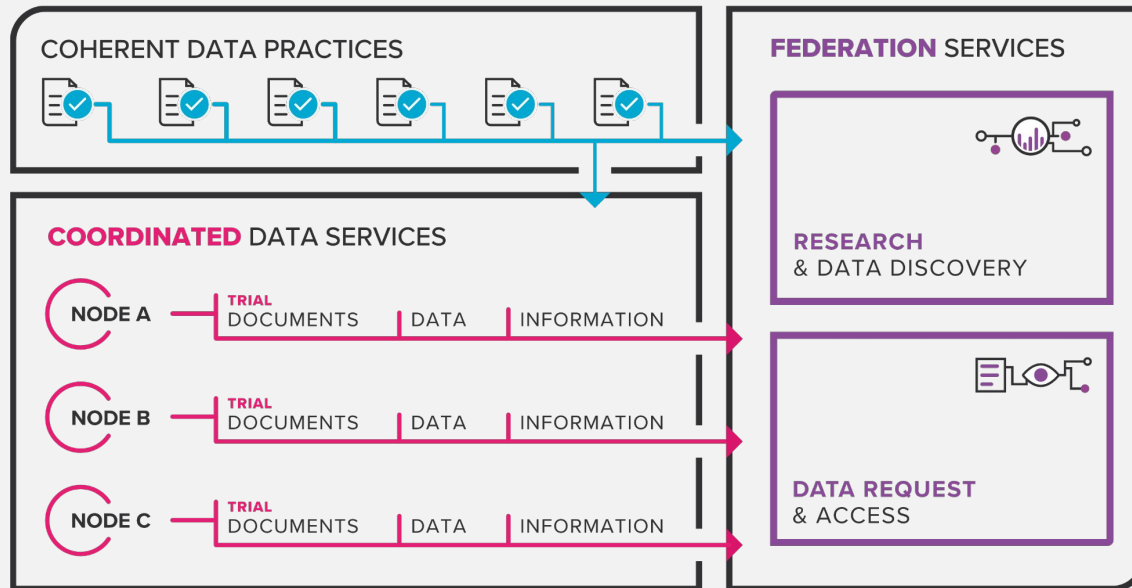


NATIONAL DATA ASSETS

The National Data Assets initiative is a multi-year, \$20 million+ investment by ARDC that will provide Australian researchers with access to a portfolio of national-scale data assets that support leading-edge research.

Image — William - 517082845 / STOCK.ADOBE.COM

HEALTH STUDIES AUSTRALIAN NATIONAL DATA ASSET



Future Developments



THEMATIC RESEARCH DATA COMMONS

Suite of RDCs in strategically selected thematic areas

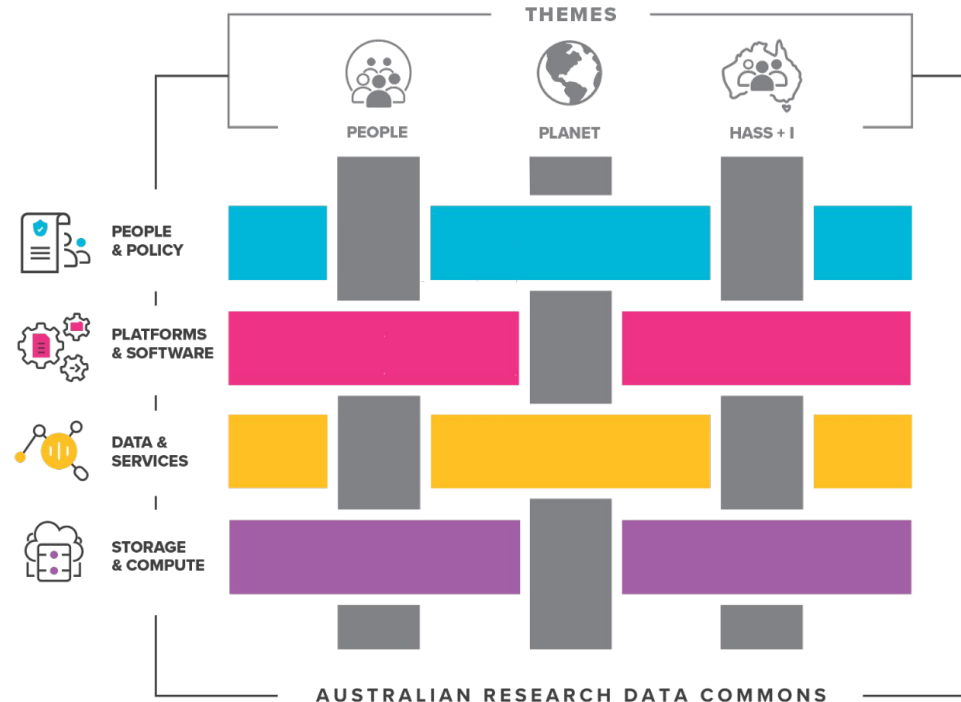
Address Australia's science and research priorities

Leverage ARDC's existing underpinning infrastructure and capabilities

Facilitate collaboration with international partners (eg EOSC)

Enhance interoperability within and across domains

Support research translation, partnership and commercialisation



PEOPLE RESEARCH DATA COMMONS

A national-scale data
infrastructure for health
research and research
translation

Image — Chinnapong - 325872880 / bigstockphoto.com

About the ARDC

ARDC
Australian Research Data Commons

NCRIS
National Research
Infrastructure for Australia
An Australian Government initiative
ARDC is
enabled
by NCRIS

An aerial photograph of a lush green mangrove forest. A winding river or canal cuts through the dense vegetation, creating a complex, meandering pattern. The water is a light brownish-green color, and the surrounding land is covered in thick, vibrant green trees and shrubs. The perspective is from directly above, looking down on the landscape.

PLANET RESEARCH DATA COMMONS

National-scale data
infrastructure for
environmental research
and decision making

Image — themorningglory - 391783296 / STOCK.ADOBE.COM

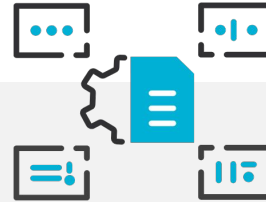
HUMANITIES, ARTS & SOCIAL SCIENCES RESEARCH DATA COMMONS



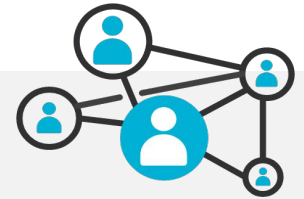
**Indigenous
Research
Capability**



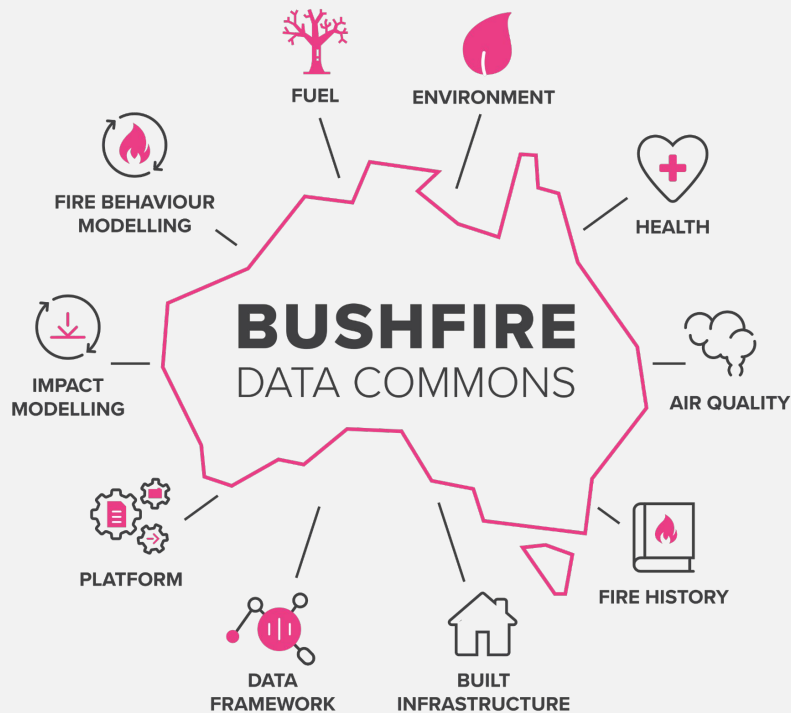
**Trove
Researcher
Platform**



**Linguistics Data
Commons of
Australia**



**Social Sciences
Research
Infrastructure**



Research resilience, response and recovery

TRANSLATIONAL RESEARCH DATA CHALLENGES: BUSHFIRES

Understanding bushfire

- Behaviour
- Impact

TRANSLATIONAL RESEARCH DATA CHALLENGES: FOOD SECURITY

Image — Tim Hüfner - 6-kTk6B8mq8 / UNSPLASH.COM

DISCUSSION

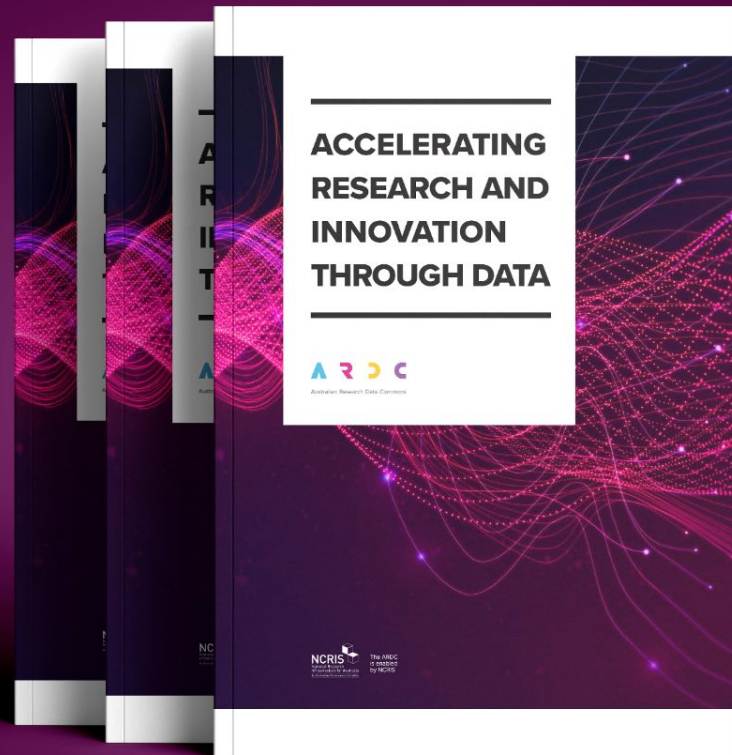


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2022 Data Driven Research Impact

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