Your research data as a valuable asset: taking the long term view

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Data, data, data

- New data paradigm
- Value of research data
- Research data management
- Australian National Data Service (ANDS)
Why is research data important?
‘our capacity to measure, store, analyse, and visualise data is becoming the new reality to which research will have to adapt’

*(Willbanks, Science Commons)*
New data paradigm

EResearch
Collaboration
Open access to data
Data repositories
Data new paradigm

• Data is no longer just a **by product** of research
• May be the **starting point** of research
• Data is an asset
• A deluge of data
• Why now?
WHY is data important?

• Data as an asset
• Assets can be shared
• Lead to collaboration opportunities
• Lead to further research
• Benefits to researcher

...........Examples of data sharing......
CSIRO Bringing pulsars to the people
Open Access

• **Open access** to publicly funded research
• Research funding bodies may require this
• Open access
  – Institutional repositories
  – Data repositories
• Australian Code for the Responsible Conduct of Research
  – S1 General principles of responsible research
  – S2 Management of research data and primary materials
The Code ...

- Responsible conduct of research
  - proper management of research data
  - retention of research data
- Retaining research data important
  - may be all that remains at the end of the research project
What does this mean for researchers?

Data management planning
What sort of “data”?

- Records needed to validate research findings
- Data collected or created during research
- Not format-specific
- Differs across disciplines
Data management planning

• Why do you need to plan?

• With most data now being **born digital** the need to manage research data is paramount

• And when should you do this?
• What to include in a plan?
  – Data to be generated or collected
  – Ownership of the data
  – Legal and ethical requirements that apply to the use of the data
  – Storage and back-up of the data
  – Volume of data and file formats
  – Retention and disposal of the data when the research project is complete
• Discovery interface
  – “Window on the Commons”
• Data collections of Australian researchers
• Makes research data collections visible
• You can see what has been done already
ANDS is supported by the Australian Government through the National Collaborative Research Infrastructure Strategy Program and the Education Investment Fund (EIF) Super Science Initiative


Australian Government

Department of Innovation Industry, Science and Research
Australian National Data Service

More Australian researchers reusing research data more often.

ANDS is building the Australian Research Data Commons: a cohesive collection of research resources from all research institutions, to make better use of Australia's research outputs.

ANDS enables the transformation of:

Data that are: Unmanaged ———> Managed
Disconnected ———> Connected
Invisible ———> Findable
Single-use ———> Reusable

...so that Australian researchers can easily publish, discover, access and use research data.

Find data on Research Data Australia
A Window on the Australian Research Data Commons
Research Data Australia is a discovery service for Australian research data.

Registry Contents
- **Collections (24769)**: Useful grouping of physical or digital items.
- **Parties (2321)**: Person or organisation that has some relationship to a collection, service, activity, or party.
- **Services (33)**: A mechanism for gaining access to information.
- **Activities (885)**: Undertaking or process related to the creation, update, or maintenance of a collection.

Collection Providers
- **AuScope (69)**
- **AusStage: Gateway to the Australian Performing Arts (1)**
- **AustLII (458)**
- **Australian Institute of Marine Science (371)**
- **Australian Nuclear Science and Technology Organisation (100)**
- **Australian Ocean Data Network (8517)**
- **Breast Cancer Tissue Bank (18)**

NCRIS Partner Spotlight

What Are the Risks of Viral Infections in Drinking Water Storages?
Project Type: Grant Initial Year: 2005 Duration: 5 years Project Status: Completed Funding Sponsor: ARC Linkage - Projects (and/or...)

Environmental fingerprints of biogeochemical cycles embedded in tree rings: Linking global climate change to local long-term forest productivity
Project Type: Grant Initial Year: 2010 Duration: 3 years Project Status: Proceeding Funding Sponsor: ARC Discovery Projects (including...)

Resilience of Moreton Bay to climate change: Links between nutrient inputs and plankton dynamics
Project Type: Grant Initial Year: 2008 Duration: 3 years Project Status: Proceeding Funding Sponsor: ARC Linkage - Projects (and/or...)

Sources of phosphorus promoting cyanobacteria in subtropical reservoirs
Project Type: Grant Initial Year: 2007 Duration: 3 years Project Status: Proceeding Funding Sponsor: ARC Linkage - Projects (and/or...)

www.ecu.edu.au/research/week
Spectral reflectance data of plant green

Dataset

The dataset contains spectral reflectance data of various crop plants and weeds. The data has been collected in the field using a spectrometer, from farm locations in Queensland and Western Australia. The dataset contains the spectral reflectance characteristics of various crop plants and weeds including sugarcane, cotton, wheat, skeleton weeds, guinea and Johnson grasses, which were monitored at different plant development stages in Gingin, Western Australia and Toowoomba and Bundaberg, Queensland. The data is categorised by time of year collected, plant name, weed name, farm and place. At this stage the dataset contains spectral reflectance data of more than 10 different plants, collected since 2008, however the dataset is growing. Data is stored in Excel file format.

Access rights:

Access to the dataset is subject to legal and commercial restrictions. Photonic Detection Systems is the commercial partner. Contact Professor Kamal Alameh of the Electron Science Research Institute at Edith Cowan University to determine access conditions.

Note:

Other participants in the research are Sreten Askrab (Senior Research Fellow, ESRI) and Arie Paap (Post Doctoral Research Fellow, ESRI).
Getting help

- Your supervisor
- Email Library research data staff: researchonline@ecu.edu.au
- Handout: Section 2 of the Australian Code for the Responsible Conduct of Research
Final take home

- Your research data is valuable
- Your research data needs to be managed
- Be aware of The Code and researcher responsibilities
- ECU developing data management plan templates
- National developments:
  - Australian National Data Service (ANDS)
Thanks!