
EUROVISION
SONG CONTEST


Greenland
Iceland
Norwegian Sea
Sweden
Finland
Norway
Denmark
United Kingdom
Ireland
Belarus
Poland
Germany
Ukraine
Austria
Romania
France
Italy
Turkey
Greece
Spain
Portugal
Syria
Tunisia
Morocco
Australia
NT
QLD
WA
SA
NSW
ACT
VIC
TAS
North Atlantic Ocean


EUROVISION
SONG CONTEST

Australian Bureau of Statistics

Australian Government
Geoscience Australia

Unleashing the power of statistics using a time-series of Earth observations from space

A collaboration between the Australian Bureau of Statistics (ABS) and Geoscience Australia (GA)

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www.abs.gov.au

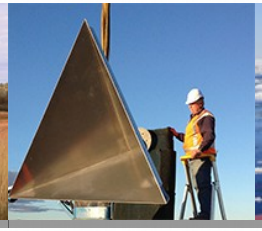
What is the ABS?

What is GA?

Geoscience Australia

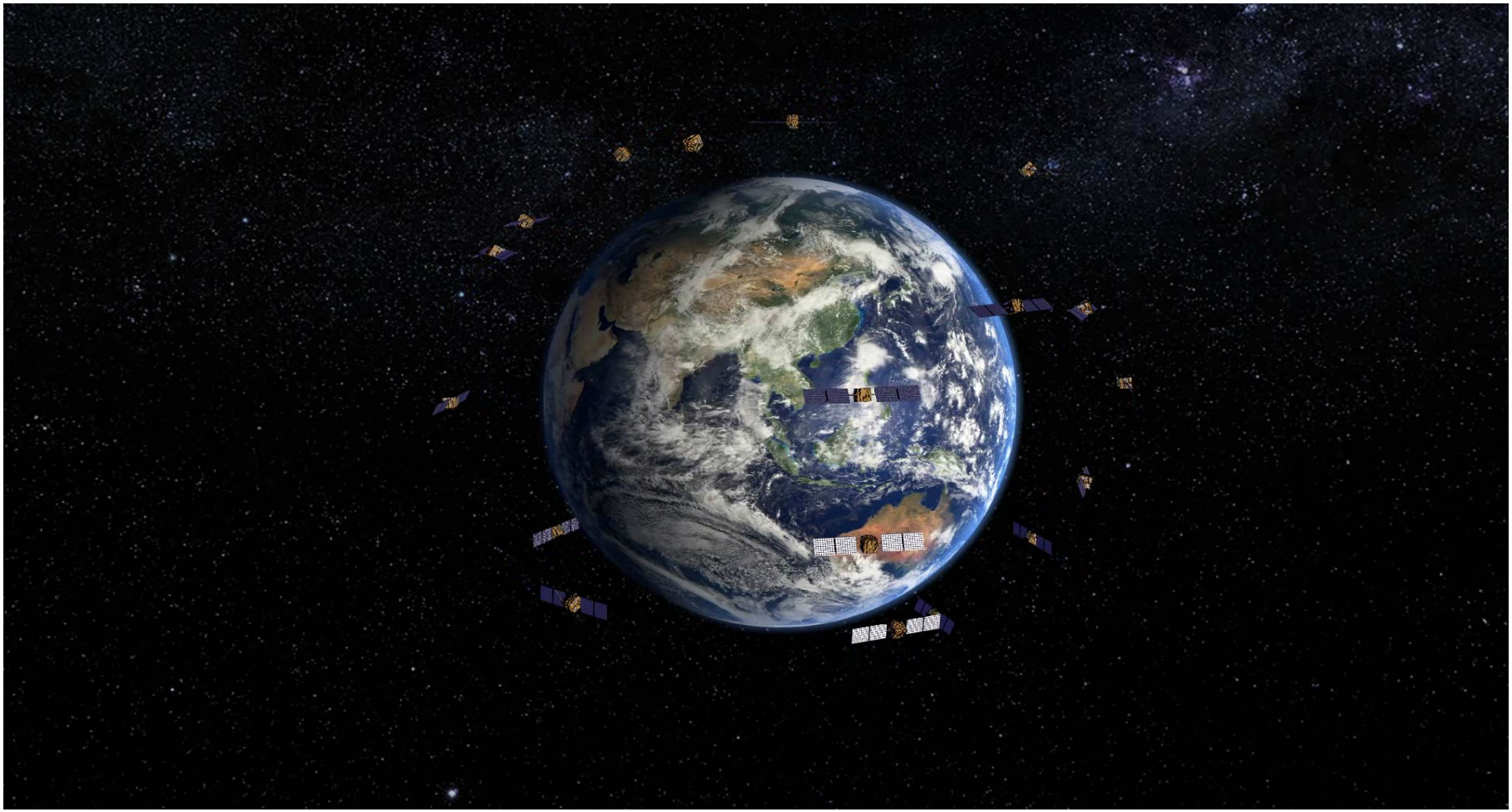
- Agency with the Department of Industry, Innovation and Science portfolio
- Applying geoscience to Australia's most important challenges
- Located in Canberra
- 4PB of geoscience data and growing



Graphics courtesy of Geoscience Australia

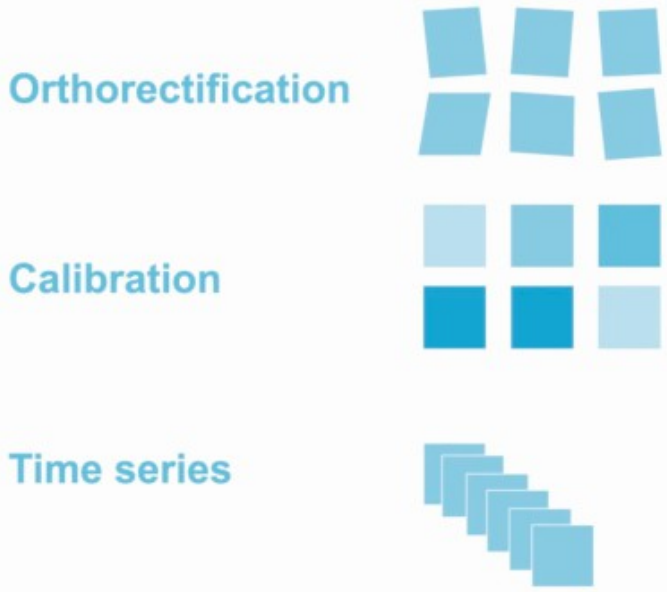
Earth observation



Graphics courtesy of
Geoscience Australia

Australian Geoscience Data Cube

A large organised and accessible collection



Graphics courtesy of Geoscience Australia

ABS-GA Collaboration

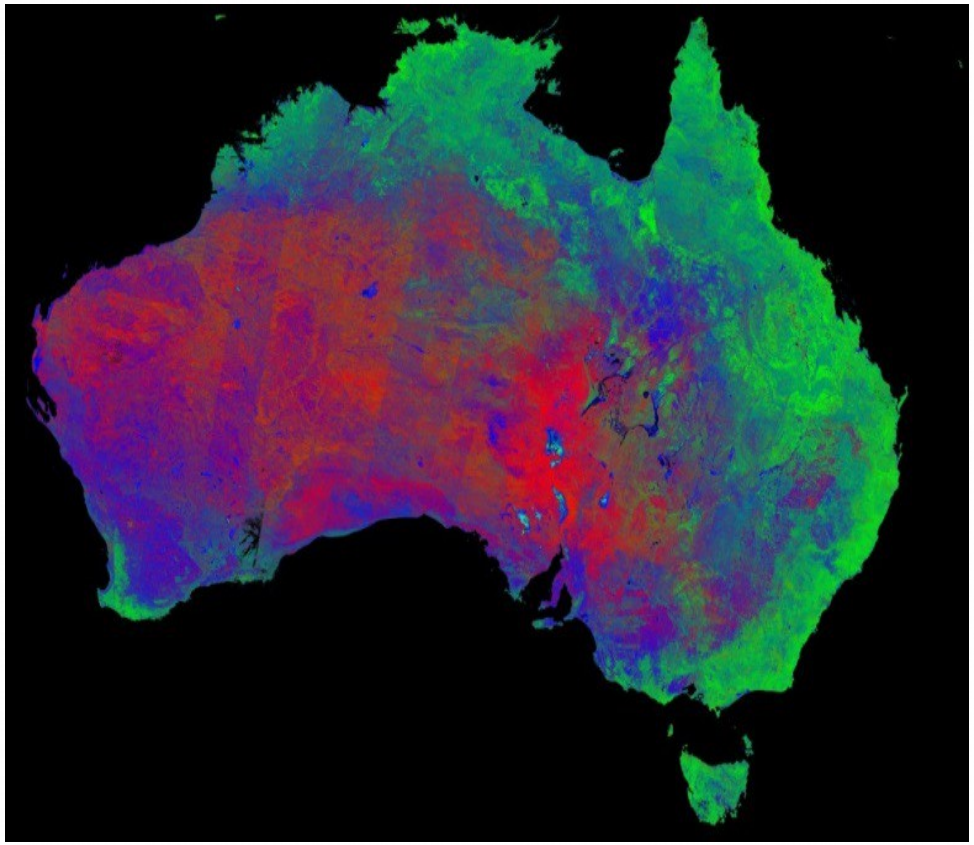
Aim

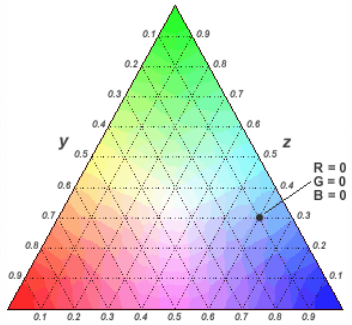
- Demonstrate the utility of Landsat imagery held in the Australian Geoscience Data Cube (AGDC) for producing statistics

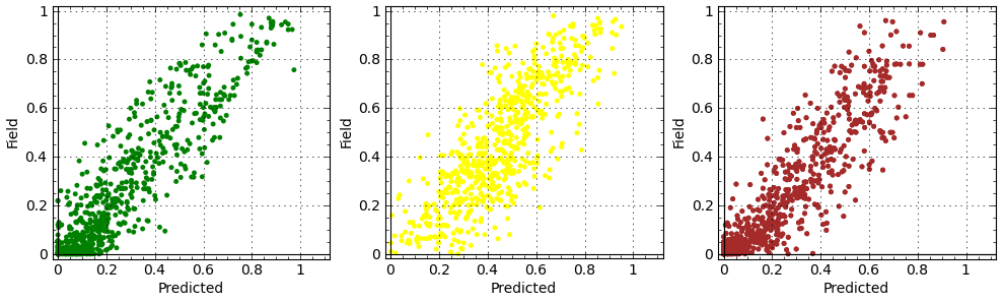
Key objectives

- Build on existing collaboration between the ABS and GA
- Explore statistical uses of the AGDC on the National Computational Infrastructure (NCI)
- Build the foundation for longer term projects leveraging the power of the AGDC and NCI for statistical purposes
- Explore wider access to the NCI environment

What is Fractional Cover?





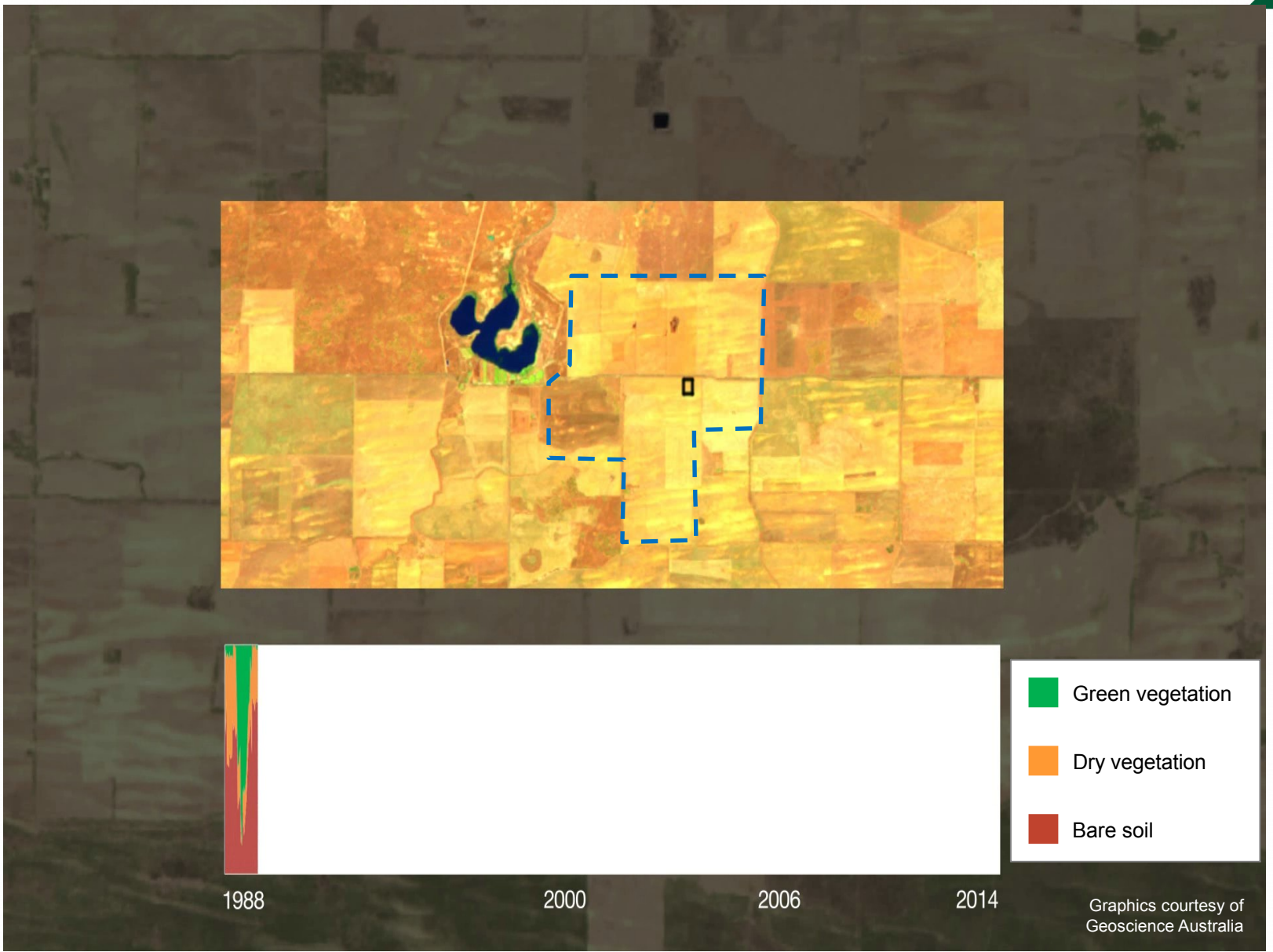


Built from Landsat Surface Reflectance Products (ARG25)

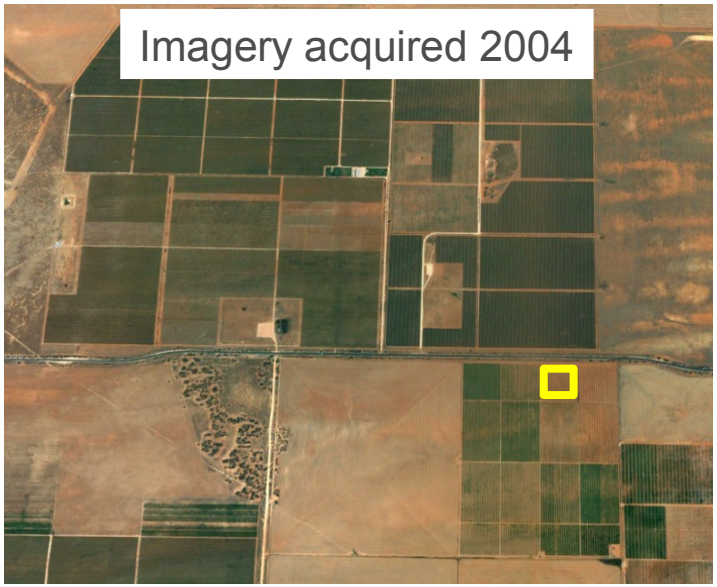
Captures cover dynamics at a 25m resolution

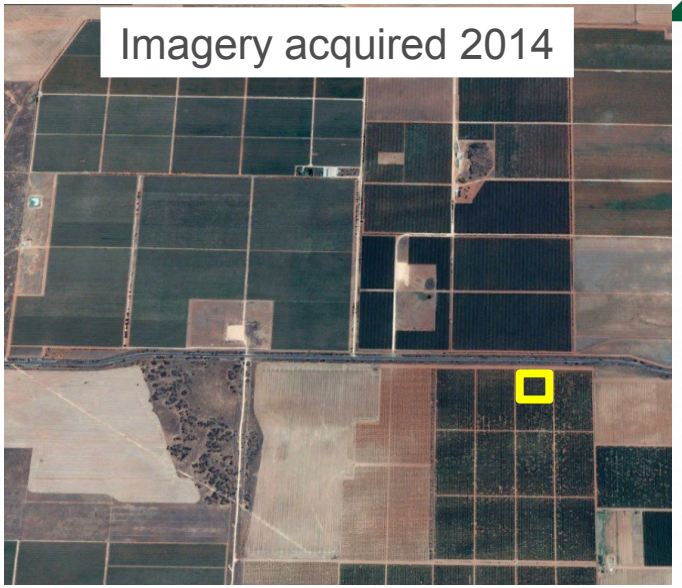
Graphics courtesy of Geoscience Australia

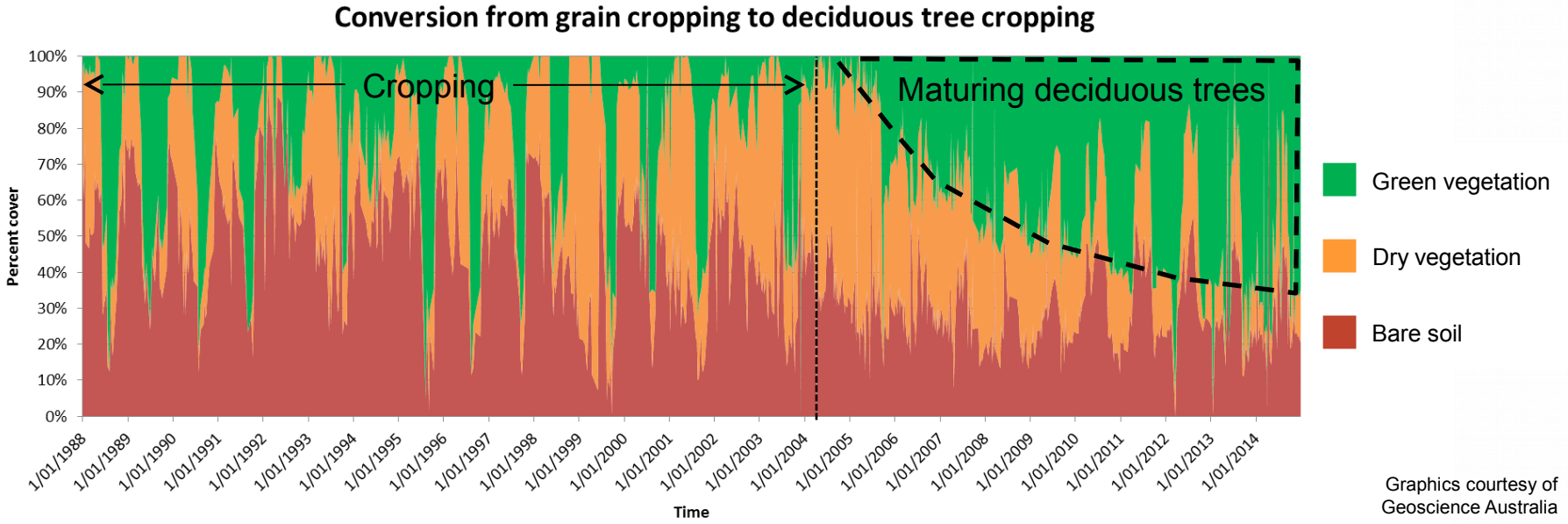
What does it tell us?



Why is this important?

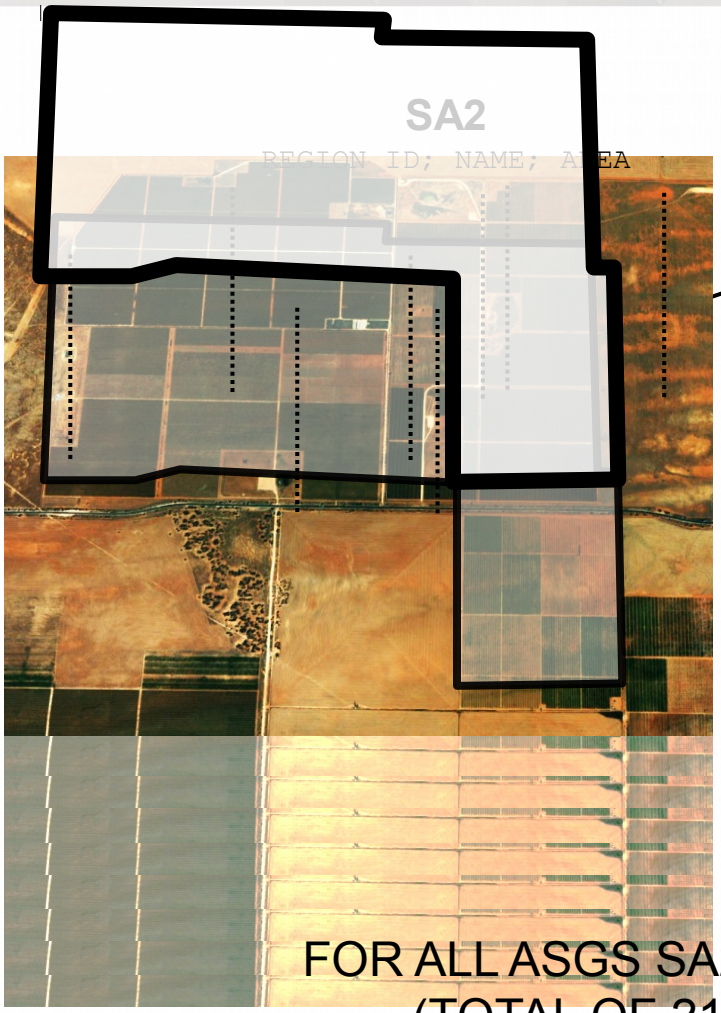






Graphics courtesy of Geoscience Australia

Regional summaries



Newest

Oldest

For each time-step:

PERCENTAGE	CELL COUNT
91 - 100	XXXXX
81 - 90	XXX
71 - 80	XXXX
61 - 70	XX
51 - 60	XXX
41 - 50	XX
31 - 40	X
21 - 30	XXX
11 - 20	XXXX
1 - 10	XXX

FOR ALL ASGS SA2'S IN AUSTRALIA
(TOTAL OF 2193 REGIONS)

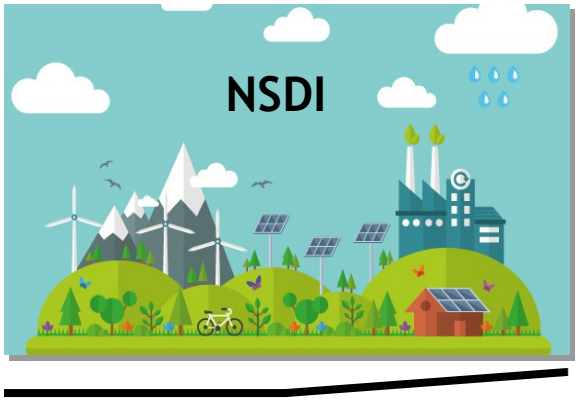
Key points and future direction

A time-series of Earth observations from space is enabling ABS to:

- Quantify spatio-temporal variations in land cover
- Explore the relationships between land cover, land use and land value
- Produce official statistics from remotely sensed data products

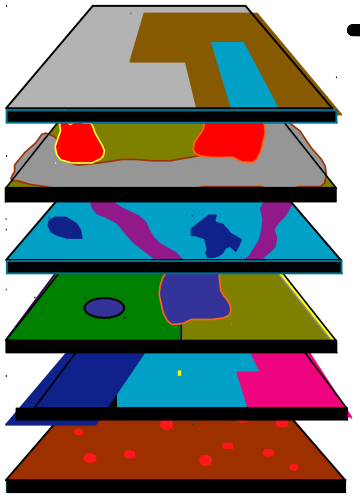
In the future, we plan to:

- Integrate grid data products with other environmental and socio-economic data
- Examine the relationship between remotely sensed products and information collected through more traditional survey instruments
    - E.g. land management practices and ecosystem health



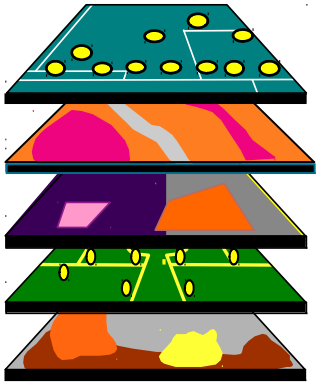
High quality, timely and reliable data

Geodetic
Elevation
Water/Ocean
Land use/cover
Transport
Cadastre
Population
Infrastructure
Settlements
Admin. Bdys.
Imagery
Geology/soils
Observations
etc.

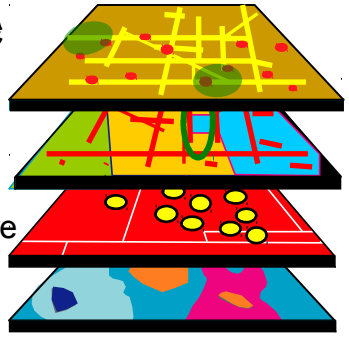


Fundamental Geospatial Data Themes

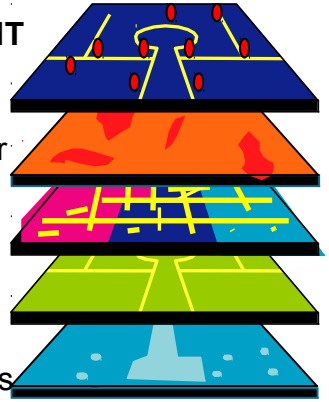
SOCIAL
Society
Poverty
Education
Health
Population
Employment
Water
Sanitation
Equality
Gender
Governance



ECONOMIC
Well-being
Cities
Water
Energy
Infrastructure
Industry
Sanitation
Economy



ENVIRONMENT
Water
Seas/oceans
Land use/cover
Ecosystems
Forests
Agriculture
Climate
Biodiversity
Natural hazards
Pollution



An integrative geospatial framework

17 Goals
169 Targets
230 Global Indicators

Global Outputs and Reporting

Official Aggregation and Integration into Indicator Framework by National Statistical Offices. Captures data integrity and validation.

SDG metrics for measuring and monitoring progress. Data compiled and disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location, etc.

National Sustainable Development Indicators

Earth Observations and Monitoring	National Spatial Data Infrastructure	National Statistics, Accounts, Administrative Registers, Demographics	Other Sources of Data, incl. Big Data
Imagery Water/Ocean Land use/cover Observations In situ monitoring Air/Pollution Ecosystems Forest/Agriculture Climate	Geodetic positioning Elevation Topography Land use & cover Transport/Infrastruct. Cadastre/Parcels Water & Oceans Cities & Settlements Administrative Bdys.	Population Demographics Poverty Trade/Business Environment Labour/Economics Agriculture Disability/Gender Civil Registration & Vital Stats.	Mobile phone Social media Sensors Automated devices Satellite imagery VGI Crowd sourcing ??

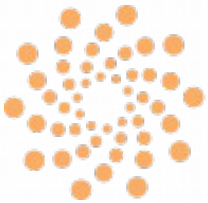
National Information Systems

Data Inputs

Fundamental baseline data and new data sources

Local to national social, economic and environmental conditions and circumstances

Collaboration built on collaboration



NCI

Australian Government
Geoscience Australia

USGS

NASA

AusCover
Remote Sensing Data Facility

JOINT
Remote Sensing
RESEARCH PROGRAM

Queensland Government

TERN
Terrestrial Ecosystem Research Network
Transforming Australian ecosystem science

The University Of Queensland
AUSTRALIA

NCRIS
National Research Infrastructure for Australia
An Australian Government Initiative

Australian National University

CSIRO

Australian Government
Bureau of Meteorology

Australian Government
Australian Research Council

DEAKIN UNIVERSITY

INTERSECT

RMIT UNIVERSITY

qcif

ACE CRC
ANTARCTIC CLIMATE & ECOSYSTEMS
COOPERATIVE RESEARCH CENTRE

UTS
UNIVERSITY OF TECHNOLOGY, SYDNEY

GARVAN INSTITUTE OF MEDICAL RESEARCH

UNIVERSITY OF WOLLONGONG
AUSTRALIA