Community Access to Natural Resources Information in a Distributed Environment

www.canri.nsw.gov.au

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CANRI - the vision

An open platform for information sharing to improve natural resource management by the whole community

Increasingly we need to...

- Use each other's data

- Seamlessly integrate & link our information products

- Maintain control of our data for security, Quality Control and updating

Whatever we do, it must be:

adaptable - extensible - scalable

Custodianship principles

- Trusteeship
- Setting and use of data standards
- Collection & maintenance of information
- Authoritative source
- Accountability
- Maintain access

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Technical principles

- Scalable, distributed model
- Separate data serving from presentation
- Data served once for multiple purposes
- Custodians serve their own data
- Domain-specific applications
- Focus on web mapping (spatial integration)
- Driving & implementing technical standards
- Establishing SCOTS software market

CANRI Program 2000-2004: $4m/4 years - 10 agencies

- Co-ordination - strategic, integrated
- Data - spatially/Internet enabling
- Systems - performance, functionality
- Standards - "world best practice"
- Products - multi-agency, integrated
- Communication - community needs

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High-level political support

"CANRI is a really exciting project ...What CANRI does is not only bring [government information] together, without taking it away from departments but, more importantly, makes it accessible to the community. That's how modern government should be."

Hon. Dr Andrew Refshauge

NSW Deputy Premier

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Using OpenGIS® services
to link data services into business applications

Business applications

- LPI Topoweb
- Spatial Data Sharing Initiative
- CANRI Natural Resources Atlas ...with Topoweb
- DIPNR Water Quality (test data)
- Bio-diversity Demo (test data)
- NPWS Wildlife Atlas

Internet

Web Map Servers
- NPWS Parks — Capabilities
- LPI Topoweb — Capabilities
- DIPNR LandSat7 — Capabilities
- NASA Rainfall — Capabilities
- ESRI SDSI — Capabilities

Web Feature Servers
- NPWS Wildlife Atlas — Capabilities
- DIPNR Water Quality — Capabilities — Simulated test data only

Catalog
- DIPNR NR Data Directory

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NSW Natural Resources Atlas

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Define map area

Quick locator ❓

Click & Drag on the map below to select a region.

Go to a Catchment Mgt Board ▾

Go to a Council ▾

Go to a Town ▾

Map:

LISMORE
MOREE
BOURKE   WALGETT   GRAFTON
ARMIDALE
TAMWORTH
COBAR
BROKEN HILL
DUBBO
MUSWELLBROOK
PARKES   NEWCASTLE
BATHURST
WEST WYALONG   SYDNEY
GRIFFITH   YOUNG   WOLLONGONG
HAY
BALRANALD   COULBURN
WAGGA WAGGA   CANBERRA
DENILIQUIN   BATEMANS BAY
COOMA
ALBURY
EDEN

Modify map layers ❓

▶Add map layers   ▶Edit layers   ▶Layer status

	Map Layers	❶	🕸
▽	✔ Landcare Groups	○	☐
▲	✔ River Gauging Stations	○	☐
▲	✘ Soil Profiles	○	☐
⊼	✔ Local Government Areas	○	☐
—	✔ Catchment Management Boards	○	☐
▓	✔ National Parks	○	☐

Hints:
- Let the page finish loading before you click
- To show or hide map layers, tick the check boxes

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Southern ▾

Go to a Council ▾

Go to a Town ▾

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Map Layers		❶	🔍
▼	✔ Landcare Groups	○	☐
▲	✔ River Gauging Stations	○	☐
▲	✕ Soil Profiles	○	☐
⊼	✔ Local Government Areas	○	☐
—	✔ Catchment Management Boards	○	☐
▦	✔ National Parks	○	☐

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—	✔ Catchment Management Boards	○	☐
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Microsoft Internet Explorer

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▸Print ▸Help ▸Feedback

↺ ❶ ✋ 🔍 🔍 ▃▄▅▆▇ **Define map area**

🗎 Search for Data - Microsoft Internet Explorer _ ☐ ✕

Search CANRI catalogue

Search term: Limit:

| land | | 50 records ▾ | | **Search** |

Advanced search   **Cancel**

🗎 Done   🖳 Local intranet

Ulladulla
Bawley Point
O'Hara Head
Durras
Long Beach
Batemans Bay
Malua Bay
Burrewarra Point
Broulee
Moruy

▸Add map layers ▸Edit layers ▸Layer status

Map Layers   ❶   🕷

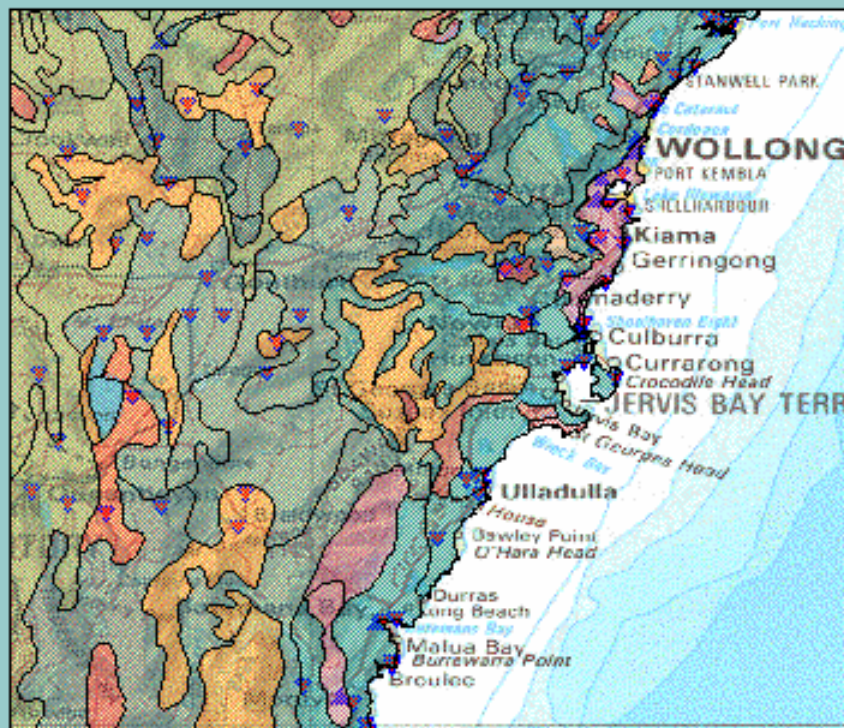| ▽ | ✔ Landcare Groups | ○ | ☑ |
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⟂	✔ Local Government Areas	○	☐
—	✔ Catchment Management Boards	○	☐
▦	✔ National Parks	○	☐
🖼	✔ Landsat 7 Satellite Image Mosaic (2000)		☐
🗺	✔ Topographic Maps		☑

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- Click the ❓ symbols for more help

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Search results

More than 50 matching datasets found.

Layer Capabilities (at current scale)

Title	Symbol	Map display	Query feature	Feature selection	Zoom to feature	Web link	Add to legend
Plantations - Hardwood - potential		✔				🔗	☐
Interim Biogeographic Regionalisation for Australia (IBRA) Version 5.1 - ibra regions		✔	✔		✔		☐
Global Map Data Australia 1M - Road by surface		✔				🔗	☐
Global Map Data Australia 1M - Road by access/order		✔				🔗	☐
Global Map Data Australia 1M - Railway single/multitrack		✔				🔗	☐
Global Map Data Australia 1M - Airfields ICAO name		✔				🔗	☐
Global Map Data Australia 1M - Airfields full name		✔				🔗	☐
Global Map Data Australia 1M - Builtup area		✔				🔗	☐
Global Map Data Australia 1M - Built area (labelled)		✔				🔗	☐
Global Map Data Australia 1M -		✔				🔗	☐

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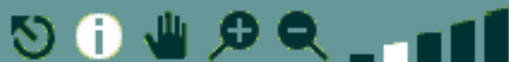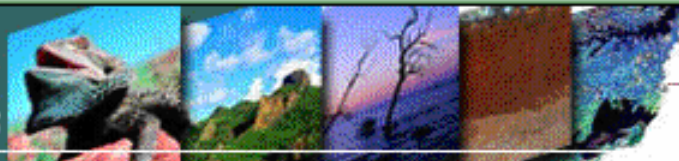
Map Layers

- Deep Alluvial Loams
- Deep Friable Red and Brown Clays
- Deep Structured Red Clay Loams
- Red-Brown Earths
- Deep Black Crackling Clays
- Coarsely Cracking Grey and Brown Clays
- Massive Black and Grey Coastal Clays
- Massive Red and Yellow Earths
- Yellow & Red Texture Contrast Soils
- Calcerous Sands
- Calcerous Earths
- Scalded Red Texture Contrast Soils
- Shallow Black Self-Mulching Clays
- Well Structured Red & Brown Earths
- Shallow Loams
- Stony Sandy Loams
- Saline Scalded Lake Bed Clays
- Siliceous Dune Sands
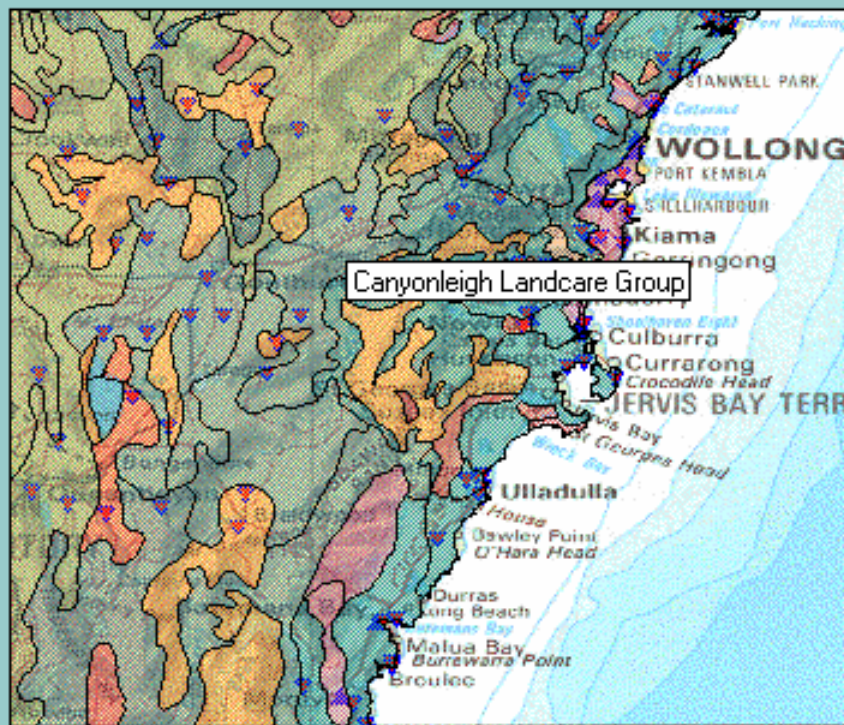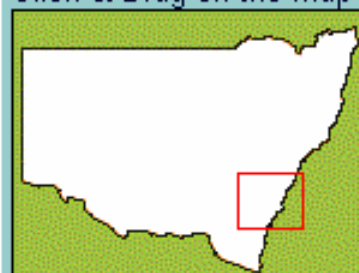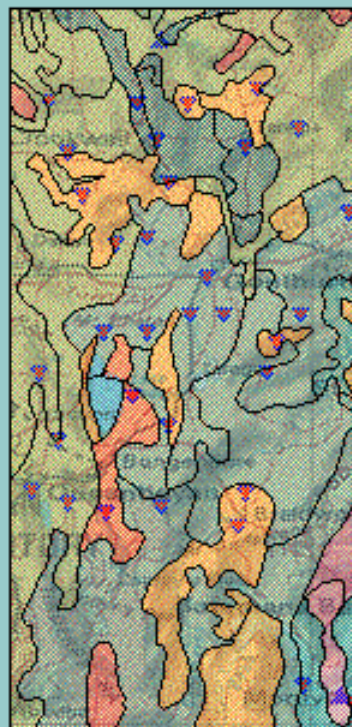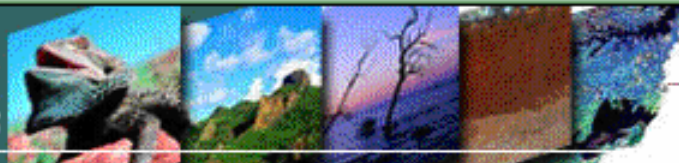
✔ Soils of NSW - S

🔻   ✔ Landcare Groups

▲   ✔ River Gauging Sta

▲   ✖ Soil Profiles

Map labels: STANWELL PARK, Cataract, Cordeaux, WOLLONG, PORT KEMBLA, Lake Illawarra, S·HELLHARBOUR, Kiama, Gerringong, naderry, Shoalhaven Bight, Culburra, Currarong, Crocodile Head, JERVIS BAY TERR, vis Bay, Pt Georges Head, Wreck Bay, Ulladulla, House, Bawley Point, O'Hara Head, Durras, ung Beach, Batemans Bay, Malua Bay, Burrewarra Point, Broulee

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Canyonleigh Landcare Group

STANWELL PARK
WOLLONG
PORT KEMBLA
S ICLLHARBOUR
Kiama
Gerringong
Shoolnaven Bight
Culburra
Currarong
Crocodile Head
JERVIS BAY TERR
Vis Bay
St Georges Head
Wreck Bay
Ulladulla
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Bawley Puint
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Landcare Group Details - Microsoft Internet Explorer　　　_ □ ✕

Canyonleigh Landcare Group

LANDCARE

Group Name	: Canyonleigh Landcare Group
Catchment Management Area	: Wollondilly CMC
Local Government Area	: WINGECARRIBEE
Date Formed	: 22/02/1997
Area	

🖅 Done　　　　　　　🌐 Internet

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Scalded Red Texture Contrast Soils
Shallow Black Self-Mulching Clays

Built with WebMap Composer

Roll your own application

Planning for sustainability

Focus in CANRI's 4th & final year

- **Consolidate systems**
  - *SCOTS software*
  - *Usability and completeness of product range*
  - *Improve range and depth of data access*
- **Promote products**
- **Seek future funding**

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CANRI site redesign

Some emerging issues

- **SDI governance**
- **Quality of service**
- **Common conceptual model**
- **Shared registry**
- **Shared access management**

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SDI needs good governance

- **Lead agency & champion**
- **Consensus between sectors**
- **Clear business drivers**
- **Data custodianship principles**
- **Interoperability principles**
- **Open technology standards**

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Quality of (web) service

- **Service level agreements**
  - *Reusable web services*
  - *For business-critical applications*
  - *Core business for the information age*
- **Conformance testing**
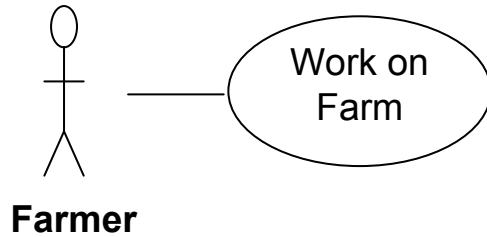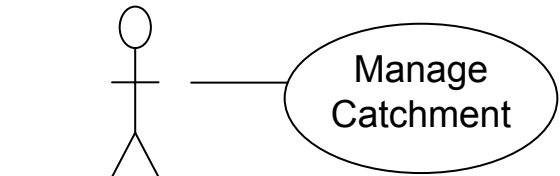 - *IT standards*
  - *SDI framework*

System actors

Common conceptual model

- **End-users**

- **Data custodians**

- **Product managers**
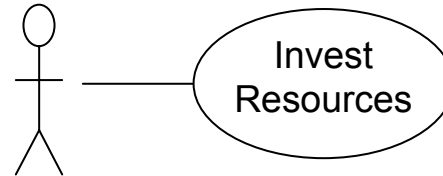
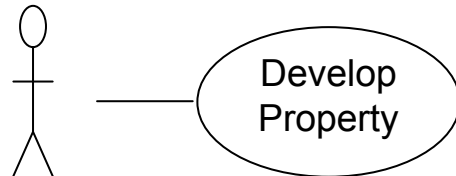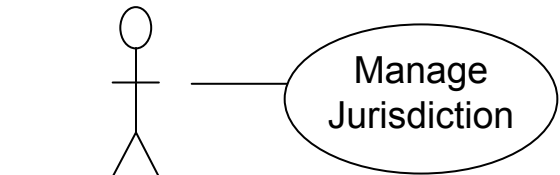- **System administrators**

End users & use cases

Farmer — Work on Farm

Investor — Invest Resources

Catchment Management Authority — Manage Catchment

Developer — Develop Property

Government — Manage Jurisdiction

Information classes

People — decision-maker — Decisions
People — agent — Actions
People — owner, user — Assets
Decisions — basis — Actions
Assets — enabler — Actions
Actions — modifier — Environment

iPlan, AppNet

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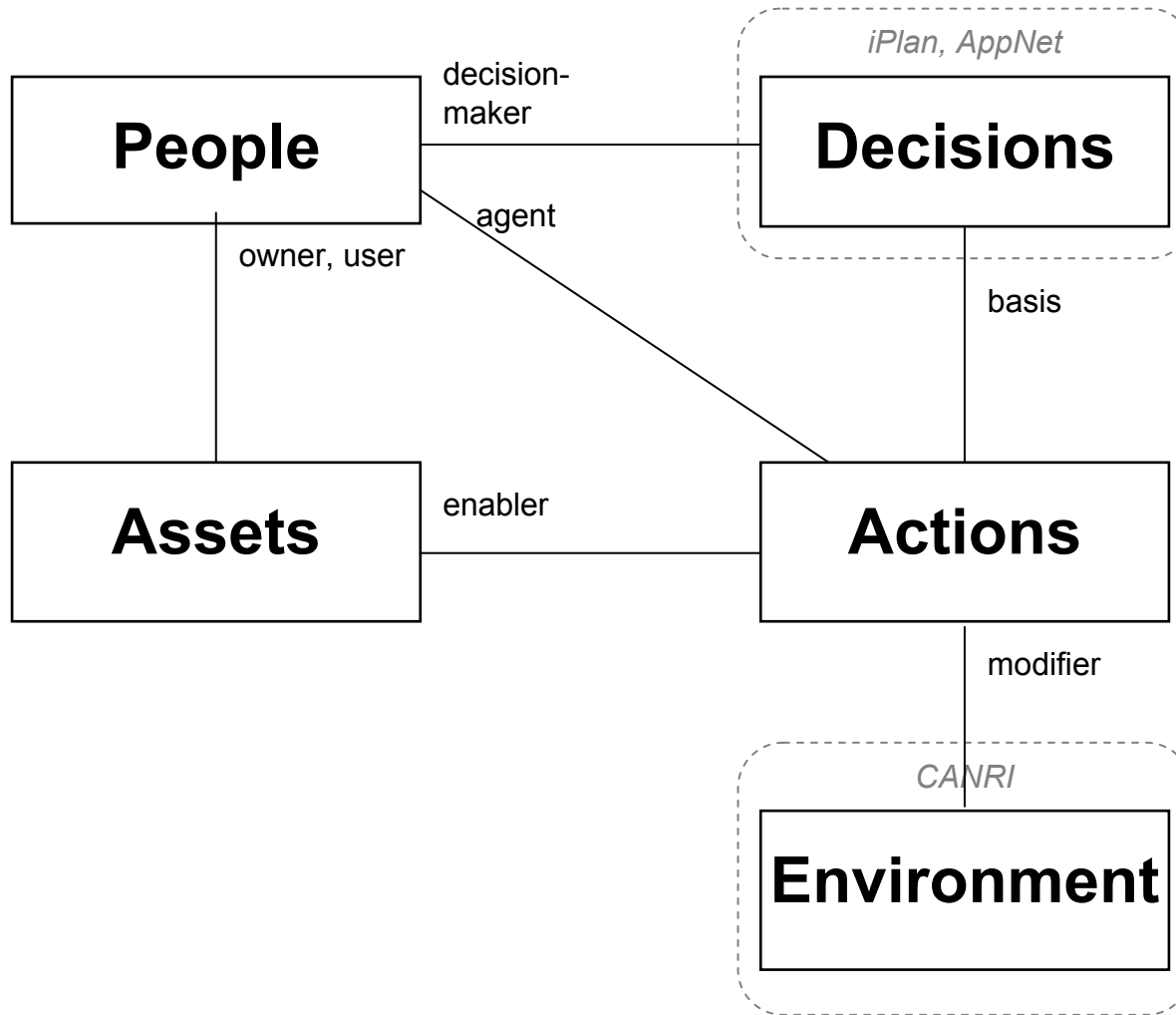
Online registry

Lynchpin of the SDI

- **Not just data, but services, data models, symbology, …**
- **Whole-of-government responsibility**
- **Standards still emerging**

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Web access management

- **Sharing sensitive resources**
- **Single-sign-on**
- **Cost-effective central user repository**
- **WAM pilot funded through connect.nsw and CANRI**

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Uses for GRID computing

- **Distributed-source geoprocessing**
- **Visualisation**
- **GIS supported conferencing**

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Limiting factors

Not technology

- **Sparsity of data**

- **Requirements definition**

- **Management clarity / political will**
  willingness to collaborate

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