Bureau of Mineral Resources, Geology & Geophysics

DATABASE REQUIREMENTS FOR THE

NORTH QUEENSLAND PROJECT

by

ROBYN ELPHINSTONE
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SEPTEMBER, 1990
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ABSTRACT

This report briefly describes those computer databases and datasets held by Commonwealth and State Government Departments, Universities, CSIRO, etc, that are available for access by the BMR for the North Queensland Project. Information relating to the source, availability of data, cost of data, and contact names are included.

Databases already in existence within the BMR have been examined for their suitability to the needs of staff in the North Queensland Project. A database program and timetable for the North Queensland Project is included.
1 INTRODUCTION

The database requirements for the North Queensland Project are implicitly related to the aims of this joint multidisciplinary project between the Commonwealth Bureau of Mineral Resources, Geology and Geophysics and the Queensland Department of Resource Industries. The project will involve integrated regional geological, geophysical, geochemical, and regolith mapping and related studies and input from other government, academic, and industry geoscientists.

It will aim to expand and consolidate the geoscientific knowledge base for North Queensland in terms of maps and integrated datasets, and make it more up-to-date, accessible and GIS compatible. Using these maps and data, it will: (1) provide a comprehensive regional geological synthesis; (2) help assess the mineral potential of the region; (3) elucidate the relationships between mineral deposit types and the geochemical and structural characteristics, ages, modes of emplacement, and petrogenesis of associated Palaeozoic igneous rocks; (4) develop quantitative models of landscape evolution for the region; (5) make an assessment of coastal hazard (susceptibility to change), resources, and aquifer quality and dynamics; and (6) allow factors impacting on the environment to be assessed.
2 CURRENT DATABASE SITUATION IN BMR

The following is a summary of databases held in the BMR which would be most applicable to the needs of the North Queensland staff.

2.1 AESIS

Database name: Australian National Earth Sciences Database
Acronym: AESIS
Database type/status: reference / active
Description: The AMF's national database, AESIS has been building since the 1970's and on-line since 1979, and contains the most comprehensive available reference to unpublished open-file Australian material. It documents the exploration activities of mining companies back to 1965, whilst a substantial coverage of oil exploration activity is also included.

Subject coverage: Published and unpublished documented material over the full range of the earth sciences. From 1979 AESIS also covers material published on continental Australia by non-Australian sources.
Geographical coverage: Australia
Time coverage: 1975 and some earlier references to present
Keywords: Subject / locality / author / map sheet (1:250 000 and 1:100 000) / mine / deposit / well name / stratigraphic name / serials index

Volume of data in database: 4 052 bibliographic references on North Queensland
Output products: lists
Availability of data: Database available through BMR Library
Documentation: AESIS Quarterly publications
Contact name: Bev Allen
BMR Library
Telephone: (06) 249 9200
Information current to: June 1990
2.2 INTERNATIONAL DATABASE FOR IGNEOUS PETROLOGY

Database name: International Database for Igneous Petrology
Acronym: IGBA
Database type/status: reference (partially source) / active
Description: IGBA (IGneous BAse) has been established by UNESCO and the International Union of Geological Sciences to provide a comprehensive retrospective data base for igneous petrology. National IGBA groups have been organised worldwide with the aim of providing data on each rock specimen for which a chemical analysis has been published in a journal, serial, or other reference work post dating 1917.
Subject coverage: Whole-rock chemical analyses / age dating / petrographic data / location of sample / Tertiary volcanics
Geographical coverage: Eastern Australia and New Zealand
Time coverage: up to 1988
Keywords: Igneous petrology / Cainozoic / chemical analysis / radiometric dating / volcanic rocks / Eastern Australia / New Zealand
Database system: Computerised, ORACLE DBMS
Volume of data in database: Approximately 2 000 whole-rock chemical analyses
Output products: Listings
Availability of data: Available on application
Contact Name: Jan Knutson
Telephone: (06) 249 9479
Information current to: June 1990

2.3 MAPDAT

MAPDAT is a facility for plotting spatial data held in the ORACLE relational database onto any map within the Australian region at any scale using a variety of projections. The facility does not compete with Geographical Information Systems but fills a niche at a much lower level of complexity.

By using MAPDAT, geoscientists can store their field data in a standard relational database management system and produce highly readable maps containing selected information. Besides producing
standard sized maps that can overlay published maps, photoscale maps can be produced to overlay airphotos. 

MAPDAT was originally developed to provide a way of plotting point location data (already held in most of the databases in the BMR) onto any type of map. As development proceeded a system for storing simple and complex line data in Oracle was devised. Additionally, a system for defining geological symbols within the structures database and plotting them was created.

Sample locations along with sample information can be plotted in a variety of ways. The information can be displayed beside each point location or in a list to the side of the map. The symbols can be sized proportionally to the sample value or a SQL numerical expression involving a combination of sample values.

All lines plotted by MAPDAT (with the exception of graticules and gridlines) are defined within the relational database. Line data is accessed much more easily and quickly using this system than by reading line files. Users can store simple line data such as survey and tenement boundaries, as well as complex line data such as geological boundaries, rivers and basin outlines. Simple line data is held in columns of type LONG in a text form allowing for easy data entry and modification of data using SQLFORMS. Complex line data is held in columns of type LONG RAW in binary form to allow for maximum efficiency when retrieving data.

MAPDAT has a user-friendly menu interface and sets defaults throughout the program to keep keyboarding input to a minimum. Mapping parameter defaults are set according to Australian Mapping Standards. You can change these defaults if you want. When selecting coastlines, the appropriate resolution coastline is chosen according to the scale you are using. In the "Data Plotting Menu" you piece together a SQL select statement to select points to be plotted. You can perform several selections of data and change the symbol type, size and/or colour to distinguish points from different selections.

Contact name: Dave Collins          Dave Walton
              Tel: (06) 249 9218           Tel: (06) 249 9348
2.4 MINERAL DEPOSITS DATABASE

Database name: Mineral Deposits Database
Acronym: MINDEP
Database type/status: source and reference / active
Description: MINDEP is a database containing data on Australian mineral deposits and occurrences. MINDEP provides information (identification and location) on: (1) age of host rocks; (2) orebody dimensions; (3) the shape, attitude, and orientation of mineralisation; (4) genetic models proposed for the deposit; (5) resources and production; (6) when and how the deposits were discovered; (7) who owns the deposits; and (8) bibliographic references. Eventual coverage Australia wide.
Subject coverage: Identification / location / geology / commodities / production / resources / bibliographic references on mineral deposits
Geographical coverage: At present data on 176 of Australia's major gold deposits (60 major gold deposits in NSW, 80 deposits in Western Australia, and 36 deposits in Queensland)
Time coverage: Production and reserve information from 1981 to present
Keywords: Metalliferous deposits / non metalliferous deposits / economic geology / ore reserves / production / mineral resources / mineral exploration / mineral deposits
Database system: Computerised, Data General microcomputer, ORACLE DBMS
Volume of data in database: 69 tables with 317 data items, it uses about 9 900 data and 1 800 index blocks, which together take up some 24 Mb of disk space.
Output products: Microfiche, hard copy, ASCII and ORACLE discs.
Availability of data: Available in the above formats
Cost of data: (External to BMR) State wide coverage: microfiche $24.95; hard copy $100; report on diskette $150; relational ASCII tables on diskette $300; Oracle export on diskette $400.
Documentation: Draft guide, E-R diagram, screen documentation
Contact name: Brian Elliott Keith Porritt
Tel: (06) 249 9502 Tel: (06) 249 9554
Information current to: June 1990
2.5 NATIONAL INDEX OF AUSTRALIAN STRATIGRAPHIC NAMES

**Database name:** National Index of Australian Stratigraphic Names

**Acronym:** GEODX

**Database type/status:** reference / active

**Description:** Contains all stratigraphic names used in Australia and references to publications in which stratigraphic names occur.

**Subject coverage:** References on Australian geology (whether or not they contain stratigraphic names).

**Time coverage:** 1949 to present

**Keywords:** Geology / Stratigraphic nomenclature / stratigraphy / bibliographic details / map sheet (1:100 000 and 1:250 000)

**Database system:** Computerised, DG MV20000 using Oracle DBMS

**Volume of data in database:** 8 000 references (18 000 stratigraphic names) as at June 1984

**Output products:** Bimonthly variations list, annual deletions list, current awareness list for BMR staff, SDI list for State Surveys

**Availability of data:** Organisational use only

**Documentation:** BMR Journal of Australian Geology and Geophysics 1(3), 247-248; BMR Record 1981/56; and BMR Record 1990/19.

**Contact name:** Charlie Modrak

**Tel:** (06) 249 9623

**Information current to:** 1990

2.6 PETCHEM

**Database name:** BMR Whole-Rock Geochemical Database

**Acronym:** PETCHEM

**Database type/status:** source / active

**Description:** PETCHEM is the whole-rock geochemical data storage system of the Minerals and Land Use Program of the Bureau of Mineral Resources. It is intended eventually to include all whole rock chemical analyses carried out by the BMR Laboratories. PETCHEM is a small part of a larger database for information on BMR rock samples and all laboratory data derived from them. On completion, PETCHEM will contain virtually all whole rock analyses acquired by MLUP (and its predecessors – the Division of Petrology and Geochemistry, and the Geological Branch) since
1970. In addition, analyses compiled from sources external to the BMR will be included progressively.

The PETCHEM database can be subdivided into a series of databases based on geological provinces and thematic databases. The following is a list of the proposed major components of the dataset and the corresponding number of samples.

<table>
<thead>
<tr>
<th>Subset</th>
<th>Areas covered</th>
<th>Number of Analyses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Database</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antartica</td>
<td>Antartica</td>
<td>1 300</td>
</tr>
<tr>
<td>Lachlan</td>
<td>Lachlan Fold Belt</td>
<td>1 800</td>
</tr>
<tr>
<td></td>
<td>NE Tasmania</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NW Tasmania</td>
<td></td>
</tr>
<tr>
<td>Mount Isa</td>
<td>Mount Isa Inlier</td>
<td>2 300</td>
</tr>
<tr>
<td>McArthur*</td>
<td>McArthur Basin</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>Murphy Tectonic Ridge</td>
<td></td>
</tr>
<tr>
<td>New Guinea*</td>
<td>New Guinea</td>
<td>1 000</td>
</tr>
<tr>
<td></td>
<td>Manus Island</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Georgia</td>
<td></td>
</tr>
<tr>
<td>NE Queensland</td>
<td>Georgetown Inlier</td>
<td>1 700</td>
</tr>
<tr>
<td></td>
<td>NE Queensland</td>
<td></td>
</tr>
<tr>
<td>Pine Creek</td>
<td>Pine Creek Inlier</td>
<td>1 700</td>
</tr>
<tr>
<td>Tennant Creek</td>
<td>Tennant Creek Inlier</td>
<td>1 600</td>
</tr>
<tr>
<td></td>
<td>Davenport Province</td>
<td></td>
</tr>
<tr>
<td>Pilbara</td>
<td>Pilbara Province</td>
<td>1 100</td>
</tr>
<tr>
<td>Other</td>
<td>Gascoyne Province</td>
<td>1 200</td>
</tr>
<tr>
<td>Proterozoic</td>
<td>Arunta Block</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stuart Shelf</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Halls Creek Inlier</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Granites-Tanami Block</td>
<td></td>
</tr>
<tr>
<td><strong>Thematic Databases</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alkaline</td>
<td>Kimberlites</td>
<td>880</td>
</tr>
<tr>
<td></td>
<td>Alkaline Rocks</td>
<td></td>
</tr>
<tr>
<td>EAVS*</td>
<td>East Australian</td>
<td>3 000</td>
</tr>
<tr>
<td></td>
<td>Volcanics (Cainozoic)</td>
<td></td>
</tr>
</tbody>
</table>

Note: The following databases (*) are not included in the present data set.
Subject coverage: Whole rock chemical major and trace element (in ppm) data. Trace elements (precious metal and rare earth) at ppb level, geophysical

Geographical coverage: As outlined in table above

Time coverage: 1970 to present

Keywords: sample number / field number / group or batholith / subgroup or suite / stratigraphic formation / stratigraphic member / stratigraphic height / map symbol / rock type / age / lithology / grouping / references / country / state / region / geographic area / locality / 1:100 000 map / grid reference / decimal latitude / north or south / decimal longitude / east or west / drill hole / depth in metres / other data / entry date / analysis number / source number / major elements / trace elements

Volume of data in database: 12 500 major and trace element analyses

Output products: Listings

Availability of data: Available on request

Documentation: BMR Record 1989/19
BMR Record 1990/19

Contact name: Leslie Wyborn Rod Ryburn
Tel: (06) 249 9489 Tel: (06) 249 9605

Information current to: 1990
2.7 PETROLEUM EXPLORATION DATA INDEX

**Database name:** Petroleum Exploration Data Index  
**Acronym:** PEDIN  
**Database type/status:** reference and source / active  
**Description:** PEDIN contains basic information and statistics on petroleum exploration and development drilling and on geophysical surveys which have been carried out in Australia and its Territories.  
**Subject coverage:** Identification / location / geology / commodities / production / resources / bibliographic references of mineral deposits  
**Geographical coverage:** Australia and PNG  
**Time coverage:** 1900 to present (but information has not been updated for wells drilled prior to 1986)  
**Keywords:** Petroleum exploration / geophysical surveys / drilling / exploratory wells / development wells / stratigraphic wells / well logs / oil fields / stratigraphy / lithology / exploration costs / sedimentary basins / Australia / Australia (offshore) / Papua New Guinea  
**Database system:** Computerised, Data General computer on the ORACLE DBMS  
**Volume of data in database:** PEDIN statistics for Australia wide:  
- total wells: 6,770  
- total surveys: 3,260  
- BMR holes: 1,785  
- seismic: 1,739  
- PSSA: 713  
- PSSA: 1,079  
- PSLA: 813  
- PSLA: 802  
**Output products:** Flexible, depending on application  
**Availability of data:** Parts are confidential  
**Documentation:** BMR Research Symposium 1989  
**Comments:** Data is routinely compiled from three sources: basic drilling and geophysical data collected by BMR staff; detailed information from PSSA and PSLA company reports; and information arising from BMR assessments of petroleum resources.  
**Contact name:** Sandy Radke  
  Telephone: (06) 249 9512  
**Information current to:** 1989
2.8 MINLOC

**Database name:** Mineral Location Database  
**Acronym:** MINLOC  
**Database type/status:** source / active  
**Description:** Development of MINLOC commenced in July 1989. Since then data for some 8,000 mineral occurrences and deposit locations have been compiled and entered. The data are stored in Oracle tables on BMR's DG MV 20000 mainframe computer and may be accessed by DG users on-line. Menus help users display and report data on screen, print reports, and plot maps using MAPDAT.  
**Subject coverage:** Identification and location (geographical coordinates, map sheet names and numbers) of Australian mineral occurrences and deposits, the commodities (if any) of economic interest known to be associated with them, method and accuracy of location, and data source reference details.  
**Geographical coverage:** Areas covered so far include Arunta, Tennant Creek, Mt Isa, East Alligator River, Kalgoorlie, Pine Creek, and Georgetown. Will include Cape York, Atherton, Kimberley and Claremont 1:100 000 sheets. Eventual coverage Australia wide.  
**Keywords:** Name of occurrence / latitude / longitude / commodity / legend description / sheet area / sheet number / scale of source map / bibliographic information  
**Database system:** Computerised, ORACLE DBMS  
**Volume of data in database:** 8,000 mineral occurrences  
**Output products:** May be passed to MAPDAT for plotting. On-line access to BMR users, hard copy reports, diskettes.  
**Availability of data:** Internally available; diskettes and hard copy reports available to public.  
**Cost of data:** (External to BMR) Pricing based on 50c/data point.  
**Documentation:** Data guide, user guide, E-R diagram  
**Contact name:** Brian Elliott  
**Telephone:** (06) 249 9502  
**Information current to:** June 1990
2.9 REGOLITH

**Database name:** Regolith Terrain Database

**Acronym:** RTMAP

**Database type/status:** source / underdevelopment

**Description:** This database will record attributes of both regolith and terrain for areas mapped by BMR. It is planned this will be a national inventory of the Australian regolith.

**Subject coverage:** regolith terrain mapping unit / field site

**Geographical coverage:** Australia wide

**Keywords:** Landform unit / regolith landform / site / zone / elevation / relief / terrain / vegetation / stratigraphic name / lithology / bedding structure / grid reference / slope / mineral / age / thickness / boundary / strength / colour / texture of zone material / cementation / type of bedding / sorting / weathering / drainage patterns / soil / tectonic structure / regolith terrain province / geomorphic province / regolith type

**Database system:** Computerised, ORACLE DBMS

**Documentation:** Preliminary documentation in progress.

**Comments:** It is intended to obtain information from other people and organisations working on the Australian regolith. Within the next 12 months it is hoped to link this database to the GIS.

**Contact name:** Colin Pain

Telephone: (06) 249 9469

**Information current to:** June 1990
2.10 STRUCTURAL GEOLOGY DATABASE

**Database name:** Structural Geology Database

**Description:** The aims of the structural geology database system are: (1) to assist geologists in accurately plotting structural information. All structural data can be plotted directly from the database without errors, onto a base map of any scale. Thus compilation plots can be drawn on photo-scale maps ready for drafting or overlaying geology; and (2) to enable digital manipulation of large amounts of structural information, to interface with user Geographic Information Systems, including PC-based systems (eg SPANS).

The database is designed to allow users the maximum degree of flexibility in the use of structural symbols and definition of structure types. Because a relational database is used, a combination of a structural type (eg cleavage) and a structural subtype (eg crenulation cleavage, slaty cleavage, solution cleavage etc) is appropriate to define any given structure. Each combination of structural type and subtypes can then be plotted with a different symbol on machine generated geological map.

Structural types and subtypes are user-definable. For example, the generic structure type "cleavage" may have associated several user-defined subtypes. For regional work, a single subtype of crenulation cleavage may be sufficient, whereas a more detailed study may wish to define rough, smooth, spaced, and close crenulations as different subtypes. Both users can be accommodated within the present database design. In a similar way, any structure can be subdivided according to its structural generation (first, second etc).

**Documentation:** BMR Research Symposium 1989

**Comments:** Structural data can be entered into the database in two ways.

**Contact name:** Peter Williams  Rod Ryburn  Dave Collins

**Telephone:**  (06) 249 9389  (06) 249 9605  (06) 249 9218

**Information current to:** 1989
2.11 OZCHRON

Database name: Geochronology Database  
Acronym: OZCHRON  
Database type/status: source / active  
Description: The Geochronology Database currently consists of 14 main tables surrounded by a number of "authority" tables. All authority tables are shared with the BMR PETCHEM database (see section 2.6).  
Subject coverage: samples and their locations / sample splits and their storage / Potassium-Argon results / Argon-Argon sample and mineral data / Argon-Argon analytical data and ages / Rubidium-Strontium analytical data / Rubidium-Strontium pooled results (ages) / Samarium-Neodymium analytical data / Samarium-Neodymium pooled results (ages) / Uranium-Lead Mineral analytical data / Uranium-Lead Mineral pooled results (ages) / Uranium-Lead Ion Microprobe data / Uranium-Lead Ion Microprobe pooled results (ages)  
Geographical coverage: At present only early to mid Proterozoic of Australia. Intended to include geographic regions as shared with PETCHEM database.  
Database system: Computerised, DG MV20000 using Oracle DBMS  
Documentation: Draft documentation of the "User's Guide to the OZCHRON Database" by R J Ryburn will be available as a BMR Record later this year.  
Contact name: Rod Page  
Tel: (06) 249 4261  
Rod Ryburn  
Tel: (06) 249 9605  
Information current to: June 1990

2.12 GREAT ARTESIAN BASIN

Database name: Great Artesian Basin Database  
Comments: Data contained on the North Queensland area has been downloaded from the Queensland Water Resources Commission Groundwater database onto the BMR Great Artesian Database. Information regarding this system can be found in section 3.2.8.  
Contact name: Rien Habermehl  
Telephone: (06) 249 9426  
Information current to: June 1990
2.13 GEOCHEMICAL SURVEY REFERENCE DATABASE

Database name: Geochemical Survey Reference Database
Database type/status: Reference / underdevelopment
Subject coverage: Area (km²) / locality / target / sample type / sample density / element analysed / laboratory used / methods / reference / data relinquished / data taken up / A to P / sample type - stream sed, soils, rock chip, water / airborne geophysics
Comments: Low priority database, requested for use by John Bain, Greg Ewers and Bruce Cruikshank
Contact name: Brian Elliott Tel: (06) 249 9502
Information current to: June 1990

2.14 STREAMCHEM

Acronym: STREAMCHEM
Database type/status: Source / underdevelopment
Subject coverage: Region / 1:100 000 map / date sampled / AMG / latitude / longitude / size fraction / stream flow / analytical method / basin lithology / up to 45 element values (ppm & ppb)
Comments: Database is still being established
Contact name: Bruce Cruikshank Tel: (06) 249 9293
Information current to: June 1990

2.15 NATIONAL GEOSCIENTIFIC COASTAL ZONE DATABASE

Database name: National Geoscientific Coastal Zone Database
Database type/status: Source / underdevelopment
Output products: Environmental geology maps of the coastal zone include data on biology, climate, tides, and sea-level
Comments: The ultimate aim is to produce an interactive geoscientific inventory of the entire coastline (1:1 000 000). Provide baseline proactive information to guide the sustainable development of the coastal zone and to assist in planning for impacts such as the effects of potential sea level rise. Includes information on mineral resources, age, structure, erosion, degradation assessments and pollution modelling
Contact name: Bob Burne Tel: (06) 249 9291
Information current to: June 1990
3 CURRENT DATABASE SITUATION IN OTHER RESEARCH AREAS

The present level of geoscientific information for the North Queensland area is quite scattered and scant. The source of information can be categorised into the following groups:

* Commonwealth Government Departments
* Queensland Government Departments and Statutory Authorities
* Universities
* CSIRO
* Exploration Companies
* Miscellaneous Organisations
* Bibliographic

Within each of the groups I have documented the name, address, and telephone number of the information officer/s or contact person for the respective organisation.

In some cases no information was found, however, these were included to indicate the degree of coverage of my survey. For each of the organisations / instrumentalities I have tried to address the following questions:

* What data is already available?
* In what form is the data available?
* What is the cost of acquiring the data?
* What time will be involved in acquiring and entering the data?

An assessment of the information found is made in Sections 4 and 5 of this report.
3.1 COMMONWEALTH GOVERNMENT DEPARTMENTS

3.1.1 DEPARTMENT OF THE ARTS, SPORT, THE ENVIRONMENT, TOURISM AND TERRITORIES (DASETT)

Address: Tobruk House
Moore Street, Canberra

Contact: Colin Steele (Lands Section)
Telephone: (06) 274 1836
Facsimile: (06) 274 1858

The Department of the Arts, Sport, the Environment, Tourism and Territories (DASETT) in conjunction with DPIE and the Queensland Government are preparing to conduct a joint Commonwealth/State land use study and plan to resolve future conflicts and protect the conservation value of the Cape York Peninsula.

Detailed plans are yet to be agreed amongst the participants of the study, but it is likely that the joint study will: (1) develop a comprehensive information base (including a GIS) on the resource, environmental, socio-economic and cultural values of the Peninsula; (2) undertake studies of specific issues (eg park requirements, Aboriginal tenure, grazing potential); and (3) assess future land use requirements and make recommendations on how these requirements could be met.
3.1.2 AUSTRALIAN HERITAGE COMMISSION

Address: Rhodes Place
Yarralumla ACT

Contact: Michael Mulvanie
Natural Section
Telephone: (06) 273 2042

The Australian Heritage Commission (AHC), which is under the jurisdiction of the Department of Arts, Sport, the Environment, Tourism and Territories (DASETT), contains files on approximately 40 places in the Cape York Peninsula area, which are on the register for the National Estate. Places on the file have mainly been nominated for their vegetation or fauna not for their geology (but in most instances reference is made to some aspect of the geology or landform).

Some of the large areas of Cape York that have been entered on the Register for the National Estate include:

(1) Great Barrier Reef and islands; (2) Bathurst Bay area - (comprising Clack, Stanley, Flinders, Blackwood, and Denham Islands, Cape Melville and parts of Bathurst Head); (3) Cooktown - Daintree / Windsor Tablelands area (comprising the area from Endeavour River National Park to the southeastern boundary of Cook Shire); (4) Wet tropical forests of North Queensland; and (5) north-east Cape York Peninsula (generally the tip of Cape York Peninsula, the entire Jardine River catchment, and the eastern side of Cape York Peninsula south to Coen).

AHC employs consultants working out of Townsville to provide nominations for Cape York (eg Gordon Claridge for Environment).
3.1.3 AUSTRALIAN SURVEYING AND LAND INFORMATION GROUP (AUSLIG)

**Address:** Belconnen Chambers  
Belconnen, ACT  
Telephone: (06) 252 7099

313 Adelaide Street  
Brisbane, Qld  
Telephone: (07) 233 7600

AUSLIG have produced a range of reports apart from their normal production of topo- and thematic mapping studies. Some of these are: (1) infrastructure report for the Department of Aboriginal Affairs looking at radio and telecommunications networks; (2) report on land ownership - property name, size, registered proprietor and reserves (over 100 ha), all contained on a database; (3) general mapping (eg topography, aerial photography, and satellite imagery) for the RAAF base at Weipa; (4) Lockhardt River area for development of roads and sewerage network; (5) Torres Strait - orthophotomaps for the development of wharfs and sewerage system; (6) cadastral survey and vegetation mapping - boundaries for industrial elements around the Cape; and (7) survey of old mines in the Coen district for the Australian Heritage Commission.
3.2 QUEENSLAND GOVERNMENT DEPARTMENTS AND AUTHORITIES

3.2.1 DEPARTMENT OF ENVIRONMENT AND HERITAGE

Address: 160 Ann Street  GPO Box 155
Brisbane, Qld  North Quay
Telephone: (07) 227 7111  Queensland 4002

Contact: Ross Hynes  Paul Sattler
Telephone: (07) 227 7804  Telephone: (07) 227 7810

Dennis Ross
Senior Computer Officer
Telephone: (07) 227 6211

The Department of Environment and Heritage (formerly the Department of Environment and Conservation) has been actively conducting research in the North Queensland area, and has also been collating data from other sources. This has resulted in the construction of two GIS networks for the North Queensland area. Information has come from such areas as the Queensland Department of Forestry, Queensland Department of Primary Industries, Queensland Museum, and many private industries and organisations.

The first GIS database contains information between Cairns and Townsville (the Wet Tropics). It contains over 500 000 plant location sites and has allowed for 30 tiers of information, such as, cadastre, geological patterns, vegetation, soils, distribution of plant and environment systems, location, roads, rivers, and telecommunications. This information has been analysed for correctness to a scale of 1:50 000. Each data set has documentation which contains information such as, the degree of accuracy of the data, its reliability and source, the limitations of each dataset, and the scale of the data.

At present there is a limitation on the access of the data in the GIS. As the custodians of the individual datasets have yet to define a code as to the use of the information, and whether it should be free or to be provided at a cost to users.
Above Cooktown is another dataset, which once again contains information from various government and non-government organisations. This information has been analysed at different scales, and contains some site specific as well as regional data. This dataset was combined with the 1:1 000 000 vegetation mapping work undertaken by John Clarkson from the Department of Primary Industries.

Information relating to these datasets will shortly be available in a publication produced by the Institute of Wet Tropical Studies.

3.2.2 DEPARTMENT OF FORESTRY

Address: Forestry House  
160 Mary Street  
Brisbane Qld  
Telephone: (07) 234 0111

Contact: Keith Jennings  
Land Use and Information Section  
Telephone: (07) 234 0156

The main study that has been undertaken by the Department of Forestry in the north Queensland area has been a management plan for the area’s inclusion in the World Heritage listing.

The Department is mainly responsible for timber resource information and quarries. It has produced 1:500 000 scale maps of that region which include information on rainforest distribution, tenures and other major features.
3.2.3 DEPARTMENT OF LANDS

Address: Sunmap Centre
Main Street
Woolloongabba
Telephone: (07) 896 3111

Contact: Graham Stanton
Technical Section
Telephone: (07) 896 3110

Airphoto Library
Telephone: (07) 896 3322

As the land tenure of the majority of Cape York Peninsula is some form of Crown leasehold or Reserve, the Department of Lands has not only interest in the area but is the responsible authority for administering the land on behalf of the government. Each Crown tenure was originally designed and subdivided by the Department, and even if the tenure is currently freehold, it is highly likely that it once was leasehold and had been managed by the Department. Regional offices in Cairns and Cloncurry represent the Department's interests in the Cape. The Cairns office manages the Cairns, Cooktown and Torres Land Agent Districts on the eastern side of the Cape, while the Cloncurry Office manages the Normanton Land Agent District on the western side.

A computerised register is maintained on all Crown Reserves and leases in the Cape area. The register contains brief information about Reserve type, local name, location, Trustees, use, lot/plan and leases. During 1986, the Department's Planning Branch prepared a computerised Land Information System for the Cape. Mapping data was collected and digitised for cadastre land tenure, vegetation, land capability, soils, land use and mining leases where information was available. The project was never quite completed although plans are presently underway to update and enhance data where required. The project was carried out in conjunction with the Australian key Centre in Land Information.
Studies in Brisbane.

The Department at present is represented on the Steering Committee for the current study managed by the Premier’s Department to investigate land use and potential in the Cape. This study should be of great assistance to further understanding of land systems.

Plans are under way for the Department to develop programs that will facilitate private sector advancement in the areas of land use and management. Information held on the States land will be made available to the public to promote conservation, scientific study and commercial development.

The Department of Geographic Information is now part of the Department of Lands and is referred to as the Division of Geographic Information. It is this division that has constructed a number of GIS networks. The information for these networks has been collected from other Queensland government departments, and has been merged with cadastre and satellite imagery data. This project was mainly conducted as a pilot study for future GIS networks.

Geological information contained on the GIS should be obtained from the Department of Resource Industries. Most of the other information should be obtainable from the individual departments.
3.2.4 DEPARTMENT OF THE PREMIER, ECONOMIC AND TRADE DEVELOPMENT

**Address:** PO Box 185  
North Quay  
Queensland 4002

**Contact:** Jan Bimrose  
Publication Section - Technical and Environment  
Telephone: (07) 224 4656

Mary Pickering  
Library  
Telephone: (07) 224 4688

The Department of the Premier, Economic and Trade Development has not undertaken much research in the way of regional studies in the north Queensland area. It has only completed local and specific studies, for example, development strategies for Cairns and Townsville. It will probably be involved in a coordinated land use study with the Department of Arts, Sport, the Environment, Tourism and Territories (DASETT). The most publicised and recent major study undertaken in the north Queensland area was the "Cape York Peninsula Resource Analysis".

**Cape York Peninsula Resource Analysis:**

This study undertaken by the Department (then called the Premiers Department) on the Cape York Peninsula has been documented in the following publications:

Connell Wagner Qld Pty Ltd, 279p. (Report commissioned by the Queensland Premiers Department).

Throughout these reports, information and data relating to resources and their use in Cape York Peninsula have been documented from published and unpublished Queensland and Commonwealth Government Departmental reports, Government Agencies, Shire Councils, Aboriginal and Torres Strait Islander communities, mining companies, papers from other sources, field inspections, and discussions with interest groups, and individuals.

From this commissioned study they located a significant amount of information on Cape York Peninsula, which was deemed unsuitable for the nature of the report. This has since been compiled into a bibliography of available source material on Cape York Peninsula, and has been documented in a separate volume.

Data collected throughout the study was collated and presented in the report and, where possible, presented in map form. This mapping is also available at the original 1:1 000 000 in a separate volume. Both of these volumes are due to be released shortly, and will be obtainable through the Department of Premiers, Economic and Trade Development.

Publications:

Useful publications held in the Premiers Department Library (which includes studies undertaken by the Premier’s Department):


Australian Department of National Development - Division of Industrial Development, 1950. Report on a proposal to extend the existing capacity in North Queensland for the production of hard or metallurgical coke.


Cameron McNamara, 1988. Socioeconomic study wet tropical rainforests north Queensland - Commissioned by Queensland Government Premiers Department. (Contents: Forestry; social and unemployment impact study - input output analysis; mining and resource compensation; tourism; infrastructure; hydroelectricity and rural industries).


Institution of Engineers Australia, 1987. Cape York International Spaceport: Part 1 of a feasibility study. Institution of Engineers Australia, 111p. (Report prepared under the auspices of the National Committee on space engineering of the IEA, for the coordinator general, Queensland Premiers Department).


3.2.5 DEPARTMENT OF PRIMARY INDUSTRIES

**Address:**
Department of Primary Industries
Meiers Road
Indooroopilly Qld 4068
Telephone: (07) 377 9311
Facsimile: (07) 371 8258
Telegraphic Address: 'QLDPRIMIND'

**Contacts:**

- **Land Resources Branch**
  - Mike Grundy
  - Telephone: (07) 377 9395
- **Water Resources Branch**
  - Rachael Barley
  - Telephone: (07) 224 2179
- **Soil Conservation**
  - Bruce Carey
  - Telephone: (07) 377 9390

**Land Resources Branch:**

The Queensland Department of Primary Industries, Land Resources Branch projects in the North Queensland area, fall into three categories. These are: (1) completed land resource assessment studies; (2) land resource assessments as yet unpublished or uncompleted; and (3) data enhancement with GIS.

1. **Completed land resource assessment studies**

Work completed prior to 1987 is detailed in the publication, "Land Resources Mapping Catalogue Volume 1" by P. H. Scott and J. A. Kelley (Land Resources Branch). Below is a list containing a summary of those projects relevant for North Queensland. Accompanying this list is a collection of maps which indicate the degree of coverage of each of these studies.
Area/keymap: 14/6.3 and 6.4 Mareeba - Dimbulah irrigation area
Theme/scale: Soils association / 1:50 000
QDPI / year: P1821, P1822 / 1975

Area/keymap: 17/1.4 Burdekin River basin study
Theme/scale: Landform zones / 1:2 500 000
QDPI / year: P1834 / 1976

Area/keymap: 18/6.2 Burdekin River basin study-sample areas 1 & 2
Theme/scale: Soils / 1:25 000
QDPI / year: P1835 / 1976

Area/keymap: 19/6.2 Burdekin River basin study-sample areas 3 & 4
Theme/scale: Soils / 1:25 000
QDPI / year: P1836 / 1976

Area/keymap: 20/6.3 Burdekin River basin study
Theme/scale: Land capability / 1:1 250 000
QDPI / year: P1837 / 1976

Area/keymap: 20/6.3 Burdekin River basin study
Theme/scale: Pastoral land capability / 1:1 250 000
QDPI / year: P1838 / 1976

Area/keymap: 20/6.3 Burdekin River basin study
Theme/scale: Total erosion / 1:1 250 000
QDPI / year: P1839 / 1976

Area/keymap: 22/6.3 Lower Burdekin (right bank), Burdekin River - Elliott River section
Theme/scale: Soils / 1:100 000
QDPI / year: P1847 / 1976

Area/keymap: 36/8.1 Part of Mayvale land system in the Gulf of Carpentaria region
Theme/scale: Soil associations / 1:250 000
QDPI / year: P1870 / 1974
Area/key.map: 41/6.1 Northern Burdekin region, Queensland
Theme/scale: Pastoral land capability / 1:1 000 000
QDPI / year: P1885 / 1977

Area/key.map: 41/6.1 Northern Burdekin region, Queensland
Theme/scale: Agricultural land capability / 1:1 000 000
QDPI / year: P1886 / 1977

Area/key.map: 49/6.1 Burdekin River project
Theme/scale: Land suitability / 1:250 000
QDPI / year: P1925 / 1978

Area/key.map: 52/6.3 Burdekin rural education centre
Theme/scale: Soils / 1:25 000
QDPI / year: P1933 / 1978

Area/key.map: 53/3.1 Mareeba shire
Theme/scale: Generalised geology / 1:1 500 000
QDPI / year: P1934 / 1978

Area/key.map: 53/3.1 Mareeba shire
Theme/scale: Climate and water resources / 1:1 500 000
QDPI / year: P1935 / 1978

Area/key.map: 53/3.1 Mareeba shire
Theme/scale: Soils / 1:1 500 000
QDPI / year: P1936 / 1978

Area/key.map: 55/6.4 Lower Burdekin (left bank), Barratta Creek - Haughton River area
Theme/scale: Soils / 1:100 000
QDPI / year: P1940 / 1979

Area/key.map: 75/6.5 Lower Burdekin (southern area), upper Barratta Creek pocket (reference area 1)
Theme/scale: Soils / 1:25 000
QDPI / year: P2079 / 1982
**Area/keymap:** 79/7.1 Special bauxite mining lease no 9 - Aurukun  
**Theme/scale:** Vegetation / 1:250 000  
**QDPI / year:** P2088 / 1982

**Area/keymap:** 82/6.2 Lower Burdekin, southern area  
**Theme/scale:** Soils / 1:100 000  
**QDPI / year:** P2212 / 1983

**Area/keymap:** 89/3.2 Northern Soil conservation zone,  
Atherton / Mareeba district  
**Theme/scale:** Land resource areas / 1:500 000  
**QDPI / year:** P2471 / 1984

**Area/keymap:** 89/3.2 Northern Soil conservation zone,  
Atherton / Mareeba district  
**Theme/scale:** Climate and climatic zones / 1:1 000 000  
**QDPI / year:** P2475 / 1984

**Area/keymap:** 92/6.2 Elliot River - Bowen area, north Qld  
**Theme/scale:** Soils / 1:100 000  
**QDPI / year:** P2530 / 1985

**Area/keymap:** 92/6.2 Elliot River - Bowen area, north Qld  
**Theme/scale:** Land suitability / 1:250 000  
**QDPI / year:** P2538 / 1985

**Area/keymap:** 96/6.2 Lower Herbert valley - land allocation study  
**Theme/scale:** Land suitability for sugar cane / 1:250 000  
**QDPI / year:** P2396 / 1983

**Area/keymap:** 97/6.4 Lower Herbert valley - land allocation study  
**Theme/scale:** Land resources and land suitability / 1:100 000  
**QDPI / year:** P2413 / 1984

**Area/keymap:** 117/7.2 Special bauxite mining lease no 9 (Aurukun),  
Coconut Creek mine site  
**Theme/scale:** Vegetation / 1:50 000  
**QDPI / year:** P2089 / 1982
Since the report "Land Resources Mapping Catalogue Volume 1", three studies have been completed they are the following:

Grundy, M. J., and Bryde, N. J., 1989. Land Resources of the Einasleigh-Atherton Dry Tropics. Queensland Department of Primary Industries Project Report Q089004 (1:250 000 covering 3.5 million ha)

Grundy, M. J., and Bryde, N. J., 1989. Upper Herbert River-Blunder Creek Irrigation Feasibility Study. Queensland Department of Primary Industries Project Report Q089003. (1:100 000 covering 50 000 ha)

Wilson, P. R., and Steele, R. J., 1988. North Queensland Tea Land Suitability Study. Queensland Department of Primary Industries Bulletin QB88006. (Covers much of the wetter coastal and range environments)
2. Land Resource assessments as yet unpublished or uncompleted

There are a number of studies on the wet tropical coast nearing completion. This is co-operative work with CSIRO Division of Soils and will shortly result in 1:50 000 mapping of land suitability from Ingham to Mossman taking in all potential arable land. (They have noted that this mapping has highlighted deficiencies in existing geological mapping particularly with respect to fans, and the officers involved in the study would be prepared to discuss the issues raised).

There have also been two high intensity studies on research stations near Innisfail. In the drier country, the Ravenshoe 1:100 000 sheet soils and land suitability study, will be published this year as will less intensive studies of Lakeland Downs and the Department's research cattle station, Batavia Downs on Cape York Peninsula. As well, the Department's Botany Branch is currently mapping Cape York Peninsula for vegetation communities at 1:250 000. The Land Resources Branch of the Department is likely to send a team to assess the reliability and usefulness of currently available information for Cape York Peninsula land use planning within the year.

3. Data enhancement with GIS

All work commenced since 1986 has used a GIS approach with a consequent increase in flexibility and applicability of the work. Mike Grundy is currently responsible for a five year project which aims at converting all of the older work in soils and land resource assessment to GIS. This will include studies by CSIRO and other outside bodies. In parallel with our studies, one important result of the Department’s work, will be an increased capability to integrate and analyse the effects of land use practices on the environment of the region.

The Department’s stated aim on acquiring adequate information on land capability in the North Queensland area, has required obtaining information on soils, vegetation and land use. In association with these studies, the Department has established
computerised databases on soil morphology, soil chemistry and unique map areas (UMA).

The morphology database has site and point data relating to the soil landform and vegetation. The soil chemistry database has the results of a range of detailed analyses of selected, representative profiles. The UMA database lists particular attributes of each individual parcel of land and is the basis of the Branch resource coverage in GIS. There is no on-line access to this data as yet. Data can be made available through requests in writing to the Director, Land Resources Branch.

**Water Resources Branch:**

The Water Resources Branch is now incorporated with the Queensland Water Resources Commission and contains an extensive database on water bore information. Data collected includes: stream flow records, catchment location, water storage, surface and underground water resources, water chemistry and water quality. At present, the two organisations are operating as separate entities.
3.2.6 DEPARTMENT OF RESOURCE INDUSTRIES

Contact: Gerhard Hofmann
Manager, NQ Project
Telephone: (07) 237 1473

Cheryl Schmidt
Database Administrator
Telephone: (07) 237 1437

Phil Dash
Metallogenic Studies
Telephone: (07) 237 1411

Paul Donovan
Core Library
Telephone: (07) 263 6833

Bob Bultitude
Geological Mapping
Telephone: (07) 237 1503

John Martin
Min Resource Assessment
Telephone: (07) 237 1604

Paul Balfe
COSRAD
Telephone: (07) 237 1477

Deanne Dorn
Librarian
Telephone: (07) 237 1442

Core Library:

Material contained in the Core Library is catalogued by bore hole name. It is not possible to conduct a search for core contained within a given area, for example by map sheet name. It is necessary to know the name of the core as they are not accessible by computer and not all are indicated on geological maps. The Core Library also stores geophysical data and magnetic tapes.

Databases:

The Department of Resource Industries, formerly the Department of Mines, has a number of computer data bases (QERDB, REGMAP, AGSQ, LINDAT, SURVMAP, SEISSURV, SPLOC, Company Report Data, Company Report Bibliographic System, MINOCC, COALFILE) which are available for access by the mining industry and the general public. Information relating to the availability of data, costs and contact name, is included.
**Database name:** Aerial Geophysical Survey Database  
**Acronym:** AGSQ  
**Database type/status:** Reference / active  
**Description:** The AGSQ database provides an inventory of all aerial surveys in Queensland and documents geographic and descriptive information about the surveys, particularly archived surveys. The database is being expanded to include surveys conducted prior to 1983. The database is used to identify what aerial surveys have been conducted on any Authority to Prospect, 1:100 000 or 1:250 000 sheet area in the state and whether the located data tape is available for reprocessing.  
**Subject coverage:** Inventory of analogue and digital data from aerial geophysical surveys of Authorities to Prospect (mainly mineral)  
**Time coverage:** 1983 to present  
**Keywords:** Geophysical surveys / aerial geophysical surveys / aerial magnetic surveys / aerial radioactivity surveys / aerial EM surveys / mineral exploration / geophysical data  
**Database system:** Computerised, floppy disk, dBase III, NECAPC 4  
**Volume of data in database:** Approx 215 surveys  
**Output products:** Interogation list  
**Availability of data:** Open File hard copy listing, client defined search parameters, or data on IBM formatted 5.25 inch floppy disk, dBase III + format file.  
**Cost of data:** Nil for hard copy listings, or client supplied floppy disk.  
**Comments:** Aerial geophysical surveys flown in the state and data submitted to the department in digital form by exploration companies. Primarily mineral company oriented but there is some petroleum exploration data. Geophysical methods involved are magnetics, radiometrics, and EM.  
**Contact name:** Richie Huber  
Geological Mapping  
Telephone: (07) 237 1511  
**Information current to:** March 1990
Database name: Air Photo Collection Index
Database type/status: Source / active
Subject coverage: Listing of aerial photos from 1:250 000
Geographical coverage: Queensland
Time coverage: 1935 to present
Keywords: Aerial photographs indexes
Database system: Computerised, Foxbase database on IBM PC
Volume of data in database: 614+ air photo sets
Availability of data: Internal only
Contact name: M Thornton
Geological Mapping
Telephone: (07) 237 1517
Information current to: February 1990

Database name: Alphabetical Listing of Seismic Surveys
Database type/status: Source / active
Subject coverage: operator / survey name / commencement year / completion year / line km / open file reports / confidential reports (any basic data available) / A to P / basin breakdown (18 basins)
Time coverage: 1927 to present
Keywords: geophysical surveys / seismic surveys / documentation
Database system: Computerised, magnetic disk, DBXL, IBM PC
Volume of data in database: 780 surveys
Output products: Printouts
Availability of data: On request
Documentation: BMR Record 1989/28, 94-112
Comments: All of data in this file will be included in the Metallogenic Studies LINDAT Database, 1:100 000 sheets
Contact name: V Suchocki
Petroleum Resources Assessment and Development
Telephone: (07) 237 1483
Information current to: March 1990
Database name: Coal Exploratory Borehole Data Base
Acronym: COALFILE
Database type/status: Source / active

Description: The COALFILE database was developed by the Coal Section of the then Department of Mines in 1980 to provide for future bulk computer processing and management of coal exploration borehole data gathered from the Department’s regional coal resource assessment programmes.

Mnemonic codes of from one to four characters are used to describe the required lithological features on a formatted 80 column coding sheet. The system runs on an IBM compatible PC.

Programs and data files making up COALFILE are accessed by use of a menu. Data validation routines are included in the system. Output may be generated directly as decoded English logs or, after additional processing, in graphic form as coal seam sections (at any scale), and as contoured or perspective diagrams of data, including depth of weathering, depth of seam, and seam thickness. This output is generally included in Departmental coal assessment reports including borelogs presented in a standard microfiche form. Data from approximately 2000 boreholes drilled since 1980 may be accessed. The system has been documented with both a users manual (GSQ Record 1983/17) and a procedures manual (GSQ Record 1983/53) available.

Subject coverage: Coal Exploratory borehole data - borehole name, county or area, bore hole number
Geographical coverage: Mainly Bowen basin
Time coverage: 1981 to present
Keywords: coal exploration / drilling / sedimentary basins / geological logs / coal seams / Bowen Basin / Queensland
Database system: Computerised, magnetic disk/tape, special purpose DBMS, IBM PC AT
Volume of data in database: 1 200 boreholes
Output products: Lithological logs, coal seam detail sections, microfiche of geological logs, contour maps at various scales
Availability of data: Internal use only, but external enquiries serviced on specific request (Data are available in microfiche form or as bulk data in ASCII format on magnetic tape)
Cost of data: Cost of materials only

Documentation: GSQ Record 1983/17 (database description and users manual); GSQ Record 1983/53 (procedures manual)

Comments: Replaces earlier manual system (Bore logs)

Contact name: Paul Balfe, Subprogram Manager
(COSRAD) Coal and Oil Shale Resources Assessment
Development Sub-program
Telephone: (07) 237 1477

Information current to: April 1990

Database name: Company Report Collection Index / Queensland Exploration Reports Index

Acronym: QERI

Database type/status: Reference / active

Description: Companies holding Authorities to Prospect in Queensland are required to provide reports to the Minister containing full particulars and results of the prospecting operations carried out by or for the company in the area of tenure. Reports which are required to be submitted six-monthly from the commencement date or on relinquishment of all or part of the Authority to Prospect, form the Company Report System.

In association with other data files, output lists of all non-confidential reports available for viewing are produced, as well as lists of company report numbers and Authority to Prospect numbers for particular 1:100 000 map sheet indexes. The database may also be searched for particular words within the title by a free text search and for activity by a particular company by the use of encoded company names.

Subject coverage: Mine / prospect / deposit name / locality / well name / company name / authority to prospect number / map sheet reference / CR number

Time coverage: 1930 to present

Keywords: Mineral exploration / coal exploration / petroleum exploration / company reports / exploration licences / mines

Database system: Computerised, Osborne 386 using BRS text retrieval system on ETHERNET

Volume of data in database: 21 000 references to company reports

Output products: Online query facility. Hard copy of selected
reports on request. Lists of non-confidential company reports produced monthly for inclusion in the Queensland Government Mining Journal. Disk produced periodically for AMF to input to AESIS.

**Availability of data:** Accessible to CIS staff and other staff using BRS search on the ETHERNET. The public have access via a terminal on the counter

**Documentation:** Contact the Technical Information Officer

**Comments:** System used extensively by staff and public. Only the index to Open files can be viewed by the public, staff can view both open and confidential company reports

**Contact name:** Donna Turner
- Technical Information Officer
- Central Information Service
- Telephone: (07) 237 1431

**Information current to:** April 1990

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**Database name:** Data Summary Sheets of Contour Plots

**Database type/status:** Reference

**Geographical coverage:** Queensland sedimentary basins

**Time coverage:** 1950 to 1989

**Database system:** Computerised, ORACLE, ARCINFO, PRIME

**Volume of data in database:**

**Output products:** Data summary sheets, contour plots (bores and coal analysis), graphic output

**Availability of data:** Internal use - external enquiries serviced on request

**Documentation:** In preparation

**Comments:** Includes data also available on several earlier computerised and manual systems (COALFILE, Borehole card system, bore logs, coal assay register, survey database, coal petrological data card index)

**Contact name:** Paul Balfe
- (COSRAD) Coal and Oil Shale Resources Assessment Development Sub-program
- Telephone: (07) 237 1477

**Information current to:** April 1990
Database name: Geophysical Survey Data

Acronyms: SEISSURV, SURVMAP, LINDAT, SPLOC

Database type/status: Source / active

Description: Under terms of the Petroleum Regulations 1966 exploration companies are required to submit to the Department basic data associated with geophysical surveys carried out on Authorities to Prospect. The above databases relate to seismic reflection sections and shot point location data submitted in accordance with the regulations. The databases provide information about petroleum exploration in the state and access to data in the following ways:

SEISSURV - provides basic information about seismic surveys in the state. Inventory, completion date, company report reference, total line kms, line kms per basin. Contains approx 790 surveys.

SURVMAP - relates seismic survey to 1:100 000 sheets. Contains approx 790 surveys.

LINDAT - provides storage/retrieval information about each seismic line section and shot point map stored by the department for industry reference. Contains approximately 31 000 sections.

SPLOC - The database contains geographic information on shot point location data for each seismic survey in the state.

Subject coverage: A to P / geographic location / type of material / year of survey / company / contractor

Time coverage: 1950 to present

Keywords: geophysical surveys / seismic surveys / geophysical data / archives

Database system: computerised, magnetic disk/tape, special purpose DBMS, PDP 11/73

Volume of data in database: 48 000 items

Output products: mainly listings, printouts

Availability of data: SPLOC data not yet available. Remainder available as hard copy listings based on client defined search parameters or on 5.25 inch floppy disks in dBase III + format files.

Cost of data: Nil for hard copy listings, or client supplies floppy disk.

Comments: All four databases are being intergrated into one petroleum exploration geophysical database. The basic geophysical data are: (1) analogue magnetic tapes; (2) digital
magnetic tapes; and (3) paper support data systems

**Contact name:** Richie Huber
Geophysical Services
Telephone: (07) 237 1511

**P Donovan**
Drilling & field services
Telephone: (07) 263 6833

**Information current to:** 1990

**Database name:** Groundwater Database

**Database type/status:** Source / active

**Subject coverage:** Unique reference number assigned to each bore, QWRC registered number, 1:1 000 000 / 1:250 000 / 1:100 000 / 1:50 000 sheet area

**Geographical coverage:** Queensland

**Time coverage:** 1890 to present

**Keywords:** Groundwater / hydrogeological data / water chemistry / water wells / drilling / stratigraphy / drill holes

**Database system:** Computerised, magnetic disk, special purpose DBMS, UNIVAC 1100/82

**Volume of data in database:** 14 500 bores

**Output products:** Comprehensive bore listing, listings and tables of water chemistry data, and other products as described in GSQ Record 1987/34

**Availability of data:** Internal use only, data available to public on request

**Documentation:** GSQ Record 1985/47 - Systems description
GSQ Record 1987/34 - Programs

**Comments:** Supersedes WATRMAS database which no longer exists in any usable form. This database has been included in the NRIC FINDAR system

**Contact name:** T Noon / D Genn
Basin Studies
Telephone: (07) 237 1492

**Information current to:** March 1990
**Database name:** Herberton Mining District - ARDM Data  
**Database type/status:** Reference / incomplete  
**Subject coverage:** Mine name / Warden’s District / commodity / locality / period of production / ore / metal / depth worked  
**Geographical coverage:** Herberton Mining District  
**Time coverage:** 1883 to 1981  
**Keywords:** Mines / indexes / mineral deposits  
**Database system:** Computerised, Foxbase PC  
**Availability of data:** Accessible to Metallogenic staff and other staff on request  
**Comments:** Index gives reference to ARDM year and page number for mines within Warden’s Districts. System not complete either geographically or chronologically. (NB ARDM = Annual Report for the Department of Mines)  
**Contact name:** P D Garrad  
Metallogenic Studies  
Telephone: (07) 237 1421  
**Information current to:** April 1990

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**Database name:** Mareeba Mining District - ARDM Data  
**Database type/status:** Source / closed  
**Subject coverage:** Commodity / locality / 1:100 000 sheet  
**Geographical coverage:** Mareeba Mining District  
**Time coverage:** 1949 to 1980  
**Keywords:** Occurrence / mineral deposits / production  
**Database system:** Computerised, floppy disk, dBase III, IBM PC XT  
**Volume of data in database:** 330 entries  
**Output products:** Computer printouts or hard copy  
**Availability of data:** Open file copy will be placed in QDRI Library upon completion of accompanying maps  
**Comments:** Production figures and development information relating to mines and mineral occurrences within the Mareeba area  
**Contact name:** M Hayward  
Mineral Resource Assessment and Development  
Telephone: (07) 237 1639  
**Information current to:** March 1988
Database name: Mineral Occurrences - Atherton 1:100 000
Database type/status: Source / under development
Subject coverage: All known mines, prospects and mineral occurrences within the boundaries of the Atherton 1:100 000 sheet area
Geographical coverage: Atherton 1:100 000 sheet area
Time coverage: 1880 to 1989
Keywords: mineral deposits / mineral occurrence / mineral exploration / metallogenesis / mineral resources / exploration potential / Atherton
Database system: Computerised, disk, Foxbase 386PC
Volume of data in database: 2 000 records
Output products: Map, data sheets, commodity listings, floppy disk
Availability of data: Available internally on request
Comments: Indexed by name, AMG grid reference and searchable on all fields
Documentation: DOM Record
Contact name: Phil Dash
Metallogenic Studies
Telephone: (07) 237 1411
Information current to: 1990

Database name: Mineral Occurrences - Bellevue 1:100 000
Database type/status: Source / under development
Subject coverage: All known mines, prospects and mineral occurrences within the boundaries of the Bellevue 1:100 000 Sheet area
Geographical coverage: Bellevue 1:100 000 Sheet area
Time coverage: 1880 to 1989
Keywords: Mineral deposits / mineral occurrences / mineral exploration / metallogenesis / mineral resources / exploration potential / Bellevue
Database system: Computerised, disk, Foxbase 386PC
Volume of data in database: 90 records
Output products: Maps, data sheets, commodity listings
Availability of data: Internally available at present
Documentation: GSQ Record 1988/5
Comments: Indexed by name, AMG grid reference and searchable on all fields

Contact name: Leslie Culpeper
Metallogenic Studies
Telephone: (07) 237 1410

Information current to: April 1990

Database name: Mineral Occurrences - Bullock Creek 1:100 000
Database type/status: Source / active
Subject coverage: All known mines, prospects and mineral occurrences / AMG grid reference
Geographical coverage: Bullock Creek 1:100 000 sheet area
Time coverage: 1880 to December 1986
Keywords: mineral deposits / metallogenesis / exploration potential / mineral resources / Bullock Creek / mineral exploration / mineral occurrence
Database system: Computerised, disk, dBase III, IBM PCXT
Volume of data in database: 220 mineral occurrences
Output products: map, data sheets, commodity listings
Availability of data: Open File
Documentation: GSQ Record 1985/27 (Explanatory Notes)
GSQ Record 1988/12

Comments: All known mines, prospects and mineral occurrences within the Bullock 1:100 000 sheet area

Contact name: Jimmy Lam
Metallogenic Studies
Telephone: (07) 237 1412

Information current to: April 1990
Database name: Mineral Occurrences - Chillagoe 1:100 000
Database type/status: Source / active
Subject coverage: mineral occurrence / AMG grid reference
Geographical coverage: Chillagoe 1:100 000
Time coverage: 1880 to 1987
Keywords: Mineral deposits / metallogenesis / mineral occurrence / exploration potential / mineral exploration / Chillagoe / mineral resources
Database system: Computerised, dBase file on PC
Volume of data in database: 389 mineral occurrences
Output products: Map, data sheets, commodity lists, floppy disk
Availability of data: Open File
Documentation: Department of Mines Record 1988/17
Contact name: Philip Dash
    Metallogenic Studies
    Telephone: (07) 237 1411
Information current to: April 1990

Database name: Mineral Occurrences - Maytown 1:100 000
Database type/status: Source / under development
Subject coverage: All known mines, prospects and mineral occurrences within the boundaries of the Maytown 1:100 000 sheet
Geographical coverage: Maytown 1:100 000 sheet area
Time coverage: 1880 to 1989
Keywords: Mineral deposits / mineral occurrence / metallogenesis / mineral exploration / mineral resources / exploration potential
Database system: Computerised, disk, Foxbase 386 PC
Volume of data in database: 400 records
Output products: Map, data sheets, commodity lists, floppy disk
Availability of data: Available internally on request
Documentation: DOM Record
Comments: Indexed by name, AMG grid reference and searchable on all fields
Contact name: Jim Lam
    Metallogenic Studies
    Telephone: (07) 237 1412
Information current to: 1990
Database name: Mineral Occurrences - Mungana 1:100 000

Database type/status: Source / active

Subject coverage: Mineral occurrence name / AMG grid ref.

Geographical coverage: Mungana 1:100 000 sheet map

Time coverage: 1880 to December 1985

Keywords: Mineral deposits / mineral occurrence / metallogenesis / exploration potential / mineral exploration / mineral resources

Database system: Computerised, Disk, dBase III, PC

Volume of data in database: 374 mineral occurrences

Output products: GSQ Record consisting of a map, data sheets and commodity listings

Availability of data: Open File

Documentation: GSQ Record 1987/29

Contact name: Philip Dash

Metallogenic Studies

Telephone: (07) 237 1411

Information current to: April 1990

Database name: Mineral Occurrences - Ravenshoe 1:100 000

Database type/status: Source / under development

Subject coverage: All known mines, prospects and mineral occurrences within the boundaries of the Ravenshoe sheet area

Geographical coverage: Ravenshoe 1:100 000 sheet area

Time coverage: 1880 to 1989

Keywords: Mineral deposits / mineral occurrence / metallogenesis / mineral exploration / mineral resources / exploration potential

Database system: Computerised, Disk Foxbase 386 PC

Volume of data in database: 1 000 records

Output products: Map, data sheets, commodity lists, floppy disk

Availability of data: Available internally on request

Documentation: DOM Record

Comments: Indexed by name, AMG grid reference and searchable on all fields

Contact name: Fred Bruvel

Metallogenic Studies

Telephone: (07) 237 1411

Information current to: April 1990
Database name: Mineral Producers List
Database type/status: Source / active
Subject coverage: Lists of mineral producers
Time coverage: to 1988
Keywords: Mineral industry / company directories
Database system: Computerised, also manual lists
Volume of data in database: 200 records per list
Output products: List of names etc
Availability of data: Printed copies available from Central Information Services
Comments: List based on latest annual census
Contact name: K McGreevy
Resource Economics
Telephone: (07) 237 1408
Information current to: March 1988

Database name: Mineral Production Statistics - Qtly
Database type/status: Source / active
Subject coverage: Mineral production statistics (name of producer, mineral type, type of mine)
Keywords: Mineral industry / mineral statistics / companies / production / coal statistics / petroleum statistics
Database system: Computerised
Volume of data in database: 150 records/qtr
Output products: Variations based on mineral type, name of producer, type of mine, warden district
Availability of data: Output is available through the Statistics Officer, confidentiality problems do exist
Documentation: Definitions and source/coverage descriptions are available
Comments: Collection started in September 1983 and held on manual tabs until June 1984 when collection was computerised
Contact name: K McGreevy
Resource Economics
Telephone: (07) 237 1408
Information current to: March 1988
**Database name:**  Mineral Production Statistics - Annual  
**Database type/status:**  Source / active  
**Subject coverage:**  Mineral production statistics (name of producer, mineral type, type of mine)  
**Time coverage:**  1982 to present  
**Keywords:**  Mineral industry / mineral statistics / companies / production / coal statistics / petroleum statistics  
**Database system:**  Computerised  
**Volume of data in database:**  1 000 active forms per year  
**Output products:**  Variations based on mineral type, name of producer, type of mine, year, district  
**Availability of data:**  Output is available through the Statistics Officer, some confidentiality problems do exist  
**Documentation:**  Definitions and source/coverage data available  
**Comments:**  Commenced in present form in 1982/83 on manual basis and computerised in 1984/85  
**Contact name:**  K McGreevy  
Resource Economics  
Telephone: (07) 237 1408  
**Information current to:**  March 1988

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**Database name:**  Mineral Project Database  
**Acronym:**  MPROJDB  
**Database type/status:**  Source / active  
**Subject coverage:**  Project no / material / district  
**Time coverage:**  October 1986 to present  
**Keywords:**  Mineral resources / mineral industry / mine development / government policy / mineral reserves / production  
**Database system:**  Computer, PRIME 4050, ORACLE (Subset of MTDB)  
**Volume of data in database:**  100 projects  
**Output products:**  Project report  
**Availability of data:**  Mineral development access internally. Selected report information for public use. Hardcopy in Library.  
**Contact name:**  Paul Southgate  
Project Officer  
Mineral Resources Assessment and Development  
Telephone: (07) 237 1593  
**Information current to:**  March 1988
**Database name:** Queensland Coal and Oil Shale Database  
**Acronym:** QCOS  
**Database type/status:** Source / under development  
**Subject coverage:** Geological data / coal seam intersections / coal analysis / summary geological logs / coal petrology / geographic location / hole number (from Departmental Drillholes)  
**Geographical coverage:** Queensland  
**Time coverage:** 1950 to present  
**Keywords:** Geological data / coal seam intersections / coal analysis  
**Database system:** Computerised, IBM PC/AT  
**Volume of data in database:** 8,000 borehole locations, summary geological logs, coal analyses, coal petrology  
**Availability of data:** Internal and external (on completion)  
**Comments:** Incorporates data from other, mostly manual databases  
**Contact name:** Paul Balfe  
(COSRAD) Coal and Oil Shale Resources Assessment Development Sub-program  
Telephone: (07) 237 1477  
**Information current to:** April 1990

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**Database name:** Queensland Mineral Occurrence Database  
**Acronym:** MINOCC  
**Database type/status:** Source / active  
**Description:** This database was designed to assist the mining and exploration industry by (1) presenting mineral occurrence data; (2) delineation of metallogenic provinces; (3) recognition of potential ore-bearing districts; and (4) progressively building a comprehensive Mineral Resource Data Base for Queensland.

Data collation is carried out on a standardised Mineral Occurrence Data Sheet, where information has been broadly grouped into location, production, mining and exploration history, geological setting and other relevant characteristics. Data are stored in a dBase type of file structure and managed by MINOCC operating under a Foxbase Multi-user licence. Its main benefits are reported to include: (1) standardisation of mineral occurrence reporting and data gathering; (2) formatted pre-specified standard reports; (3) locality plots for mineral
occurrences; (4) improved interpretative facility through enhanced selective retrieval and graphical presentation; (5) facility for rapid change of data manipulation and interpretation with advanced technology; and (6) fast dissemination of information to users.

Data has sometimes been published as a part of the Geological Survey of Queensland Record series. The data are also available on magnetic media and in this form are far more flexible and can be searched over and over to suit any new mineralisation models. The software is provided free with datasets in order to encourage the use of standardised data collection.

This database is transferreble between the BMR's MINDEP database and has been recently updated by Friedrich von Gnielinski to include additional information for the North Queensland area. 

Subject coverage: Mines / prospects / mineral occurrences / location / status / commodity / geological setting / deposit characteristics / ore mineralogy / exploration / production

Geographical coverage: Queensland

Time coverage: 1850 to 1988

Keywords: mineral deposits / mineral occurrence / metallogenesis / exploration potential / mineral exploration / mineral resources

Database system: Computerised, Foxbase / PC

Volume of data in database: Approx. 1 350 mineral occurrences

Output products: Printouts, maps, original data on data sheets, reports (GSQ Records)

Availability of data: Internal staff use only at this stage, will be available to the public in future. 5.25 inch floppy disk 360 kb; 3.5 inch disk 720 kb

Cost of data: $250 per 1:100 000 sheet area

Documentation: GSQ Record 1985/27 and explanatory notes to the MINOCC database.

Contact name: Phil Dash
Metallogenic Studies Sub-program
Telephone: (07) 237 1411

Information current to: April 1990
Database name: Queensland Mineral Resources Inventory
Acronym: MINRI
Database type/status: Source / under development
Subject coverage: Deposit or prospect name
Geographical coverage: Queensland
Time coverage: current
Keywords: Mineral exploration / mineral resources / mineral deposits / resource assessment
Database system: Computerised, under development on PC ORACLE (also manual - typed tables)
Volume of data in database: 327 pages of tables
Output products: Photocopies or selected data can be extracted for specific enquiries as required. Will be available online for enquiries later in 1990.
Availability of data: Confidential, internal use only
Documentation: GSQ Record 1987/38
Comments: Presents comprehensive information on mineral resource assessments and data on exploration results of potential economic interest for all commodities other than coal, oil shale, petroleum, limestone, and silica
Contact name: John Martin
Mineral Resources Assessment and Development
Telephone: (07) 237 1604
Information current to: March 1990

Database name: Queensland Petroleum Exploration Database
Acronym: QPED
Database type/status: Source / active
Description: This database currently contains data relating to 1270 petroleum wells, 354 stratigraphic bores, 150 coal exploration bores, and 170 water bores from throughout the State. Data from newly drilled wells become available when the relevant well completion report is placed on open file. Departmental bore data are added on completion of drilling. Included in QERDB are well location, status, hydrocarbon indications, drill stem tests, and reference to related analytical reports. In addition, the database contains Departmental interpretations of the geology of sequences encountered.
For major basin analysis investigations a number of commercial PC based software packages are utilised to compile and maintain data resources. Data files are then stripped by custom designed programs to enable graphics presentations to be prepared on the Department’s and CITEC’S mainframe computers.

**Subject coverage:** Petroleum exploration wells / stratigraphic bores / core cuttings studies (including selected coal and water bores) / geographic parameters / sedimentary basins / location / status / hydrocarbon indications / drill stem tests / stratigraphy / source and reservoir characteristics / mineralogy

**Geographical coverage:** Queensland

**Time coverage:** 1900 to present

**Keywords:** Exploratory wells / stratigraphic wells / water wells / drilling / stratigraphic drilling / petroleum exploration / oil wells / geology / Queensland / maps / indexes

**Database system:** Computerised, Oracle Prime 9750 (DRI), Mapper Sperry 1100/92 (CITEC)

**Volume of data in database:** 2 000 wells and bores

**Output products:** Lists, maps, reports, com fiche, mag tape

**Availability of data:** Restricted / hard copy, microfiche, 9-track magnetic tape

**Cost of data:** Hard copy - $100, microfiche - $100, 9-track magnetic tape $500

Qld Government Mining Journal, 77, 37-45
BMR Record 1989/28, 94-112
Database is included in the NRIC Findar system

**Comments:** Data includes location, status, hydrocarbon indications, drill stem tests, stratigraphy, source and reservoir rock characteristics, and mineralogy. Very similar to BMR’s PEDIN database

**Contact name:** Tony Noon / B John
Basin Studies Sub-program
Telephone: (07) 237 1495

**Information current to:** April 1990
Database name: Regional Mapping Field Data Management System
Acronym: REGMAP
Description: REGMAP is a computerised geological field data management system that makes field data readily available for reference, analysis, and incorporation into maps and reports not only by today's geologists, but also by future generations of researchers.

REGMAP uses a printed sheet or notebook for entry in the field. The first part of each page has fixed fields for the site description (field number, grid reference, formation name, etc), followed by several lines for structural data, also with fixed fields (data type, dip, facing, etc). The second part of the page has a more flexible format and consists of a series of records, each containing three fields: an optional "rock class", a "data type", and a "description" field. The "data type" field is the key to the flexibility of the system, avoiding the restrictions imposed by fixed fields, or "tick-the-box" forms. The geologist decides what types of information need to be recorded, aided by a prompt list of common data types and their four letter abbreviations (COLR, GNSZ, COMP, etc, including a REM data type for miscellaneous remarks). New data types can be added to the system at any time to meet specialised needs. The descriptive part can maintain as many lines as required.

The information is structured by the use of a special type called LITH, with a rock name in the associated description field, and any entry in the associated rock class field. All subsequent data are taken to refer to that lithology until a further "LITH" is entered.

The data are entered into IBM compatible microcomputers, using a menu driven software package developed for loading and manipulating the data. The software runs under Foxbase, a fast dBase clone. Direct entry in the field, using a "lap top" battery powered microcomputer, supplements data entry in the field.

The site information provides the main basis for selecting
subsets of the data, but data in the free form area can also be searched, using either the "LITH", other "data types", or keywords from the "Description" field. This provides a means by which similar information can be collated and tables or plots generated, thus speeding up mundane and specialised jobs, such as formation description, palaeocurrent analysis, and listings of samples, grain sizes, fossil occurrences, and numerous combinations. Data can also be transferred to CAD systems on a mainframe, or a micro, for incorporation into maps or diagrams.

As well as being used by Departmental staff, the data are available at low cost to the public as printed tabulations, plots, or as bulk or selected data on magnetic media. In order to encourage the collection and use of REGMAP compatible field data by other geologists, the software package is provided "free", with a nominal charge for disks and manuals. The runtime package requires a minimum of 500 kb hard disk space. An additional 600 kb of source code and documentation is also supplied.

**Subject coverage:** Geological field data / observation data / location / rock class / lithology / structure / direction / remarks / sketches

**Volume of data in database:** Contains 21 200 field points

**Availability of data:** Data can be made available as hard copy printout, on magnetic media in dBase or ASCII format, or as printed maps and plots.

**Cost of data:** Subject to negotiation

**Documentation:** Details are contained in the following guides:

**Contact name:** Mark Thornton
Database Manager
Geological Mapping Sub-program
Telephone: (07) 237 1517

**Information current to:** 1990
**Database name:** Survey Database (Coal Borehole)  
**Database type/status:** Source / active  
**Subject coverage:** Coal borehole locations (County, 1:100 000 map sheet, AMG coords)  
**Geographical coverage:** Queensland  
**Time coverage:** 1960 to present  
**Keywords:** coal / exploration / drilling  
**Database system:** Computerised, IBM PC/AT based running under dBase  
**Volume of data in database:** 7 000 borehole locations  
**Availability of data:** Internal, public if need be on request  
**Contact name:** Paul Balfe  
Subprogram Manager  
(COSRAD) Coal and Oil Shale Resources Assessment  
Development Sub-program  
Telephone: (07) 237 1477  
**Information current to:** April 1990

### 3.2.7 QUEENSLAND ELECTRICITY COMMISSION

The Queensland Electricity Commission only employs a small number of geologists, and thus is not actively involved in research. Any geological work required is normally referred to the Queensland Department of Resource Industries.
The Queensland Water Resources Commission (WRC) has carried out a stream gauging programme over a number of years on major rivers in the Cape York Peninsula and there have been specific assessments of resources for particular proposals and uses.

In Cape York Peninsula, records have been compiled from 45 stream gauging stations, some of which are no longer in operation. The majority of these stations were established in the 1960's and 1970's. The WRC also contains 5 pluviograph stations. Water quality information is also available from each of these stations. Also assessment of groundwater supplies in different localities. A large proportion of the water bores are around Weipa, Aboriginal missions, Shelburne Bay and the Torres Strait area.

The WRC has basically two databases. A groundwater database and a streamflow records database.

Databases:

Database name: Groundwater Database
Acronym: GDB
Database type/status: source / active
Subject coverage: Hydrology / hydrogeology / hydrochemistry / groundwater bores
Geographical coverage: Groundwater proclaimed districts of Queensland (covers most of the state)
Time coverage: 1890 to present
Keywords: hydrological data / hydrogeology / water wells /
ground water quality / water analysis / lithology / pump tests /
specific yield / well logs / aquifers / Queensland Ground Water
Proclaimed Area / strata logs / water bed

**Volume of data in database:** 60,780 bores as of June 1984, with
an estimated 400 in north Queensland

**Output products:** Printouts, microfiche listings, hydrographs,
magnetic tapes

**Availability of data:** Most data accessible to the public for
inspection and purchase. Data is accessible within BMR.

**Documentation:** Groundwater Database - Data preparation manual -
June 1982

**Comments:** This database has already been down loaded onto the
BMR’s computing facilities. It is part of the Great Artesian
Basin database (GAB) which is managed by Rien Habermehl. A copy
of the "Groundwater Database - Data preparation manual" is held
also by Rien Habermehl.

**Contact name:** Rien Habermehl, BMR

Telephone: (06) 249 9426

**Information current to:** June 1990

**Database name:** Streamflow Records

**Acronym:** SFRECS

**Database type/status:** source / active

**Subject coverage:** Streamflow information on quality and quantity
of selected streams

**Geographical coverage:** Queensland

**Time coverage:** 1910 to present

**Keywords:** Hydrogeology / hydrological data / water analysis /
surface waters / stream gauging / Queensland

**Volume of data in database:** Daily discharges from 1,021
stations, 21,000 water analyses

**Output products:** Microfiche listings, publications

**Availability of data:** Available for public access on microfiche,
hard copy, and magnetic tape

**Contact name:** John Hillier

Telephone: (07) 224 7244

Rob Laite

Telephone: (070) 92 2555

**Information current to:** June 1984

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The Queensland Coal Board has a small amount of information contained on a database, but most of it is available in published form at a nominal charge.

The database mainly contains statistical information on the Queensland Coal Industry. It contains information on the following: (1) export-coking and thermal coal; (2) raw coal produced and discard; (3) production of saleable coal by individual mines; (4) average daily output of saleable coal; (5) overseas shipments by ports; (6) exports by destination and mines; (7) coal consumption; (8) output of saleable coal; (9) employment; (10) company information (mine operators, mine owners); and (11) geological and mining information on the producing collieries.

Very little geologic information is documented by the Queensland Coal Board. That which is documented is mainly confined to the physical and chemical properties of the coal seams (i.e., petrographic analysis, ash fusion temperature, relative density, sulfur %, total moisture, etc).

They have also produced maps of Queensland which depict the following features: (1) opencut and underground mines; (2) prospect sites; (3) power stations; (4) export ports; and (5) distribution of thermal, coking, shallow and deep coal.
3.2.10 QUEENSLAND MUSEUM

Databases:

Database name: Fossil Catalogue
Acronym: QMF
Database type/status: source / active
Description: Fossil information mainly from Queensland. The database system is a manual system consisting of a register.
Subject coverage: Contains information on fossils in the palaeontological collection
Geographical coverage: Mainly Queensland
Time coverage: 1911 to present
Keywords: catalogues / palaeontology / fossils / Queensland
Database system: Manual - register
Volume of data in database: 13,200 entries as of June 1984
Output products: Manuscript catalogues of figured and described specimens
Availability of data: Accessible to workers in any field
Contact name: Mary Wade, Telephone: (07) 52 2716
Information current to: June 1984

Database name: Locality Register
Acronym: L
Database type/status: source / active
Description: Fossil information mainly from Queensland. The database system is a manual system consisting of a register.
Subject coverage: Localities of bulk samples of fossils
Geographical coverage: Mainly Queensland
Time coverage: 1964 to present
Keywords: Indexes / palaeontology / fossils / geography
Database system: Manual - register
Volume of data in database: 450 localities as at June 1984
Availability of data: Information available to scientific workers in specific fields, but not available to the public
Contact name: Mary Wade, Telephone: (07) 52 2716
Information current to: June 1984
3.3 UNIVERSITIES

Only a small number of universities were found to contain theses relevant to the North Queensland Project. These theses titles were obtained from individual University theses lists and from the "Union List of Higher Degrees in Australian Libraries - Supplement" by the University of Tasmania Library. The Supplement contains as complete a listing as possible of all theses submitted and accepted for higher degrees in Australian Universities and Colleges of Advanced Education. Higher degrees have been interpreted as Master degrees or Doctorates. The listing does not include the Honours year thesis of Bachelor degrees with Honours; these were only obtainable for the James Cook University of North Queensland. The Supplement is a yearly publication and currently includes theses up to 1988.

The following universities in Queensland were also checked for staff or student research in the North Queensland area: (1) University of Queensland; (2) James Cook University of North Queensland; (3) Brisbane College of Advanced Education; (4) University College of Central Queensland; (5) Darling Downs Institute of Advanced Education; (6) Gold Coast College of Advanced Education; (7) Griffith University; and (8) the Queensland Institute of Technology.

Unfortunately the following lists may contain theses that are not entirely relevant to the North Queensland Project, as it is difficult to ascertain by the titles, the exact area of study. I have enclosed in brackets, at the end of each title, the relevant sheet number/(s) for the various theses. They were obtained from the Australia 1:250 000 Map Series Gazetteer, 1975. Theses marked by an * represent those where the given titles are incomplete. Theses marked by # represent those where the submitted titles were found to differ between sources.
The following is a list of theses held by the Geology Department at James Cook University (JCU). Most of the theses can be obtained through the interlibrary loan system via the JCU Main Library. The theses for the last half of 1989 and 1990 are not available at present due to theses being away for examination or being bound. If the main library cannot help, contact Mrs Pat Lea (EGRU Secretary) on (077) 81 4726 and she will arrange to obtain a copy of the thesis (pending consent being received). The charge is 10 cents/page plus cost of student doing the photocopying (at $10/hour).

**Bachelor of Science (Honours)**

*Aizzeddin, D., 1989. Structural controls on gold mineralisation in the Croydon Goldfields, north Queensland (SE54-11)*


Baker, E. M., 1974. Geology of the Cape River – Gorge Creek Area (SF55-01)

Beddows, J. W., 1983. The Thalanga stratiform massive sulphide deposit - a study of the secondary zone and its development - a study of the mobility of barite during weathering (SF55-02)

Bedford, K. A., 1971. The geology of the Andromache Area, Proserpine (SF55-04)


Champion, D. C., 1984. Geology and geochemistry of the Mount Jukes intrusive complex (SF55-08)

Claussen, P. F., 1984. The geology of the Seventy Mile Mountain Breccia Complex and an investigation of "brain rock" (SF55-02 or SD54-16)

Cohen, P. H., 1975. A study of lineation distribution and fold mechanisms in the Barron River Metamorphics, Gillies Highway (SE55-02 or SE55-06)

Coianiz, G. M., 1981. The oxidation profile of the cassiterite/sulphide ore body at the Sardine tin mine, Ewan, north Queensland, and structural investigation into varlamoffite (Sn,Fe)(O,OH)₂ (SE55-14)


Cumming, A. F., 1986. Facies variation and the implications for petrogenesis within the Finlayson (tin) granite (?)
D'Arcy, R. K., 1980. The geology of the Exmoor Homestead region, northeast Bowen Basin (SF55-03)

Davidson, G., 1984. Recent nearshore sedimentology of Magnetic Island, north Queensland (SE55-14)

Davidson, N. C., 1981. Recent sedimentology of Halifax Bay, north Queensland: a semi-protected embayment with mixed terrigenous - carbonate input (SE55-10 or SE55-14)

Davis, B. K., 1986. Structural analysis of macroscopic fold in the Robertson River metamorphics, Robin Hood Station, far north Queensland (SE54-12)


Duncan, I. H., 1980. An investigation into the geochemistry and clay mineralogy of a portion of the Burdekin aquifer system with special reference to the phenomenon of reverse osmosis ( ? )

Duncan-Kemp, H. W., 1978. The Cannibal Creek Granite, its metamorphic aureole and associated mineralisation (SC54-15 or SE55-01)


Fawckner, J. F., 1975. Geology of the O.K. mines area, north Queensland (SE55-01)

Fitzgerald, J. D., 1974. Structure of the Robertson River Metamorphics, Robin Hood Station, Forsayth region, Queensland (SE54-12)

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Fraser, N., 1972. Geology and mineralisation, United North Australian Mine, Watsonville, north Queensland (SE55-05)

Georgees, C., 1974. Geology and mineralisation at Herberton Hill, Herberton, north Queensland, Australia (SE55-05)


Glendinning, I. G., 1974. The geology, structure and massive sulphide mineralisation of the Liontown mining area near Charters Towers, north Queensland (SF55-02)

Goode, A. H., 1984. The geology of the Collinsville coal measures in the Kerale Station region, northern Bowen Basin (SF55-03)


Goulevitch, J., 1970. Geology of an area in the Mount Philp - Fountain Range region, Mary Kathleen district (SF54-02)

*Grace, J., 1989. To be advised ( ? )


Hoffmann, K. L., 1984. A palaeoenvironmental study of the northern reaches of the Toolebuc Formation (SF54-02?)

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*Hussey, K., 1988. Skarns NQ (?)


Kidd, R. P., 1985. Geology and mineralisation of Far Fanning prospect, northern Queensland (SE55-14)

Lemmon, T. C., 1969. Geology and mineralisation of the Ewan – Mount Brown area, Queensland (SE55-13 or SE55-14)

Llewellyn, P. W., 1974. The geology of the Mount Hogan – Percyville area, northwest Queensland (SE55-09)

Locke, A. Y., 1982. The geology of the Havilah area, northwest Bowen Basin (SF55-03)

Lorraway, R., 1978. The petrology of the Camp Oven Mountain volcanic complex (SF55-10)

Mackay, C. R., 1987. The genesis of gold mineralisation in the Anakie metamorphics, central Queensland (?)

Mackinnon, I. D. R., 1974. The mineralogy and geochemistry of Arthur’s Peak (SE55-14)

Mancktelow, N. S., 1974. The geology of the Tinaroo area, north Queensland (SE55-05 or SE55-06)


Menzies, J. C., 1979. Geology and geochemistry of the Thalanga Range area and Thalanga massive sulphide (SF55-02)
Milburn, D., 1980. The geology of the Jumna Mine, Irvinebank, north Queensland (SE55-05)


Mockett, N., 1983. The geology of the Lake Lucey area, north Queensland with special reference to the clay mineralogy of the Tertiary sediments (Lake Lucey Formation) (SE55-09)

Moore, S., 1981. Major factors controlling the localisation and deposition of tin mineralisation at the Jack-In-A-Box mine, Irvinebank, north Queensland (SE55-05)

Mustard, H., 1983. Breccia forming processes at the Kidston gold deposit, north Queensland (SE55-09)


Parker, C. M., 1983. Geology of the Fletcherview area: a reconstruction of Devonian sedimentation (SE55-14)

Peachey, T. R., 1979. Palaeozoic geology of the Fish Creek area, Ravenswood (SF55-02)

Pollard, P. J., 1978. The geology of the Tommy Burns mine, Sunnymount, north Queensland (SE55-05)

Radford, B. V., 1973. The geochemistry and geohydrology of the upper Ross River basin, Townsville (SE55-14)
Rebgetz, A., 1984. A study of intergrown pegmatoidal fine grained granites in Emuford and Bamford Hill district (SE55-05)

Reid, P. D., 1975. Hydrogeology of the lower Ross and Bohle River aquifer systems (SE55-14)

Richards, T. H., 1977. The geological history of the Frankland Island region, coastal north Queensland (SE55-06)

Rienks, I., 1982. Petrology and geochemistry of Carboniferous tin-bearing granites in the Taravale area, northeast Australia (SE55-14)


Rivers, C., 1985. A study of hydrothermal alteration in the footwall rocks of the Thalanga Zn-Pb-Cu mine, north Queensland (SF55-02)

*Simeone, S., 1989. Sedimentary facies development of Triassic sediments in NE Bowen Basin and implacement history of Cretaceous intrusive complex (SF55-03)

Sims, A. T., 1980. A study of bottom sediment on the Townsville continental shelf (SE55-14)

Sinclair, W. J., 1976. The crystal chemistry of megacrysts from north Queensland basalts (?)

Slessar, G. C., 1970. The geology of the Cape Hillsborough, Mackay region (SF55-08)

Smith, B., 1986. The geology and context of the Lizzie Creek volcanics in the Collinsville area (SF55-03)


Spring, K. E., 1979. The geology of the Gray Creek area, north Queensland (SE55-06 or SE55-13 or SE55-09)


Talaska, A. M., 1973. Geology of the Mount Oxide copper deposit, northwest Queensland (SE54-13)

Talbot, P., 1982. Aspects of the geology and gold mineralisation at Ravenswood, Queensland (SF55-02)

Tate, N. M., 1983. The origin of tourmaline nodules in the Finlayson Granite, north Queensland ( ? )

Taylor, P. W., 1986. The paragenesis of tin mineralisation occurring in a sheeted vein system at Collingwood Prospect, Cooktown, north Queensland (SD55-13)

*Timmins, A., 1989. Phosphate and fluorine bearing aluminous assemblage developed in lower Palaeozoic deformed volcanics of Balcooma/Dry River (SE55-09)

Twomey, G. T., 1985. Skarn genesis of the Ti Tree Mine, Chillagoe (SE55-05)
Venn, P. J., 1985. Evidence of thrusting and subsequent genesis of a Cu-Zn-Au(Pb) skarn deposit with tin affinities, Mt Garnet, north Queensland (SE55-05)


Weller, R. S., 1974. The major elemental geochemistry of Ross River basin waters (?)


West, P. W., 1974. The stratigraphy of the Burdekin Formation in the Fanning River Homestead area (SE55-14)

*White, S., 1989. Structural controls on, and origin and timing of ironstones and mineralisation at Starra, NW Queensland (?)


Wilson, B. H., 1986. The post-glacial sedimentary and stratigraphy of the Family Islands / Rockingham Bay area, northeast Queensland (SE55-10)

Young, R. A., 1974. The crystallography, mineralogy, geochemistry and petrology of the megacryst-bearing alkali basalt plug, FR.1, Mingela basalt province, north Queensland (SF55-02?)

Master of Science (Coursework and Dissertation)

Askins, P. W., 1975. Wrigglite - an unusual fluorite bearing skarn, Mount Garnet region, north Queensland, Australia (SE55-05)

Bampton, K. F., 1982. Geology and mineralisation of the Spinifex Queen - Mount Kelly copper prospect, northwest Queensland (SF54-02)

Bluck, R. G., 1978. The influence of anisotropic rock properties on diamond drill hole deviation (?)

Buckland, K. R., 1981. The geology of the Streak Hill tin mines, Irvinebank, north Queensland (SE55-05)


Camuti, K. S., 1986. X-ray diffraction study of the near surface alteration and weathering mineralogy at the Bald Mountain gold prospect and the Kidston gold deposit, north Queensland - with emphasis on the clay minerals (SE55-09)

*Collett, D., 1989. Styles of gold-copper mineralisation, Soldiers Capbelt, East of Cloncurry, NW Queensland (SF54-02)

Creenaune, P., 1987. The alteration and mineralisation of the Mosquito Hill occurrence (SF55-08?)

Davis, G. J., 1976. Geology of the Surprise Creek Beds, Gereta Station, Mount Isa (SF54-02)

Dimo, G., 1976. Precambrian geology and copper mineralisation of the Mount Elliott area, northwest Queensland (SF54-06)


Goudie, J. C., 1977. The Split Rock copper prospect near Cardross in the Chillagoe District, north Queensland (SE55-05)


Graham, R. L., 1975. Breccia pipe formation in relation to the Coalstoun porphyry copper system (SG56-06?)

Graylin, R. K., 1981. The geology of the Kidston breccia complex (SE55-09)

Hamilton, G., 1984. Aspects of the geology and mineralisation of the Tinvale, Mount Oweenee area, northeast Queensland (SE55-14)


Harris, M. R., 1984. Geology of the Paradise Valley copper deposits, northwest Queensland ( ? )

Harvey, K., 1988. The geology of the Balcooma massive sulphide deposit (SE55-09)


Hussain, B., 1978. Geology and mineralisation of Mary Kathleen uranium deposit, northwest Queensland (SF54-02)

Johari, S., 1976. The geochemistry and mineralisation of Mount Wright, Ravenswood, Queensland (SF55-02)

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Kelly, G. R., 1976. Oxidation and supergene enrichment of the "Siberia Lode" vein system, Emuford, north Queensland (SE55-05)

Kirwin, D., 1985. Tourmaline breccia pipes (SE55-05)

Malagun, S., 1985. The origin of gold veins at Ravenswood, north Queensland (SE55-02)

Michna, P. D., 1982. The investigation of an exploration technique utilising heavy minerals (SE55-09)

Mulholland, I. R., 1986. The geology, petrology, and alteration geochemistry of the Magpie volcanogenic massive sulphide deposit near Charters Towers, Queensland, Australia (SF55-02)


Odili, T., 1984. The geology and mineralisation of Gurrumba area, north Queensland (SE55-05)

Patrick, J. P., 1978. The geology and origin of the sulphide deposit and the high grade Precambrian metamorphic rocks at Einasleigh, northeastern Australia (SE55-09)

Pike, G. P., 1975. The geology and mineralisation of the Shrimp Tin mine in the Oaky Creek area, Ewan, Queensland (SE55-14)

Robinson, C. C., 1983. Geology and mineralisation - Isabel Mine, Herberton (SE55-05)
Robinson, C. J., 1982. Some aspects of the alluvial cassiterite deposits of Battle Creek and Nettle Creek, Mount Garnet area, north Queensland, with an assessment of the techniques of alluvial prospecting and mining (SE55-03)

Rolfe, G. L., 1981. The geology and mineralisation of the Town Creek porphyry molybdenum prospect (SF55-02)


*Russell, P. J., 1989. Fluid inclusions NQ etc (?)

Shelton, S. J., 1988. The Federation gold-quartz vein system, Croydon, Queensland (SE54-11)

Stevens-Hoare, N. P., 1980. A comparative resource evaluation of the uranium potential of the Laura Basin, Queensland (SD55-09 or SD55-13)

Stockley, J. L., 1982. The Wolumba goldfield

Stuart-Smith, P. G., 1986. Mt Cullen granite mineralisation (SG55-01?)

Surjono, 1976. Petrology of Mount Wright, Ravenswood, north Queensland (SF55-02)

Woodward, A. J., 1976. Paragenesis of the silver-lead mineralisation in the Montalbion - Adventure Creek district, Queensland (SE55-05)

Master of Science (Research)

Atkinson, F. A., 1986. Cainozoic basaltic rocks in the watershed of the Upper Herbert River north Queensland - their relationship to stanniferous alluvial deposits (SE55-05 or SE55-09 or SE55-10)


Chitrakar, R., 1986. X-ray powder diffraction studies on feldspars from granitoids of Nepal and north Queensland, Australia ( ? )


Cox, R. B., 1979. Hydrogeology of the Herbert delta, Ingham (SE55-10)

Horton, D. J., 1980. Porphyry-type copper and molybdenum mineralisation in eastern Queensland ( ? )


Torrey, C. E., 1986. The geology and genesis of the Red Dome (Mungana) gold skarn deposit, north Queensland (SE55-05)

#Turner, W. S., 1981. The nature and origin of uranium-molybdenum mineralisation at Ben Lomond with particular reference to wall-rock alteration (SF55-03?)

#Turner, W. S., 1982. A study of the wall rock alteration and devitrification zoning surrounding the Ben-Lomond U-Mo deposit, north Queensland (SF55-03?)

**Doctor of Philosophy**

Arnold, G. O., 1975. A structure and tectonic study of the Broken River province, north Queensland (SE55-13 or SF55-07 or SF55-08)


Bateman, R., 1983. Structure, petrology and emplacement processes of the Cannibal Creek granite, Queensland (SE55-02 or SE55-01 or SD55-13)


*Blevin, P., 1988. Tungsten and molybdenum in Qld etc ( ? )


*Dowling, K., 1989. The discrimination of gold bearing and barren quartz in north Queensland vein deposits ( ? )

Fawckner, J. F., 1981. Structural and stratigraphic relations and a tectonic interpretation of the western Hodgkinson province, northeastern Australia (SE55-01)


Griffin, T. J., 1977. The geology, mineralogy, and geochemistry of the McBride basaltic province, northern Queensland (SE55-09)

#Hammond, R., 1986. Tectonic evolution of the Hodgkinson Basin, northeastern Queensland (SE55-01)

#Hammond, R. L., 1986. Large scale structural relationships in the Palaeozoic of northeastern Queensland: melange and mylonite development, and the regional distribution of strain

Hopley, D., 1970. Coastal geomorphology in the Townsville region: a study of the geomorphological evolution of the north Queensland coast between Cape Upstart and Hinchinbrook Island


Jones, D. R., 1985. The relationship between host-rock and deeply derived inclusions in basalts from the Chudleigh basalt province, north Queensland (SE55-13?)

Jones, P. A., 1988. A geometric analysis of the Robertson River metamorphics in the Western Creek area south of Georgetown (SE54-12)

Olatunji, J. A., 1975. The geology and mineralisation of west Herberton district, north Queensland (SE55-05)

Paverd, A. L., 1971. Contact metamorphism and mineralisation at Mount Redcap, Chillagoe, north Queensland (SE55-05)


Ponder, R. W., 1976. The Miliolacea (Milliolina, Foraminiferida) with special reference to north Queensland (?)


Richards, D. N. G., 1981. Granitoids of the northern Tate Batholith, Chillagoe, north Queensland (SE55-05)

de Roo, J. A., 1987. Genesis of several structurally-controlled ore deposits in eastern Australia (?)

Spenceley, A. P., 1980. The geomorphological and zonalational development of mangrove swamps in the Townsville area, north Queensland (SE55-14)

Sutherland, F. L., 1981. The geology and petrology of some Tertiary volcanic rocks in the Bowen - St Lawerence Hinterland, northern Queensland, in relation to the volcanism in eastern Australia (?)

Thompson, J., 1985. The application of solid-state nuclear magnetic resonance (NMR) spectroscopy to the study of clay minerals and clay minerals intercalates (?)

*Vanderhor, F., 1988. Structural geology of the Balcooma / Dry River area, NE Australia (SE55-09)
Witt, W. K., 1985. Diffuse (background) and fracture-controlled feldspathic alteration in the tin-mineralogical granites of the Irvinebank-Emuford area, northeast Queensland (SE55-05)

Master of Arts


3.3.2 UNIVERSITY OF QUEENSLAND

The University of Queensland allows the loan of duplicates or microfilms only for theses, originals are not for loan. Photocopies or microfilms are available for purposes of research or private study. Access to some theses may be restricted by author.

Master of Science


Lewis, R. W., 1974. The geology of the Paradise Valley copper deposits (?)

Mallett, C. W., 1969. Devonian stromatoporoids from Pandanus Creek Station, north Queensland (SE55-13)

Doctor of Philosophy

Armstrong, J. D., 1969. Permian spiriferida of eastern Australia (?)

Bartholomai, A., 1973. Stratigraphy, skeletal morphology, and evolution of the Upper Cainozoic and recent Macropodidae of Queensland (?)
Dudgeon, M., 1986. Palynology of the Yaamba Basin (Eocene), central Queensland ( ? )

Eden, R. J., 1988. Modelling for land information system development in Australia and in particular Queensland ( ? )


Hearn, S. J., 1982. Applications to teleseismic P phases to structure of the crust and upper mantle in eastern Queensland, Australia ( ? )


McNaughton, N. J., 1981. An isotopic, geochemical and structural study of the Proterozoic Einasleigh metamorphics, northern Queensland (SE55-09)

**Doctor of Science**

Subject to the author’s consent, one copy of the thesis deposited in the Library will be available for loan or photocopying.

**Master of Science**

Brown, W. M., 1983. The genesis of a Fe-Sn-W skarn at Mt Garnet: an example of a granite-skarn hydrothermal system (SE55-05)

**Doctor of Philosophy**

Brennan, P. V., 1983. The petrology and petrogenesis of selected ultramafic rocks in eastern Australia (?)

**3.3.4 AUSTRALIAN NATIONAL UNIVERSITY**

Theses are not for loan. Positive microfiche or microfilm is offered for sale, subject to author’s permission which will be sought by ANU. A quote is given in each case. Most theses may be consulted within the Library. In some cases access is restricted to staff and students of the University and such theses may be consulted by others only if the author gives permission.

**Master of Science**

Elgueta, S., 1981. Sedimentological study of the western zone of the Lady Annie phosphate deposit, Queensland, Australia (?)

Lundberg, J., 1976. The geomorphology of Chillagoe Limestones: variations with lithology (SE55-05)

**Doctor of Philosophy**

Black, L. P., 1970. Isotopic relationships in the Chillagoe-Herberton area, north Queensland (SE55-05)


Chen, Yinshuo 1986. Early Holocene vegetation dynamics of Lake Barrine basin northeast Queensland, Australia (SE55-06)


3.3.5 GRIFFITH UNIVERSITY

A hardback copy of each thesis is made as received and this will be available for loan purposes.

Master of Science

Kelly, R. E., 1982. Hydrogeochemistry of the upper Isaac River (?)
3.3.6 UNIVERSITY OF NEW ENGLAND

Microfilm or xerox duplicate of theses are available for loan, or text can be copied with the permission of the author. In most cases this permission has been obtained by the Library when the thesis was deposited; otherwise written permission is to be obtained by the enquirer.

Doctor of Philosophy


3.3.7 UNIVERSITY OF TASMANIA

Original copy of theses is not for loan. When there is a second copy (paper or microfiche) it is available for loan. Otherwise, the library will arrange for a microfiche copy to be made for sale.

Master of Science

Green, D. H., 1959. The geology and petrology of the Gray Creek area, north Queensland (SE55-13?)

Doctor of Philosophy


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3.3.8 MACQUARIE UNIVERSITY

The university does not normally loan the only copy of a thesis from the deposit collection in the Library. It encourages requesting libraries to buy microfiche or microfilm of these, but will lend positive microfilm if available.

Doctor of Philosophy


3.3.9 UNIVERSITY OF SYDNEY

All theses except those specifically stated to contain confidential information are freely available for use. Loan is by duplicates or microfilms only. Anyone who consults a thesis is to sign a statement undertaking to respect the author's rights.

Doctor of Philosophy

Branch, C. D., 1963. The structural and magnetic relationships between acid lavas, pyroclastic flows, and granite of the Georgetown Inlier, north Queensland (SE54-12)


Frankel, E., 1972. Recent sedimentation in the Princess Charlotte Bay and Edgucumbe Bay areas, Great Barrier Reef Province (SD54-12 or SD55-09)
Rob Leslie is constructing a GIS on the Cape York Peninsula for ERIN (Environmental Resource Information Network). The first stage of the programme will require the assembling and compilation of all primary data. This will consist principally of mapped topographic information, such as roads, rivers, height of landform and miscellaneous information relating to landuse history. This will then be digitised. A second database indicating the wilderness quality of an area will be constructed. It too will be digitised. It is well underway and is for the National Wilderness Inventory for the Australian Heritage Commission.
3.4 CSIRO

3.4.1 DIVISION OF SOILS

Contact: Ross Coventry
Telephone: (077) 71 9505

Cathy Sage
Information Officer
Telephone: (08) 274 9291

Ray Isbell
Telephone: (077) 71 9510

Graeme Murtha
Telephone: (077) 71 9507

In 1968 a map of the Cape York Peninsula by Isbell, R. F., Webb, A. A., and Murtha, G. G. was produced ("Atlas of Australian Soils Series no 7"). There is additional data on sites, and localities of soil samples, taken from 1-2 m deep boreholes. However, most of this information was taken from old geological maps, and thus reflects the geology of the day.

Databases:

Database name: National Soils Database
Database type/status: Source / under development
Description: The database system was part computerised and part manual. The type of manual system is cards. The index is computerised and arranged chronologically.
Subject coverage: Information of the soils of Australia as determined in soil mapping programs and field experiments.
Geographical coverage: Australia
Time coverage: 1927 to present
Keywords: soils / soil profiles / soil surveys / soil tests
Volume of data in database: 10 000 cards
Output products: In reports such as the "Soils and Land Use Series", some in papers in summary form.
Contact name: C T Hignett
Telephone: (08) 274 9311

Information current to: May 1984
3.4.2 DIVISIONS OF WATER AND LAND RESOURCES

**Contact:** Peter Martin
Information Officer
Div of Water Resources
Telephone: (08) 274 9294

Contact: Margaret Lowe
Information Officer
Div of Water Resources
Telephone: (06) 246 5313

**Databases:**

**Database name:** Cape York MATAS
**Acronym:** CYMATAS
**Database type/status:** Source / active
**Subject coverage:** Landform / lithology / drainage / vegetation / soils
**Geographical coverage:** Northern Cape York Peninsula (12°30' S - 13°30' S; 141°30' E - 144°E)
**Time coverage:** 1983
**Keywords:** Landforms / lithology / drainage (geomorphology) / soils / Cape York
**Database system:** Computerised; VAX
**Availability of data:** Available on request
**Contact name:** P Laut (06) 246 5666
**Information current to:** April 1984

**Database name:** Digital Elevation Models for Australia
**Database type/status:** Source / active
**Subject coverage:** Digital elevation models at regional and continental scales
**Time coverage:** To present
**Keywords:** Contour map / terrain models / digital simulation
**Database system:** Computerised; computer storage media - magnetic disk / tape; DBMS - special purpose; computer - VAX11-750
**Volume of data in database:** 1 000 000 elevation data points
**Output products:** Computer drawn contour maps at various scales, slope maps, maps of various climatic variables
**Availability of data:** Selected data printed or plotted at cost. Parts or whole of database available.
**Documentation:** Divisional Technical Memorandum
**Comments:** Database will be continued to be updated as additional
accurate point elevation data become available

**Contact name:** M F Hutchinson, Telephone: (06) 246 5733

**Information current to:** April 1984

**Database name:** Australian Resources Database

**Acronym:** ARDB

**Database type/status:** Source / active

**Subject coverage:** Broad spectrum of natural and human resources

**Geographical coverage:** Australia

**Time coverage:** 1976 to 1983

**Keywords:** Natural resources / Australia

**Database system:** Computerised; computer storage media - magnetic disk / tape; DBMS - special purpose; computer - Cyber 76

**Output products:** Listings, plots

**Availability of data:** Available on request to organisation if task is simple; otherwise available through SIROMATH consultancy.

**Documentation:** Division of Water and Land Resources Technical Memorandums 83/11 and 83/12.

**Comments:** This database is one of three components in the Australian Resources Information System (ARIS).

**Contact name:** K D Cocks, Telephone: (06) 246 5822

**Information current to:** April 1984

**Database name:** Australian Resources Bibliography

**Acronym:** ARB

**Database type/status:** Reference / active

**Subject coverage:** Geographically specific resource information

**Geographical coverage:** Australia (1:100 000 map sheets)

**Time coverage:** From 1900 to present (mostly from 1950)

**Keywords:** Natural resources / soil surveys / Australia

**Database system:** Computerised; computer storage media - floppy disk; DBMS - DATASTAR; computer - ORTEX 8-bit.

**Volume of data in database:** 400 soil survey references

**Output products:** Listings, microfiche

**Availability of data:** Available on request to Division

**Comments:** Proj Stage 1 - National Soil Survey - being undertaken in conjunction with the Aust. Soil and Land Resources Committee

**Contact name:** J Clark, Telephone: (06) 246 5001

**Information current to:** April 1984
3.4.3 CSIRO TROPICAL FOREST RESEARCH CENTRE, ATHERTON

Contact:  I S Webb  
          A N Gillison

Webb has been involved in soils and ecological research in the Cape York area. He has surveyed soils in the Cooktown area and numerous sites in the rainforest areas north of 17°S.

Gillison has been developing a research proposal for a geographic information system called TROFIS (Tropical Forest Information System) for far North Queensland. The pilot study for this project will include the southern limits of Cape York Peninsula and the methodology would be appropriate for an environmental survey of the peninsula as whole.

3.4.4 DIVISION OF GEOMECHANICS

Address:  CSIRO, Division of Geomechanics  
          PO Box 63  
          St Lucia  Qld 4067  
          Telephone: (07) 377 7822  
          Facsimile: (07) 371 7435

Contact:  Eric Lohe  
          Telephone: (07) 377 7815

Database:

Database name:  Geological and Mineral Occurrence Database  
Acronym:  MINDEX
Database type/status:  Mainly reference / active
Description:  The setup of the database is similar to that of the Qld Department of Resource Industries MINOCC system, however there are several important changes and additions, eg: (1) a separate remarks table to allow for unlimited explanations; (2) inclusion of assay results into the database; (3) addition of a production table to allow for the input of annual production
figures; (4) inclusion of a separate exploration summary table; (5) inclusion of a reference table to allow the recording of full or extended bibliographic details, as well as abbreviated references; (6) inclusion of a topographic map look-up table to reduce data sheet entry and avoid repetition; and (7) inclusion of fields for recording structural data. With the exception of these modifications, the column names adopted throughout conform with those of the MINOCC database.

**Subject coverage:** Investigate the relationships between occurrence/deposit locations and tectonic/structural features in an area extending from Mackay to Bundaberg.

**Geographical coverage:** Basic mineralisation and structural data has been collected and incorporated for the following 1:250 000 sheet areas: Baralaba, Bowen, Clermont, Duaringa, Eddystone, Emerald, Mackay, Monto, Mt Coolon, Mundubbera, Port Clinton, Proserpine, Rockhampton, Springsure, St Lawrence, and Taroom. Data for the Gympie and Maryborough 1:250 000 sheet areas will be available soon.

**Keywords:** Commodities / mining district / mining field / mining tenure / mining status / method of mine working / details of production / resources / reserves / exploration summary / geological setting / structural affiliation / deposit dimensions / ore textures / assay results / ore genesis / references

**Database system:** Computerised, using ORACLE relational database software on an IBM-compatible PC (AT) host.

**Volume of data in database:** Excluding the abandoned mining operations at the Springs, Black Ridge, and Miclere Goldfields, information relating to over 450 mineral occurrences is now contained in the database. The proposed addition of data from the Anakie Inlier and Drummond Basin should expand the database to include more than 1 100 sites of mineralisation in central eastern Queensland.

**Comments:** Future modifications to the database construction has been considered. May adopt INGRESS relational database software.

**Contact name:** Eric Lohe

   Telephone: (07) 377 7815

**Information current to:** June 1990
3.5 MISCELLANEOUS ORGANISATIONS

3.5.1 ROYAL GEOGRAPHIC SOCIETY OF AUSTRALASIA (QLD) INC

Address: "Gregory Hall"
112 Brookes Street
Fortitude Valley Qld 4006

Contact: Kathy Berg
Administrator / Librarian
Telephone: (07) 252 3856

The Royal Geographic Society of Australasia (Qld) Inc has a keen interest in the North Queensland area. The society proposes to conduct a scientific expedition to the northern section of the Cape York Peninsula during the wet season of 1991. They claim during the past 150 years, scientific study of the Cape York area has been largely restricted to dry season investigation of readily accessible areas. No project has yet been undertaken which would give researchers the opportunity to observe several ecosystems throughout the full period of the wet season. The main focus area for the study is the Jardine River catchment.

A Cape York Workshop was held last year for all interested persons working in the region. A series of papers were presented at this workshop. The following is a list of participants and their representing organisations.

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Participant</th>
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<tbody>
<tr>
<td>Dept of Aboriginal Affairs</td>
<td>Elrie Morgan-Thompson</td>
</tr>
<tr>
<td>Adelaide Uni (Dept of Geography)</td>
<td>Harry Abrahams</td>
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<tr>
<td>DASETT</td>
<td>Rod Holesgrove</td>
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<td>Australian Conservation Foundation</td>
<td>Gordon Claridge</td>
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<td>Australian Heritage Commission</td>
<td>Mike Foale</td>
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<td>Aust Institute of Agricultural Sci</td>
<td>Errol Stock</td>
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<td>Aust Littoral Society</td>
<td>Sue Corley</td>
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<td>Cape York Space Agency</td>
<td>Damien Cronin</td>
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<td>Comalco Ltd</td>
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Griffith University
MacDonald Wagner
National Parks Assoc of Qld
Uni of New England (Archaeology Dept)
Uni of Queensland (Anthropology Dept)
Uni of Queensland (Anthropology Dept)
Queensland Herbarium
Queensland Dept of Lands
Queensland Museum
Queensland Naturalists Club
Queensland Naturalists Club
Queensland Premiers Department
Queensland Tourist and Travel Corp
Royal Aust Ornithological Union
Royal Historical Society of Qld
Royal Society of Queensland
Water Resources Commission
Water Resources Commission
Wilderness Society
Wildlife Preservation Society
Aust Institute of Marine Science
Uni of Queensland (Geography Dept)
CSIRO Div of Wildlife Ecology
CSIRO Div of Tropical Forest Research
James Cook University (Geog. Dept)
(Aboriginal Rock Art Investigations)  

Alan Dale
John Blurton
George Haddock
Mike Morwood
Prof Bruce Rigsby
Bruno David
Dr Bob Johnson
Alan Lee
Dr Glen Ingram
Helen Norton
David Hanger
Jan Bimrose
Heather Ross
David Nilan
Dr Rod McLeod
Dr Don McKenzie
Glen Moller
Laurie Pappin
Karen Robinson
Trish Ferrier
Dr Kevin Boto
Prof John Holmes
Percy Trezise

The following is a list of members of the Royal Geographical Society of Australasia (Qld) - Cape York Scientific Expedition Advisory Committee:

Dr A Bartholomai  
Mr P Feeney
Dr R Hynes
Prof J Kikkawa
Dr A Chase
Prof J Holmes
Dr R Johnson
Mr K Smith

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3.5.2 COMALCO LIBRARY (WEIPA)

**Address:** Weipa Technical Library
Comalco Aluminium Ltd
GPO Box 153
Brisbane Qld 4001

**Contact:** Geoff Wharton
Librarian
Weipa Hibberd Library
Telephone: (070) 69 7101
Facsimile: (070) 69 7589

Comalco Aluminium Ltd has two libraries in Weipa, one is a Technical Library the other is a Public Library. The Comalco company has endeavoured to stock every type of document, regardless of its field of interest pertaining to the Cape York Peninsula area. A complete listing of this collection is available in the BMR Library.
3.5.3 WILDLIFE / CONSERVATION GROUPS

Wildlife Preservation Society

Telephone: (07) 221 0194

The Wildlife Preservation Society has been working in the North Queensland area, particularly in the Cape York Peninsula, and will be releasing shortly a publication on the resource material and proposed conservation strategy for the Cape.

National Parks and Wildlife Service (NPWS)

The NPWS will shortly release a publication on the proposed and existing National Parks for the Cape York Peninsula.

Queensland Conservation Council Inc

The Queensland Conservation Society claim they have done no work in the North Queensland area.

3.5.4 ROYAL SOCIETY OF QUEENSLAND

The Royal Society of Queensland has identified the need for a study on the palaeontology of the Cretaceous deposits in the Walsh River area with Aptian ammonites, and also the Laura Basin. This interest was publicised through the Royal Geographic Society of Australasia (Queensland Inc) Newsletter.
4 DATABASE REQUIREMENTS FOR BMR STAFF

The study of user needs was seen as fundamental to the whole investigation, and consequently was more wide-ranging than a simple observation of users in action or discussions with them of their "normal tasks". I tried to set out to: (1) ascertain the major functional requirements of a GIS as perceived by BMR staff; (2) assess the extent of exchange of data between the subgroups within the BMR project, between the BMR and the QDRI and between the North Queensland Project Group and other bodies; (3) assess the degree of data integration and the necessity for linking remotely sensed data with others; and (4) ascertain the current hardware and software used within BMR and obtain details of the BMR's future intention in these areas.

From the discussions with BMR staff, it was found there existed unique and common user needs - both perceived and observed; this information is tabulated below. Full descriptions of the databases mentioned are detailed in Section 2.

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It would appear at present, the database requirements of staff will be met by the existing or proposed databases as outlined in Section 2.
5 RECOMMENDATIONS AND DATABASE TIMETABLE FOR NQ PROJECT

Background

This discussion is based upon the user needs of BMR staff, for databases and eventually a geographical information system (GIS) within the North Queensland Project. This project involves BMR staff together with researchers from the Queensland Department of Resource Industries and possible external collaborative researchers, such as, university staff and CSIRO staff. This group of researchers is diverse in terms of its geographical dispersion of users, the variety of computing skills that exist, the characteristics of the data which will be held in each institute and the scientific research which will be undertaken.

To establish an efficient GIS it is necessary to: (1) ascertain the present and likely future needs of users; (2) to estimate the size of the databases which would be involved; (3) assess the extent of data exchange between the institutes; (4) consider the advantages of the various data structures which might be employed; and (5) to assess which form of man/machine interface would be most appropriate and as a consequence to define the characteristics of a unified system for the North Queensland Project.

One major factor has complicated the study of the needs of the users for computer-related facilities, namely the user's appreciation of what can be achieved. Appreciation of GIS capabilities are not widespread within the BMR staff of the North Queensland Project, this situation clearly necessitates a face-to-face approach to the capabilities of a GIS. There is a need for an informal seminar series to enhance the familiarity with GIS.

In any organisation, a combination of individual factors may have a significant bearing on final solution ie although many of these factors are encountered elsewhere, their combination is idiosyncratic. In BMR, the first of these factors was the difficulty in determining and defining the bounds of the likely
users. On the assumption that the BMR datasets would be available in the future, the potential users of a GIS to extract and manipulate the data would include members of the North Queensland Project (BMR and QDRI), a variety of scientists from universities and CSIRO and (possibly) commercial bodies such as geological consultancies, and environmental groups (both government and interest groups).

Another problem envisaged is the very wide internal diversity of the component bodies of the North Queensland Project, which differ in their thematic interest, geographical areas of concern, and scientific methodology. This consequence exposes the existence of opposing "centralist" and "highly distributed" concepts of how datasets are to be held, maintained and exploited. These are expressed in terms of access by users to centralised mainframes or use of local (occasionally networked) microcomputers.

A third problem in defining user needs arises from the fact that the BMR’s North Queensland Project will not only be an exporter of data, but will import data from a variety of sources. Thence BMR can not reasonably be regarded as a "closed system".

One other complication is the existence of many records in paper form. Such material not only includes maps and other graphics, but text and samples such as borehole logs, all of which generally have some (though occasionally imprecise) form of locational reference. Without the inclusion of details of these materials in the database or at least in a machine-readable index, the value of a GIS would be significantly diminished. To that extent, the value and form of the GIS are affected by decisions on the priorities assigned to encoding these historical records.

Finally, although the concerns in this study are partially with the spatial or geographically referenced data, it is impossible to ignore the other data (which happens to be the majority) held by BMR which are usually intimately associated with those that are spatially referenced; and the need that the "final system"
will allow individual scientists to produce specialist research papers where the data may not be geographically linked.

Discussion

The geographical spread of needs and the lack of awareness of GIS in the North Queensland Project were underlined by the discovery that some individuals were requesting the need for establishing new databases which could easily be served by existing databases or databases slightly modified.

At the time of the survey, there appeared there would be surprisingly little sharing of data. In part this is probably due to the lack of staff finding out what data is available. BMR has no catalogue at present of data holdings (spatial or otherwise). Last catalogue was in 1985 and is now grossly out of date. NRIC is still in the process of updating its FINDAR system. Another reason limiting the re-use of the data was the idiosyncratic nature of the methods used in different groups in the BMR to encode and describe them, and the lack of users manuals so as people can enter the database systems, even if only to read not to write.

There is a need to minimise duplication, to maximise the possibilities of exploiting the BMR’s North Queensland resources, and to spread the adherence to common standards, underline the need for a centrally - coordinated development of GIS. In principle - and subject to restrictions to preserve confidentiality on certain data sets - all scientists within the North Queensland Project should have common access. That is, all scientists should be able to have access to read all data sets contained on a GIS, but should only be able to change data in their own data sets. However, a master controller would be required to maintain data updates from within BMR and any updates which are made by the Queensland Department of Resource Industries.

One major concern for GIS data linkage and aggregation is the possible propagation of resulting errors. It is abundantly clear
that the problem is mostly acute when a system is used by inexperienced and/or by those unfamiliar with the characteristics of the data and their mode of collection. Thus I feel there is a need to create some computer-based means of instruction on what GIS is and what it could do, as well as to organise some in-house workshops.

Once databases are established, irrespective of whether the North Queensland data is a subset of an existing database (eg in PETCHEM) a dictionary/instruction manual should be established. For example in PETCHEM, two BMR Records have been already written about this database. One addresses how the database is constructed (BMR Record 1989/19), the other how to physically enter the data, that is the computer commands (BMR Record 1990/19), but neither address the problems of standardising data entry. That is, using the same descriptors throughout the database. Decisions such as, to use abbreviations or no abbreviations, or to adopt terminology as used in the "Glossary of Geology" or the "AMF Thesaurus" or BMR publications, need to be made. These decisions are important, as it will allow more thorough computer searches to be undertaken.

Computer access to stratigraphic terms held in GEODX should be available to database users, or if not available a temporary manual should be established as an interim which would contain the correct stratigraphic terms to be used.

There is a need for an informal training course to show people how to access the databases efficiently and effectively. These standards also need to be organised in conjunction with the Queensland Department of Resource Industries. This task should be of high priority as people will want to enter data straight away when coming back from in the field.

The problem of compatibility and standardisation of information needs to be addressed. Information and terminology needs to be internally consistent within a database and consistent within the group of databases held in BMR and the QDRI. There is also the need to identify readily the owner of the information on shared
databases so as to minimise errors. For example, the owner of the data collected in the field via REGMAP (electronic notebooks) should be easily identifiable as the information could conceivable change throughout the life of the project.

An important aspect of GIS relates to the ability to integrate data from different sources. It is therefore necessary to set standards and norms on formats of spatial data from different sources. Standardisation and normalisation are crucial decision areas; and decisions in these have to be taken at the level of overall object system which is responsible for the information utilisation system. It is also necessary to develop a data dictionary which describes all data elements associated with the GIS.

The format of data entry needs to be flexible, so the information can be multi-functionable. That is it should be suitable for GIS interrogation as well as accessible by individual researchers to write specialist papers.

There is a need to address the problem of the availability of reference/bibliographic material. At present the following three choices exist: (1) as the need arises individual researchers, ask the BMR Library to conduct literature searches for them; (2) staff could have direct access to the Queensland Department of Resources Industries Open File Report System; and (3) the downloading of data from AESIS onto a divisional run PC. Each of these options contain problems. Some of these problems are related to the large number of references that exist in the study area. There are 4,052 references in total, of these 1,127 references do not include A to P company references.

Recommendations

1. Seminars on the capabilities of GIS should be conducted in house, to all North Queensland Project staff. As most staff are thinking within their own specialist field of study and have not thought about the need of accessing other peoples information for
a complete understanding of the area.

2. Establishment of user manuals for databases.

3. Thesaurus/dictionary to ensure standardisation of data.

4. The availability of a variety of user interfaces for different types of users and the use of a single command language across the whole system.

5. The inclusion of a "tutor" on the GIS for the training of users, ranging from the totally unskilled to those skilled in GIS but are unfamiliar with a particular data set. That is, covering not only the functionality available but also details of datasets, including limitations on use, descriptions of "good practice" and contact names and phone numbers.

6. Ease of maintenance and updating, whatever facilities are selected.

7. Appropriate quality control and documentation procedures must be created to cope with new facilities of general value which are generated by individuals. It also follows that a cadre of GIS skills must be maintained (though not necessarily all in one location) to undertake the advice and educational roles inherent in such a development.

8. The GIS should have the capability to interact with both spatial and non-spatial data and information flows. A GIS which interacts with only the other sets of spatial data, operates in isolation with just a (small) part of the information utilisation system and therefore generally operates sub-optimally.

9. A pilot study of one map sheet (Cape Weymouth 1:250 000, for example) should be set up completely on GIS to see if all expectations are met.