Natural Resources,
Mines and Water

Managing Queensland's natural resources ... for today and tomorrow

Information kit for land and water management plans

fitzroy basin

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Queensland **the Smart State**

Queensland Government
Natural Resources, Mines and Water

Fitzroy Basin

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For further information contact your nearest LWMP Natural Resource Management Officer.

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1. About this information kit

This information kit is a supplementary guide for use by landholders intending to prepare land and water management plans (LWMPs) in the Fitzroy Basin area of central Queensland.

In the course of preparing LWMPs, landholders are required to provide a range of natural resource related information covering their property. The requirements of the Department of Natural Resources, Mines and Water (NRMW) that landholders need to address in the preparation of a LWMP are outlined in the *Guidelines for land and water management plans—Fitzroy Basin.*

The guidelines include desired outcomes for the specific elements of a LWMP. These will be met where the management and use of land and water resources are consistent with contemporary good agricultural management practices. Achievement of these outcomes will contribute to the natural resource management targets set out in regional plans by community representative groups such as the Fitzroy Basin Association.

These requirements stem from the water reform agenda of the Council of Australian Governments and the allocation of water under the *Water Act 2000*. They aim to achieve the sustainable use of land and water resources.

2. Accessing the information

This information kit outlines the publicly available, relevant datasets currently stored by NRMW, as well as maps outlining the areas covered.

The information kit does not provide the data itself; rather it supples:

- data descriptions
- prices
- areas covered
- the range of data format options
- the contact person for acquiring data over specific areas or properties.

All prices quoted are current as at 1 July 2005 and are subject to annual CPI price rises. For up-to-date prices go to <www.nrm.qld.gov.au/products/index.php>. For data not listed on this website contact the NRMW person mentioned in the relevant section of this document. To obtain A3 size hard copies of the maps provided in this information kit please contact your local NRMW office.

3. Datasets relevant to LWMP

3.1 Soil and land suitability studies

Refer to map in section 4.1.

3.1.1 Soils and land suitability of the Gavial–Gracemere area

The study area identified by the report, *Soils and land suitability of the Gavial–Gracemere area, central Queensland* (DNRQ990146) covers 9636 hectares (ha) to the south of Gracemere, approximately 10 kilometres (km) west of Rockhampton.

The report provides a general description of the soils of the study area and an assessment of agricultural land suitability for plantation, tree and vine crops (including mango, custard apple, citrus, grape, pineapple and passionfruit), forage and grain sorghum, lucerne, cucurbit and vegetable crops (watermelons, pumpkins and cucumbers). Maps produced include a soils map, an agricultural land class map, and a series of land suitability maps for different crops.

Available data

- Hardcopy report and maps — $25.65
- Digital data (GIS) — $117.90 (single user licence)

Further information

- NRMW contact person — Natural Resource Information Management Officer
  Phone: (07) 4967 0820

3.1.2 Land resource assessment—central Queensland horticultural area

Coastal horticultural lands producing pineapples, papaws, mangoes and other tropical fruit are experiencing pressure for land use change.

The report, *Land resource assessment—central Queensland horticultural area* (DNRQ990066) outlines a land resource survey undertaken in Calliope and Livingstone Shires. This survey assesses the horticultural potential of 16 selected areas (approximately 51 200 ha) along the central Queensland coast.

Land resource attributes examined include landform, slope, soils, lithology, land degradation, cleared land, vegetation and land use. Interpreted information includes the suitability and limitations to vegetable crop, plantation, tree and vine crop and sown pasture production.

Thirteen of the 16 areas have interim reports with maps illustrating soil distribution; the distribution of suitability classes for vegetable crops; plantation, tree and vine crops; sown pastures; and the distribution of agricultural land classes.

The report is a compilation of these areas with an accompanying soil map and land suitability map.

Available data

- Hardcopy report and maps (can include a single interim report) — $36.85
- Digital data (GIS) — $117.90 (single user licence)

Further information

- NRMW contact person — Natural Resource Information Management Officer
  Phone: (07) 4967 0820

3.1.3 Soil survey of the Emerald irrigation area left bank

The report, *Soil survey of the Emerald irrigation area left bank* outlines a soil survey (1:25 000) of 16 000 ha on the left bank of the Nogoa River. This was undertaken for the purpose of the subdivision of land into irrigation farms, each being a minimum of 200 ha at the commencement of the Emerald Irrigation Scheme.

Land resource attributes examined for the soil survey include landform, slope, soils, lithology, land degradation, cleared land, vegetation and land use.

The soil survey generated the report, digital data and one map.

Available data

• Hardcopy report and maps	$18.35
• Digital data (GIS)	$117.90 (single user licence)

Further information

• NRMW contact person	Natural Resource Information Management Officer Phone: (07) 4967 0820

3.1.4 Land resources of the Emerald irrigation area right bank

The report, *Land resources of the right bank of the Emerald irrigation area* outlines a soil survey (1:25 000) and recommended land uses.

The recommended land uses are agricultural production areas, pasture research areas, forestry production areas, irrigation implementation, urban development, waste disposal, highway planning, mine site rehabilitation, engineering uses, management of small catchments, shire planning (agricultural areas).

Land resource attributes examined for the soil survey include landform, slope, soils, lithology, land degradation, cleared land, vegetation and land use.

The soil survey generated the report, digital data and one map.

Available data

• Hard copy report and map	$18.35
• Digital data (GIS)	$117.90 (single user licence)

Further information

• NRMW contact person	Natural Resource Information Management Officer Phone: (07) 4967 0820

3.1.5 Acid sulfate soil mapping

Acid sulfate soil description and mapping have been carried out for much of the Queensland coastline between Keppel Sands to the south and Seaforth to the north of Mackay.
There are three main study areas:

- Mackay District
- Tannum Sands to Gladstone
- Keppel Sands to Yeppoon.

Refer to maps in section 4.2.

Available data

Reports are available for Tannum Sands to Gladstone and Keppel Sands to Yepoon.

- Reports $25.65
- Digital data (GIS) $117.90 (single user licence)

Textual data is available in the form of a written report for sites sampled between Tannum Sands and St Lawrence.

- Report $36.85

Further information

- NRMW contact person — Natural Resource Information Management Officer
  Phone: (07) 4967 0820

3.2 Topographic and orthographic mapping

A topographic map provides information about the shape of the land, its natural features and purpose-built structures. It allows the user to obtain precise measurements (to within map scale limits) of distance, direction and area. Orthographic mapping refers to digital topographic data derived through the interpretation of aerial photography.

Refer to map in section 4.3.

3.2.1 Relief or elevation mapping

The relief or elevation mapping dataset is digital topographic data over selected areas of Queensland and has been derived through the interpretation of aerial photography, or scanning of existing mapping. Maps may contain relief, drainage, cultural and vegetation themes. The web page at <www.nrm.qld.gov.au/property/mapping/dtdata/index> shows all areas where digital topographic data has been captured.

Available data

- Hardcopy maps (elevation and drainage) — $9.55
- Digital data (GIS)* — $117.90 (single user licence)

Further information

- NRMW contact person — Natural Resource Information Management Officer
  Phone: (07) 4967 0820

*Up to 10 standard mapping sheets

3.2.2 Raster images

Sunmap Raster presents all of Queensland's available 1:25 000 scale topographic line maps as geo-referenced ECW images, complete with viewing software. The images used in Sunmap Raster are derived from the current edition of the respective topographic line maps produced by NRMW as at October 2004.

For more information please view the Sunmap Raster flyer at <www.nrm.qld.gov.au/property/mapping/raster/pdf/sunmap_rast_flyer.pdf>.

Not all of Queensland is mapped at this scale. Covered areas are highlighted on the Sunmap Raster key map at <www.nrm.qld.gov.au/property/mapping/raster/sunmap_raster_keymap>.

To view details of all topographic line maps used within this product, please refer to the Sunmap Raster topographic line map listing sorted by map number at <www.nrm.qld.gov.au/property/mapping/raster/maps_by_number>.

Available data

- Sunmap raster images (GIS) — $101.50 (single CD)

Further information

- NRMW contact person — Natural Resource Information Management Officer
  Phone: (07) 4967 0820

3.2.3 Flood plain boundary mapping

Structures such as storages, banks and channels on flood plains can alter natural flows, which may have adverse impacts on properties and/or infrastructure upstream or downstream.

Landholders with properties within any flood plain are required to address associated flood plain management issues in their LWMPs. Landholders may also be required to abide by local laws or flood plain management plans prepared by local government.

While there is limited accurate flood plain boundary mapping in Queensland, the flood plain boundaries for sections of the Nogoa River, Dawson River and Policeman's Creek within the Fitzroy Basin have been mapped.

Refer to maps in section 4.6.

Further information

- NRMW contact person — Natural Resource Information Management Officer
  Phone: (07) 4967 0820

3.3 Surface water resources mapping

3.3.1 Drainage mapping

Digital drainage data exists over most of Queensland and has been derived from relief and/or elevation mapping. Refer to section 3.2.1.

Digital drainage data can be used to derive stream order classification. When applications to clear vegetation are assessed against assessment codes and policies under the *Vegetation Management Act 1999*, stream order is used to determine whether the 'acceptable solution' for watercourses has been met.

Stream order is a numerical ordering classification of each watercourse segment according to its position within a catchment, as shown in Figure 1 below. When two streams of the same order join, the resulting watercourse becomes one stream order larger. If two streams of a different order join, the resultant stream order is that of the larger stream.

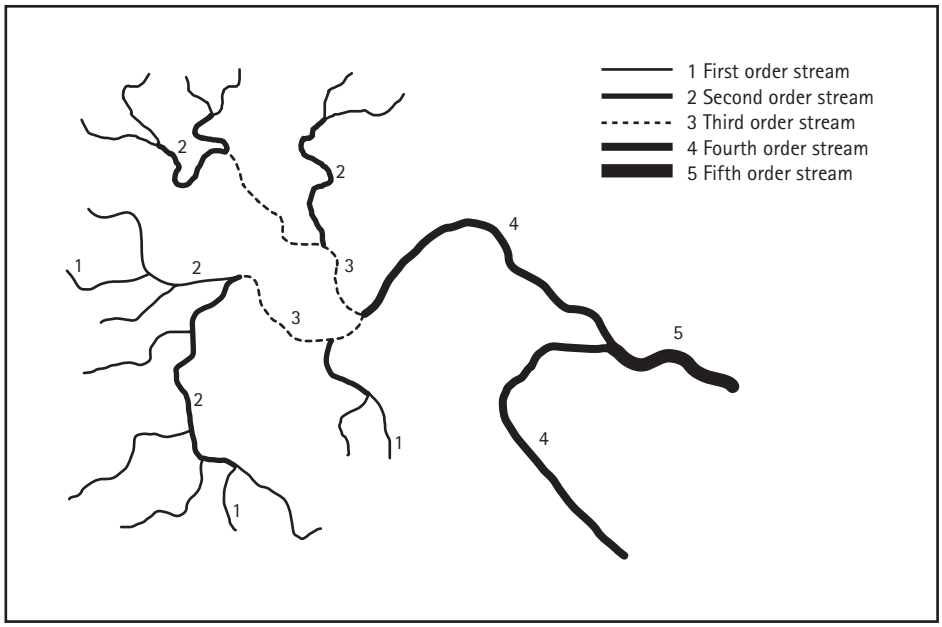

Figure 1 Stream ordering

Further information

- NRMW contact person — Natural Resource Information Management Officer
  Phone: (07) 4967 0820

3.4 Groundwater resources mapping

3.4.1 Bores

NRMW's groundwater database stores all Queensland groundwater resource information including:

- aquifer details, including strata and stratigraphy
- individual bore data including location, elevation and sometimes condition
- water level and quality including pump and flow test data for individual bores
- bore construction information.

The database also has a number of support tables that record map information, including water level measurement runs, validation dates, geological formations and Great Artesian Basin rehabilitation work.

A network of NRMW bores is regularly monitored for depth and/or water quality.

Reports (including graphs) can be prepared on request for sites in and around specific monitoring bores and can be a useful tool for condition and trend reporting for LWMP requirements.

Available data

• Digital data (textural and GIS)	$117.90 per aquifer (single user licence)

Further information

• NRMW contact person	Natural Resource Information Management Officer Phone: (07) 4967 0820

3.4.2 Declared catchments

The declared subartesian areas dataset shows the boundaries of all declared subartesian areas within Queensland. Subartesian areas are where the Queensland Government regulates the drilling and use of bores. Within these areas all bores must have a licence and landholders are obliged to record all details pertaining to bores including location, strata, pumping rates and construction.

Refer to map in section 4.5.

Available data

• Digital data (GIS)	$117.90 (single user licence)

Further information

• NRMW contact person	Natural Resource Information Management Officer Phone: (07) 4967 0820

3.5 Vegetation mapping

The Environmental Protection Agency (EPA) has undertaken vegetation mapping for all of Queensland. Referred to as regional ecosystem (RE) mapping, the mapping takes into account the land zone, geology and vegetation of any particular site. The RE status for any property is also recorded. This includes whether the RE is remnant or cleared and if it is considered endangered, of concern or not of concern.

Areas of bluegrass dominant pastures (*Dicanthium* spp.) within the brigalow belt section of the Fitzroy catchment are listed as endangered under the federal *Environment Protection and Biodiversity Conservation Act 1999*. If development is likely to impact on remnant areas, the activity must be referred to the Australian Government for assessment. The activity cannot proceed without approval.

RE maps for individual properties can be useful tools when preparing LWMPs and can be purchased from any NRMW client service centre. They can also be downloaded free of charge from the EPA's internet web site, <www.epa.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/introduction_and_status/Regional_Ecosystem_Maps/>.

Map 4.4 shows the portion of the Fitzroy Basin located within the brigalow belt bioregion.

Available data

- Hard copy maps can be purchased through NRMW client service centres for $25.65 (A3 or A4).

3.6 Land use mapping

The information produced by the land use mapping dataset is of use for strategic planning purposes only. It is not relevant at a property scale.

The land use mapping dataset represents the 1999 survey of land use in the Fitzroy Basin. Data is classified to the Baxter Russell classification and has been prepared at 1:100 000 scale for the entire area. The data was collected by satellite imagery interpretation and extensive fieldwork.

Available data

• Digital data (GIS)	$117.90 per area (single user licence)

Further information

• NRMW contact person	Natural Resource Information Management Officer Phone: (07) 4967 0820