

**PLANNING GUIDELINES:  
THE IDENTIFICATION OF GOOD QUALITY  
AGRICULTURAL LAND**

**DEPARTMENT OF PRIMARY INDUSTRIES**

**&**

**DEPARTMENT OF HOUSING, LOCAL GOVERNMENT AND PLANNING**

**QUEENSLAND**

## 1. INTRODUCTION

**1.1** The implementation of State Planning Policy 1/92: *Development and the Conservation of Agricultural Land* requires decision makers in both Local and State Governments to be aware of the location and extent of *good quality agricultural land*. Such information is necessary so that provisions for the protection of this land can be included in strategic plans, development control plans (DCPs) and other elements of planning schemes.

**1.2** These guidelines will assist local authorities and development proponents to identify areas of *good quality agricultural land* for planning purposes including the assessment of applications for rezoning, subdivision and consent in all rural areas. The roles of local authorities, development proponents and the State Government are presented in section 9.

**1.3** These guidelines should be read in conjunction with State Planning Policy 1/92.

## 2. DEFINITION OF GOOD QUALITY AGRICULTURAL LAND

**2.1** *Good quality agricultural land* is land which is capable of sustainable use for agriculture, with a reasonable level of inputs, and without causing degradation of land or other natural resources. In this context, *agricultural land* is defined as land used for crop or animal production, but excluding intensive animal uses such as feedlots, piggeries, poultry farms and plant nurseries based on either hydroponics or imported growth media.

**2.2** Four classes of agricultural land have been defined for Queensland (Refer Table 1 and Attachment 1). Class A land in all areas is considered to be *good quality agricultural land*. In some areas, Class B land (where agricultural land is scarce) and better quality Class C land (where pastoral industries predominate), are also considered to be *good quality agricultural land*.

**TABLE 1. AGRICULTURAL LAND CLASSES**

CLASS	DESCRIPTION
<b>Class A</b>	<b>Crop land</b> - Land that is suitable for current and potential crops with limitations to production which range from none to moderate levels.
<b>Class B</b>	<b>Limited crop land</b> - Land that is marginal for current and potential crops due to severe limitations; and suitable for pastures. Engineering and/or agronomic improvements may be required before the land is considered suitable for cropping.
<b>Class C</b>	<b>Pasture land</b> - Land that is suitable only for improved or native pastures due to limitations which preclude continuous cultivation for crop production; but some areas may tolerate a short period of ground disturbance for pasture establishment.
<b>Class D</b>	<b>Non-agricultural land</b> - Land not suitable for agricultural uses due to extreme limitations. This may be undisturbed land with significant habitat, conservation and/or catchment values or land that may be unsuitable because of very steep slopes, shallow soils, rock outcrop or poor drainage.

**2.3** Agricultural land classes are based on an assessment of the agricultural suitability of the land for specified agricultural uses. Agricultural land suitability is a rating of the ability of land to maintain a sustainable level of productivity. The factors used to assess agricultural land suitability are the soil, topographic and climatic limitations which determine sustainable productivity. Explicit evaluation of economic factors, such as the size of production units, are not included as they are not considered relevant to the quality of the resource. Methods of agricultural land suitability assessment have been published by the Department of Primary Industries (DPI) and others (see Section 10).

**2.4** Existing land resource mapping throughout the state has been interpreted to this classification contained in Table 1, to provide information on the location of *good quality agricultural land*. This is a simplification of existing land resource information, to enable the best agricultural resources within each local authority area to be identified for planning purposes. Attachment 2 provides this interpretation based upon the best available information.

**2.5** The definition of what constitutes *good quality agricultural land* within a local government area is a DPI responsibility, although local agricultural industries, local authorities and other relevant groups will be consulted.

**2.6** In the future, circumstances may arise where the definition of what constitutes *good quality agricultural land* in a region may need to be reviewed. Changes in agricultural land suitability as a result of new technology, environmental change or loss of infrastructure important to an agricultural industry may justify a review. A change in definition would be a DPI decision following consultation as described in the preceding paragraph.

### **3. ROLE OF PLANNING SCHEMES**

**3.1** Strategic plans, supported as necessary by Development Control Plans (DCPs), provide the planning framework within which local authorities should guide future development and land use. Therefore it is essential that areas of *good quality agricultural land* are identified in planning studies, and that strategic plans and that appropriate designations and provisions for the protection of those areas in accordance with the

State Planning Policy 1/92. Broad-scale land resource information (Refer Attachment 2) should be used to define those areas where non-agricultural development will not be approved, unless there is an overriding need for the development in terms of public benefit at the particular location.

**3.2** *Good quality agricultural land* designated for protection by strategic plans and supporting DCPs should have long-term prospects for agricultural use. Areas where farm units and small holdings are not considered to be agriculturally viable should normally be designated for protection to encourage land amalgamation and farm re-structuring. However, where such land is isolated, or significantly fragmented by other uses, farming might be too heavily constrained to warrant protection for agricultural use. The assessment of these areas needs to be undertaken by local authorities in consultation with DPI, landholders and local agricultural industries, so that agreement is reached on where land should be designated for protection..

**3.3** Strategic plans which adequately define and protect *good quality agricultural land* in this way provide clear direction to the development industry and the community. Consequently, the control of development and the protection of agricultural land should be easier and less contentious for all parties, provided of course, that such plans are properly supported by appropriate scheme provisions, zoning and subdivision control.

### **The need to review and amend planning schemes**

**3.4** Accordingly, local authorities are encouraged to review and amend their schemes in accordance with the above principles. While 'down-zoning' will generally not occur, there may be instances where inappropriate preferred dominant land uses in strategic plans or DCPs should be removed from areas where *good quality agricultural land* is identified.

**3.5** Subdivision provisions should be reviewed to ensure that they are consistent with the land quality and do not encourage fragmentation below a generally agreed minimum holding size. Although not significant in themselves, incentives to amalgamate land titles should also be considered, for example, reduced application fees.

**3.6** Where there are no strategic plans, DCPs or planning schemes, a Local Planning Policy should be prepared to explain how *good quality agricultural land* is to be protected where land use and subdivision approvals are being issued.

## **4. ASSESSING PLANNING APPLICATIONS**

**4.1** State Planning Policy 1/92 applies to all areas of *good quality agricultural land*, irrespective of whether farming activity is present. When assessing planning applications, the following issues need to be considered to determine what information is required and how the Policy should be applied.

### ***Land committed for non-rural development or sub-division***

**4.2** There will be instances where the subject land is effectively committed for development or subdivision by the planning scheme. Such a commitment would comprise the following:

- an unequivocal inclusion of the site in an area depicted for non-rural\* uses in a strategic plan or DCP, where development approval is not contingent upon consideration of the agricultural land quality; or
- the inclusion of the subject land in a zone which permits non-rural\* uses 'as-of-right'; or
- a sub-division proposal which exceeds or meets the minimum lot size prescribed by the Planning Scheme for the zone, and there is no discretion to raise the minimum size.

**4.3** Discretionary subdivisions (for example under 'family excisions' provisions) are generally below the minimum specified lot sizes and therefore, should not be regard as 'commitments'. Such applications should be assessed against the Policy, and so the agricultural land quality should be established.

**4.4** Any proposals on sites 'committed' as defined above should normally be considered on their planning merits without reference to the agricultural issues. In these circumstances, an

agricultural land quality assessment would clearly be unnecessary.

**4.5** Rejecting proposals for development despite some commitment in the planning scheme could have compensation implications. Therefore, only in exceptional cases should consideration be given to setting aside a commitment because of the need to retain a particular site in agricultural use. For example, the loss of land from agricultural production might prejudice the viability of a processing industry such as a sugar mill. In such cases, an assessment of a site's agricultural quality would be required to substantiate the case for retention.

**4.6** A development proposal that is ancillary to agricultural uses would be consistent with the Policy. Therefore, an agricultural land quality assessment in support of such planning applications would be unnecessary.

**4.7** In this context, it is necessary to distinguish between 'family' subdivisions in general (see para. 4.3 above) and those subdivisions specifically providing for agricultural workers' accommodation. Subdivisions intended to provide housing for family occupation would be contrary to the Policy where *good quality agricultural land* is involved, unless the occupants are primarily working in agriculture. In cases where there is an agricultural justification for the subdivision, the dwelling should be sited on poorer quality land whenever feasible.

**4.8** A proposed use which would not permanently alienate the land from agriculture would not be contrary to the Policy. Such a use would not involve the significant loss of soil either by removal, earthworks or building coverage. (For example, a riding school could fulfil this requirement).

### ***All other cases***

**4.9** In all other cases, the agricultural quality of the subject land should be established to determine whether the principles of State Planning Policy 1/92 are applicable.

**4.10** There will be occasions when the applicant and the local authority agree that the site is *good quality agricultural land*. Clearly no further assessment of land quality would be required and the proposal can be assessed in the

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\* *non-rural includes 'rural residential' land use.*

context of the Policy and other Policy and other planning considerations.

**4.11** Where the agricultural land quality is unknown or unclear, available broad-scale land resource information should be used in the first instance, as illustrated in Attachment 2. However, in most cases, detailed on-site information will be required.

**4.12** If the subject land is found to be *good quality agricultural land*, the local authority should refuse the application unless:

- there is an overriding need in community terms of public benefit for the proposal, and the proposal cannot be located on alternative sites of poor agricultural quality; or
- the subject land is located so that farming, either alone or in association with surrounding parcels, is not practicable: for example, a small isolated parcel of land surrounded by urban land uses.

### Determining “Overriding Need”

**4.13** Determining “an overriding need in terms of public benefit” depends upon the circumstances of the particular proposal. Some obvious cases of “overriding need” which are likely to justify the loss of the agricultural land illustrates the principles.

**4.14** State Planning Policy 1/92 cites the example of a tourist development that could provide the opportunity to diversify the economic and employment base of an area and support a growing State industry. A mining proposal is likely to offer similar advantages locally, as well as providing significant export revenue for the State as a whole. Finally, major infrastructure (for example, roads, railways, aerodromes and dams) usually have specific siting/location requirements that might require the loss of some good quality agricultural land.

**4.15** These examples should not be regarded as a justification for every proposal involving such developments. Each proposal should still be assessed on its merits to determine the degree of community advantage.

**4.16** Instances of proposals for residential development on good quality agricultural land are

likely to be more frequent. In such cases. The need for the development should be established in the context of other undeveloped land designated for urban or residential development by the strategic plan. Also relevant is the availability of alternative sites that are not of good agricultural quality, but could be serviced reasonably and could meet the same housing demand. Where an area is reasonably close to a local authority boundary, consideration of suitable alternative sites should include those in the neighbouring local authority.

**4.17** Employment/commercial developments and other non-rural proposals should be assessed in a similar way.

### Potential conflict with adjoining uses

**4.18** If the subject land is found not to be *good quality agricultural land*, the local authority should consider if there is likely to be conflict between the proposal and adjoining agricultural uses. If such conflicts are likely, measures to avoid them should also be considered. Small pockets of poor quality agricultural land may exist within an area of predominantly good quality land. The development of such pockets interspersed with agricultural activity could lead to serious land use conflict and should be avoided.

## 5. AVAILABLE LAND RESOURCE INFORMATION

**5.1** Information on land resources is available at different levels of detail and presented on maps at different scales, depending on the intensity of data collection. These Guidelines differentiate between broad-scale information (1:50 000 - 1:500 000 scale) appropriate for strategic and regional planning; and detailed information (1:2 500 to 1:10 000) which is essential for detailed land resource assessment and processing of planning applications.

### Present coverage of broad-scale information

**5.2** Land resource information has been collected at a broad-scale by DPI and CSIRO, and is available for most areas of the State. However the application of this information to detailed development assessment is limited.

**5.3** Attachment 3 shows the areas of the State covered by existing maps published at scales of 1:1 000 000 and larger. Queensland is covered in its entirety by 1:2 000 000 scale land resource information, but this is not appropriate for regional and strategic planning.

**5.4** In many areas, the best available information is limited to soils mapping, which has not been interpreted for agricultural suitability or other specific land uses. To assist in the use of such information, DPI has identified those mapping units considered to be *good quality agricultural land* (Refer Attachment 2). Local authorities should obtain copies of the information appropriate to their areas for incorporation in strategic plans.

### Applications of broad-scale mapping

**5.5** Broad-scale land resource information is limited in two respects: firstly the level of detail; and secondly its interpretation for specific purposes. Such information was collected for a wide range of purposes, not just for planning applications. Table 2 shows the minimum area which can be depicted at an acceptable level of accuracy for a range of map scales. For example, for a 1:50 000 scale map, there may only be one ground observation to describe and assess as much as 100 ha of land but a minimum area of 5 ha can be depicted on a map. While this is an acceptable level of accuracy for strategic planning of rural areas, further ground observations would be required to assess a development proposal of 5 to 20 ha in area.

**5.6** It is not acceptable for maps published at a broad scale to be enlarged for detailed assessments, as the level of accuracy is limited to the intensity of data collection for the published map.

### Use of broad-scale information in processing applications

**5.7** Where development of rural land is proposed, the broad-scale maps in strategic plans or other sources should be used by local authorities to indicate to proponents whether *good quality agricultural land* is likely to be affected. In cases where such information indicates that the subject land has no agricultural land of good quality, further analysis is usually unnecessary. However, if the local authority has additional information suggesting that the subject land is *good quality agricultural land*, then a detailed assessment should be requested. Some weight may be given to any history of previous cultivation and/or erosion of the subject land.

**5.8** If *good quality agricultural land* is indicated on the maps, the proponent may wish to apply for 'consideration-in-principle' where local authorities have this provision available. The local authority may either declare its opposition to the proposal at this stage, or specify that a detailed assessment of land resources should be included with any formal application submitted. In some cases, the broad-scale mapping information may be sufficient for the assessment of planning applications in areas of uniform suitability for agriculture.

**TABLE 2. MINIMUM AREAS DEPICTED ON LAND RESOURCE MAPS**

SCALE OF MAP	AREA PER GROUND OBSERVATION	MINIMUM AREA DEPICTED ON MAP
1:5 000	0.25 - 1.00 ha	500 m <sup>2</sup>
1:10 000	1.00 - 4.00 ha	2000 m <sup>2</sup>
1:25 000	6.25 - 25.00 ha	12500 m <sup>2</sup>
1:50 000	25 - 100 ha	5 ha
1:100 000	100 - 400 ha	20 ha
1:250 000	625 - 2500 ha	125 ha
1:500 000	2500 - 10000 ha	500 ha

Source: Gunn *et al.* (1988)

For example, an application for development in the centre of an agricultural area mapped as *good quality agricultural land* at 1:50 000 scale may be rejected on the basis of the broad-scale mapping alone. However in most cases, a detailed site assessment will be required.

## 6. PROVISION OF DETAILED LAND RESOURCE INFORMATION

**6.1** Where a development proposal affects an area identified as *good quality agricultural land* on the strategic plan or other data source, regardless of whether the land is currently cultivated, a detailed assessment of the agricultural quality of the land is usually necessary. Local authorities should make it clear, either by resolution, policy, or scheme amendment (if considered necessary by the local authority), that such information must form part of the application and is therefore in 'the public domain'.

### Information to be collected

**6.2** A detailed assessment should determine the extent of the various land types, the agricultural quality of the land resources on the subject land, and the likely effect of the proposal on the subject and surrounding lands. To ensure that an adequate level of information is supplied by the proponent to local authorities, sources and standards of data collection are specified in the following sections. In addition, a sample report of a detailed land resource assessment is provided in Attachment 4.

**6.3** Prior to on-site inspection, land resource information should be obtained from the local authority or DPI, to determine the level of site inspection necessary. The available information will usually be at a broad scale, but some ground observation site data may be available from the DPI.

### Types of on-site inspection

**6.4** The type of on-site inspection undertaken will depend on the adequacy of existing information in relation to the development proposal. For example, existing information needed to determine suitability for tree crops may include detailed soil mapping, but may lack data

on slopes and erosion risk. In other areas, detailed information on soils, vegetation and landform may not exist, and a complete survey of land resources of the subject land is required.

**6.5** With some planning applications, part or all of the subject land may be clearly non-rural (Class D) due to surface feature limitations such as extreme slope, stoniness or wetness. In such cases, only these obvious limitations, together with site locations and boundaries indicating the extent of such land, need be recorded.

Land resource survey data should be collected in accordance with Australian survey standards for conducting surveys; and describing sites (Gunn *et al.*, 1988 and McDonald *et al.*, 1990). Interpretation of land resource information for agricultural land suitability should follow Queensland guidelines (Land Resources Branch, DPI, 1990).

### Density of ground observations

**6.7** A minimum density of ground observations (site descriptions) is necessary for the accurate assessment of land resources and agricultural land quality. This is determined by the scale of mapping and area of the proposal. Recommended standards for density of ground observations for detailed assessments are presented in Table 3.

**6.8** A minimum density of ground observations should consist of detailed site descriptions that represent the major land and soil types identified by ground survey or aerial photo interpretation. On parcels of land less than 10 ha in area, a higher proportion of ground observation sites should be described in detail so that the major land and soil types are adequately characterised. A minimum set of quality land resource data should be collected at each of these detailed ground observation sites. These minimum data requirements, based on McDonald *et al.*, (1990) and are set out in Table 4.

### Mapping

**6.9** Additional ground observations to delineate mapping boundaries require less detailed descriptions. These may account for up to 80% of the total number of ground observation sites. A map should be prepared at the recommended scale showing ground observation sites, land resources and agricultural land classes (Refer Attachment 1).

### Soil sample analyses

**6.10** Soil samples for laboratory analysis should be collected from ground observation sites representative of major land types. Detailed soil descriptions are required of such sites. The aim of the laboratory analysis is to characterise soil fertility, salinity and sodicity - important soil properties for agricultural land suitability assessment. For agricultural land uses where fertiliser use is a standard management practice, fertility assessment is optional. Bulked soil samples for fertility assessment need to be collected from the surface (0-0.1 m depth) from several points within a 10m radius of the profile hole. Samples for pH, sodicity and salinity, also need to be collected from depths throughout the soil profile (0.2-0.3 m; 0.5-0.6 m; 0.8-0.9 m; and 1.1-1.2 m).

**6.11** Soil fertility assessment should include analyses for nitrogen, phosphorous, potassium and organic carbon. Assessment of soil pH should be by 1:5 (soil:water). Soil salinity assessment may be by 1:5 (soil:water) or saturation paste extract for electrical conductivity. Soil sodicity assessment should use standard exchangeable cation and CEC methods.

**6.12** Soil analyses should be conducted by a NATA registered laboratory. Interpretation of soil analysis is usually provided by the laboratory, but background information is available in Baker (1991).

### Water

**6.13** In areas of the state where agriculture is dependent on irrigation for sustainable production, site information should include an assessment of the availability and quality of water supplies from both on-farm and reticulated sources. Proponents should contact the Water Resources Commission to determine the availability of water resource information.

### Agricultural land suitability assessment

**6.14** Interpretation of land resource information for agricultural land suitability should follow Queensland guidelines (Land Resources Branch, DPI, 1990).

**6.15** Criteria for the local interpretation of land and soil attributes for agricultural suitability may be found in the individual reports accompanying broad-scale maps for local areas. These reports are available from the DPI or CSIRO, and are listed in Attachment 2.

**TABLE 3: RECOMMENDED DENSITY OF GROUND OBSERVATIONS FOR DETAILED MAPPING**

TOTAL AREA OF PROPOSAL	MAP SCALE*	DENSITY** (ha per obs)
less than 10 ha	1:2 500	0.5 - 1.0 ha
10 -100 ha	1:5 000	1.0 - 4.0 ha
more than 100 ha	1:10 000	6.25 - 25 ha

\* Maps should not be enlarged as boundaries are only accurate to the scale indicated.

\*\* Lower recommended densities are acceptable only in areas of uniform soil types.

**TABLE 4. MINIMUM DATA SET AT DETAILED SITE DESCRIPTIONS (>20% OF OBSERVATIONS)****General**

Map reference	Land disturbance
Runoff	Microrelief
Permeability	Erosion (type and degree)
Drainage	Surface coarse fragments
Surface condition	Rock outcrop
Land use (specific crops)	Groundwater depth (if less than 2 m below surface)

**Soil**

Soil profiles should be described to a depth of 1.2 m or to a hard impenetrable layer. For some land uses e.g. avocados, greater depths need to be investigated. Describe the following for each soil horizon:

Horizon depth	Structure*
Colour	Segregations
Mottles	Field pH
Field texture	Boundary distinctness
Coarse fragments	

Classification - Great Soil Group, Principal Profile Form, Australian Soil Classification.

**Vegetation**

Height, cover and dominant species of each stratum  
Formation of each stratum\*

**Landform**

Slope	Landform element type
Relief/modal slope class	Landform pattern type
Morphological type	

**Substrate\***

Lithology of and depth to substrate

**Note:** Items marked with an asterisk (\*) are optional

## 7. PRESENTATION OF INFORMATION

7.1 Information submitted by the proponent to a local authority on the quality of agricultural land should include:

- a map of the subject land, showing the location of ground observations and classes of agricultural land (Table 1);
- a report describing the land resources of the subject land, and an interpretation of the attributes of these land resources, in terms of suitability for the major agricultural land uses of the area. The report should also discuss the surrounding agricultural land uses in terms of the likely conflict between the proposal and surrounding uses; and
- background data such as detailed site descriptions and soil analyses.

7.2 An example of a report on the quality of agricultural land is presented in Attachment 4.

### Storage of information

7.3 Land resource information submitted as part of an application to a local authority will be considered as public information and accessible to the community. The site data which forms part of this information should be in a standard format (examples are presented in Attachment 4). Arrangements will be made between DPI and local authorities for the exchange and storage of site data on a Statewide database.

## 8. ASSESSMENT AND INTERPRETATION OF INFORMATION

8.1 Local authorities will be expected to use the submitted information to assist in determining the application. If the supporting information is deemed to be inadequate, the proposal should not be considered until a report of acceptable standard is submitted by the proponent.

### Assessing the information

8.2 If the land resource information submitted by the proponent indicates that the subject land is

not *good quality agricultural land* and is in disagreement with available broad-scale land resource information, the local authority may either accept the assessment or obtain an independent assessment. This assessment may be carried out using expertise available to the local authority (staff or consultant) or by requesting advice from the DPI. If the land is confirmed as not being *good quality agricultural land*, then the application is determined on other relevant material planning considerations.

### Registration of consultants

8.3 Currently, there is no registration of land resource consultants in Queensland. As an initial step, a voluntary register of land resource consultants capable of preparing reports consistent with these Guidelines is being maintained by DPI. Consultants wishing to be listed on this register should provide DPI with the names and a copy of their *Curriculum Vitae*.

8.4 It is intended that DPI will monitor the standard of information submitted with development applications as specified in these Guidelines and, if necessary, consider accreditation of land resource consultants.

## 9. ROLES

### Proponent

- Responsible for submitting adequate land resource information in support of a development application.

### Local authority

- Responsible for preparing strategic plans indicating areas of *good quality agricultural land* and policies for the protection of such areas.
- Provide applicants with specifications for land resource information as set out in the *Planning Guidelines: The Identification of Good Quality Agricultural Land*.
- Determine applications, based on independent advice if necessary.
- Supply site data from planning applications to DPI and advise on local issues relating to the identification of *good quality agricultural land*.

### **Department of Primary Industries**

- Provide and comment on available broad-scale land resource information for strategic planning.
- Prepare standards for detailed land resource information assessment.
- Define what constitutes *good quality agricultural land* within a local authority area.
- Facilitate the training of consultants in collection and local authority staff in the interpretation, of land resource information.
- Assist local authorities in checking submitted information, if necessary, and ensure appropriate standards are met.
- Provide advice to DHLGP relevant to the implementation of State Planning Policy 1/92.
- Maintain and provide public access to site database.
- Maintain a voluntary register of land resource consultants.

### **Department of Housing, Local Government and Planning**

- Review Planning Scheme proposals and amendments (rezonings).
- Advise Minister for Housing, Local Government and Planning.
- Provide policy guidance to local authorities.

## **10. REFERENCES**

Baker, D.E. (1991), *Interpreting soil analysis from soil surveys conducted in Queensland*. Queensland Department of Primary Industries Bulletin Series QB91001.

Gunn, R.H., Beattie, J.A., Reid, R.E. and van de Graff, R., eds. (1988), *Australian Soil and Land Survey Handbook: Guidelines for conducting surveys*. Inkata Press, Melbourne.

Land Resources Branch (1990), *Guidelines for agricultural land evaluation in Queensland*. Queensland Department of Primary Industries Information Series QI90005.

McDonald, R.C., Isbell, R.F., Speight, J.G., Walker, J. and Hopkins, M.S. (1990), *Australian Soil and Land Survey Field Handbook (2nd Edition)*. Inkata Press, Melbourne.

## **11. ATTACHMENTS**

1. Agricultural Land Classification.
2. List of best available land resource information for each local authority.
3. Map of existing land resource mapping.
4. Sample of detailed land resource assessment.

## **12. FURTHER INFORMATION**

**For further information** on the subjects covered in these Guidelines contact:

Resource Assessment and Planning Unit, DPI, Meiers Road, Indooroopilly, 4068. Telephone (07) 877 9515. Fax (07) 371 8258; or

Regional Offices of the DPI at Townsville, Rockhampton, Nambour, Toowoomba and Longreach.

## ATTACHMENT 1: AGRICULTURAL LAND CLASSIFICATION

### **A CROP LAND**

#### **Land suitable for current and potential crops**

Limitations to production range from none up to moderate levels.

All crop land is considered to be *good quality agricultural land*.

### **B LIMITED CROP LAND**

#### **Land marginal for current and potential crops; and suitable for pastures**

Land which is marginal or unsuitable for most current and potential crops due to severe limitations. Further engineering and/or agronomic improvements may be required before land would be considered suitable for cropping.

Land marginal for particular crops of local significance is considered to be *good quality agricultural land*.

### **C PASTURE LAND**

#### **Land suitable only for improved or native pastures**

Limitations preclude continuous cultivation for crop production but some areas may tolerate a short period of ground disturbance for pasture establishment.

In areas where pastoral industries are the major primary industry, land suitable for improved or high quality native pastures may be considered to be *good quality agricultural land*.

### **D NON-AGRICULTURAL LAND**

#### **Land not suitable for agricultural uses**

This may be undisturbed land with significant habitat, conservation and/or catchment values. Severe limitations preclude any interference with land or biological resources for the production of agricultural goods.

LOCAL GOVERNMENT	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Allora	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 1,2, 3, 4, 5, 6, 7, 8, 9,10,14, 15,16,17 <b>B:</b> 1, 11,12,13
Aramac (N)	Western Arid Region Land Use Study V (1993)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> Undulating Downs, Wooded Downs, Channel Country, Other Alluvia, Gidgee Lands, Alluvial Plains and Woodlands
Aramac (SW)	Western Arid Region Land Use Study IV (1978)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M1, M2, G1, F1, F2, F3, B1, B2, B3, B5, E1, T1, T2, A1, W1, W2, W3, W5, S1
Atherton	Evaluation of Agricultural Land - Atherton Shire - North Queensland (1983)	Kent, D.J. <i>et. al.</i>	Land Suitability Map	1:50 000	<b>A:</b> 1a,1b, 2 <b>B:</b> 3
Aurukun (S)	Lands of the Mitchell-Normanby Area, Queensland (1970)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>A:</b> M, L <b>B:</b> K, Ba, Mo, B, A <b>C:</b> Du, Le, C, R, I
Balonne	Lands of the Balonne-Maranoa Area, Queensland (1974)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> 7, 8, 21, 32, 33 <b>C:</b> 2, 3, 5, 6, 10, 4, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
Banana	Land Management Manual Dawson/Callide Districts Regional Resources Information (1991)	Shields, P.G. and Gillespie, R.L	Land Resource Areas Map	1:500 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4 <b>C:</b> 5
Barcaldine (E)	Western Arid Region Land Use Study IV (1978)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M1, M2, G1, F1, F2, F3, B1, B2, B3, B5, E1, T1, T2, A1, W1, W2, W3, W5, S1
Barcaldine (N)	Western Arid Region Land Use Study V (1993)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> Undulating Downs, Wooded Downs, Channel Country, Other Alluvia, Gidgee Lands, Alluvial Plains and Woodlands

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Barcaldine (S)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T15, F2, F3, F4, F5, F7
Barcoo (C)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Barcoo (S)	Western Arid Region Land Use Study I (1974)	Dawson, N. M. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M3, G5, W1, W6, W7, C1, C2, A1, A2, A5
Bauhinia (E)	Lands of the Isaac-Comet Area, Queensland (1967)	Story, R. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> A, Bl, Da, Gi, N, O, R <b>B:</b> Bw, Co, Hi, Hu, J, Mo, M, Re, So, Wa, Ct <b>C:</b> Be, Cr, Fu
Bauhinia (W)	Lands of the Nogoia-Belyando Area, Queensland (1967)	Gunn, R.K. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Ma, My, O, W <b>B:</b> Al, By, Bl, Ct, Cu, D, Fu, Hi, Hu, I, Mo, Pv, Ph, S, So, U, Wa, Wh <b>C:</b> Av, Cn, Fu, Ru, Wi
Beaudesert	Beaudesert Shire Council Strategic Planning Policies - 1976 (1976)	P.G. Pak-Poy and Associates Pty Ltd	Agricultural Land Suitability Map	1:150 000	<b>A:</b> Agriculture (Dark Green) Intensive Grazing (Light Green)
Belyando	Land Suitability Study of the Collinsville-Nebo-Moranbah Region (1984)	Shields, P.G.	Land Suitability Map	1:250 000	<b>A:</b> Arable. <b>C:</b> Non-arable (improved pastures).
Belyando	Lands of the Nogoia-Belyando Area, Queensland (1967)	Gunn, R.K. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Ma, My, O, W <b>B:</b> Al, By, Bl, Ct, Cu, D, Fu, Hi, Hu, I, Mo, Pv, Ph, S, So, U, Wa, Wh <b>C:</b> Av, Cn, Fu, Ru, Wi
Bendmere	Land Management Field Manual: Roma District (1987)	Macnish, S.E.	Land Resources Areas Map	1:500 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4, 5, 6, 7. <b>C:</b> 8,10

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Biggenden	Land Resources of the Burnett Region: Central (unpublished)	Kent, D.J.	Land Capability-Land Suitability Map	1:250 000	<b>A:</b> Suitable for Cropping. <b>B:</b> Limited Suitability for Cropping
Blackall (E)	Western Arid Region Land Use Study IV (1978)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M1, M2, G1, F1, F2, F3, B1, B2, B3, B5, E1, T1, T2, A1, W1, W2, W3, W5, S1
Blackall (W)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Boonah (N)	A Reconnaissance Survey of Soils in the Boonah-Beaudesert District Queensland (1971)	Paton, T.R. (CSIRO)	Soil Association Map	1:63 360	<b>A:</b> Bn-F, Bn-Bt, L-T <b>B:</b> K-C, E-R
Boonah (SE)	Terrain Analysis, Classification, Assessment and Evaluation for Regional Development Purposes of the Moreton Region, Queensland (1982)	Grant, K. <i>et. al.</i> (CSIRO)	Terrain Patterns Map	1:250 000	<b>A:</b> 52015-02 <b>B:</b> 41011-33, 52015-05
Boonah (P)	Irrigation Suitability of Teviot Brook Area, Boonah, South East Queensland (1986)	Christianos, N. <i>et. al.</i>	Irrigated Land Capability for Alluvia Map	1:100 000	<b>A:</b> II, III <b>C1:</b> IV
Boonah (P)	Bremer River Catchment Land Degradation Study (1979)	Johnstone, P	Land Units Map	1:100 000	<b>A:</b> Qa <b>B:</b> Tb2, Jw1, Jw2, Jw3
Booringa	Land Management Field Manual: Roma District (1987)	Macnish, S.E.	Land Resources Areas Map	1:500 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4, 5, 6, 7 <b>C:</b> 8,10
Boulia	Western Arid Region Land Use Study VI (1990)	Wilson, P.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> C1, C3, T1, T2, F1, F2, F3, F4, A1, A2, W1, W2
Boulia (NW)	Survey of Barkly Region, 1947-48 (1954)	Christian, C.S. <i>et. al.</i> (CSIRO)	Land Systems of the Barkly Region	1:1 000 000	<b>C:</b> S, GR, WD, B1, B2, B3, AT, KL, BL, KG, C, J, H, MN, AG, G
Bowen (E)	Soils of the Elliot River - Bowen Area North Queensland (1988)	Aldrick, J.M.	Land Suitability Map	1:250 000	<b>A:</b> Suitable <b>B:</b> Marginal

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Bowen (SW)	Lands of the Nogoa-Belyando Area, Queensland (1967)	Gunn, R.H. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Ma, My, O, W <b>B:</b> Al, By, Bl, Ct, Cu, D, Fu, Hi, Hu, I, Mo, Pv, Ph, S, So, U, Wa, Wh <b>C:</b> Av, Cn, Fu, Ru, Wi
Bowen (W)	Land Suitability Study of the Collinsville-Nebo-Moranbah Region (1984)	Shields, P.G.	Land Suitability Map	1:250 000	<b>A:</b> Arable. <b>C:</b> Non-arable (improved pastures)
Brisbane	The Soil Landscapes of Brisbane and South-Eastern Environs, Queensland (1987)	Beckmann, G.G. <i>et. al.</i> (CSIRO)	Soil Landscapes Map	1:100 000	<b>A:</b> As, Bk, Co, M, Mo, R, S, Be <b>B:</b> L, A, Br, Ru, Wa, Wy, Bl, E, Wo
Broadsound (N)	Plane Creek Sugar-Cane Land Suitability Study (1988)	Wills, A.K. <i>et. al.</i>	Land Suitability for Sugar-cane Map	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Broadsound (W)	Lands of the Isaac-Comet Area, Queensland (1967)	Story, R. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> A, Bl, Da, Gi, N, O, R <b>B:</b> Bw, Co, Hi, Hu, J, Mo, M, Re, So, Wa, Ct <b>C:</b> Be, Cr, Fu
Bulloo	Western Arid Region Land Use Study I (1974)	Dawson, N.M. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M3, G5, W1, W6, W7, C1, C2, A1, A2, A5
Bundaberg	Bundaberg Irrigation Project (unpublished)	Van Wijk, C.L. <i>et. al.</i>	Soils Association Map	1:100 000	<b>A:</b> 2, 3, 7, 8, 9, 10, 11, 13, 17 <b>B:</b> 1, 1b, 5, 16
Bungil	Land Management Field Manual: Roma District (1987)	Macnish, S.E.	Land Resources Areas Map	1:500 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4, 5, 6, 7 <b>C:</b> 8, 10

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Burdekin	Soils of the Lower Burdekin River - Barratta Creek- Houghton River Area, North Queensland (1984)	Reid, R. E. <i>et. al.</i>	Soils Map	1:100 000	<b>A:</b> 1Uge; 2Ugd, f; 2Dyc; 2Uge, g, h.; 2Ddc; 2Dbc, d, f.; 4Gnb; 5Dra; 5dyc; 6Gnb; 6Dye; 6Uma; 6Gna; 6Gnd; 6Gdu; 6Umb; 6Dbc, d, e.; 6Dra, b.; 6Dya, b; 6Dyc, d, e.; <b>D</b> <b>B:</b> 1Dba; 1Dbb; 2Dyb; 2Dda; 2Ugi; 2Ddd; 4Uab, e; 4Dyd; 4Ucc; 4Dyi; 4Dga, 5Dyc, 6Ufd, 6Ucd, 6Gnc, 6Dyg
Burdekin	Soils of the Lower Burdekin River - Elliott River Area North Queensland (1977)	Thompson, W.P.	Soils Map	1:100 000	<b>A:</b> 1Uga, b, c, d, e.; 2Uga, b, c; 3Ugb, d, f.; 4Dyb, c; 5Dra, b; 5Uga; 5Dra-g; 6Ufa, c; 6Gra; 6Uma; 6Uca; 6Dda; 6Dba, b., d <b>B:</b> 1Dya, c; 1Dda; 1Dba, b, c; 2Dbb; 2Dbb-2; 3Ugb; 3Dya; 4Uca; 4Dya; 5Dyd.; 6Ddb
Burdekin	Soils of the Lower Burdekin Valley, North Queensland (1990)	Thompson, W.P. <i>et. al.</i>	Soils Map	1:100 000	<b>A:</b> 1Uga-d; 2Uga-c; 2Uge; 2Ugg; 2Ugh; 2Dyb; 2Dbc; 2Dbd; 3Uga&d; 3Ugf; 4Gnb; 4Dbb; 4Dyb&c; 5Dra&b; 5Da-c; 5uga; 6Uca; 6Gna&d; 6Uma&b; 6Dba-g; 6Dyab&d&e; 6Drc; 6Dyf; 6Dda; 7Ugb; <b>D</b> <b>B:</b> 1Uge; 1Dya; 1Dba; 2Ugd, f, j; 2Dya, c; 2Dba, b; 2Dda; 3Ugh; 3Ugi; 3Dya; 4Ucb; 4Dyd, e, f, g, j, k, l.; 5Dye; 6Ucb, c.; 6Gnd-R; 6Gna; 6Dbh; 6Dyg, h; 6Dyi; 7Dba; 7Uga
Burke (E)	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Burke (W)	Survey of Barkly Region, 1947-48 (1954)	Christian, C.S. <i>et. al.</i> (CSIRO)	Land Systems of the Barkly Region	1:1 000 000	<b>C:</b> S, GR, WD, B1, B2, B3, AT, KL, BL, KG, C, J, H, MN, AG, G

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Caboolture	Horticultural Land Suitability Study, Sunshine Coast South East Queensland (1987)	Capelin, M.A.	Land Suitability for Horticulture Map	1:100 000	<b>A:</b> 1, 2, 3, 4, 5, 6
Cairns	Land Resources and Land Suitability - Mulgrave Shire North (1985)	Holz, G.K.	Land Suitability for Sugar-Cane Map	1:50 000	<b>A:</b> 1, 2, 3. <b>B:</b> 4
Calliope (NW)	Lands of the Dawson-Fitzroy Area, Queensland (1968)	Speck, N.H. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Hl, D, E, B, R, Kb, W, Bw, H, T, D <b>B:</b> Td, Na, Mn, Lw, O, Rr, Wt, Gv, Or, Bf, Dn, J, Km <b>C:</b> Ci, Dy, Gn, Wo, Rf, Ab, Mb, P, Rd, Te, We, Pm, Oh, Ga
Caloundra	Moreton Mill area Sugar-cane Land Suitability Study (1987)	Capelin, M.A.	Land Suitability Map (for sugar-cane)	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Caloundra	Horticultural Land Suitability Study, Sunshine Coast South East Queensland (1987)	Capelin, M.A.	Land Suitability for Horticulture Map	1:100 000	<b>A:</b> 1, 2, 3, 4, 5, 6
Cambooya (NE)	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Cardwell (S)	Soils and Agricultural Land Suitability of the Wet Tropical Coast North Queensland, Ingham Area (1990)	Wilson, P.R. <i>et. al.</i>	Land Suitability for Sugar-Cane Map	1:100 000	<b>A:</b> Suitable <b>B:</b> Marginal
Carpentaria (N)	Lands of the Mitchell-Normanby Area, Queensland (1970)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>A:</b> M, L. <b>B:</b> K, Ba, Mo, B, A <b>C:</b> Du, Le, C, R, I
Carpentaria (S)	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:750 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Charters Towers		(CSIRO)	Atlas of Australian Soils - Sheet 4	1:2 000 000	
Chinchilla (E)	Land Inventory and Technical Guide Jandowae Area (1972)	Dawson, N.M.	Land Systems Map	1:506 880	<b>A:</b> 2, 3, 4, 5, 6, 7, 9 <b>B:</b> 1

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Chinchilla (S)	Land Inventory and Technical Guide Miles Area, Queensland (1972)	Dawson, N.M.	Land Systems Map	1:253 440	<b>A:</b> 1, 3, 4, 5, 6, 7, 8, 9, 10 <b>B:</b> 2, 11, 13, 14, 26, 27, 28
Clifton	Land Inventory and Technical Guide Eastern Downs Area, Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Cloncurry	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Cloncurry (S)	Western Arid Region Land Use Study VI (1990)	Wilson, P.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> C1, C3, T1, T2, F1, F2, F3, F4, A1, A2, W1, W2
Cook (S)	Lands of the Mitchell-Normanby Area, Queensland (1970)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>A:</b> M, L <b>B:</b> K, Ba, Mo, B, A <b>C:</b> Du, Le, C, R, I
Cooloola	Agricultural Land Classess				<b>A:</b> A <b>B:</b> B
Crows Nest	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Croydon	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Dalby	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Dalrymple (N)	Land Resources of the Einasleigh-Atherton Dry Tropics (1989)	Grundy, M.J. <i>et. al.</i>	Soil Associations Map	1:250 000	<b>A:</b> KUB, EUB, RERT, YERT, RRT, RPL, BCPL, RERG, RRG, YERG, YRG, BERG, REPT, YEPT, REPR, YEPR, KPR, NCRM, ERM, YERM, BELB, KLB, BCLB, ELB, XLB, YEAN, RAN, PSAN, GBAN, BEAL, GCAL, GRAL, EBAL, BCAL <b>C:</b> SKUB, BYPT, SKLB, SBLB, SELB, SCAN, SHAN, GSAN, BYAN, PSAL
Dalrymple (S)	Lands of the Nogoia-Belyando Area, Queensland (1967)	Gunn, R.K. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> Av, K, Ma, My, O, W <b>B:</b> Al, By, Bl, Ct, Cu, D,Fu, Hi, Hu, I, Mo, Pv, Ph, S, So, U, Wa, Wh <b>C:</b> Cn, Fu, Ru, Wi
Dalrymple (W)	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Diamantina (E)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Diamantina (W)	Western Arid Region Land Use Study VI (1990)	Wilson, P.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> C1, C3, T1, T2, F1, F2, F3, F4, A1, A2, W1, W2
Douglas	Agricultural Land Suitability of the Wet Tropical Coast, Mossman Julatten Area (1991)	Wilson, P.R.	Land Suitability for Sugar-cane	1:100 000	<b>A:</b> Suitable Land <b>B:</b> Marginal Land
Duaringa	Land Management Manual Dawson/Callide Districts Regional Resources Information (1991)	Shields, P.G. and Gillespie, R.L.	Land Resource Areas Map	1:500 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4 <b>C:</b> 5, 6
Eacham	Evaluation of Agricultural Land - Eacham Shire, North Queensland (1983)	Kent, D.J. <i>et. al.</i>	Land Suitability Map	1:50 000	<b>A:</b> 1a, 1b, 2 <b>B:</b> 3 <b>C:</b> 4

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Eidsvold (P)	Soils and Irrigation Potential of the Ceratodus Area, Eidsvold, Queensland (1989)	Kent, D.J. <i>et. al.</i>	Soils Map	1:50 000	<b>A:</b> Ay, Cd, Bv, Hw, Bb, Yr, Ev <b>B:</b> Dg, Ac
Emerald (E)	Lands of the Isaac-Comet Area, Queensland (1967)	Story, R. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> A, Bl, Da, Gi, N, O, R <b>B:</b> Bw, Co, Hi, Hu, J, Mo, M, Re, So, Wa, Ct <b>C:</b> Be, Cr, Fu
Emerald (W)	Lands of the Nogo-Belyando Area, Queensland (1967)	Gunn, R.K. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Ma, My, O, W <b>B:</b> Al, By, Bl, Ct, Cu, D, Fu, Hi, Hu, I, Mo, Pv, Ph, S, So, U, Wa, Wh <b>C:</b> Av, Cn, Fu, Ru, Wi
Esk	Soils of the Lockyer Valley Alluvia (Unpublished)	Powell, B	Soils Map	1:50 000	<b>A:</b> Bl, Bl(g), Bl(l), Bm, Br, Cd, Dn, Fs, Hp, Ld, Lr, Lw, Ly, Rb, Rb(st), Rs, Th, Ts, Ww <b>B:</b> Bl(l), Bm, Br, Br-r, Br-y, Fs, Gc, Gm, Lk, Ly, Rb
Esk	Evaluation of Agricultural Land Suitability, Moreton Shire (1987)	Hass, C	Land Suitability Map	1:100 000	<b>A:</b> A <b>B:</b> B
Esk	Terrain Analysis, Classification, Assessment and Evaluation for Regional Development Purposes of the Moreton Region, Queensland (1982)	Grant, K. <i>et. al.</i> (CSIRO)	Terrain Patterns Map	1:250 000	<b>A:</b> 52015.02, 51021-34 <b>B:</b> 41005-24, 41005-33, 41011-33, 51015-02/3, 52015-05, 52015-21
Etheridge	Cropping Potential in the Eastern Etheridge Shire Area , North Queensland (1984)	Kent, D.J. <i>et. al.</i>	Potential Cropping Land Map	1:1 000 000	<b>A:</b> AC, GD <b>B:</b> RE <b>C:</b> Br, Bc

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Etheridge	Land Resources of the Einasleigh-Atherton Dry Tropics (1989)	Grundy, M.J. <i>et. al.</i>	Soil Associations Map	1:250 000	<b>A:</b> KUB, EUB, RERT, YERT, RRT, RPL, BCPL, RERG, RRG, YERG, YRG, BERG, REPT, YEPT, REPR, YEPR, KPR, NCRM, ERM, YERM, BELB, KLB, BCLB, ELB, XLB, YEAN, RAN, PSAN, GBAN, BEAL, GCAL, GRAL, EBAL, BCAL <b>C:</b> SKUB, BYPT, SKLB, SBLB, SELB, SCAN, SHAN, GSAN, BYAN, PSAL
Fitzroy	Lands of the Dawson-Fitzroy Area, Queensland (1968)	Speck, N.H. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Hl, D, E, B, R, Kb, W, Bw, H, T, D <b>B:</b> Td, Na, Mn, Lw, O, Rr, Wt, Gv, Or, Bf, Dn, J, Km <b>C:</b> Ci, Dy, Gn, Wo, Rf, Ab, Mb, P, Rd, Te, We, Pm, Oh, Ga
Flinders (C)	Upper Flinders River Irrigation Proposal (1983)	Turner, E.J. <i>et. al.</i>	Irrigated Land Suitability (Map 2)	1:250 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Flinders (NW)	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Flinders (S)	Western Arid Region Land Use Study V (1993)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> Undulating Downs, Wooded Downs, Channel Country, Other Alluvia, Gidgee Lands, Alluvial Plains and Woodlands
Gayndah	Land Resources of the Burnett Region: Central (unpublished)	Kent, D.J. <i>et. al.</i>	Land Capability-Land Suitability Map	1:250 000	<b>A:</b> Suitable for Cropping <b>B:</b> Limited Suitability for Cropping
Gladstone		(CSIRO)	Atlas of Australian Soils - Sheet 4	1:2 000 000	

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Glengallan	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Gold Coast (NE)	Availability of suitable land for sugar-cane growing, Rocky Point Sugar Mill Aea (1989)	Forster, B.A.	Land Suitability for Sugar - cane Map	1:50 000	<b>A:</b> 2,3. <b>B:</b> 4
Gold Coast (NW)	Soils and Land Use in the Beenleigh-Brisbane Area, SE Queensland (1967)	Beckmann, G.G. (CSIRO)	Soil Association Map	1:100 000	<b>A:</b> Bk,M,R,S. <b>B:</b> L,A,Ru,Wo
Gooburrum	Bundaberg Irrigation Project (unpublished)	Van Wijk, C.L. <i>et. al.</i>	Soils Association Map	1:100 000	<b>A:</b> 2, 3, 7, 8, 9, 10, 11, 13, 17 <b>B:</b> 1, 1b, 5, 16
Goondiwindi	Land Management Manual: Waggamba Shire Part A (1991)	Thwaites, R. N. <i>et. al.</i>	Land Resource Areas Map	1:250 000	<b>A:</b> 2, 3, 8, 9, 10, 11 <b>B:</b> 4, 12
Gympie		(CSIRO)	Atlas of Australian Soils - Sheet 4	1:2 000 000	
Herberton	Agricultural Land Suitability of Herberton Shire (1986)	Grundy, M.J. <i>et. al.</i>	Land Suitability Map	1:250 000	<b>A:</b> A1, A2 <b>B:</b> B1, b2, b3 <b>C:</b> C1
Hervey Bay	Maryborough Sugar Factory Area (1991)	Miles, R.L. (eds)	Land Suitable for Sugar-cane Map	1:100 000	<b>A:</b> A, A/B, A/C <b>B:</b> B, B/A, B/C
Hinchinbrook	Soils and Agricultural Land Suitability of the Wet Tropical Coast North Queensland Ingham Area (1990)	Wilson, P.R. <i>et. al.</i>	Land Suitability for Sugar-cane Map	1:100 000	<b>A:</b> Suitable <b>B:</b> Marginal
Ilfracombe (N)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Ilfracombe (S)	Western Arid Region Land Use Study V (1993)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> Undulating Downs, Wooded Downs, Channel Country, Other Alluvia, Gidgee Lands, Alluvial Plains and Woodlands

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Inglewood	Land Management Manual, Shire of Inglewood (1988)	Cassidy, G. J. (ed).	Land Capability Map	1:250 000	<b>A:</b> II, II-III, III, III-IV <b>B:</b> IV <b>C:</b> V, IV-VI, VI
Ipswich	Evaluation of Agricultural Land Suitability - Moreton Shire (1987)	Hass, C.A.	Agricultural Land Suitability Map	1:100 000	<b>A:</b> A <b>B:</b> B
Ipswich	Terrain Analysis, Classification, Assessment and Evaluation for Regional Development Purposes of the Moreton Region, Queensland (1982)	Grant, K. <i>et. al.</i> (CSIRO)	Terrain Patterns Map	1:250 000	<b>A:</b> 52015.02, 51021-34 <b>B:</b> 41005-33, 51021-22, 52015-05
Isis	Land Suitability Study of Isis Mill Cane Growing Area (1985)	Smith, C.D.	Land Suitability Map	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Isisford	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Jericho	Western Arid Region Land Use Study IV (1978)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M1, M2, G1, F1, F2, F3, B1, B2, B3, B5, E1, T1, T2, A1, W1, W2, W3, W5, S1
Jericho (E)	Lands of the Nogoia-Belyando Area, Queensland (1967)	Gunn, R.K. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Ma, My, O, W <b>B:</b> Al, By, Bl, Ct, Cu, D, Fu, Hi, Hu, I, Mo, Pv, Ph, S, So, U, Wa, Wh <b>C:</b> Av, Cn, Fu, Ru, Wi
Johnstone	Soils of the Tully-Innisfail Area, North Queensland (1986)	Murtha, G.G. (CSIRO)	Soils of the Tully-Innisfail Area Map	1:50 000	<b>A:</b> Pg, Eu, Gu, Mu, Ms, Ga, Ut Ty, Th, Li, Tu, In, Mi, Fe, Lu, Co, Ba, Ti, Ra, Bg, He, Ma, Br
Jondaryan	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Kilcoy	Terrain Analysis, Classification, Assessment and Evaluation for Regional Development Purposes of the Moreton Region, Queensland (1982)	Grant, K. <i>et. al.</i> (CSIRO)	Terrain Patterns Map	1:250 000	<b>A:</b> 52015.02, 51021-34 <b>B:</b> 41005-33, 51021-22, 52015-05

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Kilkivan (W)	Land resources of the Burnett Region Part 1: South Burnett (1983)	Vandersee, B.E. <i>et. al.</i>	Land Capability - Land Suitability Map	1:250 000	<b>A:</b> 1, 2a, 2b, 3, 4a, 4b <b>B:</b> 5, 6
Laidley (S)	Land Degradation in the Lockyer Catchment (1979)	Shaw, J.H.	Land Units Map	1:100 000	<b>A:</b> Recent Alluvium <b>B:</b> Hillwash alluvium and colluvium
Livingstone	The Soil Fertility of Capricornia Grazing Lands (1989)	Shields, P. G. <i>et. al.</i>	Soil Phosphorous Status Map	1:500 000	<b>C:</b> 1, 2, 3, 4, 5, 6, 8
Logan	Beaudesert Shire Council Strategic Planning Policies - 1976 (1976)	P.G. Pak-Poy and Associates Pty Ltd	Agricultural Land Suitability Map	1:150 000	<b>A:</b> Agriculture, Intensive Grazing
Logan	Soils and Land Use in the Beenleigh-Brisbane Area, South East Queensland (1967)	Beckmann, G.G. (CSIRO)	Soil Association Map	1:100 000	<b>A:</b> Bk, M, R, S <b>B:</b> L, A, Ru, Wo
Longreach (N)	Western Arid Region Land Use Study V (1993)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> Undulating Downs, Wooded Downs, Channel Country, Other Alluvia, Gidgee Lands, Alluvial Plains and Woodlands
Longreach (S)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Mackay	Mackay Sugar-cane Land Suitability Study (1985)	Holz, G.K. <i>et. al.</i>	Land Suitability for Sugar-cane Map	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Mareeba	Agricultural Land Suitability of the Wet Tropical Coast, Mossman Julatten Area (1991)	Wilson, P.R.	Land Suitability for Sugar-cane Map	1:100 000	<b>A:</b> Suitable Land <b>B:</b> Marginal Land
Mareeba (E)	Land Suitability of Mareeba Shire Cropping Areas (1985)	Capelin, M.A.	Agricultural Land Suitability Map	1:50 000	<b>A:</b> A1, A2, A3, B1, C1 <b>B:</b> B2, C2
Mareeba (NW)	Lands of the Mitchell-Normanby Area, Queensland (1970)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>A:</b> M, L <b>B:</b> K, Ba, Mo, B, A <b>C:</b> Du, Le, C, R, I

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Maroochy	Horticultural Land Suitability Study, Sunshine Coast South East Queensland (1987)	Capelin, M.A.	Land Suitability for Horticulture Map	1:100 000	<b>A:</b> 1, 2, 3, 4, 5, 6
Maryborough	Maryborough Sugar Factory Area (1991)	Miles, R.L. (eds)	Land Suitable for Sugar-cane Map	1:100 000	<b>A:</b> A, A/B, A/C <b>B:</b> B, B/A, B/C
McKinlay	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Millmerran (E)	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Millmerran (W)	Land Use Study for the Millmerran-Moonie-Tara Area (1980)	Mullins, J.A.	Land Systems Map	1:250 000	<b>A:</b> 1, 2, 3, 4, 5
Mirani	Land Suitability Study of the Collinsville-Nebo-Moranbah Region (1984)	Shields, P.G	Land Suitability Map	1:250 000	<b>A:</b> Arable <b>C:</b> Non-arable (Improved pastures)
Mirani (E)	Mackay Sugar-cane Land Suitability Study (1985)	Holz, G.K. <i>et. al.</i>	Land Suitability for Sugar-cane Map	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Miriam Vale		(CSIRO)	Atlas of Australian Soils Sheet 4	1:2 000 000	
Monto		(CSIRO)	Atlas of Australian Soils Sheet 4	1:2 000 000	
Mornington		(CSIRO)	Atlas of Australian Soils Sheet 7	1:2 000 000	
Mount Isa (E)	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:1 000 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G

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Mount Isa (W)	Survey of Barkly Region, 1947-48 (1954)	Christian, C.S. <i>et. al.</i> (CSIRO)	Land Systems of the Barkly Region	1:1 000 000	<b>C:</b> S, GR, WD, B1, B2, B3, AT, KL, BL, KG, C, J, H, MN, AG, G
Mount Morgan	Lands of the Dawson-Fitzroy Area, Queensland (1968)	Speck, N.H. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, HI, D, E, B, R, Kb, W, Bw, H, T, D, <b>B:</b> Td, Na, Mn, Lw, O, Rr, Wt, Gv, Or, Bf, Dn, J, Km <b>C:</b> Ci, Dy, Gn, Wo, Rf, Ab, Mb, P, Rd, Te, We, Pm, Oh, Ga
Mulgrave (N)	Land Resources and Land Suitability - Mulgrave Shire North (1985)	Holz, G.K.	Land Suitability for Sugar-cane Map	1:50 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Mundubbera	Land Resources of the Burnett Region: Central (unpubl)	Kent, D.J.	Land Capability-Land Suitability Map	1:250 000	<b>A:</b> Suitable for Cropping <b>B:</b> Limited Suitability for Cropping
Murgon	Land Resources of the Burnett Region Part 1: South Burnett (1983)	Vandersee, B.E. <i>et. al.</i>	Land Capability-Land Suitability Map	1:250 000	<b>A:</b> 1, 2a, 2b, 3, 4a, 4b <b>B:</b> 5, 6
Murilla	Land Inventory and Technical Guide Miles Area, Queensland (1972)	Dawson, N.M	Land Systems Map	1:253 440	<b>A:</b> 1, 3, 4, 5, 6, 7, 8, 9, 10 <b>B:</b> 2, 11, 13, 14, 26, 27, 28
Murilla (W)	Lands of the Balonne-Maranoa Area, Queensland (1974)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> 7, 8, 21 <b>C:</b> 2, 3, 5, 6, 10, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
Murweh (E)	Lands of the Balonne-Maranoa Area, Queensland (1974)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> 7,8,21 <b>C:</b> 2, 3, 5, 6, 10, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
Murweh (N)	Western Arid Region Land Use Study IV (1978)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M1, M2, G1, F1, F2, F3, B1, B2, B3, B5, E1, T1, T2, A1, W1, W2, W3, W5, S1
Murweh (SW)	Western Arid Region Land Use Study III (1990)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> D2, G1, F1, B2, B3, A1, A2, W3-8

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Murweh (W)	Western Arid Region Land Use Study I (1974)	Dawson, N.M. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M3, G5, W1, W6, W7, C1, C2, A1, A2, A5
Murweh (W)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Nanango	Land Resources of the Burnett Region Part 1: South Burnett (1983)	Vandersee, B.E. <i>et. al.</i>	Land Capability-Land Suitability Map	1:250 000	<b>A:</b> 1, 2a, 2b, 3, 4a, 4b <b>B:</b> 5, 6
Nebo	Land Suitability Study of the Collinsville-Nebo-Moranbah Region (1984)	Shields, P.G.	Land Suitability Map	1:250 000	<b>A:</b> Arable <b>C:</b> Non-arable (improved pastures)
Nebo (S)	Lands of the Isaac-Comet Area, Queensland (1967)	Story, R. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> A, Bl, Da, Gi, N, O, R. <b>B:</b> Bw, Co, Hi, Hu, J, Mo, M, Re, So, Wa, Ct <b>C:</b> Be, Cr, Fu
Noosa	Agricultural Land Classes Map (1995)			1:100 000	<b>A:</b> A <b>B:</b> B
Paroo (E)	Western Arid Region Land Use Study III (1990)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> D2, G1, F1, B2, B3, A1, A2, W3-8 <b>C:</b> M3, G5, W1, W6, W7, C1, C2, A1, A2, A5
Paroo (W)	Western Arid Region Land Use Study I (1974)	Dawson, N.M. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M3, G5, W1, W6, W7, C1, C2, A1, A2, A5
Peak Downs (E)	Lands of the Isaac-Comet Area, Queensland (1967)	Story, R. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> A, Bl, Da, Gi, N, O, R <b>B:</b> Bw, Co, Hi, Hu, J, Mo, M, Re, So, Wa, Ct <b>C:</b> Be, Cr, Fu
Peak Downs (W)	Lands of the Nogo-Belyando Area, Queensland (1967)	Gunn, R.K. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> Av, K, Ma, My, O, W <b>B:</b> Al, By, Bl, Ct, Cu, D, Fu, Hi, Hu, I, Mo, Pv, Ph, S, So, U, Wa, Wh <b>C:</b> Cn, Fu, Ru, Wi
Perry	Agricultural Land Classes Map			1:250 000	<b>A:</b> A <b>B:</b> B

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Pine Rivers (P)	North Pine River Dam Catchment Land Use Study (1975)	DLG	Land Suitable for Arable Agriculture Map	1:100 000	<b>A:</b> Mostly Suitable
Pioneer	Land Suitability Study of the Collinsville-Nebo-Moranbah Region (1984)	Shields, P.G	Land Suitability Map	1:250 000	<b>A:</b> Arable <b>C:</b> Non-arable (improved pastures)
Pioneer	Mackay Sugar cane Land Suitability Study (1985)	Holz, G.K. <i>et. al.</i>	Land Suitability for Sugar Cane Map	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Pittsworth	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12., 13
Prosperine (P)	Soils of the Proserpine Lowlands, North Queensland (1981)	Thompson, W.P.	Irrigated Land Capability Map	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Quilpie (N)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7
Quilpie (S)	Western Arid Region Land Use Study I (1974)	Dawson, N. M. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M3, G5, W1, W6, W7, C1, C2, A1, A2, A5
Redcliffe					None
Redland	Soils and Land Use in the Beenleigh-Brisbane Area, South East Queensland (1967)	Beckmann, G.G. (CSIRO)	Soil Association Map	1:100 000	<b>A:</b> Bk, M, R, S <b>B:</b> L, A, Ru, Wo
Richmond	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:750 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Richmond (N)	Cropping Potential in the Eastern Etheridge Shire Area, North Queensland (1984)	Kent, D.J. <i>et. al.</i>	Potential Cropping Land Map	1:1 000 000	<b>A:</b> AC, GD <b>B:</b> RE <b>C:</b> Br, Bc

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Rockhampton	Lands of the Dawson-Fitzroy Area, Queensland (1968)	Speck, N.H. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> K, Hl, D, E, B, R, Kb, W, Bw, H, T, D <b>B:</b> Td, Na, Mn, Lw, O, Rr, Wt, Gv, Or, Bf, Dn, J, Km <b>C:</b> Ci, Dy, Gn, Wo, Rf, Ab, Mb, P, Rd, Te, We, Pm, Oh, Ga
Roma	Land Management Field Manual: Roma District (1987)	Macnish, S.E.	Land Resource Areas Map	1:500 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4, 5, 6, 7 <b>C:</b> 8, 10
Rosalie (W)	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Rosalie (N)	Cooyar Grazing Lands Study (1978)	Vandersee, B.E.	Land Systems Map	1:50 000	<b>A:</b> 1, 2 <b>B:</b> 11 <b>C:</b> 5, 7, 12, 14, 15
Rosenthal	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Rosenthal (S)	The Granite and Traprock Area South East Queensland (1976)	Wills, A.K. <i>et. al.</i>	Land Capability Map	1:500 000	<b>A:</b> II, II-III, III, III-IV <b>B:</b> IV <b>C:</b> V, IV-VI, VI
Sarina	Plane Creek Sugar-cane Land Suitability Study (1988)	Wills, A.K. <i>et. al.</i>	Land Suitability for Sugar Cane Map	1:100 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4
Stanthorpe (W)	The Granite and Traprock Area, South East Queensland (1976)	Wills, A.K. <i>et. al.</i>	Land Capability Map	1:500 000	<b>A:</b> II, II-III, III, III-IV <b>B:</b> IV <b>C:</b> IV-VI, VI
Tambo (E)	Western Arid Region Land Use Study IV (1978)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> M1, M2, G1, F1, F2, F3, B1, B2, B3, B5, E1, T1, T2, A1, W1, W2, W3, W5, S1
Tambo (W)	Western Arid Region Land Use Study II (1978)	Mills, J.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> W1, W3, W4, W5, W7, C1, C2, C3, A1, A5, A6, G1, G2, G3, T1-5, F2, F3, F4, F5, F7

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Tara (E)	Land Use Study for the Millmerran-Moonie-Tara Area (1980)	Mullins, J.A.	Land Use Map	1:250 000	<b>A:</b> 1, 2, 3, 4, 5
Tara (N)	Land Inventory and Technical Guide, Miles Area, Queensland (1978)	Dawson, N.M.	Land Systems Map	1:253 440	<b>A:</b> 1, 3, 4, 5, 6, 7, 8, 9, 10 <b>B:</b> 2, 11, 13, 14, 26, 27, 28
Tara (W)	Lands of the Balonne-Maranoa Area, Queensland (1974)	Galloway, R.W. <i>et. al.</i> (CSIRO)	Land Systems Map	1:500 000	<b>A:</b> 7, 8, 21 <b>C:</b> 2, 3, 5, 6, 10, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
Taroom	Evaluation of Agricultural Land in Taroom Shire (1985)	Forster, B.A.	Agricultural Land Suitability Map	1:250 000	<b>A:</b> A1, A2 <b>B:</b> B1 <b>C:</b> C1
Thuringowa (C)	Ross River Dam Catchment Area Land Use Study Volume 2, Appendix C(1978)	DPI	Land Suitability Figures C3 and C4	1:100 000	<b>A:</b> Shaded Areas
Thuringowa (N)	Soils and Agricultural Land Suitability of the Wet Tropical Coast North Queensland Ingham Area (1990)	Wilson, P.R. <i>et. al.</i>	Land Suitability for Sugar-cane Map	1:100 000	<b>A:</b> Suitable <b>B:</b> Marginal
Thuringowa (N)	Soils and Land Use on the Northern Section of the Townsville Coastal Plain, North Queensland (1975)	Murtha, G.G.(CSIRO)	Land Capability Map	1:100 000	<b>A:</b> 2, 3a, 3b <b>B:</b> 4
Thuringowa (S)	Soils and Land Use on the Southern Section of the Townsville Coastal Plain, North Queensland (1982)	Murtha, G.G. (CSIRO)	Soils Association Map	1:100 000	<b>A:</b> Ba, By, Bl, Ro, To, Hv, Sy <b>B:</b> AC, Gr, He
Tiario	Evaluation of Agricultural Land Tiario Shire (1983)	Leverington, A.R.	Land Suitability Map	1:250 000	<b>A:</b> 1 ,2a, 2b, 2c
Tiario	Maryborough Sugar Factory Area (1991)	Miles, R.L. (eds)	Land Suitable for Sugar-cane Map	1:100 000	<b>A:</b> A, A/B, A/C <b>B:</b> B, B/A, B/C
Toowoomba	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Torres		(CSIRO)	Atlas of Australian Soils Sheet 7	1:2 000 000	

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Townsville	Soils of the Townsville Area in relation to Urban development (1976)	Murtha, G.G. <i>et. al.</i> (CSIRO)	Soil Map	1:100 000	<b>A:</b> 3e, 3f, 5a, 5b, 6 <b>B:</b> 4c, 5c, 5e
Waggamba	Land Management Manual: Waggamba Shire Part A (1991)	Thwaites, R. N. <i>et. al.</i>	Land Resource Areas Map	1:250 000	<b>A:</b> 2, 3, 8, 9, 10, 11 <b>B:</b> 4, 12 <b>C:</b> 1
Wambo (E)	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Wambo (N)	Land Inventory and Technical Guide Jandowae Area (1972)	Dawson, N.M.	Land Systems Map	1:506 880	<b>A:</b> 2, 3, 4, 5, 6, 7, 9 <b>B:</b> 1
Wambo (W)	Land Inventory and Technical Guide Miles Area, Queensland (1972)	Dawson, N.M.	Land Systems Map	1:253 440	<b>A:</b> 1, 3, 4, 5, 6, 7, 8, 9, 10 <b>B:</b> 2, 11, 13, 14, 26, 27, 28
Warroo	Land Management Fields Manual: Roma District (1987)	Macnish, S.E.	Land Resources Areas Map	1:500 000	<b>A:</b> 1, 2, 3 <b>B:</b> 4, 5, 6, 7 <b>C:</b> 8, 10
Warwick	Land Inventory and Technical Guide Eastern Downs Area Queensland (1975)	Vandersee, B.E.	Land Systems Map	1:200 000	<b>A:</b> 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17 <b>B:</b> 1, 11, 12, 13
Winton (E)	Western Arid Region Land Use Study V (1993)	Turner, E.J. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> Undulating Downs, Wooded Downs, Channel Country, Other Alluvia, Gidgee Lands, Alluvial Plains and Woodlands
Winton (N)	General Report on Lands of the Leichhardt-Gilbert Area, Queensland (1964)	Perry, R.A. <i>et. al.</i> (CSIRO)	Land Systems Map	1:750 000	<b>C:</b> Cy, Gb, A, J, Wd, Mo, Gy, Bo, R, Ka, Br, Yn, Gl, Ly, Mc, Hb, N, Rs, Ki, Mr, Do, Dd, Bi, Gn, G
Winton (W)	Western Arid Region Land Use Study VI (1990)	Wilson, P.R. <i>et. al.</i>	Land Systems Map	1:500 000	<b>C:</b> C1, C3, T1, T2, F1, F2, F3, F4, A1, A2, W1, W2
Wondai	Land resources of the Burnett Region Part 1: South Burnett (1983)	Vandersee, B.E. <i>et. al.</i>	Land Capability-Land Suitability Map	1:250 000	<b>A:</b> 1, 2a, 2b, 3, 4a, 4b <b>B:</b> 5, 6

LOCAL AUTHORITY	REPORT TITLE	AUTHOR	MAP TITLE	MAP SCALE	MAP UNITS OF GOOD QUALITY AGRICULTURAL LAND
Woocoo	Maryborough Sugar Factory Area (1991)	Miles, R.L. (eds)	Land Suitable for Sugar Cane Map	1:100 000	<b>A:</b> A, A/B, A/C <b>B:</b> B, B/A, B/C
Woongarra	Evaluation of Agricultural Land: Woongarra Shire (1986)	Leverington, A.R.	Land Suitability Map	1:50 000	<b>A:</b> A <b>B:</b> B

- Notes:** 1. (C) - Central; (P) - Part; (N) - North; (S) - South; (E) - East; (W) - West  
 2. Unless otherwise indicated, reports are published by DPI.

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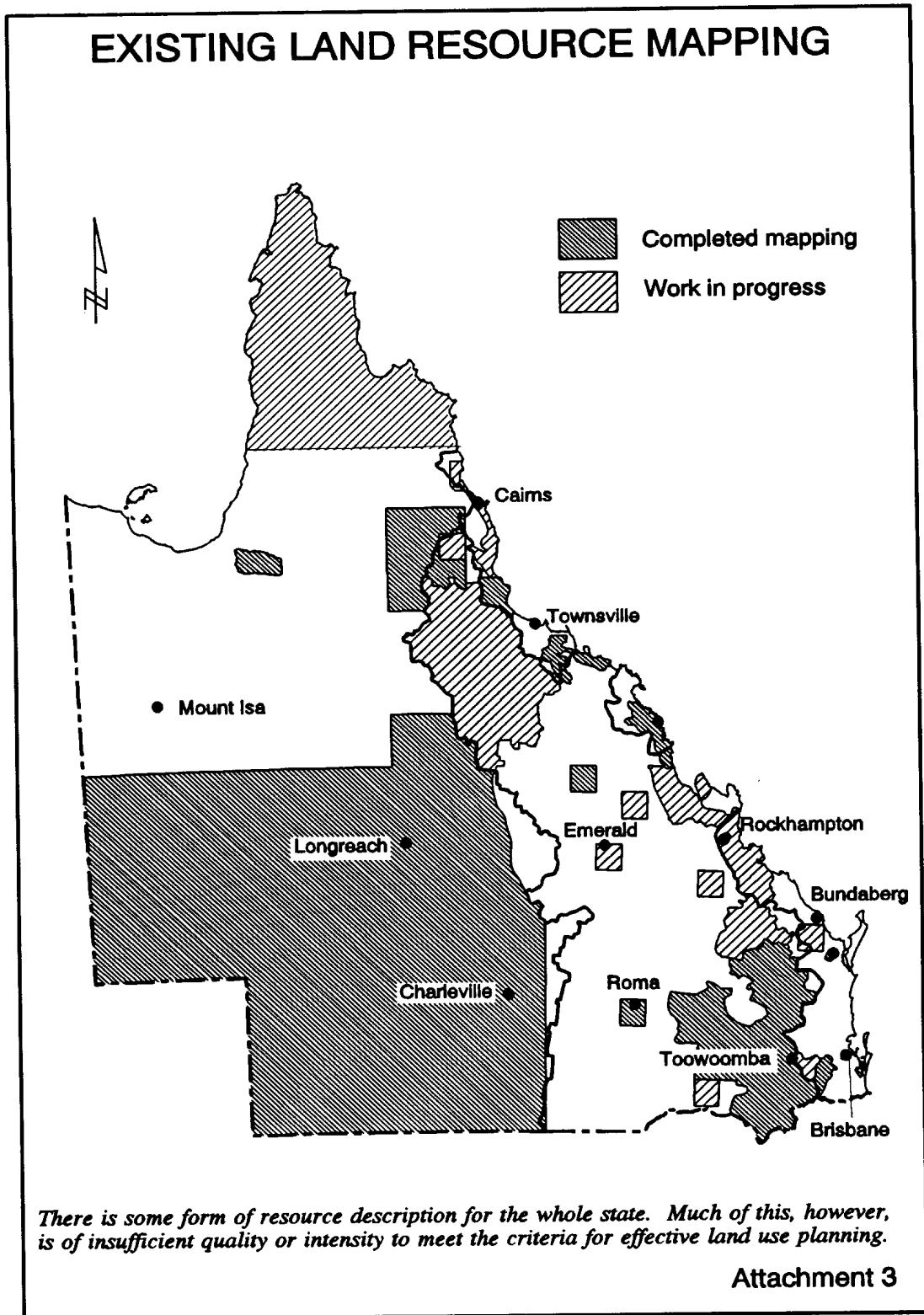
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**ATTACHMENT 3**



## ATTACHMENT 4: SAMPLE DETAILED LAND RESOURCE ASSESSMENT

### REZONING OF AGRICULTURAL LAND

**Location:** Lot 111 on RP 23792, Parish of Tropicana  
Smith Street, Smithville

**Local Authority:** Black Stump Shire Council

#### Background:

Anonymous Consultants Limited has been contracted to investigate the agricultural suitability of the subject land of 14.5 ha, and report on surrounding agricultural land uses in terms of likely conflict between the proposal and surrounding land uses. The land is subject to a rezoning application from the Rural A zone to the Rural Residential zone to facilitate subdivision into 10 allotments. The strategic plan for the Shire of Black Stump designates the area as Rural.

The property concerned has been mapped at 1:100 000 in the report *Black Stump Horticultural Land Suitability Study* (by Jones, M.A.), published by the Department of Primary Industries in 1987. This report classifies part of the land as suitable for most tree and vine crops with moderate limitations (Class 3), and part as unsuitable for agriculture (Class 5). The *Planning Guidelines: The Identification of Good Quality Agricultural Land* (the *Guidelines*) have interpreted Class 3 as good quality agricultural land (Class A, Arable land).

#### Land Resource Assessment

An assessment of the land resources of the subject land has been conducted according to the *Guidelines* standards published by the Department of Primary Industries and the Department of Housing, Local Government and Planning. Details of references cited in this report are available in the *Guidelines*.

The subject land has been mapped into three land types at a scale of 1:500 000 (attached). At ten ground observation sites, descriptions of soils, vegetation and slopes were made, and three detailed site descriptions taken at sites where soils were sampled for laboratory analysis.

Ground observation sites are described briefly in Table 1, and detailed descriptions and laboratory analysis of representative sites are presented in the attached Appendix.

**TABLE 1 BRIEF SITE DESCRIPTION**

Site	Vegetation	Landform	Soils *		
			GSG	PPF	ASC
1	blue couch pasture	alluvial plain	Humic gley	Dg 3.11	Redoxic Hydrosol
2	blue gum remnants	alluvial plain	Humic gley	Dg 3.11	Redoxic Hydrosol

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\* GSG = Great Soil Group (Stace *et. al.* 1968)  
PPF = Principal Profile Form (Northcote 1974)  
ASC = Australian Soil Classification (Isbell 1992)

3	narrow-leaved ironbark, spotted gum	8% midslope	Red earth	Gn 2.11	Red Kandosol
4	blackbutt, wood tallowwood	10% midslope	Red earth	Gn 2.14	Red Kandosol
5	blackbutt	7% midslope	Yellow earth	Gn 2.41	Yellow Kandosol
6	tallowwood	11% midslope	Red earth	Gn 2.14	Red Kandosol
7	blackbutt, tallowwood	12% midslope	Red earth	Gn 2.12	Red Kandosol
8	spotted gum, narrow-leaved ironbark	17% upperslope	Soloth	Dy 2.41	Yellow Sodosol
9	spotted gum, grey gum	25% upperslope	Soloth	Dy 3.11	Yellow Sodosol
10	narrow-leaved ironbark	18% upperslope	Soloth	Dy 3.41	Brown Sodosol

Descriptions of the three land types are summarised in Table 2.

**TABLE 2 SUMMARY OF LAND TYPES ON SUBJECT LAND**

LAND TYPE	SLOPE		DOMINANT VEGETATION	SOILS
	RANGE	MODAL		
1 (1.5 ha)	1-2	1	Cleared for pasture, with bluegum remnants	Humic Gleys - soft silty loam A horizon to 0.15 m over mottled grey acid clay subsoil to 1 m deep over ground water.
2 (8 ha)	7-12	10	Blackbutt, tallow wood (selectively logged)	Red earths - hardsetting, gravelly, sandy loam A horizon to 0.1 m over red acid clay loam > 1.2 m deep.
3 (5 ha)	12-25	20	Spotted gum, grey gum, narrow-leaved ironbark	Soloths - hardsetting, gravelly, sandy loam A horizon to 0.1 m over mottled yellow acid clay to 0.6 m sandstone.

### Land Suitability assessment

The main agricultural land uses in the area are tree and vine crops, pineapples, sugar-cane and forestry. Within the region crops grown are determined mainly by limitations, such as effective soil depth, slope, stoniness, internal soil drainage and frost. The subject land is currently used for the grazing of native and naturalised pastures.

Agricultural land suitability, agricultural land classes and limitations of the land types are summarised in Table 3. The *Guidelines* indicate that Land Types 1 and 2 are considered good quality agricultural land in the Black Stump Shire.

**TABLE 3    LIMITATIONS, SUITABILITY AND AGRICULTURAL LAND CLASSES OF LAND TYPES**

LAND TYPES	IMPORTANT LIMITATIONS	AGRICULTURAL SUITABILITY			AGRICULTURAL LAND CLASSES
		Tree and Vine	Pineapples	Sugar-cane	
1	shallow water table internal drainage (wetness)	unsuitable (Class 5)	unsuitable (Class 5)	suitable (Class 3)	A          crop land
2	slope water erosion hazard	suitable (Class 2)	suitable (Class 3)	suitable (Class 3-4)	A          crop land
3	effective soil depth slope water erosion hazard internal drainage (wetness)	unsuitable (Class 5)	unsuitable (Class 5)	unsuitable (Class 5)	C          pastoral

Land type 1 (1.5 ha) is a low lying flat area which experiences a shallow water table and has slow internal drainage. The humic gley was sampled for laboratory analysis and showed low fertility and low subsoils sodicity with an exchangeable sodium percentage (ESP) ranging from 3 to 4. Subsoils show gley mottling due to a fluctuating ground water table. The shallow water table and slow internal drainage make Land type 1 unsuitable for horticultural cropping but it is suitable for sugar-cane production.

Land type 2 (8 ha) is a lower midslope area of deep soils with rapid internal drainage. The red subsoil colours and low sodicity suggest that these soils are well drained and suitable for growing most crops found in the district.

Land type 3 (5 ha) is a steep upper slope area of hardsetting shallow soils with slow internal drainage. The subsoil mottling and high subsoil sodicity (ESP 6-9) suggest that the soils have poor internal drainage which would limit crop performance. In addition, the slopes combined with soils with high subsoil sodicity make this an area with a high erosion hazard. These limitations make land type 3 unsuitable for any form of conventional agricultural land use except for low intensity grazing.

### **Surrounding land use**

The subject land is bounded to the south by a dam and a new rural residential development beyond the dam. Houses on this development are, in general, located close to Smith Road. To the east, the land is pasture land with sugar-cane production on the flats. The sugar-cane is about 100 m from the property boundary and the broad-scale map of Jones (1987) indicates that this property is located on good quality agricultural land. To the west and north of the subject land is State Forest.

### **Conclusion**

On the evidence provided from the land suitability assessment, the majority of the subject land is considered to be good quality agricultural land. There is a 9.5 ha area of Class A land (Land types 1 and 2) present on the subject land, but some is adjacent to rural residential land. As the houses on these allotments are generally located close to Smith Road, there is little potential for conflict between agricultural land use on the subject land and the adjacent rural residential land uses. Should development proceed on the subject land, a buffer area would be required to minimise conflicts with adjacent agricultural land use to the east.

In summary, the subject land is dominated by good quality agricultural land which forms part of a larger agricultural area. Under State Planning Policy 1/92, *Development and the Conservation of Agricultural Land*, it is unlikely that a planning application to Council would be approved.

W. Smith

**ANONYMOUS CONSULTANTS LIMITED**

**APPENDIX: DESCRIPTION AND LABORATORY ANALYSIS OF REPRESENTATIVE SITES**

**Note:** Description and codes are according to McDonald et. al. (1990)

<b>Site No.:</b>	2					<b>Microrelief:</b>
<b>Map Reference (AMG):</b>	Zone 56, 474350E, 70990900N					<b>Erosion:</b>
<b>Run-off:</b>	very slow					<b>Surface coarse fragments:</b>
<b>Permeability:</b>	slowly permeable					<b>Rock outcrop:</b>
<b>Drainage:</b>	very poorly drained					<b>Substrate:</b>
<b>Landform:</b>	alluvial plain, 1.5% slope					<b>Groundwater:</b>
<b>Vegetation:</b>	blue gum ( <i>Eucalyptus tereticornis</i> )					<b>Surface condition:</b>
<b>Site disturbance:</b>	cleared, pasture, never cultivated					<b>Soil classification:</b>
<b>Soil description</b>						
<b>Horizon</b>	<b>Depth</b>	<b>Boundary</b>	<b>Colour</b>	<b>Mottles</b>	<b>Texture</b>	<b>Coarse fragments</b>
A1	0-0.1	clear	10YR 2/2	-	ZL	-
B	0.1-0.5	-	2.5Y 5/2	distinct brown	HC	-

<b>Laboratory data:</b>				<b>Site No.: 2</b>	<b>Exch. cations (m. equiv. 10</b>		
<b>Lab No.</b>	<b>Depth (m)</b>	<b>pH (1:5) H<sub>2</sub>O</b>	<b>E.C. (1:5) mScm<sup>-1</sup></b>	<b>CEC</b>	<b>Ca<sup>++</sup></b>	<b>Mg<sup>++</sup></b>	
0001	0-0.1	5.7	0.052	16	1.5	6.8	
0002	0.2-0.3	5.8	0.074	12	0.9	7.0	
0003	0.4-0.5	5.8	0.111	12	0.7	7.2	

Planning Guidelines

<b>Site No.:</b>	4	<b>Microrelief:</b>	none						
<b>Map Reference (AMG):</b>	Zone 56, 474250E, 7091050N	<b>Erosion:</b>	minor sheet erosion						
<b>Run-off:</b>	rapid	<b>Surface coarse fragments:</b>	2-10%, sandstone and quartz						
<b>Permeability:</b>	highly permeable	<b>Rock outcrop:</b>	none						
<b>Drainage:</b>	rapidly drained	<b>Substrate:</b>	sandstone						
<b>Landform:</b>	rolling hills, 12% upperslope	<b>Groundwater:</b>	n/a						
<b>Vegetation:</b>	open forest of blackbutt ( <i>E. pilularis</i> ), minor tallowood ( <i>E. microcorys</i> )	<b>Surface condition:</b>	hardsetting						
<b>Site disturbance:</b>	minor grazing disturbance	<b>Soil classification:</b>	<b>GSG:</b> Red earth <b>PPF:</b> Gn 2.14 <b>Aust:</b> Red Kandosol						
<b>Soil description</b>									
<b>Horizon</b>	<b>Depth</b>	<b>Boundary</b>	<b>Colour</b>	<b>Mottles</b>	<b>Texture</b>	<b>Coarse fragments</b>	<b>Structure</b>	<b>Segregations</b>	<b>Field pH</b>
A1	0-0.15	clear	7.5YR 3/2	-	SL	2-10%	weak granular	-	5.5
A2	0.15-0.3	gradual	5YR 3/4	-	SL	10-20%	massive	-	5.5
B	0.3-1.2	-	5YR 4/4	-	SCL	10-20%	massive	-	6.0

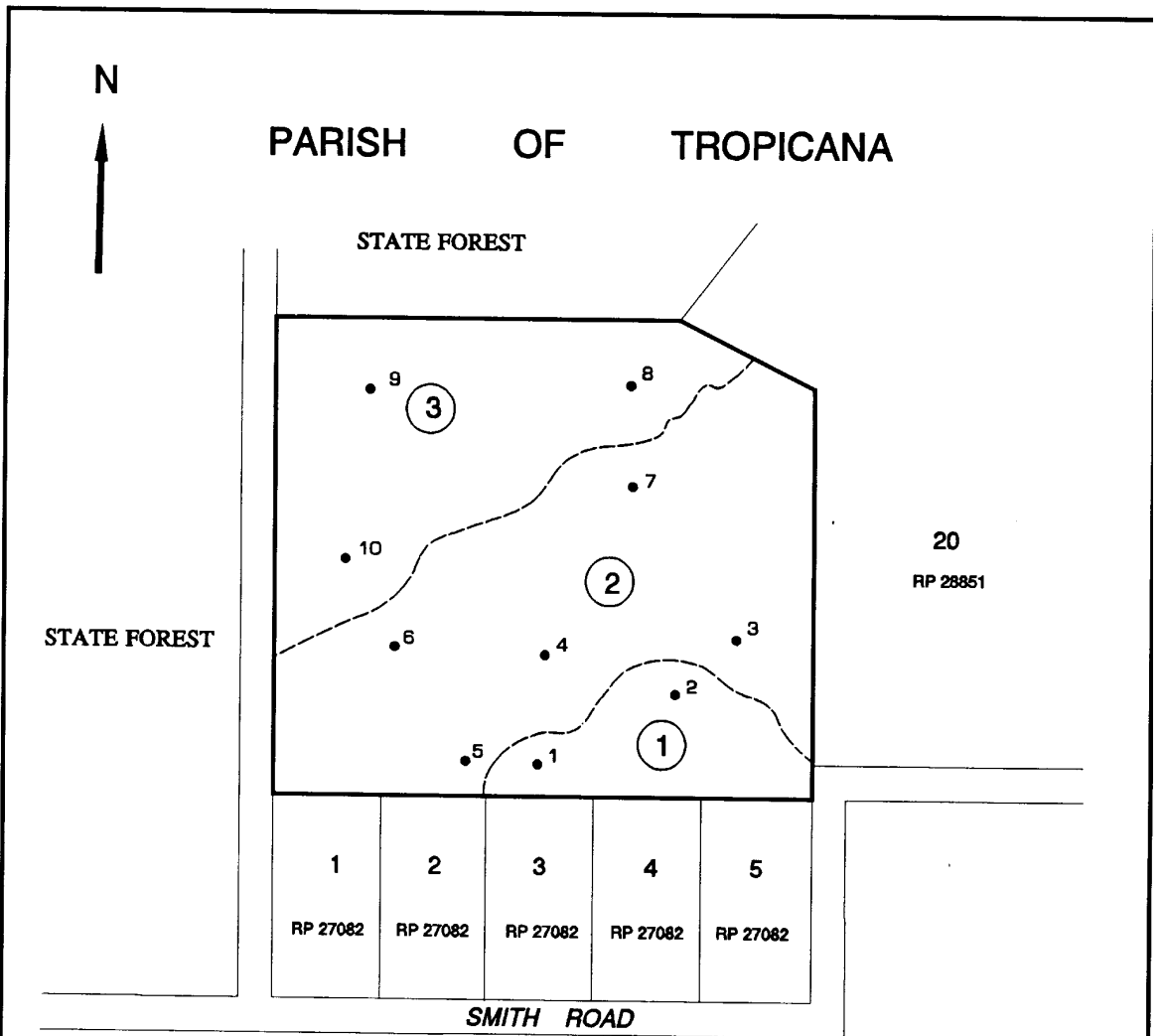
<b>Laboratory data:</b>		<b>Site No.: 10</b>			<b>Exch. cations (m. equiv. 100g<sup>-1</sup>)</b>				
<b>Lab No.</b>	<b>Depth (m)</b>	<b>pH (1:5) H<sub>2</sub>O</b>	<b>E.C. (1:5) mScm<sup>-1</sup></b>	<b>CEC</b>	<b>Ca<sup>++</sup></b>	<b>Mg<sup>++</sup></b>	<b>K<sup>+</sup></b>	<b>Na<sup>+</sup></b>	<b>ESP</b>
0004	0-0.1	5.5	0.052	5	2.6	2.0	0.2	0.1	2
0005	0.2-0.3	5.7	0.031	4	1.5	2.1	0.1	0.1	2.5
0006	0.5-0.6	5.5	0.03	4	0.8	2.5	0.1	0.1	2.5
0007	0.8-0.9	5.5	0.03	5	0.7	3.0	0.1	0.1	2

<b>Site No.:</b>	10	<b>Microrelief:</b>	none
<b>Map Reference (AMG):</b>	Zone 56, 474300E, 7090990N	<b>Erosion:</b>	minor rill erosion
<b>Run-off:</b>	rapid	<b>Surface coarse fragments:</b>	10-20% quartz
<b>Permeability:</b>	slowly permeable	<b>Rock outcrop:</b>	none
<b>Drainage:</b>	moderately well drained	<b>Substrate:</b>	sandstone
<b>Landform:</b>	rolling hills, 18% upperslope	<b>Groundwater:</b>	n/a
<b>Vegetation:</b>	open forest of narrow-leaved ironbark ( <i>E. crebra</i> )	<b>Surface condition:</b>	hardsetting
<b>Site disturbance:</b>	limited clearing	<b>Soil classification:</b>	<b>GSG:</b> Soloth <b>PPF:</b> Dy 3.11 <b>Aust:</b> Yellow Sodosol

**Soil description**

Horizon	Depth	Boundary	Colour	Mottles	Texture	Coarse fragments	Structure	Segregations	Field pH
A1	0-0.1	abrupt	10YR 3/2	-	SL	10-20% quartz gravel	weak granular	-	5.5
B21t	0.1-0.3	gradual	10YR 6/4	distinct grey	MC	2-10% quartz gravel	-	-	5.8
B22t	0.3-0.6	gradual	10YR 5/4	prominent red and grey	SC	-	-	-	6.4
C	>0.6								

Laboratory data:				Site No.: 10	Exch. cations (m. equiv. 100g <sup>-1</sup> )				
Lab No.	Depth (m)	pH (1:5) H <sub>2</sub> O	E.C. (1:5) mScm <sup>-1</sup>	CEC	Ca <sup>++</sup>	Mg <sup>++</sup>	K <sup>+</sup>	Na <sup>+</sup>	ESP
0008	0-0.1	5.5	0.031	6	3.5	2.4	0.23	0.15	2.5
0009	0.2-0.3	5.9	0.042	8	3.1	4.4	0.17	0.52	6.5
0010	0.5-0.6	6.3	0.055	8	1.1	6.8	0.08	0.72	9.0



**REFERENCE**

- ① Land type 1 = A Crop land
- ② Land type 2 = A Crop land
- ③ Land type 3 = C Pastoral land
- <sup>1</sup> Observation site

SCALE 1 : 5 000



**AGRICULTURAL LAND CLASSES**  
of  
**Lot 111 on RP 23792, Parish of Tropicana**