Appendix 2

Preliminary Agricultural Assessment
Classification Assessment

PEAK LAND MANAGEMENT

- PRELIMINARY AGRICULTURAL LAND CLASSIFICATION ASSESSMENT –

-SOMERSBY LANDUSE STRATEGY STUDY AREA-

LOT 12 DP 263427 REEVES ROAD, LOT 41 DP 771535 GOLDSMITH ROAD, LOT 3 DP 261507 DEBENHAM ROAD & LOT 4 DP 261507 TALLANA ROAD, AND LOT 2051 DP 5529231 DEBENHAM ROAD

SOMERSBY

PEAK LAND MANAGEMENT

PO Box 83
MEREWETHER NSW 2291
Ph: 02 49 633 323
Fax: 02 49 635 522
Mobile: 0410 633 837
Email: peak@hunterlink.net.au

AUGUST 2007

CONTENTS

ABOUT THE AUTHOR 3

1.0 INTRODUCTION AND BACKGROUND **3**

1.1 Methodology 4

2.0 HISTORY AND CURRENT LANDUSE **4**

3.0 LAND MANAGEMENT PLANNING INSTRUMENTS **7**

4.0 PHYSICAL SETTING **8**

4.1 GEOLOGY, SOILS AND LAND DEGRADATION 8
4.2 PASTURES 11
4.3 NATIVE VEGETATION AND WATER 11
4.4 OTHER INFRASTRUCTURE 11

5.0 AGRICULTURAL LAND CLASSIFICATION **11**

5.1 CONSULTANT AGRICULTURAL LAND CLASSIFICATION 12

6.0 RECOMMENDATIONS CONCERNING LAND PLANNING INSTRUMENTS **17**

7.0 CONCLUSION **18**

8.0 REFERENCES **20**

APPENDIX 1: DEPARTMENT OF PRIMARY INDUSTRIES POLICY FOR PROTECTION OF AGRICULTURAL LAND, 2004 ..... **21**

APPENDIX 2: SYDNEY REP NO. 8 (CENTRAL COAST PLATEAU) **26**

APPENDIX 3: PHOTOS OF SITE **32**

Cover photo: Angus steers on Lot 12.

ABOUT THE AUTHOR

Ted Smith is an experienced, multidisciplined environmental and agricultural consultant with an interest in sustainable land management. He has over 17 years experience, commercially consulting in his business – PEAK LAND MANAGEMENT PTY LTD and formerly with the Department of Land and Water Conservation – Former Senior Landcare Specialist and Senior Farming for the Future Facilitator for the Hunter Region. He is an accredited Property Planner with the Federal Government, And a Certified Practicing Agriculturist and consultant member with the Australian Institute of Agricultural Science and Technology. Ted has undertaken the NSW Consulting Planners Bushfire Training Course allowing PEAK LAND MANAGEMENT PTY LTD to prepare Bushfire Threat Assessment Reports. Ted is also a Qualified Workplace Trainer, Registered with Department of Environment to collect threatened plants for flora surveys (Licence No. S 11395) and has an Honours Science degree majoring in Physical Geography. PEAK LAND MANAGEMENT PTY LTD is a consultant member of the NSW Ecological Association.

PEAK LAND MANAGEMENT PTY LTD has completed numerous Environmental Management Plans, Statements of Environmental Effects, Bushland Management Plans, Property Management Plans, Land Capability Analysis, Agricultural Land Suitability & Classification Assessments, Flora & Fauna Surveys, 7 Part Tests and Bushfire Threat Assessment Reports for landholders, business and government clientele.

1.0 INTRODUCTION AND BACKGROUND

PEAK LAND MANAGEMENT PTY LTD has been engaged by Andrews Neil Pty Ltd to prepare a Preliminary Agricultural Land Classification Assessment Report on land located at Lot 12 DP 263427 Reeves Road, Lot 41 DP 771535 Goldsmith Road, Lot 3 DP 261507 Debenham Road & Lot 4 DP 261507 Tallana Road, and Lot 2051 DP 5529231 Debenham Road, Somersby (Figures 1& 2).

The land in total is 109.88 hectares in extent (hereafter referred to as "the subject land or study area"). Photos of the site are shown in Appendix 3.

This report aims to provide more information about the subject site in relation to Department of Primary Industries Agricultural Policy, with an emphasis on assessing the Agricultural Land Classification of the subject site. It will also address Sydney REP 8 (Central Coast Plateau Areas), and assess the land in regard to whether the land is prime land or not as classed under both REP 8, and the Department of Primary Industries system of Agricultural Land Classification. It is understood that this report is needed to enable consideration by Gosford City Council to consider rezoning the land.

This report will assess the land briefly according to NSW Agriculture Agricultural Land Classification methodology (now Department of Primary Industries, 2002). This includes soil characteristics (fertility, texture, structure, acidity, salinity, compaction, erosion, dispersability, etc), pasture species and condition, native vegetation distribution/species present, aspect, past land management practices, identification of current land management practices and any problems/ land degradation, viability of those enterprises, level of soil improvement and current infrastructure (including irrigation setup, licences, fences, buildings, etc), farm water supply, slope and any other factors affecting the agricultural classification of the land. It will assess the land according to Sydney REP 8 land classification map, which is a slightly different classification system.

From this information a scientific assessment can be made of its current agricultural land classification, and future agricultural potential.

It should be noted that not all land was inspected as this was a preliminary report.

1.1 Methodology

To develop this preliminary report the following methodology has been used:

- Most of the accessible subject land was inspected and assessed on Monday the 20th August, 2007.

- This report has been produced using on site information listed above, and in reference to relevant topographic maps, Department of Natural Resources (Soil Landscape Maps), Department of Primary Industries Agricultural Land Classification Map (from Sydney REP 8), and in consultation with Mr Michael Dick (owner of lot 41 Goldsmith Rd), and Mr Andrew Neil (Andrews Neil Pty Ltd). It should be noted that Department of Primary Industries maps are at a 1:50 000 scale and can not be relied on for land less than 10ha in site, and that they are "inappropriate for making decisions relating to individual development applications" (Department of Primary Industries ,2004). Therefore an on-site assessment has been carried out which is more detailed and accurate.

- Soils were inspected through on site soil auger testing across the properties' as well as through visual assessment of road cuttings and landscape features, and by reference to soils maps produced by Department of Natural Resources.

- Report produced. The Agricultural Land Classification map follows the accepted method developed by Department of Primary Industries. The Sydney REP 8 land classification is not widely used and is unique to this area (as far as the author is aware).

2.0 HISTORY AND CURRENT LANDUSE

Mr Michael Dick was briefly interviewed and described a brief history of his and the other subject property's as follows.

"The properties have very limited agricultural production with some horses, market gardening, minor pasture improvement and a couple of cows present over the land. There is no irrigation occurring on any property"

No other land uses currently occur on the farms. They are all primarily hobby farms, with very limited agricultural production.

Figure 1: Topographic map of subject site – approx. location (from Gosford 1:25 000 Topographic Map, 2001)

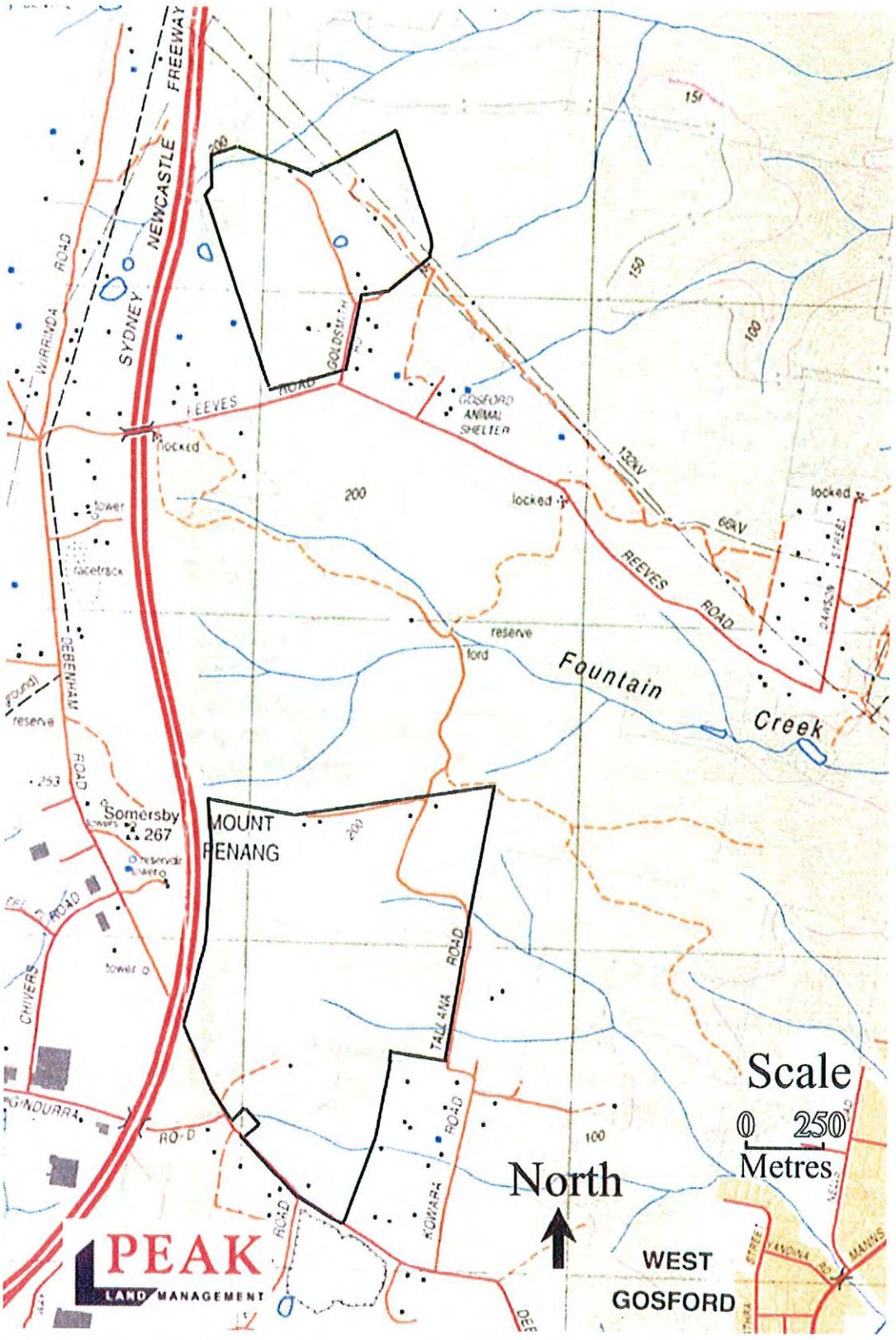
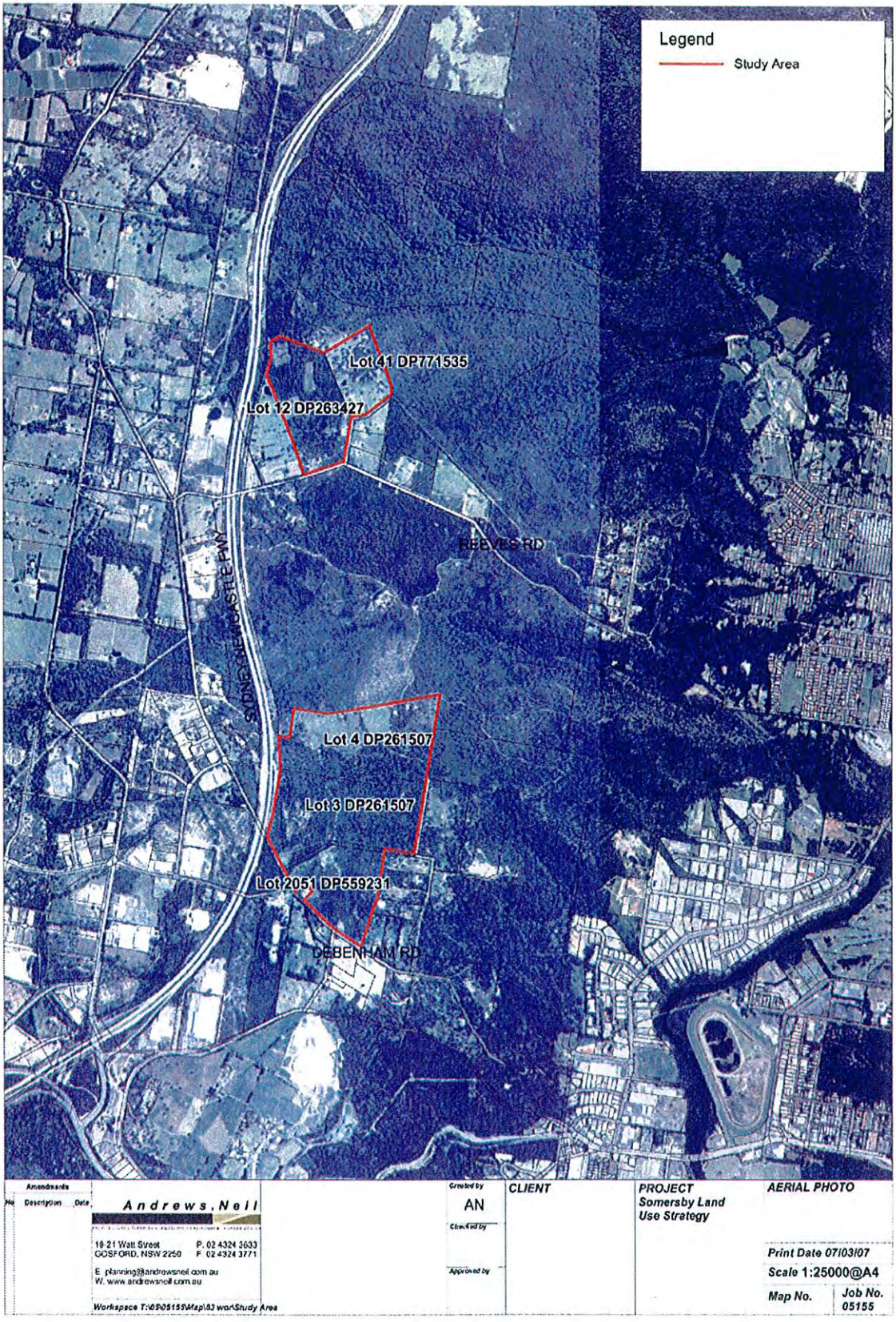


Figure 2: Aerial photo location (from Andrews Neil).



3.0 LAND MANAGEMENT PLANNING INSTRUMENTS

The major environmental planning instruments that are relevant to this site in terms of an agricultural assessment include the Gosford City Council Planning Scheme Ordinance, Department of Primary Industries Agricultural Land Policy (2004), and Sydney REP No. 8 (Central Coast Plateau Areas).

Gosford Planning Scheme Ordinance

The land is a mix of zonings comprising 1(a) Rural Agriculture (Lot 12 Reeves Rd), with the remainder of the subject lots being zoned 7(b) Conservation and Scenic Protection (Scenic Protection). There are restrictions on the types of development allowed in these zonings which will be addressed by Andrews Neil in their report.

Policy for the protection of agricultural land (2004) – Department of Primary Industries (Appendix 1)

This policy has the aim of protecting agricultural land from urbanisation, erosion, salinisation and other forms of land degradation, and maintaining the availability of land for agriculture, avoiding any unnecessary limitations on the use of that land, and promoting agricultural enterprises that are consistent with the principles of Environmentally Sustainable Development (NSW Agriculture Policy 2004). Department of Primary Industries policy is to support the retention of prime agricultural land. They recognise that some alienation of prime crop and pasture land is inevitable as a consequence of population growth and economic development.

Prime agricultural land is defined as Agricultural Land Classification Classes 1, 2 or 3.

Department of Primary Industries advocate environmental planning which takes account of :

- The agricultural productivity and suitability of the land
- The nature and requirements of agricultural industries in the area being considered.

This land has to the authors knowledge not been mapped by the Department of Primary Industries under this well recognised system, probably as it has been mapped under the old Sydney REP 8 system (see below), and is covered by the legislation pertaining to this REP 8.

Sydney Regional Environment Plan No. 8 (Central Coast Plateau Areas)

This REP is shown in Appendix 2. It has many objectives, being mainly environmental protection and extractive industry protection, with the major one relevant to this agricultural report being:

- "(b) to encourage the use of land having a high agricultural capability for that purpose and, as much as possible, to direct development for non agricultural purposes to land of lesser agricultural capability".

The map completed by Department of Primary Industries shows the subject land where mapped, being a mix of Class 4/5, with some Class 3 and Class 2 land. The map is shown in Figure 3. Over half of the subject land appears to fall outside the mapped area.

4.0 PHYSICAL SETTING

4.1 GEOLOGY, SOILS AND LAND DEGRADATION

Soils and their unique characteristics occur as a result of weathering of parent material, geology, slope, time, landscape position, landuse, aspect, and to a lesser degree vegetation and climate.

The **geology** of the study area consists of a variety of parent rock strata including deeply weathered Hawkesbury Sandstone and lenses of Wianamatta shale from the Hawkesbury and Terrigal Formations (Murphy and Tile, 1993).

Soil landscapes are mapped using a combination of slope, soil type, and terrain to give a broad picture of major soil groups occurring over the landscape. Estimated soil landscape boundaries were determined through this testing program, in combination with landscape assessment (elevations, geomorphology, soil colour, vegetation species present and vigour and surrounding landuse). This found that the Department of Conservation and Land Management, 1993 (CaLM) Soil Landscape Maps were reasonably accurate, and rigorous enough for this assessment to be based partly upon soils mapping. Figure 3 shows the CaLM soil landscapes map for the subject site. This is important as the soils determine to a large degree potential carrying capacity of the land, and agricultural suitability rating.

The major soil landscapes present on the site are described below (from Murphy, 1993).

Sydney Town (st)

"Shallow (<50cm) to deep Yellow Earths (>150cm), Earthy Sands and some Siliceous Sands on crests and slopes; shallow (<50cm) to moderately deep (>150cm) siliceous sands, Leached sands and Grey Earths in poorly drained areas and drainage lines: moderately deep (100-150cm) Yellow Podzolic Soils, and Gleyed Podzolic Soils associated with shale lenses.

Limitations: Very high soil erosion hazard, permanent waterlogging (localised), highly permeable, strongly acid soils with very low fertility".

The soils are generally only suited to agriculture if they are well fertilised, and irrigated to improve water availability. It was noted that where they were cleared only poor quality pasture was growing, with very poor feed quality. This soil occurred over around 85% of the property.

Somersby (so)

"Moderately deep (100cm) to deep (300cm) Yellow Earths and Erath sands on crests and slopes with Grey earths in poorly drained areas and Leached sands and Siliceous sands along drainage lines.

Limitations: localised permanent and seasonal water logging, moderate erosion hazard, stoniness, very low soil fertility, highly permeable soil."

This soil landscape is mapped as occurring over a small part of lot 12.

The soils on this property were all tested and generally found to have:

Soil characteristic	Measurement
pH	Topsoil Very Acid - around 5 , Subsoil acid 5.5
Structure- Topsoil	Apedal (Sands and Earths)
- Subsoil	Generally Apedal (sands and earths)
Texture- Topsoil	Loamy sand, sandy loam, sand. Somersby topsoil had more organic matter, and tended to be a light sandy loam.
- Subsoil	Loamy sand, sandy loam, sand
Depth	Topsoil depths varied with the Sydney Town Soil Landscape topsoil generally absent or <50cm. Somersby Soil Landscape tended to have a deeper (up to 50cm topsoil). Subsoil depths ranged from 0cm deep over some parts of the Sydney Town landscape (rock outcrops and benches and incised drainage lines) to greater than 1m deep in other parts, and over 2m deep the Somersby Soil Landscape (this depth was not tested however- beyond the limit of the auger).
Soil colour	Topsoils generally dark grey to light grey to yellow. Subsoils varied from light grey to white, to yellow.

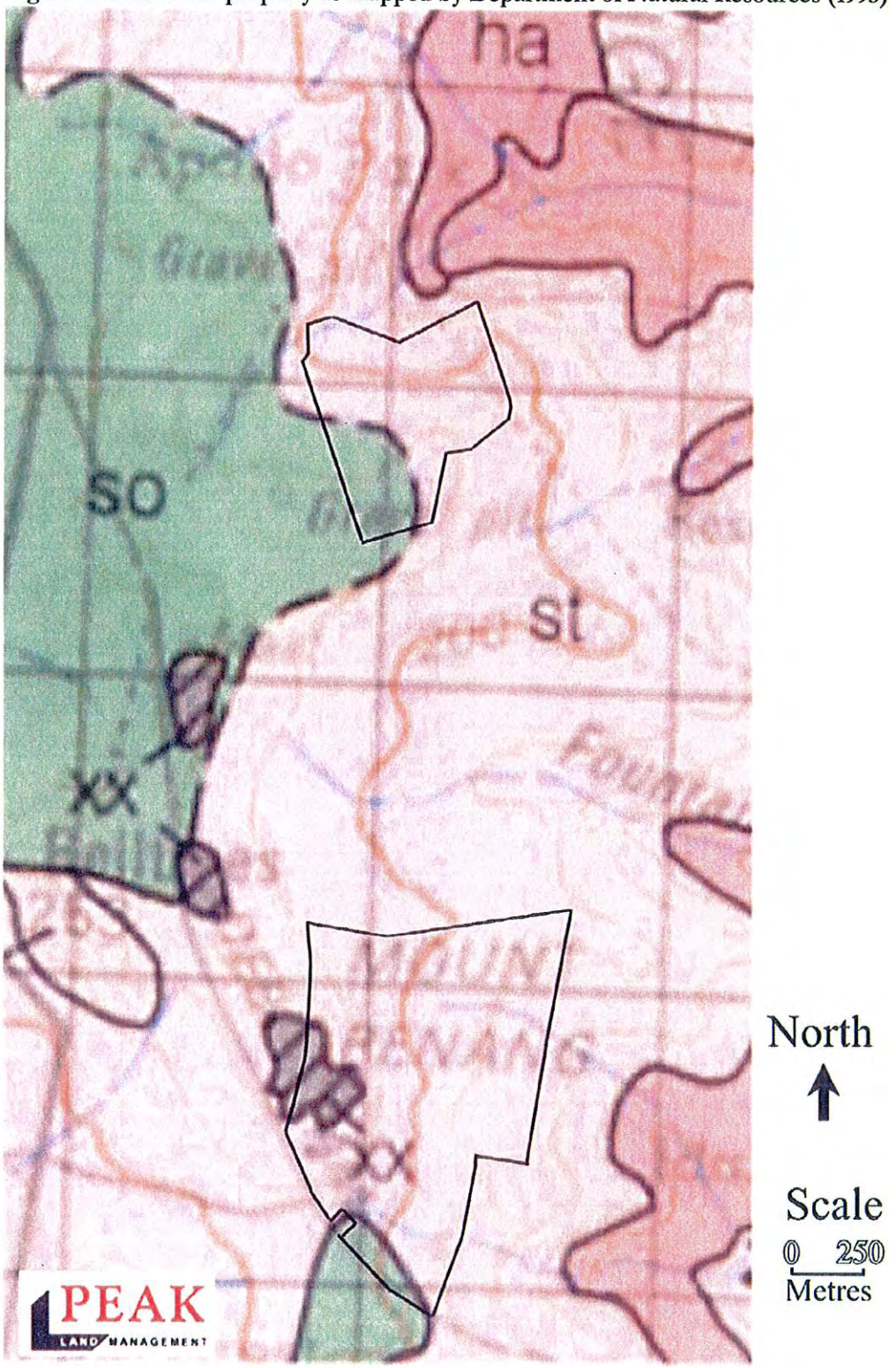
Soils are rated as low to very low in terms of fertility. They are very sandy, with little organic matter or clay/silt to enhance their fertility and water holding capacity. In some drainage lines they were almost pure sand.

These soils even if fertilized and pasture improved will always remain input hungry agricultural soils and in the long term may suffer induced soil salinity from over fertilizing with superphosphate and sowing of leguminous pastures. Clover was present in most pastures inspected and although it traps nitrogen and has a beneficial effect, with over use and in combination with too much superphosphate has been shown to cause acidification of light textured soils such as these (Charman et al.,1991). This will need rectifying in the future to increase pasture growth. No liming has occurred on any property to the consultant's knowledge. Due to their high permeability and low water holding capacity they will always need frequent rain, or irrigation to keep up good pasture growth.

Paradoxically where deeper soils occur in combination with their highly permeable properties, they are suited to pastures and permanent horticulture (such as citrus) and even some crops (such as flowers and some vegetables) where water and nutrients can be applied frequently. The economics of this are questionable however on small properties such as these without any irrigation licences (above or below ground), or significant water holding structures. Only three very small dams were present on the properties off Reeves Road and Goldsmith Road.

Other forms of **land degradation** were evident including weeds in pastures (fire weed and parramatta grass were especially bad on Lot 41), extensive sheet erosion (topsoil was missing in many areas), soil was acid, waterlogging occurred over all property's, and some rill and minor gully erosion was evident.

Figure 3: Soils of the property as mapped by Department of Natural Resources (1993)



4.2 PASTURES

Pastures have been improved over most of the cleared areas of the properties, with the most common grasses being kikuyu, clover, couch, paspalum, and carpet grass. Areas differed in their pasture makeup dependant on fertilizer regime, soil moisture and soil type and depth. Some areas were dominated by good pasture species such as kikuyu (particularly Lot 12), whilst other areas had very poor pasture dominated by Parramatta Grass and Fireweed (Lot 41). There was clover present, but its occurrence was generally sparse.

The pastures were mainly not well managed, being overgrazed in some areas, acid and lacking both nutrients and water. Lot 12 was in the process of being improved with newly sown pasture present (Figure 5), new dams and some clearing of a former pine plantation being evident.

4.3 NATIVE VEGETATION AND WATER

Approximately 70-80% of the subject land was naturally vegetated with a mix of eucalypts such as scribbly gum, red bloodwood, blackbutt and grey gum amongst many others. The vegetation is mapped as Hawkesbury Woodland (exposed and sheltered) and heath over most of it (LHCCREMS vegetation mapping 2003).

Water supplies were limited to creeks and drainage lines (which are mostly dry) over all of the properties and the following dams:

Dam location	Number present	Size (approx)
Lot 41	1	1/3mgl
Lot 12	2	Both around 1/4mgl
Lot 4	1	0.5 -1mgl (shallow)

As mentioned in soils no irrigation licences of any kind were present over any of the properties.

4.4 OTHER INFRASTRUCTURE

Other improvements were noted over parts of the subject land, including partial clearing, fertilizer application (amounts/types not known), pasture improvement, fencing infrastructure (most fences in good condition) and stock yards. Also all lots had a house and driveway, and varying levels of associated gardens/pools etc. All houses were serviced by electricity, and phone lines. All properties had sealed roads leading to their front driveway.

5.0 AGRICULTURAL LAND CLASSIFICATION

Agricultural Land Classification is a system developed by NSW Agriculture which aims to allow rapid assessment for planning and helps to identify land worth retaining for agriculture. The following classes are used (from NSW Agriculture AGFACT 211/532, 1996):

- Class 1: Arable land suitable for intensive cultivation where constraints to sustained high levels of agricultural production are minor to absent.

- Class 2: Arable land suitable for regular cultivation for crops but not suited to continuos cultivation. It has moderate to high suitability for agriculture, but edaphic (soil factors) or environmental constraints reduce the overall level of production and may limit the cropping phase to a rotation with sown pastures.

- Class 3 : Grazing land or land well suited to pasture improvement. It may be cultivated or cropped in rotation with pasture. The overall production level is moderate because of edaphic or environmental constraints. Erosion hazard, soil structural breakdown and other factors including climate may limit the capacity for cultivation and soil conservation or drainage work may be required. 3(p) refers to pastures present.

- Class 4 : Land suitable for grazing but not for cultivation. Agriculture is based on native pastures or improved pastures established using minimum tillage techniques. Production may be seasonally high but the overall production level is low as a result of major environmental constraints. 4(T) refers to timber present.

- Class 5: Land unsuitable for agriculture or at best suited only to light grazing. Agricultural production is very low to zero as a result of severe constraints, including economic factors, which preclude land improvement. An additional class may be used occasionally where land has some special features which allows a specialist crop to be grown.

In this case the NSW Department of Agriculture has used a modified system of agricultural land classification with different classes based primarily on soil depth (and maybe slope?). The map is shown in Figure 6. It was compiled in 1984, and looks to be a precursor to the standard land classification system outlined above.

It appears to be fairly rudimentary, and in the consultants opinion is not very sound. Basing land class assessment on predominantly soil depth (and perhaps slope) alone makes no allowance for the fertility of the soil, its structure and texture attributes, and hence potential agricultural capacity. It seems to wrongly assume that all land can be improved by fertilizer application and irrigation, whereas it is now known that soil and water degradation can occur through inappropriate fertilizer application and inappropriate agricultural landuses. It can also be costly and not always financially viable to "improve" land which has many constraints to its sustainable production. This modified system is also ambiguous and hard to define with many areas marked as a variety of classes (eg 3-4). Further, Sydney REP No 8 defines Prime Agricultural Land as areas on the map marked as ….2,3, 3-4, 4,…. It does not include land classed as 4/5 as Prime. This is different to the current system which classes Prime Land as Classes 1-3 inclusive.

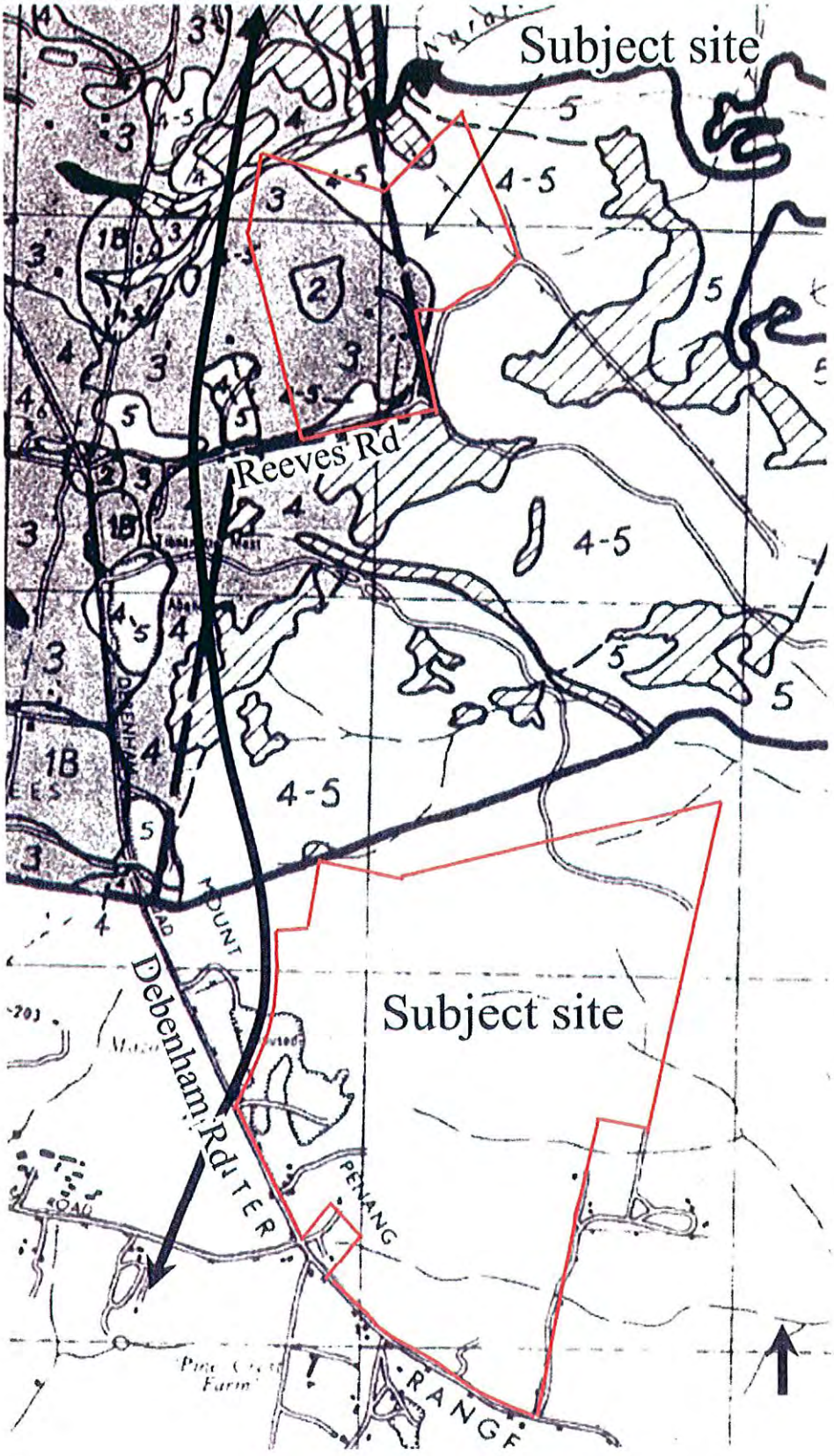
Of some assistance however is the printing of equivalent agricultural land classes in the right hand column of the key (see Appendix 3). The results for the agricultural land classification survey undertaken by NSW Agriculture are shown in Figure 6. They have mapped the land as comprising a mix of Classes 2 & 3 and 4/5 for Lots 12 & 41. It appears mapping has not been completed over Lots 3,4,and 2051. Therefore under Sydney REP No 8 approximately 60-70% of the land in Lots 12 and 41 is mapped as Prime Land.

5.1 CONSULTANT AGRICULTURAL LAND CLASSIFICATION

From onsite inspection and from research information I believe most of the land is better classed as 4 and 5 as shown in Figure 8. This is because of :

- Soils are predominantly earthy sands, and almost pure sand in some cases, with very low fertility.
- Soils are shallow in some areas.
- Soils are prone to waterlogging in parts due to shallow rock.
- Slopes are moderate to steep in some areas.
- Erosion potential is high, therefore cultivation should not occur.
- A lack of irrigation over the land therefore hinders the establishment of high quality crops or pastures.
- Fertilizer costs are increasing and the financial viability of maintaining good soil nutrient levels over these highly leached and impoverished sands and earths is questionable.

Figure 7: Agricultural land classification map prepared by Department of Primary Industries for this area under REP No 8.



Department of Agriculture New South Wales

CLASSES OF AGRICULTURAL LAND ON THE HUNTER PLATEAU NEW SOUTH WALES

MAP 3

SYMBOLS	DESCRIPTIONS
	boundary of area surveyed
	boundary of areas surveyed in detail
	boundary of land class
	tentative boundary of land class
	drainage line, water course, stream, wetland swamp, dam – not available for cropping or grazing
	stream with rapids
	soil analysis sampling site
	moisture determination sampling site
b.i. basalt influence	basaltic influence evident in the soil
black	soil has a black organic surface layer
shale influence	colluvium from Wianamatta Shale has produced a more clayey soil
h.s.	hydromorphic soil
heavy	clayey subsoil
stony	soil markedly stony at the surface and through the surface layer

LAND CLASS	DEFINITION	EQUIVALENT CLASS OF THE RURAL LAND EVALUATION MANUAL¹
1	Total depth of soil to solid rock greater than 2 metres	–
1A	[illegible]	
1A lot	Yellow soil has layer of large ironstone boulders up to 50 cm thick usually within 80 cm of the surface	
1A grav. gra. gr	Yellow soil has heavy ironstone gravel and sometimes small boulders from 60–75 cm depth	
1B	Yellow earth (upper profile) less than 2 metres thick	
1B grav gra. gr.	Yellow soil has heavy ironstone gravel from 30–50 cm depth	
1B Fe stone	Yellow soil has heavy ironstone gravel from 40–50 cm depth and ironstone boulders in deep sub soil	
1H	Clayey soil on colluvium from Wianamatta Shale	
1U	Uniformly sandy soil without gravel or stones	
2	Total depth of soil to solid rock greater than 1.5 metres and up to 2 metres	2
2 grav gra. gr	Yellow soil has heavy ironstone gravel from 30 cm depth	
3	Total depth of soil to solid rock greater than 1.0 metre and up to 1.5 metre	2
3 grav. gra gr	Yellow soil has very heavy gravel from 30 cm depth	
3H	Clayey, Podzolic soil on Wianamatta Shale	
3U	Uniformly sandy soil without gravel or stones	
3·4	A complex of classes 3 and 4	3
4	Total depth of soil to solid rock 0.5–1.0 metre	3·4
4H	Clayey Podzolic soil on Wianamatta Shale	2
4U	Uniformly sandy soil without gravel or stones	2
4·5	A complex of classes 4 and 5	3·4·5
5	Total depth of soil to solid rock less than 0.5 metre	5

CROP SUITABILITY OF HUNTER PLATEAU CLASSES

CLASS	CROP SUITABILITY
1, 2, 3, 4	Fruit, vegetables, crops, pastures
4U	Vegetable crops and pastures
3·4, 4	Crops and pastures
4·5 (better)	Pastures only
4·5 (poor), 5	Unsuited to pastures

NOTE TO MAP USERS

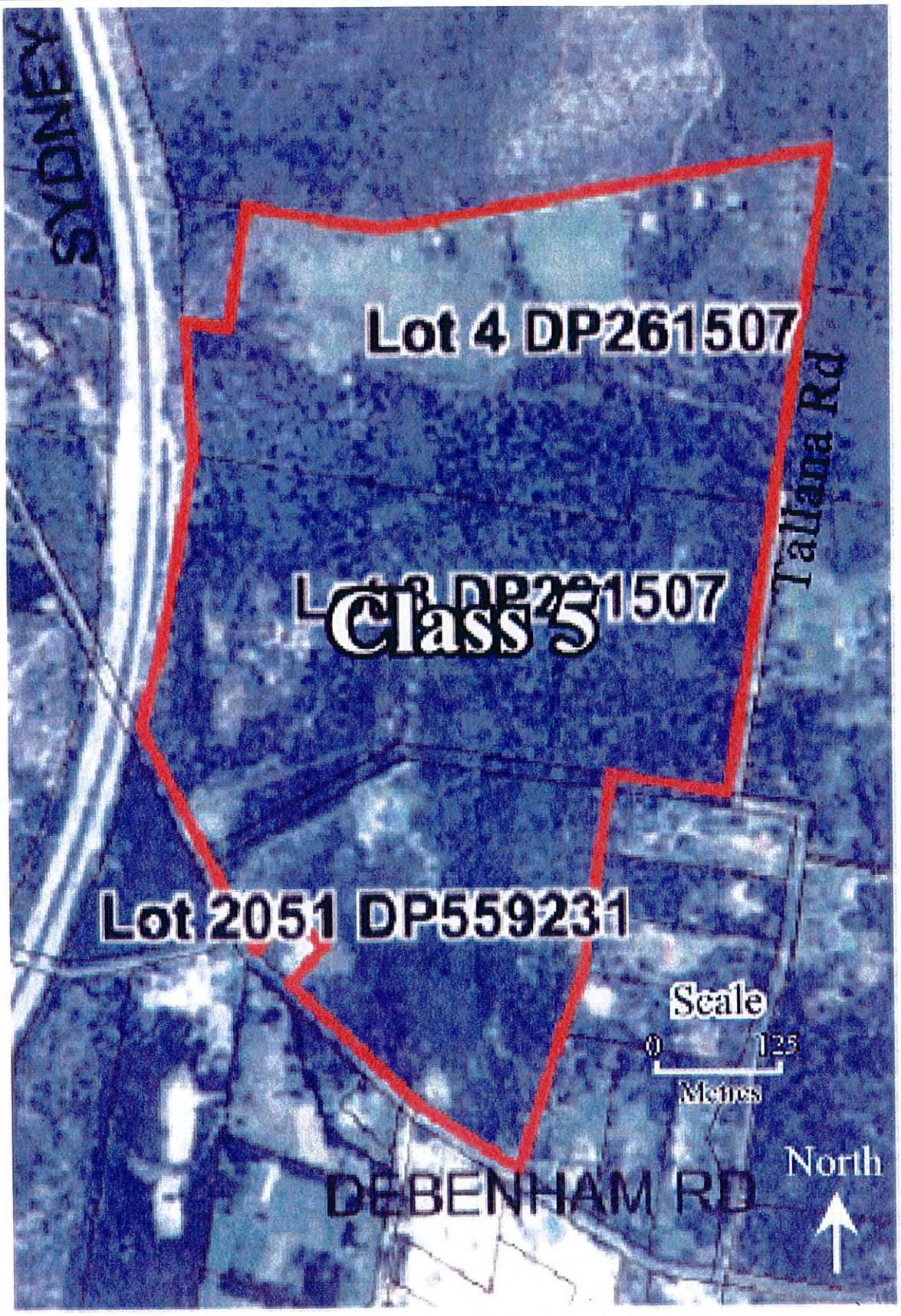
This map forms part of an overall assessment of agricultural lands in the subject area and should be read in conjunction with the written report on that area. It was prepared using base maps, aerial photography and field traversing where possible. Outside of the detailed areas land class boundaries are tentative except for those between Class 3 or higher classes and Class 4. There may be anomalies with specific detail and land class boundaries. The map is not reliable at scales larger than that at which it is reported.

Base map - Central Mapping Authority of New South Wales 1:25 000 topographic maps. Field survey - C. A. Hawkins and N. Haddad. Drafting - C. Wright and D. Holland. January 1984

¹ Woodward, R. and Nelson, J. (1981)

PEAK LAND MANAGEMENT

Figure 8: Agricultural land classification map (prepared by PEAK LAND MANAGEMENT for north– below, and south study areas).



PEAK LAND MANAGEMENT

- Large areas have native vegetation over them, presumably with conservation value. They are better mapped mainly as Class 5 – better left for conservation.

The only land that is "Prime" in my opinion is a small part of Lot 12, which has a lower slope, deep soil, more organic matter and higher fertility as a result and should therefore be classed as prime Class 3. Lot 12 also has access to water from two small dams, has been pasture improved with kikuyu and clover amongst other grasses, and had cattle running on it (albeit only four steers). It should be noted that the exact boundaries of this Class were not fully determined in this survey. They are an informed estimate over part of the land based on soil landscape boundaries and natural features.

All major creek lines should also be mapped as Class 5 (shown in blue on the topographic map), and preferably not grazed and revegetated for a distance of 20 metres from their banks. These have been left uncleared, which is good for biodiversity, bank stability, shade, & water quality.

6.0 RECOMMENDATIONS CONCERNING LAND PLANNING INSTRUMENTS

Andrews Neil Pty Ltd will address planning issues related to proposed rezoning of the subject site with regard to the Gosford City Council Planning Scheme Ordinance.

NSW Agriculture policy on the protection of agricultural land

This policy as shown in Appendix 1 has the aim of protecting the alienation of agricultural land from urbanisation, erosion, salinisation and other forms of land degradation (NSW Agriculture Policy 2004). Department of Primary Industries policy is to support the retention of prime agricultural land. They recognise that some alienation of prime crop and pasture land is inevitable as a consequence of population growth and economic development. To aid planners maps have been produced showing agricultural land classes. In this case the consultant does not fully agree with the mapping.

Prime agricultural land is defined as Agricultural Land Suitability Classes 1, 2 or 3.

They advocate environmental planning which takes account of

- The agricultural productivity and suitability of the land
- The nature and requirements of agricultural industries in the area being considered.

This report has shown that:

- Over 90% of the total land area is not prime agricultural land.

- Most of the land has shallow infertile soil, is erosion prone, mainly undulating to steep, and is naturally vegetated with high conservation value. It generally has a low or Nil stock carrying capacity over these areas as a result.

- Where land has been cleared on more flat or gently undulating slopes soils are generally deeper and if inputs are available (ie: lime/fertilizer/organic matter/water) then they are capable of growing pastures and some specific perennial crops (over the mapped Class 3 land only).

- Agricultural viability at present is low due to the small land areas involved (high overheads, low returns), poor soils with the need of expensive inputs, lack of irrigation, low carrying capacity for stock, lack of any horticultural crops (probably due to poor returns), and resultant low income. The

properties which have any income occurring from agricultural enterprises would have a negative gross margin when rates, labour, costs of maintaining stock, etc are taken into account.

- The possible long term consequences of farming cattle over most areas Mapped Class 4 or 5 would be to degrade the land (through soil erosion - loss of topsoil, acidification, loss of biodiversity, water quality decline), and render it unsuitable for many types of future agricultural practices, and even limit natural regeneration of the site. Any agriculture undertaken should be carefully managed, including the Class 3 country which had active sheet erosion occurring whilst the inspection was occurring.

Sydney Regional Environment Plan No. 8 (Central Coast Plateau Areas)

This REP is shown in Appendix 2. It has many objectives, being mainly environmental protection and extractive industry protection, with the major one relevant to this agricultural report being:

- "(b) to encourage the use of land having a high agricultural capability for that purpose and, as much as possible, to direct development for non agricultural purposes to land of lesser agricultural capability

This assessment has found that over 90% of the land has a Low or even Nil agricultural value.

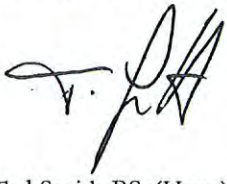
The land that is considered suitable for agriculture is mapped as Class 3 (ie of moderate agricultural value), and is certainly not of high agricultural capability. It is limited by its small area and other issues as stated above.

7.0 CONCLUSION

The subject land is generally rated as low agricultural production value, with many constraints. These properties make virtually no contribution to the regions cattle or other agricultural enterprise production. It would be unwise to consider clearing any other land mapped as Class 4 or 5 due to its high potential for erosion and shallow infertile soils. In many cases vegetation remaining has been left for a purpose – the land is no good for agriculture. It also now has probably greater conservation and scenic value. Parts of the property at Goldsmith Road and Reeves Road may be better off left to naturally revegetate.

This report therefore concludes that the land if rezoned for other uses would generally meet the requirements of both the NSW Agriculture policy on the protection of agricultural land (2004) and the agricultural objective of the Sydney Regional Environment Plan No. 8 (Central Coast Plateau Areas), with only a minor exception of approximately 10Ha of some marginally prime land off Reeves Road (Lot 12).

Thankyou for considering this report.



Ted Smith BSc(Hons) Cert. Practicing Agriculturist
PEAK LAND MANAGEMENT PTY LTD

occurring as a result of information in this document. A full soil and agricultural survey did not occur over all parts of every property.

8.0 REFERENCES

Agfacts. *Agricultural suitability maps – uses and limitations.* 1996, Department of Primary Industries.

Auld, B.A. and Medd, R.W. 1992. Weeds. Inkata Press.

Brooker M.I.H. and Kleineg D.A. 1999. *Field Guide to Eucalypts – South Eastern Australia,* Volume 1. Blooming Books.

Central Mapping Authority of NSW. 2001. Gosford 1:25 000 topographic map.

Charman, P.E.V. and Murphy,B.W. 1991. *Soils- Their Properties and Management: A Soil Conservation Handbook for NSW* , Soil Conservation Commission of NSW. Sydney University Press

Department of Primary Industries. Agricultural Land Classification map. (Courtesy of Andrews Neil and David Kettle)

Department of Primary Industries. 2004. *Policy for Sustainable Agriculture in New South Wales.*

Department of Primary Industries 2006. *Beef stocking rates and farm size- Hunter Region.*

Fairley, A and Moore, P. 2000. *Native Plants of the Sydney District.* Kangaroo Press

Harden, G. 2002. Volumes 1-4. *Flora of NSW.* UNSW Press.

Murphy, C.L. and Tille, P.J. (1993). *Soil Landscapes of the Gosford 1:100 000 sheet.* Department of Conservation and Land Management, NSW.

Sydney Regional Environmental Plan No 8 (Central Coast Plateau Areas). 17th May, 2002.

Wheeler, D.J.B., Jacobs, S.W.L. and Whalley, R.D.B. 2002. Grasses of NSW. University of New England Printery.

APPENDIX 1: Department of Primary Industries Policy for Protection of Agricultural Land, 2004

Policy for Protection of Agricultural Land, 2004
31 May 2004

This policy document is an update of the *Policy for Protection of Agricultural Land, 1993*

Purpose

This policy document guides officers of NSW Agriculture in their input to development and implementation of environmental planning instruments under the *Environmental Planning and Assessment Act, 1979.* Strategies in the *Policy for Sustainable Agriculture in New South Wales 1998* provide the context for this policy.

Protecting agricultural land includes maintaining the availability of land for agriculture, avoiding unnecessary limitations on the use of that land, and promoting agricultural enterprises that are consistent with the principles of ecologically sustainable development (ESD) as elucidated in *National Strategy for Ecologically Sustainable Development, 1992.*

The *Environmental Planning and Assessment Act* provides for the development and implementation of environmental planning instruments, *viz* State Environmental Planning Policies, Regional Environmental Plans, Local Environmental Plans and Development Control Plans. These instruments determine the areas of land that are available for commercial agriculture and the restrictions under which agriculture, and especially intensive agriculture, will operate.

Context

Agriculture is a diverse sector of the State's economy that includes the production, processing and marketing of food, fibre and ornamental products. The sector has played a key role in the development of New South Wales and contributed to the character, culture and heritage value of our rural landscape.

Sustainable development is the basis for agricultural land policy. Agricultural policies directed at conserving natural resources to maintain their long term productive potential for the community as a whole are a fundamental component of sustainable agriculture. Some agricultural industries rely on soil, in which case matching land use to land capability is essential to their sustainability. There are other agricultural industries that are not dependant on the soil resource, such as hydroponics, protected horticulture and intensive livestock production. For all agricultural enterprises, appropriate access to water, labour, markets, processing facilities and infrastructure is necessary.

The slow freeing up of world trade and internationalisation of agricultural markets is changing the opportunities for agricultural enterprises. It is desirable that environmental planning instruments and planning decisions maintain the capacity for farmers to respond to this changing market and policy environment.

The threats to sustainable agricultural production include degradation of the natural resources on which agriculture relies and alienation of agricultural land. Agricultural land may be alienated directly through lands being used for non-agricultural purposes and indirectly by incompatible developments on adjacent land restricting routine agricultural practices. Non-agricultural development of land currently used for agriculture contributes to this and may force future agricultural production onto more marginal lands.

New South Wales, as Australia's most important agricultural producing State, has a direct economic and social interest in maintaining and improving agricultural production not only for the nation's present and future generations, but also for exports. In many rural regions, agriculture or value adding industries based on agriculture, provide the only opportunity for economic development.

NSW Agriculture recognises that land with the best combination of soil, climate and topography for agricultural production (termed prime agricultural land) is a limited resource in New South Wales and its preservation should be encouraged. In addition agricultural enterprises that are not based on the soil resource should also be protected, especially where the location or other features of the region give those enterprises a competitive advantage or where there has been significant investment in facilities or infrastructure to support those enterprises.

The planning system should provide certainty and security for agricultural enterprises and enable agricultural enterprises to maintain efficiency by responding to future market, policy, technology and environmental changes. Any restrictions on agricultural enterprises should be fully justified by scientific evidence to quantify potential impacts and alternatives.

NSW Agriculture Corporate Goals

The mission of NSW Agriculture is to *Benefit the general community by leading agriculture in NSW to a profitable, environmentally sustainable future*. Corporate goals under this mission include *Innovative and internationally competitive agricultural industries* and *Sustainable management of natural resources for agriculture and community.*

The planning and development control systems under the *Environmental Planning and Assessment Act, 1979* (EP&A Act) determine the areas of land that are available for commercial agriculture and the restrictions under which agriculture, and especially intensive agriculture, will operate. These decisions are relevant to the competitiveness of agricultural industries, now and in the future, and the sustainable management of natural resources for agriculture and the community.

The NSW Government released a Policy for Sustainable Agriculture in 1998. The goal of that policy is *Agricultural industries that contribute positively to the State's productivity and economy, protect the State's biological and physical resource base, and support the State's rural people and communities.*

One of the activities by NSW Agriculture in pursuit of these goals is to provide advice to assist in developing and implementing environmental planning instruments (EPI) under the *Environmental Planning and Assessment Act, 1979* (EP&A Act).

NSW Agriculture has no statutory role under the Act or its instruments, but acts as an advocate for sustainable agriculture and provides technical advice to assist the appropriate authorities make informed decisions in the best interests of their communities. It is the responsibility of the appropriate authorities to balance this advocacy for sustainable agriculture against the other needs and aspirations of their communities.

This policy document provides direction to NSW Agriculture staff in their role of assisting planning authorities and communities to develop and implement environmental planning instruments relevant to agriculture or rural communities. These instruments include State Environmental Planning Policies, Regional Environmental Plans, Local Environmental Plans and Development Control Plans developed under the *Environmental Planning and Assessment Act, 1979.*

NSW Policy for Sustainable Agriculture

The Policy for Sustainable Agriculture identified the following requirements for agriculture to be sustainable:

- respond to consumer needs for food and fibre products that are healthy and of high quality

- take full account of the costs of production, including environmental costs, and ensure its pricing reflects these costs
- protect and restore the natural resource base on which agriculture depends
- prevent adverse on-site and off-site impacts on the environment and any other sector of the community
- be flexible in order to accommodate regional differences and changing economic, environmental and social circumstances such as drought or terms of trade
- be financially viable.

In relation to land use planning the Policy for Sustainable Agriculture includes the following strategies:

- Ensure collaboration in the development, implementation and review of plans, policies and legislation relating to agriculture.
- Ensure the equitable and efficient allocation of land and other natural resources between agriculture and other sectors of the community.
- Ensure land use planning is undertaken, where appropriate, in association with agriculture to avoid conflict that may jeopardise agriculture's sustainability.
- Ensure enactment of environmental impact assessment procedures that result in the sustainable development of agriculture.
- Develop and adopt agricultural activities and planning strategies that minimise impacts on community amenity from noise, dust and odour.
- Identify lands and farming methods best suited to specific agricultural industries and retain production options for those lands in the future.

Principles for implementation of this Policy

- NSW Agriculture is not a consent authority. Advice should be provided to appropriate authorities to assist them to make informed decisions in the best interests of their communities.
- NSW Agriculture input should be to strategic decisions rather than operational decisions, except for development applications which because of novelty, complexity or significance justify independent technical input from NSW Agriculture.
- NSW Agriculture should promote the consistent and transparent implementation of environmental planning instruments to avoid the intent of instruments being undermined by cumulative impacts from variations to standards and to ensure equity between regions.
- Communities should not be disenfranchised by *ad hoc* decisions that are contrary to the intent of environmental planning instruments. If environmental planning instruments no longer meet the needs and aspirations of communities, they should be revised through an open consultative process that is informed by an assessment of all the values that agriculture contributes.

NSW Agriculture should continue to develop best management practices to promote whole farm management and to implement the other strategies identified in the Policy for Sustainable Agriculture.

Policies to Protect Agricultural Land

1 Environmental planning instruments

Environmental planning instruments should be structured to:

- promote the continued use of agricultural land, particularly prime crop and pasture land, for commercial agricultural purposes, where that form of land use is sustainable in the long term;
- avoid land use conflicts;
- protect natural resources used by agriculture;
- protect other values associated with agricultural land that are of importance to local communities, such as heritage and visual amenity;
- provide diversity of agriculture opportunities, including specialised agricultural developments, at appropriate locations to provide scope for development in rural areas; and
- allow for value adding and integration of agricultural industries into regional economies.

Explanation: The development of appropriate planning instruments is the first step in supporting the capacity of agricultural industries to contribute positively to the State's productivity and economy, while protecting the State's biological and physical resource base, and supporting the State's rural people and communities.

2 Conversion of land

The conversion of land used by agricultural enterprises to other uses should only take place where fully justified against the criteria set out in relevant environmental planning instruments and after consideration of alternative sites and options. Any decisions to convert agricultural land to non agricultural uses should consider the optimal agricultural use of the land and alternative ways to structure the agricultural business.

Explanation: It is recognised that changing community needs and aspirations may sometimes require a change in the use of areas of land. However, once land is converted to other uses, especially to residential or industrial uses, it is most unlikely to ever return to agricultural production. Since these decisions cannot be practically reversed the long term costs and benefits, from a triple bottom line perspective, need to be evaluated before a decision is made.

The objective is not to prevent or discourage other land uses, but rather through planning to ensure that competing landuses are located so as to maximise total benefit to the community. To achieve this goal, planning authorities should develop a strategy for development of agricultural industries at the same time as they develop strategies for other landuses. This approach requires the determination of the economic, environmental and social contributions from agricultural land uses, preferably through a regional rural land study.

Where a change in land use appears to be desirable, any changes to environmental planning instruments should only be made after open and informed consultation with the community. Spot rezonings and other *ad hoc* approaches to planning are undesirable. Changes should be implemented in a way that minimises the impact on existing agricultural enterprises, such as by phasing in the change and providing short term buffers between agricultural and non-agricultural properties.

Evaluation of the economic returns from an area of land should be based on good agricultural practice, not on potentially sub-optimal practices that may currently be utilized.

3 Minimum size of holdings for dwelling entitlement

Criteria in environmental planning instruments to determine the minimum size of holdings necessary for a dwelling entitlement should be developed to suit local needs and conditions.

Explanation: Setting the minimum area necessary for a building entitlement is a commonly used tool to influence residential land uses in agricultural zones. The objective is to reduce opportunities for conflict with commercial agricultural enterprises by minimising residential uses that are not directly associated with commercial farms. Setting a large minimum is a disincentive to life style purchasers but the size also needs to allow for entry by young farmers and the criteria should also allow for more intensive forms of agriculture where appropriate.

While specifying a minimum area for a dwelling entitlement has been an effective strategy that is easily understood and is efficiently implemented, Councils should also consider other approaches to achieving the goal of minimising conflict in agricultural production zones so that farms can operate without unnecessary restrictions.

The minimum area for a dwelling entitlement and other provisions in Environmental Planning Instruments to regulate subdivisions should take account of:

- the agricultural productivity and suitability of the land in question;
- the nature and requirements of agricultural industries in the area being considered;
- the risk of creating land use conflict;
- the current distribution of property sizes; and
- cumulative impacts.

Document details

Created/Updated: 31 May 2004

Feedback

We welcome your comments/suggestions/feedback on this item

The information contained in this web page is based on knowledge and understanding at the time of writing - 31 May 2004 . However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

APPENDIX 2: Sydney REP No. 8 (Central Coast Plateau)

Sydney Regional Environmental Plan No 8 (Central Coast Plateau Areas)

[1986-016]

Status Information

Currency of version
This is the latest version of this legislation.
Legislation on this site is usually updated within 3 working days after a change to the legislation.
This version was last updated on 17 May 2002.
This version relates to the period commencing on 17 May 2002 to date.

Act under which legislation made
This legislation was made under the Environmental Planning and Assessment Act 1979

Date made
22 August 1986

Provisions in force
The provisions displayed in this version of the legislation have all commenced. See Historical notes

Contents

1 Name of plan
2 Aims, objectives etc
3 Land to which plan applies
4 Definitions
5 Relationship to other environmental planning instruments
6 Prime agricultural land
7 Extractive industries
8 Clearing of land
9 (Repealed)
10 Rural residential development
11 Special provisions—draft local environmental plan applications

Historical notes

New South Wales

1 Name of plan

This plan may be cited as *Sydney Regional Environmental Plan No 8 (Central Coast Plateau Areas)*.

2 Aims, objectives etc

The general aims of this plan are:

(a) to provide for the environmental protection of the Central Coast plateau areas and to provide a basis for evaluating competing land uses,

(b) to encourage the use of land having a high agricultural capability for that purpose and, as much as possible, to direct development for non-agricultural purposes to land of lesser agricultural capability,

(c) (Repealed)

(d) to protect regionally significant mining resources and extractive materials from sterilization,

(e) to enable development for the purposes of extractive industries in specified locations,

(f) (Repealed)

(g) to protect the natural ecosystems of the region, and

(h) to maintain opportunities for wildlife movement across the region, and

(i) to discourage the preparation of draft local environmental plans designed to permit rural residential development, and

(j) to encourage the preparation of draft local environmental plans based on merits.

3 Land to which plan applies

This plan applies to the land shown by heavy black edging on the map marked "Sydney Regional Environmental Plan No 8 (Central Coast Plateau Areas)" deposited in the office of the Department.

4 Definitions

In this plan:

agriculture:

(a) in relation to the carrying out of development within the Gosford local government area—means "agriculture" or "intensive agriculture" within the meaning of *Interim Development Order No 122—Gosford*, and

(b) in relation to the carrying out of development within the Wyong local government area—means "agriculture" or "intensive agriculture" within the meaning of *Wyong Local Environmental Plan 1991*.

council, in relation to the carrying out of development, means the council of the area in

which the development is or is to be carried out.

extractive industry:

(a) in relation to the carrying out of development within the Gosford local government area—has the same meaning as in *Interim Development Order No 122—Gosford*, and

(b) in relation to the carrying out of development within the Wyong local government area—has the same meaning as in *Wyong Local Environmental Plan 1991*.

prime agricultural land means land:

(a) which is land to which this plan applies, and

(b) which is identified by a class number 1, 1A, 1B, 1H, 1U, 2, 3, 3H, 3U, 3–4, 4, 4H or 4U and shown coloured pink on the map marked "Classes of Agricultural Land on the Plateaux of New South Wales Central Coast" prepared by the Department of Agriculture, copies of which are deposited in the office of the Department of Environment and Planning and of the Councils of the City of Gosford and Shire of Wyong.

sedgelands means land with impeded drainage and moist organic soils on which vegetation comprising sedges and shrubs occurs and identified as "drainage line, watercourse, stream, wetland, swamp, dam—not available for cropping or grazing" on the map marked "Classes of Agricultural land on the Plateau of New South Wales Central Coast" deposited in the Newcastle office of the Department, copies of which are held in the offices of the councils of Gosford City and of Wyong.

the map means the map marked "Gosford/Wyong Local Environmental Plan 2001—Central Coast Plateau Areas" deposited in the Newcastle office of the Department, copies of which are held in the offices of the councils of Gosford City and of Wyong.

5 Relationship to other environmental planning instruments

Subject to section 74 (1) of the *Environmental Planning and Assessment Act 1979*, in the event of an inconsistency between this plan and another environmental planning instrument (other than a State environmental planning policy) whether made before, on or after the commencement of this plan, this plan shall prevail to the extent of the inconsistency.

6 Prime agricultural land

(1) A person shall not:

(a) erect a building on prime agricultural land,

(b) construct a dam on prime agricultural land, or

(c) subdivide prime agricultural land,

except with the consent of the council.

(2) A council shall not consent to an application to carry out development on or with respect to prime agricultural land unless:

(a) (Repealed)

(b) the council is satisfied that the carrying out of the development would not adversely affect the present or future use of other prime agricultural land for the purposes of agriculture.

(3), (4) (Repealed)

(5) A council shall not consent to the carrying out of development on prime agricultural land for a purpose other than a purpose of agriculture unless it is satisfied that no other land to which this plan applies, not being prime agricultural land, could provide a viable or workable alternative site for the carrying out of the development.

(6) Development may be carried out, but only with the consent of a council, on prime agricultural land for the purposes of extractive industries and rural tourist facilities within the locations respectively specified for them on the map. Subclause (5) does not apply to the grant of such a consent.

7 Extractive industries

(1) Development for the purposes of an extractive industry may be carried out, with the consent of a council, on land within an area identified as a preferred location for extractive industries as shown on the map.

(2) A council shall not consent to the carrying out of development on land to which this plan applies for the purposes of an extractive industry unless it is satisfied:

(a) that appropriate arrangements have been made for buffer zones to surround the place at which the material is to be extracted or is proposed to be extracted, except where the council is satisfied they are not necessary, and

(b) that the land will be satisfactorily restored or rehabilitated on cessation of the use of the land for an extractive industry so as to enable its subsequent development for agricultural purposes or for another purpose that the council considers suitable for that land.

(3) A person shall not remove ridge gravel (nodular ferricrete) from any land to which this plan applies unless the removal of the gravel is ancillary to the use of the land in accordance with a development consent which permits the land to be used otherwise than exclusively or predominantly for the extraction of ridge gravel.

8 Clearing of land

(1) In this clause, ***clear*** has the same meaning as in the *Native Vegetation Conservation Act 1997*.

(2) A person shall not clear land to which this plan applies for any purpose (including agriculture) except with the consent of a council.

(3) A council shall not consent to development on land to which this plan applies where, in its opinion, the carrying out of the development shall result in the destruction of sedgelands.

(4) Nothing in this clause requires consent for, or prevents, prohibits or restricts,

activities that are allowed to be carried out without consent by, and are undertaken in accordance with, any regional vegetation management plan made under the *Native Vegetation Conservation Act 1997* that applies to any land to which this plan applies.

9 (Repealed)

10 Rural residential development

A draft local environmental plan that applies to land to which this plan applies should not contain provisions that have the effect of permitting subdivision to create a lot that is smaller than any minimum lot size prescribed for the land in *Interim Development Order No 122—Gosford* or *Wyong Local Environmental Plan 1991* at the commencement of *Gosford/Wyong Local Environmental Plan 2001—Central Coast Plateau Areas*.

11 Special provisions—draft local environmental plan applications

In preparing any draft local environmental plan applying to land to which this plan applies, the council should have regard to the objective that any development allowed by the plan should:

(a) not impact upon the current or future use of adjoining land for existing or future agricultural uses, and

(b) not result in an increased settlement pattern (by way of urban development, rural residential development, residential accommodation of a permanent or semi-permanent nature, community titles subdivisions or any other features that would facilitate increased settlement), and

(c) have a significant positive economic contribution to the area and result in employment generation, and

(d) not result in any adverse environmental effect on or off the site, and

(e) be consistent with the strategic direction for water quality standards and river flow objectives developed through the State Government's water reform process, and

(f) be consistent with rural amenity (including rural industries) and not detract significantly from scenic quality, and

(g) not encourage urban (residential, commercial or industrial) land uses, and

(h) not require augmentation of the existing public infrastructure (except public infrastructure that is satisfactory to the council concerned and is provided without cost to public authorities), and

(i) result in building works being directed to lesser class soils.

Historical notes

The following abbreviations are used in the Historical notes:

Am	amended	No	number	Schs	Schedules
Cl	clause	p	page	Sec	section

Cll	clauses	pp	pages	Secs	sections
Div	Division	Reg	Regulation	Subdiv	Subdivision
Divs	Divisions	Regs	Regulations	Subdivs	Subdivisions
GG	Government Gazette	Rep	repealed	Subst	substituted
Ins	inserted	Sch	Schedule		

Table of amending instruments

Sydney Regional Environmental Plan No 8 (Central Coast Plateau Areas) published in Gazette No 134 of 22.8.1986, p 4117 (see also GG No 142 of 12.9.1986, p 4515) and amended as follows:
Gosford/Wyong Local Environmental Plan 2001—Central Coast Plateau Areas (GG No 87 of 17.5.2002, p 3096)

Table of amendments

Cll 2, 4, 6, 7	Am 17.5.2002.
Cl 8	Am 12.9.1986. Subst 17.5.2002.
Cl 9	Rep 17.5.2002.
Cl 10	Subst 17.5.2002.
Cl 11	Ins 17.5.2002.

APPENDIX 3: Photos of site

Lot 41. Note shallow rock and poor pasture species composition.

Soil sample Lot 41. Yellow earthy sand.

Lot 12 natural vegetation. Note sand topsoil.

Laterite boulders on Lot 12 removed from soil where improved pastures are trying to be established.