# Agricultural Report



**Report for:** C. Dixon – Butler McIntyre

**Property Location:** CT 127363/1
38A Faulkner Rd
Ravenswood 7250

**Prepared by:** Astrid Ketelaar & Michael Tempest
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**Date:** 15th May 2017

AK Consultants

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| **Summary Client:** | C. Dixon – Butler McIntyre |
| **Property identification:** | 38A Faulkner Rd, Ravenswood<br>Zoning: Rural Resource(36.5ha) General Residential (2.5ha) (*Launceston Interim Planning Scheme 2015*).<br>CT 127363/1 PID 6918832 (39ha). |
| **Proposal:** | Rezoning of title to enable future development. |
| **Land Capability:** | Assessed Land Capability (1:25,000) Class 5 (21ha), Class 5+6 (2ha), Class 6 (16ha). |
| **Assessment comments:** | An initial desktop feasibility assessment was undertaken followed by a field inspection on the 26th of April 2018 to confirm or otherwise the desktop study findings of the agricultural assessment. This report summarises the findings of the desktop and field assessment. |
| **Conclusion:** | The loss of approximately 39ha of Class 5 (21 ha), Class 5+6 (2ha) and Class 6 (16ha) land on this title is considered insignificant because of the characteristics of the land which limit the agricultural potential. The title is also significantly constrained by the adjacent General Residential Zone and has no connectivity with agricultural land that has Commercial Scale potential. Due to the physical characteristics, the presence of the existing house and the geographical location, it is unlikely that this title would be attractive for farming in conjunction with other holdings. It is also unlikely that rezoning would place any further constraints on nearby Rural Resource land than already exists. Any proposed lots that adjoin the three blocks with Lifestyle characteristics to the east of the subject title, that are currently in the Rural Resource Zone should retain sufficient area to provide for a 50m buffer from any proposed future dwellings on those lots to the eastern boundary. However, if these titles to the east are also zoned Rural Living in the future, then the standard setbacks required in the Rural Living Zone would be appropriate. |
| **Assessment by:** | A. Ketelaar<br>_____<br>Astrid Ketelaar, Natural Resource Management Consultant, Member, Agricultural Institute Australia (current). |

*And*

M.J.T.

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## INTRODUCTION

The title (CT 127363/1) is located at 38A Faulkner Rd, Ravenswood. Current zoning for the title is predominately Rural Resource with 2.5ha zoned as General Residential in the north west corner (*Launceston Interim Planning Scheme, 2015)*.

The proponent seeks to gain discretionary approval for the title to be rezoned from its current zoning to Rural Living to enable a 34 lot subdivision on the site. Under the *Launceston Interim Planning Scheme 2015*, consideration of the impact on agriculture is required.

All relevant information available at desktop level was considered to determine the site's ability to support agricultural use either individually or with land in the vicinity. A site assessment was conducted on the 26th of April 2018 to confirm or otherwise the desktop study findings.

## DESCRIPTION

The title is approximately 39ha in area. The title is on a ridge line, with the eastern portion having a south easterly aspect, while the western portion of the title has a south westerly aspect. The title is gently undulating. There is an existing dwelling centrally located on the title. The title is mostly managed as pasture for grazing. TasVeg 3.0 primarily maps the title as agricultural land, with regenerating cleared land along the western boundaries and a weed infestation in the south eastern corner.

Adjacent to the north western and northern boundary of the subject title are 44 titles, these are all zoned General Residential and have existing dwellings located on them. Adjacent to the eastern boundary are three titles zoned Rural Resource. These range in size from 1.3 to 3ha in area, the most northern and most southern have existing dwellings. These titles would best be described as having 'Lifestyle'[1] characteristics. South of the title is Distillery Creek, where it runs through a steeply sloped gully. This area is zoned as "Open Space". Further south of the Open Space Zone is another Area of the General Residential Zone. There are at least 10 dwellings in this area that are within 200m of the subject title.

The soil type of the title has not been mapped, however, based on Enterprise Suitability data (LIST) all soil is slightly acidic with a pH between 4.1 and 7 (majority of soil with a pH range of 5.1-6) and is classed as either slowly or moderately permeable soil that is imperfectly or moderately well drained.

[1]As defined by AK Consultants in Ketelaar, A and Armstrong, D. 2012, *Discussions paper – Clarification of the Tools and Methodologies and Their Limitations for Understanding the Use of Agricultural Land in the Northern Region* which was a paper written for Northern Tasmania Development.

Land Capability has not been mapped for the title. Land Capability has been mapped at 1:100,000 to the east of the title (minimal distance of approximately 58 m), which shows the land changes progressively from Class 4, to Class 5 (approximately 277 m from boundary), to Class 6 (approximately 602 m from boundary). During the site inspection, a Land Capability Assessment was conducted, which involved auguring 6 assessment pits as well as visual inspection of land characteristics. From this assessment, it was determined that there is 21ha of Class 5 land, 2ha of Class 5+6 land and 16ha of Class 6 land. The main limiting factors in the Class 5 area are poor drainage characteristics and moderate amount of course fragments throughout the profile. The Class 6 areas had frequent rocky outcrops (dolerite), while the Class 5+6 land showed a mix of these characteristics. Land Capability Class descriptions are in Appendix 4 and full descriptions of the assessment pits and Land Capability assessment method are in Appendix 5.

While the land is mostly managed as pasture, in the south western corner is an area of native grasses that is mixed with weeds and has a sparse coverage of native trees. This area coincides with the sloped rocky areas of the Class 6 Land on the title. There is also a rocky ridge line from the dwelling following a contour toward the south eastern area of the title. this ridge line also coincides with Class 6 land. There are two stock dams on the property, one in the south eastern corner and one near the middle of the property.

In the south eastern corner, the title has direct access to Distillery Creek which flows to the west into the North Esk River. The Department of Primary Industry, Parks, Water and Environment (DPIPWE) Water Assessment Tool (WAT) indicates that there is sufficient yield to support an irrigation allocation for a winter take water of approximately 309ML of Surety 5 and 380ML of Surety 6 at an offtake point on Distillery Creek adjacent to the title. Surety 5 water is expected to be available 8 out of 10 years, while surety 6 water is expected to be available approximately 6 to 7 years out of 10. To utilise this water during the summer irrigation period, a storage would need to be constructed and it may be feasible to construct a 20 – 30ML hillside dam adjacent to Distillery Creek and pump fill from Distillery Creek during the winter take period. The amount of water potentially available is more than enough to establish a high value horticultural operation on the title.

Enterprise Suitability Mapping indicates that blueberries and sparkling wine may be suitable to be established on this land, especially with the above water potentially available. However, a key requirement for both of these perennial crops according to DPIPWE's Crop Rules are well-drained soils, which as demonstrated in the Land Capability Assessment is not a feature of this site. Currently the title is utilised for small scale dry land grazing (beef). On the date of the site visit, there were 28 cows on the property which equates to approximately 288-360 DSE[2] for the 39ha property (7-9DSE/ha). This is under what the likely carrying capacity of this land is. Land with these characteristics, if well managed could expect an average carrying capacity of around 15DSE/ha (585 DSE total). Historical Google Earth Imagery to 2010 does not indicate any evidence of previous cropping occurring on the title. Current land use and future potential agricultural use is best summarised as being at 'hobby farm' scale.

[2] DSE – Dry Sheep Equivalent is a term used to describe the amount of feed or dry matter (kg DM) required to maintain a wether or non lactating ewe per day (weighing 45-50kg). It is used as a standard to compare different classes of livestock and to determine stocking rates and carrying capacity of a property.

Under the new State-wide Planning Scheme the Department of Justice, *Agricultural Land Mapping Project (ALMP)*, shows the title as 'unconstrained' and in the Agricultural Zone. The ALMP, was completed by the Department of Justice to provide Councils with spatial data to assist with segregating the Rural Resource Zone (and Significant Agriculture Zone where relevant) into the Rural and Agriculture Zones, as required under the new State-wide Planning Scheme. The constraints analysis that was utilised in the ALMP was not aimed to provide a comprehensive analysis of all the factors that may contribute to the constraint of agricultural land as it was perceived to not be feasible to develop a model at state-wide level that could consider all factors of each individual title. Instead it was developed to provide a tool for Councils to utilise to identify areas for further investigation that could be potentially constrained.

In this instance, the analysis tool would have identified that the subject title was more than 1ha, adjacent to a water resource, have at least one enterprise suitability crop mapped as suitable and that there is sufficient area on the title to support that enterprise. A title with these characteristics would be mapped as 'unconstrained'. The tool is appropriately conservative in its approach, and these observations are weighted higher in their importance than other factors which should also be considered when determining the potential constraints of the title. Whilst the ALMP has mapped the title as unconstrained and appropriate for Agricultural Zone there is scope to consider alternate zoning if there is sufficient evidence through more detailed assessment that the agricultural potential of the title is compromised.

The title is adjacent to the General Residential Zone and is separated from agricultural land with 'Commercial' scale characteristics by land with 'Lifestyle' scale characteristics. The most northern of the three lots with Lifestyle scale characteristics is not mapped with a constraint class, which strongly indicates it will be zoned as 'Rural', rather than 'Agriculture'. The most southern of these titles was mapped as 'Potentially Constrained 2A', this strongly indicates there is limited ag potential for this title especially with an existing dwelling located on it. While the middle title was mapped as 'unconstrained', with the existing dwelling on similar sized titles to the north and south and poor connectivity to land to east due to Faraday Rd, the agricultural potential of this title is also questionable. These titles are all likely to be more suited to the Rural Zone than the Agriculture Zone. Hence, the subject title is more likely to be assigned to the Rural Zone rather than the Agricultural Zone if this area is reviewed prior to finalising the Local Provisions Schedules.

## DISCUSSION

Currently the land is utilised for small scale grazing that would be described as 'hobby farm' scale (Armstrong Ketelaar 2012). There is some potential for increasing the size of the existing dam and creating an irrigation water resource to utilise on the property for a high value horticultural pursuit. However, the land area available and the encroaching General Residential Zone to the west limits the potential for a commercial scale operation on this site.

The Land Capability Assessment conducted also indicates that the site has characteristics that limit the potential for high value horticultural operations that rely on the soil as a growth medium. The site characteristics and limitations are not favourable for a commercial venture which requires very high capital investments.

Class 5 land has no potential for cropping and can have limited potential for grazing. The improved pasture areas of the land appeared to be in good condition, although currently there is only a stocking rate of around 7-9DSE/ha. There is scope to increase the stocking to an average of approximately 15DSE/ha. However, even through increasing the stocking rate it is unlikely that an enterprise beyond 'hobby scale' could be developed. Commercial beef operations generally require large areas of land to be commercially viable, to be able to have greater herd numbers and to be able to adequately rotate land so that is occasionally rested. This is especially important for land like this that has a Land Capability Class of 5 and shows signs of being poorly drained. This indicates that during wet times of the year there would be significant areas that would need to be rested to avoid irreversible compaction and degradation caused by stock. Land such as this can be utilised more productively and with less risk of degradation if farmed as part of a larger holding. However, given it's location, the presence of the dwelling and lack of connectivity with a larger holding this is unlikely in this instance.

If the title is to be rezoned to a non-agricultural zone then the impacts of future development on surrounding agricultural use needs to be considered. There is no land immediately adjacent with Commercial Scale characteristics, with the three Rural Resource Zone titles to the east displaying Lifestyle characteristics only. The closest land that displays Commercial Scale characteristics is further to the south east beyond Faraday St, this is a 241ha title that appears to be utilised for grazing.

There are a range of activities associated with grazing and cropping, Learmonth et.al. (2007) detail the common range of issues associated with sensitive uses such as residential use in (or adjacent to) the Rural Resource zone which can constrain agricultural activities (see Appendix 3). The types of activities associated with irrigated cropping enterprises which may affect residential amenity are generally much more frequent and of greater concern than activities associated with grazing activities.

The Western Australia Department of Health (DOH, 2012) has published guidelines relating specifically to minimising conflict between agricultural activities and residential areas through management of buffer areas. This study particularly focuses on spray drift and dust generation and recommends a minimum separation of 300m to reduce the impact of spray drift, dust, smoke and ash. Through the establishment of an adequately designed, implemented and maintained vegetative buffer, this minimum separation distance can be reduced to 40m.

In this case, consideration of setbacks to the adjacent Lots with Lifestyle characteristics to the east needs to be undertaken. The scale and intensity of grazing on these titles is low. A setback of 50m separation distance between these titles and any future dwellings on the subject title is considered appropriate to minimise the risk of constraining adjacent agricultural use on the

titles. If these titles were also zoned Rural Living in the future, then the 50m setback would not be required and standard Rural Living Zone setbacks would be appropriate.

The most likely use of the land is improved, semi-improved and native grassland for grazing at a hobby scale. If this title was rezoned from Rural Resource and General Residential to Rural Living Zone to facilitate the future development on the site of a 34 lot subdivision, the loss of this land to the agricultural productivity of the Launceston area would be of no significance. Furthermore, it is unlikely that rezoning would place any further constraints on nearby agricultural uses than already exists.

## CONCLUSIONS

The loss of approximately 39ha of Class 5 (21 ha), Class 5+6 (2ha) and Class 6 (16ha) land on this title is considered insignificant because of the characteristics of the land which limit the agricultural potential. The title is also significantly constrained by the adjacent General Residential Zone and has no connectivity with agricultural land that has Commercial Scale potential. Due to the physical characteristics, the presence of the existing house and the geographical location, it is unlikely that this title would be attractive for farming in conjunction with other holdings. It is also unlikely that rezoning would place any further constraints on nearby Rural Resource land than already exists. Any proposed lots that adjoin the three blocks with Lifestyle characteristics to the east of the subject title, that are currently in the Rural Resource Zone should retain sufficient area to provide for a 50m buffer from any proposed future dwellings on those lots to the eastern boundary. However, if these titles to the east are also zoned Rural Living in the future, then the standard setbacks required in the Rural Living Zone would be appropriate.

## REFERENCES


City of Launceston Council. (2015) Launceston *Interim Planning Scheme*, City of Launceston Council

Department of Justice. (2017) *Agricultural Land Mapping Project - Background Report*, Tasmanian Government.

Dimmock, G.M. (2001). *Beaconsfield-George Town Soil Report*, Department of Primary Industries, Water and Environment.

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Learmonth, R., Whitehead, R., Boyd, B., & Fletcher, S. (2007). *Living and Working in Rural Areas. A handbook for managing land use conflict issues on the NSW North Coast.* Centre for Coastal Agricultrual Landscapes in Partnership with the Northern Rivers Catchment Management Authority.

West Australian Government. (2012). *Guidelines for Separation of Agricultural Land and Residential Land Uses.* Department of Health, WA.

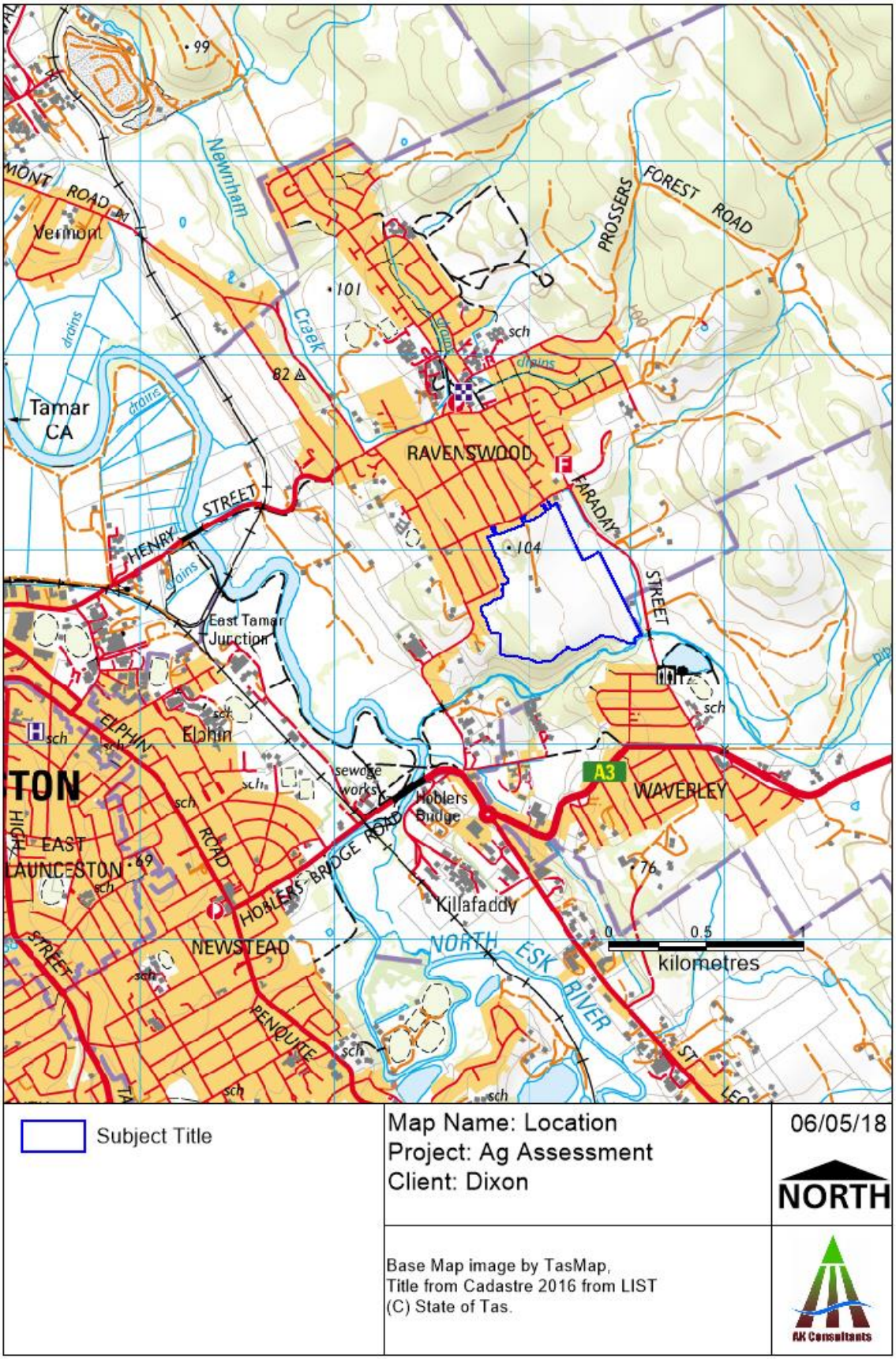


**Figure 1. Location Map.**


**Figure 2. Aerial Image.**

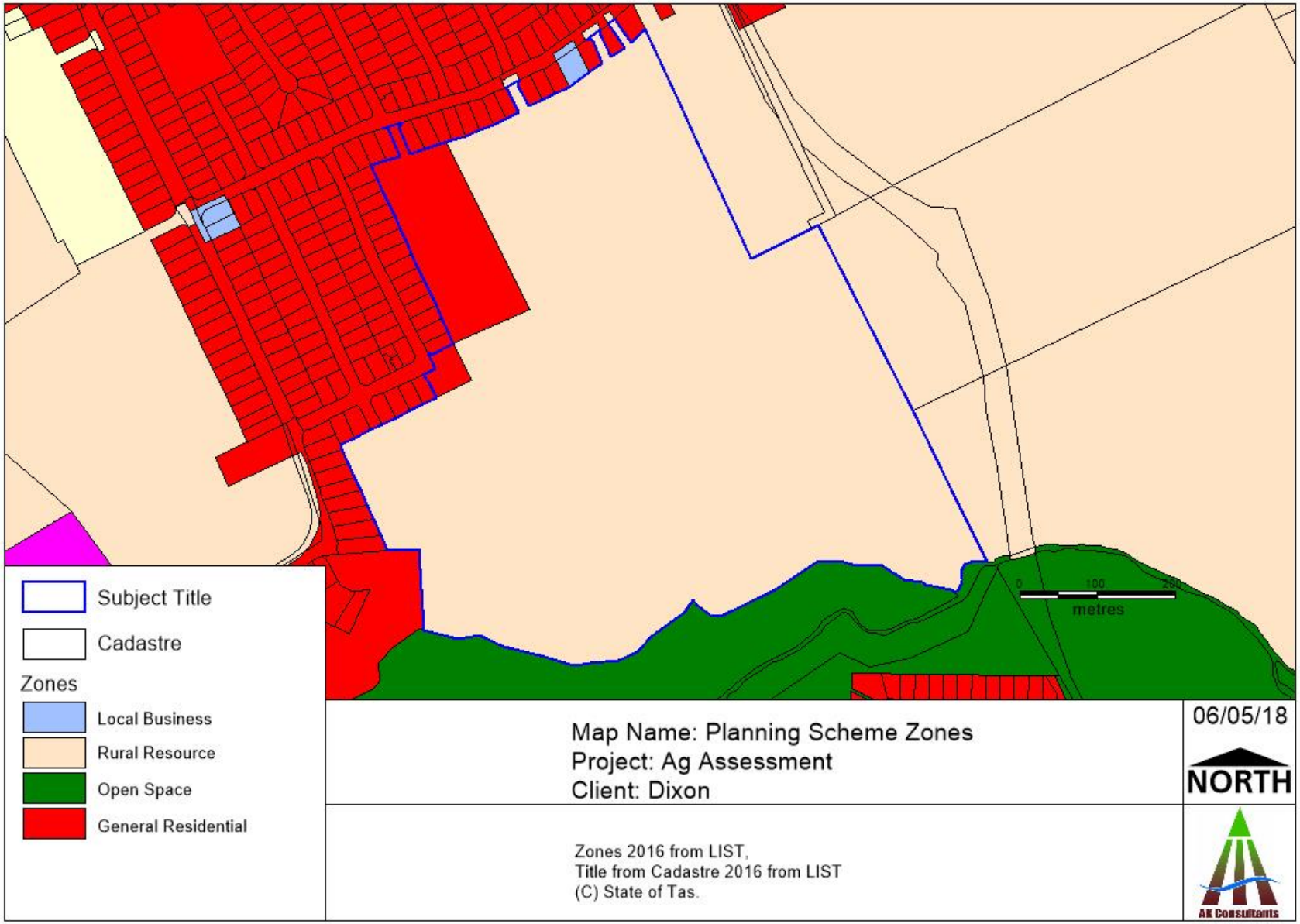


**Figure 3. Current Zoning Boundaries and Surrounding Titles**

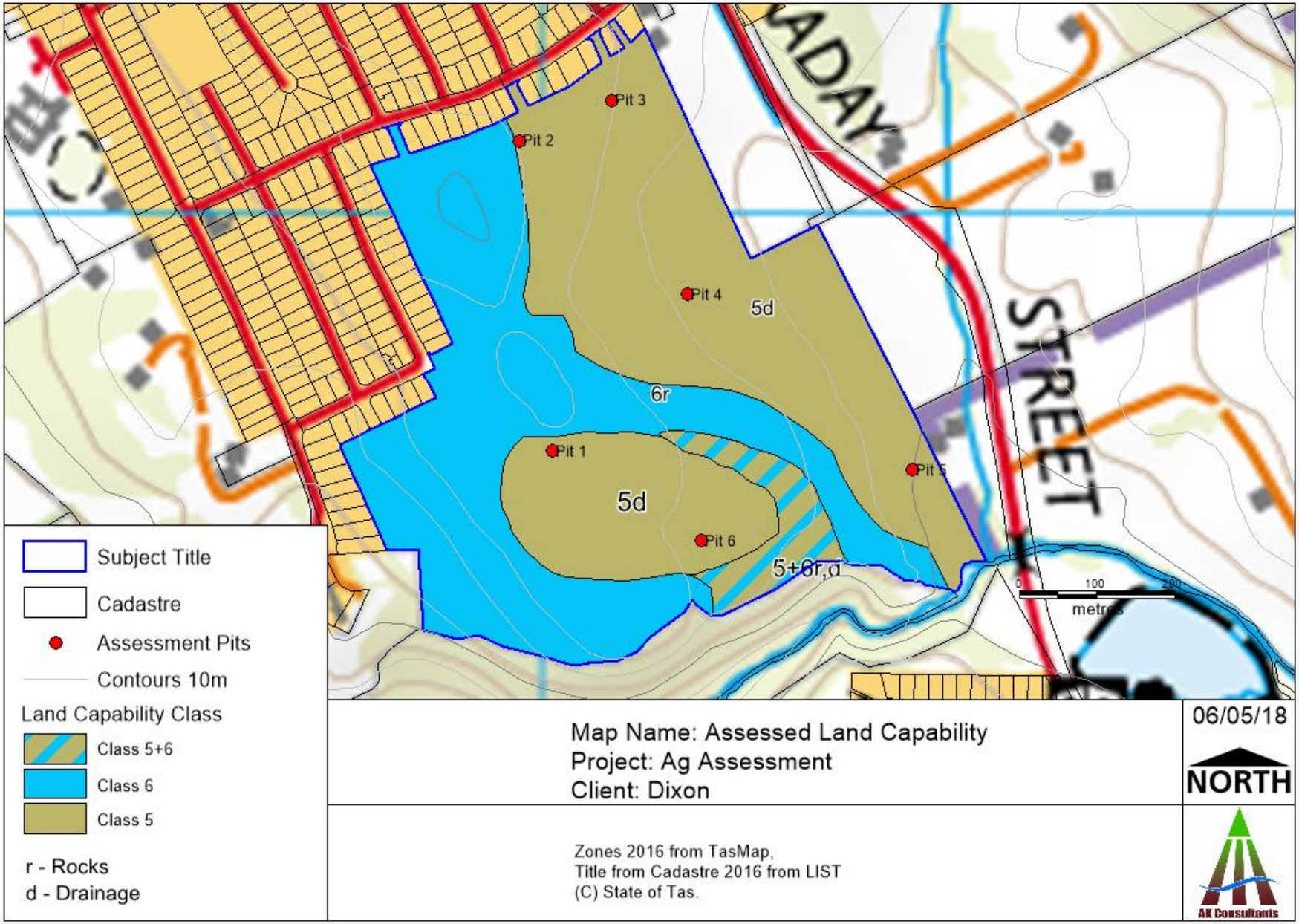


**Figure 4. Land Capability.**

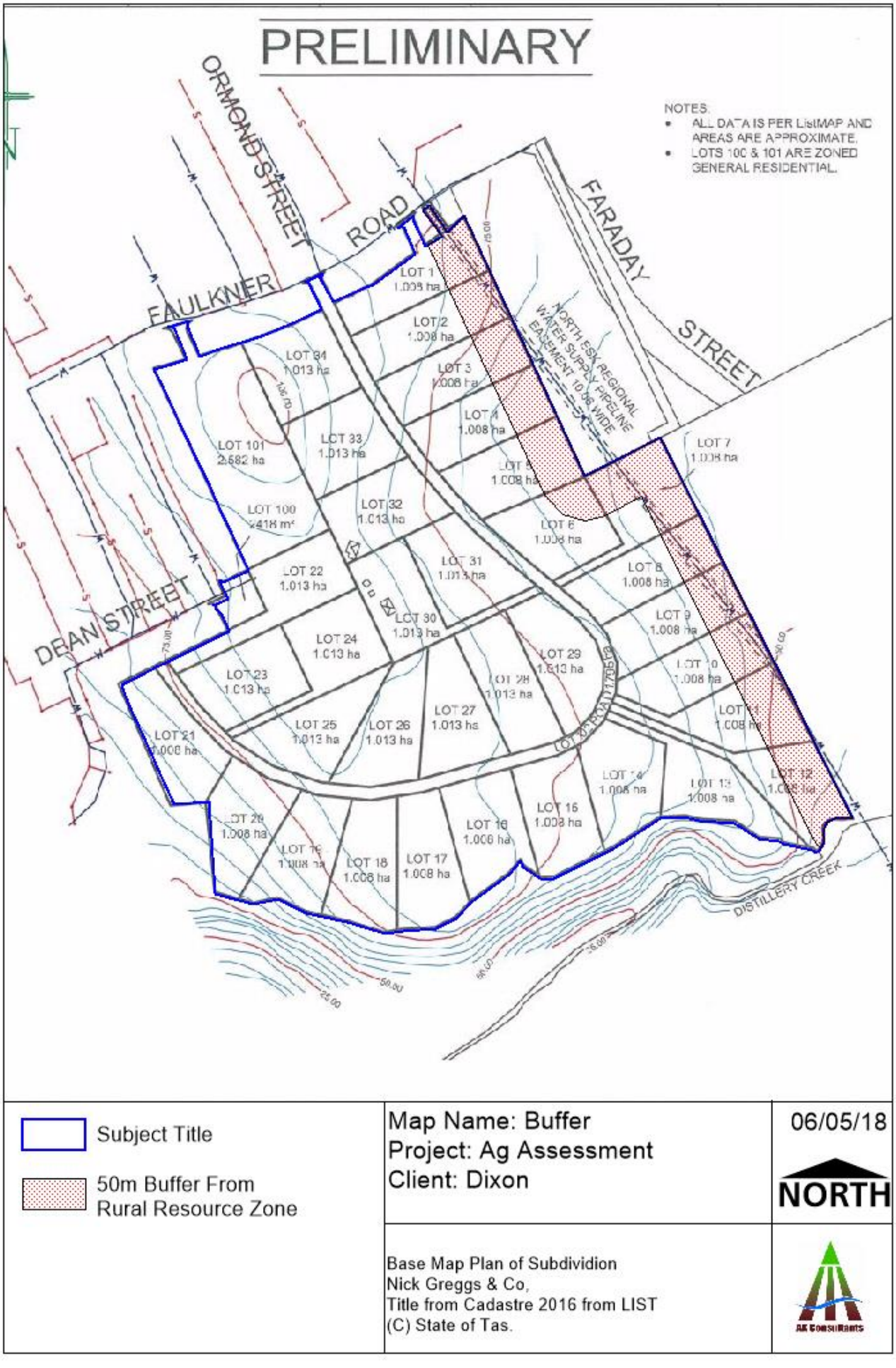


**Figure 5. 50m Buffer from Rural Resource Zone to East (if retained in Rural Resource Zone)**

## APPENDIX 2. PHOTOS

**Photo 1. Rocky outcrops in north western area of title**

**Photo 2. Class 6 pastured area in north western area of title..**

**Photo 3. Class 5 pasture on eastern area of title, looking east.**

**Photo 4. Dwellings to north.**

**Photo 5. One of three adjacent small lots to the east in the Rural Resource Zone with 'Lifestyle' characteristics.**

## APPENDIX 3. POTENTIAL CONFLICT ISSUES

Living and Working in Rural Areas. A handbook for managing land use conflict issues on the NSW North Coast. Learmonth, R., Whitehead, R., Boyd, B., and Fletcher, S. n.d.

*Table 1. Typical rural land use conflict issues in the north coast region*

| Issue | Explanation |
|---|---|
| Absentee landholders | Neighbours may be relied upon to manage issues such as bush fires, straying stock, trespassers etc. while the absentee landholder is at work or away. |
| Access | Traditional or informal 'agreements' for access between farms and to parts of farms may break down with the arrival of new people. |
| Catchment management | Design, funding and implementation of land, water and vegetatin management plans are complicated with larger numbers of rural land-holders with differing perspectives and values. |
| Clearing | Neighbours may object to the clearing of trees, especially when it is done apparently without approvals or impacts on habitat areas or local amenity. |
| Cooperation | Lack of mutual co-operation through the inability or unwillingness on behalf individuals to contribute may curtail or limit traditional work sharing practices on-farm or in the rural community. |
| Dogs | Stray domestic dogs and wild dogs attacking livestock and wildlife and causing a nuisance. |
| Drainage | Blocking or changing drainage systems through a lack of maintenance or failure to cooperate and not respect the rights of others. |
| Dust | Generated by farm and extractive industry operations including cultivating, fallow (bare) ground, farm vehicles, livestock yards, feed milling, fertiliser spreading etc. |
| Dwellings | Urban or residential dwellings located too close to or affecting an existing rural pursuit or routine land use practice. |
| Electric fences | Electric shocks to children, horses and dogs. Public safety issues. |
| Fencing | Disagreement about maintenance, replacement, design and cost. |
| Fire | Risk of fire escaping and entering neighbouring property. Lack of knowledge of fire issues and the role of the Rural Fire Service. |
| Firearms | Disturbance, maiming and killing of livestock and pest animals, illegal use and risk to personal safety. |
| Flies | Spread from animal enclosures or manure and breeding areas. |
| Heritage management | Destruction and poor management of indigenous and non indigenous cultural artefacts, structures and sites. |
| Lights | Bright lights associated with night loading, security etc. |
| Litter | Injury and poisoning of livestock via wind blown and dumped waste. Damage to equipment and machinery. Amenity impacts. |
| Noise | From farm machinery, scare guns, low flying agricultural aircraft, livestock weaning and feeding, and irrigation pumps. |
| Odours | Odours arising from piggeries, feedlots, dairies, poultry, sprays, fertiliser, manure spreading, silage, burning carcases/crop residues. |
| Pesticides | Perceived and real health and environmental concerns over the use, storage and disposal of pesticides as well as spray drift. |
| Poisoning | Deliberate poisoning and destruction of trees/plants. Spray drift onto non-target plants. Pesticide or poison uptake by livestock and human health risks. |
| Pollution | Water resources contaminated by effluent, chemicals, pesticides, nutrients and air borne particulates. |
| Roads | Cost and standards of maintenance, slow/wide farm machinery, livestock droving and manure. |
| Smoke | From the burning of crop residues, scrub, pasture and windrows. |
| Soil erosion | Loss of soil and pollution of water ways from unsustainable practices or exposed soils. Lack of adequate groundcover or soil protection. |
| Straying livestock | Fence damage, spread of disease, damage to crops, gardens and bush/rainforest regeneration. |
| Theft/vandalism | Interference with crops, livestock, fodder, machinery and equipment. |
| Tree removal | Removal of native vegetation without appropriate approvals. Removal of icon trees and vegetation. |
| Trespass | Entering properties unlawfully and without agreement. |
| Visual/amenity | Loss of amenity as a result of reflective structures (igloos, hail netting), windbreaks plantings (loss of |
| Water | Competition for limited water supplies, compliance with water regulations, building of dams, changes to flows. Stock access to waterways. Riparian zone management. |
| Weeds | Lack of weed control particularly noxious weeds, by landholders. |
| | *Based on: Smith, RJ (2003) Rural Land Use Conflict: Review of Management Techniques – Final Report to Lismore Living Centres (PlanningNSW).* |

## APPENDIX 4. LAND CAPABILITY DEFINITIONS FROM GROSE (1999)

**CLASS 1.** Land well suited to a wide range of intensive cropping and grazing activities. It occurs on flat land with deep, well drained soils, and in a climate that favours a wide variety of crops. While there are virtually no limitations to agricultural usage, reasonable management inputs need to be maintained to prevent degradation of the resource. Such inputs might include very minor soil conservation treatments, fertiliser inputs or occasional pasture phases. Class 1 land is highly productive and capable of being cropped eight to nine years out of ten in a rotation with pasture or equivalent without risk of damage to the soil resource or loss of production, during periods of average climatic conditions.

**CLASS 2.** Land suitable for a wide range of intensive cropping and grazing activities. Limitations to use are slight, and these can be readily overcome by management and minor conservation practices. However the level of inputs is greater, and the variety and/or number of crops that can be grown is marginally more restricted, than for Class 1 land.

This land is highly productive but there is an increased risk of damage to the soil resource or of yield loss. The land can be cropped five to eight years out of ten in a rotation with pasture or equivalent during 'normal' years, if reasonable management inputs are maintained.

**CLASS 3.** Land suitable for cropping and intensive grazing. Moderate levels of limitation restrict the choice of crops or reduce productivity in relation to Class 1 or Class 2 land. Soil conservation practices and sound management are needed to overcome the moderate limitations to cropping use. Land is moderately productive, requiring a higher level of inputs than Classes I and 2. Limitations either restrict the range of crops that can be grown or the risk of damage to the soil resource is such that cropping should be confined to three to five yens out of ten in a rotation with pasture or equivalent during normal years.

**CLASS 4.** Land primarily suitable for grazing but which may be used for occasional cropping. Severe limitations restrict the length of cropping phase and/or severely restrict the range of crops that could be grown. Major conservation treatments and/or careful management is required to minimise degradation. Cropping rotations should be restricted to one to two years out of ten in a rotation with pasture or equivalent, during 'normal' years to avoid damage to the soil resource. In some areas longer cropping phases may be possible but the versatility of the land is very limited. (NB some parts of Tasmania are currently able to crop more frequently on Class 4 land than suggested above. This is due to the climate being drier than 'normal'. However, there is a high risk of crop or soil damage if 'normal' conditions return.)

**CLASS 5.** This land is unsuitable for cropping, although some areas on easier slopes may be cultivated for pasture establishment or renewal and occasional fodder crops may be possible. The land may have slight to moderate limitations for pastoral use. The effects of limitations on the grazing potential may be reduced by applying appropriate soil conservation measures and land management practices.

**CLASS 6.** Land marginally suitable for grazing because of severe limitations. This land has low productivity, high risk of erosion, low natural fertility or other limitations that severely restrict agricultural use. This land should be retained under its natural vegetation cover.

**CLASS 7.** Land with very severe to extreme limitations which make it unsuitable for agricultural use.

## APPENDIX 5. PROTOCOL FOR LAND CAPABILITY ASSESSMENT USED BY AK CONSULTANTS

This protocol outlines the standards and methodology that AK Consultants uses to assess Land Capability.

In general, we follow the guidelines outlined in the Land Capability Handbook (Grose 1999) and use the survey standards outlined in the Australian Soil and Land Survey Handbooks to describe (McDonald, et al. 1998), survey (Gunn, et al. 1988) and classify (Isbell 2002) soils and landscapes.

Commonly we are requested to assess Land Capability in relation to local government planning schemes. As such the level of intensity of the investigation is usually high and equivalent to a scale of 1:25 000 or better. The choice of scale or intensity of investigation depends on the purpose of the assessment. As the scale increases (becomes more detailed and the scale is a smaller number), the number of observations increases.

An observation can be as much as a detailed soil pit description or as little as measuring the gradient of an area using a clinometer or the published contours in a Geographical Information System and includes soil profile descriptions, auger hole descriptions, and observations confirming soil characteristics, land attributes or vegetation. The table below shows the relationship between scale, observations, minimum distances and areas that can be depicted on a map given the scale and suggested purpose of mapping.

| Scale | Area (ha) per observation | Minimum width of map unit on ground | Minimum area of map unit on ground | Recommended use |
|---|---|---|---|---|
| 1:100 000 | 400ha | 300m | 20ha | Confirmation of published land capability mapping |
| 1 : 25 000 | 25ha | 75m | 1.25ha | Assessments of farms, fettering or alienation of Prime Agricultural Land |
| 1 : 10 000 | 4ha | 30m | 2 000$m^3$ | Area assessments of less than 15ha |
| 1 : 5 000 | 1ha | 15m | 500$m^3$ | Site specific assessments for houses and areas less than 4ha |
| 1 : 1 000 | 0.04ha | 3m | 20$m^3$ | Shown for comparison purposes |

Based on 0.25 observations per square cm of map, minimum width of mapping units 3mm on map as per (Gunn, et al. 1988).

### ***ASSESSMENT METHODOLOGY***

With all assessments we examine a minimum of three observations per site or mapping unit and determine Land Capability on an average of these observations.

Land Capability is based on limitations to sustainable use of the land, including the risk of erosion, soil, wetness, climate and topography. The most limiting attribute determines the Land Capability class. This is not always a soil limitation and thus soil profile descriptions are not always required for each mapping unit. For example, land with slopes greater than 28%, areas that flood annually and areas greater than 600m in elevation override other soil related limitations.

The availability of irrigation water can affect the Land Capability in some areas. An assessment of the likelihood of irrigation water and quality is made where it is not currently available.

As a minimum all assessment reports include a map showing the subject land boundaries, observation locations, published contours and Land Capability.

***DEFINITIONS***

*Land Capability*

A ranking of the ability of land to sustain a range of agricultural land uses without degradation of the land resource (Grose 1999).

***PROTOCOL REFERENCES***


Grose, C J. *Land capability Handbook. Guidelines for the Classification of Agricultural Land in Tasmania.* Second Edition. Tasmania: Department of Primary Industries, Water and Environment, 1999.

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Isbell, R F. *The Australian soil classification.* Revised Edition. Melbourne: CSIRO Publishing, 2002.

McDonald, R C, R F Isbell, J G Speight, J Walker, and M S Hopkins. *Australian Soil and Land Survey Field Handbook.* Second Edition. Canberra: Australian Collaborative Land Evaluation Program, CSIRO Land and Water, 1998.

## ***ON SITE LAND CAPABILITY ASSESSMENT***

At the site inspection, 6 assessment pits were augured across the eastern third of the property along with a visual inspection of the remainder of the property. One representative pit was described.

The Land Capability Assessment was conducted at a scale of 1:25000 and determined that there is 21ha of Class 5d land, a total of 2ha of Class 5+6rd and 16ha of Class 6r. There were two main limiting factors that distinguished the Class 5 land. These factors were;

- drainage (d) – Class 5 areas showed poor drainage characteristics through mottling (common & distinct)
- coarse fragments (g) – presence of gravel and ironstone throughout the surface horizon of the soil profiles.

The main distinguishing feature of the Class 6 land was;

- rock outcrops (r) – presence of surface rocks. The dominant rock type was dolerite and this was prevalent throughout the Class 6 area to the extent that cultivation was not feasible.

The Class 5+6 area displayed a mix of the above characteristics whereby the improved pasture was interspersed with rocky out crops. Cultivation could occur around the rock outcrops

**Pit 1**

Site: 38A Faulkner Rd
Date: 26th April 2018
Pit: 1
Flood Risk: Low
Slope: 5-12%
Morphology: south easterly hill slope
Surface condition: Pasture.

Profile description

| Depth (cm) | | Munsell Colour | | Structure | Texture | Gravel | Mottle | Comments |
|---|---|---|---|---|---|---|---|---|
| 0 | 15 | 10YR | 2/2 | S | CL | 2-20 | - | Some ironstone nodules present. |
| 15 | 50 | 10YR | 2/2 | V | HC | - | 5 | Mottling Common and distinct |

Duplex profile with well-structured soils with Clay Loam at the surface and Heavy Clay at depth. The presence of mottling and ironstone nodules indicates these soils are 'poorly drained' which dictates a Land Capability Classification of Class 5d. All pits displayed the same characteristics. The only change noticed across pits was that Pits 5 and 6, A horizons had a depth of 30cm compared to 15cm.