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Hello.

I have attached a report prepared for the rezoning of 260 Appleby Road.

As is stated in the report we do not believe it is class Agricultural soil having owned the land for 5 years now with little success growing potatoes or poppies or any high income earning potential crops.

Poppies were a complete failure hence factories will allow us to a contract and potatoes only covered costs and season 2021 we lost money hence we no longer grow them.

We are just focusing on cattle and fodder production now.

Kind Regards
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LATROBE LOCAL PROVISIONS SCHEDULE

PROPOSED AGRICULTURAL ZONE

260 APPLEBY ROAD THIRLSTANE

APRIL 2022



Nicholbrook
Horticultural Consulting



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Introduction

This report, by Dr Lee Peterson, Principal Consultant, Nicholbrook Pty Ltd, has been prepared to provide an expert agricultural assessment of property PID 3332430 title reference 160847/1, 260 Appleby Road Thirstane in respect to the proposed rezoning of the property from Rural Resource under the Tasmanian Interim Planning Scheme, Latrobe to zoning of Agriculture under the proposed statewide Tasmanian Planning Scheme, Local Provisions Schedule (LPS) Latrobe.

This report reviews the current agricultural usage of the land title and the surrounding region in relation to the Land Capability and Land Classification. This includes soils, aspect, topography, water resource, and potential constraints analysis to agriculture.

Qualifications and Experience

Dr Lee Peterson is an agricultural science graduate from the University of Tasmania with 35 years of experience in primary industry production, research and consulting. Dr Peterson has worked with a variety of farming enterprises throughout Tasmania and other mainland states. A detailed outline of experience and qualifications is attached in Appendix A.

Location

The property PID 3332430 title reference 160847/1 is situated at 260 Appleby Road Thirstane. The property is bordered by Appleby Road to the west and land proposed zone Rural, the Panatana Rivulet to the east and land currently zone Rural resource to the north and south. Part of the eastern boundary borders a golf club, proposed zone Recreation, previously also rural resource as well as Rural Living.

The title boundaries are not reflected on ground. Appleby Road is not within the corridor indicated such that a small title, reference 413317/1 is managed as part of the title reviewed here yet it has been proposed zone Rural.

Land Classification

Land capability of the property was assessed according to the Tasmanian Land Capability Classification System (Grose, 1999). Land is ranked according to its ability to sustain a range of agricultural activities without degradation of the land resource. Class 1 land is the best land and Class 7 land is the poorest. A wide range of limitations are considered and the most significant limitation determines its final classification, or ranking. Limitations in relation to soils include stoniness, topsoil depth, drainage and erosion hazard. Limitations to topography include slope and associated erosion hazard. Limitations relating to climate include low rainfall and frost.

A full explanation of the Land Capability System is available in the *DPIPWE Tasmanian Land Capability Handbook*.

The classification system assumes an average standard of land management and that production will be sustainable if the land is managed according to the guidelines of its Class. The system does not take into account the economics of production, distance from markets, social or political factors, all of which can change over time.

Class 4 land is described as follows:

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 minimize 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.

Class 5 land is described as follows:

Land with slight to moderate limitations to pastoral use but which 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 effects of limitations on the grazing potential may be reduced by applying appropriate soil conservation measures and land management practices.

Class 6 land is described as follows:

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.

Class 7 land is described as follows:

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

A detailed, site specific assessment of land classification of the property was undertaken by the author on 26th August 2021.

The attached map illustrate the extent of each land capability class within the property.

Table 1: Land Capability Summary – 260 Appleby Road Thiristane

Land Capability Class ¹	Area (ha)	Limitation	Soil Description	Cropping Suitability Rating ²	Land Use Types ³	Cropping Frequency ⁴
4s	33.3	Soil Structure	Ferralsol derived from Basalt, with moderate depth to clay subsoil, 5-10% slope	Low/moderate	DP/IP DS/ISD	Annual 1-2 in 10 years
5s	19	Soil structure	Ferralsol derived from Basalt, with shallow depth to clay subsoil 5-10% slope	Unsuitable/very low	DP H	Annual Annual
5w	4.2	Low lying, prone to waterlogging	Ferralsol derived from Basalt, with shallow depth to clay subsoil, imperfectly drained, 0 – 10% slope	Unsuitable	DP	Annual
6	4.8	Low density native vegetation and introduced grass species	Ferralsol derived from Basalt, with shallow depth to clay subsoil, imperfectly drained, rock fragments	Unsuitable	DP	Annual but requires careful management
7	3.3	Dense native vegetation	Ferralsol derived from Basalt, with shallow depth to clay subsoil, imperfectly drained, exposed rock outcrops	Unsuitable	Not suitable	Nil

¹ Land Capability Class

Land capability was assessed according to the Tasmanian Land Capability Classification System (Grose, 1999). Land is ranked according to its ability to sustain a range of agricultural activities without degradation of the land resource. Class 1 land is the best land and Class 7 land is the poorest. A wide range of limitations are considered and the most significant limitation determines its final classification, or ranking. The classification system assumes an average standard of land management and that production will be sustainable if the land is managed according to the guidelines of its Class. The system does not take into account the economics of production, distance from markets, social or political factors, all of which can change over time.

² Cropping Suitability Rating

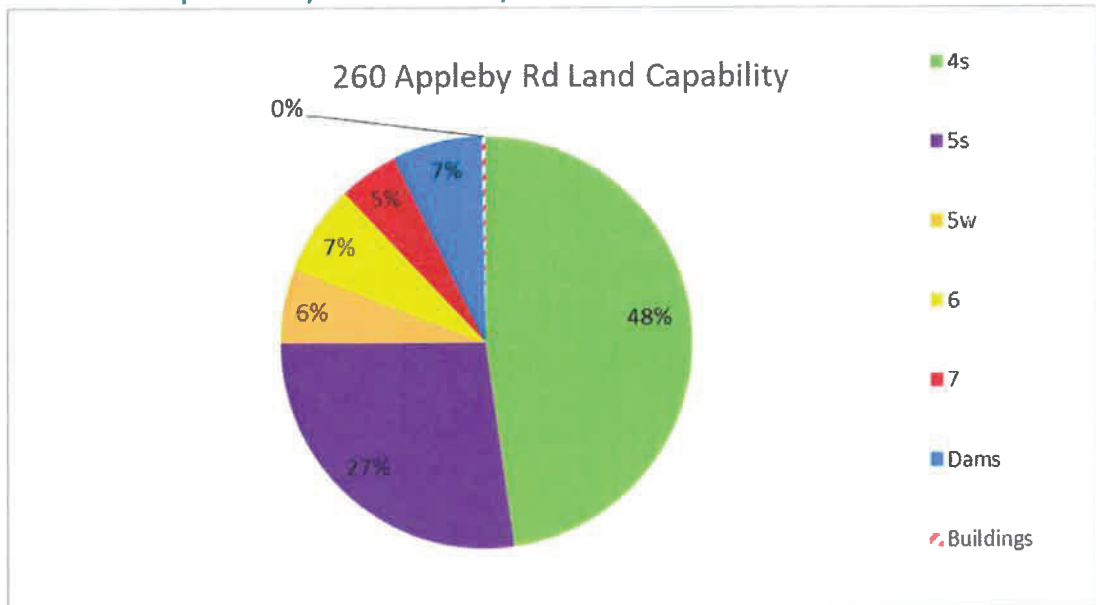
- High - Soils with no or only slight limitations to use. Can support a wide range of intensive cropping and grazing activities. Cropping can occur almost continuously with only occasional pasture breaks.
- Moderate - Soils with moderate limitations to use. Conservation practices and sound management are needed to overcome limitations. Regular short-term pasture breaks are also required.
- Low - Soils suited to occasional cropping through severe limitations. Major conservation treatments and/or careful management required to minimise degradation.
- Very low - Very limited cropping with long pasture breaks (greater than 8 years).
- Unsuitable - No cropping should be undertaken.

³ Land Use Types

- DP (Dryland pasture)
- IP (Irrigated pasture)
- DS (Dryland surface cropping; i.e. cereals and poppies)
- ISD (Irrigated surface cropping – dry harvest; i.e. cereals, poppies, carrot seed and grass seed)
- ISW (Irrigated surface cropping – wet harvest; i.e. peas, beans and broccoli)
- IRC (Irrigated root cropping; i.e. potatoes and carrots)
- H (Horticulture; i.e. grapes, olives and fruit)
- F (Forestry)

⁴ Cropping Frequency is given as an approximate range only. It assumes that best practices are being implemented in relation to soil management, sustainable crop rotations undertaken, and that seasonal and long term climatic conditions are favourable for cropping activities. Best practice soil management includes cultivation at an appropriate soil moisture level so as to maintain soil structure, management of cropping residues to assist in maintaining soil structure, and implementation of the most appropriate cultivation techniques. The lower range pertains to a more intensive cropping rotation (i.e. typically including irrigated root cropping) and/or less favourable seasonal/growing conditions. The upper range pertains to non-intensive cropping rotations (i.e. cereals and poppies) and/or more favourable seasonal/growing conditions (see Appendix 1). Cropping frequency does not include irrigated pasture which can be irrigated annually.

Land Capability Summary



The property is predominantly Class 4s and as such is used for occasional surface cropping, the soils and drainage are not suitable for root crops, and the remained 5s as grazing. There is an area Class 6 adjacent to Class 7 land that is unsuitable for agriculture. However the Class 4s land is very irregular in shape which limits the effective cropping area.

The areas identified as Class 6 and 7 are a continuation of the landform to the west of the property which have been proposed as Rural zone.

Soils

The soil type present over the property is a krasnozem that is derived from Basalt. In this region it is fine soil that compacts easily and is shallow depth over impermeable clay. This formation is typically associated with rock outcrops and many rock fragments within the soil profile, this is very much the case in the area of the proposed residential development. Fertility is inherently moderate but drainage is poor especially in low lying areas. This soil type is not suitable for cropping where depth to clay is less than 300mm and rock is present in the profile.

Climate

The climate of the region is described by Noble (1999) as temperate mild to cool maritime which is favourable for agriculture. The maritime influence decreases with distance inland from the coast and with increasing altitude.

The properties proximity to the coast means a moderate climate with low frost risk.

Water Resources

There are two dams on the property, both have a total capacity of 20ML each and are utilised for irrigation. The property is not within an Irrigation District.

Drainage

The property drains from west to east with only 10 metres in total elevation change, most of the Class 4s area is low lying and imperfectly drained. The drainage lines traverse the property irregularly and limit the potential practical paddock areas for cropping to 15.5 ha.

A significant area of the western side of the title is identified as Flood-prone Hazard along with areas of Waterway and Coastal Protection.

Current Land Use

The properties current land use is grazing for livestock and occasional irrigated cropping.

Constraints Analysis

Land within the region has been initially assessed for zoning Agriculture based on a range of criteria under the "Agricultural Land Mapping Project" 2017 (ALMP).

Below is a summary of the criteria assessment for the title reported here:

Enterprise Suitability (ES)	ALMP Criteria met based on whole title	Actual Constraints	Site assessment criteria
ES1 – 10ha	Yes	Whilst the title area has access to irrigation and is greater than 10 ha the soils and drainage are not suitable for intensive horticulture	Not met
ES2 – 25ha	Yes	Similarly only 15.5ha is suitable for irrigated cropping	Not met
ES3 – 40ha	Yes	Only approximately 33ha can be irrigated in total due to soil, drainage and topographic constraints	Not met
ES4 – 133ha	No	Title 65ha	Not met
ES5 – 333ha	No	Title 65ha	Not met

Note ES 1- 3 are contingent on irrigation availability, as the property is not within an irrigation district it is limited to the onsite water resource for irrigation. The reliable extraction yield of the dams is 35 ML, this is insufficient to irrigate the entire property as per the ES 1-3 criteria.

There is no adjoining title with an area greater than the criteria assessment and there is rural residential zone adjacent therefore the property is constrained.

Recommendation

The currently zone Rural Resource property has been proposed zoned Agriculture under the Latrobe LPS yet it is confined between proposed Rural, Rural Residential, Recreational and potential equally constrained proposed Agriculture titles.

Whilst the overall constraints analysis have indicated the title be zoned Agriculture, an onsite assessment indicates that the property is constrained and should be reviewed. Much of the constraints are also applicable to the properties to the north which are not in the irrigation district.

Based on the land capability, soils and available water resource the property is a potential candidate for split zoning to protect a small area of agricultural potential land. All the agricultural potential land is present in the eastern side of the property whilst the western side has a mix of land unsuitable for agriculture and flood prone adjacent to proposed Rural zoned land.

References

Grose C.J. (1999) Land Capability Handbook: Guidelines for the Classification of Agricultural Land in Tasmania. 2nd Edition, DPIWE, Tasmania

Noble K.E. (1999) Tamar Report. Land Capability Survey of Tasmania. DPIWE. Tasmania

Declaration

I declare that I have made all the enquiries which I consider desirable or appropriate, and no matters of significance which I regard as relevant have, to my knowledge, been withheld.

Dr Lee Peterson B. Agri. Sci (Hons), ISHS, MAICD, CPag
Principal Consultant
Nicholbrook Horticultural Consulting
April 2022

Land Capability Assessment 260 Appleby Rd Thirlstane



Land Capability	
House	Orange
Buildings	Red with diagonal lines
Dams	Blue
4s	Light Green
5s	Pink
5w	Light Orange
6	Yellow
7	Red

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B Ag Sc (Hons) University of Tasmania

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Professional Associations:

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Company Directors Graduate Diploma 2007

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Introduction

Dr Lee Peterson is an agricultural professional with extensive expertise in many aspects of agricultural production gained over a period of 35 years in industry, consulting and research. Lee has considerable experience in the areas of new crop development, horticultural production systems, plant extracts and waste stream management in agricultural.

Professional Experience

- 2020-present Director Nicholbrook Horticultural Consulting
- 2018-2020: National Technical Manager BerryWorld
- 2011–2018: Principal Consultant Macquarie Franklin
- 2005-2011: Executive Director – Agribusiness
Agricultural Resource Management (AGRM Pty Ltd)
- 2000- 2004: Agricultural Resource Management Group
- 1998- 1999: Serve-Ag Senior Project Agronomist
- 1996-1997: Private agricultural consultancy and contract research provider
- 1993- 1995: General Manager of Essential Oils of Tasmania
- 1989- 1993: Production Manager of Essential Oils of Tasmania
- 1985- 1989: Post-Graduate at the University of Tasmania
- 1984- 1985: Agricultural Officer with the Tasmanian Department of Agriculture, Pasture and Field Crops Branch

Recent Projects

- Technical advisor to Houston’s Farm roles include production system development, variety assessment, market research, crop scheduling, pesticide strategies, IPM program and representation of the company in respect to technical issues such as biosecurity and IPM
- Tasmanian contractor for the CSIRO land use and management information system estimating changes in soil carbon from changes in land use, an Australian Greenhouse Organisation project
- Project manager for the agricultural component of 8 wastewater reuse developments including Tasmania’s two largest schemes, Brighton and Clarence.

- Agricultural advisor to United Utilities bid to develop effluent reuse for Ballarat North waste water treatment plant.
- Independent advisor and author to the “Environmental Guidelines for Recycled Water Use in Tasmania, 2002”.
- Development of annual soil monitoring programs for Clarence, Brighton and Collinsvale reuse schemes.
- Project Manager for the land capability assessment for the Meander Dam Development Proposal
- Agricultural potential study for the Jordan Dam Feasibility Study
- Review of the Australian Lavender industry for RIRDC
- Project manager for Rekuna Pty Ltd, a Panax ginseng production company supported by an AusIndustry Commercial Ready Grant
- Climatic and resource suitability assessment for salad vegetable production on Australia’s east coast, including risk assessment
- Technical advisor to Raspberry Fresh, out of season glasshouse raspberry production company
- Study tour and technical review of latest developments in hydroponic production of salad vegetables, Canada, Belgium, Holland and Italy
- Project manager for field services operation establishment for Tasmanian Poppy Enterprises
- Technical advisor to South Pacific Oils, essential oil production and extraction company, Vanuatu – Sandalwood production and research
- Technical resource to Southern Water for the coordinate and manage Tasmania’s largest agricultural recycled water irrigation scheme, the Clarence Recycled Water (CRW)
- Technical advisor to Heydon Park Olives, Talmalmo, Victoria
- Production system economic assessment and inputs for TIDB feasibility studies – Musselrow, Great Forester and South East irrigation scheme developments
- Land capability assessments for numerous properties throughout rural Tasmania to support agricultural development, subdivision of non-agricultural land and expert witness reporting for legal representation
- Review of Industrial Hemp as a commercial cropping opportunity in Tasmania
- Review of pyrethrum industry strategic plan and industry development officer program
- Economic and socio analysis of the impact of blueberry rust incursion to the Tasmanian blueberry industry

Areas of Expertise

- New crop development including essential oils, culinary herbs, medicinals and leafy vegetables
 - Design of innovative harvest systems for new crops
 - Waste water and effluent reuse
 - Agricultural research and development
 - Sustainable agricultural system design and implementation
 - Environmental monitoring
 - Plant physiology
 - Land capability assessment
 - Group training
 - Agribusiness and financial management
 - Socio and economic impact assessment
- Site assessment, property liaison and development of Irrigation and Ground Water Management Plans for effluent management of Tassal hatchery expansion at Ranelagh and waste processing plant at Triabunna including representation to EPA.
 - Quinoa trial coordination for commercialisation of an emerging “super food” in Australia
 - Review of pyrethrum industry strategic plan and industry development officer program
 - Market, production and feasibility study of medicinal cannabis production for Tasmanian Alkaloids
 - Importation of new varieties and coordination and production system development for BerryWorld Australia in Tasmania and Queensland

Nicholbrook Expertise

- Economic studies
- Business and farm management
- Feasibility studies
- State and regional development
- Irrigation and water development
- Land capability and mapping
- Natural resource management
- Training and extension
- Technical agricultural consulting