Agricultural Report
For Future Multiple Occupancy
Lot 11 DP 1039847,
74 Charltons Rd, Federal NSW

Melaleuca Group Pty Ltd

Date: 17th May 2016

Prepared for:
J Jackson and S Smith

Further Information:
Melaleuca Group Pty Ltd

M 0427 628 847
melissa.vanzwieten@exemail.com.au

.....
Dr. Melissa Van Zwieten
Environmental and Agricultural Scientist

Melaleuca Group Pty Ltd

Melaleuca Group Pty Limited

Table of Contents

1. Introduction

Melaleuca Group has been engaged by J Jackson and S Smith to undertake an Agricultural Assessment and an Agricultural Report for Lot 11 DP1039847, 74 Charltons Road, Federal (the site) in response to the Draft Byron Rural Land Use Strategy (the Strategy). This assessment provides site specific information regarding the constraints of the site both to Agriculture and to a possible future Multiple occupancy and with regard to the benefits of combining the two land uses.

Specifically, this assessment provides clarification to Council in response to the proposed exclusion of the site from the current Draft Strategy. The following advice has been provided by Council:

> *The term" EXCLUDE from further consideration "means that in the context of the site specific property investigations (reported to Council on 17th March – Report 13.10) the subject land had significant areas affected by one or more of the constraints identified in Table 1 of the 'Site Suitability Criteria & Mapping Methodology' ¾ the primary constraint being "regionally significant farmland" (100%) and slopes > 32% (small pockets only).*
>
> *As a result of these constraints it has been excluded from consideration for future rural lifestyle living opportunities. If the draft Strategy had identified parts of your land as either unconstrained or assessable then these areas could be considered against 'Figure 4: Decision Framework for Future Rural Lifestyle Living Opportunities' of the draft Strategy. However at this point in time regionally significant farmland is to be retained for existing or future agricultural production. This represents the State government's current policy position as articulated in the Far North Coast Regional Strategy, draft North Coast Regional Plan and s117 Direction 5.3 (Farmland of State and Regional Significance on the NSW Far North Coast). Direction 5.3 specifically refers to "Section 4 of the report titled Northern Rivers Farmland Protection Project - Final Recommendations, February 2005", which states:*
>
> > *Regionally significant farmland cannot be considered for rural residential rezoning. The only exception is where the land is identified in a council rural settlement strategy which has been agreed to between December 1994 and December 2004 under clause 20 of the North Coast Regional Environmental Plan (or placed on public exhibition by the end of 2004 and subsequently approved). Councils when preparing new rural residential settlement strategies cannot consider regionally significant farmland for inclusion.*

The site was originally included in the 1998 Byron Rural Settlement Strategy (BRSS) and subsequently removed at the request of a previous landowner. The current landowners (J Jackson and S Smith) have been negotiating with Council since 2012 for the reinstatement of the site for inclusion in the BRSS. Some surety was provided by Council in September 2013, July 2014 and June 2015 of the site's reinstatement under the BRSS and the current draft Strategy.

In addition, the following advice allows Council to consider site specific information so that the site may be included in the new Strategy being prepared:

> *Although the final Strategy will have a 20 year life it is intended to have this document reviewed every 5-years to consider any new site-suitability information that becomes available, as well as any new legislative or policy changes affecting future rural lifestyle living opportunities.*

As such, this assessment provides site specific information for Council's consideration at this time for the continued inclusion of the site within the Byron Rural Land Use Strategy. The objectives of this assessment is to assess the quality of agricultural lands at the site and to assess the impact of a future multiple occupancy (or similar) development at the site with regard to agricultural viability and productivity. This is particularly in response to the desktop analysis and exclusion of the subject site under the broadscale Regionally Significant Farmland mapping.

This assessment proposes that it is possible to use the Community Title model to create outcomes that support maintaining significant farmland through sharing responsibilities and costs. Continued inclusions of the subject site in the Strategy will allow for future investigations into such a proposal. At such time, additional assessments will be required to address other components of such a development including (but not limited to) Bushfire, Access, On-site wastewater, Ecological and the like.

Please refer to Figure 1 for the site's locality.

2. The Site

2.1 Site Identification

The Site is known as Lot 11 DP1039847 and is located approximately 1km north/north-east of Federal and approximately 7.5km north-west of the centre of Bangalow CBD. The Site is approximately 58 ha in size.

The site lies within the catchment of The Wilsons River which forms the eastern boundary of the site.

2.2 Zoning and Proposal

The subject site is predominantly zoned RU2 Rural Landscape in accordance with Byron Shire Council (BSC) Local Environmental Plan (LEP) (2014). A small area adjacent to The Wilsons River is zoned 1(ah) General Rural Zone - hatched in accordance with BSC LEP 1988. Surrounding lands similarly zoned with also areas zoned RU1 (Primary Production).

2.3 Current and Historical Site Usages

Information pertaining to the historical landuses are limited to some aerial photography, local knowledge and information provided by J Jackson. The current owners have resided on the land for 14 years and have gathered information regarding historical uses by way of conversations with locals including the previous land owner. The previous land owner (Mr Charlton) has a long connection to the land having resided on the property for approximately 60 years (1940s to 2002). Given the topography of the land, existing vegetation and discussions with Mr Charlton (J Jackson, pers comm.), it is believed that landuses were limited to grazing activities for some time including the period before the Charlton family holding the property. As such, based on anecdotal evidence, it is believed period to be at least approximately 80 years of this land use.

A single dwelling and associated structures are located on the upper portion of the allotment adjacent to Charltons Rd. The dwelling is estimated to be over 75 years old. Based on anecdotal evidence, it is believed individuals have resided on the property in excess of 100 years.

Recent (2000 - 2015) historical aerials were reviewed. These images indicate a relatively cleared property with clusters of trees as observed by imagery. Some vegetation appear to form windbreaks with other being isolated paddock trees.

Given the generic history of the area, it is likely the site was cleared around 100 - 150 years ago with principal uses being subsistence farming along with dairy cattle grazing. Around 1950/60, dairy farming declined in the area with a change to beef cattle grazing which was evident during site investigations as the current land use. Plates 1 to 6 show general views of the site in its current (2016) condition.

Figure 1. Location Plan

Plate 1: Southerly view of western section of site (elevated area adjacent to Charltons Rd).

Plate 2: Easterly view of southern section of site along sloping ridgeline.

Plate 3: General view of eastern section of site showing elevated western section and steep lands.

Plate 4: General view of area immediately adjacent to The Wilsons River. (Note surface boulders).

Plate 5: General view of pile of rocks, multiple piles observed across the site.

Plate 6: Example of a significant tree located on the site (*Macadamia tetraphylla*).

2.4 Local Geology and Soil Description

NSW DPI (2004) describes the geology of the study area as Tertiary volcanics - Lismore Basalts. Morand (1994) describes the geology of the study area as being Lamington Volcanics: Lismore Basalts - Tertiary basalt with bole and minor agglomerate.

The soils across the Subject Site are identified as *Rosebank* (**ro**) (Morand 1994).

Rosebank (ro):

> **Landscape** – rolling low hills and hills on Lismore Basalts. Relief 70 - 100m, sloes 20-40%. Ridges and crests are convex and moderately broad (100-300m). Ridge slopes, sideslopes and isolated hills are common. Extensively cleared closed native forest, now predominantly sod grassland with large areas of closed camphor laurel forest.
>
> **Soils** Shallow (<100cm), well drained Krasnozems and brownish red Krasnozems (Gn3.11, Gn4.11, Uf5.21, Uf6) on crest margins. Moderately deep to deep (>100cm) Krasnozems and brownish red well-drained Krasnozems (Gn3.11, Gn4.11, Uf5.21, Uf5.2, Uf6) on slopes.
>
> **Limitations** – very acid soils with high aluminium toxicity potential. Steep slopes with mass movement hazard and localised rock outcrop.

Observations of soils across the site were consistent with this description. As such soils across the site would be considered relatively shallow along ridgelines with variable depth on slopes. Many surface rocks were observed across the lower sections of the site. A number of piles of rocks were observed (e.g. Plate 5). Rockiness appeared to increase towards the east coinciding with slopes. Given the steepness of areas of the site and long term clearing and grazing, it is likely rockiness has been increased due to erosion processes.

2.5 Topography

The subject site consists of a knoll in the south-western corner of the site which has an upper elevation of approximately 180m AHD. From this knoll, two (2) ridgelines diverge. One to the north, following Charltons Road and one to east. The eastern spur diverges into two (2) ridgelines with one generally following the southern boundary of the site and the other diverging in the north-east direction. Thereby three (3) ridgelines exist on the site of varying steepness. Elevation at the eastern boundary (i.e. adjacent to The Wilsons River) is approximately 50m AHD. As a consequence, slopes vary from near flat (0-2%) in the south-western corner) to areas greater than 20% (Figure 2).

2.6 Surface Water

As previously discussed, the site lies within the catchment of The Wilsons River which forms the eastern boundary of the site. Two (2) unnamed tributaries commence within the bounds of the site and flow to the River. These are located between the three (3) ridgelines located on the site.

Figure 2. Broadscale Slope Analysis (Department of Land and Water Conservation 1998).

2.7 Agricultural Land Classification

The entire site and surrounds are mapped as Regionally Significant Farmland. The distinction between State and regionally significant farmland was established to recognise the diversity within the region's 'important' farmland (DIPNR 2005). This document outlines the need to distinguish between very high quality and unique agricultural soils/lands and other lands that were also important to agriculture but which were more extensive and less productive generally per unit area. A number of attributes were considered in determining between State and regionally significant farmlands including:

- Slope generally less than 15%;
- Consists predominantly certain soil types;
- Soils are generally deeper than 1 metre;
- Well drained landscape;
- Rock outcrop less than 10%;
- Flood free; and
- Not affected by other constraints/hazards either within the soil landscape or originating in adjoining soil landscapes (eg: run-on, mass movement, localised flooding).

With distinction, greater flexibility in planning controls can occur. Rules about urbanisation of farmland can afford stronger levels of protection to smaller unique significant areas compared to expansive areas that contain a more diverse range of soils, landscapes and opportunities for agriculture.

Various other mapping of Agricultural land has occurred since 1986. For example NSW Agriculture (1988) mapped land at the site under two (2) classifications (Figure 3) namely:

> *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.
>
> *Class 6:* (Special use) Land which, because of a combination of climate and soil, is well suited to intensive production of a crop or a narrow range of crops whose special requirements limit their successful culture to such land. This class may include some lands formerly described as 'unique'.
>
> (Agricultural Rural Land Classification Maps 1988)

NSW OEH (2013) mapped the entire site under one classification (Figure 4) namely:

> *Class 6:* (has very severe limitations for a wide range of land uses and few management practices are available to overcome these limitations. Land generally is suitable only for grazing with limitations and is not suitable for cultivation.
>
> Class 6 land includes steeply sloping lands (20–33% slope) that can erode severely even without cultivation, or land that will be subject to severe wind erosion when cultivated and left exposed. Other limitations can include shallow soils (less than 50 cm deep), stoniness, rock outcrop (50–70% coverage), salt outbreaks, naturally acid soils of low fertility, major flow lines with high flows and flooding, areas that are poorly drained and wet for long periods, areas that are severely eroded, including scalds, and strong climatic limitations'.

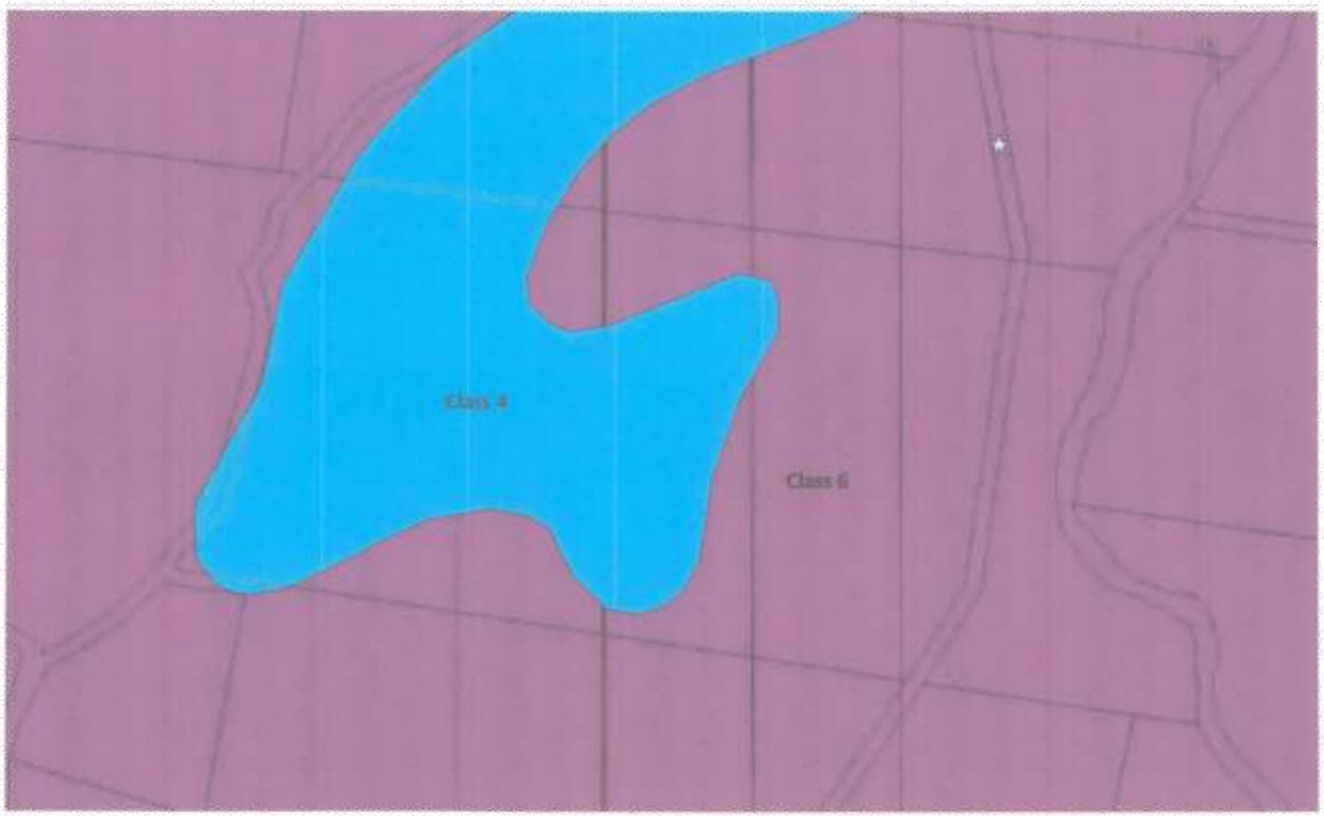

Figure 3. Agricultural Rural Land Classification (1988).

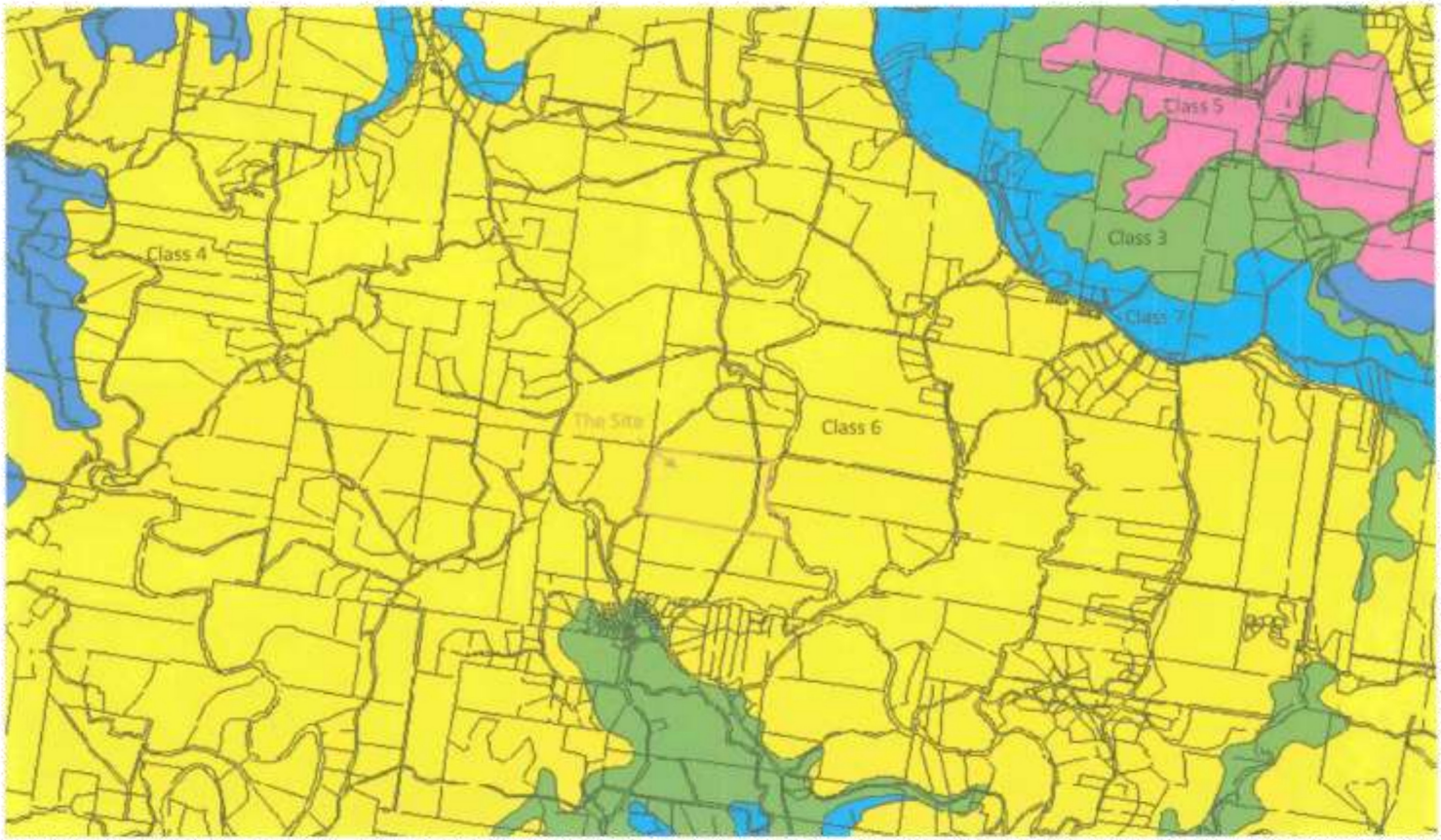

Figure 4. Agricultural Land Classification (2013).

3. Agricultural Potential

3.1 Proposal

A proposed MO layout is not available at the time of writing. However, this assessment aims to assess the possibility of such a proposal in the future to allow for the subject site to be included in the currently exhibited Draft Byron Shire Rural Land Use Strategy (the Strategy). This assessment also allows for some guidance to such a proposal by determining areas of the site that represent good Agricultural land.

3.2 Relevant Legislation

Under BSC's LEP 2014, the following zoning objectives apply to the site:

RU2 Zone Objectives:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To maintain the rural landscape character of the land.*
- *To provide for a range of compatible land uses, including extensive agriculture.*
- *To enable the provision of tourist accommodation, facilities and other small-scale rural tourism uses associated with primary production and environmental conservation consistent with the rural character of the locality.*
- *To protect significant scenic landscapes and to minimise impacts on the scenic quality of the locality.*

Draft Byron Shire Rural Land Use Strategy Objectives:

Council has adopted the following planning policy directions to encourage opportunities for protecting and improving our natural systems.

1. *Future rural development will not be supported on sites, or areas within a site:*
   - *having high environmental value vegetation identified through a range of verification methods including but not limited to one or a combination of the following:*
     (i) field inspections and surveys by a qualified person,
     (ii) reports <5 years old by a suitably qualified person and accord with the HEV vegetation criteria,
     (iii) high resolution aerial photos <5 years old in conjunction with another verification method
   - *within 100m of a major creek or water way located in a drinking water catchment*
   - *having slopes > 32%*
   - *generally requiring significant landform modification in the form of excavation or filling*
   - *identified as having 'extreme' bushfire risk (ie. Category 1 vegetation on slopes greater than 20%)*
   - *within acid sulfate soil risk class 1 or 2*
   - *affected by an S117 Mineral Resources planning direction, including transitional and potential areas, their buffers and use of key access roads (unless the applicant can demonstrate that the land's inclusion in a S117 Mineral Resources direction is outdated, and if required, gains agreement from the relevant NSW Government authority).*
2. *The planning framework will encourage natural resource based rural industries committed to the use of ecologically sustainable management practices.*
3. *Future rural tourist development will protect and where possible enhance key environmental features and preserve land of high scenic quality.*

4. *Future rural lifestyle living opportunities will serve to repair and enhance the land's natural values in a manner which more than offsets the full impact of the site's population and pressures on the environment.*
5. *Future rural lifestyle living opportunities will preserve scenic amenity, minimise environmental impacts and better manage natural or man made hazard risks.*

3.3 Soils

The Krasnozem soil types (FAO classification 2016 as Rhodic Ferralsol) found across the site are typically strongly structured, deep, well-drained red to red-brown soils that are loam to clay loam in texture at the surface which gradually become more clayey with depth. These soils are amongst the most fertile soils of the subtropical areas of Eastern Australia (Stephens 1962). However, this description is more typical of the Wollongbar (wo) Soil Landscape (Morand 1994) whereby the Wollongbar soils are residual soils and located, in general, to the south in alignment with the Alstonville Plateau landform. Rosebank (ro) soils as found on the site, are an erosional soil landscape and as such are slightly poorer in fertility, but of more impact, are generally rockier and shallower.

A wide range of sub-tropical horticultural crops are grown throughout the immediate area as well as the wider region of the North Coast of NSW. These successful enterprises bear testament to the suitability of the Krasnozem soil type for these crops whereby this range of crops are generally located on the Wollongbar soil type. While it is considered, soils of the site could still support a wide range of intensive agricultural pursuits, additional resources and efforts would be required to ensure such pursuits are successful (e.g. removal of rock and/or addition of fertilisers, manures or compost).

3.2 Topography

The site's topography varies greatly between relatively flat areas (<5%) to steep gully areas (>20%). Gentle (2-5%) to moderately (up to 10%) sloping lands are well suited to horticultural tree crops due to the lack of required cultivation practices in other enterprises. However, these areas are relatively limited on the site to the upper areas of the ridgelines.

3.4 Water resources

Future proposals would not subdivide the site and as such, the site would maintain access to water within The Wilsons River under harvestable water rights. Additionally, the site has a Groundwater Bore (GW070466) which is licensed for stock and domestic purposes. Potentially, the bore licence may be able to be upgraded to an irrigation licence is intensive horticultural activities are pursued. This bore and/or surface water features provide opportunities for a range of Agricultural enterprises.

Water usage will be dependent on the agricultural pursuits selected, however, it should be noted the climate and high rainfalls of the North Coast of NSW are suitable for a range of enterprises without the need for additional irrigation. For example, Macadamia irrigation is only recommended where annual rainfall is less than 1,200mm (Qld DPI, reprint 2004). The average annual rainfall recorded at the Ballina Airport Automated Weather Station (closest station) is 1773 mm and as such irrigation is not warranted for macadamia production at this site. Macadamia plantations, in general, are not irrigated in Northern NSW.

3.5 Agricultural Potential

This site specific assessment has investigated a range of features pertinent to the ability of the site for a range of agricultural pursuits and the ability of the site to also be able to sustainably allow for additional households (e.g. by way of a Multiple Occupancy or similar).

Notwithstanding the land classification (i.e. Regionally Significant, Classes 4 and 6 (1988) and Class 6 (2013)), parts of the site offers the opportunity for a range of agricultural pursuits.

However, a large extent of the site is highly constrained due to slopes, rocks and shallow soils. The topography of the site also is relatively exposed and as such high wind levels are expected. A number of wind-affected trees were observed during site investigations along with confirmation of periods of strong winds from the proponents. Winds present additional financial and labour inputs by way of requiring the establishment of wind breaks.

To pursuit high value horticultural crops would, in general, be very limited to small flat areas of the site. Areas with increased slopes may be placed under these higher valued tree crops, however, major land formation and labour be required. The relative increase in resources required for intensive/higher value crops would potentially not provide a financially viable option due to the inherent risks of such agricultural pursuits.

For example, during approximately the 1980/90s, a range of agricultural and horticultural enterprises developed in the region. In particular Macadamia plantations were established with large plantations established in areas south of Federal. These plantations coincide with fertile Wollongbar soil types and the Alstonville plateau formation. Soils at the site are considered suitable for Macadamia although increased rockiness is likely. However, the topography and exposure to winds reduces the area available for a Macadamia orchard to small areas of the site which, with increased financial inputs (i.e. for rock clearing, land formation and wind break establishment), indicates the site would not provide sufficient area for a successful Macadamia plantation.

Other higher value tree crops (e.g. custard apples, lychees) may be possible at the site. However, as described above, obtaining sufficient area without the need for major land formation and/or labour inputs would be difficult. In addition, areas best suited are on along ridgelines in high wind exposure areas.

Other Agricultural pursuits might include Native Bush foods, market gardens, Mushroom tunnels free range livestock (e.g. ducks, pigs, chickens) and Snail production. All of these pursuits require relatively large inputs of labour. However, these options may provide options for the use of increased areas of the site (e.g. on slopes up to 10%) as the footprint requirements to provide a viable financial return are smaller.

The current landuse (cattle grazing) has limitations due to improving pasture economically is only within upper areas of the site due predominantly to steep slopes and rocks (i.e. not accessible for tractors and/machinery). Improvements in pasture in these areas could be achieved, but would be labour intensive as rock removal and/or deployment of seeds (e.g. oversowing with tetraploid ryegrass for winter pasture productivity) and/or fertiliser (predominantly Phosphorus) would need to be done predominantly by hand.

A review of recent available aerials indicate intensive horticultural pursuits are sparse in areas surrounding the subject site and particularly north of the site. The surrounding land uses provide an indication of the importance (or lack thereof) of the site in the context of being regionally significant

agricultural lands. Land to the east includes an existing Multiple Occupancy development. Lands to the east and south include areas of forestry. Forestry plantations tend to be located on lands which do not possess characteristics for higher value agricultural commodities. Lands to the north and east represent similar lands in terms of soil types and topography and are being used for cattle grazing. As described above, Macadamia plantations tend to be associated with the Wollongbar soil landscape and the Alstonville plateau and a review of aerial photography indicate the closest is approximately 1.8km to the south with a number of plantations further south (an coincides with Wollongbar soil landscape). A review of aerial photography for other high value horticulture/agriculture indicate few within the Federal locality. A possible Macadamia plantation was located approximately 2km to the north-west which, while having a similar soil landscape, differs in the topography facing west and thereby being protected from winds. In addition, a small coffee and possible nursery was located approximately 800m to the north-west. Similarly, the westerly aspect of this property may be providing the site specific attribute enabling these agricultural enterprises. Other site specific attributes of these properties were not investigated. In both instances, these enterprises covered area less than 10ha (1-2ha for nurseries) indicating quite small areas of land can lead to economically viable options.

The subject site also has a range of significant vegetation including large Fig Trees and a number of Macadamia tetraphylla specimens (Vulnerable at State and Commonwealth levels). Some of these trees are located within areas of gentle to moderate slope (i.e. within possible tree horticulture areas) and thereby would possibly require removal or would impact on viability of an orchard/intensive agricultural pursuit. Further, the BRSS aims to protect and improve environmental features in the LGA. This in combination to the riparian area adjacent to The Wilsons River would not be able to be addressed without financial resources (e.g. increased income from agricultural pursuits) and/or increased labour inputs. Improvements in the environment would be not only contained to tree planting to reduce soil erosion and land slips, but increase habitat areas and riparian protection. Additionally, an enriched environment can become habitat for a range of beneficial faunal species (e.g. microbats for insect control in orchards, Owl habitat for rodent control).

To provide labour at a financially viable level to meet both agricultural and environmental objectives of the site, the option of increasing residents at the site by way of a MO would resolve both issues. It is not envisaged all residents would require an income from the property, whereas providing opportunities for a rural lifestyle come availabilities for residents to contribute to the management of the land. Areas of the site that are not well suited to agricultural pursuits or would not highly impact on available agricultural lands, offer areas whereby a number of dwellings and associated infrastructure could be located. With increased availability of farm (or 'property') staff, variable agricultural pursuits and improvements in the environment could occur. This could lead to other opportunities for farm tourism thereby increasing local jobs and expanding land use diversity.

A further consideration, is the ability of the a group of residents being able to undertake subsistence farming and thereby produce much of the food consumed by residents of the site. Surplus crops could be sold locally to residents thereby reducing environmental impacts due to transport of produce into the area.

Please refer to Figure 5 for a preliminary concept and land suitability plan of the site. This plan shows some options for locating dwelling clusters while still retaining large portions of the site for agricultural and environmental pursuits. Nominated agricultural classes are compared to a generalised agricultural class as identified in literature (e.g. various authors between 1981 and 2013).

Figure 5. Preliminary Concept and Land Suitability Plan

4. Discussion and Conclusion

Melaleuca Group Pty Ltd has been commissioned by J Jackson and S Smith to undertake an Agricultural Assessment and prepare an Agricultural Report for Lot 11 DP1039847, 74 Charltons Road, Federal (the site) in response to the Draft Byron Rural Land Use Strategy.

A site inspection was undertaken on the 27th April 2016 to ascertain soil and site characteristics.

The site in its current condition is relatively devoid of treed vegetation and consists of a number of grazing paddocks used for beef cattle. Slope ranges considerably across the site from relatively flat to gentle slopes predominantly in the western section of the site to very steep (>20%). As the elevation drops from west to east a marked increase in surface rocks were observed. In addition, land slips, erosion and shallower soils were observed.

While cattle grazing is often seen as the most common farming option, a range of other livestock could be suitable such as goats, free range pigs and free range poultry. These options allow for the increasing the diversity of enterprises on the site while also enabling effective managed production on steeper locations at the site. Similarly niche markets such as snail production could also be undertaken at the site as this requires a small footprint (shed) on flatter area(s) of the site.

While the site's characteristics also offers an opportunity for a range of other agricultural or horticultural pursuits, these would all require increased inputs including land formation and labour. Similar to cattle grazing, Macadamia production is often seen to provide a standardised analysis for site within the Northern Rivers area. A Macadamia plantation is considered to be unlikely to be financially viable on the property due to increased inputs. However a range of other horticultural pursuits may be suitable for this site including other tree crops (e.g. high value sub-tropical fruits, bushfoods, cut flowers, blueberries and mushrooms (shed/s)). However, these would also require increased labour and thereby financial inputs.

Thereby, this Agricultural Assessment has identified suitable areas within the site that might be able to support viable agricultural industries. As shown in Figure 5 the subject site is divided into the following Agricultural quality classes:

- Class A: equivalent to published Class 3 to 4 - 12% or 6.96ha
- Class B: equivalent to published Class 4 - 5% or 2.9ha
- Class C: equivalent to published Class 4 to 5- 7% or 4.06ha
- Class D: equivalent to published 1988 Class 6 (unique) - 6% or 3.48ha
- Class E: Considered more appropriate for Environmental works than Agriculture- 32% or 18.56ha
- Other: residual lands equivalent to published Class 6 - 38% or 22.04ha

As such, none of the site is considered in the better quality Agricultural Classes of Class 1 and 2. Approximately 24% or 13.92ha is recognised as the best Agricultural land on the site. However, these areas are still impacted by slopes, winds and topography and thereby additional inputs are required for increased agricultural outputs. A further 6% (or 3.48ha) of the site is identified as potential opportunities for the production of niche commodities. These areas were identified due to being protected from winds as on lower slopes but additional inputs are still required to establish access, remove rocks and undertake some land reformation. A large portion (32% or 18.56ha) was

identified as being better suited to environmental activities to allow for reforestation along watercourses and steep slopes to improve land stabilisation, habitat (including linkages) and reduce erosion and sedimentation. These areas could be considered as being classified with the 2013 Class 7 Agricultural class. Class 7 areas are described as " has extremely severe limitations for most land uses. It is unsuitable for any type of cropping or grazing because of its limitations. Use of this land for these purposes will result in severe erosion and degradation. It may be too steep, rocky, swampy or fragile for grazing". The remaining portions of the site offer opportunities to remain as grazing land with few opportunities for increased outputs and considered Class 6 under the 2013 descriptions ("*very severe limitations for a wide range of land uses and few management practices are available to overcome these limitations*")

As a consequence of this assessment, the site is not considered 'regionally significant' farmland as areas are small in nature and the majority (70% or 40.6ha) of the site is not considered good agricultural lands due to soils, topography, wind exposure and rockiness and thereby increased financial inputs required. In addition, it is considered the site is remote from Regionally Significant lands capable of supporting a diverse range of agricultural pursuits. The Regionally Significant farmland mapping is a very broad mapping tool which utilised soil landscapes and a major criteria (DIPNR, 2005). While slopes are considered paramount in agricultural viability (DIPNR 2005), this mapping has not include topographic maps and infers the mapping may not be applicable on an individual site basis. The lack of the site fitting 'Regional Significant' farmland is further supported by the available mapping from 1988 to 2013 that indicate the site is of poorer agricultural potential as classified as Class 4 or Class 6 in 1988 and all Class 6 in 2013. While this assessment has recognised some variability in land classes across the site, this assessment has taken into account site specific characteristics. However, it must be emphasised that increasing agricultural diversity and/or output required financial and labour burdens that may still not result in an agriculturally viable enterprise.

Despite the limitations of the site, a number of agricultural pursuits could be undertaken at the site. The most significant requirement to these enterprises is the increase in labour requirements. As such, a potential solution is the inclusion of increased residents at the site by way of a MO. These similarly minded individuals would be able to partake in the daily management of the property and thereby the increased available labour would allow for a range of agricultural pursuits. An additional benefits of these residents, is the availability of labour for undertaking a range of environmental activities and repairs which is a major objective of Council's Rural Land Use Strategy.

All five (5) objectives (refer s3.2) of the Rural Land Use Strategy would be met by a carefully designed MO (or equivalent). In addition, the objectives of the RU2 Zone could also be met by such a proposal. As such, it is the conclusion of this assessment, that the site should be included within the current Rural Land Use Strategy to allow for appropriate development at the site while combining agricultural and environmental outcomes.

5. References

Australian Bureau of statistics (ABS) 2016, http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/6523.0main+features12013-14

Byron Shire Council (BSC) 2014, Local Environmental Plan.

Cunningham, G.M., Higginson, F.R., Riddler, A.M.H. , and Emery K.A., 1988, Systems used to classify rural lands in New South Wales.

Department of Infrastructure, Planning and Natural Resources (DIPNR) 2005, Northern Rivers Farmland Protection Project Final Recommendations.

Department of Employment, Economic Development and Innovation (DEEDI) 2004. Macadamia grower's handbook (Reprint)

Morand, D.T. 1994, Soil Landscapes of the Lismore-Ballina – 1:100 000 Sheet Report, Department of Land and Water Conservation, Sydney.

NSW Agriculture, 2002. Agricultural Land Classification Agfact AC.25. Therese Hulme,

Tom Grosskopf, John Hindle.

New South Wales Department of Environment and Planning, 1981, Rural Land Evaluation Manual, Woodward, R., and F. Neilson, Eds.

New South Wales Department of Planning, 1988, Rural Land Evaluation Manual", rev. edn., Woodward, R.

NSW Department of Primary Industry (Mineral Resources Division) (DPI). Eds: Troedson, A., Hashimoto, R., Jaworska, J., Malloch, K., Cain, L. 2004. New South Wales Coastal Quaternary Geology – Digital Data Set. NSW Department of Primary Industries, Mineral Resources, for Comprehensive Coastal Assessment."

NSW Department of Primary Industries, 2004, Macadamia costs and returns for northern NSW. Agnote DPI-491 Kevin Quinlan, District Horticulturist, NSW Agriculture, Alstonville.

NSW Department of Primary Industries Office of Water (2015). http://allwaterdata.water.nsw.gov.au/water.stm

NSW Office of Environment and Heritage (2013) Land and Soil Capability mapping of NSW. Bioregional Assessment Source Dataset.

Office of Environment and Heritage 2012, The land and soil capability assessment scheme. Second approximation. A general rural land evaluation system for New South Wales.

Riddler A.M.H., 1996, Agricultural suitability maps - uses and limitations, NSW Agriculture Agfact AC.9, 3rd edn.

Stephens, C.G., 1962, A Manual of Australian Soils; Third Edition., CSIRO, Melbourne

DISCLAIMER

Melaleuca Group has conducted work concerning the environmental status of the property, which is the subject of this report, and has prepared this report on the basis of that assessment.

The work was conducted, and the report has been prepared, in response to specific instructions from the client or a representative of the client to whom this report is addressed, within the time and budgetary requirements of the client, and in reliance on certain data and information made available to Melaleuca Group. The analysis, evaluations, opinions and conclusions presented in this report are based on that information, and they could change if the information is in fact inaccurate or incomplete.

Melaleuca Group has made no allowance to update this report and has not taken into account events occurring after the time its assessment was conducted.

This report is intended for the sole use of the client and only for the purpose for which it was prepared. Any representation contained in the report is made only to the client unless otherwise noted in the report. Any third party who relies on this report or on any representation contained in it does so at their own risk.


N
11
DP1197847
Land Suitability Ranking
Possible Location of Dwelling Cluster
(Subject to further investigation)
SCALE 1:3000 AT A3
Dr Melissa Van Zwieten
Melaleuca Group Pty Ltd
Lot 11 DP1197847
74 Charlton Road
Federal
PRELIMINARY CONCEPT
& LAND SUITABILITY
PLAN
M316003-EV01
1 of 1