



22 Goodwins Road Subdivision

NATURAL VALUES ASSESSMENT

2nd December 2024

For Rogerson and Birch obo Stage C Developments

AUP008



313 Macquarie Street, Hobart Tasmania, 7000

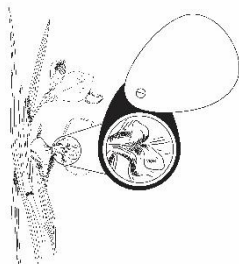
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Acknowledgements

Project	22 Goodwins Road – Subdivision <i>Natural Values Assessment</i>		
Location	22 Goodwins Road, Clarendon Vale, Tasmanian, 7019		
Client	Rogerson and Birch		
Ultimate Client	Stage C Developments Pty Ltd		
NBES Job Code	AUP008		
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Version	Date	Author & Comment	Position
Version 0.1	30/09/2024	Drafted by Ian Jenkinson and Cameron Geeves	Ecologist and Senior Ecologist
Version 1.0	02/12/2024	Reviewed and delivered to the client by Cameron Geeves	Senior Ecologist



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Summary

Proposed Residential Subdivision at 22 Goodwins Road, Clarendon Vale.	
Property address	22 Goodwins Road, Clarendon Vale (PID: 2166880 Title Ref. 164805/1)
Zoning	General Residential (Zone 8), Utilities (Zone 26)
Codes	- Road and Railway Assets Code (Code 4) – Future major road (Overlay 4) - Natural Assets Code (Code 7) – Waterway and coastal protection area (Overlay 16) and Priority vegetation area (Overlay 18) - Flood-prone Hazard Areas Code (Code 12) – Flood prone areas (Overlay 30) - Bushfire-prone Areas Code (Code 13) – Bushfire-prone areas (Overlay 31) - Potentially Contaminated Land Code (Code 14) – Potentially contaminated land (Overlay 32) - Landslip Hazard Code (Code 15) – Low landslip hazard band (Overlay 33) - Safeguarding of Airports Code (Code 16) – Airport obstacle limitation area (Overlay 38)
Natural Values	
Vegetation & Associated Impacts	<u>Vegetation Communities</u> The design has utilised existing modified land, excepting where necessary for bushfire hazard management. <u>Threatened Vegetation</u> <i>Eucalyptus ovata</i> forest and woodland – 0.49 ha impact for bushfire hazard management.
Conservation Significant Flora & Associated Impacts	<u>Threatened Flora</u> NIL - No impacts
Threatened Fauna and Habitat & Associated Impacts	<u>Threatened fauna</u> NIL – No incidental observations of threatened fauna or likely signs of fauna such as scats, prints, diggings or nesting were observed. <u>Threatened fauna habitat</u> Negligible - The loss of marginal habitat for threatened fauna will not significantly impact any species and does not constitute critical habitat for any species. High value habitat elements, such as the <i>Eucalyptus ovata</i> foraging trees within DOV for the swift parrot (<i>Lathamus discolor</i>) (e/CR) can be retained on site.
Geoconservation Sites & Associated Impacts	No geoconservation sites occur within 1 km of the proposed development. No known geoconservation sites in the broader landscape will be impacted by the proposed development

Legislative Compliance	
Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBCA)	No impacts.
Tasmanian <i>Threatened Species Protection Act 1995</i> (And <i>Nature Conservation [Wildlife] Regulations 2021</i>)	No impacts – A permit to take is not required under this Act.
<i>Biosecurity Act 2019</i> (BA)	Six declared weed species are present within the proposed development area. All of these weeds are Category B weeds in the Clarence Council. Containment principles apply.
Tasmanian <i>Nature Conservation Act 2002</i> (NCA)	<u><i>Threatened vegetation</i></u> <i>Eucalyptus ovata</i> forest and woodland (DOV) – 0.49 ha impacted Impacts to this community are assessed under the Tasmanian <i>Land Use Planning and Approvals Act 1993</i> – Subsequently under the Tasmanian Planning Scheme.
Tasmanian Planning Scheme (TPS) – Clarence Local Provision Schedule	<u><i>Natural Assets Code (Code 7)</i></u> - Waterway and coastal protection area (Overlay 16) The potential impact from the proposed development to Stokell Creek does not conflict with any of the applicable criteria (a-j, l and m) of the performance criteria P1.1. Therefore, the proposed development is acceptable under the Waterway and coastal protection area provision of the Natural Assets Code. - Priority vegetation area (Overlay 18) Impact from the proposed development for bushfire hazard management to priority vegetation present on the site [DOV]. The proposed development meets performance criteria P1.1 (e) and has regarded P1.2. Therefore, the proposed development is acceptable under the Priority Vegetation Area provision of the Natural Assets Code.

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1. PROJECT DETAILS

1.1. BACKGROUND

The following proposal is for the development of an 81 Lot subdivision at 22 Goodwins Road, Clarendon Vale (Figures 1 and 2). The lot to be subdivided contains a mixture of degraded native vegetation and existing modified land. A large proportion of the lot is covered by the Natural Assets Code overlay (Code 7) and the Bushfire-prone Areas Code (Code 13) as defined by the Clarence Local Provisional Schedule of the Tasmanian Planning Scheme (Planning Scheme).

Rogerson and Birch Surveyors have engaged North Barker Ecosystem Services (NBES) on behalf of the owners of the land proposed for development, Stage C Developments Pty Ltd, to complete a undertake a natural values assessment and a bushfire hazard assessment of the property in relation to the proposed subdivision. This natural values assessment report includes commentary on natural values present, recommendations to reduce impacts and comments on compliance with environmental legislation, with reference particularly to the waterway and coastal protection area provisions and the priority vegetation area provision of the Natural Assets Code. Commentary relating to the bushfire hazard assessment is contained in another NBES report¹.

1.2. LOCATION AND SURVEY AREA

1.2.1. Project area

The project area is defined by the cadastral boundaries of 22 Goodwins Road, Clarendon Vale (PID: 2166880 | Title Ref. 164805/1) (Figures 1 and 2) and is approximately 8.3 ha in size. The project area falls entirely within the Clarence City Council municipality. According to the IBRA 7 bioregions², the survey area is within the Tasmanian South East bioregion.

1.2.2. Geology

According to the LIST³, the project area has a mixed geology, underlain by a sedimentary geology, comprised of upper glaciomarine sequence from the Abels Bay formation and correlates to the north of Stokell Creek and alluvial and marsh depositions of moderation flood plains to the south.

1.2.3. Topography and altitude

The lot is situated on the southern end of a low ridge that extends north. The ridge runs down to Stokell Creek to the east and Clarence Plains Rivulet to the west. Elevation on the lot ranges from 45 m to 30 m ASL.

1.2.4. Climate characteristics

Mean annual rainfall for the area is 601 mm per annum, with increased precipitation in autumn and winter months. Annual mean maximum temperatures are around 17.6 °C, annual mean minimum temperature of 8.2 °C⁴.

2. METHODS

Field investigations of the survey area was undertaken by an NBES ecologist on the 27th of September 2024, using a meandering area search technique⁵. Additional survey effort was applied to habitats

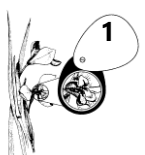
¹ North Barker Ecosystem Services (2024). Bushfire Report and Hazard Management Plan. December 2024.

² Information on the Interim Biogeographic Regionalisation for Australia, Version 7 (IBRA 7) is available here: <https://www.dcceew.gov.au/environment/land/nrs/science/ibra>.

³ LISTmap is accessible via: <https://nre.tas.gov.au/land-tasmania/the-list/listmap> and was accessed at the time of this report.

⁴ According to statistics available at the Bureau of Meteorology from weather stations 94082 (Mt Rumney [Mount Rumney Road]) and 94008 (Hobart Airport West): <http://www.bom.gov.au/climate/data/index.shtml>

⁵ Goff *et al.* (1982)



suitable for threatened species and/or vegetation communities (under the Tasmanian *Threatened Species Protection Act 1995* [TSPA], the Tasmanian *Nature Conservation Act 2002* [NCA], and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* [EPBCA]), and to occurrences of 'declared' weeds listed under the Tasmanian *Biosecurity Act 2019* [BA] and associated *Biosecurity Regulations 2022*, or Weeds of National Significance [WoNS] under the *Australian Weed Strategy 2017- 2027*. All location data was recorded with a handheld GPS, with an accuracy of ± 10 m.

The assessment was informed by the *Guidelines for Natural Values Surveys*⁶. Native vegetation was mapped in accordance with units defined in TASVEG 4.0⁷. Botanical nomenclature follows the current census of Tasmanian plants⁸. The Natural Values Atlas database was consulted for records of threatened species and vegetation types within a 5 km radius. The possibility of the survey area supporting threatened values known from within this radius has been considered in the interpretation of results and discussion. The Natural Values Atlas database was also consulted to identify any sites of listed geoconservation value within 1 km of the project area. The possibility of the proposed development intersecting these areas was investigated at the desktop level.

2.1. LIMITATIONS

Identification of certain flora can be limited by the limitations of the sampling technique, seasonality, annual variation, and the absence of fertile material for identification. However, all significant species known to occur in the vicinity of the impact areas are considered and it is unlikely that any species of significance have been overlooked (apart from those described in this report as seasonally absent). Fauna habitat, including the presence of hollows and nests, was assessed from ground level only. Vegetation mapping is not always reliable when small sections of the patch are assessed, as it can be skewed by local variations and visibility.

⁶ Natural and Cultural Heritage Division (2015)

⁷ Kitchener and Harris (2013)

⁸ de Salas and Baker (2024)



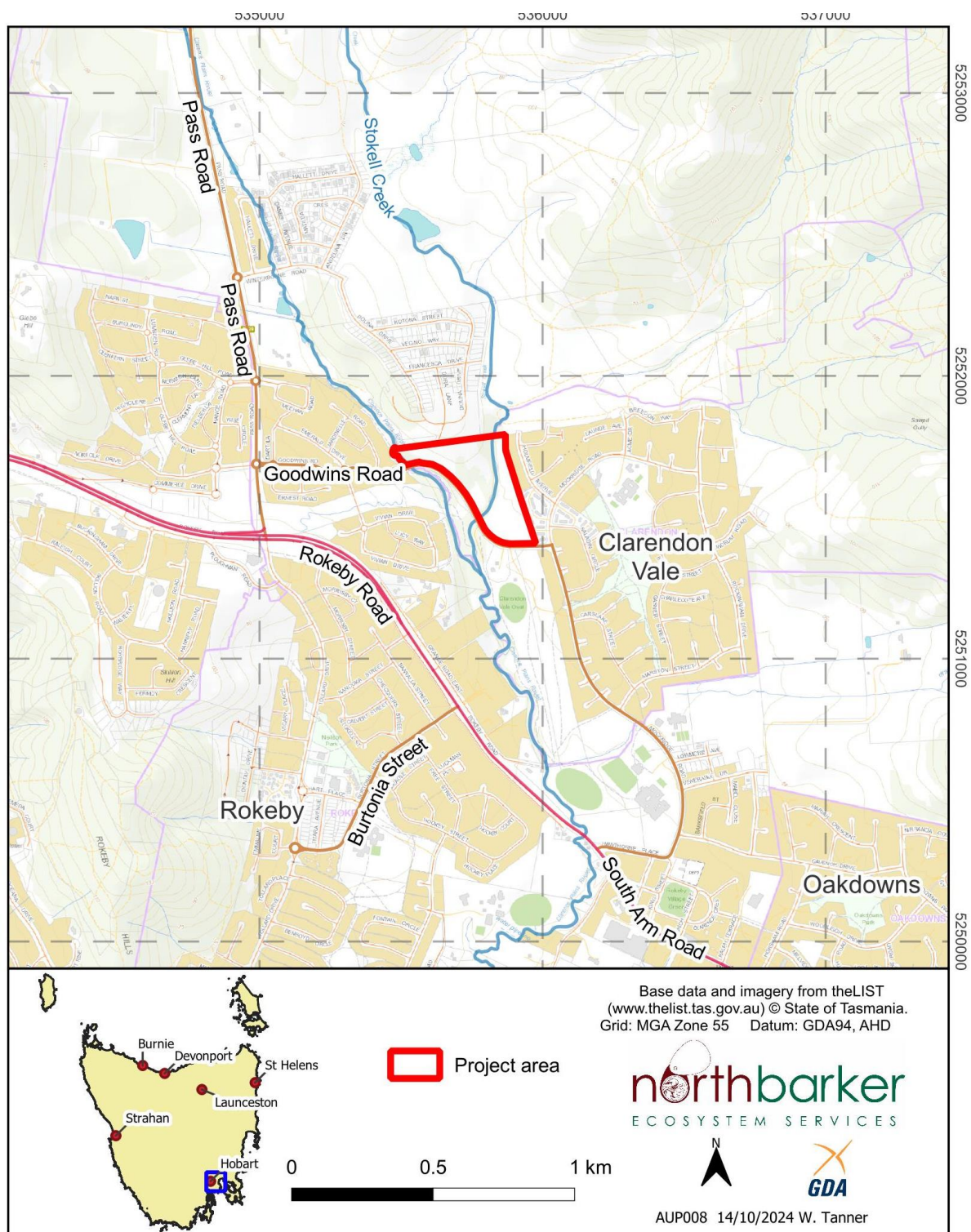


Figure 1. Location of the proposed development at 22 Goodwins Road, Clarendon Vale

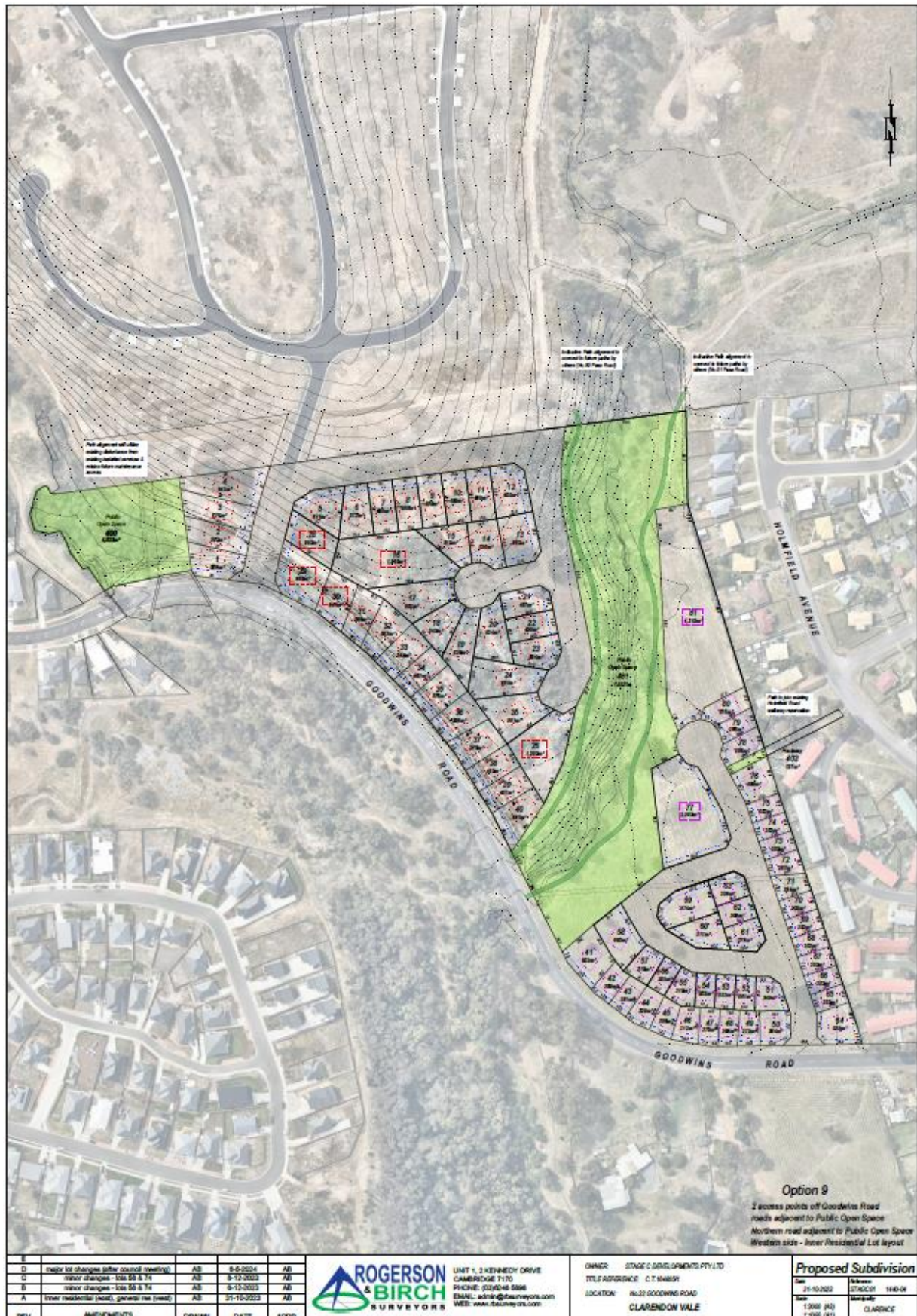


Figure 2. Proposed design of the residential subdivision development at 22 Goodwins Road, Clarendon Vale

3. SITE NATURAL VALUES

3.1. VEGETATION COMMUNITIES

The survey area is mixture of existing modified and degraded native vegetation remnants (Figure 3). Three native vegetation communities have been recorded as well as two modified land units (Table 1). The communities present are tabulated and summarised below, described in the following sections with a representative vascular flora species list from each community provided in Appendix A:

Table 1: TASVEG 4.0 communities recorded during the survey

Vegetation group	TASVEG code	TASVEG name	Area total (ha)
Agricultural, urban, and exotic vegetation	FUM	Extra-urban miscellaneous	0.70
	FAG	Agricultural land	3.21
Dry eucalypt forest and woodland	DOV	<i>Eucalyptus ovata</i> forest and woodland*	0.83
Native grassland	GCL	Lowland grassland complex	1.18
Non-eucalypt forest and woodland	NBA	<i>Bursaria</i> - <i>Acacia</i> woodland and scrub	2.4
Total			8.32

3.1.1. *Eucalyptus ovata* forest and woodland (DOV)

This community has been mapped as disjunct patches associated with Clarence Plains Rivulet in the north-west corner of the study area and Stokell Creek, which runs through the study area from north to south. Both patches are highly degraded and consist of a predominantly weedy understorey.

Clarence Plains Rivulet

In the patch associated with Clarence Plains Rivulet the canopy is dominated by *Eucalyptus ovata*, with occasional *Eucalyptus viminalis* (Plate 1). The tall shrub layer consists of *Acacia dealbata* and *A. mearnsii* and *A. melanoxylon*, *Bursaria spinosa* and *Dodonaea viscosa*. The understorey is dominated by introduced shrubs with large areas of blackberry infestation, boneseed and where the patch grades to grassland, serrated tussock. Where weed species have not entirely established there are patches supporting native groundcovers including *Rhagodia candolleana* and *Einadia nutans*.

Stokell Creek

The patch associated with Stokell Creek does not contain *Eucalyptus ovata* and the canopy is instead dominated by *Eucalyptus viminalis* – which can occasionally be locally dominant in the community. The understorey is dominated by a similar suite of disturbance induced species as that on Clarence Plains Rivulet, however boneseed is more dominant in the understorey and the community is generally in poorer condition.

Eucalyptus ovata forest and woodland is a listed threatened community under Schedule 3A of the NCA and has the potential to qualify as a threatened ecological community under the EPBCA if condition threshold criteria are met. In this case both patches of trees do not meet the native cover and habitat thresholds, to qualify.



Plate 1: Patch of DOV dominated by *Eucalyptus ovata* associated with Clarence Plains Rivulet in the north-west corner of the study area.



Plate 2: Patch of DOV dominated by *Eucalyptus viminalis* associated with Stokell Creek.

3.1.2. Lowland grassland complex (GCL)

Lowland grassland complex occurs north of Stokell creek and is intermixed with patched *Bursaria*-*Acacia* woodland and scrub. It is dominated by spear grasses (*Austrostipa spp.*) while *Rytidosperma sp.*, *Poa labillardierei* and *Tetrarrhena distichophylla* is also present. Introduced grasses are prevalent including the declared weed serrated tussock (*Nassella trichotoma*) which in some areas forms the dominant cover.



Plate 3: Lowland grassland complex (GCL) with a high proportion of serrated tussock cover in foreground.

3.1.3. *Bursaria*-*Acacia* woodland and scrub (NBA)

This vegetation community occurs in patches throughout the GCL community and is species poor. The dominant species throughout is *Acacia dealbata* with occasional *Acacia mearnsii*. Much of the understory has been overrun by the declared weed boneseed (*Chrysanthemoides monilifera*). As it grades to GCL *Austrostipa spp.* and serrated tussock occur as a ground cover where boneseed has not colonised.



Plate 4: *Bursaria* – *Acacia* woodland and scrub (NBA).

3.1.4. Modified land – Extra-urban miscellaneous (FUM) and Agricultural land (FAG)

The modified land units FAG and FUM are present within the survey area (Figure 3).

All land south-east of Stokell Creek has been mapped as degraded agricultural land (FAG) while an area of FUM has been mapped in the north-west of the study area which is associated with the partial construction of a new road linking to the approved subdivision to the north. Declared weeds, such as boneseed, blackberry, fennel, serrated tussock and african boxthorn are prevalent, in some areas forming infestations. Further discussion about the extent and abundance of declared weeds across the survey area is provided in section 2.4.

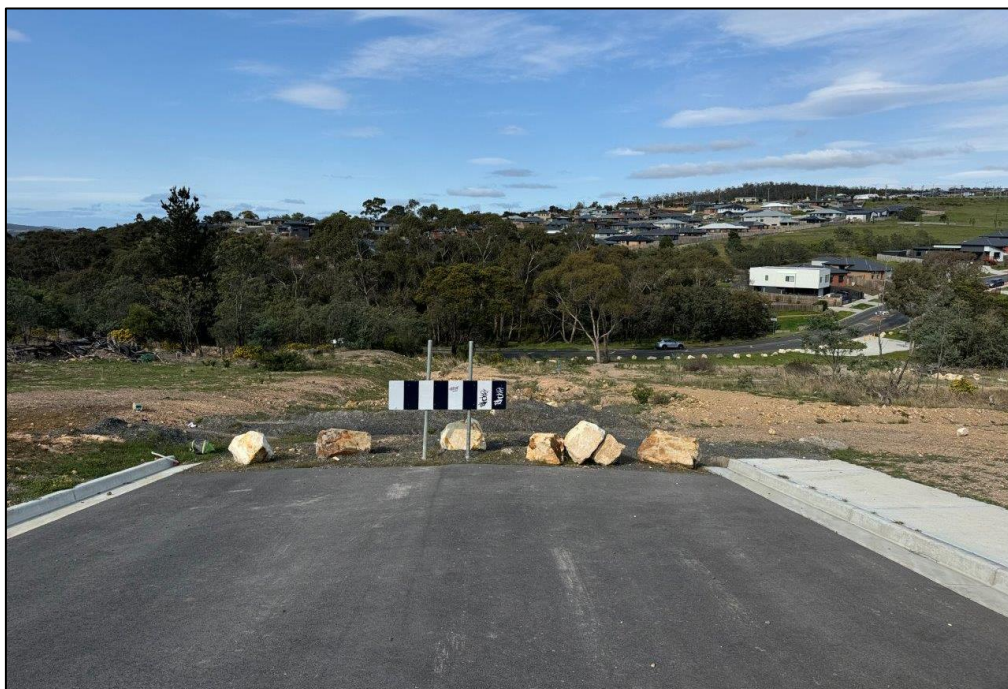


Plate 5: FUM in the north-west portion of the study area.

3.1.5. Stokell Creek and Clarence Plains Rivulet

Two named waterways cross through the project area (Figure 3). Both of these creeks are covered by the waterways and coastal protection area overlay (Overlay 16) of the Natural Assets Code (Code 7) of the Tasmanian Planning Scheme (more information on the Planning Scheme requirements see section 5).

3.1.5.1. Stokell Creek

Stokell Creek runs for approximately 310 m through the project area from the northeast corner to the southwest side (Figure 3). The creek line ranges from 2 to 5 m wide, though at the time of surveying, the water channel is c. 1 m wide and was very slow moving (Plate 6). The edges of the creek are incised forming steep banks, with a greater than >1 m drop off in some places. The creek itself contained some rubbish and debris (such as fallen logs) and was surrounded by native rushes, such as *Juncus pallidus*. The waterway itself was mostly free from native vegetation except for some *Lemna disperma* occurring in pooling sections. *Typha* species, an introduced rush, were observed throughout. The overall quality of this section of Stokell Creek is low as it is in a currently degraded state (Plate 7). The native communities DOV (dominated by *E. viminalis*) and NBA line the western bank of the creek while the eastern side of the creek has been historically cleared and is dominated by introduced grasses.

Stokell Creek is piped under Goodwins Road where it flows into Clarence Plains Rivulet.



Plate 6. Stokell Creek



Plate 7. Degraded condition of Stokell Creek near Goodwins Road

3.1.5.2. Clarence Plains Rivulet

Clarence Plains Rivulet forms the boundary of the north-western corner of the study area and flows south towards Rokeby, ultimately into Ralphs Bay. The rivulet is c. 1 – 2 m wide and is vegetated with mostly introduced grasses and shrubby weed species over a canopy of *E. ovata*. This portion of the site has been mapped as DOV.



Plate 8. Clarence Plains Rivulet



Figure 3. Natural values present within the project area

3.2. CONSERVATION SIGNIFICANT FLORA

Ninety-nine vascular plant taxa were recorded within the survey area (Appendix A), of which 50 are introduced species. Six of these are declared weeds. No threatened flora species were recorded.

One threatened species has been historically recorded on the site, *Asperula scoparia* subsp. *scoparia* as well as a number of additional threatened plant taxa known from within both 500 m and 5 km⁹ of the area (Tables 2 and 3). Given the small size of the available habitat, and/or the habitat preferences of these species, it is unlikely that most of these species occur on the site and were overlooked during the survey. However, several cryptic/seasonal species have some chance of occurring on the site and are discussed below in Table 4.

Table 2: Threatened flora attributed to within 500 m of the project area; SS = Tasmanian Threatened Species Protection Act 1995, NS = Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Asperula scoparia</i> subsp. <i>scoparia</i>	prickly woodruff	r		n	4	05-Dec-2005
<i>Carex longibrachiata</i>	drooping sedge	r		n	1	06-Nov-2009
<i>Haloragis heterophylla</i>	variable raspwort	r		n	1	04-Dec-2005
<i>Vittadinia muelleri</i>	narrowleaf new-holland-daisy	r		n	3	15-Feb-2012
<i>Vittadinia muelleri</i> (broad sense)	narrow leaf new holland daisy	p		n	1	04-Dec-2005

Table 3: Threatened flora attributed to within 5 km of the project area; SS = Tasmanian Threatened Species Protection Act 1995, NS = Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Acacia ulicifolia</i>	juniper wattle	r		n	1	17-Oct-1980
<i>Asperula scoparia</i> subsp. <i>scoparia</i>	prickly woodruff	r		n	23	04-Nov-2021
<i>Austrostipa bigeniculata</i>	doublejointed speargrass	r		n	2	04-Dec-2005
<i>Bolboschoenus caldwellii</i>	sea clubsedge	r		n	1	24-Jan-2013
<i>Caladenia caudata</i>	tailed spider-orchid	v	VU	e	78	21-Oct-2022
<i>Caladenia filamentosa</i>	daddy longlegs	r		n	3	16-Oct-1955
<i>Caladenia patersonii</i>	patersons spider-orchid	v		n	1	22-Oct-1996
<i>Carex longibrachiata</i>	drooping sedge	r		n	1	06-Nov-2009
<i>Cuscuta tasmanica</i>	golden dodder	r		n	1	09-Nov-1980
<i>Dianella amoena</i>	grassland flaxlily	r	EN	n	4	17-Oct-2005
<i>Discaria pubescens</i>	spiky anchorplant	e		n	1	30-Mar-1804
<i>Eryngium ovium</i>	blue devil	v		n	2	22-Dec-2010
<i>Eucalyptus risdonii</i>	risdon peppermint	r		e	288	12-Mar-2024
<i>Goodenia paradoxa</i>	spur velleia	v		n	13	05-Jan-2022
<i>Haloragis heterophylla</i>	variable raspwort	r		n	64	04-Nov-2021
<i>Isolepis stellata</i>	star clubsedge	r		n	1	30-Nov-1897
<i>Lachnagrostis robusta</i>	tall blowgrass	r		n	13	29-Feb-2016
<i>Lepidium hyssopifolium</i>	soft peppergrass	e	EN	n	4	29-Oct-2004
<i>Limonium australe</i> var. <i>australe</i>	yellow sea-lavender	r		n	1	14-Feb-1966
<i>Olearia hookeri</i>	crimsontip daisybush	r		e	2	23-Sep-2011
<i>Scleranthus diander</i>	tufted knawel	v		n	1	01-Jan-1995
<i>Scleranthus fasciculatus</i>	spreading knawel	v		n	13	04-Mar-2011
<i>Senecio squarrosus</i>	leafy fireweed	r		n	14	09-Mar-2020
<i>Stenopetalum lineare</i>	narrow threadpetal	e		n	1	17-Oct-1942
<i>Stuckenia pectinata</i>	fennel pondweed	r		n	1	19-Feb-1953
<i>Vittadinia cuneata</i> var. <i>cuneata</i>	fuzzy new-holland-daisy	r		n	2	01-Jan-1990
<i>Vittadinia gracilis</i>	woolly new-holland-daisy	r		n	24	22-Mar-2023
<i>Vittadinia muelleri</i>	narrowleaf new-holland-daisy	r		n	165	23-Sep-2023
<i>Vittadinia muelleri</i> (broad sense)	narrow leaf new holland daisy	p		n	29	11-Oct-2006
<i>Wilsonia rotundifolia</i>	roundleaf wilsonia	r		n	1	04-May-1998

⁹ Department of Natural Resources and Environment Tasmania (2024)

Table 4. Conservation significant flora within 5 km of the survey area¹⁰

Species	Status TSPA / EPBCA	Records within 500 m / 5km	Habitat	Likelihood of Impact	Commentary
<i>Acacia ulicifolia</i> juniper wattle	rare / -	0 / 1	Found in sandy coastal heaths and open heathy forest and woodland in the north and east of Tasmania. Populations are often sparsely distributed, and most sites are near-coastal, but it can occasionally extend inland (up to 30 km).	NONE	No suitable habitat within the survey area.
<i>Asperula scoparia</i> <i>subsp. scoparia</i> prickly woodruff	rare / -	0 / 4	Widespread in Tasmania and is mainly found in native grasslands and grassy forests, often on fertile substrates such as dolerite-derived soils. Forested sites are usually dominated by <i>Eucalyptus globulus</i> and <i>E. viminalis</i> (lower elevations) and <i>E. delegatensis</i> (higher elevations).	VERY LOW	Given the high degree of competition from weed species across the study area in suitable habitat, the chance of this species still occurring within the study area is very low.
<i>Austrostipa bigeniculata</i> <i>doublejointed</i> <i>speargrass</i>	rare / -	0 / 2	Found mainly in the south-east and Midlands in open woodlands and grasslands on fertile soils, where it is often associated with <i>Austrostipa nodosa</i> .	VERY LOW	Not recorded during the survey. Habitat present is not typically associated with this species, as it is highly modified, and the native vegetation present has a thick shrubby understorey. Thus, the likelihood of occurrence is very low.
<i>Bolboschoenus caldwellii</i> <i>sea clubsedge</i>	rare / -	0 / 1	Widespread in shallow, standing, sometimes brackish water, rooted in heavy black mud.	NONE	There is very limited suitable habitat for this species along Stokell Creek. Given the poor condition of this creek line, it is relatively open allowing for extensive searches to be conducted. Though inflorescence aid in the identification of this species, the genus can be identified using morphological characteristics alone. However, not this or any other <i>Bolboschoenus</i> species were observed during surveys and are unlikely to have been overlooked. Thus, there is no chance of impact to this species, given its absences from the survey area.

¹⁰ Department of Natural Resources and Environment Tasmania (2024); Ecological descriptions have been informed by information available on the Tasmanian Government's *Threatened Species Link* (<https://www.threatenedspecieslink.tas.gov.au/Pages/default.aspx>) and the Federal Government's *Species Profile and Threats Database* (<https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>).

Species	Status TSPA / EPBCA	Records within 500 m / 5km	Habitat	Likelihood of Impact	Commentary
<i>Caladenia caudata</i> tailed spider-orchid	vulnerable / vulnerable	0 / 78	Highly variable habitat, which includes the central north: <i>Eucalyptus obliqua</i> heathy forest on low undulating hills; the north-east: <i>E. globulus</i> grassy/heathy coastal forest, <i>E. amygdalina</i> heathy woodland and forest, <i>Allocasuarina</i> woodland; and the south-east: <i>E. amygdalina</i> forest and woodland on sandstone, coastal <i>E. viminalis</i> forest on deep sands. Substrates vary from dolerite to sandstone to granite, with soils ranging from deep windblown sands, sands derived from sandstone and well-developed clay loams developed from dolerite. A high degree of insolation is typical of many sites.	VERY LOW	Given the high degree of competition from weed species across the study area in suitable habitat, the chance of these orchid species still occurring within the study area is very low.
<i>Caladenia filamentosa</i> daddy longlegs	rare / -	0 / 1	Occurs in lowland heathy and sedgy eucalypt forest and woodland on sandy soils and finer grained sediments such as mudstones.	VERY LOW	
<i>Caladenia patersonii</i> patersons spider-orchid	vulnerable / -	0 / 1	Favours coastal and near-coastal areas in northern Tasmania, growing in low shrubby heathland and heathy forest/woodland in moist to well-drained sandy and clay loam.	VERY LOW	
<i>Carex longebrachiata</i> drooping sedge	rare / -	1 / 1	Grows along riverbanks, in rough grassland and pastures, in damp drainage depressions and on moist slopes amongst forest, often dominated by <i>Eucalyptus viminalis</i> , <i>E. ovata</i> or <i>E. rodwayi</i> .	VERY LOW	A single record of this species has been made ~500 m from the survey area. This species is large and distinctive and is unlikely to have been overlooked during survey.
<i>Cuscuta tasmanica</i> golden dodder	rare / -	0 / 1	Known from saline areas and brackish marshes often, but not exclusively, on plants of <i>Wilsonia backhousei</i> (narrowleaf wilsonia).	NONE	No suitable habitat within the survey area.
<i>Dianella amoena</i> grassland flaxlily	rare / endangered	0 / 4	Occurs mainly in the northern and southern Midlands, where it grows in native grasslands	NONE	There is no suitable habitat for this species present within the survey area. Furthermore. This species can be differentiated using morphological characteristics alone and is unlikely to have been overlooked if present.

Species	Status TSPA / EPBCA	Records within 500 m / 5km	Habitat	Likelihood of Impact	Commentary
			and grassy woodlands. Most frequent on basalt substrates in <i>Themeda triandra</i> grasslands.		Thus, there is no chance of occurrence or impact it.
<i>Discaria pubescens</i> spiky anchorplant	endangered / -	0 / 1	Found sporadically in the Midlands and more abundantly in drier parts of the Central Highlands. It grows on sandy or gravelly soil, in basalt talus slopes and clefts amongst fractured dolerite rocks and flood channels. Many sites are in rough pasture, and it also grows on roadsides. Recent collections indicate the species is occasionally associated with sandstone outcrops.	NONE	A single record of this species has been made ~500 m from the survey area. This species is large and distinctive and is unlikely to have been overlooked during survey.
<i>Eryngium ovinum</i> blue devil	vulnerable / -	0 / 2	Occurs in a range of lowland vegetation types most often on fertile heavy clay soils derived from dolerite. Vegetation types include open grasslands usually dominated by <i>Themeda triandra</i> (kangaroo grass), grassy forests and woodlands on slopes, ridges and broad flats, and also roadside verges (representing remnant populations).	VERY LOW	This species was not recorded during the survey. Given the substrate type, no suitable habitat is present within the study area and therefore the chances of this species occurring within the study area is very low.
<i>Eucalyptus risdonii</i> Risdon peppermint	rare / -	0 / 288	Restricted to the greater Hobart area (particularly the Meehan Range), with an outlying population at Mangalore and on South Arm. It occurs on mudstone, with an altitudinal range from near sea level to 150 m above sea level. It can occur as a dominant in low open forest with a sparse understorey on dry, insulated ridgelines and slopes (e.g. with a north-west aspect), and individuals can extend into other forest types typically dominated by <i>E. tenuiramis</i> or <i>E. amygdalina</i> (but occasionally by other species) on less exposed sites.	NONE	This species was not recorded during the survey and is very unlikely to have been overlooked.

Species	Status TSPA / EPBCA	Records within 500 m / 5km	Habitat	Likelihood of Impact	Commentary
<i>Goodenia paradoxa</i> spur velleia	vulnerable / -	0 / 13	Known from the Hobart and Launceston areas, and the Midlands and the Derwent Valley, where it occurs in grassy woodlands or grasslands on dry sites. It has been recorded up to 550 m above sea level at sites with an annual rainfall range of 450-750 mm.	VERY LOW	Given the high degree of competition from weed species across the study area in suitable habitat, the chance of this species still occurring within the study area is very low.
<i>Haloragis heterophylla</i> variable raspwort	rare / -	1 / 64	Occurs in poorly drained sites (sometimes only marginally so), which are often associated with grasslands and grassy woodlands with a high component of <i>Themeda triandra</i> . It also occurs in grassy/sedgy <i>Eucalyptus ovata</i> forest and woodland, shrubby creek lines, and broad sedgy/grassy flats, wet pasture, and margins of farm dams.	NONE	The habitat present within the survey area is not typical for this species, and given the degraded and weedy condition of Stokell Creek, it is marginal at best. Though inflorescence aid in the identification of this species, the genus can be differentiated year-round. Given that suitable habitat for this species was searched and this or no other <i>Haloragis</i> species were not observed, it is unlikely to be present (or have been overlooked).
<i>Isolepis stellata</i> star clubsedge	rare / -	0 / 1	Recorded from near-coastal areas in the State's north and east, and also in the Northern Midlands near Conara. Habitat includes the margins of sedgy wetlands, wet soaks and seasonally inundated heathy sedgeland; the altitude of recorded sites in Tasmania ranges from close to sea level to elevations of 240 m above sea level. One historic (1897) record of this species has been made 4.9 km (accuracy of 5 km) from the study area	VERY LOW	No suitable habitat is present within the study area and the likelihood of this species occurring within the study area is very low.
<i>Lachnagrostis robusta</i> tall blowgrass	rare / -	0 / 13	<i>Lachnagrostis robusta</i> occurs in saline situations such as the margins of coastal and inland saline lagoons.	NONE	There is no suitable habitat for this species present within the survey area. The species was also not observed during field investigations. Thus, there is no chance of occurrence or impact it.
<i>Lepidium hyssopifolium</i> soft peppergrass	endangered / endangered	0 / 4	The native habitat of <i>Lepidium hyssopifolium</i> is the growth suppression zone beneath large trees in grassy woodlands and grasslands (e.g. over-mature black wattles and isolated eucalypts in rough pasture). <i>Lepidium hyssopifolium</i> is now found primarily under	NONE	The small available suitable habitat within the survey area has high competition from weed species such as blackberry and boneseed. This species was not recorded during the survey and is unlikely to have been overlooked.

Species	Status TSPA / EPBCA	Records within 500 m / 5km	Habitat	Likelihood of Impact	Commentary
			large exotic trees on roadsides and home yards on farms. It occurs in the eastern part of Tasmania between sea-level to 500 metres above sea level in dry, warm and fertile areas on flat ground on weakly acid to alkaline soils derived from a range of rock types. It can also occur on frequently slashed grassy/weedy roadside verges where shade trees are absent.		
<i>Limonium australe</i> var. <i>australe</i> yellow sea-lavender	rare / -	0 / 1	Occurs in succulent or graminoid saltmarsh close to the high water mark, typically near small brackish streams.	NONE	No suitable habitat within the survey area.
<i>Olearia hookeri</i> crimsontip daisybush	rare / -	0 / 2	Found on dry hills around Hobart in the State's south and also along the central east coast. It grows within eucalypt woodlands with a mixed grassy-shrubby understorey, favouring north-north-westerly slopes on mudstone (except for an atypical occurrence on dolerite at Templestowe flats near Seymour). In the south of the State the habitat is dominated by <i>Eucalyptus amygdalina</i> , <i>Eucalyptus risdonii</i> or <i>Eucalyptus tenuiramis</i> ; in the central east near Mt Peter the habitat is dominated by <i>Eucalyptus sieberi</i> over a very sparse understorey.	NONE	Although the survey area has a substrate suitable for this species, aspect and slope are unsuitable for this species occurrence. No species were recorded during the survey, and it is unlikely this species was overlooked.
<i>Scleranthus diander</i> tufted knawel	vulnerable / -	0 / 1	Found from the Central Midlands area to Hobart with most of the records from the Ross and Tunbridge areas. This species inhabits grassy woodland and is associated with dolerite and basalt substrates.	NONE	Due to a lack of suitable substrate within the survey area it is unlikely this species will occur.
<i>Scleranthus fasciculatus</i> spreading knawel	vulnerable / -	0 / 13	<i>Scleranthus fasciculatus</i> is only recorded from a few locations in the Midlands and south-east. The vegetation at most of the sites is Poa grassland/grassy woodland. <i>Scleranthus fasciculatus</i> appears to need gaps between the	NONE	Small areas of what may have been suitable habitat within the study area are overrun with either shrubby or grassy weeds.

Species	Status TSPA / EPBCA	Records within 500 m / 5km	Habitat	Likelihood of Impact	Commentary
			tussock spaces for its survival and both fire and stock grazing maintain the openness it requires. Often found in areas protected from grazing such as fallen trees and branches.		
<i>Senecio squarrosus</i> leafy fireweed	rare / -	0 / 14	Occurs in a wide variety of habitats. One form occurs predominantly in lowland damp tussock grasslands. The more widespread and common form occurs mainly in dry forests (often grassy) but extends to wet forests and other vegetation types.	VERY LOW	Species requires disturbance and recruitment often occurs after fire. Based on the size and condition of habitat available for the species, it is unlikely to be present.
<i>Stenopetalum lineare</i> narrow thread petal	endangered / -	0 / 1	The prime habitat for <i>Stenopetalum lineare</i> appears to be grass-covered low dunes but it also extends to scrub-covered dunes (coast wattle) and there is one inland site on a rocky outcrop in dry sclerophyll forest (Gunn's Quoin in the Risdon area).	NONE	No suitable habitat within the study area.
<i>Stuckenia pectinate</i> fennel pondweed	endangered / -	0 / 1	Found in fresh to brackish/saline waters in rivers, estuaries and inland lakes. It forms dense stands or mats, particularly in slow-flowing or static water.	VERY LOW	Stokell Creek and Clarence Plains Rivulet provide a very small area of marginal habitat for the species. Not recorded during the survey and unlikely to have been overlooked.
<i>Vittadinia cuneata</i> var. <i>cuneata</i>	rare / -	0 / 2	Occurs in native grassland and grassy woodland on fertile soils, typically overlying basalt. It is confined to the Derwent Valley, Central Midlands and central East Coast on areas of lowest rainfall in Tasmania.	NONE	Unsuitable substrate type, very unlikely to occur within the study area.
<i>Vittadinia gracilis</i> woolly new-holland-daisy	rare / -	0 / 24	<i>Vittadinia gracilis</i> occurs in dry grassy habitats, often in relatively degraded grasslands and grassy woodlands. It has been found to occur in low-rainfall areas, on a range of substrates.	NONE	Mudstone substrate is unlikely to provide suitable habitat for this species

Species	Status TSPA / EPBCA	Records within 500 m / 5km	Habitat	Likelihood of Impact	Commentary
<i>Vittadinia muelleri</i> narrowleaf new- holland-daisy (including broad sense)	rare / -	0 / 165	<i>Vittadinia muelleri</i> occurs in dry native grasslands and grassy woodlands particularly in open areas with lighter grass cover and patches of bare ground such as rock plates. It freely colonises disturbed sites such as roadside cuttings. It is widely dispersed through the Midlands and Southeast.	NONE	Although there is some potential habitat for this species, it was not recorded during survey and is unlikely to have been overlooked.
<i>Wilsonia rotundifolia</i> roundleaf wilsonia	rare / -	0 / 1	Found in coastal and inland saltmarshes in the eastern part of the State.	NONE	No suitable habitat for this species is present within the study area.

3.3. CONSERVATION SIGNIFICANCE FAUNA

3.3.1. General survey observations and habitat assessment

No direct or indirect observations or signs, such as scats, diggings, or prints, of threatened fauna were observed within the survey area.

Our fauna habitat assessment established that the proposed clearance footprint does not contain any observable habitat elements that could be considered critical to the persistence of threatened fauna species at a local level or higher.

Foraging habitat, though limited, is available across parts of the study area for a number of wide-ranging threatened fauna.

Those threatened fauna species that have some potential habitat for foraging, nesting, or breeding within the survey area are addressed below. Table 5 addresses all other threatened fauna species which have been recorded on the Natural Values Atlas within 5 km radius that have only a very low chance of occurring or do not have any suitable habitat within the survey area.

3.3.2. Blue-winged parrot (*Neophema chrysostoma*) (-/VU)

Blue-winged parrots inhabit a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones. The species can also be seen in altered environments such as airfields, golf-courses, and paddocks¹¹. This species has previously been recorded once within 5 km¹². Limited habitat for the species was observed during field investigations.

3.3.2.1. Foraging habitat only

Pairs or small parties of blue-winged parrots forage mainly near or on the ground for seeds of a wide range of native and introduced grasses, herbs, and shrubs¹¹. The small area of degraded GCL represents potential foraging habitat for the species.

3.3.3. Eastern barred bandicoot (*Perameles gunnii gunnii*) (-/VU)

The eastern barred bandicoot (*Perameles gunnii gunnii*) is listed as vulnerable under the EPBCA. This subspecies of bandicoot is found only in Tasmania. This species historically inhabited open woodlands and forests with grassy understories and grasslands across central and eastern Tasmania¹³, however potential habitat now includes mosaics of agricultural and bushland remnants¹³.

Given that large parts of the survey area are disturbed, there is limited suitable foraging and nesting habitat. The habitat that is available is of low quality and as it surrounded by urbanisation, is unlikely to provide elements that are critical to its persistence within the broader landscape.

Furthermore, no incidental observations of this species were made during surveys and no characteristic diggings of the bandicoot genera were observed. The species has previously been recorded within the local (within 500 m) and broader landscape (within 5 km)¹⁴

3.3.4. Swift parrot (*Lathamus discolor*) (e/CR)

Swift parrots migrate to Tasmania in late winter/early spring from mainland Australia to breed. The nectar of *Eucalyptus ovata* and *E. globulus* are the preferred food source and they nest in hollows within mature eucalypts of any species close to this food source. These eucalypts have a patchy distribution

¹¹ Department of Climate Change, Energy, the Environment and Water (2023)

¹² As indicated by records for the species available on the Natural Values Atlas: Department of Natural Resources and Environment (2024)

¹³ Department of the Environment, Water, Heritage and the Arts (2008)

¹⁴ According to records available on the Natural Values Atlas; Department of Natural Resources and environment (2024)



across the state with flowering patterns often erratic and unpredictable, leading to only a small proportion of habitat being available in any one year¹⁵.

3.3.4.1. Foraging habitat only

Foraging habitat is limited across the survey area, being restricted to the area DOV in the north-western corner of the survey area as well as two habitat trees (*E. globulus*) on Stokell Creek (Figure 3).

No suitable nesting habitat for the species was identified during the survey.

3.3.5. Tasmanian devil (*Sarcophilus harrisii*) (e/CR) and eastern quoll (*Dasyurus viverrinus*) (-/EN)

The Tasmanian devil occupies a wide range of habitats across Tasmania and exploits landscapes with a mosaic of pasture and forest with elevated prey densities and is attracted to roadkill hotspots with concentrated scavenging resource. Populations have declined substantially since the first observations of the infectious cancer Devil Facial Tumour Disease (DFTD). DFTD has now spread across much of Tasmania. The reduced population is also likely to be more sensitive to additional threats such as death by roadkill, competition with cats and foxes, and loss or disturbance of areas surrounding traditional dens where young are raised. The protection of breeding opportunities is particularly important for the species due to the mortalities from demographic pressures.

Eastern quolls have similar denning requirements to that of the Tasmanian devil. Preferences for foraging include pasture, farmland and mosaics including native grasslands which are represented within the survey area as GCL.

3.3.5.1. Foraging habitat only

It is likely that both devils and quolls occasionally frequent the study area and local landscape for foraging. No evidence in the form of dens or scats/latrines was found during field surveys. As devils are wide-ranging mammals, it is possible that they frequent the area to forage, including for roadkill associated with Goodwins Road.

3.3.6. Additional threatened fauna habitat values

According to the Natural Values Atlas¹⁶, the eastern barred bandicoot, swift parrot and Tasmanian devil have all previously been recorded within 500 m – albeit in low numbers. In the broader landscape, an additional 37 threatened fauna species have previously been recorded (including the blue-winged parrot)¹⁷ (noting that many of these records are marine species). Furthermore, based on the range boundaries supplied by the Natural Values Atlas, one additional threatened fauna species has potential habitat available from them within 5 km¹⁸.

The survey area does not provide critical habitat for any of these species:

- The degraded GCL, NBA and DOV provides very low foraging habitat for these species; with most of the species likely being transient visitors only.
- No nesting or denning habitat for any of these species was observed.
- The degraded, altered and weedy state Clarence Plains Rivulet and Stokell Creek provides no breeding habitat for aquatic or semi aquatic species – with it only providing a potential dispersal route for the green and gold frog (*Litoria raniformis*).

¹⁵ Forest Practices Authority (2014); Threatened Species Scientific Committee (2016); Department of Climate Change, Energy, the Environment and Water (2024)

¹⁶ Department of Natural Resources and Environment Tasmania (2024)

¹⁷ According to records available on Tasmania's Natural Values Atlas: Department of Natural Resources and Environment Tasmanian (2024)

¹⁸ A total of 29 threatened fauna species have previously been recorded within 5 km and/or are likely to occur: Department of Natural Resources and Environment Tasmanian (2024) – Natural Values Atlas Report.



- The FUM area provide negligible values to threatened fauna species.

Further discussion on the likelihood of occurrence, significance of habitat values present and the potential of impact to from the proposed development, based on habitat preferences, the conditions of the survey area have been made in Table 5.

Table 5. Conservation significant fauna within 5 km of the survey area¹⁹ - NOTE: marine species and other with no conceivable chance of occurring have not been included.

Species	Status TSPA / EPBCA	Records within 500 m / 5 km ²⁰	Significance of Habitat	Observations and Preferred Habitat
MAMMALS				
<i>Dasyurus viverrinus</i> eastern quoll	- / endangered	0 / 7	Denning: NONE Foraging: VERY LOW	This species was previously widespread in mainland south-eastern Australia but is now restricted to Tasmania. Records from the Tasmanian Natural Values Atlas indicate that the eastern quoll occurs in most parts of Tasmania but is recorded infrequently in the wetter western third of the state. The species' distribution is positively associated with areas of low rainfall and cold winter minimum temperatures. Within this distribution, it is found in a range of vegetation types including open grassland (including farmland), tussock grassland, grassy woodland, dry eucalypt forest, coastal scrub and alpine heathland, but is typically absent from large tracts of wet eucalypt forest and rainforest. No signs characteristic of this species, such as scats, prints or incidental sightings were made during field surveys. No suitable denning habitat was observed. There is a very low chance that the area could be utilised by a transient foraging visitor or a dispersing individual. However, the study area is unlikely to be utilised as critical habitat. As such, the proposed development will have no long-term impact to this species in the broader landscape.
<i>Perameles gunnii gunnii</i> eastern barred bandicoot	- / vulnerable	4 / 85	Nesting: LOW Foraging: MODERATE	Inhabits grassy woodlands, native grasslands, and mosaics of pasture and shrubby ground cover favouring open grassy areas for foraging with thick vegetation cover for shelter and nesting. It has a widely dispersed range with concentrations in SE, NE and NW Tasmania and some areas of the State from where it is absent or in very low densities. It extends into the urban fringe where it can survive in large gardens and bushland reserves. It favours a mosaic of open grassy areas for foraging and thick vegetation cover for shelter and nesting.

¹⁹ Department of Natural Resources and Environment Tasmania (2024) –Ecological descriptions have been informed by information available on the Tasmanian Government's *Threatened Species Link* (<https://www.threatenedspecieslink.tas.gov.au/Pages/default.aspx>), the Federal Government's *Species Profile and Threats Database* (<https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>) and the Forest Practices Authority *Fauna Technical Notes* (<https://fpa.tas.gov.au/planning/biodiversity/fauna-technical-notes>).

²⁰ Or predicted to occur based on range boundaries developed by the Tasmanian Natural Values Atlas

Species	Status TSPA / EPBCA	Records within 500 m / 5 km ²⁰	Significance of Habitat	Observations and Preferred Habitat
				No incidental observations of this species were made during NBES surveys, and no characteristic shaped diggings were observed. Though there were no signs of this species observed, there is some chance that it may be present. It is possible that this species uses the site on occasions. Given the ability of this species to survive in a peri-urban matrix (indeed thrive in some areas), it is quite possible that this species occurs on the site.
<i>Sarcophilus harrisii</i> Tasmanian devil	endangered / endangered	0 / 7	Denning: NONE Foraging: VERY LOW	This species occupies a wide range of habitats across Tasmania and exploits landscapes with a mosaic of pasture and forest with elevated prey densities and is attracted to roadkill hotspots with concentrated scavenging resource. Populations have declined substantially since the first observations of the infectious cancer Devil Facial Tumour Disease (DFTD). DFTD has now spread across much of Tasmania. The reduced population is also likely to be more sensitive to additional threats such as death by roadkill, competition with cats, and loss or disturbance of areas surrounding traditional dens where young are raised. The protection of breeding opportunities is particularly important for the species due to the mortalities from demographic pressures. No signs characteristic of this species, such as scats, prints or incidental sightings were made during field surveys. No suitable denning habitat was observed. There is a very low chance that the area could be utilised by a transient foraging visitor or a dispersing individual. However, given that survey area is now nearly entirely surrounded by urbanisation, it is unlikely to be utilised as any critical habitat. As such, the proposed development will have no long-term impact to this species in the broader landscape.
BIRDS				
<i>Accipiter novaehollandiae</i> grey goshawk	endangered / -	0 / 10	Nesting: NONE Foraging: VERY LOW	Inhabits large tracts of wet forest and swamp forest, particularly patches with closed canopies above an open understorey, but with dense stands of prey habitat nearby. Mature trees provide the best nesting sites. Most nests have been recorded from blackwoods, silver wattles and occasional myrtle beech. Due to a lack of suitable nesting habitat, it is not expected any development to the site would cause disturbance to this species..

Species	Status TSPA / EPBCA	Records within 500 m / 5 km ²⁰	Significance of Habitat	Observations and Preferred Habitat
<i>Aquila audax fleayi</i> Tasmanian wedge-tailed eagle	endangered / endangered	0 / 36	Nesting: NONE Foraging: VERY LOW	This species nests in a range of old growth native forests and is dependent on forest for nesting. Territories can contain up to five alternate nests usually close to each other but may be up to 1 km apart where habitat is locally restricted. This eagle preys and scavenges on a wide variety of fauna including fish, reptiles, birds, and mammals. Suitable nesting habitat is present within 5000 m of the site in surrounding gullies. Whilst there is some chance the species may fly over the area on occasion there are no expected potential impacts to any eagle nests associated with the proposal. No known nests occur within 500 m or 1 km line-of-sight of the study area.
<i>Haliaeetus leucogaster</i> white-bellied sea-eagle	vulnerable / -	0 / 32	Nesting: NONE Foraging: VERY LOW	In Tasmania, this species is restricted to nesting within 5 km of coastlines, major estuaries, and inland lakes. They typically build nests in large eucalypt trees, much like the Tasmanian wedge-tailed eagle (<i>Aquila audax fleayi</i>), although their specific nesting requirements aren't as strict, such that they often nest in relatively small and exposed coastal trees (including [in a minority of cases] non-native species [e.g. <i>Pinus radiata</i>]) and are also known to nest occasionally on sea cliffs or even piles of rocks at ground level on islands lacking ground predators (e.g. Ninth Island). There are numerous records within 5000 m of the site. No nests have been recorded within 5000 m. It is highly unlikely that any development to the site would cause disturbance therefore there are no expected potential impacts associated with the proposal. No known nests occur within 500 m or 1 km line-of-sight of the study area.
<i>Lathamus discolor</i> swift parrot	endangered / critically endangered	0 / 36	Nesting: NONE Foraging: NEGLECTABLE	This species spends its winter in south-eastern mainland Australia before migrating to Tasmania in late winter/early spring to breed. During the breeding season, nectar from Tasmanian blue gum (<i>Eucalyptus globulus</i>) and black gum (<i>Eucalyptus ovata</i>) flowers is the primary food source for the species. These eucalypts are patchily distributed, and their flowering patterns are erratic and unpredictable, often leading to only a small proportion of swift parrot habitat being available for breeding in any one year. Swift parrots breed in tree hollows in mature eucalypts within foraging range of a flower source.

Species	Status TSPA / EPBCA	Records within 500 m / 5 km ²⁰	Significance of Habitat	Observations and Preferred Habitat
				c. 0.3 ha of DOV woodland (that contain <i>E. ovata</i>) occurs in the north western portion of the study area along Clarence Plains Rivulet and two isolated <i>Eucalyptus globulus</i> in Stokell creek. These trees represent reasonable foraging habitat. No nesting habitat trees were observed during the survey. Any potential impact to this impact is likely to have negligible impacts on this species. Further discussion on the potential impacts to this species are made in section 4.
<i>Neophema chrysostoma</i> blue-winged parrot	- / vulnerable	0 / 7	Nesting: NONE Foraging: NEGIGABLE	Blue-winged parrots inhabit a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones. The species can also be seen in altered environments such as airfields, golf-courses and paddocks. Pairs or small parties of blue-winged parrots forage mainly near or on the ground for seeds of a wide range of native and introduced grasses, herbs and shrubs. Some of the species migrates to Tasmania in spring to breed. During the breeding season (spring and summer), birds occupy eucalypt forests and woodlands. Nests are made in hollows, preferably with a vertical opening, in live or dead trees or stumps. Before migrating north from Tasmania in autumn, many birds congregate on saltmarshes and agricultural land. GCL and FAG within the survey area provides a negligible foraging resource, as most of the area is disturbed and weedy. Any potential impact to this impact is likely to have negligible impacts on this species. Further discussion on the potential impacts to this species are made in section 4.
<i>Pardalotus quadragintus</i> forty-spotted pardalote	endangered / endangered	0 / 1	Habitat: LOW	Endemic to Tasmania and occurs in only a few small areas within the State. It is relatively restricted to dry grassy forest and woodland along the east coast containing mature white gum (<i>Eucalyptus viminalis</i>). The DOV woodland mapped along Stokell Creek is relatively mature and <i>E. viminalis</i> occur on site. <i>E. viminalis</i> with a DBH > 40 cm and that show signs of senescence offer some potential to bear hollows for forty-spotted pardalotes. Notably, the larger trees in the survey area are relatively healthy limiting their hollow-bearing potential. No hollows were observed during survey of this patch of woodland. It is therefore not likely that the trees on the site are

Species	Status TSPA / EPBCA	Records within 500 m / 5 km ²⁰	Significance of Habitat	Observations and Preferred Habitat
				suitable breeding habitat for this species. The site is not in the core range for this species..
<i>Tyto novaehollandiae castanops</i> Tasmanian masked owl	endangered / vulnerable	0 / 16	Nesting: NONE Roosting: NONE Foraging: LOW	Found in a range of habitats which contain some mature hollow-bearing forest, usually below 600 m altitude. This includes native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pasture. Significant habitat is limited to large eucalypts within dry eucalypt forest in the core range. No potential nesting or roosting habitat was observed within the survey area for this species. There is also a very low chance that the area would be utilised by a transient foraging visitor, or a dispersing individual given that the area is small and surrounded by urbanisation. Given that equivalent habitat is abundant in the broader landscape, any potential loss of foraging habitat will have a negligible effect on the species.
REPTILES and FROGS				
<i>Litoria raniformis</i> green and gold frog	vulnerable / vulnerable	0 / 2	Habitat: NEGLIGABLE	In Tasmania, this species is found in lowland areas, primarily coastal. They require permanent or temporary water bodies for survival and tend to inhabit ones containing emergent plants such as <i>Cycnogeton procera</i> or species of <i>Juncus</i> or sedge. They are rarely seen in open water and spend most of their time in vegetation at the water's edges. They depend upon permanent fresh water for breeding, which occurs in spring and summer. This species is known to be highly mobile, as such, there is some chance that either Clarence Plains Rivulet or Stokell Creek could be used by dispersing individuals. However, given its degraded condition, that weeds are abundant in and around the waterway and the lack of habitat elements required for breeding (such as emergent and submerged native vegetation), it is not suitable for breeding.
<i>Pseudemoia pagenstecheri</i> tussock skink	vulnerable / -	Potential habitat available within 500 & 5 km based on range boundaries.	Habitat: NONE	A ground-dwelling lizard, occurring in grassland and grassy woodland habitats at a range of elevations. Records in Tasmania a few disconnected patches of habitat from Midlands, inland Cradle Coast, and eastern Bass Strait islands. This species has not previously been recorded within 5 km, though based on

Species	Status TSPA / EPBCA	Records within 500 m / 5 km ²⁰	Significance of Habitat	Observations and Preferred Habitat
				habitat range boundaries developed by the Natural Values Atlas, there is potential habitat available for this species. Given the lack of native grassy areas within the survey area, the presence of weeds and the history of urbanisation around the site, there is no suitable habitat present for this species.
FISH				
<i>Prototroctes maraena</i> Australian grayling	vulnerable / vulnerable	0 / 4	Habitat: NEGLIGABLE	In Tasmania, the diadromous Australian grayling has been found in northern, eastern, and western rivers. Little is known of the population size. The major threat to the species is the construction of barriers that prevent adult fish moving upstream and juveniles downstream. Clarence Plains Rivulet and Stokell Creek provide the only area of potential habitat for this species. However, as these waterways are both degraded, piped at several sections both up and downstream and potential seasonally flowing, it is not suitable for the species. As such, the species will not be impacted by the proposed development.

3.4. INTRODUCED PLANTS AND PATHOGENS

Introduced flora species were widespread across survey area, being common in native vegetation and modified land. Of the 99 flora species observed within the survey area, 50 (or 50.5 %) of the species were introduced²¹. Most of these species were non-declared weeds, such as environmental weeds and garden escapes. Six declared weed species were observed (Figure 4). No evidence or signs characteristic of plant pathogens or soil borne disease were observed.

3.4.1. Declared weeds

Six declared weeds were observed across the survey area. Blackberry, boneseed and fennel are the most common declared weed present, with blackberry and boneseed being found in both native and modified vegetation. These declared weeds are all classified as Class B weeds under the relevant statutory weed management plans. Signs of direct weed management, such as dieback from spraying, was observed on some patches of blackberry, though regrowth was observed in these patches. The extent and distribution of these weeds is described in Table 6 and displayed in Figure 4.

Table 6. Extent of declared weed species found within the survey area

Species	WoNS Status	BA Class	Extent
African boxthorn <i>Lycium ferocissimum</i>	YES	B	One individual in southern part of FAG.
blackberry <i>Rubus fruticosus</i>	YES	B	Widespread along waterways.
boneseed <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>	YES	B	Widespread across the survey area, occurring as isolated plants to large patches. Mature plants and seedlings observed. Most prevalent in the understory of DOV along Stokell Creek and NBA.
fennel <i>Foeniculum vulgare</i>	-	B	Occurring as isolated plants to large patches within FAG. Mature plants and seedlings observed.
hoary cress <i>Lepidium draba</i>	YES	B	Occurring as isolated plants to large patches within FAG. Mature plants and seedlings observed.
serrated tussock <i>Nassella trichotoma</i>	YES	B	Widespread infestations in GCL, FAG and FUM -ubiquitous across the survey area.

The survey occurred in mid-September, and it is worth noting that records of Chilean needle grass are known from the southern portion of the site adjacent to Goodwins Road which may not have been identifiable at the time of survey. The species as well as Texan needle grass is also known from the broader area and is a high priority weed for eradication in Tasmania. Both species are WoNS and classified as Zone A in Clarence council.

3.4.1. Pathogens

No signs characteristic of or evidence for soil borne diseases or pathogens, such as *Phytophthora cinnamomi* (PC) were observed. As PC is generally restricted to areas that receive above 600 mm of rainfall per annum²², there is some chance that it could persist within the survey area if established, given that the mean annual rainfall of the Clarence Plains area is ~ 600 mm²³.

²¹ See Appendix A for the full vascular flora species list.

²² Podger & Brown (1989); Podger et al. (1990)

²³ According to statistics available at the Bureau of Meteorology



Plate 9: Blackberry



Plate 10: Boneseed



Plate 11: Fennel



Plate 12: Hoary cress



Plate 13: African boxthorn



Plate 14: Serrated tussock

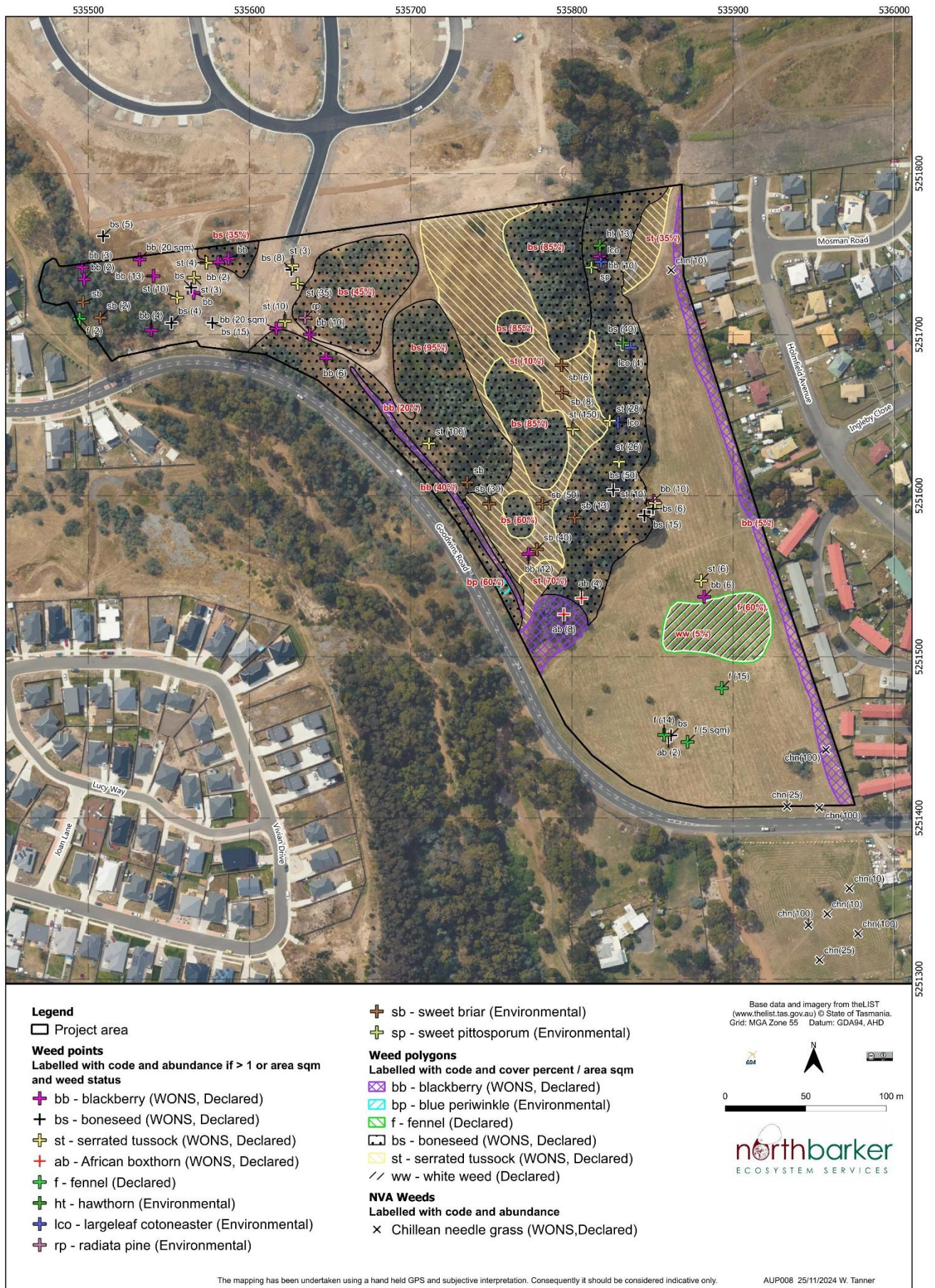


Figure 4. Distribution and extent of declared weeds across the survey area

3.5. GEOCONSERVATION SITES

According to the Natural Values Atlas²⁴ no geoconservation sites have been identified within 1 km of the study area. The closest known site shown on the LIST is the Seven Mile Beach Spit, which is 5.3 km to the east.

4. IMPACT ASSESSMENT, SCOPE FOR MITIGATION, AND RECOMMENDATIONS

Overall, our field investigation has established that impacts to natural values associated with the proposed residential subdivision at 22 Goodwins Road, Clarendon Vale are low.

Specific recommendations are provided below for components of the assessment.

4.1. VEGETATION COMMUNITIES

The design covers the vast majority of the site, however, avoids impacts to DOV along Clarence Plains Rivulet. Impacts as a result of bushfire hazard management will result in the clearance of 0.49 ha of the understory of DOV along Stokell Creek.

It is recommended that all *Eucalyptus viminalis* and *E. globulus* are retained along Stokell Creek where possible.

4.2. CONSERVATION SIGNIFICANT FLORA

There will be no direct impact from the proposed development to threatened flora as there are no threatened flora present within the project impact area.

4.3. CONSERVATION SIGNIFICANT FAUNA

The proposal will not directly impact any threatened fauna species. The proposal may impact foraging habitat for threatened fauna that may occur in modified land and the surrounding native vegetation: Tasmanian wedge-tailed eagle, masked owl, eastern barred bandicoot, quolls, Tasmanian devil, swift parrot and blue-winged parrot. These are wide-ranging fauna, and the development of the proposal is expected to have a low impact on these species. The study area is unlikely to support a population or be important to the survival of a local population for any of these species.

Accordingly, no mitigation measures are recommended for these species.

4.4. INTRODUCED PLANTS AND PATHOGENS

The proposed development poses a risk of spreading weeds locally (or further) and worsening infestations through creating new disturbance niches. Increased weed infestations may risk compromising nearby native vegetation remnants, the occurrences of threatened flora in the local area, and the integrity of adjacent privately owned land.

To manage this risk, a project-specific *Weed and Hygiene Management Plan* (WHMP) must be developed to detail weed and hygiene prescriptions for contractors through construction and for land managers into operations. The plan must outline primary and secondary weed control and requirements, including wash-down stations and auditing procedures. The plan should take into account the following guidelines:

- *Keeping it clean – A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens*²⁵;

²⁴ Natural Resources and Environment Tasmania (2024)

²⁵ Allen & Gartenstein (2010)

- *Weed and Disease Planning and Hygiene Guidelines – Preventing the spread of weeds and diseases in Tasmania*²⁶;
- *Tasmanian Washdown Guidelines for Weed and Disease Control. Machinery, Vehicles & Equipment*²⁷

Having a WHMP will ensure legislative compliance and ensure that the proponent's responsibility regarding the containment of the declared weed species.

4.5. GEOCONSERVATION SITES

There will be no direct impact from the proposed development to sites of geoconservation significance as no values are present within or around the project area.

5. LEGISLATIVE IMPLICATIONS

5.1. COMMONWEALTH *ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999*

The EPBCA is structured for self-assessment, with guidelines and criteria available to assist any person who proposes to take an action to decide whether they should submit a referral to the national Department of Climate Change, Energy, the Environment and Water for a decision by the Minister on whether assessment and approval is required under this Act.

Under this Act, an action will require approval from the minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance (MNES), which includes all species and communities listed as threatened and/or migratory under this Act, as well as world heritage values.

It is not considered likely that any MNES protected under this Act will be impacted by the proposal.

5.2. TASMANIAN *THREATENED SPECIES PROTECTION ACT 1995 (AND NATURE CONSERVATION [WILDLIFE] REGULATIONS 2021)*

Under the TSPA, a person cannot knowingly without a permit 'take' a listed species. The definition of 'take' encompassing actions that kill, injure, catch, damage, destroy and/or collect threatened species or vegetation elements that support threatened species, *e.g.*, nests and dens. Likewise, species listed under the *Nature Conservation (Wildlife) Regulations 2021* (essentially all native wildlife, with limited exceptions) are protected from direct impacts and impacts to their products (*e.g.* nests and dens).

Permits are administered through the Conservation Assessments branch of the Department of Natural Resources and Environment Tasmania.

A permit to take will not be required as no threatened species listed under this Act will be impacted by the proposed development.

5.3. TASMANIAN *BIOSECURITY ACT 2019*

According to the provisions of the *Tasmanian Biosecurity Regulations 2022*, administered under the *Tasmanian Biosecurity Act 2019*, Class A localities are areas in which eradication is deemed feasible (generally due to the existence of a targeted management plan) and is the responsibility of the landowner or land manager, or in the case of disturbance the development proponent. Although not recorded during the survey, there is a high probability of Chilean needle grass being present, at least within the southern portion of the site (based on NVA records). Chilean needle grass is classified as zone A according to the statutory weed management plan.

²⁶ Department of Primary Industries, Parks, Water and Environment (2015)

²⁷ Department of Primary Industries, Parks, Water and Environment (2004)

Class B municipalities are those which host moderate or large infestations of the declared weed that are not deemed eradicable because the feasibility of effective management is low at this time. Therefore, the objective is containment of infestations. This includes preventing spread of the declared weed from the municipality or into properties currently free of the weed or which have developed or are implementing a locally integrated weed management plan for that species. As well there is a requirement to prevent spread of the weeds to properties containing sites for significant flora, fauna, and vegetation communities.

According to the relevant statutory weed management plan, all declared weeds present within the survey area are listed as a Class B weed in the Clarence municipality, thus containment objectives apply.

As such, a project specific WHMP is required to manage the associated high risk of high risk of spreading weeds locally (or further), worsening infestations or introducing pathogens to the area construction activities pose.

5.4. TASMANIAN NATURE CONSERVATION ACT 2002

This Act provides provisions with respect to the conservation and protection of the fauna, flora and geological diversity of the State. All vegetation types classified as threatened within Tasmania are listed under Schedule 3A of this Act. One threatened vegetation community listed under this Act is present in the survey area:

- *Eucalyptus ovata* forest and woodland (DOV)

Impacts as a result of bushfire hazard management will result in the clearance of 0.49 ha of the understory of DOV along Stokell Creek.

Protection of this threatened vegetation community is administered through Tasmanian *Land Use Planning and Approvals Act 1993* (LUPAA)²⁸ or under the Tasmanian *Forest Practices Act 1985* (and associated *Forest Practices Regulations 2017*)²⁹ in areas where Forest Practices Plans apply.

5.5. TASMANIAN LAND USE PLANNING AND APPROVALS ACT 1993

LUPAA states that 'in determining an application for a permit, a planning authority must (amongst other things) seek out the objectives set out in Schedule 1'³⁰.

Schedule 1 includes 'The objectives of the Resource Management and Planning System of Tasmania' which are (amongst other things):

'To promote sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity'.

Sustainable development includes 'avoiding, remedying or mitigating any adverse effects of activities on the environment'³¹. The objectives of LUPAA when dealing with planning proposal are administered through the application of the Local Provisions Schedules of the Tasmanian *Planning Scheme*.

5.6. TASMANIAN PLANNING SCHEME

In consideration of the requirements of LUPAA, each municipal area incorporates development standards codes under the appropriate planning scheme. The survey area is located entirely within the Clarence Council area, which is subject to the Clarence Local Provision Schedule of the Tasmanian

²⁸ Refer to Section 5.6

²⁹ Refer to Section 5.5

³⁰ Section 51(2)(b) – Part 4 Enforcement of Planning Control – Division 2 Development Control (*LUPAA 1993*) - Tasmanian Government 1993

³¹ page 56 – *LUPAA 1993* - Tasmanian Government 1993

Planning Scheme (the Planning Scheme). The Planning Scheme outlines land uses and development activities that are exempt, prohibited, or require planning permissions (such as a permit).

5.6.1. Zoning

The survey area is entirely zoned as Rural.

5.6.2. Code overlays

The survey area is currently subject to seven codes (and associated overlays) under the Planning Scheme:

- Road and Railway Assets Code (Code 4) – Future major road (Overlay 4)
- Natural Assets Code (Code 7) – Waterway and coastal protection area (Overlay 16) and Priority vegetation area (Overlay 18)
- Flood-prone Hazard Areas Code (Code 12) – Flood prone areas (Overlay 30)
- Bushfire-prone Areas Code (Code 13) – Bushfire-prone areas (Overlay 31)
- Potentially Contaminated Land Code (Code 14) – Potentially contaminated land (Overlay 32)
- Landslip Hazard Code (Code 15) – Low landslip hazard band (Overlay 33)
- Safeguarding of Airports Code (Code 16) – Airport obstacle limitation area (Overlay 38)

Only the Natural Asset Code is relevant to this report, and as such other codes have not been addressed. The area subject to the Natural Asset Code is depicted in Figure 5 below.

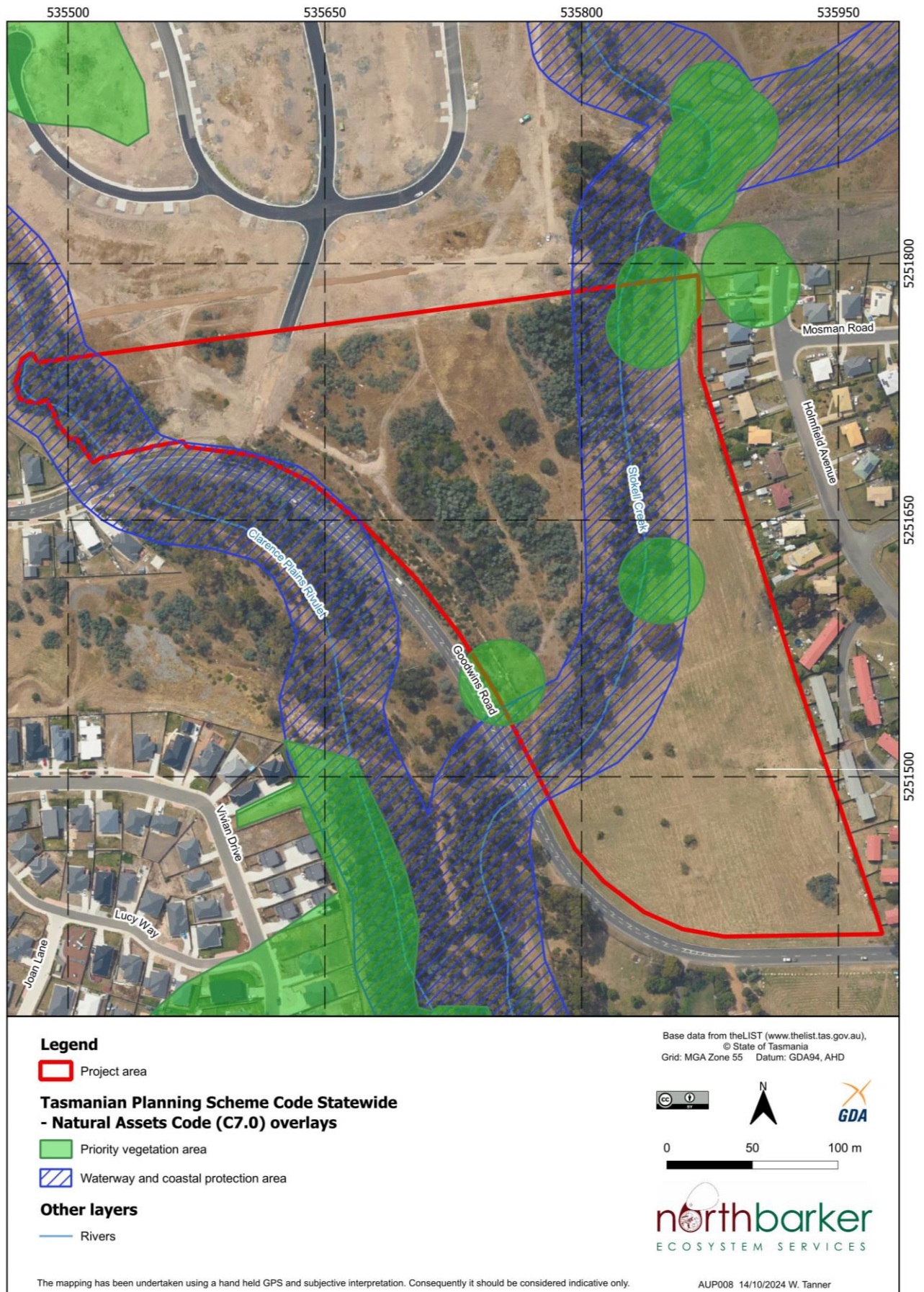


Figure 5. Natural Assets Code overlay in relation to the proposal.

5.6.2.1. Natural Assets Code – Code 7

The purpose of the Natural Assets Code is to³²:

1. minimise impacts on water quality, natural assets including native riparian vegetation, river condition and the natural ecological function of watercourses, wetlands, and lakes.
2. to minimise impacts on coastal and foreshore assets, native littoral vegetation, natural coastal processes, and the natural ecological function of the coast.
3. To protect vulnerable coastal areas to enable natural processes to continue to occur, including the landward transgression of sand dunes, wetlands, saltmarshes, and other sensitive coastal habitats due to sea-level rise.
4. To minimise impacts on identified priority vegetation.
5. To manage impacts on threatened fauna species by minimising clearance of significant habitat.

Under the Natural Values Asset Code, the survey area is subject to the Waterway and coastal protection area and Priority vegetation area provisions of the code.

5.6.2.2. Waterway and coastal protection area – Overlay 16 (WWCPA)

The WWCPA refers to land that is:

“within the relevant distance from a watercourse, wetland, lake or the coast... but does not include a piped watercourse or piped drainage line”³³.

This provision is applied to both Stokell Creek and Clarence Plains Rivulet, where a 30 m protection area around the creek has been established (Figure 5).

Areas within lots 40, 77 and 81 are within the WWCPA buffer for Stokell Creek (as well as a portion of the proposed public access within stage 3 and 4). These areas do not contain riparian vegetation.

It is also noted that Stokell Creek is in a degraded, altered and weedy condition, with limited native riparian species present. Further discussion on the condition of Stokell Creek is provided in section 3.1.5.

Regardless of the condition of the Stokell Creek, as it is protected under the Code, the development must be assessed under the appropriate development and buildings stands (Table 7).

Table 7. Subdivision within a waterway and coastal protection area or a future coastal refugia area³⁴

Objective		
That:		
(a) Works associated with subdivision within a waterway and coastal protection area or a future coastal refugia area will not have an unnecessary or unacceptable impact on natural assets; and		
(b) Future development likely to be facilitated by subdivision is unlikely to lead to an unnecessary or unacceptable impact on natural assets.		
Acceptable Solutions		
A1 Each lot, or a lot proposed in a plan of subdivision, within a waterway and coastal protection area or a future coastal refugia area, must:		
(a)	Be for the creation of separate lots for existing buildings.	N/A

³² Code Purpose C7.1; Tasmanian Planning Scheme

³³ Definitions of Terms Table C7.3; Tasmanian Planning Scheme 2020

³⁴ Development Standards for Subdivision Table C7.7.1; Tasmanian Planning Scheme 2020

(b)	Be required for public use by the Crown, a council, or a State authority.	N/A
(c)	Be required for the provision of Utilities.	N/A
(d)	Be for the consolidation of a lot.	N/A
(e)	Not include any works (excluding boundary fencing), building area, services, bushfire hazard management area or vehicular access within a waterway and coastal protection area or future coastal refugia area.	N/A
The proposed development does not meet the acceptable solution; thus, the performance criteria must be regarded.		
Performance Criteria		
P1 Each lot, or a lot proposed in a plan of subdivision, within a waterway and coastal protection area or a future coastal refugia area, must minimise adverse impacts on natural assets, having regard to:		
(a)	The need to locate building areas and any associated bushfire hazard management area to be outside a waterway and coastal protection area or a future coastal refugia area.	Building areas and associated HMA are located within the WWCPA overlay, however given the condition of the Stokell Creek the proposed subdivision will not cause unnecessary or unacceptable impact on any natural asset.
(b)	Future development likely to be facilitated by the subdivision.	Addressed in P1. (a) above

5.6.2.3. Priority vegetation area – Overlay 18

The priority vegetation area refers to land that has native vegetation where any of the following apply³³:

- a) It forms an integral part of a threatened native vegetation community as prescribed under Schedule 3A of the Nature Conservation Act 2002;
- b) is a threatened flora species;
- c) it forms a significant habitat for a threatened fauna species; or
- d) it has been identified as native vegetation of local importance.

Within the lot this provision is applied as buffer around historic threatened flora records (Figure 5).

Further to this, areas of DOV mapped within the lot satisfies the definitions to be classified as priority vegetation as it is a listed threatened vegetation community. Although this patch meets the definition for priority vegetation, it is in poor condition.

DOV associated with Clarence Plains Rivulet also provides a potential foraging resource for the swift parrot (Critically Endangered). As no trees that could provide nesting habitat are present within the lot, this patch is not considered significant habitat for the species, with reference to (c).

The proposed development has reduced impacts to priority vegetation by avoiding impacts to DOV associated with Clarence Plains Rivulet – which is in poor condition but has a canopy dominated by *Eucalyptus ovata* (swift parrot foraging habitat). However, as some priority vegetation [DOV] associated with Stokell Creek is proposed to be impacted for bushfire hazard management and for proposed walking pathways within POS.

Table 8. Clearance within a Priority Vegetation Area³⁵

³⁵ Development Standards for Subdivision Table C7.7.2; Tasmanian Planning Scheme 2020

Objective		
That:		
(a) Works associated with subdivision will not have an unnecessary or unacceptable impact on priority vegetation; and		
(b) Future development likely to be facilitated by subdivision is unlikely to lead to an unnecessary or unacceptable impact on priority vegetation.		
Acceptable Solutions		
A1 Each lot, or a lot proposed in a plan of subdivision, within a priority vegetation area must be for:		
(a)	Be for the purposes of creating separate lots for existing buildings.	N/A
(b)	Be required for public use by the Crown, a council, or a State authority.	N/A
(c)	Be required for the provision of Utilities.	N/A
(d)	Be for the consolidation of a lot.	N/A
(e)	Not include any works (excluding boundary fencing), building area, bushfire hazard management area, services or vehicular access within a priority vegetation area.	N/A
The proposed development does not meet the acceptable solution; thus, the performance criteria P1.1 and P 1.2 must be regarded.		
Performance Criteria		
P1.1 Each lot, or a lot proposed in a plan of subdivision, within a priority vegetation area must be for:		
(a)	Subdivision for an existing use on the site, provided any clearance is contained within the minimum area necessary to be cleared to provide adequate bushfire protection, as recommended by the Tasmanian Fire Service or an accredited person.	No. The proposed subdivision is for future residential use beyond that which is existing.
(b)	Subdivision for the construction of a single dwelling or an associated outbuilding.	No. The subdivision will result in the future development of multiple new dwellings.
(c)	Subdivision in the General Residential Zone or Low-Density Residential Zone.	No. Currently zoned Rural but application for rezoning to General Residential.
(d)	Use or development that will result in significant long term social and economic benefits and there is no feasible alternative location or design	The social and economic benefits of the proposal are not within our scope as ecologists to assess.
(e)	Subdivision involving clearance of native vegetation where it is demonstrated that on-going pre-existing management cannot ensure the survival of the priority vegetation and there is little potential for long-term persistence; or	<u>Threatened vegetation</u> 0.49 ha of DOV mapped along Stokell Creek is in very poor condition in its current state mainly because of the proportion of zone B weeds in the understory (predominantly boneseed). It is unlikely there has been any management of this land in

		the recent past. Section 3.3.1 and section 3.1.5 provide detail on the condition of this patch. It is unlikely given the proportion of weeds in the understory of this community, that under current or on-going land management this community will persist in the long term.
(f)	Subdivision involving clearance of native vegetation that is of limited scale relative to the extent of priority vegetation on the site.	No. 59 % of DOV (understory along Stokell Creek) will be impacted for bushfire hazard management – noting all trees within this community have been recommended to be retained.
The proposal can meet P1.1 (e)		
P1.2 Works association with subdivision within a priority vegetation area must minimise adverse impacts on priority vegetation, having regard to:		
(a)	The design and location of any works, future development likely to be facilitated by the subdivision, and any constraints such as topography or land hazards.	All priority vegetation within the design is within public open space. The only impacts to priority vegetation within the proposed subdivision are restricted to clearance of the weedy understory of DOV along Stokell Creek for bushfire hazard management.
(b)	Any particular requirements for the works and future development likely to be facilitated by the subdivision.	Addressed above in (a).
(c)	The need to minimise impacts resulting from bushfire hazard management measures through siting and fire-resistant design of any future habitable buildings.	Addressed above in (a).
(d)	Any mitigation measures implemented to minimise the residual impacts on priority vegetation.	A site-specific weed and hygiene management plan is recommended which will mitigate residual impacts to priority vegetation within the lot.
(e)	Any on-site biodiversity offsets; and	DOV within the lot does not qualify as the EPBC Act listed 'Tasmanian Forests and Woodland Dominated by black gum or brokers gum' community.
(f)	Any existing cleared areas on the site.	Existing cleared areas are utilised as a part of the design.
The proposal can meet P1.2.		

6. CONCLUSION AND RECOMMENDATIONS

Overall, impacts to natural values associated with the proposed subdivision at 22 Goodwins Road, Clarendon Vale are low, and will not lead to a long-term decline of any threatened flora or fauna species in the broader area. The impacts will largely occur to modified land which has been degraded by declared and environmental weed species.

Specific recommendations are summarised below for minimising impacts and ensuring legislative compliance.

6.1. VEGETATION COMMUNITIES

The proposal will likely see the conversion of 4.01 ha native vegetation into developed land. Including 0.49 ha of the understory of a state listed (NCA) threatened vegetation community – *Eucalyptus ovata* forest and woodland (DOV). The impact to this community is restricted to the portion of the community along Stokell Creek for bushfire hazard management.

It is noted that the area of DOV is already highly modified and does not contain any other conservation significant values.

6.2. CONSERVATION SIGNIFICANT FLORA

There will be no direct impact to threatened flora as no such values are present within the survey area.

6.3. CONSERVATION SIGNIFICANT FAUNA

No threatened fauna species were located during the survey, and threatened fauna habitat is largely confined to minor amounts of potential foraging habitat for a few widely-occurring threatened species. No significant impacts to any threatened fauna are expected with this development.

6.4. INTRODUCED PLANTS AND PATHOGENS

Six declared weed species, African boxthorn, blackberry, boneseed, fennel, hoary cress and serrated tussock, are present in the survey area. No evidence or signs of pathogens were observed.

To manage the risks of spreading weeds from and within the survey area, a project specific *Weed and Hygiene Management Plan* must be developed and implemented prior to, and post-construction works.

As a minimum standard, all works should follow the following best-practice guidelines:

- *Keeping it clean – A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens*³⁶;
- *Weed and Disease Planning and Hygiene Guidelines – Preventing the spread of weeds and diseases in Tasmania*³⁷;
- *Tasmanian Washdown Guidelines for Weed and Disease Control. Machinery, Vehicles & Equipment*³⁸

6.5. GEOCONSERVATION SITES

There will be no direct impact to threatened flora as no such values are present within the project area or within 1 km of the survey area.

³⁶ Allen & Gartenstein (2010)

³⁷ Department of Primary Industries, Parks, Water and Environment (2015b)

³⁸ Department of Primary Industries, Parks, Water and Environment (2004)

6.6. TASMANIAN *PLANNING SCHEME*

Zoning

The survey area occurs within an area currently zoned Rural. An application for rezoning to General Residential is required.

Parts of the site are subject to the Waterway and coastal protection area and Priority vegetation area provisions of the Natural Assets Code. Assessment of the proposed development against the Code have concluded that potential impacts are minimal and acceptable under the Code. Findings from each provision have been summarised below:

Waterway and coastal protection area

Stokell Creek and Clarence Plains Rivulet are covered by the waterway and coastal protection area overlay within the survey area. Stokell Creek is highly degraded and weedy, with negligible riparian vegetation and natural stream features being present.

The proposed subdivision can meet this Provision, as it has regraded performance criteria P1.1.

Priority Vegetation Area

Only the DOV vegetation within the lot satisfies the definitions to be classified as priority vegetation under the Scheme. DOV within the lot that has a canopy of *Eucalyptus ovata* (constituting swift parrot foraging habitat) has been avoided by being included as part of the POS. Impacts to DOV along Stokell Creek are for bushfire hazard management and trees within this patch can be retained. Both patches of DOV are in very poor condition with an understory dominated by boneseed and blackberry.

It has therefore been determined that proposed development does not conflict with this Provision, as it satisfies performance criteria P1.1 (e) and has regarded performance criteria P1.2.

REFERENCES

- Allen and Gartenstein (2010). Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens. Published by NRM South.
- Commonwealth of Australia (1999). *Environment Protection and Biodiversity Conservation Act 1999*. No. 91, 1999.
- de Salas M. F. and Baker M.J. (2024). A Census of the Vascular Plants of Tasmania, including Macquarie Island. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery, Hobart)
<https://flora.tmag.tas.gov.au/resources/census/>
- Department of Climate Change, Energy, the Environment and Water (2023). Conservation Advice for *Neophema chrysostoma* (blue-winged parrot). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from:
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/726-conservation-advice-31032023.pdf>. In effect under the EPBC Act from 31-Mar-2023.
- Department of Climate Change, Energy, the Environment and Water (2024). National Recovery Plan for the Swift Parrot (*Lathamus discolor*). Department of Climate Change, Energy, the Environment and Water, Canberra. Available from:
<http://www.dcceew.gov.au/environment/biodiversity/threatened/recovery-plans/swift-parrot-2024>. In effect under the EPBC Act from 30-Apr-2024.
- Department of Natural Resources and Environment Tasmania (2024). Natural Values Report_1_03-Oct-2024, Natural Values Atlas, Threatened Species Section, Department of Natural Resources and Environment Tasmania, Hobart, Tasmania.
- Department of Primary Industries, Parks, Water, and Environment (2003). Waterways and wetlands works manual: Environmental best practice guidelines for undertaking works in waterways and wetlands in Tasmania. (Eds.) Steve Gallagher. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania.
- Department of Primary Industries, Parks, Water, and Environment (2004). Tasmanian Washdown Guidelines for Weed and Disease Control. Machinery, Vehicles & Equipment. Edition 1. Department of Primary Industries, Water & Environment, Forestry Tasmania, and Agricultural Contractors of Tasmania.
- Department of Primary Industries, Parks, Water, and Environment (2015). Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania. (Eds.) Karen Stewart and Michael Askey-Doran. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania.
- Department of Primary Industries, Parks, Water, and Environment (2019). *Guidelines for Natural Values Surveys - Terrestrial Development Proposals*. Department of Primary Industries, Parks, Water and Environment (Natural and Cultural Heritage Division), Hobart, Tasmania.
- Department of Primary Industries, Parks, Water and Environment (2020). TASVEG 4.0, Released July 2020. Tasmanian Vegetation Monitoring and Mapping Program, Resource Management and Conservation Division.
- Department of the Environment, Water, Heritage and the Arts (2008). Approved Conservation Advice for *Perameles gunnii gunnii* (Eastern Barred Bandicoot (Tasmania)). Canberra: Department of the Environment, Water, Heritage and the Arts. Available from:
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/66651-conservation-advice.pdf>. In effect under the EPBC Act from 26-Mar-2008.

- Department of the Environment, Water, Heritage, and the Arts (2010). Lowland Native Grasslands of Tasmania — a nationally threatened ecological community. *Environment Protection and Biodiversity Conservation Act 1999* Policy Statement 3.18. Australian Government, Canberra.
- Forest Practices Authority (2014). Identifying swift parrot breeding habitat, Fauna Technical Note No. 3, Forest Practices Authority, Hobart, Tasmania.
- Goff, F. G, Dawson, G.A. and Rochow, J.J. (1982). Site examination for threatened and endangered plant species. *Environmental Management* 6(4) pp 307-316.
- Kitchener, A. and Harris, S. (2013). *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation*. Edition 2. Department of Primary Industries, Parks, Water and Environment, Tasmania.
- Koch, A. J., Munks, S. A. and Woehler, E. J., (2008). Hollow-using vertebrate fauna of Tasmania: distribution, hollow requirements and conservation status, *Australian Journal of Zoology*, 56, pp. 323-349.
- Podger, F. D., Mummery, D. C., Palzer, C. R., & Brown, M. J. (1990). Bioclimatic analysis of the distribution of damage to native plants in Tasmania by *Phytophthora cinnamomi*. *Australian Journal of Ecology*, 15(3), 281-289.
- Podger, F.D. and Brown, M.J. (1989). Vegetation damage caused by *Phytophthora cinnamomi* on disturbed sites in temperate rainforest in western Tasmania. *Australian Journal of Botany*, 37(6), pp. 443-480.
- Tasmanian State Government (1995). *Threatened Species Protection Act 1995*. No.83 of 1995. Government Printer, Hobart, Tasmania.
- Tasmanian State Government (2002). *Nature Conservation Act 2002*. No.63 of 2002. Government Printer, Hobart, Tasmania.
- Tasmanian State Government (2019). *Biosecurity Act 2019*. No.22 of 2019. Government Printer, Hobart, Tasmania.
- Threatened Species Scientific Committee (2016). Conservation Advice *Lathamus discolor* swift parrot. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/744-conservation-advice-05052016.pdf>. In effect under the EPBC Act from 05-May-2016.

APPENDIX A – VASCULAR FLORA SPECIES LIST

Status codes:

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

Sites:

5 Eucalyptus viminalis grassy forest and woodland (now mapped as DOV on Stokell Creek) - DVG - E535834, N5251634
27/09/2024 Ian Jenkinson

6 Lowland grassland complex - GCL - E535738, N5251728 27/09/2024 Ian Jenkinson
7 Agricultural land - FAG - E535810, N5251473 27/09/2024 Ian Jenkinson
8 Extra-urban miscellaneous - FUM - E535627, N5251753 27/09/2024 Ian Jenkinson
9 Bursaria - Acacia woodland and scrub - NBA - E535731, N5251649 27/09/2024 Ian Jenkinson
10 Eucalyptus ovata forest and woodland - E535514, N5251713 27/09/2024 Ian Jenkinson

Site	Name	Common name	Status
DICOTYLEDONAE			
APIACEAE			
7 10	<i>Foeniculum vulgare</i>	fennel	d
APOCYNACEAE			
7 9	<i>Vinca major</i>	blue periwinkle	i
ASTERACEAE			
6 7 8	<i>Arctotheca calendula</i>	capeweed	i
7	<i>Bellis perennis</i>	english daisy	i
5 9 10	<i>Cassinia aculeata subsp. aculeata</i>	dollybush	
5 7 8 9 10	<i>Chrysanthemoides monilifera subsp. monilifera</i>	boneseed	d
5 6 7 8 9 10	<i>Cirsium vulgare</i>	spear thistle	i
6	<i>Coronidium scorpioides</i>	curling everlasting	
5 8	<i>Cotula australis</i>	southern buttons	
5 6 8 10	<i>Euchiton japonicus</i>	common cottonleaf	
5 7	<i>Helminthotheca echioides</i>	bristly oxtongue	i
5 6 7 8 9	<i>Hypochaeris radicata</i>	rough catsear	i
5 6 8 9	<i>Leontodon saxatilis</i>	hairy hawkbit	i
8 9	<i>Olearia ramulosa</i>	twiggy daisybush	
5	<i>Senecio biserratus</i>	jagged fireweed	
5 8 9 10	<i>Senecio glomeratus</i>	shortfruit purple fireweed	
5 8 9 10	<i>Senecio quadridentatus</i>	cotton fireweed	
10	<i>Senecio sp.</i>	groundsel	
5 9 10	<i>Silybum marianum</i>	variegated thistle	i
7 8 10	<i>Sonchus asper</i>	prickly sowthistle	i

9 10	<i>Sonchus oleraceus</i>	common sowthistle	i
8	<i>Vellereophyton dealbatum</i>	white cudweed	i
BRASSICACEAE			
6 7 8 9 10	<i>Brassicaceae sp.</i>		i
5	<i>Cardamine sp.</i>	bittercress	
6 7 8 10	<i>Hirschfeldia incana</i>	hoary mustard	i
7	<i>Lepidium draba</i>	hoary cress	d
8	<i>Raphanus raphanistrum</i>	wild radish	i
CARYOPHYLLACEAE			
5 6 7 10	<i>Cerastium glomeratum</i>	sticky mouse-ear	i
8	<i>Spergularia rubra</i>	greater sandspurrey	i
5 10	<i>Stellaria media</i>	garden chickweed	i
CASUARINACEAE			
5	<i>Allocasuarina verticillata</i>	drooping sheoak	
CHENOPODIACEAE			
9 10	<i>Einadia nutans subsp. nutans</i>	climbing saltbush	
CRASSULACEAE			
6	<i>Crassula sp.</i>		i
EUPHORBIACEAE			
5 6	<i>Euphorbia peplus</i>	petty spurge	i
FABACEAE			
5 8 9 10	<i>Acacia dealbata subsp. dealbata</i>	silver wattle	
5 6 9 10	<i>Acacia mearnsii</i>	black wattle	
5	<i>Acacia melanoxylon</i>	blackwood	
5	<i>Acacia verticillata</i>	prickly moses	
5 6 7 8 9	<i>Trifolium repens</i>	white clover	i
7	<i>Vicia sativa subsp. sativa</i>	common vetch	i
FUMARIACEAE			
5 7 8 9 10	<i>Fumaria bastardi</i>	bastards fumitory	i
GERANIACEAE			
5 7 8 10	<i>Erodium moschatum</i>	musky heronsbill	i
5 7 10	<i>Geranium potentilloides var.</i>	mountain cranesbill	
HALORAGACEAE			
9	<i>Gonocarpus tetragynus</i>	common raspwort	
MALVACEAE			
8	<i>Malva sp.</i>	mallow	i
MYRTACEAE			
5	<i>Eucalyptus globulus subsp. globulus</i>	tasmanian blue gum	
9 10	<i>Eucalyptus ovata var. ovata</i>	black gum	
5 7 9	<i>Eucalyptus viminalis subsp. viminalis</i>	white gum	
OXALIDACEAE			
6 7 8 9 10	<i>Oxalis perennans</i>	grassland woodsorrel	

PITTOSPORACEAE			
5 9	<i>Bursaria spinosa subsp. spinosa</i>	prickly box	
5	<i>Pittosporum undulatum</i>	sweet pittosporum	i
PLANTAGINACEAE			
5 6 8	<i>Plantago coronopus</i>	buckshorn plantain	i
5 6 7 8	<i>Plantago lanceolata</i>	ribwort plantain	i
5	<i>Veronica persica</i>	persian speedwell	i
POLYGALACEAE			
10	<i>Comesperma volubile</i>	blue lovecreeper	
POLYGONACEAE			
6 7 8 10	<i>Acetosella vulgaris</i>	sheep sorrel	i
7 8 10	<i>Rumex sp.</i>	dock	
PRIMULACEAE			
5 6 7 8 9 10	<i>Lysimachia arvensis</i>	scarlet pimpernel	i
RESEDACEAE			
5 7 8 9	<i>Reseda luteola</i>	weld	i
RHAMNACEAE			
5	<i>Pomaderris apetala</i>	common dogwood	
ROSACEAE			
5 6	<i>Acaena novae-zelandiae</i>	common buzzy	
5	<i>Cotoneaster glaucophyllus var. serotinus</i>	largeleaf cotoneaster	i
5	<i>Crataegus monogyna</i>	hawthorn	i
7	<i>Malus domestica</i>	apple	i
5 6 7 9 10	<i>Rosa rubiginosa</i>	sweet briar	i
5 7 9 10	<i>Rubus fruticosus</i>	blackberry	d
RUBIACEAE			
5 7 10	<i>Galium aparine</i>	cleavers	i
SANTALACEAE			
5 9 10	<i>Exocarpos cupressiformis</i>	common native-cherry	
SAPINDACEAE			
5 9 10	<i>Dodonaea viscosa subsp. spatulata</i>	broadleaf hopbush	
SOLANACEAE			
5 7	<i>Lycium ferocissimum</i>	african boxthorn	d
9	<i>Solanum laciniatum</i>	kangaroo apple	
8	<i>Solanum nigrum</i>	blackberry nightshade	i
URTICACEAE			
5	<i>Urtica urens</i>	stinging nettle	i
GYMNOSPERMAE			
PINACEAE			
9	<i>Pinus radiata</i>	radiata pine	i
MONOCOTYLEDONAE			

AMARYLLIDACEAE			
9	<i>Narcissus poeticus</i>	poet's daffodil	
ASPARAGACEAE			
5	<i>Lomandra longifolia</i>	sagg	
7	<i>Muscari armeniacum</i>	grape hyacinth	i
CYPERACEAE			
5 6	<i>Carex appressa</i>	tall sedge	
5	<i>Cyperus eragrostis</i>	drain flatsedge	i
7 8 10	<i>Ficinia nodosa</i>	knobby clubsedge	
5	<i>Schoenus apogon</i>	common bogsedge	
IRIDACEAE			
5 6 7	<i>Romulea rosea var. australis</i>	lilac oniongrass	i
JUNCACEAE			
5 10	<i>Juncus pallidus</i>	pale rush	
8 10	<i>Juncus sarophorus</i>	broom rush	
JUNCAGINACEAE			
10	<i>Cycnogeton procerum</i>	greater waterribbons	
LEMNACEAE			
5	<i>Lemna disperma</i>	common duckweed	
POACEAE			
5 6 8 9 10	<i>Austrostipa sp.</i>	speargrass	
6 7 8 9 10	<i>Dactylis glomerata</i>	cocksfoot	i
7	<i>Holcus lanatus</i>	yorkshire fog	i
5 6 7 8 9	<i>Nassella trichotoma</i>	serrated tussock	d
10			
7 8 9 10	<i>Panicum capillare</i>	common witchgrass	i
5 6 7 8 9	<i>Paspalum dilatatum</i>	paspalum	i
5 6 7 8 9	<i>Phalaris sp.</i>	canarygrass	i
10			
7	<i>Phleum pratense</i>	timothy grass	i
6 7 8 9 10	<i>Poa annua</i>	winter grass	i
5 6 7 8 9	<i>Poa labillardierei</i>	silver tussockgrass	
10			
6	<i>Tetrarrhena distichophylla</i>	hairy ricegrass	
8 9 10	<i>Tetrarrhena distichophylla</i>	hairy rice-grass	
TYPHACEAE			
5	<i>Typha latifolia</i>	great reedmace	i