SFM HCV Assessment and Process

SFM Group Scheme

Forest Management Units – Green Triangle Limestone and Western Australia

(FSC-STD-30-005 V1-1 EN)

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1 INTRODUCTION

1.1 General

SFM Environmental Solutions Pty Ltd (SFM) currently operates a Group Scheme for Forest Management (FSC-STD-30-005 V1-1 EN) under the Forest Stewardship Council ® (FSC ®) system, in which individual landowners may join the Group and gain the benefits of certification, subject to committing to the FSC Principles and Criteria. SFM holds the certificate (SA-FM/COC-002984) and acts as the Group Manager, undertaking forest management responsibilities on behalf of the Group to the FSC Australia National Forest Stewardship Standard (FSC-STD-AUS-01-2018 EN). The current scope of SFM's current FSC certificate is for plantations on private property. Properties within the Group Scheme form the Forest Management Units (FMUs). Two FMU's are included; the Green Triangle Limestone (GTL) FMU and Western Australia Limestone (WAL) FMU.

SFM's publicly available 'SFM Natural, Cultural and High Conservation Values Management Plan', provides an overarching high-level view of how SFM manage HCV's. This document, the '**SFM HCV Assessment and Process for entry into SFM Group Scheme',** describes the HCV assessment and process for all properties that have been added to the Group Scheme. Stakeholder engagement and review of this document is SFM's primary tool for assessing and managing HCV's.

SFM also holds Sustainable Forest Management certification AS4708 (Responsible Wood). Areas managed under Responsible Wood (RW) certification are within SFM's Defined Forest Area (DFA). The coupes within the DFA may differ from the FMU due to landowner wishes, customer demands and properties ineligible for FSC certification (for example conversion of plantation to agriculture).

1.2 Focus of Assessment

SFM has well-established policies, plans and procedures in place that demonstrate conformance with the above RW and FSC standards due to being continuously third-party certified for over since 2010. E.g. see SFM's publicly available Forest Management policy, Forest Management Plan and Audit Results for third party RW/ FSC assessments undertaken on SFM over the period.

The specific focus of this document is to demonstrate the HCV assessment process for entry of any property to an FMU and the SFM FSC Group Scheme. The HCV assessments are consistent with:

- the FSC Australia National Forest Stewardship Standard (NFSS FSC-STD-AUS-01-2018 EN specifically Principle 9 (High Conservation Values) and Annex G). Annex G provides clear HCV definitions, recommendations of best available information for each HCV, and an assessment pathway for each HCV.

Annex G is SFM's key reference document for classification of HCVs.

1.3 Scope of Assessment

The scope of this HCV assessment is for suitable/eligible established hardwood (*E. globulus*) and softwood (*P. radiata*) plantations within the Limestone Plantations estate located in the Green Triangle and Western Australia regions.

SFM began managing the Victorian and South Australian Limestone Plantations on the 1st of July 2014, and the Western Australian Limestone Plantations on the 1st of September 2016. The Limestone Plantations consist of approximately 14,129 hectares located across a broad geographical area (Green Triangle Region & Western Australia) and is owned by the Trust Company Australia Pty Ltd as Trustee for the Australia New Zealand Forest Fund. Australian Blue Gum Plantations (ABP) hold leases (and hence forest management responsibility) over approximately 37% (encumbered/leased portion) of the Limestone Plantations until harvesting of the first / second rotation. Once harvesting is complete, a management handover occurs and SFM take over full management responsibilities.

As properties are handed back to SFM from ABP, they are assessed for HCVs prior to becoming part of the SFM GTL or SFM WAL FMU under the SFM Group Scheme. The initial HCV assessment process was completed in 2015 and focused on 16 properties (2,299 hectares) in Limestone Plantations for the 'SFM GTL FMU', followed by a second round of assessments in 2016 which added a further 19 properties (3,815 hectares) in Limestone Plantations to the 'SFM GTL FMU' and then a third and fourth round of properties (52 in total) was assessed and added to the SFM GTL GMU and the SFM WAL FMU in early 2018. Properties that form part of the Group Scheme are listed below in Table 1, 2, and 3. The location of the properties is shown in Appendix 1a and 1b.

Table 1. Round 1 properties by FMU that form part the SFM Group Scheme

Plantation	FMU	State	Property Name	Shire	Plantation Area	Title Area
Limestone	GTL	VIC	Basil	Moyne	57.2	64.8
Limestone	GTL	VIC	Carroll	Moyne	83.2	93.0
Limestone	GTL	VIC	Harrip	Southern Grampians	110.8	130.6
Limestone	GTL	VIC	Kalambra	Glenelg	251.0	283.5
Limestone	GTL	VIC	Kraft	Moyne	61.9	76.3
Limestone	GTL	VIC	Kruger	Southern Grampians	216.9	246.8
Limestone	GTL	VIC	Manly	Moyne	37.2	47.3
Limestone	GTL	VIC	Pettit	Moyne	50.6	61.2
Limestone	GTL	VIC	Shalders	Moyne	106.6	137.8
Limestone	GTL	VIC	Sheehan	Moyne	105.7	122.2
Limestone	GTL	VIC	Shider	Moyne	133.8	170.9
Limestone	GTL	VIC	Sproal	Moyne	201.9	251.7
Limestone	GTL	VIC	Sutherland	Southern Grampians	383.5	448.4
Limestone	GTL	VIC	Tarrone	Moyne	31.6	42.2
Limestone	GTL	VIC	Terrence	Southern Grampians	57.5	63.0
Limestone	GTL	VIC	Vandriel	Glenelg	50.5	59.7
			TOTAL		**1939.9**	**2299.4**

Table 2. Round 2 properties by FMU that form part of the SFM Group Scheme

Plantation	FMU	State	Property Name	Shire	Plantation Area	Title Area
Limestone	GTL	VIC	Baloo	Moyne	107.3	120.8
Limestone	GTL	VIC	Cobbadah	Glenelg	146.8	178.1
Limestone	GTL	VIC	Danyenah/Kirkpatrick	Moyne	125.8	134.8
Limestone	GTL	VIC	Dyer	Moyne	163.6	186.4
Limestone	GTL	VIC	Evergreen	Moyne	131.2	142.9
Limestone	GTL	VIC	Hines	Glenelg	334.7	378.6
Limestone	GTL	VIC	Hodges	Moyne	43.6	51.5
Limestone	GTL	VIC	Hunter	Glenelg	29.9	34.5

Plantation	FMU	State	Property Name	Shire	Plantation Area	Title Area
Limestone	GTL	VIC	James	Glenelg	204.0	238.4
Limestone	GTL	VIC	Jewell	Southern Grampians	204.9	255.9
Limestone	GTL	VIC	Koondoola/Leo	Moyne	97.5	131.9
Limestone	GTL	VIC	McCaskill	Moyne	95.0	127.0
Limestone	GTL	VIC	Phoines	Glenelg	202.0	252.3
Limestone	GTL	VIC	Purcell	Moyne	390.6	472.3
Limestone	GTL	VIC	Riordan	Moyne	114.8	134.0
Limestone	GTL	VIC	Runnymede	Glenelg	312.0	575.8
Limestone	GTL	VIC	Spring Creek	Moyne	29.6	32.9
Limestone	GTL	VIC	Sobey	Glenelg	186.6	211.9
Limestone	GTL	VIC	Waverley West	Naracoorte Lucindale	128.6	153.1
			TOTAL		**3048.5**	**3813.4**

Table 3. Round 3 properties by FMU that form part of the SFM Group Scheme

Plantation	FMU	State	Property Name	Shire	Plantation Area	Title Area
Limestone	GTL	SA	Brinkworth	Naracoorte Lucindale	1158.4	1501.4
Limestone	GTL	VIC	Bulloch Swamp	West Wimmera	1512.9	2259.1
Limestone	GTL	VIC	Castine	West Wimmera	363.0	471.9
Limestone	GTL	VIC	Greenwald	Glenelg	65.4	124.2
Limestone	GTL	VIC	Hennigs	West Wimmera	238.8	263.3
Limestone	GTL	SA	Miltana	Naracoorte Lucindale	259.6	371.4
Limestone	GTL	VIC	Sim	Moyne	108.6	116.7
Limestone	GTL	VIC	The Gums	Moyne	104.7	145.7
Limestone	GTL	SA	Tomich North	Naracoorte Lucindale	517.5	675.0
Limestone	WAL	WA	Bramwell	City of Albany	248.1	349.9
Limestone	WAL	WA	Cheynes	City of Albany	370.4	449.9
Limestone	WAL	WA	Davidson	City of Albany	300.2	407.7
Limestone	WAL	WA	Frawley	City of Albany	276.8	276.8
Limestone	WAL	WA	Lucknow	Shire of Boyup Brook	89.1	107.2
Limestone	WAL	WA	Maringa West	City of Albany	227.3	339.6
			TOTAL		**5876.8**	**7859.4**

Table 4. Round 4 properties by FMU that form part of the SFM Group Scheme

Plantation	FMU	State	Property Name	Shire	Plantation Area	Title Area
Limestone	GTL	VIC	Harland Hills	Dergholm	102.5	125.7
Limestone	GTL	VIC	Hill	Warrabkook	27.7	31.3
			TOTAL		**130.2**	**157**

Any new properties that require certification will be assessed using the approach outlined in this document. This may be as properties leave the management control of ABP or as SFM take on management of additional properties that require certification.

1.4 High Conservation Values (HCV's) Evaluation Framework and the FSC Australia National Forest Stewardship Standard (NFSS) - Annex G

SFM refers to Annex G: Framework for Assessment, Management and Monitoring of High Conservation Valuesfor HCV definitions, best available information for HCV's, and a clear assessment pathway for each HCV. Note that the definition for HCV5 is more detailed in Principle 9.1 of the NFSS than Annex G and has therefore been used below.

The six HCVs as recognised by FSC are:

- HCV1 – Specifies diversity. Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels;
- HCV2 – Landscape-level ecosystems and mosaics. Intact Forest Landscapes and large landscape-level ecosystems an ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance;
- HCV3 – Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia;
- HCV4 – Critical ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes;
- HCV5 – Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities or Indigenous Peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or Indigenous Peoples;
- HCV6 – Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological and historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or Indigenous Peoples, identified through engagement with these local communities or Indigenous Peoples.

SFM undertook a review of the FSC Australia Directory of Information Sources (referred to in the evaluation framework) to identify applicable and current data sources for the assessment of HCVs within the scope of the planned FMUs. Additional/up to date information sources were added to this dataset and superfluous information was removed. SFM also referred to the best available information as documented in Annex G.

The key external sources of information used, and that continue to be used, are:

Nature Kit Victoria;

Nature Maps South Australia;

Nature Map Western Australia;

Aboriginal Cultural Heritage Register and Information System (ACHRIS) Victoria;

Taa wika Portal (SA Aboriginal Portal);

Aboriginal Heritage Inquiry System (AHIS) Western Australia;

Atlas of Living Australia; and

EPBC Protected Matters Search Tool

Where available, SFM imports datasets into SFM's Resource Management System (GIS) from government agencies and can use this information to assist with the planning process.

1.5 Legislative Requirements

The SFM GTL FMU cover forests in South Australia and Victoria, while the SFM WA FMU covers forests in Western Australia. A wide range of legislation applies to management of forests over the three states. The main legislation applicable to forest management at a commonwealth level is the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* and the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999)*. The purpose of this legislation is to preserve and protect areas of Indigenous and national environmental significance. SFM maintains a Legislative Register and Planning Documents for each state that list the relevant legislation, its purpose, and SFM's control measures to ensure management activities are compliant. Legislation specific to forest operations on private property is summarised below.

Victoria

The key state legislation related to Victorian forest operations on private property is the *Conservation, Forests and Lands Act 1987* and the *Code of Practice for Timber Production 2014*. Along with the Code is the document '*Management Guidelines for the Code of Practice for Timber Production on Private Land (native vegetation and plantations) in Victoria'* which aids in the interpretation of the Code.

There are many other key pieces of legislation relevant to the protection of HCVs that are referenced in the Code. These include the *Aboriginal Heritage Act 2006 (and the Aboriginal Heritage Amendment Act 2016) and Aboriginal Heritage Regulations 2018, Catchment and Land Protection Act 1994,* and the *Flora and Fauna Guarantee Act 1988 (FFG Act 1988)*. Local government is responsible for ensuring compliance with planning systems and provisions within the Victoria Planning Provisions.

South Australia

The core legislation in South Australia related to forest operations and the protection of HCVs on private property is the *Forest Property Act 2000, Environmental Protection Act 1993, Aboriginal Heritage Act 1988, Heritage Places Act 1993, , Native Vegetation Act 1991*, and the *National Parks and Wildlife Act 1972 (NPW Act 1972)*. The *Guidelines for Plantation Forestry in South Australia 2009*, while not a 'legal' document, is an excellent guide to management of plantation forestry in SA and has many references to legislation, regulations, and other key documents. The local government is responsible for compliance with the planning system under the *Planning, Development and Infrastructure Act 2016.*

Western Australia

The *Code of Practice for Timber Plantations in Western Australia*, while a voluntary code, is a great resource that lists legislation relevant to forest operations on private property in WA and the protection of HCV's. Key legislation in WA is the *Planning and Development Act 2005, Environmental Protection Act 1986, Soil and Land Conservation Act 1945, Aboriginal*

Heritage Act 1972, Biodiversity Conservation Act 2016, Forest Products Act 2000, Conservation and Land Management Act 1984, and the *Heritage Act 2018.*

1.6 Stakeholders

SFM realises that the involvement of stakeholders and their continued input into the planning processes is vitally important. Such stakeholders include local community groups and representatives, neighbours, industry groups, contractors, customers, Aboriginal groups, all levels of government, environmental non-government organisations (ENGOs) and forest users.

Through the HCV planning, Estate Planning, and Property Management Plan (PMP) preparation stages, SFM identifies stakeholders using a variety of measures including industry contacts, ENGO groups and associations, personal meetings and through use of the FSC Australia Directory of Information Sources. Stakeholder contact information is retained in SFM's Stakeholder Register, while interactions with stakeholders are recorded on SFM's Stakeholder Communications Register. SFM's Stakeholder Engagement Plan describes the management processes for dealing with all stakeholder related issues.

2 ASSESSMENT OF HIGH CONSERVATION VALUES

2.1 Summary of High Conservation Values

For specialist independent input, independent consultants (Landtech Consulting (Peter Austin), Australis Biological (Dr Robin Adair) and Dr Gillian Craig for WA properties) have been used for initial ground and desktop HCV assessments. SFM have then undertaken a classification of HCV's using a combination of consultant advice and reports, professionals at the Glenelg Hopkins Catchment Management Authority, BirdLife Australia, inhouse knowledge, and HCV information from previous property managers. The below tables summarise where HCV's were found in each FMU by property and HCV type.

Where HCV's have not been identified, SFM still consider remnant native vegetation and wetlands are of conservation value. These areas are marked on SFM's internal mapping system and are excluded from forestry related activities. Properties without HCV's present have not been included in the below tables.

Table 5. HCV outcomes for the Green Triangle Limestone FMU

	Green Triangle Limestone FMU							
HCV	Brinkworth	Bulloch Swamp	Greenwald	Pettit	Runnymede	Waverly West	Miltana	Purcell
HCV1	YES	YES	NO	NO	YES	NO	NO	NO
HCV2	NO	NO	NO	NO	NO	NO	NO	NO
HCV3	NO	YES	YES	NO	NO	NO	NO	NO
HCV4	NO	NO	NO	NO	NO	YES	NO	NO
HCV5	NO	NO	NO	NO	NO	NO	NO	NO
HCV6	NO	NO	NO	YES	NO	NO	YES	YES

Table 6. HCV outcomes for the Western Australia Limestone FMU

	Western Australia Limestone FMU	
HCV	Davidson	Maringa West
HCV1	YES	YES
HCV2	NO	NO
HCV3	NO	NO
HCV4	NO	NO
HCV5	NO	NO
HCV6	NO	NO

2.2 HCV 1

See Annex G NFSS for:

- definition of 'refugia', significant concentrations', areas that contain significant concentrations or rare and threatened species' and 'areas with significant seasonal concentrations of species'

- best available information
- assessment pathway
- values to be assessed
- management guidance

Scope:

Species diversity. Concentrations of biological diversity including endemic species, and rare, threatened or endangered species (RTE), that are significant at global, regional or national levels.

Under the Interim Biogeographic Regionalisation for Australia (IBRA), properties are located in the Warrnambool Plain, Victorian Volcanic Plain, Glenelg Plain, and Dundas Tablelands in Victoria, Lucindale in South Australia, and the Esperance Plains and Jarrah Forest regions in south-west Western Australia.

The Victorian Volcanic Plain is considered 1 of 15 national biodiversity hotspots, stretching from Melbourne to Portland, and includes 65 species listed as nationally threatened and 173 species threatened at a state level which highlights its importance. The South-East South Australia/South-West Victoria hotspot (Glenelg Plain & Lucindale) straddles the state border and is also considered 1 of 15 national biodiversity hotspots. This hotspot is known to hold high value wetlands and scattered remnant native vegetation. Located within the Esperance Plains and Jarrah Forest IBRA regions is the Busselton Augusta biodiversity hotspot. The Busselton Augusta hotspot contains heathlands and shrublands that support hundreds of different plants, many of which are endemic and endangered, and a wide range of fauna.

The Green Triangle Region & South-West Western Australia has a history of intensive agricultural land use prior to the establishment of plantations. This has resulted in a reduction in structurally diverse habitat niches. Remnant vegetation areas are typically isolated from other vegetation, degraded, small compared to the surrounding protected area network, and lack connectivity to other remnant areas in the landscape. The majority of wetlands have been modified by rural drainage schemes, grazing and pasture improvement. Feral animals, grazing pressure, sedimentation and salinity, and fire continue to pose a risk to remnant habitat and RTE species. In WA, *Phythophthora cinnamomi*, a pathogen, is a huge threat to remaining areas of vegetation as described in the 2018 'Threat Abatement Plan for Disease in Natural Ecosystems caused by *Phytophthora cinnamomi*'. Despite this, RTE species may still utilise such areas where structurally diverse habitat niches exist. The assessment of HCV1 aims to highlight areas of 'habitat critical to survival' of RTE species on a regional scale.

Key Information Sources:

1. Nature Kit Victoria (previously Biodiversity Interactive Map)
2. Nature Maps South Australia
3. Nature Maps Western Australia
4. EPBC Protected Matters Search Tool
5. Victorian Biodiversity Atlas

6. Atlas of Living Australia (ALA)
7. Species Profile and Threats Database / Recovery Plans
8. Fauna in Eucalypt and Pine Plantations in the Green Triangle of south eastern South Australia and south-western Victoria 2009
9. Previous managers HCV information and classifications
10. Stakeholder Engagement

Planning Approach:

1. Consult the 'best information available' as recommended by Annex G to identify relevant datasets that provide information on the likely presence of rare, threatened and endangered species and their habitats (e.g. nesting and feeding areas) and prepare lists and maps of potential HCV accordingly. Cross check this with the Directory of Information Sources (referred to in the evaluation framework).
2. Consult experts and other knowledgeable stakeholders to identify HCV's (e.g. sites with higher potential for presence of rare, threatened and endangered species).
3. Undertake field assessments at each property to identify known and previously unidentified potential habitat, communities, breeding places or foraging/feeding places for rare, threatened and endangered species.
4. Areas containing or likely to contain such species are identified and marked on maps to be included in PMP's.
5. Identify management required to maintain and/or enhance identified HCV's, including exclusion areas and/or management prescriptions. Recommendations to enhance and manage habitats with the potential to support significant species to be included in PMP's.
6. HCV1 areas are marked on maps and included in PMP's.
7. Develop a program for periodic monitoring and adaptive management as required and record details in the Monitoring Database.
8. Consult stakeholders on assessment, management and monitoring.
9. Finalise assessment and implement management and monitoring plan.

Assessment Method:

When undertaking a desktop assessment by interrogation of databases, a 1km buffer zone was placed around the properties. The above listed information sources were used as they provide differing data. For example, the Victorian Biodiversity Atlas, Nature Kit VIC, Nature Maps SA and WA, and the ALA provide actual records of species sighted in a specific area, where as the EPBC Tool shows the likelihood of Commonwealth listed species being present based on models of preferred habitat and other sources. All properties were then inspected in the field by an ecologist to provide a more detailed assessment of the presence of rare, threatened and endangered species and potential habitat. Species that may utilise the properties based on available habitat are presented in Appendix 2a and 2b. Species that were identified on site have been noted.

Survey effort focused on species listed in legislation such as the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999, the *Victorian Flora and Fauna Guarantee Act 1988*, the South Australian *National Parks and Wildlife Act 1972,* and the Western Australian *Biodiversity Conservation Act 2016.*

The Victorian Advisory List was also considered. The aim of the Victorian Advisory List is to increase community awareness of threatened species and encourage community members to become involved in activities to protect threatened species, thereby reducing the risk of their conservation status worsening. The Western Australian Threatened Flora - Rare Flora Notice was also referenced. Although not a list of 'legislated' threatened species, its purpose is similar to the Victorian Advisory List.

Findings:

Brinkworth

HCV1 was determined to be present at the Brinkworth property in areas of Heathy Woodland which consist of an overstory of Brown Stringy Bark (*E. baxteri*) and. Both over storey species provide critical feeding habitat for the South Eastern Red-tailed Black Cockatoo (RTBC) which is listed as Endangered in South Australia under the *NPW Act 1972* and Endangered under the national *EPBC Act 1999*. The population is estimated at 1400 birds and restricted to the south-east of South Australia and south-west of Victoria. The top threats to the survival of the RTBC are food shortages; impacts of fire on food; feeding habitat loss; grazing impacts on foraging sites; fragmentation; weed invasion; nest site availability; human interference with nests; firewood harvesting; nest predation and invasion of *Acacia longifolia subsp. sophorae*.

SFM have selected the largest and most intact remnant areas of *E. baxteri* and classified them as HCV1 due to providing food source critical to the Endangered RTBC, providing habitat for other RTE species as listed in Appendix 2a, and being significant on a regional scale.

Photo 1: Remnants of Heathy Woodland at Brinkworth which contain critical feeding and potential nesting habitat for the nationally and state listed endangered South-Eastern Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne*)

Small and degraded areas of Stringy Bark forest are still protected under legislation and sound environmental principles, however, do not meet the HCV1 classification.

Bulloch Swamp

HCV1 was determined to be present at the Bulloch Swamp property in areas of large and high quality Heathy Woodland/Seasonally Inundated Shrubby Woodland/Plain Sedgy Woodland with an overstory of Brown Stringy Bark (*E. baxteri*) and River Red Gum (*E.camuldulensis*) that provide a food source critical to the survival of the South Eastern Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne*) and also in areas that contain hollow bearing trees within 4km of large Stringy Bark reserves. SFM consider hollow trees within proximity of the species main food source of equal importance as known nesting sites. In a proposed amendment to the ES03 Environmental Significance layer in the Glenelg Planning Scheme, Maron (2017) describes such habitats and any areas of hollow bearing trees within 4km as critical to the survival of the species. Some hollow bearing trees at Bulloch Swamp (*E. viminalis spp. cygnetensis* and *E. camaldulensis*) are estimated to be over 150 years old.

There are several threats to HCV1 in Bulloch Swamp – domestic stock pressure; past grazing impacts; timber removal; invasion of exotic species; pressure from movement of vehicles and equipment within remnants which are typically narrow and vulnerable. The survey advised that there are potential habitats for Brolga in the wetlands as swans have been seen present in the area. Therefore protection of wetlands are also important in Bulloch Swamp to reduce the impacts from threats.

Photo 2: An example of one of the highest quality remnants of Heathy Woodland at Bulloch Swamp which contains critical feeding habitat for the nationally and state listed endangered South-Eastern Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne*)

Photo 3 & 4: Hollow bearing trees at Bulloch Swamp which provide critical nesting habitat for the nationally and state listed endangered South-Eastern Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne*)

The size and quality of these reserves also provides habitat for other RTE species as listed in Appendix 2a. Comparatively smaller and more degraded areas of forest elsewhere on the property are still protected under legislation and sound environmental principles, however, do not meet the HCV1 classification.

Davidson

Davidson is located in 1 of 15 national biodiversity hotspots in Western Australia, the Busselton Augusta hotspot. The Busselton Augusta hotspot is known for its wide range of endemic and endangered flora and fauna.

Davidson contains a high-quality reserve in the NW corner of the property of approximately 45ha in size. The reserve contains an assortment of high quality over storey species such as Marri (*Corymbia calophylla*), Swamp Yate (*Eucalyptus occidentalis*), Paperbark (*Melaleuca striata*), Candlestick Banksia (*Banksia attenuata*) and Bull Banksia (*Banksia grandis*) and highly diverse shrub and herbaceous layer. Hollow bearing Marri trees are also evident across the reserve which provide ideal nesting habitat for species such as Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Baudin's Cockatoo (*Calyptorhynchus baudinii*) and the Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*). Such species also feed on seeds of the main tree species identified on site such as the Marri (*Corymbia calophylla*) and Banksias (*Banksia attenuate, B. grandis*). This reserve has been assigned HCV1 based its high habitat values and rich understorey values that likely support a range of RTE species as mentioned above and listed in Appendix 2b, and hollow-bearing trees that can support a range of RTE fauna species.

Photo 6: The Davidson reserve exhibits both size and key flora resources to support various RTE species. The reserve has a rich understory dominated by varied structural attributes of the Proteaceae genera.

Maringa West

Maringa West, also located in the Busselton Augusta national biodiversity hotspot, contains HCV1 in two of the largest sections of remnant native forest due to high potential for RTE species to exist as listed in Appendix 2b, the intact nature, high relative structural attributes, size, quality, and connectivity of the remnants to surrounding State Forest, and the likelihood of the remnants containing populations of the threatened Good's Banksia *(Banksia goodii)* which is listed as Vulnerable on the *EPBC Act 1999* and is considered likely to become extinct or rare in WA based on the provisional Threatened Flora - Rare Flora Notice.

Runnymede

Photo 9: A high quality remnant of *E. calophylla* woodland at Maringa West.

HCV1.1 was determined to be present at the Runnymede property. This property has an environmental significance overlay for Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne* - Endangered) habitat. The current population is estimated to be less than 1000 birds with no more than 100 breeding pairs. The survival of the species depends very much on the availability of nesting sites, which are generally River Red Gums. Widespread protection of hollow bearing trees, particularly isolated specimens, is a critical factor in ensuring the survival of this species. Runnymede has a large number of mature, hollow bearing red gums, which are remnants of EVC719 - Grassy Woodland (Photo 10). No nests are known on the property, but as it is located within 5km of the species main food source (Stringybark) it is considered to be of equal importance as known nesting sites.

Photo 10: Remnants of Grassy Woodland at Runnymede contain potential nesting habitat for the nationally endangered Red-tailed Black Cockatoo (*Calyptorhynchus banksii graptogyne*)

On properties where HCV has not been identified, all remnant native vegetation and wetlands are still considered by SFM to be of conservation value. These areas are marked on SFM's internal mapping system and are excluded from forestry related activities.

General Management Strategies:

1. Management prescriptions within PMPs are designed to assist the maintenance of populations throughout its range, and to ensure prescriptions within PMPs are included within operational plans and are communicated effectively to all operational staff and contractors.
2. Prescriptions shall be consistent with those specified in recovery/action plans developed under Commonwealth and State legislative procedures.
3. Contractor induction to operational plans requires sign off that they understand all the requirements and conditions contained within the operational plans.
4. Reserves, exclusion zones and areas of HCV have been mapped accurately on SFM's internal maps to ensure protection during forest operations.

5. Monitor the implementation of management prescriptions within the PMP whilst undertaking routine monitoring and periodic auditing of forest operations.
6. Ecologist's recommendations for biodiversity enhancement and monitoring are included within PMP's and progressively adopted across the FMU.

Special Management Strategies:

1. All properties in the Green Triangle Region will be monitored for the presence of the South Eastern Red-tailed Black Cockatoo (RTBC) as SFM staff conduct field operations and property inspections. All sightings will be reported to the South-Eastern Red -tail Black Cockatoo Recovery Team.
2. Areas containing hollow bearing trees will be inspected in Spring each year to monitor for the presence of RTE species including the RTBC.
3. Stock will be excluded from all HCV areas, including the RTBC, to protect from damage and allow natural regeneration.
4. Areas will be monitored for illegal firewood harvesting and human interference.
5. All dead and live nesting trees (mature red gums) to be retained and protected.
6. Any revegetation works to restore the tree canopy should include species natural to the area. Direct planting or seeding is recommended. Restoration will be targeting areas such as (but not limited to) RTBC feeding habitat, high value EVCs or remnant vegetation that forms riparian corridors and wetlands.
7. Areas of HCV will be monitored for the presence of noxious weeds and managed accordingly. E.g. WA properties have several known areas of Sydney Golden Wattle (*Acacia longifolia*), and Victorian Tea Tree (*Leptospermum laevigatum*). Green Triangle properties may have areas invaded by Radiata Pine (*P. radiata*).
8. Monitoring and treatment of Phytophthora infestations in WA which typically impacts the *Proteaceae* and *Myrtaceae* generas.
9. Control of pest animals such as Foxes,Rabbits and Deers.
10. Restrict movement of vehicles and equipment within narrow remnants.

2.3 HCV 2

See Annex G NFSS for:

- definition of 'large landscape-level ecosystems/native forests', 'intact forest landscapes', 'regionally significant', 'native forests', 'Indigenous' & 'habitat connectivity'
- best available information
- assessment pathway
- values to be assessed
- management guidance

Scope:

HCV 2 recognises landscape-level ecosystems and mosaics. Intact Forest Landscapes and large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

HCV 2 does not include man-made, converted, heavily degraded or fragmented ecosystems extensively modified by human activity, especially land clearing and farming (Page 31 of Common Guidance for the Identification of High Conservation Values).

Given the scope of this assessment (existing plantation only) it is considered unlikely that any area of plantation will meet the criteria for HCV 2. However, in the unlikely event that SFM managed plantations adjoin forest that may be classified as HCV 2, SFM has identified key information sources and developed a planning approach and management strategies. From a precautionary principle, the focus of SFM management activity is to ensure that 'disturbance' is not introduced to any native vegetation (consistent with approach for HCV 1).

Key Information Sources:

1. Nature Kit Victoria (previously Biodiversity Interactive Map)
2. Nature Maps South Australia
3. Nature Maps Western Australia
4. EPBC Protected Matters Search Tool
5. Aerial Photos (SFM Resource Management System)
6. Stakeholder engagement with Trust for Nature
7. Intact Forest Landscapes

Planning Approach:

1. Consult the 'best information available' as recommended by Annex G to identify relevant datasets and prepare lists and maps of potential HCV accordingly. Cross check this with the Directory of Information Sources (referred to in the evaluation framework).
2. Consult experts and other knowledgeable stakeholders to identify HCV's (e.g. consultation with Trust for Nature to check for presence of private conservation covenants on properties adjacent to plantations that are not identified in national and state data sets and if the adjoining conservation areas meet HCV2 requirements).

3. Field assessment of plantation area and surrounds to verify and possibly refine knowledge of any known values. Additional or unknown values may also be identified through this process.
4. Identify management required to maintain and/or enhance identified HCV's, including exclusion areas and/or management prescriptions.
5. HCV2 areas are marked on maps and included in PMP's.
6. Develop a program for periodic monitoring and adaptive management as required and record details in the Monitoring Database.
7. Consult stakeholders on assessment, management and monitoring.
8. Finalise assessment and implement management and monitoring plan.

Findings:

No HCV2 forest was identified. Land surrounding most properties is used for grazing or timber production. The localised and regional landscape is highly modified and scores poorly for connectivity and proximity to native vegetation.

Field assessment and interrogation of databases found several plantations with reserves adjacent to larger areas of protected State Forest such as Purcell which is located on the southern boundary of the Budj Bim Landscape/ Mt Eccles National Park. Purcell was established on cleared land historically used for grazing. Another property, Runnymede, is opposite to the Bahgallah Bushland Reserve located on the North side of the Glenelg River. Runnymede was also established on cleared land historically used for grazing. Neither property meets the HCV2 requirements of large landscape level forests. Based on the Annex G, to be considered a regionally significant large landscape level forest, containing the management unit (property) or contained within the management unit (property), would need to be thousands or tens of thousands of hectares in size.

General Management Strategies:

1. Management prescriptions will be designed to maintain or enhance the condition of HCV2 within native forest that is within or adjoins plantations subject to operational activity (see also Management Strategies for HCV1).
2. Include endorsed prescriptions in the PMP and operational plans.
3. Monitor the implementation of management prescriptions within the PMP and operational plans whilst undertaking routine monitoring of forest operations. This may include monitoring for impacts in adjoining native forest; for example, windthrow, wildlings, weeds, pests and disease.

2.4 HCV 3

See Annex G NFSS for:

- definition of 'ecosystems', 'habitats', 'rare', 'threatened', 'refugia', 'conservation', 'old-growth forest' & 'landscape'
- guidance on old-growth forest
- best available information
- assessment pathway
- values to be assessed
- management guidance

Scope:

HCV3 recognises ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats, or refugia.

The Commonwealth has identified nationally threatened ecological communities, which align with specific Ecological Vegetation Classes (EVC's) or vegetation communities. Areas of HCV3 forest can occur as remnant native forest patches within or adjacent to the plantation, but most have been significantly degraded through intensive agricultural practices prior to the establishment of plantations. HCV3 considers vegetation communities that are rare and under threat at global, national, or regional levels.

SFM's Native Vegetation Management policy states that there will be no clearing of native forest to plantation or other non-forest issues except where limited clearing is required for infrastructure or required by law.

Key Information Sources:

1. Nature Kit Victoria
2. Nature Maps South Australia
3. Nature Maps Western Australia
4. EPBC Protected Matters Search Tool
5. Species Profile and Threat Database
6. EVC benchmarks and Criteria for Bioregional Conservation Status of EVC's in VIC
7. Listing Advice for Nationally Threatened Ecological Communities
8. Provisional List of Threatened Ecosystems of SA
9. Proteaceae Dominated Kwongkan Shrubland: a nationally protected ecological community (Guide)
10. FSC Directory of Information Sources where deemed necessary
11. Stakeholder engagement with Glenelg Hopkins Catchment Management Authority and the South East Natural Resources Management Board.

Assessment Pathway:

1. Consult the 'best information available' as recommended by Annex G to identify relevant datasets and prepare lists and maps of potential HCV accordingly. Cross check this with the Directory of Information Sources (referred to in the evaluation framework) to ensure information sources specific to ecosystem and range mapping are checked (relevant sources are listed above).
2. Undertake field assessments at each property to identify known and previously unidentified vegetation communities. Undertake threat assessment of management activities on identified HCV's.
3. Consult experts and other knowledgeable stakeholders to identify HCV's (e.g. consultation with ecologists to refine knowledge at sites with higher potential for presence of rare, threatened and endangered vegetation communities).
4. Identify management required to maintain and/or enhance identified HCV's, including exclusion areas and/or management prescriptions.
5. HCV3 areas are marked on maps and included in PMP's.
6. Develop a program for periodic monitoring and adaptive management as required and record details in the Monitoring Database.
7. Consult stakeholders on assessment, management and monitoring.
8. Finalise assessment and implement management and monitoring plan.

Assessment Method:

Under the Interim Biogeographic Regionalisation for Australia (IBRA), the properties assessed are in the Warrnambool Plain, Victorian Volcanic Plain, Glenelg Plain, Wimmera, and Dundas Tablelands in Victoria, Lucindale in South Australia, and the Esperance Plains, Mallee, Jarrah Forest regions in south-west Western Australia. Most of the bioregions have been extensively cleared. The depletion and fragmentation of ecosystems means that intact remaining areas are likely to be highly significant for biodiversity.

Mapping tools for each state were interrogated by identifying EVC's/vegetation communities in the area, and the relevant global, national and state conservation status.

The field survey component was undertaken by specialist consultants and SFM and focused on ecosystems listed in legislation such as the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999, the *Victorian Flora and Fauna Guarantee Act 1988*, the South Australian *National Parks and Wildlife Act 1972,* and the Western Australian *Biodiversity Conservation Act 2016.*

At the state level, South Australia has no legal listing system for threatened ecosystems, however the Provisional List of Threatened Ecosystems of SA provides some guidance on ecosystems that are under threat and rare at the bioregional level. In Victoria, in addition to the *FFG Act 1988* Threatened List which includes ecological communities, there is also a bioregional EVC benchmark system and set criteria for bioregional conservation status which provide an excellent guide to the percentage cover of an EVC in relation to its former range. Western Australia has ~~s~~ a list of Threatened Ecological Communities (TECs) which lists threatened communities by IBRA region.

HCV3 has been assigned based on a consideration of the following attributes:

- conservation status (rarity) of the ecosystem present,
- patch size in relation to remnant areas in the surrounding landscape,
- quality of the ecosystem:
  - retention of large trees,
  - retention of tree canopy cover,
  - retention and diversity of understory lifeforms,
  - presence of appropriate recruitment,
  - absence of weeds,
  - organic litter and logs,
  - diversity of wetland species and evidence of inundation,
- proximity and links to other native vegetation,
- presence / support for RTE species.

Findings:

The EPBC protected matters reports identified six nationally threatened ecological communities known or expected to occur within 5km of each property:

- Grassy Eucalypt Woodland of the Victorian Volcanic Plain
- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
- Natural Temperate Grassland of the Victorian Volcanic Plain
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains
- Subtropical and Temperate Coastal Saltmarsh
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

Based on assessment of the criteria provided in the relevant EPBC listing advice, and via field assessment, no nationally significant threatened ecological communities were identified on the properties.

Properties were assessed for conservation significance at the bioregional level and HCV3 was identified at four properties which is detailed below. The properties with HCV3 present are Bulloch Swamp and Greenwald.

Bulloch Swamp

HCV3 occurs at the Bulloch Swamp property in several locations of Aquatic Herbland EVC (653) which is Endangered in the Glenelg Plan at the bioregional level. Under the Criteria for Bioregional Conservation Status of EVC's, a status of Endangered means that there is <10% of this EVC remaining compared to its original range (less than 10% of pre-European extent). The Aquatic Herbland EVC occurs in the form of three wetlands that are of very high quality and are currently supporting nesting habitats for the Brolga (*Grus rubicunda*), and other wetland birds. Nesting pairs of the Brolga in Victoria are estimated at around 200-250 and wetlands of such high quality and of the Endangered conservation status in the Glenelg Plain provide invaluable 'critical' habitat

SFM have classified the three wetlands as HCV3 due to the bioregional conservation status of 'Endangered' and the significance of the wetlands on a bioregional scale, the high quality of the wetlands, and the wetlands providing nesting habitat for the Brolga (*Grus rubicunda*) and other wetland birds.

Areas of remnant forest and wetlands located elsewhere on the property that are not considered threatened are still protected under legislation and sound environmental principles, however, do not meet criteria for HCV3 classification.

Photo 11: An aerial view of an extremely high-quality Aquatic Herbland (wetland) which is Endangered in the Glenelg Plain and contains nesting habitat for the Brolga (*Grus rubicunda*) which is Threatened in Victoria under the *FFG Act 1988*.

Greenwald

Greenwald contains two patches of native vegetation of Lowland Forest (EVC 16) and Herb-rich Foothill Forest EVC (23), both of which are Vulnerable in the Glenelg Plain, meaning only 10%-30% of the pre-European extent remains. The total area is approximately 35ha and is dominated by Messmate (*E.obliqua*). The EVC's represented on the property are also well represented in the immediate local area however the diversity and condition of the remnants warrant classification of HCV3. The reserves in Greenwald display a varied cohort of tree age-classes, with some trees estimated at over 200 years old. In addition to the arboreal habitat elements, understory habitats of Native Grass Tree (*Xanthorrhoea minor spp. Lutea*), Bracken (*Pteridium aqulinum var esculentum)*, and Gahnia (*Gahnia radula*) provide refugia for species such as the FFG and EPBC listed Southern Brown Bandicoot and Long-Nosed Potoroo.

There are several threats identified in HCV3 in Greenwald – invasion of weeds such as Sweet Pittosporum (*Pittosporum undulatum*), Coastal Wattle (*A. longifolia subsp sophorae*) and European Blackberry (*Rubus fruticosus*); and grazing pressure from domestic stock are apparently in some areas.

Photo 12: HCV3 reserve at Greenwald showing varied tree cohort age classes with both *E. baxteri* and *E. ovata* tree species. Some trees are estimated at over 200 years old. The reserve is of high quality with mixed tree canopy arboreal habitat elements and Native Grass Tree (*Xanthorrhoea minor spp. Lutea*), Bracken (*Pteridium aqulinum var esculentum*) and Gahnia (*Gahnia radula*) dominated understory which provides key habitat for the Southern Brown Bandicoot and Long-Nosed Potoroo, FFG and EPBC listed species.

General Management Strategies:

1. Management prescriptions are designed to maintain or enhance the condition of threatened communities within or adjoining plantations subject to operational activity (see also Management Strategies for HCV 1).
2. Monitor the implementation of management prescriptions within the PMP whilst undertaking routine monitoring of forest operations. This may include monitoring for impacts in adjoining native forest; for example, hybridisation, wildlings, weeds, pests and disease.
3. Prescriptions shall be consistent with those specified in recovery/action plans developed under Commonwealth and State legislative procedures.
4. Contractor induction to PMPs requires sign off that they understand all the requirements and conditions contained within the PMPs.
5. Reserves, exclusion zones and areas of HCV have been mapped accurately on SFM's internal maps to ensure protection during forest operations.
6. Monitor the implementation of management prescriptions within the PMPs whilst undertaking routine monitoring and periodic auditing of forest operations.

Special Management Strategies:

1. Stock will be excluded from all HCV areas to protect from damage and allow natural regeneration.
2. Areas will be monitored for illegal firewood harvesting and human interference.
3. Any revegetation works should include species natural to the area.
4. Areas of HCV will be monitored for the presence of noxious weeds and managed accordingly. Green Triangle properties may have areas invaded by Radiata Pine (*P. radiata*),
5. Control of pest animals such as Foxes and Rabbits.

2.5 HCV 4

See Annex G NFSS for:

- intent
- guidance on critical situations, ecosystem services and values
- best available information
- assessment pathway
- values to be assessed
- management guidance

Key Information Sources:

1. SFM Natural, Cultural and High Conservation Values Management Plan
2. Glenelg Hopkins Regional Catchment Strategy 2022-2027
3. FSC Directory of Information Sources where deemed necessary
4. Index of condition database (DELWP)

Scope:

This HCV recognises critical ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes. Substantial alteration of these forests is likely to result in an unacceptable impact on the delivery of ecosystem services.

Assessment Pathway:

1. Consult the 'best information available' as recommended by Annex G to identify relevant datasets and prepare lists and maps of potential HCV accordingly. Cross check this with the Directory of Information Sources (referred to in the evaluation framework) to ensure all relevant information sources are checked (relevant sources are listed above). Identify indicators of flood risk, soil erodibility and erosion risk, fire risk, water catchment and water quality though interrogation of databases.
2. Undertake field assessments at each property to identify potential areas that provide basic ecosystem services in critical situations. Undertake threat assessment of management activities on identified HCV's.
3. Consult experts and other knowledgeable stakeholders to identify HCV's (e.g consultation with local ecologist to refine knowledge at sites with higher potential of providing basic ecosystems in critical situations).
4. Identify management required to maintain and/or enhance identified HCV's, including exclusion areas and/or management prescriptions.
5. HCV4 areas are marked on maps and included in PMP's.
6. Develop a program for periodic monitoring and adaptive management as required and record details in the Monitoring Database.
7. Consult stakeholders on assessment, management and monitoring.
8. Finalise assessment and implement management and monitoring plan.

Findings:

Protection from flooding

Some of the properties historically contained wetlands, and some properties still contain wetlands. Wetlands are important landscape features that reduce the impacts of flooding by holding and slowing floodwater. Most wetlands have been modified by drainage schemes and agricultural practices, which has greatly reduced the ecosystem services they once provided. Any wetlands in the properties assessed that do continue to hold water were not identified to be offering any services "critical" to protecting local communities or the environment.

Runnymede contains a small area of Rural Floodway overlay associated with the Glenelg River floodplains. The purpose of this planning control is to maintain the free passage and

temporary storage of flood waters, minimise flood damage and ensure compatibility with flood hazards, local drainage conditions and the minimisation of soil erosion, sedimentation and silting. The majority of the Runnymede property is significantly elevated and does not provide any significant protection from flooding to upstream or downstream areas.

Flood risk in relation to a decrease of forest cover was also considered however no properties were considered to provide protection services "critical" to protecting local communities or the environment.

Protection from erosion

Geomorphology across the properties is variable, ranging from gentle plains and slowly permeable soils, to rapidly drained sandy soils.

Runnymede contains a steep, treeless escarpment typical of the Casterton area. Land slips are evident, but comparison of historic and recent aerial imagery suggests the slips have stabilised (Photo 15). SFM have also complete a revegetation project in this area in conjunction with the Glenelg Hopkins Catchment Management Authority (GHCMA) as a preventative measure.

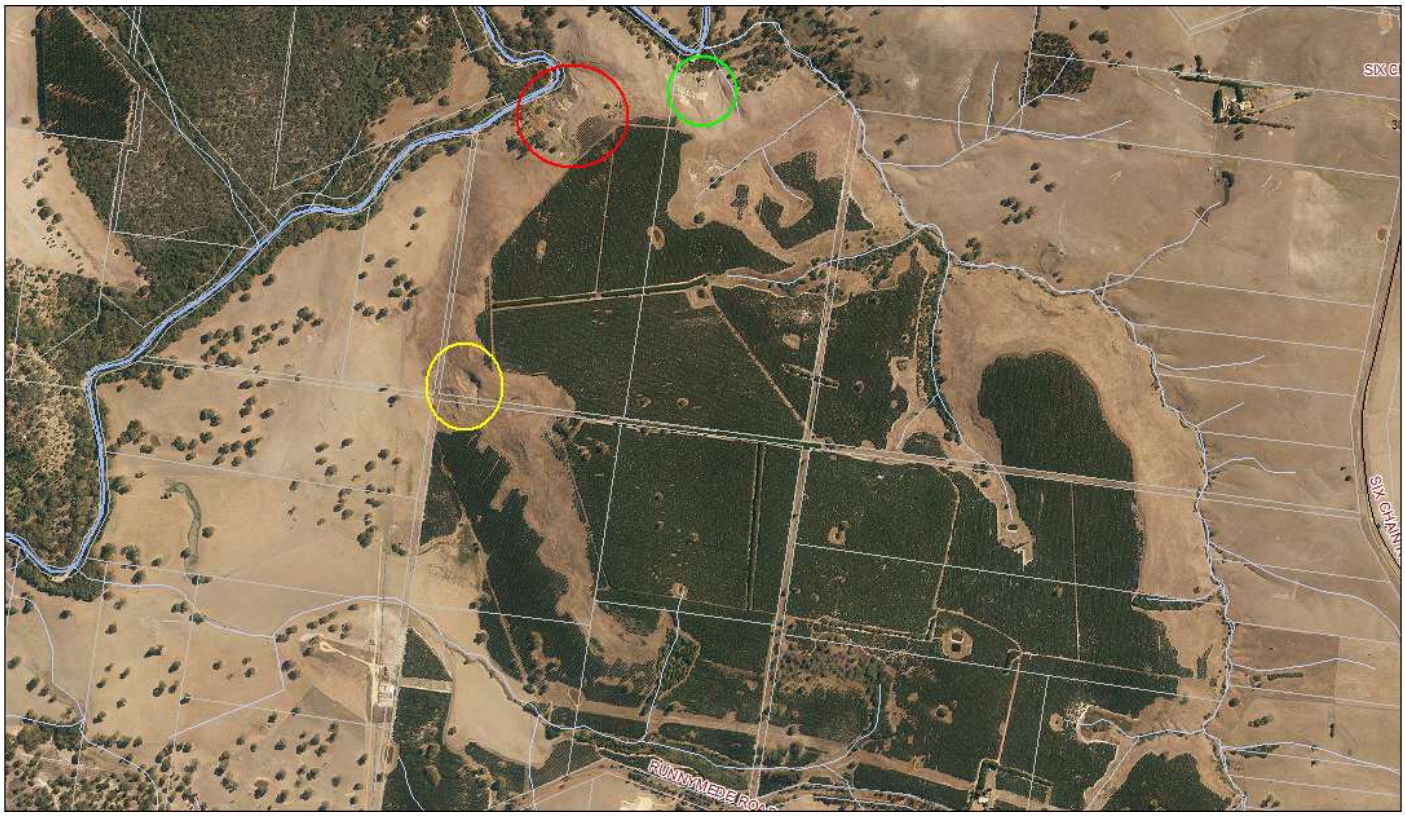

Photo 15: Locations of Landslips at Runnymede using 2010 imagery. Comparison of aerial photos shows landslips have not significantly changed since at least 1953.

Waverly West contains a creek that is a tributary to the Crawford River, noted for being in poor condition in the upper reaches. Some erosion is evident at the intersection of the creek line and the western boundary, attributable to lack of creek line vegetation on the neighbouring property. The creek line within the property was revegetated with non-indigenous species 15- 20 years ago and now provides an important but localised stabilising function (Photo 16). HCV 4 status has been assigned as a precautionary measure.

Photo 16. The main watercourse traversing the Waverly West site has been restored between 15-20 years ago to arrest critical soil erosion. Photo credit – Landtech.

Protection from destructive fires

Forests that may provide barriers to the spread of destructive fires include rainforest and wet sclerophyll gullies. These forest types are not present in this group of properties.

Clean water catchments

The properties are located across various catchments in gently undulating to flat landscapes that have been mostly cleared for agriculture. The landscapes that properties are located in have a wide range of land use types. Remnant native vegetation areas within this group of properties are small and/or degraded, offering little in maintaining clean water catchments. None of the properties assessed were located in local drinking water catchments, and therefore not deemed to be providing services to prevent a "critical" situation.

General Management Strategies:

1. Apply and monitor compliance with PMP for the coupe and with the current Code of Practice.
2. Participate in the industry planning process to promote strategic planning within water catchments between the forest managers of different tenures.
3. Time operations to ensure sites are harvested at the appropriate time of the year, depending on the likelihood of soil and water issues in wet conditions.
4. Ensure appropriate roading, harvesting and silvicultural prescriptions are used to minimise any potential soil movement during or post operation.
5. Ensure streamside reserves are adequately demarcated in the field.
6. Minimise the requirement for stream crossings wherever possible.

7. SFM is working with Nature Glenelg Trust, Glenelg Hopkins Catchment Management Authority and Basalt to Bay Landcare network to identify opportunities for waterway and wetland restoration.
8. SFM will routinely notify affected stakeholders (e.g. neighbours, councils etc.) of the intent to carry out forest operations, which helps identify any other stakeholders to be affected (for example unregistered domestic outtake points)
9. Implement and follow chemical application codes of practice requirements.
10. SFM undertakes an annual firebreak maintenance program to minimise the risk of spread of landscape level fire.

Special Management Strategies:

Waverly West

1. Exclude stock from creek.
2. Any areas identified as active areas of erosion will be addressed with advice from the Glenelg Hopkins Catchment Management Authority.

2.6 HCV 5

See Annex G NFSS for:

- definition of 'local communities', 'basic human needs', 'damage', 'affected stakeholders', 'ecosystems', 'Indigenous', 'ecosystems', 'fundamental', 'HCV's', 'monitoring', 'adaptive management'
- values to be assessed
- best available information
- assessment pathway
- management guidance

Scope:

HCV5 recognises forest areas that are fundamental to meeting basic needs of local communities. Basic needs are values on which local people are critically dependent. Potential fundamental basic needs include unique sources of water for drinking and other daily uses; food, medicine, fuel, building and craft resources; the production of food crops and subsistence cash crops; protection of "agricultural" plots against adverse microclimate, and traditional farming practices. Loss of the resources from this area would have a significant impact on the supply of the resource and decrease local community well-being.

Information Sources:

1. Declared Water Supply Catchments in Victoria & South Australia
2. Proclaimed Area Maps of Western Australia
3. Field Assessment
4. Stakeholder consultation
5. FSC Directory of Information Sources where appropriate

Assessment Pathway:

1. Consult the 'best information available' as recommended by Annex G to identify relevant datasets and prepare lists and maps of potential HCV accordingly. Cross check this with the Directory of Information Sources (referred to in the evaluation framework) to ensure all relevant information sources are checked (relevant sources are listed above).
2. Consult experts and other knowledgeable stakeholders to identify HCV's.
3. Undertake threat assessment of management activities on identified HCV's.
4. Identify management required to maintain and/or enhance identified HCV's, including exclusion areas and/or management prescriptions. Management strategies to maintain and/or enhance areas identified under HCV5 should be developed in cooperation with representatives and members of affected local communities and Indigenous peoples.
5. Develop a program for periodic monitoring and adaptive management as required. Summarise findings in the Conservation Monitoring Database and record any identified issues on the CPAR system.
6. Consult stakeholders on assessment, management and monitoring.
7. Finalise assessment and implement management and monitoring plan.

Stakeholder consultation with affected stakeholders will routinely occur whilst preparing HCV assessments and Property Management Plans (PMPs). Through these processes SFM will identify traditional uses of the plantation and any surrounding native forest. Where traditional uses are present, SFM will consult and engage with affected stakeholders on the planned forest operation. SFM will identify any concerns they may have and, where practicable, design management prescriptions to protect these values.

Findings:

No areas within the SFM GTL FMU or the SFM WA FMU were assessed as being fundamental to meeting basic needs of local communities – hence no areas of HCV 5 have been identified.

Aboriginal people live within the broader community, and have access to food stores, modern health services and medicines. The properties assessed do not contain foods and medicines fundamental for local traditional uses.

Drinking water sources for local people include groundwater and collected rainwater. None of the properties are in declared water supply catchments.

General Management Strategies:

1. Where values are identified, insert appropriate management prescriptions to protect values within the PMP.
2. Monitor the implementation of management prescriptions within the PMP whilst undertaking routine monitoring of forest operations.

2.7 HCV 6

See Annex G NFSS for:

- definition of 'habitats', 'landscapes', 'critical', 'communities' or 'Indigenous Peoples', 'engagement', 'local communities' and 'cultural significance'
- values to be assessed
- best available information
- assessment pathway
- management guidance

Scope:

HCV 6 recognises cultural values, sites, resources, habitats and landscapes of global or national cultural, archaeological and historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or Indigenous Peoples.

Information Sources:

1. Victorian Heritage Database
2. South Australian Heritage Places Database
3. State Heritage Register WA
4. Australian Heritage Database
5. Australian Heritage Places Inventory
6. Victorian Aboriginal Cultural Heritage Register and Information System (ACHRIS)
7. Taa wika Portal (SA Aboriginal Portal);
8. Aboriginal Heritage Inquiry System (AHIS) for Western Australia
9. Aboriginal Heritage Map (Cultural Heritage Sensitivity Layer Online)
10. SFM Resource Management System – Cultural Heritage Sensitivity Layer
11. Aboriginal Cultural Heritage Poster Series
12. Practice Note: Significant Ground Disturbance
13. Reconciliation SA – Map of Aboriginal Australia
14. Stakeholder consultation (e.g. RAP's)

Assessment Pathway:

8. Consult the 'best information available' as recommended by Annex G. Cross check this with the Directory of Information Sources (referred to in the evaluation framework) to ensure all relevant information sources are checked prior to undertaking field survey (relevant sources are listed above).
9. Consult experts and other knowledgeable stakeholders to identify HCV's (Liaison with local Aboriginal Parties or Cultural Heritage Advisors to refine knowledge of sites).

10. Undertake a field survey, refer to the Aboriginal Cultural Heritage Poster Series to aid recognition of potential sites.
11. Undertake threat assessment of management activities on identified HCV's by following the SFM Conservation Monitoring procedure Summarise findings in the Conservation Monitoring Database and record any identified issues on the CPAR system.
12. Identify management required to maintain and/or enhance identified HCV's, including exclusion areas and/or management prescriptions. Management actions and will be captured in the Conservation Monitoring Database. Specific management prescriptions will be added to the Property Management Plan.

    .
13. Consult stakeholders on assessment, management and monitoring.

Findings

HCV 6.1 Aesthetic values

The Department of Premier and Cabinet commissioned a study to identify special landscape values in South West Victoria. None of the properties are located along the major viewing corridors identified in the study.

HCV 6.2 Historic values of global or national cultural or archaeological significance

The Buji Bim Cultural Landscape – Mt Eccles Lake Condah Area occurs within the vicinity of SFM managed properties (in the area north of Tyrendarra, east to Bessibelle, and north to Macarthur). This landscape was included in the National Heritage List on 20th July 2004 and was inscribed on the World Heritage List on the 6th July 2019. SFM acknowledge the cultural significance of this special landscape and the importance it has to the Gunditjmara Traditional Owners. The Purcell property near Bessibelle borders this landscape, with a small area of story rise landform projecting onto the property. This area has been discussed below under 'spiritual and cultural values' and has been assigned HCV.

HCV 6.3 Long term research sites

No long-term research sites were identified.

HCV 6.4 Social (including economic) values

No social or economic values relevant to local communities or Indigenous people were identified.

HCV 6.5 Spiritual and cultural values

The properties are all freehold title and are in the traditional country of the Gunditjmara and/or Eastern Maar peoples in Victoria, the Buandig peoples in South Australia, and the Minang and Kaniyanh peoples in Western Australia. It is considered very unlikely that Aboriginal peoples are currently living within existing plantations on private property in Victoria, South Australia, or Western Australia.

Under the Commonwealth Native Title Act 1993, the valid grant of a freehold estate (other than certain types of Aboriginal and Torres Strait Islander land) on or before 23 December 1996 is known as a 'previous exclusive possession act'. This means that native title has been extinguished over the area. Native title claimants are not allowed to include land and waters covered by previous exclusive possession acts in their applications; therefore, they would normally exclude freehold areas. A native title application may, however, be made over freehold land on the basis that freehold was invalidly granted, but the chances of this happening are very low.

Aboriginal heritage may still exist on freehold titles, and these sites (registered or unregistered) are protected under the Victorian *Aboriginal Heritage Act 2006 & Aboriginal Heritage Amendment Act 2016, the* South Australian *Aboriginal Heritage Act 1988*, and the Western Australian *Aboriginal Heritage Act 1972*. Information about registered sites is available to landholders on application to the relevant department in SA and VIC and is available online without application for WA properties.

There are mapped areas of cultural heritage sensitivity in Victoria, which are landforms and land categories that are generally regarded as more likely to contain Aboriginal cultural heritage. The Victorian state government planning controls apply to development within properties containing these areas, and an online tool is available to determine if a planned activity requires a cultural heritage management plan. Within the plantations, these areas are mostly associated with waterways and wetlands located on or adjacent to the properties. SFM employs buffer zones and machinery exclusion around all major watercourses for the conservation of water values, biodiversity and possible cultural values within these zones consistent with the Victorian Code of Practice 2014.

SFM has identified two registered Aboriginal Heritage Sites on the Pettit property known as Montrose Mound 1 and Montrose Mound 2. Aboriginal mounds are places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells and stone tools. SFM has sought advice from the Gunditj Mirring Traditional Owners Aboriginal Corporation on the future management of these sites.

Another registered site falls immediately north of the Purcell boundary as discussed under HCV 6.2 above, associated with the stony rise landform. A small part of this landform projects into the Purcell property. This landform has been assigned as HCV based on advice from a cultural heritage advisor and Aboriginal Affairs Victoria.

A grave site of European Heritage has been identified on the Miltana property. The grave is located on a section of the property which is dominated by native vegetation which is managed for conservation values. Very little is known about the grave with research suggesting it belongs to a 22 year old woman who passed away in 1862.

No other sites of European Heritage have been identified.

General Management Strategies:

1. Where known sites exist, develop appropriate management prescriptions and maps in consultation with local aboriginal parties or other relevant authorities for inclusion in PMPs
2. Include Indigenous community in the process when making management decisions for sites with known Aboriginal heritage.

3. Monitor for impacts on any sites during periods of operational activity.
4. SFM will allow full access, if requested, to all areas under management for research or traditional use such as ceremonies, gathering, hunting, access to important sites or as part of teaching law and customs to future generations. Access may be denied due to health and safety concerns but not unnecessarily so.

Special Management Strategies:

Purcell

1. The property has been assessed by a cultural heritage advisor. It was determined that areas of archaeological potential at this location are restricted to the stony rise landform feature.
2. Harm to this aboriginal place can be avoided by continuing to avoid the stony rise feature that exists within the property boundaries.
3. If harm to this place cannot be avoided, a mandatory cultural heritage permit (CHP) or Cultural Heritage Management Plan (CHMP) will be required for management of this place prior to the proposed activity.

Pettit

1. There is an area of Aboriginal Cultural Heritage Sensitivity on the property, associated with the Eumeralla River at the East of the property. The area is either plantation or firebreak and contains registered Aboriginal sites (Montrose mound 1 and mound 2). The site has been assessed by a cultural heritage advisor and consultation is ongoing.
2. Harm to this aboriginal place can be avoided by not undertaking any ground disturbing operations within the area.
3. If harm to this place cannot be avoided, a mandatory cultural heritage permit (CHP) or Cultural Heritage Management Plan (CHMP) will be required for management of this place prior to the proposed activity.

Miltana

1. The grave is located on a section of the property which is dominated by native vegetation which is managed for conservation values.
2. Harm to the grave site can be avoided by ensuring no ground disturbing operations occur within the conservation area.

3 LIST OF ACRONYMS AND ABBREVIATIONS

ABP	Australian Bluegum Plantations
BC	Biodiversity Conservation Act 2016
CMA	Catchment Management Authority
DELWP	Department of Environment, Land, Water and Planning
ENGOs	Environmental Non-Government Organisations
EVC	Ecological Vegetation Class
EPBC	Environment Protection and Biodiversity Conservation Act 1999
FFG	Flora and Fauna Guarantee Act 1988
FMU	Forest Management Unit
FSC	Forest Stewardship Council
HCVs	High Conservation Values
IBRA	Interim Biogeographic Regionalisation for Australia
NPWA	National Parks and Wildlife Act 1972
PMP	Property Management Plan
SFM	Sustainable Forest Management –

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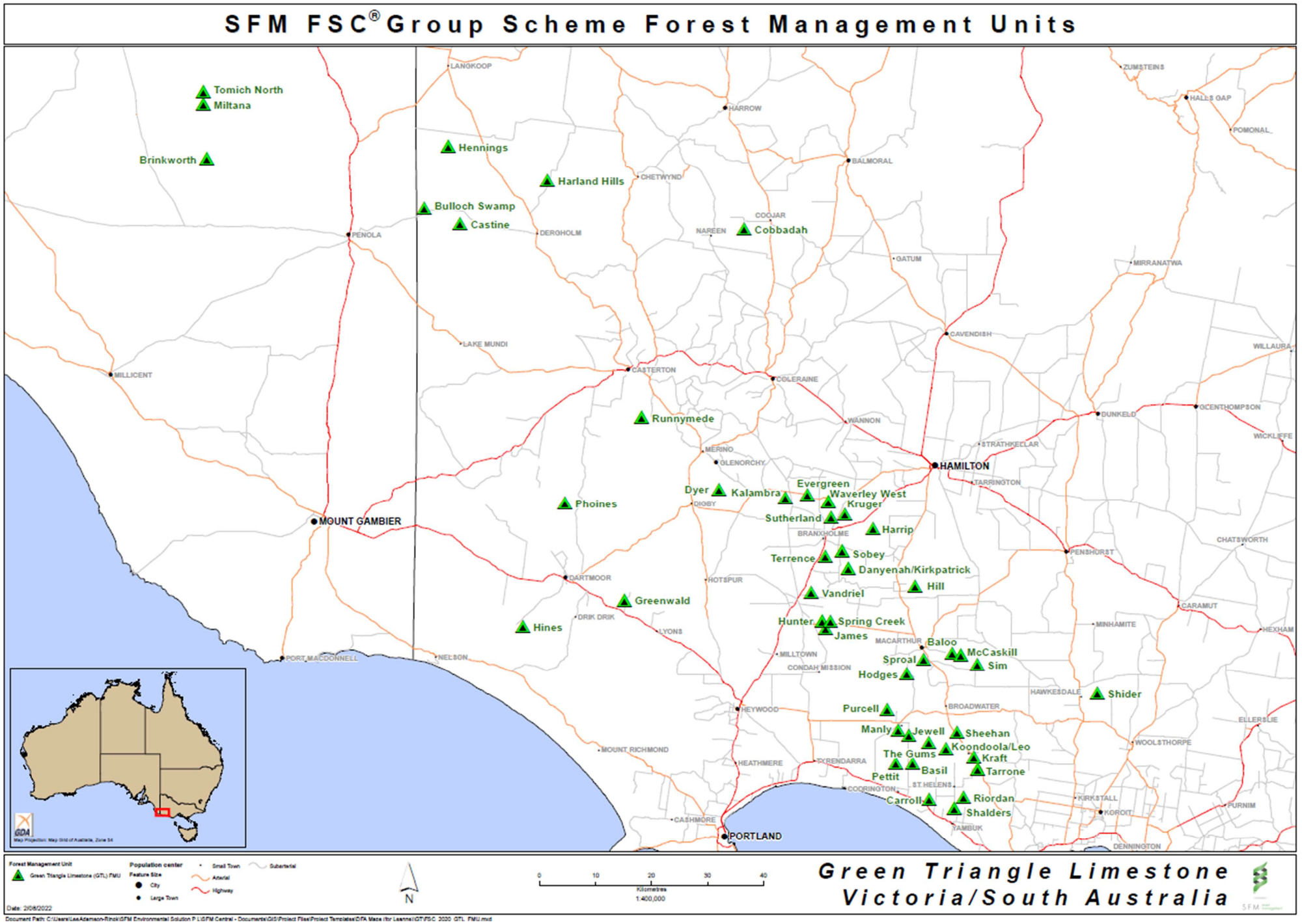
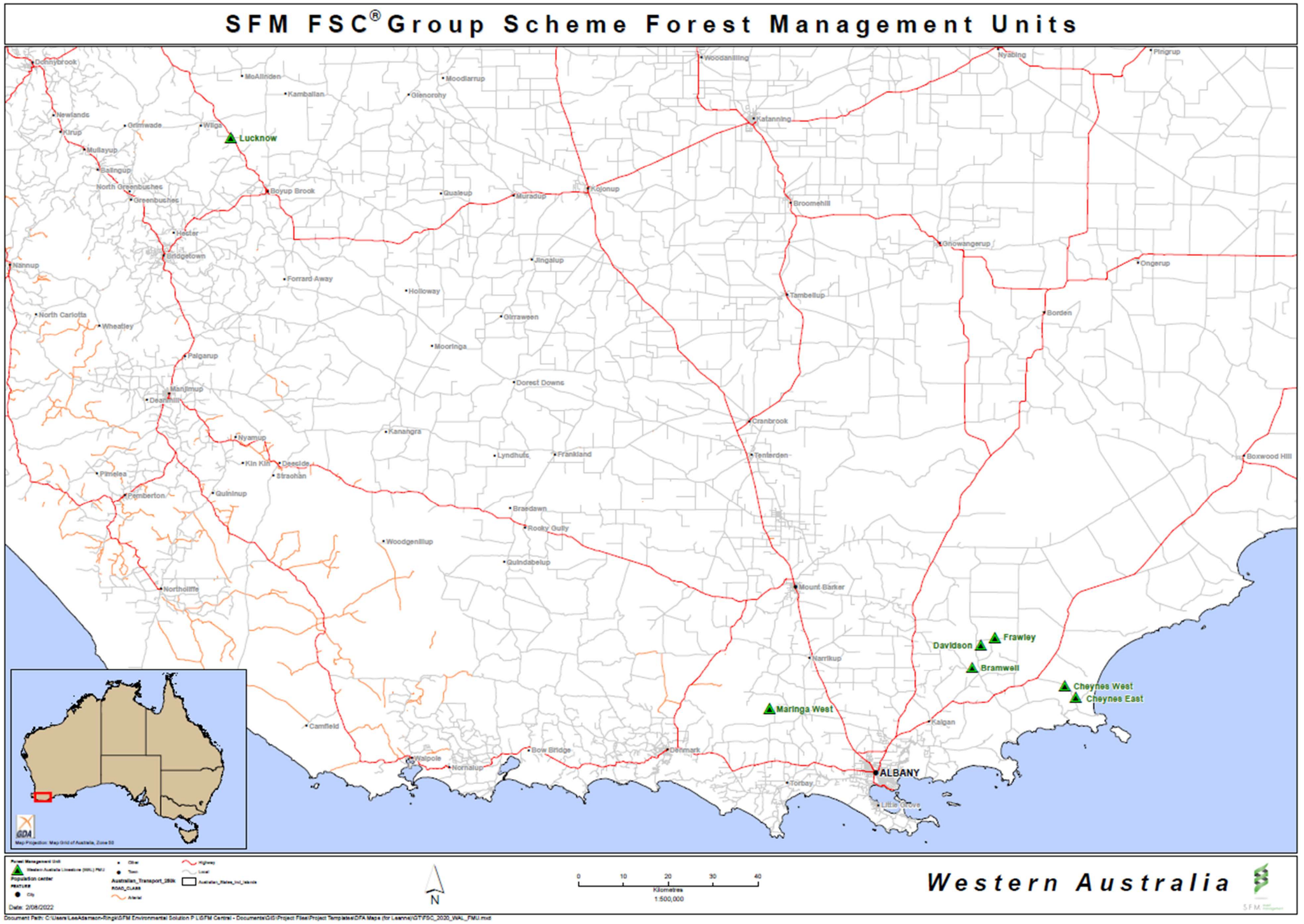
Appendix 1a: Property locations for Green Triangle Limestone (GTL) FMU (As at August 2022)



Appendix 1b: Property locations for Western Australia Limestone (WAL) FMU (As at August 2022)



Appendix 2a: Rare, threatened and endangered flora and fauna species likely to use properties in the GTL FMU

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Amphibian	*Pseudophryne bibronii*	Brown Toadlet	Remnant native woodland and along drainage lines	Phoines, Kraft, Sheehan, Tarrone	No		Endangered	Rare
GTL	Amphibian	*Litora raniformis*	Growling Grass Frog	Wetland, dams, rivers, creeks, drainage lines	Bulloch Swamp, Castine, Baloo, Dyer, McCaskill, Purcell, Runnymede, Sobey, Phoines, Kraft, Tarrone, Sheehan	No	Vulnerable	Vulnerable	
GTL	Amphibian	*Pseudophryne semimarmorata*	Southern Toadlet, Marbled Toadlet	Glenelg River and Bowtell creek	Runnymede, Kruger, Sutherland, Sproal, Kraft, Sheehan, Tarrone, Shalders	No		Endangered	Vulnerable
GTL	Bird	*Botaurus poiciloptilus*	Australasian Bittern	Densely vegetated wetlands.	Bulloch Swamp, Baloo, Dyer, Purcell, Sobey, Sutherland, Shalders	No	Endangered	Critically Endangered	
GTL	Bird	*Spatula rhynchotis*	Australasian Shoveler	Wetland, dams, rivers, creeks, drainage lines.	Baloo, Dyer, Sobey, Kalambra, Kruger, Sutherland, Shider, Sproal, Shalders	No		Vulnerable	Rare
GTL	Bird	*Rostratula australis*	Australian Painted Snipe	Wetlands with mosaic of low, patchy vegetation.	Bulloch Swamp, Castine, Baloo, Koondoola_Leo, Sobey, Shalders	No	Endangered	Critically Endangered	Endangered
GTL	Bird	*Ceyx azurea*	Azure Kingfisher	Glenelg River and Bowtell creek	Baloo, Dyer, Sobey, Pettit, Runnymede	No			
GTL	Bird	*Ceyx azurea azurea*	Azure Kingfisher	Not known		No			Endangered
GTL	Bird	*Ninox connivens connivens*	Barking Owl	Woodland	Sproal	No		Critically Endangered	Rare
GTL	Bird	*Falco subniger*	Black Falcon	Woodland	Kalambra, Sutherland, Terrence, Vandriel, Sproal, Kruger	No		Critically Endangered	Rare
GTL	Bird	*Oxyura australis*	Blue-billed Duck	Wetland areas	Sutherland, Sproal, Shalders	No		Vulnerable	Rare
GTL	Bird	*Antigone rubicunda*	Brolga	Wetland areas	Bulloch Swamp, Castine, Tomich North, Miltana, Greenwald, Purcell, Kruger, Sutherland, Shider, Sproal, Pettit, Manly, Sheehan, Basil, Tarrone, Shalders	Yes (Bulloch Swamp)		Endangered	Vulnerable
GTL	Bird	*Hydroprogne caspia*	Caspian Tern	Wetlands and waterways	Shalders	No		Vulnerable	
GTL	Bird	*Calidris ferruginea*	Curlew Sandpiper	Wetlands & dams	Bulloch Swamp, Castine, Tomich North, Miltana, Sutherland, Terrence, Kraft, Shalders	No	Critically Endangered	Critically Endangered	Endangered
GTL	Bird	*Stagonopleura guttata*	Diamond Firetail	Woodland	Sproal	No		Vulnerable	Vulnerable
GTL	Bird	*Stictonetta naevosa*	Freckled Duck	Wetland areas	Shalders	No		Endangered	Vulnerable

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Bird	*Plegadis falcinellus*	Glossy Ibis	Wetland areas	Sproal, Shalders	No			Rare
GTL	Bird	*Accipiter novaehollandiae*	Grey Goshawk	Sub-optimal foraging and transient, plantation not suitable for breeding	Jewell, Kruger, Sutherland, Kraft, Manly, Sheehan, Basil, Tarrone	No		Endangered	Endangered
GTL	Bird	*Pluvialis squatarola*	Grey Plover	Wetlands	Shalders	No		Vulnerable	
GTL	Bird	*Pezoporus wallicus wallicus*	Mainland/Eastern - Ground Parrot	Close to water. Eucalyptus woodlands and mallee shrublands.	Kraft, Sheehan, Tarrone	No		Endangered	Endangered
GTL	Bird	*Gelochelidon nilotica macrotarsa*	Gull-billed Tern	Wetlands and waterways	Shalders	No		Endangered	
GTL	Bird	*Thinornis cucullatus cucullatus*	Eastern Hooded Plover	Wetlands		No	Vulnerable	Vulnerable	Vulnerable
GTL	Bird	*Melanodryas cucullata cucullata*	(South-eastern) Hooded Robin	Sub-optimal foraging and transient, plantation not suitable for breeding. Can be found in drainage lines.	Hodges, Waverly West, Sproal, Pettit	No		Vulnerable	Rare
GTL	Bird	*Tringa stagnatilis*	Marsh Sandpiper	Wetlands	Shalders	No		Endangered	
GTL	Bird	*Tyto novaehollandiae novaehollandiae*	(Southern) Masked Owl	Forests, woodlands, and riparian vegetation along waterways.	Greenwald, Sproal	No		Critically Endangered	Endangered
GTL	Bird	*Pezoporus occidentalis*	Night Parrot	Close to water. Eucalyptus woodlands and mallee shrublands.	Hennings	No	Endangered		Endangered
GTL	Bird	*Neophema chrysogaster*	Orange-bellied Parrot	Wetlands and waterways		No	Critically Endangered	Critically Endangered	Endangered
GTL	Bird	*Grantiella picta*	Painted Honeyeater	Sub-optimal foraging and transient, plantation not suitable for breeding. May occur in native forests with *Eucalyptus* & *Acacia* species. Connected to presence of mistletoe.	Brinkworth, Bulloch Swamp, Castine, Hennings, Tomich North, Miltana, Evergreen, McCaskill	No	Vulnerable	Vulnerable	Rare
GTL	Bird	*Ninox strenua*	Powerful Owl	Open forests and woodlands. Sheltered gullies in	Greenwald, Runnymede, Waverly West, Manly, Sheehan, Basil	No		Vulnerable	Endangered

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
				wet forests with dense understoreys especially along watercourses.					
GTL	Bird	*Haematopus fuliginosus*	Sooty Oystercatcher	Wetland	Shalders	No			Rare
GTL	Bird	*Calyptorhynchus banksii graptogyne*	South Eastern Red-tailed Black Cockatoo	Heathy woodland (E. baxteri, E. arenacea), E. camaldulensis hollows, areas of remnant veg	Brinkworth, Bulloch Swamp, Castine, Greenwald, Hennings, Tomich North, Miltana, Phoines, Runnymede, Waverly West, Kruger, Sutherland, Terrence	No	Endangered	Endangered	Endangered
GTL	Bird	*Cinclosoma punctatum*	Spotted Quail-thrush	Woodland		No			Endangered
GTL	Crustacean	*Geocharax falcata*	Grampians Bush Yabby	Wetlands and waterways	Tarrone, Kraft	No		Endangered	
GTL	Crustacean	*Engaeus sericatus*	Hairy Burrowing Crayfish	Wetland areas	Purcell, Shider	No		Vulnerable	
GTL	Ecological community		Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions		NA	No	Endangered		
GTL	Ecological community		Grassy Eucalypt Woodland of the Victorian Volcanic Plain		NA	No	Critically Endangered		
GTL	Ecological community		Grey Box Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		NA	No	Endangered		
GTL	Ecological community		Natural Temperate Grassland of the Victorian Volcanic Plain		NA	No	Critically Endangered		
GTL	Ecological community		Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains		NA	No	Critically Endangered		
GTL	Ecological community		White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and		NA	No	Critically Endangered		

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
			Derived Native Grassland						
GTL	Fish	*Prototroctes maraena*	Australian Grayling	Rivers and streams with cool clear moderate flow	Greenwald, Runnymede	No	Vulnerable	Endangered	
GTL	Fish	*Galaxiella pusilla*	Eastern Dwarf Galaxias	Slow flowing and still shallow, permanent and temporary freshwater wetlands, drains, streams, and creeks.	Bulloch Swamp, Castine, Greenwald, The Gums, McCaskill, Runnymede	No	Vulnerable	Endangered	
GTL	Fish	*Galaxiella toourtkoourt*	Little Galaxias	Slow flowing and still shallow, permanent and temporary freshwater wetlands, drains, streams, and creeks.	Kraft, Tarrone	No		Endangered	
GTL	Fish	*Macquaria australasica*	Macquarie Perch	Larger upland rivers and streams	Runnymede	No	Endangered	Endangered	
GTL	Mammal	*Phascogale tapoatafa*	Brush-tailed Phascogale	Grassland / Woodland		No		Vulnerable	Endangered
GTL	Mammal	*Sminthopsis murina murina*	Common Dunnart	Grassland / Woodland	Sproal	No		Vulnerable	
GTL	Mammal	*Perameles gunnii*	Eastern Barred Bandicoot	Grassland / Woodland	Sheehan	No	Endangered	Endangered	Endangered
GTL	Mammal	*Pteropus poliocephalus*	Grey-headed Flying-Fox	Not in known foraging area - may have transient presence in remnant native woodland and plantation	May be transient in all properties	No	Vulnerable	Vulnerable	Rare
GTL	Mammal	*Pseudomys shortridgei*	Heath Mouse	Frequently found in species-rich dry heathland that has been burnt 5-15 years prior. Also occurs in dry Brown Stringybark and Desert Stringybark open forest with health understorey.	Bulloch Swamp, Castine, Greenwald	No	Endangered	Endangered	Endangered
GTL	Mammal	*Pseudomys fumeus*	Smokey Mouse	Occurs in a variety of vegetation communities.	Bulloch Swamp, Castine	No	Endangered	Endangered	

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
				Ground cover is important.					
GTL	Mammal	*Miniopterus orianae bassanii*	Southern Bent-wing Bat	Not in known foraging area - may have transient presence in remnant native woodland and plantation	May be transient in all properties	No	Critically Endangered	Critically Endangered	Endangered
GTL	Mammal	*Isodon obesulus obesulus*	Southern Brown Bandicoot (eastern)	Heathy woodland with dense heath or shrub understorey	Brinkworth, Bulloch Swamp, Greenwald, Purcell, Runnymede, Kraft, Tarrone	No	Endangered	Endangered	Vulnerable

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Mammal	*Dasyurus maculatus maculatus*	Spot-tailed Quoll	Native remnant vegetation	Purcell, Sproal, Basil	No	Endangered	Endangered	Endangered
GTL	Mammal	*Antechinus minimus maritimus*	Swamp Antechinus	Heathly woodland with dense understorey	Brinkworth, Bulloch Swamp, Castine, Greenwald.	No	Vulnerable	Vulnerable	Endangered
GTL	Migratory Marine Birds	*Bubulcus ibis coromandus*	Eastern Cattle Egret	Not known					Rare
GTL	Migratory Marine Birds	*Bubulus ibis*	Cattle Egret	Large expanding range. Can be found in wetlands, dams, river, creeks, drains	Brinkworth, Bulloch Swamp, Castine, Greenwald, The Gums, Tomich North, Miltana, Vandriel	No			
GTL	Migratory Marine Birds	*Ardea alba modesta*	Eastern Great Egret	Water body	Baloo, Dyer, Jewell, McCaskill, Riordan, Sobey, Kalambra, Sproal, Kraft, Manly, Shalders	No		Vulnerable	
GTL	Migratory Marine Birds	*Apus pacificus*	Fork-tailed Swift	Wide range of habitats. Forests, open areas, wetlands.	Brinkworth, Bulloch Swamp, Castine, Greenwald, Hennings, The Gums, Tomich North, Miltana, Sim	No	Protected Migratory Species		
GTL	Migratory Marine Birds	*Ardea alba*	Great Egret	Large expanding range. Can be found in wetlands, dams, river, creeks, drains including the Eumeralla River and Glenelg River.	Brinkworth, Bulloch Swamp, Castine, Greenwald, The Gums, Tomich North, Miltana, Baloo, Dyer, McCaskill, Purcel, Runnymede, Sobey, Waverly West	No			
GTL	Migratory Marine Birds	*Aythya australis*	Hardhead	Water body	Dyer, Kalambra, Kruger, Sutherland, Shider, Sproal, Sproal, Shalders	No		Vulnerable	
GTL	Migratory Marine Birds	*Ardea intermediate plumifera*	Plumed Egret	Not known				Critically Endangered	Rare
GTL	Migratory Marine Birds	*Ardea intermedia*	Intermediate Egret	Water body	Sobey, Sutherland, Sproal	No			
GTL	Migratory Marine Birds	*Egretta garzetta nigripes*	Little Egret	Wetland	Shalders	No		Endangered	Rare
GTL	Migratory Marine Birds	*Anseranas semipalmata*	Magpie Goose	Wetlands	Bulloch Swamp, Castine, Shider, Shalders	No		Vulnerable	Endangered
GTL	Migratory Marine Birds	*Biziura lobata menziesi*	Musk Duck	Not known					Rare
GTL	Migratory Marine Birds	*Biziura lobata*	Musk Duck	Water body	Dyer, Kalambra, Kruger, Sutherland, Shider, Sproal, Manly, Shalders	No		Vulnerable	

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Migratory Marine Birds	*Rostratula benghalensis*	Painted Snipe	Reedy swamps/wetlands, usually in lowlands.	Bulloch Swamp, Castine,	No			
GTL	Migratory Marine Birds	*Merops ornatus*	Rainbow Bee-eater	Sub-optimal foraging and transient, plantation not suitable for breeding. May be present in remnant native woodland and plantation near water.	Brinkworth, Bulloch Swamp, Castine, Hennings, The Gums, Tomich North, Miltana, Sim, Dyer, McCaskill, Phoines, Purcell, Runnymede, Waverly West	No			
GTL	Migratory Marine Birds	*Calidris alba alba*	Sanderling	Not known					Rare
GTL	Migratory Marine Birds	*Calidris alba*	Sanderling	Coastal, wetlands	Shalders	No	Protected Migratory Species		
GTL	Migratory Terrestrial Species	*Myiagra cyanoleuca*	Satin Flycatcher	Tall forests and wetter habitats	Brinkworth, Bulloch Swamp, Castine, Greenwald, Hennings, The Gums, Tomich North, Miltana, Sim, Purcell	No	Protected Migratory Species		Endangered
GTL	Migratory Terrestrial Species	*Hirundapus caudacutus caudacutus*	Eastern White-throated needletail	Not known					Vulnerable
GTL	Migratory Terrestrial Species	*Hirundapus caudacutus*	White-throated Needletail	Wide range of habitats. Forests, open areas, wetlands.	All properties	No	Protected Migratory Species (Vulnerable)	Vulnerable	
GTL	Migratory Terrestrial Species	*Motacilla flava*	Yellow Wagtail	Marshes, meadows, riverbanks, forests. Wide range.	All properties	No	Protected Migratory Species		
GTL	Migratory Wetland Birds	*Tringa nebularia*	Common Greenshank	Wetland habitats / marshy areas	Tomich North, Miltana, Sutherland, Shalders	No	Protected Migratory Species	Endangered	
GTL	Migratory Wetland Birds	*Actitis hypoleucos*	Common Sandpiper	Wetlands, shallow rivers, creeks, drains	Brinkworth, Bulloch Swamp, Greenwald, Castine, The Gums, Tomich North, Miltana, Shalders	No	Protected Migratory Species	Vulnerable	Rare
GTL	Migratory Wetland Birds	*Numenius madagascariensis*	(Far) Eastern Curlew	Wetlands	Bulloch Swamp, Castine, Greenwald, Tomich North, Miltana	No	Critically Endangered, Protected Migratory Species		Vulnerable

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Migratory Wetland Birds	*Gallinago hardwickii*	Latham's Snipe	Wetlands, dams, rivers	Bulloch Swamp, Castine, Greenwald, The Gums, Tomich North, Miltana, Sim, Baloo, Dyer, McCaskill, Purcell, Riordan, Sobey, Kruger, Sutherland, Sproal, Manly, Shalders	No	Protected Migratory Species		Rare
GTL	Migratory Wetland Birds	*Pandion haliaetus*	Osprey	Can be found in a variety of habitats.	The Gums, Tomich North, Miltana, Greenwald, Sim	No	Protected Migratory Species		
GTL	Migratory Wetland Birds	*Calidris melanotos*	Pectoral Sandpiper	Wetlands & dams	Bulloch Swamp, Castine, Greenwald, Hennings, Tomich North, Miltana, Sim	No	Protected Migratory Species		Rare
GTL	Migratory Wetland Birds	*Calidris acuminata*	Sharp-tailed Sandpiper	Grassy edges of shallow wetlands	Bulloch Swamp, Greenwald, Castine	No	Protected Migratory Species		
GTL	Migratory Wetland Birds	*Tringa glareola*	Wood Sandpiper	Wetland areas	Sobey, Sutherland	No	Protected Migratory Species	Endangered	Rare
GTL	Plant	*Lachnagrostis adamsonii*	Adamson's Blown-grass	Widespread across the Victorian Volcanic Plan. Usually in swamps and depressions.	Bulloch Swamp, Castine, Hennings, Sim	No	Endangered	Endangered	
GTL	Plant	*Cassinia tegulata*	Avenue Cassinia	Remnant vegetation	Tomich North	No	Critically Endangered	Critically Endangered	Endangered
GTL	Plant	*Dianella sp. aff. revoluta (Minjah)*	Basalt Flax-lily	Grassland / Woodland	Shider	No			
GTL	Plant	*Lepidium hyssopifolium*	Basalt Peppercress	Grassland / Woodland	Shider	No	Endangered	Endangered	
GTL	Plant	*Dipodium campanulatum*	Bell Flower Hyacinth Orchid	Native remnant vegetation	Tomich North	No	Endangered	Endangered	Vulnerable
GTL	Plant	*Thelymitra benthamiana*	Blotched Sun-orchid	Grassland / Woodland	Sheehan	No		Endangered	
GTL	Plant	*Lomandra glauca s.s.*	Blue Mat-rush	Grassland / Woodland	Kraft, Sheehan, Tarrone	No			
GTL	Plant	*Acacia exudans*	Casterton Wattle	Heathland / Woodland	Bulloch Swamp	Yes (Bulloch Swamp)		Critically Endangered	
GTL	Plant	*Glycine latrobeana*	Clover Glycine	Mostly found in grassy woodland habitats, less often in dry forests, and rarely in heathland.	Brinkworth, Bulloch Swamp, Castine, Greenwald, Hennings, Tomich North, Miltana, Vandriel, Shider, Kraft, Tarrone	No	Vulnerable	Vulnerable	Vulnerable

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Plant	*Caladenia colorata*	Coloured Spider-orchid	Found in sand or sandy loams in woodland and mallee habitats (pink gum, bluegum, golden wattle)	Brinkworth, Tomich North, Miltana	No	Endangered	Critically Endangered	Endangered
GTL	Plant	*Carex tasmanica*	Curly Sedge	Grassland / Woodland	Kruger, Sutherland, Terrence, Harrip, Sproal	No		Endangered	
GTL	Plant	*Prasophyllum spicatum*	Dense Leek-orchid	Coastland, Hinterland heath, and heathy woodland	Shider, Kraft, Tarrone	No	Vulnerable	Critically Endangered	Endangered
GTL	Plant	*Austrostipa puberula*	Fine-hairy Spear-grass	Grassland / Woodland	Shider	No		Endangered	

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Plant	*Prasophyllum diversiflorum*	Gorae Leek-orchid	Along watercourses and around swamps on heavy black soils that are seasonally indundated.	The Gums, Sim, Sheehan	No	Endangered	Critically Endangered	
GTL	Plant	EPBC & Vic FFG Act: *Caladenia tensa* SA NPW Act: *Caladenia dilatata*	Greencomb Spider-orchid	Found in sand or sandy loams	Brinkworth, Bulloch Swamp, Castine, Hennings, Tomich North, Miltana	Yes (Brinkworth)	Endangered	Endangered	
GTL	Plant	*Pterostylis chlorogramma*	Green-striped Greenhood	Heathy and shrubby forests	Brinkworth, Bulloch Swamp, Greenwald, Castine	No	Vulnerable	Endangered	Endangered
GTL	Plant	*Microlepidium pilosulum*	Hairy Shepherd's Purse	Grassland / Woodland	Shalders	No		Critically Endangered	Rare
GTL	Plant	*Platylobium triangulare*	Ivy Flat-pea	Grassland / Woodland	Sheehan	No			
GTL	Plant	*Lemna trisulca*	Ivy-leaf Duckweed	Wetlands		No			
GTL	Plant	*Leptorhynchos elongatus*	Lanky Buttons	Grassland / Woodland	Shider	No		Endangered	Endangered
GTL	Plant	*Pterostylis cucullata*	Leafy Greenhood	Tea-tree vegetation communities.		No	Vulnerable		
GTL	Plant	*Pterostylis cucullata cucullata*	Leafy Greenhood	Not known		No		Endangered	Endangered
GTL	Plant	*Prasophyllum frenchii*	Maroon Leek-orchid	Grassland and grassy woodlands on sandy to black clay loams that are damp but well drained.	Shider	No	Endangered	Endangered	Endangered
GTL	Plant	*Thelymitra epipactoides*	Metallic Sun-orchid	Open woodland or mallee habitats dominated by heath species in the understorey.	Brinkworth, Bulloch Swamp, Greenwald, Castine	No	Endangered	Endangered	Endangered
GTL	Plant	*Coronidium gunnianum*	Pale Swamp Everlasting	Wetlands including sedge swamps and shallow freashwater marshes	Carroll	No		Critically Endangered	Endangered
GTL	Plant	*Xanthosia leiophylla*	Parsley Xanthosia	Grassland / Woodland	Sheehan	No		Critically Endangered	
GTL	Plant	*Lachnagrostis punicea subsp. Filifolia*	Purple Blown-grass, Narrow leaf Blown Grass	Wet marshes, saline swamps and depressions	Shider, Shalders	No		Endangered	Rare
GTL	Plant	*Bossiaea riparia*	River Leafless Bossiaea	Grassland / Riparian	Kalambra	No		Endangered	

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Plant	*Amphibromus fluitans*	River Swamp Wallaby-grass	Natural and man made water-bodies including swamps, lagoona, billabongs and dams.	Greenwald	No	Vulnerable		
GTL	Plant	*Ixodia achillaeoides subsp. Arenicola*	Sand Ixodia	Sand Ixodia occurs on windswept, exposed limestone headlands in low coastal shrublands, often on steep slopes.	Greenwald	No	Vulnerable		Endangered
GTL	Plant	*Poa fax*	Scaly Poa	Grassland / Woodland	Shalders	No		Endangered	Rare
GTL	Plant	*Cardamine tenuifolia*	Slender Bitter-cress	Grassland / Woodland	Kraft, Tarrone, Sheehan	No			Rare
GTL	Plant	*Chorizandra australis*	Southern Bristle-sedge	Wet areas	Shider	No			Endangered
GTL	Plant	*Thelymitra matthewsii*	Spiral Sun-orchid	Heathly open woodlands and forests, on well-drained sand, gravel and clay loam soils. Favours areas that have been disturbed (road verges, tracks)	Brinkworth, Bulloch Swamp, Castine, Hennings, Tomich North, Miltana	No	Vulnerable	Endangered	Endangered
GTL	Plant	*Diuris palustris*	Swamp Diuris	Coastal areas, open eucalyptus forest, sedge grassland and healthland with tea-tree and paperpark	Shider	No		Endangered	
GTL	Plant	*Xerochrysum palustre*	Swamp Everlasting	Wetlands including sedge swamps and shallow freashwater marshes	Bulloch Swamp, Castine	No	Vulnerable	Critically Endangered	
GTL	Plant	*Senecio psilocarpus*	Swamp Fireweed	High quality herb-rich woodlands	Bulloch Swamp, Castine	No	Vulnerable		
GTL	Plant	*Dianella callicarpa*	Swamp Flax-lily	Grassland / Woodland	Shider, Kraft, Pettit, Manly, Sheehan, Carroll, Basil, Tarrone	No		Endangered	Endangered
GTL	Plant	*Galium curvihirtum*	Tight Bedstraw	Woodland	Brinkworth	Yes (Brinkworth)		Vulnerable	Rare
GTL	Plant	*Dodonaea procumbens*	Trailing Hop-bush	Native remnant vegetation	Brinkworth, Bulloch Swamp, Castine, Hennings, Tomich North, Miltana	Yes (Bulloch Swamp)	Vulnerable		Vulnerable

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	Vic FFG Threatened List	SA NPW Act
GTL	Plant	*Eucalyptus falciformis*	Western Peppermint	Areas of remnant vegetation	Runnymede, Sheehan	No		Vulnerable	
GTL	Plant	*Leucochrysum albicans subsp. tricolor*	White Sunray	Grassland / Woodland	Sproal	No	Endangered	Endangered	
GTL	Reptile	*Pseudemoia rawlinsoni*	Glossy Grass Skink	Grassland		No		Critically Endangered	Vulnerable
GTL	Reptile	*Varanus varius*	Lace Monitor	Woodlands	Sheehan	No		Endangered	Rare
GTL	Reptile	*Delma impar*	Striped Legless Lizard	Areas of remnant vegetation with good cover at ground level	Brinkworth, Bulloch Swamp, Greenwald, Castine, Runnymede, Kalambra	No	Vulnerable	Endangered	Endangered
GTL	Reptile	*Pseudemoia pagenstecheri* (Volcanic Plains)	Tussock Skink	Grassland	Sheehan	No		Endangered	Rare

Appendix 2b: Rare, threatened and endangered flora and fauna species likely to use properties in the WAL FMU

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	WA BC Act Threatened and Priority List	WA Rare Flora/Fauna Notice
WA	Bird	*Calidris ferruginea*	Curlew Sandpiper	Wetlands & dams.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Critically Endangered	Critically Endangered	Critically Endangered
WA	Bird	*Calyptorhynchus banksii naso*	Forest Red-tailed Black-Cockatoo	Eucalypt forests. Feeds on seding Marri, Jarrah, Blackbutt, Karri, Sheoak and Snottygobble. It nests in hollows of Marri, Jarrah, Wandoo, Karri and Bullich trees.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Vulnerable	Vulnerable	Vulnerable
WA	Bird	*Calyptorhynchus baudinii*	Baudin's Cockatoo	Feeds in eucalypt forests of Jarrah, Marri, and Karri, and in Banksia and Hakea. It breeds in hollows of Karri, Marri, and Wandoo trees.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Endangered	Endangered	Endangered
WA	Bird	*Calyptorhynchus latirostris*	Carnaby's Cockatoo	Feeds in kwongan heath plants such as Banksias, Dryandra, Hakea, Grevillea, and Marri seeds. Breeds in eucalypt woodland comprising Salmon Gum or Wandoo.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Endangered	Endangered	Endangered

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	WA BC Act Threatened and Priority List	WA Rare Flora/Fauna Notice
WA	Bird	*Dasyornis longirostris*	Western Bristlebird	Coastal heathlands with diverse range of dense low growing shrubs.	Bramwell, Cheynes, Davidson, Maringa West	No	Vulnerable	Listed	Vulnerable

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	WA BC Act Threatened and Priority List	WA Rare Flora/Fauna Notice
WA	Bird	*Atrichornis clamosus*	Noisy Scrub-bird	Dense, long-unburnt vegetation of low forest and scrub but rarely in heath. This vegetation community commonly occurs in gullies and drainage lines of hills, granite mountains, lowland areas, overgrown swamps, lake margins, and beside streams.	Cheynes	No	Vulnerable	Listed	Endangered
WA	Ecological community		Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	NA	Bramwell, Cheynes, Davidson	No	Endangered	Poorly known ecological community	
WA	Mammal	*Dasyurus geoffroii*	Western Quoll	Most abundant in areas of contiguous Jarrah forest.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Vulnerable	Vulnerable	Vulnerable
WA	Mammal	*Parantechinus apicalis*	Dibbler	Occurs in mallee-heath with some Banksias or Dryandras present. Vegetation eneds to be at least 10 years since fire, and 50%-100% cover at less than 1m height.	Bramwell, Cheynes, Davidson, Maringa West	No	Endangered	Endangered	Endangered
WA	Mammal	*Pseudocheirus occidentalis*	Western Ringtail Possum	Arboreal habitats of peppermint woodlands and eucalypt forests.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Critically Endangered	Critically Endangered	Critically Endangered
WA	Mammal	*Setonix brachyurus*	Quokka	Dense vegetation near swamps. Shade and moist environments.	Cheynes	No	Vulnerable	Vulnerable	Vulnerable
WA	Migratory Marine Birds	*Apus pacificus*	Fork-tailed Swift	Wide range of habitats. Forests, open areas, wetlands.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Protected Migratory Species	Protected Migratory Species	Protected Migratory Species

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	WA BC Act Threatened and Priority List	WA Rare Flora/Fauna Notice
WA	Migratory Terrestrial Species	*Motacilla cinerea*	Grey Wagtail	Usually found near fast-flowing streams in forested areas as well as lowland watercourses such as canals and rivers. Can be found in plantations, farmland, and even town centres.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Protected Migratory Species	Protected Migratory Species	Protected Migratory Species
WA	Migratory Marine Birds	*Thinornis cucullatus cucullatus*	Hooded Plover	Near beaches and inland salt lakes.	Bramwell, Cheynes, Davidson,	No	Vulnerable	Priority (4) Near Threatened	
WA	Migratory Wetland Birds	*Tringa nebularia*	Common Greenshank	Wetland habitats / marshy areas.	Bramwell, Cheynes, Davidson, Maringa West	No	Protected Migratory Species	Protected Migratory Species	Protected Migratory Species
WA	Migratory Wetland Birds	*Actitis hypoleucos*	Common Sandpiper	Wetlands, shallow rivers, creeks, drains.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Protected Migratory Species	Protected Migratory Species	Protected Migratory Species
WA	Bird	*Numenius madagascariensis*	Eastern Curlew	Wetlands.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Critically Endangered	Listed	Vulnerable
WA	Bird	*Pezoporus flaviventris*	Western Ground Parrot	Wetlands.	Cheynes	No	Critically Endangered & Protected Migratory Species	Critically Endangered	Critically Endangered & Protected Migratory Species
WA	Bird	*Psophodes nigrogularis nigrogularis*	Western Heath Western Whipbird	Wetlands.	Cheynes	No	Endangered	Endangered	Endangered
WA	Migratory Wetland Birds	*EPBC Act: Pandion haliaetus* WA BC Act: *Pandion cristatus*	Osprey Eastern Osprey	Can be found in a variety of habitats.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Protected Migratory Species	Protected Migratory Species	Protected Migratory Species
WA	Migratory Wetland Birds	*Calidris melanotos*	Pectoral Sandpiper	Wetlands & dams.	Bramwell, Cheynes, Davidson, Lucknow, Maringa West	No	Protected Migratory Species	Protected Migratory Species	Protected Migratory Species
WA	Migratory Wetland Birds	*Calidris acuminata*	Sharp-tailed Sandpiper	Grassy edges of shallow wetlands.	Bramwell, Cheynes, Davidson,	No	Protected Migratory Species	Protected Migratory Species	Protected Migratory Species

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	WA BC Act Threatened and Priority List	WA Rare Flora/Fauna Notice
					Lucknow, Maringa West				
WA	Plant	*Banksia brownii*	Brown's Banksia	Southern populations occr among low woodland of E. marginata (Jarrah) in shallow, nutrient-poor white or grey sand over laterite soils.	Bramwell, Cheynes, Davidson, Maringa West	No	Endangered	Critically Endangered	Critically Endangered
WA	Plant	*Banksia goodii*	Good's Banksia	Understorey species in Jarrah, Wandoo, and Karri forests.	Maringa West	No	Vulnerable	Vulnerable	Vulnerable
WA	Plant	*Banksia verticillata*	Granite Banksia	Grows on granite outcrops.	Cheynes	No	Vulnerable	Critically Endangered	Critically Endangered
WA	Plant	*Chordifex abortivus*	Manypeaks Rush	Known to occur mostly east of Albany in sand gravelly clay in heath or scrub with a sedge understorey. Associated with *Hakea cucullata*, *Banksia brownii*, *B. baxteri*, *B. coccinea*, *Melaleuca striata*, *Pericalymma ellipticum*, and D*asypogon bromeliifolius*.	Bramwell, Cheynes, Davidson,	No	Endangered	Vulnerable	Vulnerable
WA	Plant	*Conostylis misera*	Grass Conostulis	North of Stirling Range to Narrikup and across to the South Stirling Area. Favours seasonally waterlogged flats of brown or grey sandy loam over clay duplex soils where it inhabits low woodland over heath or sedge, mallee heath and heath.	Bramwell, Cheynes, Davidson, Maringa West	No	Endangered	Vulnerable	Vulnerable
WA	Plant	*Darwinia collina*	Yellow Mountain Bell	Endemic to mountain summit areas of the Stirling Range where it grows on shallow siliceous soils over sandstone and shale, in dense heath and thicket.	Cheynes	No	Endangered	Critically Endangered	Critically Endangered
WA	Plant	*Darwinia oxylepis*	Gillam's Bell	Confined to gullies near the lower slopes of mountains in the Stirling Range National Park. The species grows in mallee heathland on acid, sandy, clay soil on rough, rocky ground in seasonally moist gullies.	Cheynes, Davidson	No	Endangered	Endangered	Endangered
WA	Plant	*Darwinia wittwerorum*	Wittwer's Mountain Bell	The habitat consists of open mallee over scrub in sandy clays	Davidson	No	Endangered	Endangered	Endangered

FMU	Lifeform	*Scientific Name*	Common Name	Habitat requirements	Potential properties based on habitat requirements	Identified in FMU?	EPBC Act	WA BC Act Threatened and Priority List	WA Rare Flora/Fauna Notice
				over schist. It occurs in drainage lines from approximately 320 to 480 metres altitude.					
WA	Plant	*Daviesia obovata*	Paddle-leaf Daviesia	Mallee scrub in sandy clays.	Davidson	No	Endangered	Endangered	Endangered
WA	Plant	*Drakaea micrantha*	Dwarf Hammer-orchid	Grows in bare sand in woodlands.	Bramwell, Cheynes, Davidson, Maringa West	No	Vulnerable	Endangered	Endangered
WA	Plant	*Isopogon uncinatus*	Albany Cone Bush	Seasonally damp soil, shallow sandy-clay over granite, or gravelly soil from decomposed laterite over granite, in saddles between summit rocks. Associated vegetation is heath.	Bramwell, Cheynes, Davidson, Maringa West	No	Endangered	Critically Endangered	Critically Endangered
WA	Plant	*Sphenotoma drummondii*	Mountain Paper-heath	Mountain peaks. Shallow soil over granite, quartzite, or schist. Commonly located on sheer cliff faces or over-hangs. Associated with heath vegetation.	Bramwell, Cheynes, Davidson, Maringa West	No	Endangered	Endangered	Endangered
WA	Plant	*Kennedia glabrata*	Northcliffe Kennedia	Soil pockets, sandy soils. Granite outcrops.	Cheynes	No	Vulnerable	Vulnerable	Vulnerable
WA	Plant	*Commersonia erythrogyna*	Trigwell's Rulingia	Only occurs in WA in the IBRA Bioregion Jarrah Forest.	Lucknow	No	Endangered	Critically Endangered	Critically Endangered
WA	Plant	*Diuris micrantha*	Dwarf Bee-orchid	Dark, grey to blackish, sandy clay-loam substrates in winter wet depressions or swamps. The bases of the flowering plants are often covered with shallow water.	Lucknow	No	Vulnerable	Vulnerable	Vulnerable
WA	Plant	*Verticordia apecta*	Hay River Featherflower	Grows in sandy clay with loam and broken granite on a west-facing slope in Eucalyptus wandoo low open woodland and low open shrub land.	Lucknow	No	Critically Endangered	Critically Endangered	Critically Endangered