

8. Leigh Landscape Zone

8.1 Leigh Landscape Zone description

The Leigh Zone consists of undulating plains lying roughly between Geelong, Meredith, Sutherland Creek and the Moorabool River in the east; Wingeel and the Warrambine Creek in the west; Mia Mia Creek and the Barwon River to the south; and Central Victorian Uplands bioregion to the north. Boundaries have been determined with reference to Land Systems, pre-1750 EVCs and hydrology (Barwon and Moorabool Rivers, and Sutherland, Warrambine and Mia Mia Creeks). It is bordered to the west by the Rokewood Zone, to the east by the Werribee Zone, the south by Corangamite East and Barwon Zones and to the north by the Ballan Zone and the Central Victorian Uplands bioregion (Map 2). The zone falls entirely within the Corangamite Catchment Management Authority area (Map 11) and includes parts of the Greater Geelong, Golden Plains, Surf Coast and Moorabool Shires (Map 12).

The landscape is an extensive volcanic plain with finely textured yellow duplex soils and yellow and grey clays. A large area of Tertiary sediments of the Moorabool Viaduct Formation occurs in the southern part of the zone. Soils in this area are generally mottled yellow duplex soils. The Leigh River cuts a wide and (in places) steep gorge through the overlying basalt and Tertiary and Ordovician sediments. Rainfall varies markedly from south to north: average annual rainfall is approximately 511 mm at Bannockburn and 750 mm north of Mount Mercer. The vast majority of native vegetation has been cleared. Major agricultural activities are sheep and cattle grazing on improved pastures and cropping.

Pre-1750 vegetation cover would have comprised of Plains Grassland and Plains Grassy Woodland dominated by Manna Gum, River Red Gum, Yellow Gum, Drooping Sheoak, Lightwood, Banksia and Blackwood (Map 29). Floodplain Riparian Woodland, Creekline Grassy Woodland and Escarpment Shrublands occurred along the Leigh, Moorabool and Barwon Rivers and other major streams. A few larger wetlands supported Plains Sedgy Wetland and Plains Grassy Wetland or a mosaic of Aquatic Herbland and Plains Sedgy Wetland.

The zone includes considerable geomorphological and biotic variation. Its proximity to the Central Victorian Uplands bioregion contributes to the diversity of flora and fauna present. Although, the majority of vegetation in the region has been cleared for agriculture, highly significant areas of native vegetation remain on both public and private land (Map 31). Relatively large areas of remnant vegetation remain in the south on lighter soils, along the Leigh River and adjoining the Mount Mercer Road (Map 30). Relatively intact Plains Grassland is generally restricted to small public land sites although several highly significant large areas of native grassland persist on private land.

The majority of land is freehold with only a small number of conservation reserves and streamside reserves (Map 14). Inverleigh Flora and Fauna Reserve is the largest conservation reserve. A number of highly significant remnants occur in cemeteries, on road and rail reserves and other public land sites including escarpment areas of the Leigh River Gorge. There is a considerable opportunity to protect and link remnants associated with major waterways.

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8.1 Leigh Landscape Zone description (cont'd)

The zone includes remnants of several highly threatened vegetation communities including vegetation types and vegetation sequences that are unusual within the bioregion (Map 31). A major conservation objective is to retain such areas. Protection of remaining extensive areas of native vegetation, especially where these are adjoining, is an overwhelming priority. Mt Mercer Road, Shelford-Cressy Road, Bannockburn Cemetery, Bannockburn Rail Reserve and several areas on private land are of critical importance for the conservation of native grasslands across the bioregion. The zone includes important populations of numerous plant species including *Small Scurf-pea*, *Tough Scurf-pea*, *Button Wrinklewort*, *Large-fruit Fireweed* and *Spiny Rice-flower* (Map 32). Extensive areas of suitable habitat are present for *Striped Legless Lizard*, *Golden Sun Moth*, *Plains-wanderer*, *Common Dunnart* and *Fat-tailed Dunnart* especially on private land. Plains Grassy Woodland areas are of significance for *Swift Parrot*, *Painted Honeyeater* and hollow dependent species (Map 33). *Brolga*, *Nankeen Night Heron*, *Royal Spoonbill*, *Australian Shoveler*, *Hardhead* and a number of other wetland dependent species are widely distributed.

Changes to landuse, clearing of native vegetation (including clearing due to installation and maintenance of roads and utilities), weed invasion, inappropriate burning regimes, overgrazing by stock and feral animals, predation by feral animals, loss of plant and animal diversity, degradation of riparian habitats and fragmentation are all significant issues for biodiversity conservation. Protection and restoration of freehold and roadside grassland and grassy woodland remnants are critical to retain the remaining biodiversity assets. For biodiversity gains to be made there will need to be considerable voluntary co-operation and participation of private landholders, upon whose management actions much of the remaining native biota will depend.

References: LCC (1980), LCC (1985), Beaglehole (1983), Ecology Australia (2002), Ross (1999), McDougall et al (1992, 1993), Hadden (1995, 1998), Scarlett & Parsons (1996).

Note: The Final Report of Ecology Australia (2002) is likely to provide details of further biodiversity assets in this zone.

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8.1 Leigh Landscape Zone description (cont'd)

Table 18. Total area of pre-1750 and extant EVCs in the Leigh Landscape zone.

EVC group	EVC #	EVC Bioregional Conservation Status	EVC Name	Pre-1750 Area (ha)	Current Area (ha)
13	897	E	Plains Grassland/Plains Grassy Woodland Mosaic	31182	253
13	132	E	Plains Grassland	26856	255
14	55	E	Plains Grassy Woodland	20835	1710
15	56	E	Floodplain Riparian Woodland	3662	351
5	175	E	Grassy Woodland	3498	165
15	68	E	Creepline Grassy Woodland	1426	50
8	851	E	Stream-bank Shrubland	979	248
8	53	E	Swamp Scrub	628	9
6	22	D	Grassy Dry Forest	534	27
16	3	V	Damp Sands Herb-rich Woodland	362	104
19	647	E	Plains Sedgy Wetland	329	71
14	895	E	Escarpment Shrubland	296	37
9	641	E	Riparian Woodland	267	8
6	47	V	Valley Grassy Forest	252	30
16	164	E	Creepline Herb-rich Woodland	161	34
19	125	X	Plains Grassy Wetland	146	2
2	134	E	Sand Forest	61	35
19	691	E	Aquatic Herbland/Plains Sedgy Wetland Mosaic	41	1
6	20	LC	Heathy Dry Forest	27	4
15	198	V	Sedgy Riparian Woodland	5	<1
3	16	LC	Lowland Forest	<1	0
TOTAL				91630	3976
99	998	NA	Water Body - Natural or man made	82	77
99	987	NA	Plantation (undefined)	0	212
99	58	NA	Cleared Severely Disturbed	0	506
99	997	NA	Private Land No Tree Cover	0	87443

Table 19. Total area and number of current EVCs in each conservation status in the Leigh Landscape zone.

EVC Conservation Status	Hectares	Number of EVCs
Endangered	3226	13
Vulnerable	135	3
Depleted	27	1
Rare	0	0
Least Concern	4	1
Presumed Extinct	2	1

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8.1 Leigh Landscape Zone description (cont'd)

Table 20. List of current threatened flora the Leigh Landscape Zone (NRE 2002x* & SAC 2002# and EA 2003*).

Scientific name	Common name	Australian Status [*]	Victorian Status [*]	FFG Act [#]	Recovery Plan [*]	Action Statement [*]	BNA Unassessed	Species No.
<i>Rutidosia leptorhynchoides</i>	Button Wrinklewort	End	e	L	Y	28		2982
<i>Glycine latrobeana</i>	Clover Glycine	Vul	v	L				1456
<i>Thelymitra X macmillanii</i>	Crimson Sun-orchid		v				Un	3377
<i>Arachnorchis pumila</i>	Dwarf Spider-orchid	Ext	x	L			Un	544
<i>Prasophyllum suaveolens</i>	Fragrant Leek-orchid	End	e	L		147		4567
<i>Senecio macrocarpus</i>	Large-fruit Fireweed	Vul	e	L		68		3116
<i>Arachnorchis magnifica</i>	Magnificent Spider-orchid		x	L			Un	4349
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	End	e	L		154	Un	2709
<i>Eucalyptus leucoxyton ssp. connata</i>	Melbourne Yellow-gum		v	X			Un	4484
<i>Thelymitra circumsepta</i>	Naked Sun-orchid		v				Un	3383
<i>Microseris sp. 1</i>	Plains Yam-daisy		v				Un	4657
<i>Pultenaea graveolens</i>	Scented Bush-pea		v	L			Un	2849
<i>Prasophyllum fosteri</i>	Shelford Leek-orchid		e	L		165	Un	5632
<i>Diuris sp. aff. lanceolata (Laverton)</i>	Small Golden Moths	End	e	L				1473
<i>Comesperma polygaloides</i>	Small Milkwort		v	L		96		798
<i>Cullen parvum</i>	Small Scurf-pea	End	e	L		31		2773
<i>Pimelea spinescens</i>	Spiny Rice-flower		e	L				3894
<i>Pimelea spinescens ssp. spinescens</i>	Spiny Rice-flower	Vul	e					4823
<i>Craspedia paludicola</i>	Swamp Billy-buttons		v				Un	4649
<i>Cullen tenax</i>	Tough Scurf-pea		e	L				2776
<i>Olearia pannosa ssp. cardiophylla</i>	Velvet Daisy-bush		v	L				2317

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8.1 Leigh Landscape Zone description (cont'd)

Table 21. List of current threatened fauna in the Leigh Landscape Zone
(EA 2003*, DSE 2003^, NRE 2002x* & SAC 2002#).

Latin Name	Common Name	Australian Status*	Victorian Status^*	FFG Act#	Recovery Plan*	Action Statement No.*	BNA Unassessed	Species No.
<i>Ardeotis australis</i>	Australian Bustard		CR	L			Un	176
<i>Prototroctes maraena</i>	Australian Grayling	Vul	VU	L				4031
<i>Porzana pusilla palustris</i>	Baillon's Crake		VU					50
<i>Falco subniger</i>	Black Falcon		VU					238
<i>Grus rubicunda</i>	Brolga		VU	L				177
<i>Coturnix ypsilophora australis</i>	Brown Quail		NT				Un	10
<i>Phascogale tapoatafa tapoatafa</i>	Brush-tailed Phascogale		VU	L		79	Un	1017
<i>Burhinus grallarius</i>	Bush Stone-curlew		EN	L		78	Un	174
<i>Sterna caspia</i>	Caspian Tern		NT					112
<i>Hylacola pyrrhopygia</i>	Chestnut-rumped Heathwren		VU				Un	498
<i>Sminthopsis murina murina</i>	Common Dunnart		VU					1061
<i>Stagonopleura guttata</i>	Diamond Firetail		VU				Un	652
<i>Perameles gunnii un-named subsp.</i>	Eastern Barred Bandicoot	End	CR	L	Y	4		1098
<i>Sminthopsis crassicaudata</i>	Fat-tailed Dunnart		NT				Un	1072
<i>Stictonetta naevosa</i>	Freckled Duck		EN	L		105		214
<i>Ardea alba</i>	Great Egret		VU	L				187
<i>Accipiter novaehollandiae novaehollandiae</i>	Grey Goshawk		VU					220
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler		EN	L		34	Un	443
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vul	VU				Un	1280
<i>Litoria raniformis</i>	Growling Grass Frog	Vul	EN				Un	3207
<i>Aythya australis</i>	Hardhead		VU				Un	215
<i>Melanodryas cucullata cucullata</i>	Hooded Robin		NT				Un	385
<i>Ardea intermedia</i>	Intermediate Egret		CR	L				186
<i>Turnix velox</i>	Little Button-quail		NT				Un	18
<i>Cacatua leadbeateri leadbeateri</i>	Major Mitchell's Cockatoo		VU	L		87	Un	270
<i>Tyto novaehollandiae novaehollandiae</i>	Masked Owl		EN	L			Un	250
<i>Biziura lobata</i>	Musk Duck		VU				Un	217
<i>Nycticorax caledonicus hillii</i>	Nankeen Night Heron		NT					192
<i>Grantiella picta</i>	Painted Honeyeater		VU	L			Un	598
<i>Calidris melanotos</i>	Pectoral Sandpiper		NT				Un	978
<i>Phalacrocorax varius</i>	Pied Cormorant		NT					99
<i>Pedionomus torquatus</i>	Plains-wanderer	Vul	CR	L		66		20
<i>Gadopsis marmoratus</i>	River Blackfish		CR					4127
<i>Platalea regia</i>	Royal Spoonbill		VU					181
<i>Chthonicola sagittata</i>	Speckled Warbler		VU				Un	504
<i>Lathamus discolor</i>	Swift Parrot	End	EN	L	Y	169		309
<i>Chlidonias hybridus javanicus</i>	Whiskered Tern		NT				Un	110

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8.2 Leigh Landscape Zone priorities

8.2.1 Summary of priority biodiversity actions for Leigh Landscape Zone:

The zone includes a number of relatively large areas of native vegetation on both public and private land and several sites of very high conservation significance. Important populations of many threatened species are found on roadsides, rail reserves and cemeteries and on private land. The focus of biodiversity management should be to:

- Protect and enhance areas supporting endangered EVCs and threatened species.
- Develop conservation agreements to protect areas supporting threatened EVCs and threatened species on public land.
- Protect and enhance large areas of native vegetation on private land through incentives, purchase, covenants or land management agreements.
- Develop a Conservation Management Network to protect and manage Plains Grassland and Plains Grassy Woodland conservation values.
- Protect, enhance and restore riverine corridors especially the Leigh, Moorabool and Barwon Rivers.

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8.3 Private Land

Land tenure details:

The tenure includes all freehold land. Associated creeklines and unreserved public wetlands surrounded by freehold land are also included in this tenure for convenience. Relatively large and very high quality areas of grassland, wetland and escarpment EVCs occur in the northern part of this zone adjoining the Leigh River. Other significant areas of remnant vegetation are found to the south west of Bannockburn and west of Lethbridge.

Land Manager:

Private landholders

Stakeholders:

Key CMA, DSE, DPI, LGA

Others LFW, GAV, ATCV, FNC, VFF, LC, TFN, TSN, FTG, GNP.

Threatened Biodiversity Assets (in brackets: Cons status Vic - lower case, Aust - upper case; followed by BNA priority / risk rankings for threatened taxa = 1A, 2B, etc., or un - unassessed):

EVCs: Plains Grassland (e), Plains Grassland/Plains Grassy Woodland Mosaic (e), Plains Grassy Woodland (e), Plains Sedgy Wetland (e), Plains Grassy Wetland (e), Damp Sands Herb-rich Woodland (v).

Threatened flora: Clover Glycine (Vv,1B); Corkscrew Spear-grass (r,NR); Golden Cowslips (v,2A); Hairy Tails (l,NR), Pale Swamp Everlasting (v,NR); Rye Beetle-grass (r,NR); Small Golden Moths (Ee,1A); Small Milkwort (v,1A); Small Scurf-pea (Ee,2B); Southern Swainson-pea (r,NR); Spiny Rice-flower (Ve,3A); Spurred Spear-grass (r,NR); Tough Scurf-pea (e,1A); Turkey Bush (v,NR); White Cypress-pine (v,NR).



Southern Swainson-pea - DSE

Threatened fauna: Brolga (v,1B); Fat-tailed Dunnart (dd,NR); Golden Sun Moth (Ee,3A); Hardhead (v,NR); Musk Duck (v,NR); Nankeen Night Heron (v,1B); Plains-wanderer (Ve,1A); River Blackfish (v,2B); Striped Legless Lizard (Vv,1A); Warty Bell Frog (new name is Growling Grass Frog) (Vv,NR).



Striped Legless Lizard - DSE

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8.3 Private Land (cont'd)

Recommended actions:

Protection of existing remnants:

- Monitor populations of Small Scurf-pea, Small Golden Moths and Tough Scurf-pea.
- Identify remnants of high conservation and strategic significance, focusing on those that support native grassland, stony knoll and wetland EVCs. Determine priorities for protection of remnants and apply covenants, management agreements, voluntary programs, incentives and/or planning controls, as appropriate, to protect these blocks.
- Acquire large significant areas of native grassland and high quality wetlands to be managed as conservation reserves where such sites are available or where this is required to protect conservation values.
- Adhere strictly to native vegetation retention controls, particularly where habitat exists for threatened fauna and flora.

Management to enhance remnants for threatened taxa (BNA response level in brackets: 4 = full commitment, 3 = substantive participation, 2 = opportunistic action, 1 = watching brief):

- Manage stock grazing in native grasslands to benefit Western Basalt Plains Grassland, Plains-wanderer (4), Striped Legless Lizard (4), Small Milkwort (4), Spiny Rice-flower (3), Clover Glycine (3), Tough Scurf-pea (4), Golden Cowslips (3), Small Golden Moths (4), Hairy Tails, Small Scurf-pea (2) and Golden Sun Moth (3).
- Control weeds including Serrated Tussock and Chilean Needle-grass to benefit Western Basalt Plains Grassland, Striped Legless Lizard (4), Small Milkwort (4), Spiny Rice-flower (3), Hairy Tails, Small Golden Moths (4) and Golden Sun Moth (3).
- Trial ecological burns to benefit Western Basalt Plains Grassland, Small Golden Moths (4), Hairy Tails and Spiny Rice-flower (3), mindful of potential effects on Plains-wanderer (4).
- Implement control programs for foxes and cats, giving priority to known or potential habitat sites of Plains-wanderer (4), Striped Legless Lizard (4) and Brolga (3).
- Control introduced herbivores to benefit Plains-wanderer (4).
- Control and exclude where required stock grazing on wetlands to benefit Brolga (3).
- Enhance quantity of water flows to wetlands to benefit Brolga (3).
- Control hunting (especially the use of lead shot) to benefit Brolga (3).
- Provide information to landholders to benefit Brolga (3).
- Control human disturbance at roosting, nesting and breeding sites to benefit Nankeen Night Heron (3).



Serrated Tussock -
Viridans

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8.3 Private Land (cont'd)

- Exclude stock grazing from riparian zones to benefit remnant vegetation and River Blackfish (2).
- Enhance quality and quantity of water flows to benefit River Blackfish (2).
- Remove in-stream barriers to benefit River Blackfish (2).



Restoration of strategic vegetation blocks or linkages:

- Reintroduce Small Scurf-pea into areas of suitable secure habitat.
- Supplement habitat to benefit Golden Sun Moth, Nankeen Night Heron and River Blackfish.
- Aim to increase patch size and connectivity on sites where landholders are agreeable. Provide assistance with fencing and other management strategies on restoration areas.
- Use LFW program, Landcare, and other programs as appropriate, to encourage and assist landholders to restore and expand native vegetation cover and wetlands, using fencing, grazing exclusion, weed control, erosion control, reseeding, replanting and regeneration.
- Develop programs to restore and enhance grassland, riparian and wetland vegetation and create habitat links between existing areas of wetland and native vegetation on public and private land. Particular effort should be placed on areas adjoining the Leigh, Moorabool and Barwon Rivers.
- Develop a Conservation Management Network, embracing public and private land sites from Mount Mercer to Inverleigh.

OTHER POLICIES, PLANS OR PROGRAMS supporting one or more of the recommended actions:

- Recovery Plan & FFG Action Statement – Striped Legless Lizard (17).
- FFG Action Statement – Plains-wanderer (66).
- FFG Action Statement – Golden Sun Moth (106).
- FFG Action Statement – Small Milkwort (96).
- FFG Action Statement – Small Scurf-pea (31).
- FFG Action Statement – Predation by Red Fox (44).
- FFG Action Statement – Predation by Cat (80).
- FFG Action Statement – Western Basalt Plains Grassland (53).
- JAMBA – Plains-wanderer.

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8.4 Other Public Land

Land tenure details:

Generally all public land where conservation is not the primary management objective. Significant areas include Bannockburn RecR (O6), Teesdale RecR (O9), Teesdale Timber Reserve (R34), Meredith Reserve (O4), Bannockburn RR (BB), Murgheboluc RR (MB), Wingeel RR (WG) and PLWF.

Land Manager:

DSE, DPI, PTC

Stakeholders:

Key DSE, DPI, Private, CMA, LGA, VCM

Others TSN, BG, GNP, FNC, LC, FG.

Threatened Biodiversity Assets (in brackets: Cons status Vic - lower case, Aust - upper case; followed by BNA priority / risk rankings for threatened taxa = 1A, 2B, etc., or un - unassessed):

EVCs: Plains Grassy Woodland (e); Plains Grassland (e); Grassy Woodland (e); Plains Grassland/Plains Grassy Woodland Mosaic (e); Streambank Shrubland (e)

Threatened flora: Basalt Sun-orchid (e,NR); Branching Groundsel (k,NR); Button Wrinklewort (Ee,1A); Derrinallum Billy-buttons (v,2B); Fragrant Leek-orchid (Ee,1A); Fragrant Salt-bush (r,NR); Hairy Tails (l,NR); Large-fruit Fireweed (Ve,1A); Small Milkwort (v,2A); Spiny Rice-flower (Ve,1A); Turkey Bush (v,NR); White Cypress-pine (v,NR); Yellow Gum (Ve,NR).



Spiny Rice-flower - DSE

Threatened fauna: Grey Goshawk (ln,4C); Painted Honeyeater (v,NR); Swift Parrot (Ee,4A).



Grey Goshawk - DSE

Recommended actions:

Protection of existing remnants:

- Signpost rail reserves that support threatened EVCs and threatened species.
- Develop PAMAs to protect Western Basalt Plains Grassland and populations of Button Wrinklewort, Spiny Rice-flower, Large-fruit Fireweed, Fragrant Leek-orchid and Small Milkwort on rail reserves.
- Review habitat values and status of public land.
- Monitor and protect areas supporting threatened EVCs, flora and fauna.
- Assess status and condition of water frontages, lake reserves, uncommitted public land and rail reserves, especially with respect to grazing, fencing and weed control requirements. Implement measures to provide maximum protection for existing values, excluding or reducing grazing wherever possible.

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8.4 Other Public Land (cont'd)

Management to enhance remnants for threatened taxa (BNA response level in brackets: 4 = full commitment, 3 = substantive participation, 2 = opportunistic action, 1 = watching brief):

- Exclude stock grazing from rail reserves to benefit Western Basalt Plains Grassland, Button Wrinklewort (4), Small Milkwort (3), Fragrant Leek-orchid (4) and Spiny Rice-flower (4).
- Control weeds to benefit Western Basalt Plains Grassland, Large-fruit Fireweed (4), Small Milkwort (3), Spiny Rice-flower (4), Fragrant Leek-orchid (4), Hairy Tails and Derrinallum Billy-buttons (2).
- Control rabbits to protect Western Basalt Plains Grassland and Button Wrinklewort (4).
- Conduct ecological burns on rail reserves to benefit Western Basalt Plains Grassland, Button Wrinklewort (4), Large-fruit Fireweed (4), Small Milkwort (3), Fragrant Leek-orchid (4), Spiny Rice-flower (4), Hairy Tails and Derrinallum Billy-buttons (2).
- Conduct ecological burns to benefit Grey Goshawk (1).
- Prevent human disturbance to sites supporting Western Basalt Plains Grassland and Fragrant Leek-orchid (4).



Button Wrinklewort - DSE

Restoration of strategic vegetation blocks or linkages:

- Supplement habitat to benefit Grey Goshawk and Swift Parrot.
- Seek opportunities (with Shire, adjoining land managers and local landholders) to expand size and connectivity of remnant vegetation on public land through sympathetic management on adjoining areas. Particular emphasis should be given to areas adjoining or linking grassy woodland and riparian areas.
- Restore and enhance riparian areas and wetland fringes through revegetation programs in cooperation with adjoining landholders.

OTHER POLICIES, PLANS OR PROGRAMS supporting one or more of the recommended actions:

- Recovery Plan & FFG Action Statement – Button Wrinklewort (28).
- Draft Recovery Plan – Swift Parrot.
- FFG Action Statement – Large-fruit Fireweed (68).
- FFG Action Statement – Small Milkwort (96).
- FFG Action Statement – Predation by Red Fox (44).
- FFG Action Statement – Predation by Cat (80).
- FFG Action Statement – Western Basalt Plains Grassland (53).

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8.5 Local Government

Land tenure details:

Includes all land for which Local Government has responsibility: typically roadsides, township land and, generally, cemeteries. Mt Mercer Rd and Shelford-Cressy Rd are of critical importance for the conservation of native grasslands across the VVP. Cemeteries managed by local Committees of Management also support significant remnant vegetation e.g. Bannockburn, Inverleigh, Teesdale, Shelford.

Land Manager:

LGA, VCM

Stakeholders:

Key DSE, DPI, Private, CMA, CFA

Others BG, LFW, GAV, FNC, RCAC, LC.

Threatened Biodiversity Assets (in brackets: Cons status Vic - lower case, Aust - upper case; followed by BNA priority / risk rankings for threatened taxa = 1A, 2B, etc., or un - unassessed):

EVCs: Plains Grassland (e); Plains Grassland/Plains Grassy Woodland Mosaic (e); Plains Grassy Woodland (e).

Threatened flora: Basalt Podolepis (e,NR); Button Wrinklewort (Ee,1A); Clover Glycine (Vv,1B); Derrinallum Billy-buttons (v,1A); Golden Cowslips (v,1A); Hairy Tails (l,NR); Large-fruit Fireweed (Ve,1A); Maroon Leek-orchid (Ee,NR); Small Golden Moths (Ee,2A); Small Milkwort (v,2A); Small Scurf-pea (Ee,4B); Southern Swainson-pea (r,NR); Spiny Rice-flower (Ve,1A); Spurred Spear-grass (r,NR).



Golden Cowslips - Viviparous

Threatened fauna: None recorded.

Recommended actions:

Protection of existing remnants:

- Signpost road reserves and cemeteries that support threatened EVCs and threatened species such as Small Scurf-pea, Spiny Rice-flower, Maroon Leek-orchid, Small Golden Moths, Golden Cowslips, Derrinallum Billy-buttons and Small Milkwort (McDougall et al 1993).
- Develop PAMAs to protect Western Basalt Plains Grassland and populations of threatened flora at Bannockburn Cemetery, Inverleigh Cemetery and on road reserves.

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8.5 Local Government (cont'd)

- Instruct Shire staff on locations and importance of roadside remnants.
- Exclude grazing and cultivation from all roadsides supporting remnant native vegetation.

Management to enhance remnants for threatened taxa (BNA response level in brackets: 4 = full commitment, 3 = substantive participation, 2 = opportunistic action, 1 = watching brief):

- Exclude stock grazing from roadsides and cemeteries to benefit Western Basalt Plains Grassland, Small Milkwort (3), Large-fruit Fireweed (4), Hairy Tails and Small Golden Moths (3).
- Control weeds (especially Phalaris) to benefit Western Basalt Plains Grassland, Small Milkwort (3), Clover Glycine (3), Spiny Rice-flower (4), Hairy Tails, Small Scurf-pea (1), Golden Cowslips (1), Small Golden Moths (3) and Derrinallum Billy-buttons (4).
- Conduct ecological burns to benefit Western Basalt Plains Grassland, Button Wrinklewort (4), Large-fruit Fireweed (4), Small Milkwort (3), Clover Glycine (3), Spiny Rice-flower (4), Hairy Tails, Small Scurf-pea (1), Golden Cowslips (4) and Derrinallum Billy-buttons (4).
- Prevent human disturbance to sites supporting Western Basalt Plains Grassland and Small Golden Moths (3).



Small Scurf-pea - DSE

Restoration of strategic vegetation blocks or linkages:

- Identify suitable habitat for threatened species and expand habitat through sympathetic management on adjoining land. Seek to manage all remnant vegetation on local government land for conservation and expand areas within recreation and other reserves.
- Encourage adjoining landholders or land managers to undertake complementary restoration works on freehold or other land, preferably in the context of local landscape plans.

OTHER POLICIES, PLANS OR PROGRAMS supporting one or more of the recommended actions:

- Recovery Plan & FFG Action Statement – Button Wrinklewort (28).
- FFG Action Statement – Large-fruit Fireweed (68).
- FFG Action Statement – Small Milkwort (96).
- FFG Action Statement – Small Scurf-pea (31).
- FFG Action Statement – Western Basalt Plains Grassland (53).

8. Leigh Landscape Zone

8.6 Parks and Reserves

Land tenure details:

Inverleigh FFR (H4,1050ha), Moorabool SSR (K1,?ha), Barwon River SSR (K46,?ha), Wabdallah BR (I40,?ha). Approximately 1,100 ha occur within conservation reserves in this zone.

Land Manager:

Parks Victoria

Stakeholders:

Key DSE, DPI, CMA

Others ECC, TSN, GNP, FNC, FG

Threatened Biodiversity Assets (in brackets: Cons status Vic - lower case, Aust - upper case; followed by BNA priority / risk rankings for threatened taxa = 1A, 2B, etc., or un - unassessed):

EVCs: Plains Grassy Woodland (e); Floodplain Riparian Woodland (e); Streambank Shrubland (e); Basalt Escarpment Shrubland (e); Damp Sands Herb-rich Woodland (v).

Threatened flora: Clover Glycine (Vv,2B); Fragrant Saltbush (r,NR); Hairy Tails (I,NR).



Fragrant Saltbush -
DSE

Threatened fauna: Common Dunnart (dd,2B); Swift Parrot (Ee,3A).



Common Dunnart -
DSE

Recommended actions:

Protection of existing remnants:

- Develop and implement management plans for conservation reserves.
- Assess status and biodiversity values of public land, and determine priorities for upgrading status or other protection. Give particular emphasis to areas that support endangered EVCs.
- Ensure all conservation reserves are adequately fenced and signposted.

8. Leigh Landscape Zone

8.6 Parks and Reserves (cont'd)

Management to enhance remnants for threatened taxa (BNA response level in brackets: 4 = full commitment, 3 = substantive participation, 2 = opportunistic action, 1 = watching brief):

- Control weeds to benefit Plains Grassy Woodland, Clover Glycine (2) and Hairy Tails.
- Conduct ecological burns to benefit Clover Glycine (2) and Hairy Tails and promote understorey regeneration in woodland areas.
- Control rabbits, hares and kangaroos to benefit Hairy Tails, Plains Grassy Woodland and Damp Sands Herb-rich Woodland.
- Exclude grazing to benefit Small Milkwort (4) and Hairy Tails.
- Exclude all grazing from selected woodland areas to encourage regeneration of understorey species.
- Prevent human disturbance (including horse and motorbike riding) to sites that support Hairy Tails.



Hairy Tails - DSE

Restoration of strategic vegetation blocks or linkages:

- Supplement habitat for Swift Parrot and Hairy Tails.
- Reinforce populations of Small Milkwort.
- Establish populations of Large-fruit Fireweed in suitable secure habitat.
- Seek opportunities (with Shire, adjoining land managers and local landholders) to expand size and connectivity of remnant vegetation on public land through sympathetic management on adjoining areas. Particular emphasis should be given to riparian areas.
- Restore and enhance riparian zones through revegetation programs.

OTHER POLICIES, PLANS OR PROGRAMS supporting one or more of the recommended actions:

- Draft Recovery Plan – Swift Parrot.
- FFG Action Statement – Predation by Red Fox (44).
- FFG Action Statement – Predation by Cat (80).
- FFG Action Statement – Western Basalt Plains Grassland (53).