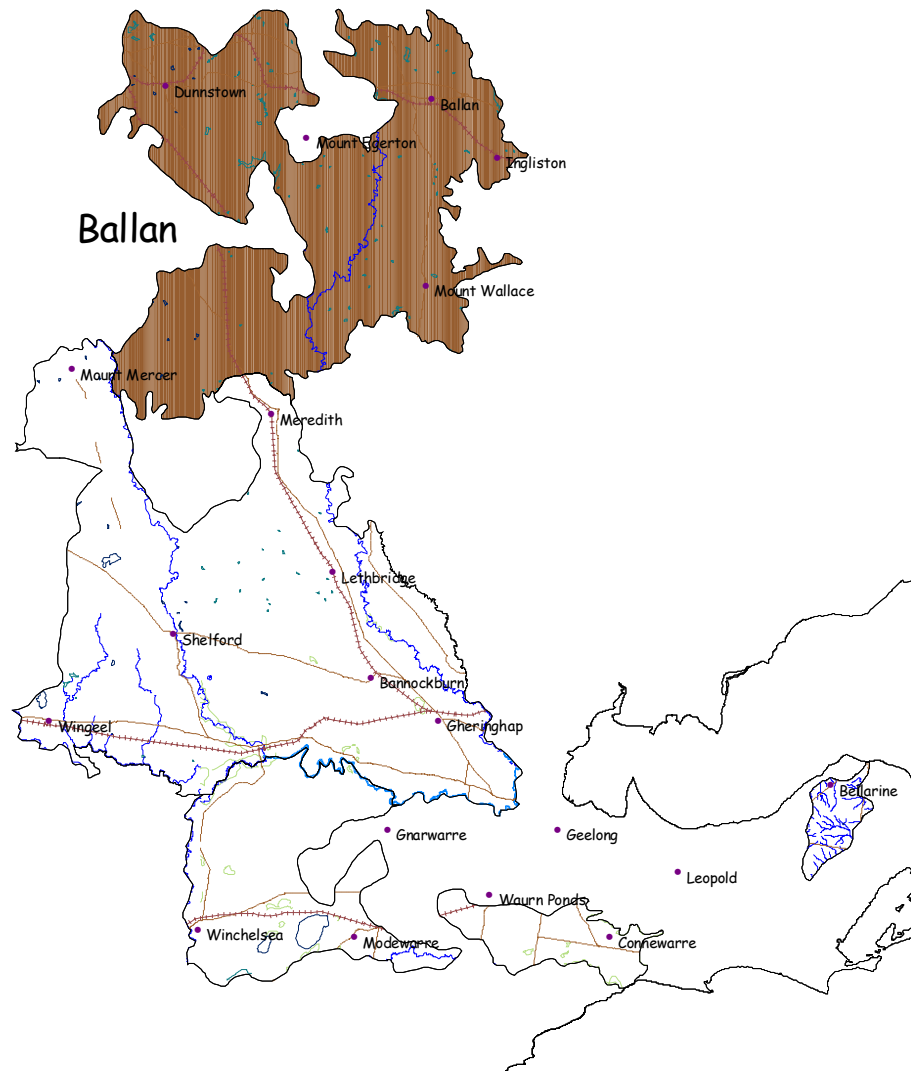


6. Ballan Landscape Zone



6. Ballan Landscape Zone

6.1 Ballan Landscape Zone description

The Ballan Zone is bordered to the west by the Leigh River, the Lal Lal Reservoir and Mount Warrenheip; to the north by Dunnstown, Mount Egerton and Ballan North; the east by Pykes Creek Reservoir, Ingliston and the Brisbane Ranges National Park; and to the south by Beremboke and Meredith. The zone is generally bordered on all sides by the Central Victorian Uplands bioregion and shares a short boundary with the Leigh Zone along the Leigh River and at Meredith (Map 2). Boundaries have been determined with reference to pre-1750 EVCs. The zone is within the Moorabool, Ballarat and Golden Plains Shires (Map 12) and generally within the area of the Corangamite Catchment Management Authority with a small area within the area of the Port Phillip Catchment and Land Protection Board (Map 11).

The landscape is characterised by undulating volcanic plains and tablelands. Soils are yellow duplex soils and yellow and grey clays. The plains are dissected by the Eastern and Western Moorabool and Leigh Rivers that cut wide and (in places) steep gorges through the overlying basalt and Tertiary and Ordovician sediments. The upper reaches of the Werribee River also occur within this zone. Volcanic eruption points such as Mount Warrenheip, Black Hill and Mount Darriwill are also prominent landscape features. A small area of the Central Volcanic Uplands bioregion is found north east of Morrisons. The vast majority of native vegetation has been cleared. Rainfall generally decreases to the north and the east with average annual rainfall being approximately 750mm at Meredith and 574mm at Fiskville. Major agricultural activities are sheep and cattle grazing on improved pastures, cropping and timber plantations.

Pre-1750 vegetation cover would have comprised of Plains Grassland and Plains Grassy Woodland of Manna Gum, River Red Gum, Yellow Gum, Drooping Sheoak, Lightwood, Banksia and Blackwood (Map 18). Grassy Woodland occurred on better-drained soils in the north east with Herb-rich Foothill Forest on Mount Warrenheip. Scoria Cone Woodland was associated with other volcanic eruption points. Riparian Woodland, Valley Grassy Forest and Escarpment Shrubland occurred along the Leigh and Moorabool Rivers with small areas of Swampy Riparian Woodland along major waterways in the north. Substantial areas of Plains Grassy Wetland occurred at Mount Wallace and a mosaic of Aquatic Hermland and Plains Sedgy Wetland near Lal Lal.

The zone includes considerable geomorphological and biotic variation and 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, a number of areas of native vegetation remain on both public and private land especially near Lal Lal and along major waterways (Map 19). Remnants of Plains Grassland and Plains Grassy Woodland communities are generally restricted to small public land sites such as rail reserves and roadsides.

The majority of land is freehold with only a small number of conservation reserves including Mount Warrenheip Flora Reserve and Cargerie Bushland Reserves (map 14). A small area of the Brisbane Ranges National Park occurs in the east of the Zone. There are few other substantial areas of public land that support native vegetation with the exception of Lal Lal State Forest and Public Land Water Frontages.

6. Ballan Landscape Zone

6.1 Ballan Landscape Zone description (cont'd)

The zone includes remnants of several threatened vegetation communities including vegetation types that are unusual on the Victorian Volcanic Plain (Map 19). A major conservation objective is to retain and enhance these areas. The Zone is important for several plant species including *Button Wrinklewort*, *Hairy Anchor Plant* and *Maroon Leek-orchid* (Map 21). Plains Grassy Woodland areas are of significance for *Swift Parrot* (Map 22). The *Brush-tailed Phascogale* has also been recorded from this area. There is a considerable opportunity to protect and link remnants associated with major waterways. The Eastern Moorabool River was recommended as a Representative River by the LCC.

Changes to landuse, clearing of native vegetation, weed invasion, overgrazing by stock and feral animals, predation by feral animals, the extreme depletion of native vegetation and habitat and the consequent loss of plant and animal diversity, degradation of riparian habitats, inappropriate burning regimes and decline and death of mature trees are all significant issues for biodiversity conservation. Effective conservation management of all remnants is 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.

References: LCC (1980), LCC (1980, 1985, 1991), Beaglehole (1983), Ross (1999), Scarlett & Parsons (1996).

6. Ballan Landscape Zone

6.1 Ballan Landscape Zone description (cont'd)

Table 10. Total area of pre-1750 and extant EVCs in the Ballan Landscape zone.

EVC group	EVC #	EVC Bioregional Conservation Status	EVC Name	Pre-1750 Area (ha)	Current Area (ha)
14	55	E	Plains Grassy Woodland	51372	2287
13	132	E	Plains Grassland	7270	124
5	175	E	Grassy Woodland	3648	516
6	47	V	Valley Grassy Forest	1696	463
19	125	X	Plains Grassy Wetland	1212	30
8	83	E	Swampy Riparian Woodland	1173	46
6	23	V	Herb-rich Foothill Forest	860	131
6	20	LC	Heathy Dry Forest	836	671
19	691	E	Aquatic Herbland/Plains Sedgy Wetland Mosaic	797	144
16	164	E	Creekline Herb-rich Woodland	661	110
8	851	E	Stream-bank Shrubland	598	188
6	22	D	Grassy Dry Forest	410	277
9	641	E	Riparian Woodland	368	32
14	895	E	Escarpment Shrubland	237	52
5	894	E	Scoria Cone Woodland	183	9
19	647	E	Plains Sedgy Wetland	127	18
15	198	V	Sedgy Riparian Woodland	39	6
16	3	V	Damp Sands Herb-rich Woodland	17	6
9	18	V	Riparian Forest	16	<1
13	897	E	Plains Grassland/Plains Grassy Woodland Mosaic	3	1
TOTAL				71523	6279
99	998	NA	Water Body - Natural or man made	0	254
99	987	NA	Plantation (undefined)	0	850
99	58	NA	Cleared Severely Disturbed	0	914
99	997	NA	Private Land No Tree Cover	0	64396

Table 11. Total area and number of current EVCs in each conservation status in the Ballan Landscape zone.

EVC Conservation Status	Hectares	Number of EVCs
Endangered	3527	12
Vulnerable	606	5
Depleted	277	1
Rare	0	0
Least Concern	671	1
Presumed Extinct	30	1

6. Ballan Landscape Zone

6.1 Ballan Landscape Zone description (cont'd)

Table 12. List of current threatened flora the Ballan 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>Craspedia paludicola</i>	Swamp Billy-buttons		v				Un	4649
<i>Discaria pubescens</i>	Australian Anchor Plant		r	L		47	Un	1072
<i>Eucalyptus leucoxydon ssp. connata</i>	Melbourne Yellow-gum		v	X			Un	4484
<i>Helichrysum aff. rutidolepis (Lowland Swamps)</i>	Pale Swamp Everlasting		v				Un	4655
<i>Pimelea spinescens ssp. spinescens</i>	Spiny Rice-flower	Vul	e					4823
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	End	e	L		154	Un	2709
<i>Rutidosis leptorhynchoides</i>	Button Wrinklewort	End	e	L	Y	28		2982
<i>Senecio psilocarpus</i>	Swamp Fireweed	Vul	v				Un	4659
<i>Xerochrysum palustre</i>	Swamp Everlasting	Vul	v	L				3763

Table 13. List of current threatened fauna in the Ballan 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>Falco subniger</i>	Black Falcon		VU					238
<i>Oxyura australis</i>	Blue-billed Duck		EN	L				216
<i>Phascogale tapoatafa tapoatafa</i>	Brush-tailed Phascogale		VU	L		79	Un	1017
<i>Sminthopsis murina murina</i>	Common Dunnart		VU					1061
<i>Oreoica gutturalis gutturalis</i>	Crested Bellbird		NT				Un	419
<i>Ardea alba</i>	Great Egret		VU	L				187
<i>Accipiter novaehollandiae novaehollandiae</i>	Grey Goshawk		VU					220
<i>Aythya australis</i>	Hardhead		VU				Un	215
<i>Biziura lobata</i>	Musk Duck		VU				Un	217
<i>Phalacrocorax varius</i>	Pied Cormorant		NT					99
<i>Ninox strenua</i>	Powerful Owl		VU	L		92	Un	248
<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

6. Ballan Landscape Zone

6.2 Ballan Landscape Zone priorities

6.2.1 Summary of priority biodiversity actions for Ballan Landscape Zone:

The zone includes unusual vegetation types and landforms and its proximity to other bioregions enhances its biodiversity conservation values. Although there are few areas of public land, riverine corridors still support significant areas of native vegetation. The focus for biodiversity management should be to:

- Identify areas on private land that support habitat for threatened flora and fauna.
- Protect, enhance and restore threatened EVCs on public and private land.
- Develop conservation agreements to protect areas supporting threatened EVCs and threatened species on public land.
- Implement Recovery Plans and Action Statements for threatened species and communities on public and private land.
- Protect, enhance and restore riverine corridors especially the Moorabool, Leigh and Werribee Rivers.

6. Ballan Landscape Zone

6.3 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. Although, the majority of vegetation in the region has been cleared for agriculture, a number of areas of native vegetation remain on private land especially near Lal Lal and along major waterways.

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); Grassy Woodland (e); Aquatic Herbland/Plains Sedgy Wetland (e); Plains Sedgy Wetland (e); Swampy Riparian Woodland (e); Streambank Shrubland (e); Escarpment Shrubland (e); Valley Grassy Forest (v).

Threatened flora: Brisbane Ranges Grevillea (r,NR); Hairy Anchor Plant (v,NR).



Brisbane Ranges
Grevillea - DSE

Threatened fauna: Brush-tailed Phascogale (v,NR); Swift Parrot (Ee,4A).



Brush-tailed Phascogale -
DSE

Recommended actions:

Protection of existing remnants:

- Monitor populations of Hairy Anchor Plant.
- Identify remnants of high conservation and strategic significance, focusing on those that support native grassland, woodland and wetland EVCs. Determine priorities for protection of remnants and apply covenants, voluntary programs, incentives and/or planning controls, as appropriate, to protect these blocks.
- Adhere strictly to native vegetation retention controls, particularly where habitat exists for threatened fauna and flora.

6. Ballan Landscape Zone

6.3 Private 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 to benefit Hairy Anchor Plant and Swift Parrot (2).
- Control weeds in riparian areas to benefit remnant vegetation and Hairy Anchor Plant.
- Manage stock grazing in Western Basalt Plains Grassland.
- Implement control programs for foxes and cats, giving priority to known or potential habitat sites of Brush-tailed Phascogale.

Restoration of strategic vegetation blocks or linkages:

- Supplement availability of large and hollow-bearing trees on freehold, protect and regenerate natural understorey vegetation, and retain fallen timber and litter, to benefit Swift Parrot.
- Establish Hairy Anchor Plant in suitable secure habitat.
- Implement extension activities to encourage landholders with key remnants to enhance long-term viability and patch size of these habitats. Provide assistance by identifying resources to assist in appropriate on-ground management works.
- 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, woodland, riparian and escarpment vegetation (especially in areas adjoining the Moorabool, Leigh and Werribee Rivers) and create habitat links between existing areas of native vegetation on public and private land, including large public land blocks to the north, east and west of the Zone.
- Encourage development of local landscape plans, targeting areas with extensive high-quality freehold remnants, to maintain, improve and extend existing native vegetation to adjoining properties and other tenures.
- Increase landholder awareness of the need for comprehensive regeneration of trees and plants within and around remnants.



Swift Parrot - DSE

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

- Recovery Plan & FFG Action Statement – Hairy Anchor Plant (47).
- Draft Recovery Plan – Swift Parrot.
- FFG Action Statement – Brush-tailed Phascogale (79).
- FFG Action Statement – Western Basalt Plains Grassland (53).

6. Ballan Landscape Zone

6.4 Other Public Land

Land tenure details:

Generally all public land where conservation is not the primary management objective. Significant sites include Elaine RR, Lal Lal RR, Lal Lal SF, PLWF and uncommitted public land. This tenure includes 337ha within the Lal Lal SF to be managed as a Special Protection Zone under the West Victoria RFA.

Land Manager:

DSE, DPI, PTC

Stakeholders:

Key DSE, DPI, Private, CMA, LGA

Others TSN, BG, GNP, FNC, 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 Grassy Woodland (e); Plains Grassland/Plains Grassy Woodland Mosaic (e); Grassy Woodland (e); Streambank Shrubland (e); Plains Sedgy Wetland (e); Grassy Dry Forest (v); Valley Grassy Forest (v); Creekline Herb-rich Woodland (e); Heathy Dry Forest (d).

Threatened flora: Button Wrinklewort (Ee,1A); Hairy Anchor Plant (v,NR); Maroon Leek-orchid (Ve,NR); Swamp Everlasting (v,NR); Swamp Groundsel (v,NR); Tall Wallaby-grass (k,NR); Wetland Blown-grass (k,NR).



Swamp Everlasting - DSE

Threatened fauna: None recorded.

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, Maroon-orchid and Swamp Everlasting on rail reserves.
- Review habitat values and status of public land.
- Monitor and protect areas supporting threatened EVCs, flora and fauna.



Maroon Leek-orchid - DSE

6. Ballan Landscape Zone

6.4 Other Public Land (cont'd)

- Assess status and condition of water frontages, 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.

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

- Conduct ecological burns to benefit Western Basalt Plains Grassland and Button Wrinklewort (4).
- Exclude grazing to benefit Button Wrinklewort (4), Swamp Everlasting and Hairy Anchor Plant.
- Trial ecological burns to benefit Swamp Everlasting.
- Control introduced herbivores to benefit Button Wrinklewort (4).
- Control weeds to benefit Western Basalt Plains Grassland and Hairy Anchor Plant.

Restoration of strategic vegetation blocks or linkages:

- 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).
- Recovery Plan & FFG Action Statement – Hairy Anchor Plant (47).
- FFG Action Statement – Western Basalt Plains Grassland (53).

6. Ballan Landscape Zone

6.5 Local Government

Land tenure details:

Includes all land for which Local Government has responsibility: typically roadsides, township land and, generally, cemeteries.

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); Valley Grassy Forest (v).

Threatened flora: None recorded.

Threatened fauna: None recorded.

Recommended actions:

Protection of existing remnants:

- Identify native vegetation on roadsides and other local government managed land, prepare strategic plans and protect important remnants through PAMAs especially those areas supporting Western Basalt Plains Grassland.
- Signpost all road reserves supporting threatened EVCs and threatened species.
- Instruct Shire staff on locations and importance of roadside remnants.
- Exclude grazing and cultivation from all natural and semi-natural roadsides.

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 Western Basalt Plains Grassland and other remnant vegetation.
- Maintain burning to control biomass on roadsides where this has been traditional practice.

6. Ballan Landscape Zone

6.5 Local Government (cont'd)

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.
- Develop a strategy to enhance key roadside linkages, along with high-quality remnants of other tenures, in consultation with landholders and other land managers (e.g. of unused roads).

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

- FFG Action Statement – Western Basalt Plains Grassland (53).

6. Ballan Landscape Zone

6.6 Parks and Reserves

Land tenure details:

Brisbane Ranges NP (A1,10ha); Mt. Warrenheip FR (G4,69ha); Cargerie BR (I42,I43,65ha); Lal Lal Falls SR (P4,J9,100ha). A total of 244ha occur within conservation reserves in this zone.

Land Manager:

Parks Victoria

Stakeholders:

Key DSE, DPI, CMA, VCM

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 Grassland (e); Streambank Shrubland (e); Basalt Escarpment Shrubland (e); Plains Grassy Woodland (e); Valley Grassy Forest (v); Herb-rich Foothills Forest (v).

Threatened flora: Clover Glycine (Vv,2B); Hairy Anchor Plant (v,NR); Slender Tick-trefoil (r,NR); Yarra Gum (k,NR).

Threatened fauna: None recorded.

Recommended actions:

Protection of existing remnants:

- Monitor populations of Hairy Anchor Plant.
- 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.



Hairy Anchor Plant - DSE

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

- Conduct ecological burns to benefit Clover Glycine (2) and Western Basalt Plains Grassland.
- Conduct weed control to benefit Western Basalt Plains Grassland, Clover Glycine (2) and Hairy Anchor Plant.



Clover Glycine - DSE

6. Ballan Landscape Zone

6.6 Parks and Reserves (cont'd)

Restoration of strategic vegetation blocks or linkages:

- 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 and endangered EVCs.
- Restore and enhance riparian zones through revegetation programs.

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

- Recovery Plan & FFG Action Statement – Hairy Anchor Plant (47).
- FFG Action Statement – Western Basalt Plains Grassland (53).
- FFG Action Statement – Predation by Red Fox (44).
- FFG Action Statement – Predation by Cat (80).