

Table S1. Site selection criteria and data source.

Selection stage	Identification	Filter and resource
Stage 1	Potential sites that had recently burned via wildfire or planned burns	<p>The Fire History layer [54] was used, which incorporate data from Tasmanian state and local agencies and private landowners to map historical wildfires and planned fire boundaries throughout Tasmania. Updated annually, it identifies fire start and end dates, fire size (hectares) and ignition cause(s). We identified burn sites with most recent fire events between January 2018 and November 2020 which had the potential for paired unburned sites.</p> <p>The fire history dataset is comprised of two feature classes: ‘Fire History’ and ‘Fire History - Last Impacted’. This paper used the latter. The fire history records from individual agencies are appended each year into the ‘Fire History’ feature class. The ‘Fire History - Last Impacted’ feature class is derived from ‘Fire History’ and identifies the latest fire having occurred at any location across the state. The ‘Fire History - Last Impacted’ feature class does not contain any overlaps.</p>
Stage 2	Potential sites by dominant vegetation community	<p>The TASVEG 4.0 Groups [55] was used, which is a continuously amended state-wide vegetation map, derived from field and satellite imagery. The six most dominant vegetation types were investigated.</p> <p>TASVEG uses 157 distinct mapping units. The forest vegetation mapping units (which primarily originate from the RFA forest vegetation communities mapping) are largely based on the dominant canopy layer, with one or more species consistently present. A smaller selection of forest vegetation communities are defined by the combination of dominant canopy species and known understory type. Some forest mapping units are also characterised by geology, topographic features, altitude or the height of dominant trees. Non-forest vegetation community mapping units may be characterised by geology, environmental and topographic features and dominant species. Field verification of data is strategic, with priority given to rare or threatened communities, and communities where remote identification is less reliable. WHA mapping was largely derived from PI and verified in the field. Apart from the presence or otherwise of field verification, attribute reliability can be inferred from the mapping source date and source type, and from the source interpretability rating scale.</p>
Stage 3	Potential sites where climate data was accurate and available	We incorporated the Monthly average rainfall and Monthly mean minimum/maximum temperature layers [52]. The former interpolates rainfall data from 553 Australian Bureau of Meteorology (BoM) weather stations, and temperature data from 57 BoM for the latter. We aimed to select a range of sites across temperature and rainfall gradients in Tasmania to highlight herbivore diversity in the state.
Stage 4	Potential sites with adjacent burned and unburned vegetation	Potential sites were sourced from 13 separate post-2018 fire incidents, ranging from low-intensity planned and cultural burn sites, as small as 0.42 hectares, and extensive wildfire events, as large as 63, 719.43 hectares. Potential unburned paired sites were identified using the available satellite imagery [52].
Stage 5	Ground truthing	Potential paired sites were visited for truthing of desktop assessment. A range of vegetation cover and structure parameters were recorded at each location.

Figure S1: Burned and unburned quadrat comparisons for each vegetation community type; A/B – dry forest, C/D – grassland, E/F – highland, G/H – sedgeland, I/J – heath, K/L – wet forest.

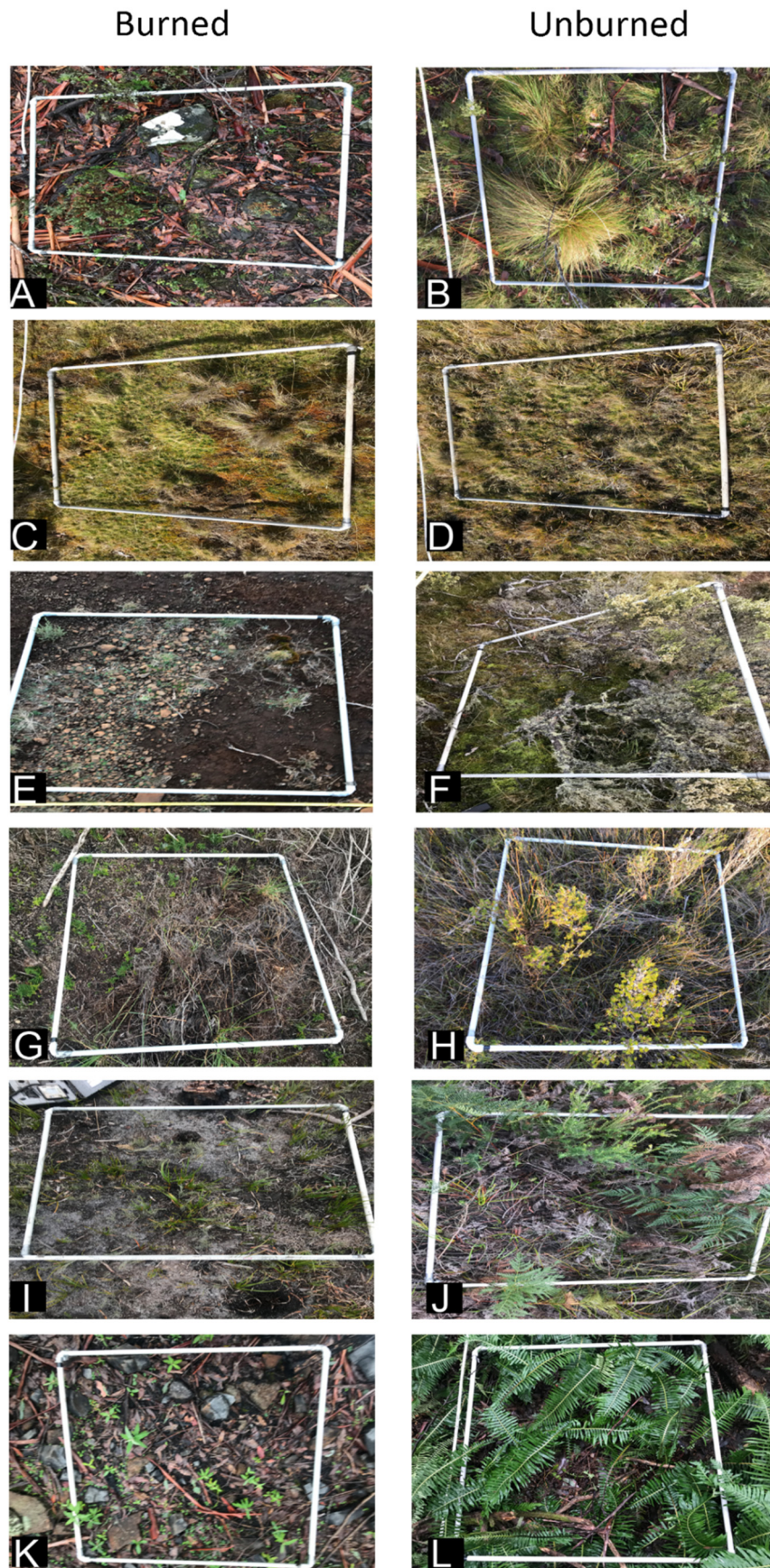


Figure S2: Workflow diagram of this present study which considered climate and geographic controls on fire and attributes from six vegetation types that could support common Tasmanian herbivores.

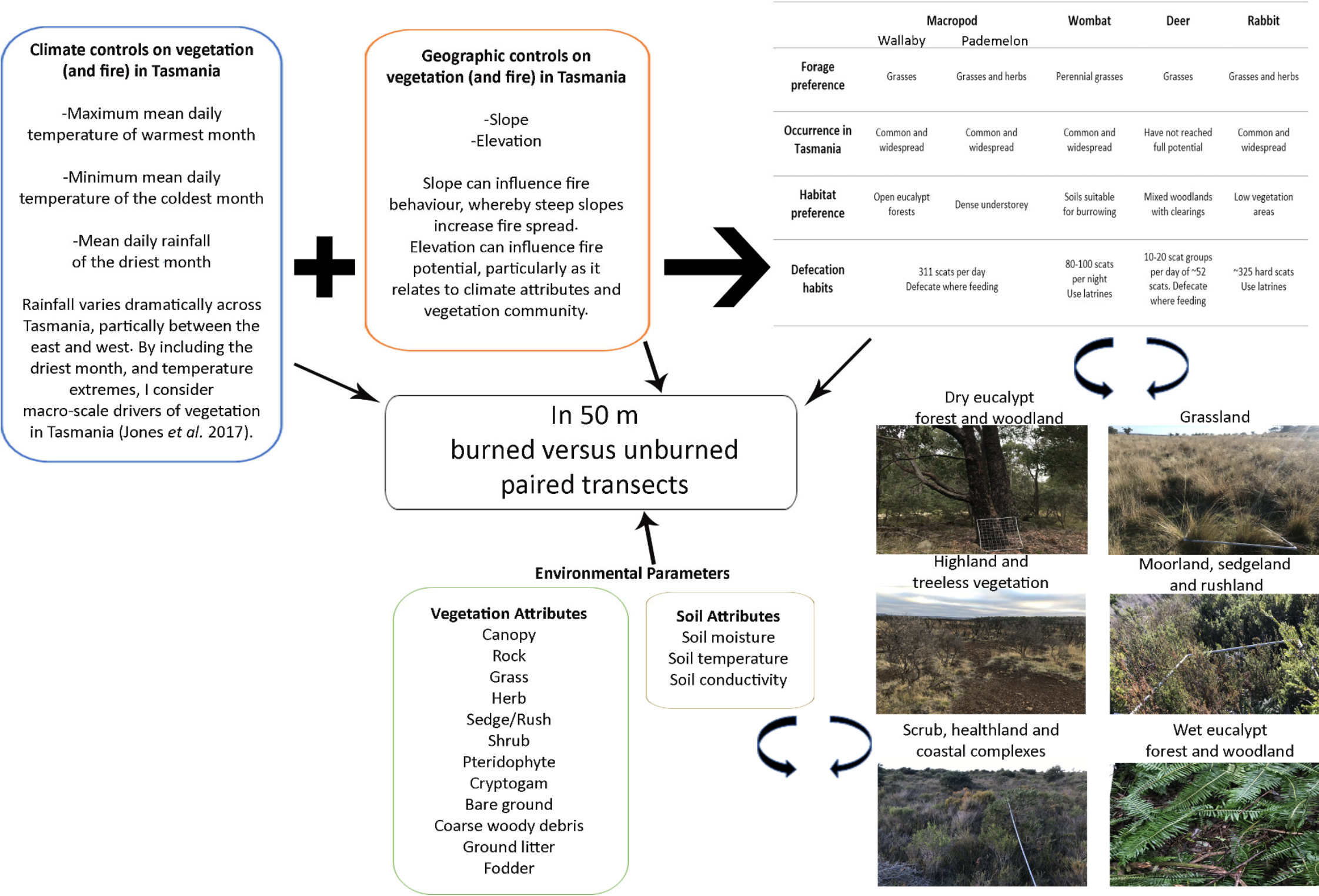


Table S2: Environmental parameters of vegetation communities* of Tasmania, contrasted between areas that experienced fire in the past three years (‘Burned’) versus adjacent areas that were not burned in this period (‘Unburned’). Each column shows total quadrats used for the general linear models (chi-squared for slope (ranked)). Each box shows mean results, with (±) standard error, and minimum and maximum value in brackets. Significant differences (p = /<0.05) between burned and unburned areas of the same vegetation community are highlighted in grey.

	Quadrats	DE	G	H	MSR	SHC	WE	DE	G	H	MSR	SHC	WE
		Burned						Unburned					
		24	12	30	24	24	24	24	24	30	24	24	24
Topography	Elevation (m)	524.2 ± 24.6 (168-828)	455.2 ± 23.0 (226-693)	1037.4 ± 11.0 (812-1152)	396.1 ± 36.7 (144-1015)	62.8 ± 8.84 (0-214)	410.6 ± 25.1 (157-815)	527.3 ± 26.0 (170-864)	442.3 ± 21.7 (225-672)	1042.2 ± 11.3 (815-1167)	388.3 ± 36.7 (148-1009)	67.3 ± 10.1 (3-243)	447.9 ± 21.0 (275-802)
	Slope (ranked)	2.5 (1-4)	1.3 (1-2)	1.0 (1-2)	2.3 (1-4)	1.9 (1-2)	2.5 (1-4)	2.0 (1-3)	1.1 (1-2)	1.2 (1-2)	2.4 (1-4)	2.0 (1-2)	2.3 (1-4)
Climate	Max temperature January (°C)	20.8 ± 0.12 (6.5-11.4)	21.9 ± 0.22 (7.7-11.2)	18.6 ± 0.04 (4.8-6.7)	20.8 ± 0.14 (5.2-11.7)	21.8 ± 0.03 (11.2-13.7)	21.2 ± 0.23 (7.4-10.5)	20.7 ± 0.14 (6.5-11.4)	22.0 ± 0.21 (7.7-11.2)	18.7 ± 0.04 (4.8-6.7)	20.9 ± 0.15 (5.2-11.7)	21.7 ± 0.07 (11.2-13.7)	20.8 ± 0.19 (7.4-10.5)
	Min temperature July (°C)	1.6 ± 0.15 (-0.2-3.6)	1.2 ± 0.06 (0.1-1.6)	-1.3 ± 0.04 (-1.7- -0.4)	2.2 ± 0.22 (-1.5-4.0)	4.6 ± 0.08 (3.5-5.5)	2.5 ± 0.08 (1.3-3.4)	1.6 ± 0.15 (-0.2-3.6)	1.2 ± 0.06 (0.1-1.6)	-1.3 ± 0.04 (-1.7- -0.4)	2.2 ± 0.22 (-1.5-4.0)	4.6 ± 0.08 (3.5-5.5)	2.5 ± 0.08 (1.3-3.4)
	February rainfall (mm)	52.6 ± 0.34 (48.7-56.1)	43.5 ± 0.70 (37.4-53.9)	50.2 ± 0.29 (46.2-53.7)	58.2 ± 1.05 (49.0-74.6)	48.8 ± 0.71 (37.7-56.7)	61.6 ± 1.26 (51.2-82.5)	53.8 ± 0.45 (49.5-59.5)	40.9 ± 0.36 (37.4-44.9)	50.0 ± 0.29 (46.3-53.8)	58.7 ± 1.10 (49.1-75.9)	49.4 ± 0.76 (37.3-57.3)	63.5 ± 1.18 (53.0-82.6)
Fire Attributes	Burn size (ha)	14 881.1 ± 4427.4 (2-51,185.3)	2.9 ± 0.8 (0.4-5.4)	51 185.3 ± 0 (NA)	14 807.5 ± 4406.3 (736.1-51,185.3)	1 689.5 ± 578.2 (67.0-6,492.0)	49 870.3 ± 5001.7 (8322.8-63,719.4)						
	Scorch height (m)	6.4 (0-14)		2.0 (0-2)		4.0 (0-4)	8.9 (0-13)						3.2** (0-4)
Soil Attributes	Soil moisture (%)	14.9 ± 0.96 (4.3-39.4)	16.9 ± 0.82 (7.5-38.0)	31.2 ± 1.67 (9.7-70.1)	38.9 ± 1.51 (12.4-60.3)	24.4 ± 1.59 (2.9-48.3)	15.4 ± 0.93 (2.2-36.3)	11.2 ± 0.54 (4.8-24.2)	16.8 ± 0.62 (8.8-32.3)	24.9 ± 1.72 (5.3-68.9)	37.3 ± 1.20 (11.1-59.3)	27.9 ± 1.86 (3.0-62.2)	20.4 ± 1.05 (5.5-45.3)
	Soil temperature (°C)	13.6 ± 0.18 (10.7-17.3)	9.8 ± 0.47 (4.3-19.5)	12.1 ± 0.33 (6.3-19.9)	14.7 ± 0.33 (8.7-20.1)	15.2 ± 0.19 (13.1-20.1)	11.0 ± 0.13 (8.6-13.3)	12.2 ± 0.33 (7.0-16.3)	12.5 ± 0.51 (6.4-19.4)	12.3 ± 0.36 (4.8-17.5)	13.5 ± 0.24 (10.1-16.5)	17.8 ± 0.27 (14.2-21.7)	11.6 ± 0.18 (8.5-14.6)
	Soil conductivity (µm/cm)	0.05 ± 0.004 (0-0.13)	0.053 ± 0.004 (0-0.18)	0.047 ± 0.003 (0-0.18)	0.080 ± 0.007 (0-0.30)	0.037 ± 0.004 (0-0.16)	0.038 ± 0.003 (0-0.11)	0.033 ± 0.003 (0-0.10)	0.053 ± 0.003 (0-0.09)	0.042 ± 0.002 (0-0.08)	0.088 ± 0.006 (0-0.25)	0.038 ± 0.005 (0-0.18)	0.044 ± 0.004 (0-0.15)

Table S2 continues overleaf...

Table S2 (continued): Environmental parameters of vegetation communities* of Tasmania, contrasted between areas that experienced fire in the past three years (‘Burned’) versus adjacent areas that were not burned in this period (‘Unburned’). Each column shows total quadrats used for the general linear models (chi-squared for slope (ranked)). Each box shows mean results, with (±) standard error, and minimum and maximum value in brackets. Significant differences (p = /<0.05) between burned and unburned areas of the same vegetation community are highlighted in grey.

	Quadrats	DE	G	H	MSR	SHC	WE	DE	G	H	MSR	SHC	WE
		Burned						Unburned					
		24	12	30	24	24	24	24	24	30	24	24	24
Vegetation Attributes	Bare ground cover (%)	16.8 ± 1.97 (0 - 75)	0.63 ± 0.19 (0 - 8)	19.1 ± 2.24 (0 - 90)	16.0 ± 1.80 (0 - 60)	19.0 ± 2.19 (0 - 80)	3.42 ± 0.57 (0 - 24)	2.92 ± 0.84 (0 - 40)	0.83 ± 0.31 (0 - 15)	8.77 ±1.76 (0 - 88)	1.38 ± 0.42 (0 - 20)	1.38 ± 0.41 (0 - 20)	1.88 ± 0.39 (0 - 16)
	Shrub cover (%)	6.08 ± 1.79 (0 - 86)	0.04 ± 0.02 (0 - 1)	0.08 ± 0.17 (0 - 6)	6.08 ± 1.24 (0 - 60)	9.54 ± 1.32 (0 - 45)	2.0 ± 0.34 (0 - 15)	15.1 ± 3.01 (0 - 100)		38.2 ± 3.47 (0 - 100)	22.9 ±2.49 (0 - 80)	22.6 ± 2.33 (0 - 65)	0.33 ± 0.09 (0 - 4)
	Fodder cover (%)	20.9 ± 5.58 (1 - 85)	91.0 ± 3.61 (59 - 100)	43.8 ± 5.69 (3 - 100)	35.0 ± 8.27 (0 - 100)	13.8 ± 4.73 (0 - 82)	4.08 ± 1.58 (0 - 35)	34.0 ± 7.72 (0 - 98)	95.1 ± 2.91 (66 - 100)	30.2 ± 5.10 (0 - 100)	21.8 ± 6.31 (0 - 90)	4.5 ± 1.16 (0 - 20)	1.08 ± 0.88 (0 - 8)
	Herb cover (%)	11.2 ± 2.03 (1 - 80)	7.79 ± 1.42 (0 - 51)	26.1 ± 2.55 (1 - 90)	11.6 ± 2.02 (0 - 79)	2.25 ± 0.25 (0 - 12)	3.96 ± 1.58 (0 - 35)	4.21 ± 0.58 (0 - 25)	5.67 ± 1.56 (0 - 78)	5.97 ± 0.56 (0 - 21)	1.33 ± 0.26 (0 - 10)	2.33 ± 0.32 (0 - 12)	1.04 ± 0.20 (0 - 8)
	Rock cover (%)	18.2 ± 2.27 (0 - 82)	0.38 ± 0.10 (0 - 4)	7.33 ± 1.66 (0 - 90)	5.0 ± 1.75 (0 - 85)		15.0 ± 3.08 (0 - 95)	0.29 ± 0.07 (0 - 2)		16.6 ± 2.61 (0 - 97)	0.38 ± 0.10 (0 - 4)	0.41 ± 0.21 (0 - 10)	6.79 ± 1.76 (0 - 70)
	Ground litter cover (%)	40.0 ± 3.58 (0 - 98)	0.08 ± 0.04 (0 - 2)	2.7 ± 0.74 (0 - 38)	8.96 ± 1.96 (0 - 80)	5.08 ± 1.00 (0 - 40)	52.3 ± 3.15 (0 - 100)	40.5 ± 2.88 (0 - 90)	0.13 ± 0.06 (0 - 3)	1.57 ± 0.46 (0 - 20)	3.96 ± 0.66 (0 - 25)	14.9 ± 2.22 (0 - 80)	70.2 ± 3.13 (0 - 100)
	Pteridophyte cover (%)	2.58 ± 1.79 (0 - 35)	0.25 ± 0.09 (0 - 4)		0.41 ± 0.21 (0 - 10)	5.83 ± 1.59 (0 - 65)	0.83 ±0.20 (0 - 8)	4.79 ± 1.53 (0 - 70)			6.25 ± 1.33 (0 - 50)	6.46 ± 1.44 (0 - 60)	7.83 ± 2.33 (0 - 94)
	Coarse woody debris cover (%)	2.21 ± 0.37 (0 - 15)		3.7 ± 0.81 (0 - 48)	3.33 ± 1.03 (0 - 50)	3.96 ± 0.90 (0 - 40)	14.5 ± 1.99 (0 - 60)	5.75 ± 1.66 (0 - 80)			0.17 ± 0.08 (0 - 4)	1.46 ± 0.53 (0 - 25)	8.58 ± 1.63 (0 - 70)
	Canopy cover (%)	27.9 ± 4.83 (0 - 55)		2 ± 1.69 (0 - 50)			43.5 ± 3.91 (20 - 90)	36.0 ± 4.70 (0 - 70)		3 ± 2.10 (0 - 50)			62.5 ± 3.52 (30 -95)
	Grass cover (%)	9.71 ± 1.80 (0 - 65)	88.8 ± 1 .93 (33 - 100)	18.3 ± 1.78 (0 - 74)	23.6 ± 3.16 (0 - 90)	11.5 ± 2.33 (0 - 80)	0.13 ± 0.05 (0 - 2)	29.8 ± 3.59 (0 - 94)	96.1 ± 0.79 (64 - 100)	24.2 ± 2.46 (0 - 92)	20.4 ± 3.15 (0 - 90)	2.17 ± 0.54 (0 - 20)	0.04 ± 0.02 (0 - 1)
	Sedge/Rush cover (%)	3.92 ± 0.87 (0 - 40)	0.29 ± 0.11 (0 - 5)	0.07 ± 0.03 (0 - 2)	23.5 ± 2.60 (0 - 75)	50.0 ± 3.53 (0 - 98)	0.29 ± 0.06 (0 - 2)	9.83 ± 2.51 (0 - 95)	0.21 ± 0.07 (0 - 3)	2.10 ± 0.71 (0 - 40)	44.0 ± 2.84 (0 - 90)	56.5 ± 3.72 (0 - 100)	4.25 ± 2.05 (0 - 100)
	Cryptogam cover (%)	8.12 ± 1.65 (0 - 80)	6.46 ± 1.34 (0 - 51)	30.0 ± 2.60 (0 - 97)	13.2 ± 2.00 (0 - 70)	1.42 ± 0.26 (0 - 10)	23.1 ± 2.33 (0 - 78)	5.42 ± 0.89 (0 - 35)	2.38 ± 0.46 (0 - 18)	9.63 ± 1.49 (0 - 73)	8.67 ± 2.14 (0 - 98)	1.42 ± 0.23 (0 - 10)	20.4 ± 2.67 (0 - 81)