

Vegetation associations, impact of fire and management recommendations

Supporting information for the vegetation association codes, impact of fire information and management recommendations provided to Tasmania Fire Service in excel format.

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Disclaimer: The vegetation associations, impact of fire and management recommendations of threatened flora in Tasmania is a descriptive document for use by those conducting biodiversity evaluations as part of the development of planned burn assessment in Tasmania.

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Key

Tasmanian *Threatened Species Protection Act 1995* (TSPA)

(r) rare

(v) vulnerable

(e) endangered

(x) extinct (x)

Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA)

(VU) vulnerable

(EN) endangered

(CR) critically endangered

(EX) extinct.

1. Introduction

The purpose of this document is to provide background and supporting information for the vegetation associations and management recommendations provided (in excel format) to Tasmania Fire Service.

2. Fire frequency guidelines

Table 1 lists the treatable vegetation types and the fire frequency guidelines (for fuel management). These guidelines have been taken into consideration in the development of management recommendations for each threatened flora species. That is, many of the management recommendations may not be suitable if a planned burn is conducted at a shorter interval than recommended by the fire frequency guideline. If the planned burn is conducted at a shorter interval than the fire frequency guideline, it is recommended that additional advice is sought from DPIPW for any threatened flora species within the burn unit on a case by case basis.

Table 1: Fire frequency guidelines for planned burning (Marsden-Smedley 2009).

Vegetation type	Fire frequency guidelines (for fuel management) and planned burning notes
Dry eucalypt forest	4 to 10 years. Planned burning in dry eucalypt forest is conducted for fuel and ecological management. In asset protection zones, surface, near-surface, elevated and bark fuel-hazard ratings must be reduced to low, requiring fires to be conducted with flame heights of two to four meters. In strategic management zones the aim will be to reduce overall fuel-hazards to low or moderate.
Heathland, dry scrub, wet scrub	5 to 10 years. A planned burn in heathlands, dry scrub and wet scrub is conducted for fuel management and ecological management. During heathland, dry scrub and wet scrub burning, minor increases in wind speed and/or slope, or minor decreases in fuel moisture can rapidly transform low intensity fires into high intensity fires. This narrow threshold highlights the difficulty between a successful fuel reduction burn, a fuel reduction burn that does not carry and fuel reduction burn that gets out of control.
Buttongrass moorland	5 to 10 years. Buttongrass moorland planned burning is conducted for fuel management and ecological management. The most important issue influencing buttongrass moorland burning is the balance between boundary security (what measures are required to minimise the risk of fire escaping the burn boundary) and fuel removal.
Native grassland	Not defined. Native grassland burns in Tasmania are mainly conducted for agricultural green pick and for ecological management to maintain species and structural diversity.

3. Vegetation associations

Table 2 provides a list of vegetation associations and the suitability of each vegetation type for a planned burn. This information has been sourced from Marsden-Smedley and Whight (2011). Each threatened flora species has been assigned one or more vegetation association codes based on their habitat descriptions and expert opinion (see excel document for details). The vegetation associations help to determine which species are likely to occupy a habitat that may be subject to a planned burn, and therefore which species require detailed management recommendations. That is, species that only occupy habitats that will not be subject to a planned burn (e.g., Alpine and subalpine heath with conifers and/or fagus) would not have a detailed management recommendation developed. In the unlikely event one of these species does occur within a planned burn unit, it is recommended that DPIPW are consulted for advice on a case-by-case basis. Note that a cautionary approach has been taken, and if a species occupies a habitat unlikely to be subject to a planned burn, but the habitat may be impacted by a burn in an adjacent treatable vegetation type, then a management recommendation has been developed (to minimise the potential impact to the habitat of a known threatened flora species). More detail is provided in section 4 of this report.

In table 2 each vegetation association has also been linked to a TASVEG code. This is based on the work by Pyrke and Marsden-Smedley (2005) with updates to the current TASVEG 3.0 codes. The TASVEG code is possibly a more useful link (for planning purposes) to determine whether or not the species occupies a habitat that is likely to be subject to a planned burn.

Table 2: Vegetation association and the suitability for planned burning (Marsden-Smedley and Whight 2011). The corresponding TASVEG communities (from Pyrke and Marsden-Smedley 2005) are also provided. Note that TASVEG 3.0 codes have been provided and that there are some communities from TASVEG 2.0 (as used by Pyrke and Marsden-Smedley 2005) which do not have equivalent TASVEG 3.0 communities, or where the TASVEG 2.0 community has been attributed to multiple communities in TASVEG 3.0 (particularly for the scrub communities).

Vegetation association code	Vegetation association	Associated TASVEG 3.0 code (Pyrke and Marsden-Smedley 2005)	Suitability for planning burning (Y, suitable or N, not suitable)
Ac	Alpine and subalpine heath with conifers and/or fagus	HCH, RPW, RPP, RpF, RFS, RKP	N
As	Alpine and subalpine heath without conifers and/or fagus	HCM, HHE, HUE, HHW, MBR, SHS, NLN, SSW, HHW	N
Ag	Alpine and subalpine sedge and/or grass without conifers or fagus	HSH, MGH, GPH, HSW	N
Sp	Sphagnum	MSP	N
Df, Dd	Dry eucalypt forest and woodland	DMO, DPE, NCR, NAL, NAV, DAC, DAD, DAS, DAM, DAZ, DBA, DDE, DGL, DNI, DNF, DOB, DOV, DOW, DPU, DRI, DRO, DSO, DSG, DTD, DTG, DTO, DVC, DVF, DVG, DMW,	Y
Ds, Hh	Dry scrub and heathland	SAL, SSC, SCA, NBA, SCL, SLG, SCH, SHW, SRH, SSK	Y
Dp	Damp sclerophyll forest	DSC, DPD, DPO, DKW, SBR	Y
Wf, Wd	Wet sclerophyll forest and woodland	NAD, NAR, NAF, WBR, SBR, DCO, DCR, DDP, WDA, WDL, WDB, WDU, DGW, WNL, WNU, WOL, WOB, WOU, WRE, WSU, WVI, NLM	N
Mf	Mixed forest	WDR, WGK, WOR, WNR, NME	N
Rc	Rainforest with conifers	RKF, RKP, RKX, RHP	N
Rf	Rainforest without conifers	RCO, RSH, SRF, RMT, RML, RMS, RFE	N
Bs	Buttongrass moorland	MAP, MBU, MBS, MBE, MBP, MRR, MBW, MSW	Y
Ws	Wet scrub	SRE, SBM, NLE, NLA, SLW, SMR, SWR, SWW, SSK, NBS, SMM	Y
Wl	Swamp and wetland	AHF, ASF, AHL, AHS, ARS, AUS, FSM, ASS, AWU	N
G	Native grassland	GHC, GCL, GPL, GSL	Y
Sr	Plantation	FPL	N
Ub	Urban areas	FRU	N

We	Flammable weeds (mainly gorse) and bracken	FPF, FWU,	Y
Pt, Wt, Zz	Other: agricultural land, water, non-vegetated	FAG, FMU, FPF, FUR, ORO, OSM, OAQ	N

4. Impact of fire and management recommendations

Information on the impacts of any form of fire (e.g. wildfire, ecological burning, fuel reduction burning) on a species has been collated from Listing Statements, Notesheets and Recovery Plans available from DPIPWE's website. Information on impacts of fire in these documents has been copied verbatim into the table of species. The source of the copied statements is provided below each statement (or set of statements), including the date of the document (this is relevant to the currency of the available information). If the copied information includes citations from other sources, these have also been copied in verbatim but the reader needs to refer to the cited material directly by checking the reference list in the original document.

Personal observations and/or opinion has been provided by the authors below many of the information statements from Listing Statements, Notesheets and Recovery Plans, particularly where some clarification is needed (e.g. the available information is not in accordance with field observations).

4.1 Management categories

Four categories of management related to FRB were developed after the review of the available information.

The allocation of species to a management category has been undertaken using available information, expert opinion and a cautionary approach. Where a species did not easily fit into a management category (usually because of uncertain habitat association) it has been allocated to a higher management category to ensure that it is taken into account. This means that some species that ostensibly occur in habitats unlikely to be subject to FRB (e.g., *Cyathea cunninghamii* in deeply incised gullies that will not be burnt but may be adjacent to treatable vegetation type) may not be allocated to the '0' category, instead to a higher management category that may require special prescriptions to be applied to ensure that occurrences in non-typical habitat are taken into account.

Category 0: These are species where no management is required because either FRB will not occur in areas supporting known sites and/or potential habitat e.g. alpine or aquatic species, etc. – listed in the table as sub-category 0(h); or the species is presumed extinct and development of meaningful management prescriptions was not practical – listed in the table as sub-category 0(x); or the species occur on Macquarie Island – listed in the table as sub-category 0(MI).

Category 1: These are species that will not be deleteriously affected by and/or may benefit from an FRB regime relevant to the supporting vegetation type, or where there is a strong indication that this will be the case (based on examples from related species, field evidence or specialist opinion).

Category 2: These are species where there is some degree of potential risk from FRB but where case-by-case advice from DPIPWE is not warranted if certain prescriptions can be applied (e.g. avoiding a known site). This category includes some species with management recommendations that suggest seeking advice from a specialist, but note this does not always imply direct advice from DPIPWE (e.g. seeking advice from a lichen or orchid expert may be appropriate). The FPA has produced a Survey Guidelines document that provides information on the skill level required to confirm the presence of threatened flora, and while this relates to wood production forests, it is also applicable to staff planning a FRB. If the recommended management prescriptions can not be applied, these species will require case-by-case advice from DPIPWE.

Category 3: These are species where FRB may have a deleterious impact if particular consideration is not given to various factors such as previous fire history, risk of introducing diseases and weeds, veracity of records, and degree of sensitivity of the species to fire. For these species, case-by-case advice from DPIPWE is recommended. Note, however, that planners may seek other advice prior to such consultation to develop draft burn prescriptions that may be suitable for the species. For many of the species in this category, a site assessment by a specialist may be required (but this will depend on the available information on some sites).

***Phytophthora cinnamomi*:** Some species are susceptible to *Phytophthora cinnamomi* and this is indicated in the category field as either PC-species (where the species is susceptible) or PC-habitat (where introduction of PC to the supporting habitat is not desirable because it could impact on the species through changes to the understorey). Standard hygiene procedures are recommended for these species.

References

Marsden-Smedley JB (2009) Planned Burning in Tasmania: operation guidelines and review of current knowledge. Fire Management Section, Parks and Wildlife Service, Department of Primary Industries, Parks, Water and the Environment, Hobart, Tasmania.

Marsden-Smedley JB and Wright, S (2011) Planned burning in Tasmania. II. Fire risk assessment and the development of a standardised Burn Risk Assessment Tool (BRAT). *Tasforests*, 19 pp 109-122.

Pyrke AF and Marsden-Smedley JB (2005) Fire-attributes categories, fire sensitivity, and flammability of Tasmanian vegetation communities. *Tasforests* 16 pp. 35-46.