



**NSW National Parks and Wildlife Service**

# **Fire Management Manual 2024–25**

**Policy and procedures for fire management**

## Acknowledgement of Country

Department of Climate Change, Energy, the Environment and Water acknowledges the Traditional Custodians of the lands where we work and live.

We pay our respects to Elders past, present and emerging.

This resource may contain images or names of deceased persons in photographs or historical content.

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**DISCLAIMER:** This Manual contains policies, guidelines, protocols and procedures which may be subject to change. Strict compliance with the Manual may not be possible for operational reasons in emergencies or under other unforeseen circumstances. Members of the public should not rely on this Manual as evidence of the procedure NPWS as part of DCCEEW will follow in such circumstances.

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## Abbreviations used in the Fire Management Manual

AAR	After Action Review	BIP	Branch Incident Procedures
AAHS	Australasian All Hazards Symbology set	BMP	Bushfire Management Plan
AAS	Air Attack Supervisor	BNHCRC	Bushfire and Natural Hazards Cooperative Research Centre
AASFA	NSW Agriculture and Animal Services Functional Area	BOI	Burn Off Illegal
ABM	Air Base Manager	BOL	Burn Off Legal
ACCH Policy	Aboriginal Country, Culture and Heritage Policy	BOM	Bureau of Meteorology
ACMA	Australian Communications and Media Authority	BOP	Branch Operations Plan
ADG Code	Australian Dangerous Goods Code	BFEAC	Bush Fire Environmental Assessment Code
ADO	Aviation Duty Officer	BPED	Bushfire Protection for Existing Development
AED	Automated External Defibrillator	CAP	Conservation Action Plan
AFAC	Australasian Fire and Emergency Service Authorities Council	CASA	Civil Aviation Safety Authority
AFDRS	Australian Fire Danger Rating System	Cat 1	Category 1 firefighting appliance
AFFF	Aqueous Film Forming-Foam	Cat 7	Category 7 firefighting appliance
AGL	Above Ground Level	Cat 9	Category 9 firefighting appliance
AHIMS	Aboriginal Heritage Information Management System	CCF	Climate Change Fund
AI	Aerial Incendiary	CIMS	Coordinated Incident Management System
AID	Aerial Ignition Device	CRA	Conservation Risk Assessment
AIIMS	Australasian Inter-service Incident Management System	COAG	Council of Australian Governments
AIS	Asset of Intergenerational Significance	COP	Common Operating Picture
AMC	Aviation Management Circular	CRC	Cooperative Research Centre
AMS	Asset Management System	DCCEEW	Department of Climate Change, Energy, the Environment and Water. Previously the Department of Planning and Environment.
AOB	Air Observer	DEECA	Victorian Department of Energy, Environment and Climate Action
AOBV	Area of Outstanding Biodiversity Value	DO	Duty Officer
AOF	Aircraft Officer	DPI	Department of Primary Industries
AOL	Approved Operator List	DZ	Drop Zone
APZ	Asset Protection Zone	EAP	Employee Assistance Program
ARG	Aviation Reference Group	EDPOC	Executive Director Park Operations Coastal
AS	Australian Standard	EDPOI	Executive Director Park Operations Inland
ASNZS	Australian/New Zealand Standard	EHG	Environment and Heritage Group
ASQA	Australian Skills Quality Authority	EMP	Emergency Management Plan
AWS	Automatic Weather Station	EIS	Environmental Impact Statement
BC Act	Biodiversity Conservation Act 2016	EMA	Emergency Management Australia
BDAR	Biodiversity Development Assessment Report	EMC	Equilibrium Moisture Content
BDO	Branch Duty Officer	EMPLAN	NSW State Emergency Management Plan
BFCC	NSW Bush Fire Coordinating Committee	EPA	Environment Protection Authority
BFMC	District Bush Fire Management Committee	EPBC	Environment Protection and Biodiversity Conservation Act 1999
BFPL	Bush Fire Prone Land		
BFRMP	Bush Fire Risk Management Plan		

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ERTO	Enterprise Registered Training Organisation	HP	Helipad
ESD	Ecologically Sustainable Development	HR	Hazard Reduction
ETA	Estimated Time of Arrival	HRC	Hazard Reduction Certificate
EP&A Act	Environmental Planning and Assessment Act 1979	IAAWG	Interagency Aviation Working Group
FAFT	Fire Access and Fire Trail	IAP	Incident Action Plan
FBI	Fire Behaviour Index	IC	Incident Controller
FCNSW	Forestry Corporation of NSW	IC3	Incident Controller Major Incident
FDI	Fire Danger Index	ICMI	Incident Controller Major Incident Program
FDR	Fire Danger Rating	ICON	Incident Control Online (RFS database)
FEAT	Fire and Emergency Aviation Technical Group	ICS	Incident Control System
FEZ	Fire Exclusion Zone	ILO	International/Interstate Liaison Officer
FFMG	Forest Fire Management Group	ILUA	Indigenous Land Use Agreement
FFO	Flight Following Officer	IMS	Incident Management Structure (see AIIMS)
FIMESC	Fire and Incident Management Executive Steering Committee	IMT	Incident Management Team
FIOB	Fire and Incident Operations Branch (previously the Fire and Incident Management Branch), comprises the Planning Unit, Operations Unit, Capability and Training Unit and the Flight Unit	IMX	Incident Management Exercise
FIP	FIOB Incident Procedures	IMZ	Ignition Management Zones
FISC	Fire Issues Sub-committee	IOS	Incendiary Operations Supervisor
FEAT	Fire and Emergency Aviation Technical Group	ISBN	International Standard Book Number
FLIR	Forward Looking Infrared	IWF	Incident Weather Forecast
FMC	Fire Management Circular	JSA	Job Safety Analysis
FMM	Fire Management Manual	JSB	Job Safety Briefing
FMP	Fire Management Program	KBDI	Keetch-Byram Drought Index
FMZ	Fire Management Zone	KPI	Key Performance Indicator
FMSC	Firearms Management Standing Committee	LACES	Lookouts, Awareness, Communications, Escape Routes, Safety Zones
FOPS	Falling Object Protection Structures	LAT	Large Air Tanker
FOU	Flight Operations Unit	LEMC	Local Emergency Management Committee
FPD	Fire Preparedness Day	LEMO	Local Emergency Management Officer
FRISK	Fire Science and Risk planning governance committee	LEMP	Local Emergency Management Plan
FRNSW	Fire and Rescue NSW	LEOCon	Local Emergency Management Controller
FTAG	Fire Training Advisory Group	LFB	Linear Fire Break
GFDI	Grassland Fire Danger Index	LGA	Local Government Area
GIS	Geographic Information System	LMZ	Land Management Zone
GPS	Global Positioning System	MIC	RFS Major Incident Coordination
GVM	Gross Vehicle Mass	MoU	Memorandum of Understanding
HAZMAT	Hazardous Material	MSDS	Material Safety Data Sheet
HB	Helibase	NAFC	National Aerial Firefighting Centre
HF	High Frequency	NCC	National Construction Code
HHIMS	Historic Heritage Information Management System	NIMS	National Incident Management System
		NOK	Next of Kin
		NPW Act	National Parks and Wildlife Act 1974
		NPWS	National Parks and Wildlife Service
		NRSC	National Resource Sharing Centre
		NSP	Neighbourhood Safer Places
		NSW	New South Wales

# Contents

NWCG	National Wildfire Coordinating Group	SDC	NPWS Service Delivery Commitment
OEH	Office of Environment and Heritage (now the Department of Climate Change, Energy, the Environment and Water)	SDE	Spatial Database Engine
OFH	Overall Fuel Hazard	SDI	Soil Dryness Index
OIC	Officer In Charge	SDO	State Duty Officer
OOB	Out of Branch	SDS	Safety Data Sheet
PAR-Q	Physical Activity Readiness Questionnaire	SEATS	Single Engine Air Tankers
PILs	Power Incendiary Launcher	selcall	Selective calling
PHILs	Power Hand-held Incendiary Launcher	SEPP	State Environmental Planning Policy
PLB	Personal Locator Beacon	SES	NSW State Emergency Service
PMI	Program Maintenance Inspection	SFAZ	Strategic Fire Advantage Zone
PMR	Private Mobile Radio	SFMI	Statement of Fire Management Intent
POB	Person on Board	SIP	State Incident Plan/Procedures
PoM	Plan of Management	SIS	Species Impact Statement
PPC	Personal Protective Clothing	SitRep	Situation Report
PPE	Personal Protective Equipment	SitUps	Situation Updates
PPRR	Prevent, Prepare, Respond, Recover Framework	SMEACS-Q	Situation Mission Execution Administration Command/Communication Safety Questions
PS	Public Service	SOI	Southern Oscillation Index
PSN	Public Safety Network	SOLO	State Operations Liaison Officer
PUA	Public Safety Training Package	SOC	State Operations Controller
PWG	Parks and Wildlife Group	SOP	Standard Operating Procedure
RAF	Remote Area Firefighter	SRC	State Resource Coordinator
RAFT	Remote Area Firefighting Team	TAW	Technical Advisor Wildlife
RART	Rapid Aerial Response Team	TBA	Task Based Assessment
RBPP	Reserve Bushfire Planning Process	TOBAN	Total Fire Ban
REF	Review of Environmental Factors	TSC Act	Threatened Species Conservation Act 1995
REMC	Regional Emergency Management Committee	UHF-CB	Ultra High Frequency – citizen band
REMO	Regional Emergency Management Officers	USDA	United States Department of Agriculture
REOCon	Regional Emergency Management Controller	VHF	Very High Frequency
RF Act	Rural Fires Act 1997	VLAT	Very Large Air Tanker
RFMS	Reserve Fire Management Strategy	VRN	Vehicle Radio Number
RFS	NSW Rural Fire Service	WAF	Wind Adjustment Factor
RH	Relative Humidity	WERT	Wildlife Emergency Response Taskforce
RMS	Roads and Maritime Authority (now Transport for NSW)	WFCS	Wildland Fire Chemical System
ROPS	Roll Over Protection Structures	WHS	Work Health and Safety
ROS	Rate of Spread	WSAA	Work Safely Around Aircraft
RPA	Remotely Piloted Aircraft	WUI	Wildland Urban Interface
RPAS	Remotely Piloted Aircraft Systems		
RPD	Respiratory Protective Device		
SAD	State Air Desk		
SAP	Systems Applications and Products®		
SAR	Search and Rescue		

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# Contents

## Introduction

The NSW National Parks and Wildlife Service (NPWS), part of the Department of Climate Change, Energy, the Environment and Water (DCCEEW), manages approximately 10% of the land area of New South Wales (NSW). Much of this area is remote from access infrastructure and is some of the most rugged and bushfire-prone country in south-eastern Australia. These areas have been reserved to conserve their natural and cultural values, including their biodiversity, landscapes, Aboriginal cultural values, historic structures and recreational settings.

NPWS recognises fire as a natural and recurring factor shaping the NSW environment. NPWS also acknowledges that altered fire regimes may pose a significant threat to human life, property and other values including biodiversity, cultural heritage and tourism, and that the onset of climate change may exacerbate these risks.

Fire management is one of the most important tasks in managing protected areas. Under the *Rural Fires Act 1997*, NPWS is both a firefighting authority and a public authority and is responsible for managing fire on all lands under its control. This includes detecting and suppressing fires and implementing risk management programs to protect life and property from fires. NPWS also assists with suppressing fires on adjacent lands, as may be required under plans prepared in accordance with the *Rural Fires Act 1997*. Cooperative arrangements are established through the NSW Bush Fire Coordinating Committee (BFCC) and implemented through Bush Fire Management Committees (BFMCs).

NPWS is committed to ensuring that fire management planning is fully integrated with other aspects of protected area management and with fire management on adjacent land. It is also important that NPWS fire management aligns with the landscape level planning undertaken through the BFCC and BFMCs.

This manual details the policies and procedures for all fire management planning and fire operations on lands reserved under the *National Parks and Wildlife Act 1974* and any land managed by NPWS on behalf of the Minister for Environment and Heritage.

# Introduction

## About the Fire Management Manual

- 1 The *Fire Management Manual* ('the Manual' or FMM) combines the policy and procedural information necessary for NPWS to achieve its fire management objectives. The Manual provides guidelines for staff and strengthens the organisation's ability to work cooperatively with other firefighting authorities, emergency services and the community.
- 2 The Manual:
  - is the basis for consistent application of fire management legislation, policy and procedures on NPWS-managed land across NSW
  - is an integral component of a range of measures established to ensure the conservation of natural and cultural heritage, and
  - outlines operational procedures to ensure that staff, the public and stakeholders are protected from fire.

### Application of the Fire Management Manual

- 3 Manual content applies to all lands reserved under the National Parks and Wildlife Act 1974 (NPW Act) and any lands managed on behalf of the Minister for the Environment and Heritage within NSW.
- 4 Relevant operational procedures apply to all contractors and agents working on behalf of NPWS within parks, and to all NPWS staff and volunteers operating within parks and, when assisting with fire management, off-park.
- 5 Policies and procedures apply to bushfire and prescribed burning operations.

### Relationship to legislation and other policies

- 6 The Manual is prepared with reference to relevant NSW and Commonwealth legislation detailed in section 8.6 Relevant legislation.
- 7 Supports key NPWS fire management priorities, which will be incorporated into relevant BFMC Bush Fire Risk Management Plans (BFRMP), Fire Access Fire Trail (FAFT) Plans as well as Plan of Operations.
- 8 Is guided by the Bush Fire Coordinating Committee (BFCC) and Australasian Fire Authorities and Emergency Services Council (AFAC) policy guidelines (see [sections 8.1 AFAC Guidelines](#) and [8.3 BFCC policies](#)).

### Staff responsibilities

- 9 The Manual forms part of a multifaceted approach to managing fire and should be read in conjunction with other policies including Park Management Policies, and other staff circulars and procedures manuals referenced throughout.
- 10 Staff have a responsibility to ensure they are engaging with the latest version of the Manual and adhering to relevant policies.
- 11 Advice on significant updates, or changes requiring action before the release of the next annual edition of the Manual, will be communicated to staff through Fire Management Circulars.



# Introduction

## Access to the Fire Management Manual

- 12 Access to the Manual is as follows:
- A 'control' copy is kept on the NPWS Intranet
  - A copy of the Manual is made available in each NPWS workplace
  - The public has access to the Manual on the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) Website

## Fire Management Manual Review Process

- 13 The NPWS Fire and Incident Operations Branch (FIOB) has overarching responsibility for Manual content and will coordinate development of new policy and the review of existing policies. FIOB will involve relevant subject matter experts and content owners where applicable.
- 14 Amendments to the Manual are guided by the NPWS Fire Management Manual Business Rules 2023 (in preparation).
- 15 The National Parks and Wildlife Advisory Council, the BFCC, the relevant firefighting authorities and other identified key stakeholders are informed of any relevant policy amendments.

## Fire Management Circulars

- 16 Advice on significant updates, or policies requiring action before the release of the next annual edition of the Manual, will be communicated to staff through Fire Management Circulars.
- 17 Fire Management Circulars issued throughout the year remain current until they are superseded by the next annual edition of the Manual.
- 18 NPWS maintains a [Register of Fire Management Circulars](#) to record and provide context to decision making and fire policy development.

## Annual reviews:

- 19 FIOB will invite all staff to comment on the Manual at the end of the statutory fire season in February and March.
- 20 The purpose of the annual review is to ensure that the Manual is updated with:
- Fire Management Circulars released since the previous edition of the Manual
  - Bushfire response post-incident assessment, after action reviews or other lessons learned
  - New or significantly changed information
  - Updates that warrant a review (i.e., changes in legislation or guiding principles)
  - Inputs from chapter reviews that occurred in the previous year
  - Feedback from users or content owners
- 21 NPWS staff may also provide feedback or request changes to content throughout the year by emailing the [NPWS FIOB Planning Mailbox](#).

# Introduction

- 22 If accepted by the FIOB Planning unit, changes will be recorded for updates to the Manual in the next edition, or scheduled for consideration by subject matter experts as part of chapter review process.

**Table 1: Annual review and approvals process**

Start	End	Action
February	March	ParkSupportMail calling for staff comments Annual feedback from staff and content owners
March	May	Drafting and consultation
June	July	Executive review and approvals
August	August	Publication of annual edition

## Chapter reviews:

- 23 FIOB will invite NPWS subject matter experts to conduct a thorough review of chapter content between July and December each year.
- 24 Chapter reviews are coordinated within the NPWS Fire and Incident Management Governance Framework to promote alignment with NPWS fire management priorities.
- 25 If a reference group cannot reach consensus, it will escalate issues to the Fire and Incident Management Executive Steering Committee (FIMESC) for discussion, advice or decision.
- 26 Chapters are reviewed on a three-year rolling basis to:
- incorporate relevant changes in best practice, scientific knowledge, technology, or other drivers affecting capstone or policy content
  - consider if policies effectively address all relevant capstone requirements
  - incorporate major operational improvements
  - ensure procedures and guidelines are consistent with changes in capstone or policy

**Table 2: Chapter review and approval process**

Start	End	Action
July	September	FIOB invites relevant Reference Group to commence review at quarter one (Q1) meeting.
September	October	<ul style="list-style-type: none"> <li>• Detailed consideration and review of assigned chapter/s.</li> <li>• Drafting and consultation</li> </ul>
October	December	<ul style="list-style-type: none"> <li>• Reference Group escalates unresolved issues to FIMESC quarter two (Q2) meeting.</li> <li>• Reference Group tables and returns approved comments, including FIMESC feedback, to FIOB at quarter two (Q2) meeting.</li> </ul>
<b>Annual review in the following year</b>		Reference Group comments are incorporated into publication of annual edition.

# Introduction

## Roles and responsibilities for maintaining the Manual

- 27 The NPWS FIOB Planning Unit has overarching responsibility for content in the Manual.
- 28 Other teams in FIOB and across NPWS have subject matter expertise and responsibility as content owners to ensure specific content is accurate and up to date.
- 29 Roles and responsibilities for ensuring the Manual is current are summarised at [Table 3](#).

## Executive Director Park Operations Coastal

- 30 The Executive Director Park Operations Coastal (EDPOC) is accountable for the quality and accuracy of Manual content as proposed for publication in the annual edition.
- 31 The EDPOC determines if the Executive Director Park Operations Inland (EDPOI) also needs to approve external consultation and the publication of content. For the annual edition of the Manual. The decision to include the EDPOI may be due to the level of change or sensitivity of the content. The EDPOC may also choose to refer the content to other executive directors or escalate to the Deputy Secretary to approve content before it is published.

## Director FIOB

- 32 The Director FIOB is accountable for consulting on and publishing the Manual and is responsible to the EDPOC for ensuring that Manual content is accurate.
- 33 The Director FIOB determines the level of approval required for Manual content, before EDPOC consideration, based on their assessment of the sensitivity. As part of this assessment, the Director FIOB will also determine if any other directors should be made aware of new or revised content.

## Manager Planning in the FIOB Planning Unit

- 34 The Manager Planning is accountable for the review process and responsible to the Director FIOB for guidance on the appropriate level of approval for consulting on and publishing the Manual.
- 35 The Manager Planning, in consultation with the FIOB Planning Unit, assesses the level of sensitivity and complexity of changes proposed in the content updates to determine the appropriate level of consultation and publication approval required.

## FIOB Planning Unit

- 36 FIOB Planning Unit is responsible, under the Manager Planning, for coordinating the review, consultation and publication of the Manual. The FIOB Planning Unit is expected to apply a level of quality control to the Manual and is responsible for progressing accurate and up to date content for approval.
- 37 FIOB Planning Unit maintains a three-year rolling review schedule. This begins with storing new or revised content and requested changes throughout the year to consider in the annual edition. It coordinates the review process and records any additions or changes, the reasons for the change, and when the Manual was updated. It also arranges the approvals for content, consultation, and publication of the Manual.

# Introduction

## Content owners

- 38 Content owners are the subject matter experts who are best placed to ensure the accuracy, currency and usefulness of specific Manual content. Content owners are identified by FIOB Planning Unit as part of the review process and are consulted on revisions and updates to relevant sections of the Manual.
- 39 Content owners have a responsibility to ensure that Manual content is kept up to date and that any review is processed in a timely manner. Content owners should notify FIOB Planning Unit if they identify a requirement for new or revised doctrine. If the doctrine requires a major change or could be contentious the content owner has a responsibility to alert their own director. Content received by FIOB Planning Unit is assumed to have already received the necessary approvals from the respective unit.

## NPWS staff

- 40 All NPWS staff can provide feedback on policies, procedures and guidelines to the FIOB Planning Unit at any time via [npws.fiobplanning@environment.nsw.gov.au](mailto:npws.fiobplanning@environment.nsw.gov.au).
- 41 Staff have a responsibility to ensure they are engaging with the latest version of the Manual and adhering to relevant policies. Advice on significant updates, or changes requiring action before the release of the next annual edition, will be communicated to staff through Fire Management Circulars.

**Table 3: Roles and responsibilities for maintaining the NPWS Fire Management Manual**

	Accountable	Responsible	Consulted	Informed
<b>Accuracy of Manual content for publication</b>	EDPOC	Director FIOB	Relevant directors	EDPOI
<b>Coordination of review process</b>	Manager Planning	FIOB Planning Unit FIMESC Reference Groups	Content owners	Relevant directors
<b>Appropriate consultation</b>	Director FIOB	Manager Planning	Content owners	Relevant directors
<b>Publication and communication</b>	Director FIOB	Manager Planning	Relevant directors	NPWS staff

## NPWS Fire Policy Refresh Project

- 42 The NPWS Fire Policy Refresh Project consisted of a high-level review of the organisation's fire-related policy frameworks. The review considered whether existing policy frameworks, principally the Fire Management Manual, offered appropriate levels of governance, supported staff to effectively manage fire, and was readily accessible by users.
- 43 Recommendations of the Fire Policy Refresh Project were endorsed by the A/Deputy Secretary on 29 November 2023.
- 44 In response to the recommendations of the Project, updates are being made to the Manual to ensure it aligns with the approved future fire policy framework.
- 45 Work is also underway to strengthen review processes and align the Manual with government Accessibility standards, to ensure that it remains modern and relevant for all NPWS fire practitioners.

# Changes since 2022-2023

## Changes to the Manual

The previous 2022 - 2023 FMM was comprehensively reviewed by the Fire and Incident Operations Branch, with support from the subject matter experts across the agency.

### Throughout document:

- Forest Fire Danger Index has been updated to the Australian Fire Danger Rating System Fire Behaviour Index
- NPWS Fire Planning Framework including a transition from Reserve Fire Management Strategies (RFMS) to Statements of Fire Management Intent (SFMI).
- BFMC Operations Coordination Plans updated to BFMC Plan of Operations.

### About the Fire Management Manual

- Section contains new information on review and approval processes for the Manual.
- Section contains new information on roles and responsibilities for maintaining the Manual

### 1.1.2 Cooperative fire management

- Policy 2: Descriptions for EMPLAN, EnvSFA and AASFA updated to:
  - [NSW State Emergency Management Plan \(EMPLAN\)](#): EMPLAN provides a strategic overview to emergency management arrangements in NSW. It is supported by [Sub Plans](#) and [Supporting Plans](#) which detail the response to specific hazards and the roles and responsibilities of individual NSW Government Agencies. NPWS is identified as a support agency under the NSW EMPLAN.
  - [NSW State Bushfire Plan](#): The State Bush Fire Plan sets out the arrangements for preparedness, prevention, mitigation, response to, and recovery from, bushfire events by combat, participating and support agencies in NSW. This plan describes the arrangements for the control and coordination of the response to Class 2 and 3 bush and grass fires, including those managed under the provisions of Section 44 of the RF Act, and the provisions for emergency warnings at all classes of fires. The State Bush Fire Plan is a sub plan to the NSW EMPLAN.
  - [Environmental Services Functional Area \(EnvSFA\)](#): The NSW Environment Protection Authority (EPA) is the coordinating agency for the EnvSFA and is responsible for mobilising arrangements contained within the [Environmental Services Functional Area Supporting Plan](#). The EnvSFA has a key role in responding to emergencies, or leading activities, where the environment is at risk or impacted. The EnvSFA coordinates assistance to combat agencies with managing the response to environmental impacts across the elements of land, air and water. This includes cultural and natural heritage assets, and the coordination of wildlife responses during emergencies in NSW.

# Changes since 2022-2023

Previously, wildlife response was included under the AASFA Plan. The AASFA and EnvSFA supporting plans are being modified to reflect this change, although there will still be areas, such as animal welfare in fires, where there is potential for overlap in responsibilities.

[Agriculture and Animal Services Functional Area \(AASFA\)](#): The NSW Department of Primary Industries (DPI) is the coordinating agency for the AASFA and is responsible for mobilising arrangements contained within the [Agricultural and Animal Services Functional Area Supporting Plan](#). The AASFA has a key role in responding to emergencies, or leading activities, where agricultural and animal impacts may occur.

- Policy 2: Updated to include “Memorandum of Understanding between the former Department of Environment and Conservation (NSW) and the NSW Rural Fire Service for a Co-Operative Operational Framework (CM10 DOC15/155220): Facilitates joint cooperation in operational firefighting arrangements and mutual aid activities between the two organisations”.

## 1.1.3 Conserving biodiversity

- Policy 1: removed
- Subsection ‘NPWS Zero Extinctions Framework’ created
- Policy 5: new policy “NPWS is the first national parks agency in Australia to adopt a zero-extinction target and is committed to creating permanent strongholds for the conservation and recovery of threatened species”.
- Policy 6: new policy “Around 85% of all threatened species in New South Wales are represented on the national park estate, despite national parks occupying only 10% of the State. The concentration of threatened species and their habitats highlights the critical role of national parks in the effective conservation of threatened species”.
- Policy 7: new policy “There is evidence that the overall decline in biodiversity in New South Wales is occurring even in the national park estate. Key threats affecting threatened species populations in national parks include feral predators and other feral animals, invasive weeds, changed fire regimes and a range of impacts associated with climate change”.
- Policy 8: new policy “The [Zero extinctions – national parks as a stronghold for threatened species recovery: National Parks and Wildlife Service Threatened Species Framework](#) (the Framework) outlines a series of actions designed to secure and restore threatened species populations on the national park estate. There are several objectives for threatened species conservation on NSW national parks relating to fire management”.
- Policy 9: new policy “The Framework provides for a range of actions operating at multiple scales including:
  - the declaration of important habitat as Assets of Intergenerational Significance, attracting special legislative protection

# Changes since 2022-2023

- the reintroduction of locally extinct species into a network of feral predator-free areas
- the strengthening of the integration of threatened species objectives in NPWS landscape scale programs such as feral animal control and fire management
- the delivery of a world class ecological health monitoring framework.

The design and delivery of these actions will occur in partnership with Aboriginal communities, including through joint management arrangements, and will be informed by effective engagement and collaboration with neighbours and other partners and stakeholders”.

- Policy 10: new policy “NPWS is committed to improving the integration of threatened species objectives in the design and delivery of landscape scale park management actions”
- Subsection ‘Enhancing threatened species conservation through fire management’ created
- Policy 11: new policy “A dedicated Bushfire Risk and Evaluation Team has been established within NPWS. The responsibilities of this team include ensuring that risk to threatened species populations (including AIS declared areas) are factored into new BFMC Bush Fire Risk Management Plans and NPWS landscape-specific fire management planning”.

## 1.1.4 Conserving cultural heritage

- Policies 2 – 5 updated and replaced:
- Policy 2: new policy “Under the NPW Act, NPWS in conjunction with Heritage NSW has statutory responsibility for the management of Aboriginal cultural heritage on NPWS-managed lands, including the conservation of Aboriginal objects and declared Aboriginal places”.
- Policy 3: new policy “NPWS staff involved in operational park management of Aboriginal cultural heritage will seek advice on and apply current best practice methods for Aboriginal cultural heritage management in the planning, assessment and undertaking of any on-park activities (including conservation work). See Section [1.1.5 Cultural Fire Management](#) for further guidance”.
- Policy 5: new policy “[Bush Fire Environmental Assessment Code](#). Bush fire hazard reduction activities carried out by the NPWS will be in accordance with the Bush Fire Environmental Assessment Code, containing standards for the protection of Aboriginal cultural heritage. Where Aboriginal cultural heritage is indicated to be present, the Code prescribes that works must be undertaken in accordance [with NSW RFS document Conditions for Hazard Reduction and Aboriginal Heritage](#). Alternate environmental assessment pathways are provided under Part 5 of the EP&A Act”.
- Subsection ‘Involving Aboriginal people in fire management’ created

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- Policy 6: updated to “[Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013](#) and its accompanying guidelines are considered the best practice standard for historic buildings and European cultural heritage management in Australia. On NPWS managed lands, the conservation and protection of cultural heritage can be achieved, consistent with the Burra Charter, by managing and reducing risks during fire operations. Application of the Burra Charter to fire management activities is guided by the Burra Charter’s comprehensive suite of Practice Notes including:
  - [The Burra Charter Flow Chart](#)
  - [ICOMOS Blue Shield Rapid Assessment proforma](#)”
- Policy 6: new policy “The NPWS supports Aboriginal people to care for Country and seeks greater engagement and partnerships with Aboriginal communities across the full spectrum of fire management activities”.
- Policy 7: new policy “A key element of involving Aboriginal people in fire management activities undertaken by NPWS is providing a culturally safe environment. Aboriginal cultural safety involves providing Aboriginal employees with a safe, supportive and positive environment where they are comfortable to be themselves and to express their culture and spiritual beliefs. FIOB is currently developing cultural safety resources to better integrate Aboriginal cultural safety into its fire planning processes and operations”.
- Policy 8: new policy “NPWS policy for increasing the involvement of Aboriginal people in fire management activities and protecting cultural heritage values includes:
  - The (interim) [Aboriginal Country, Culture and Heritage Policy](#) (ACCH Policy) is a statement of NPWS’s commitment to recognising and realising the roles and responsibilities of Aboriginal people as custodians and managers of their Country and culture. The ACCH Policy is an internal document available to NPWS staff, which will be reviewed, updated and finalised to align with the new joint management model for NSW national parks, currently under preparation. Staff should ensure they are engaging with the latest version.
  - [NPWS Aboriginal Park Partnerships Manual](#) provides a ‘how to’ guide for DCCEE staff and Aboriginal communities in NSW who are or will be engaging in a partnership with DCCEE for parks.
  - [Aboriginal Partnerships Policy](#) fosters partnerships between DCCEE and Aboriginal people for the management of parks and provides a framework for this to occur.
- Subsection ‘Protecting cultural values from the impacts of fire’ created
- Policy 9, point 3: new point “work together to identify, assess and protect Aboriginal sites and places, historic places and culturally significant features known to exist within NSW from damage by fire or fire mitigation works. NPWS will provide advice to and cooperate with other land managers and fire services in this regard”.



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## 1.1.5 Cultural Fire Management

- New subheading 'Cultural Fire Management' containing:
- Policy 1: new policy "For many thousands of years Aboriginal people have developed and shared an intimate knowledge of Country and cultural fire management practice. Aboriginal cultural fire management provides an opportunity for current and future generations to practice culture, learn new skills, build capacity and connect with and care for Country".
- Policy 2: new policy "NPWS staff involved in operational park management of Aboriginal cultural heritage will seek advice on and apply current best practice methods for Aboriginal cultural heritage management in the planning, assessment and undertaking of fire management activities (including conservation work). Current best practice methods include:
  - Applying the [Indigenous Cultural and Intellectual Property Protocol](#) when referring to Aboriginal heritage, knowledge and cultural expressions in respect to all First Nations cultures and people.
  - Implementing the [Cultural Fire Management Policy](#). This policy supports Aboriginal community aspirations to connect to and care for Country through cultural fire management in parks. This policy is currently under review and staff should ensure they are engaging with the current version.
  - Applying the [Guidelines for Community \(Low Risk\) Cultural Burning on NPWS managed land](#) (currently under review). This guideline provides an endorsed approach to including Aboriginal communities in planned burning.
  - Applying the [Guide to Aboriginal Cultural Heritage Assessments and Approvals](#), which details the assessment of impacts on Aboriginal objects and Aboriginal places and identifies measures to mitigate impacts.
  - In relation to Fire Access and Fire Trail programs, applying the following:
    - [Fire Access and Fire Trail Aboriginal Cultural Heritage Assessment Guide](#)
    - [Fire Access and Fire Trail Native Title Future Acts Notifications Guide](#)
  - Applying the [Cultural Burning Decision Support Package](#), which has been developed to assist personnel with the environmental assessment and recording of cultural burns on NPWS managed lands. The Cultural Burning Decision Support Package comprises:
    - a) Cultural Burning Decision Support Tool – offers guidance on the application of the [Bush Fire Environmental Assessment Code 2021](#) and will assist staff in determining the most appropriate environmental assessment pathway for cultural burning activities on NPWS managed land.
    - b) NPWS Record of Aboriginal Stakeholder Involvement – provides a standard template for recording the decision-making process and consultation undertaken by staff for each community (low risk) cultural burning activity.

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- c) Quick Reference Guide (QRG) for entering cultural burns into Elements – outlines how to capture cultural burning activities in Elements to improve data quality for reporting.
- Applying the [NPWS Aboriginal Cultural Heritage Assessment Guide for non-BFEAC bushfire hazard reduction activities](#). This guide applies to the assessment of Aboriginal objects and places where the provisions of the BFEAC do not apply”.

## 1.3 Work Health and Safety (previously WH&S (safety and welfare))

- Policy 1: amended to remove “Hazard Specific Policies and Guidelines”.
- 1.3 WH&S (safety and welfare) renamed to Work Health and Safety

### 1.3.3 WHS procedures

- Policy 11: updated to “Where a safety incident involves aircraft operations, the Incident Controller or Officer In Charge should inform the [Aviation Duty Officer](#), as per the [Standard Operating Procedures](#) and [Interagency Aviation Standard Operating Procedures 2022](#) (2.7 Accident, Incident, Occurrence and Near Miss Reporting) and an investigation will be conducted (as per 2.8 Accident, Incident and Near Miss Investigation)”.

## 1.4 Governance (policy development & working groups)

- Section 1.4 ‘Governance (policy development & working groups)’ renamed to ‘Governance’

### 1.4.1 Background

- Policies 1-5: updated to “Governance identifies who can make decisions, who has the authority to act on behalf of the NPWS and who is accountable for how its people behave and perform. Governance principles are supported by laws and regulations and are used by NPWS to make decisions about managing fire within national parks and reserves across the state.”.

### 1.4.2 Responsibilities and accountabilities

- New section created, containing content previously located in Appendix 2.

### 1.4.3 NPWS Fire and Incident Management Governance Framework

- New section created containing information on the NPWS Fire and Incident Management Governance Framework

### 1.4.4 Fire policy review process

- Section contains information previously located in 1.4.2.

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- Policy 1: amended to “NPWS fire management policy operates in the context of the broader policy framework captured in the NPWS Park Policy Manual 2019, which managed by the NPWS Parks Policy Unit”.
- Policy 2: new policy “The Fire Management Manual is the principal reference document for NPWS fire related policy and procedure”.
- Policy 3: new policy “NPWS fire policy is reviewed on a regular basis to ensure:
  - that fire management practice is consistent with legislation and other NPWS policies.
  - content is evidence based and informed by the latest scientific research
  - content is relevant, practical and supports effective decision making”.

## 1.5.1 Performance indicator policies

- Section 1.5.1 ‘Performance indicator policies’ renamed ‘Fire Management Program Reporting and Evaluation’
- Section 1.5.1: updated to:
  - Policy 1: “NPWS has identified fire management performance measures and targets to guide and evaluate success of our hazard reduction activities, bushfire response, and conservation of biodiversity and cultural heritage values. These measures are categorised as Service Delivery Commitments, and are reflected in strategic documents including the NPWS Fire Management Direction Statement, Fire Management Program Action Plan and the Fire Management Program 2022-2030 Monitoring, Evaluation, Reporting and Improvement Framework (MERI)”.
  - Policy 2: “The MERI framework defines the program logic and intended outcomes for the Fire Management Program. It outlines what the Program aims to accomplish, how it will achieve its objectives and how success will be measured and evaluated. The MERI framework uses two approaches to monitoring: activity monitoring and impact monitoring. The framework will undergo periodic reviews and updates across the life of the Program”.
  - Policy 3: “Program activity monitoring in the MERI framework includes a series of metrics to measure the program activities and immediate outputs, with the aim to understand and quantify the outputs. Metric methodology is defined in the MERI Data Dictionary. These activities are reported annually in the Fire Management Program Annual Report (internal document). Service Delivery Commitments and other priority metrics are also reported on regularly throughout the year”.
  - Policy 4: “Program impact monitoring assesses effectiveness through formal periodic evaluations, using both the program activity metrics and other qualitative performance measures, with examination of best practice. The Fire Management Program 2022-2030 will undergo two independent evaluations: a mid-term evaluation during 2025-2026, and an outcome evaluation in the first half of 2029-2030”.

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## 2.1.1 Background

- Policy 3: updated to “NPWS is also a member of local BFMCs where it has reserves. Under s. 52 of the RF Act BFMCs are responsible for the development of BFRMP, Plan of Operations, and FAFT plans across BFMC Areas in NSW. These are cooperative plans, and their scope extends to NPWS operations and to the management of fire and fire trails within NPWS managed land. These plans integrate landscape-specific objectives and strategies from NPWS SFMIs (or RFMSs where landscape specific SFMIs are yet to be prepared) and associated spatial datasets into a wider multi-agency framework (see [Figure 2](#))”.
- Policy 4: updated to “Fire planning and land management is undergoing a period of significant change. NPWS is supporting BFMCs in the development of next generation BFRMP’s as well as leading Operations Branch staff in transitioning from RFMSs to the new spatial-based NPWS Reserve Bushfire Planning Process (RBPP). This new process will deliver landscape specific SFMIs, a centralised NPWS Fire Planning Portal (spatial viewer) as well as help to drive [Assets of Intergenerational Significance](#) and [zero-extinctions](#) initiatives across NSW”.

## 2.1.2 Fire management planning framework

- Tier 2: updated to: “the new NPWS Reserve Bushfire Planning Process produces Statements of Fire Management Intent (and associated spatial datasets), which will be uploaded into the NPWS Fire Planning Portal (under development). Statements of Fire Management Intent (SFMIs) define management approaches for either individual or groups of protected areas, consistent with NPWS strategic policy. SFMIs (and associated spatial datasets) form the basis for preparing prescribed burn plans and IAPs as well as BOPs. *Note: RFMSs are being phased out and are being replaced with SFMIs*”.
- Tier 3: updated to “BOPs – include fire management works programs, which are prepared for the purpose of planning and prioritising the annual implementation of BFMC management plan treatment registers, landscape specific SFMI objectives and strategies, and incident procedures, which provide fire suppression information and procedural guidelines. Additionally, a prescribed burn plan or IAP is prepared for each bushfire management operation on NPWS-managed land”.

## 2.1.3 Risk assessment framework

- Policy 4: updated to “NPWS manages a broad range of cultural heritage including structures, works such as roads, dams, cultural landscapes, modified landscapes and archaeological objects and sites. Cultural heritage often reflects evidence of a shared history between Aboriginal and non-Aboriginal people. This shared history is recognised and recorded by NPWS. Further information can be obtained from the [Aboriginal People, Partnerships and Heritage Branch](#) as well as from [AHIMS](#)”.
- Policies 5, 6, 7 consolidated and relocated to ‘conserving cultural heritage’
- Policy 8: updated to “Fire protection measures will be *progressively* installed in historic heritage buildings and structures as required in accordance with Australian Standards, and relevant planning and heritage legislation. The NPWS Historic Heritage Team is available for consultation on best practice for heritage relics,

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items, places and property via their mailbox at:

[npws.heritage@environment.nsw.gov.au](mailto:npws.heritage@environment.nsw.gov.au). Further information can be obtained from the [Historic Heritage ParkSite Page](#) and information on historic heritage sites can be obtained from the [HHIMS](#)".

- Policy 12: new point "feral predator-free network areas (established as part of the NSW NPWS Threatened Species Framework to meet our commitment of zero extinctions and restore threatened species populations)"
- Policy 13: updated to "The spatial datasets underpinning the NPWS Fire Planning Portal (under development) must include a spatial layer that identifies important natural values and features requiring protection. Fire management zoning shall reflect the significance of features and incorporate measures to protect them".
- Policy 14: updated to "Fire management intent for each park or fire planning landscape should contain specific objectives and strategies to guide on-ground actions to protect important natural values. These actions will be reflected in NPWS managed land PoMs, SFMIs (or RFMSs where landscape specific SFMIs are yet to be prepared), the new NPWS Fire Planning Portal (under development) and in the use of appropriate fire management zones".
- Policy 15: updated to "Directors of Park Operations Branches should ensure that the above actions to protect important biodiversity and landscape features on NPWS managed land are included in the spatial datasets that underpin the new NPWS Fire Planning Portal (under development).

## 2.1.4 Consultation framework

- Policy 1: updated to "NPWS is committed to involving key stakeholders in the management of NPWS managed land; consultation is always an important part of any management approach.

In Aboriginal joint-managed parks, the process for Aboriginal community engagement should follow the requirements of those agreements. There may be legal requirements such as Indigenous Land Use Agreements (ILUA's) and Part 4A boards that require consultation with regard to fire management activities and the development of landscape-specific objectives and strategies.

- Policy 3: new point "ensure NPWS landscape specific objectives and strategies developed as part of the new NPWS Reserve Bushfire Planning Process are used to inform (and be informed by) BFMC BMPs".

## 2.1.5 Fire management zones

- Policy 3: new policy "Further to the provisions of Annexure C, there are two 'firebreak' types identified through the BFRMP process:
  - Linear Fire Breaks
  - Transport Corridor Fire Breaks (*Note: Transport corridor fire breaks are limited to public roads and railways that are vested in, or under the control a local authority (councils) or Transport for NSW*)
- Policy 3: updated to: "In addition to the above, NPWS will also consider the conservation objectives of a particular park reserve, existing reserve bushfire

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planning (including both RFMSs and SFMIs), reserve PoM and pest management strategies when identifying fire management zones. Table 2 below outlines the zone objectives and characteristics as per BFCC policy”.

- Policy 6: new policy “A precautionary approach should be adopted when identifying IMZs on NPWS managed land. NPWS staff must work closely with BFMCs to ensure that a range of Bushfire Management Zones and other treatment strategies (e.g., community engagement) are applied to appropriately address the risks to the variety of asset types in their area. While the application of all zone types needs to be considered by the BFMC, in certain circumstances some zones (e.g., IMZ’s) may not be appropriate or required. Staff should refer to [‘NPWS Guideline for identifying Ignition Management Zones \(IMZs\)’](#)”.
- Table titled ‘Fire management zone objective, characteristics and NPWS KPIs’ updated to improve Zone Characteristics and contain Fire Exclusion Zones (FEZs)

## 2.1.6 Vegetation biodiversity thresholds and fire interval guidelines

- Policy 2: updated to “When using the [Bush Fire Environmental Assessment Code](#) to issue a HRC, staff should refer to the NSW RFS supporting document [Fire Intervals for Strategic Fire Advantage Zones and Land Management Zones](#) for minimum SFAZ and LMZ thresholds. This table is modified from [Guidelines for Ecologically Sustainable Fire Management](#) for the specific purpose of the Code. **Note:** The fire interval guidelines are currently being reviewed and updated, due for release in 2024/25”.
- Subheading: new subheading ‘Fire Regime Thresholds Specific to Land Management Zones
- Policy 4: new policy “Fire thresholds are defined for vegetation communities to conserve biodiversity. Guidelines for interpreting the various fire regime threshold status categories for NPWS Land Management Zones are described at [Table 6](#)”.

## 2.1.7 NPWS Fire Planning Framework

- Subheading 2.1.7 renamed from ‘Reserve Fire Management Strategies’ to ‘NPWS Fire Planning Framework’
- Policy 1: new policy “The establishment of the new NPWS Fire Planning Framework moves the organisation away from single static hard copy documents for each reserve and instead adopts a landscape approach to fire planning that produces multiple map-based products. These will be live-linked to corporate databases and designed to deliver multiple organisational objectives. The framework (and associated methodology) replaces the previous NPWS Reserve Fire Management Strategies, including Type 1, 2 and 3”.
- Policy 2: new policy “This change has been driven by the findings of the NSW Bushfire Inquiry (2020), the NPWS After Action Review of the 2019-20 fire season, the age and currency of existing RFMSs, the ecological effects of the 2019-20 fire season and a consensus across the organisation that RFMSs are no longer meeting NPWS needs”.

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- Policy 3: new policy “A key aspect of the new NPWS Fire Planning Framework is the establishment of a formal five step process (see [Table 8](#)) focussed on logical fire planning landscapes. This is known as the Reserve Bushfire Planning Process (RBPP) and produces two primary products:
  - a concise Statement of Fire Management Intent (SFMI) document containing Branch developed and approved landscape-specific fire management objectives and strategies/actions, and
  - reviewed and updated corporate data layers that reflect the objectives and strategies identified in the SFMI.

These primary products will be displayed in an Internal NPWS Fire Planning Portal (online spatial viewer) that links approved landscape-specific fire management objectives and strategies to a fire planning landscape map”.

- Policy 4: new policy “Each SFMI guides fire management activities, encompassing planning, preparation, response and recovery strategies, on NPWS managed lands. As such SFMIs are intended to support, inform and complement the development of relevant BFMC planning documents including Bush Fire Risk Management Plans and Fire Access and Fire Trail Plans. It is also intended to inform other NPWS planning, programs and policies including plans of management for NPWS managed land, BOPs, prescribed burning plans, incident action plans, Conservation Action Plans, AIS Fire Response Plans and annual works programs (refer to [Figure 3](#))”.
- Figure: new figure ‘NPWS Fire Planning Framework (including BFMC integrations)’
- Policy 5: new policy “Approved NPWS SFMIs and associated spatial data for protected areas will also be considered as relevant plans for the purposes of Section 38 and 44 of the RF Act and will be communicated to relevant fire control officers during fire incidents”.
- Policy 6: new policy “The development of an internal NPWS Fire Planning Portal is scheduled to be delivered in the 2024/25 financial year. In the interim, staff can utilise ArcMap or the [NPWS Fire Planning Landscapes PowerBi Dashboard](#) to view key fire planning datasets”.
- Policy 7: new policy “DIO Spatial Services have the responsibility of setting data governance standards for spatial data across the DCCEE cluster. All data held within the NPWS Fire Planning Portal will align with the [Spatial Data Publishing](#) requirements. Change requests to corporate data should be made directly with the data creator. Data creators can be viewed via the [Information Asset Register](#)”.
- Policy 12: new policy “Both new and revised SFMIs require Park Operations Branch Director approval before they can be formally adopted and shared with other relevant agencies. The annual review of SFMIs and associated spatial datasets will be recorded as an annual action in BOPs. A new ‘version number’ must be included on each version of an adopted SFMI document within CM10”.
- Policy 13: new policy “Approval of the SFMI will be recorded via CM10. Other agencies do not sign off on NPWS managed land SFMIs or associated spatial datasets and no other agency logos should be displayed on SFMIs”.

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- Policy 14: new policy “In the case where SFMIs are prepared for NPWS managed lands under Aboriginal Joint Management Arrangements, the relevant Aboriginal Joint Management Board representative (i.e., Chairperson or their delegate) must provide written concurrence approving the content within the SFMI document. This evidence of approval must be uploaded into CM10 and attached to the file copy of the relevant SFMI document”.
- Subsection ‘Reserve Bushfire Planning Process Methodology’ created
- Policy 16: new policy “The NPWS Reserve Bushfire Planning Process consists of two parts:
  - Part 1 involves background work undertaken in preparation for the delivery of workshops ([Table 6](#)), and
  - Part 2 consists of a series of workshops that engage a working group in the planning process ([Table 7](#)). Further information and supporting documentation is available from the [Reserve Bushfire Planning Process ParkSite page](#)
- Table “RBPP methodology Part 1 (background preparation)” and “RBPP Methodology Part 2 (Fire Planning Workshops)” created
- Subsection ‘Community consultation’ renamed ‘Consultation Process’
- Policy 17: new policy “RBPP workshops are designed to be facilitated and delivered by NPWS Branch staff with or without the support of FIOB. Non-NPWS staff may also participate in workshops where fire planning landscapes encompass lands under joint management arrangements (such as with Aboriginal Joint Management Boards or Water NSW) or where significant project partnership arrangements exist (for example with Australian Wildlife Conservancy or Wild Deserts)”.
- Policy 18: new policy “Consultation with the RFS and the wider community on each SFMI will occur through local BFMCs for each landscape. However, NPWS may seek also input from other agencies, neighbours and key stakeholders outside of the BFMC meetings as part of the organisations commitment to establish good working relationships and foster a broader understanding of NPWS’ fire management programs”.
- Policy 1: updated to “RFMSs will continue to be used to guide fire management across NPWS managed lands, where landscape-specific SFMIs are yet to be prepared. This will continue until such time as all NPWS managed lands have transitioned to the new NPWS Reserve Bushfire Planning Process”.
- Policy 2: updated to “When a new bushfire prone reserve is acquired by NPWS, an approved reserve fire strategy must be developed within 9 months of gazettal. Completion of the NPWS RBPP (including the preparation of an SFMI and the review of relevant spatial datasets) for new reserves fulfils this commitment and should be scheduled as actions in BOPs”.
- Policy 3: separated into two policies and updated to “SFMI (and associated spatial datasets) will be checked annually to ensure accuracy of information (e.g., fire history, zoning etc). A major revision of each SFMI will be undertaken



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immediately prior to any review of relevant Bush Fire Risk Management Plans by BFMCs (generally every 5 years).

- Policy 3 separated into two policies and updated to “Major revisions of SFMIs will also be required:
  - after significant fire events,
  - in response to receipt of new information that changes the intent of fire planning across a specific landscape, and/or
  - in response to developments or other major changes which require amendments to fire management zoning”.
- Policy 4: removed
- Policy 6: removed
- Policy 7: removed
- Policy 10: updated to “Approval of the SFMI will be recorded via CM10. Other agencies do not sign off on NPWS managed land SFMIs or associated spatial datasets and no other agency logos should be displayed on SFMIs”.
- Policy 11: updated to “Spatial datasets associated with SFMIs will remain as live data that changes with each fire season. Relevant information, including zones, roads and operational management guidelines, should be kept up to date electronically within the specified GIS layers”.
- Policy 12: removed
- Subheadings 2.1.8, 2.1.9, 2.1.10 and 2.1.11 and associated content removed.
- Subsection ‘preparing and approving Type 2 and 3 fire management strategies’ and associated content removed.

## 2.2.1 Background

- Policy 1: updated to “Research guides management actions to minimise the risk of harmful impacts of bushfire, while maintaining healthy, biodiverse natural landscapes. To better understand the complex nature of fire and how it interrelates with climate change, biodiversity, fragmentation of natural landscapes, urbanisation, weeds and pest animals ongoing research is required. Establishing a comprehensive knowledge base and keeping up to date with the latest research and current practices ensures that NPWS continually improves the effectiveness of its fire management operations”.
- Policy 2: updated to “Research is also required to align NPWS fire management with a risk management framework, as recommended by the COAG National Bushfire Inquiry (2004). To meet its statutory obligations of protecting life and property and conserving biodiversity and cultural heritage, NPWS requires access to a wide range of knowledge across an array of fields”.

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## 2.2.2 Research policies

- Policy 1: updated to “Integrated and practical fire research is delivered to NPWS by the Science and Insights Division and external research partners, in line with the [Scientific Rigour Position Statement](#) and Knowledge Strategy. The scientific evidence produced across the research industry supports and complements management actions and ongoing monitoring led by NPWS”.
- Policy 2: updated to “Knowledge brokering helps generate and share information through networks, across functions and up to policy writers and decision makers. Guidance on how knowledge mobilisation and knowledge brokers facilitate strategic goal development is available in the documents ‘Fire and Incident Operations Branch – Operational Improvement Team Strategy 2024–28’, [‘Knowledge mobilisation in the Science and Insights Division’](#) and [‘Science and Insights Knowledge Statement’](#)”.
- Policy 3: updated to “The FIOB Operational Improvement Team leads the work to identify and advocate for NPWS fire research priorities to deliver safer and more effective fire and incident management outcomes throughout our organisation. The Operational Improvement Team is also responsible for facilitating and coordinating NPWS’ connection with industry stakeholders and research partners. This function supports the co-design and co-delivery of outcomes and enable the implementation of decision-ready science, ensuring our fire management operations are industry leading”.
- Policy 4: updated to “NPWS will continue to contribute to internal, external and joint research projects, which includes the NSW Bushfire and Natural Hazard Research Centre and the Natural Hazards Research Australia”.

## 2.5.1 Background

- Policy 3: updated to “Where NPWS is the proponent, the [Guidelines for Preparing a Review of Environmental Factors](#) should be followed and consideration given (where appropriate) to preparing a REF to cover an entire reserve, Branch or vegetation community where possible”.

## 2.5.3 Situations where the Code does not apply

- Policy 4: new point “where NPWS policy direction applies and program-specific EIA documentation has been developed (such as NPWS FAFT Program)”

## 2.6.4 Protecting assets

- Policy 1: updated to “BFMC [BFRMP](#) and NPWS Reserve Bushfire Planning (including SFMIs and associated spatial datasets) identify where APZs are required to minimise the risk of bushfire damage to life and property. Staff should continue to refer to existing RFMSs where an SFMI has not yet been prepared for a specific area of NPWS managed land.

NPWS will maintain APZs where identified in these management planning documents. Fuel management will be undertaken by various methods, including

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prescribed burning and mechanical clearing, to achieve the outcomes stated in the plans”.

- Policy 17: policy removed.
- Policy 18: points rearranged, with point three becoming point one
- Subsection ‘Neighbourhood Safer Places’ created
- Policy 21: new policy “A Neighbourhood Safer Place (NSP) is a building or a space within the community that has been designated as such by the Commissioner of the NSW Rural Fire Service. It provides for improved protection of human life during the onset and passage of a bush fire. It is a location where people facing an immediate threat to their personal safety or property can gather and seek shelter from the impact of a bush fire. Their function is to provide a place of last resort for a person to seek shelter at during the passage of the bush fire front”.
- Policy 22: new policy “The intended occupation time of an NSP is from a couple of minutes to a couple of hours as the fire front passes. NSPs are not to be confused with Fire Refuges, Recovery Centres, Assembly Areas, Evacuation Centres or Informal Places of Shelter”.
- Policy 23: new policy “Before a site may be designated as an NSP, a formal assessment is to be undertaken. This assessment is to be completed in line with the [NSP Guidelines for the Identification and Inspection of Neighbourhood Safer Places in NSW](#)”.
- Policy 24: new policy “Where NPWS managed lands are identified to form part of an NSP, advice should be sought from FIOB via the [FIOB Planning Mailbox](#)”.
- Policy 22 (Environmental Impact Assessment): updated to “The primary role of APZs and NSPs is the protection of life and property. However, the potential environmental impacts of any treatments applied within APZs require consideration (see section 2.5 Environmental impact assessment)”.

## 2.7.3 Fuel hazard assessment

- Policy 6: updated to “OFH results must be recorded in Elements. Further information can be accessed in Elements support tab:
  - HR 7.01 Collect OFH with OCA Appr
  - HR 7.03 Create an OFH report on Desktop”.

## 2.7.4 Fuel management practices

- Policy 1: new point “iii Pile burning. Pile burns can be a useful method for reducing bush fire fuels and allow for the opportunity to burn vegetation that has been cut and stacked as part of an authorised mechanical activity”.
- Policy 2: updated to “NPWS may prescribe the use of other fuel management strategies (where considered appropriate). Other potential methods include

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pruning, herbicide application, trail construction, watering, irrigation, and fuel replacement (replacing highly flammable vegetation types with less flammable vegetation types)”.

## 2.8.2 Developing a prescribed burn plan

- Policy 2: new policy “With the permission of the Area Manager, the designated person can delegate tasks related to the planning, preparation and reporting phases of the prescribed burn. The designated person retains accountability for the quality, integrity and validity of the prescribed burn plan and cannot delegate the approval of the plan”.
- Policy 3: updated to “The prescribed burn plan will incorporate the management and operational guidelines specified in the applicable reserve bushfire planning documents (including SFMIs / RFMSs), conservation management plan, CAP (including AIS Fire Response Plans where these have been developed), PoM, site protection plan, pest management plan, threatened species recovery plan or other relevant plan”.
- Policy 5: updated to “All persons on the fireground must have access to a prescribed burn plan and be given relevant maps. Where possible, all personnel on the fireground should be given access to, or directed to, sources of electronic fire operations maps, burn plans and Incident Action Plans for use in mobile phones and tablets”.
- Policy 11: updated to “A comprehensive check of the area of the proposed burn will be conducted for potential hazards. These hazards are related to operational personnel, visitors (including people experiencing homelessness), road users and neighbours”.
- Policy 26, point 2: policy updated to “a Traffic Guidance Scheme (*previously Traffic Control Plan*) will be developed and put in place prior to prescribed burning being undertaken (refer to the [Traffic Control at Worksites and Technical Manual](#))”.
- Policy 27: updated to “The Incident Controller will deploy certified Traffic Controllers (*previously Transport for NSW certified traffic controllers*) for traffic control where required. Where considered necessary, Police or local council assistance may be requested”.
- Policy 32 and 33 relocated to ‘smoke considerations and management in prescribed burn planning’ subsection.

## 2.9.4 Identification and classification of fire trails

- Policy 2: updated to “BFMCs are leading the identification and classification of fire trails that make up the network of trails necessary for fire management through the FAFT process”.
- Policy 3: updated to “Fire trail planning, including preparation of fire trail registers, is to be done in accordance with the BFCC Policy 1/2017 ‘Fire Access and Fire Trails”.

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- Policy 4: removed
- Policy 5: removed
- Policy 15: removed
- Policy 18: removed
- Policy 25: removed
- Policy 27: removed

## 2.9.7 Access to NPWS managed land

- Subheading 2.9.7 renamed from 'Access to NPWS managed land by other firefighting authorities' to 'Access to NPWS managed land'
- Policies 1 to 5 replaced with concise content:
  - Policy 1: "The NPWS requires all firefighting authorities, support agencies and utility companies to seek written agreement from NPWS prior to accessing NPWS managed lands, except in the case of emergency response operations".
  - Policy 2: "In the case of emergency operations, access to NPWS managed land will be in accordance with the coordinated policies outlined in BFMC Plan of Operations. All emergency access is to be reported to the DO as soon as possible".
  - Policy 3: "The NPWS is committed to facilitating safe and appropriate access to NPWS managed lands. Requirements for fire related activities are documented in Table 6 and the [NPWS Vehicle Access Policy](#)".
  - Policy 4: "The NPWS may vary access arrangements according to the sensitivity or management objectives of an area. Examples include nature reserves, areas declared as Assets of Intergenerational Significance, feral predator-free areas, Aboriginal areas or places, wilderness areas or drinking water catchment areas".
  - Policy 5: "Access approvals are generally considered and granted through the NSW RFS District Command structure. These arrangements promote a coordinated and cooperative approach to fire related activities".
- Policy 4: relocated to the end of 2.9.7 'Access to NPWS managed land'

## 2.12.4 Dangerous goods storage

- Subsection 'Incendiaries' renamed 'Storage and transport of incendiaries'

## 2.13 Asbestos

- New section 'Asbestos' created

# Changes since 2022-2023

- New subheading '2.13.1 Background' created
- Policy 1: new policy "Asbestos is a naturally occurring mineral with a long, thin fibrous shape. Asbestos fibres are carcinogenic, and, when inhaled, can cause asbestosis and mesothelioma".
- Policy 2: new policy "Every person is exposed to some level of airborne asbestos in the air they breathe. Most people who develop asbestos-related diseases have worked on jobs where they frequently breathed in large amounts of asbestos fibres, such as construction worker".
- Policy 3: new policy "A large quantity of uncontaminated air is drawn in from the combustion process, in the order of tens of thousands of cubic metres of fresh air or more depending on the size of the fire. This large quantity of fresh air has an effect on diluting airborne asbestos fibre concentrations below both exposure standards and detection limits".
- Policy 4: new policy "Asbestos can pose a hazard on the fireground, as structures and materials containing asbestos may be rapidly degraded by both fire and firefighting activities, liberating asbestos fibres into the air, and increasing the risk of inhalation, both directly, and via the contamination of clothing and equipment used on the fireground".
- Policy 5: new policy "Due to the risk posed by airborne asbestos fibres in fire situations, precautions must be taken to ensure exposure to asbestos for firefighters is minimised".
- New subheading '2.13.2 Asbestos policies' created
- Policy 1: new policy "The Incident Controller or Officer in Charge must assess the conditions to determine the likelihood of an asbestos risk".
- Policy 2: new policy "The defines the processes required for NPWS workers to identify and manage WHS risks and obligations associated with naturally occurring or manufactured asbestos on the fireground".
- Policy 3: new policy "For all incidents where an asbestos risk has been encountered, the [NPWS Asbestos on Fireground Procedure](#) contains decontamination procedures are to be applied to NPWS personnel and equipment prior to departing the location".

## 3.1.1 Background

- Policy 2; updated to "The [Australian Fire Danger Rating System](#) (AFDRS) is a national approach to calculating, forecasting and communicating fire danger".
- Policy 3: new policy "Fire danger ratings describe the potential level of danger should a bushfire start".
- Policy 4: new policy "The Fire Behaviour Index (FBI) replaces the Fire Danger Index (FDI) and assists with operational decision making".

# Changes since 2022-2023

- Policy 5: new policy “The FBI has been incorporated into NPWS policy and protocols for response operations”.
- Policy 6: new policy “Key AFDRS policy is referenced throughout the Manual. Further information including support tools, fuel characteristic guides, and online learning requirements is available at [ParkSite Australian Fire Danger Rating System](#)”.

## 3.1.3 Incident procedures

- Policy 3, point 3: updated to “Branch fire preparedness guidelines, including preparedness levels informed by [AFDRS Bushfire Alerts Matrix and Alert Levels for BIPs](#) and [AFDRS Community Messages and Action Statements for BIPs](#)”.
- Policy 3, point 7: updated to include “information on significant assets, built, natural and cultural”
- Policy 3, point 11: removed
- Policy 3, point 12: updated to “information about the NPWS radio system and radio systems of other agencies that will allow effective communication during incidents. Local Branch radio channels and towers should be listed and include local cross agency and cross border radio channels and procedures where applicable”.
- Policy 6: updated to “All firefighting and support vehicles must carry a copy of the incident procedures relating to their home Branch. This may be in print or electronic format. Electronic format may be carried by fire crew within the vehicle.
- Policy 8: updated to “Each Branch will define its own ‘critical fire season’ – for the Branch and for each Area or group of reserves. Predictions will be made annually on the extent of the critical fire season Southern Oscillation Index trends and RFS advice for the geographic area”.
- Policy 10: updated to remove content duplicating Table ‘Fire Danger Ratings: preparedness guidelines and public warnings’

## 3.1.4 Duty Officer system

- Policy 7: updated to “The Radio Duty Officer (02) 66507124 is active all year-round on scaled standby and provides advice and assistance on NPWS and PSN radio network issues”.
- Policy 10: updated to “During the bushfire danger period all rostered DOs must have access to suitable telecommunication facilities (i.e. network connectivity) to allow the timely monitoring and activation of local NPWS response to bushfire”.

## 3.1.5 Fire Preparedness Days

- Policy 3, point 4: updated to “collect data on currency hours from the previous fire season (to be forwarded to the Capability and Training Unit within FIOB)”

# Changes since 2022-2023

- Policy 5: updated to “The duration of a FPD must be sufficient to encompass all learning opportunities and team-based roles”.
- Policy 6: updated to “Fire and Incident Operations Branch will annually produce, prior to Fire Prep Days, the [FPD Resource Kit](#) as a tool to help Branches run FPDs”.

## 3.2.2 Communications equipment policies

- Policy 2: updated to “Each Branch will appoint an officer who is responsible for overseeing the maintenance of the Branch’s radio system. Branches should advise the [npws.mobileassets@environment.nsw.gov.au](mailto:npws.mobileassets@environment.nsw.gov.au) upon appointment of this person”.
- Policy 6: removed
- Policy 9: updated to “Where there is an identified need, Branches will contact the Radio Assets officer to assist in acquiring radio equipment to allow communication with other fire agencies on their primary systems”.
- Policy 10: policy number assigned to “Use of UHF-CB radios in NSW is regulated by the [Australian Communications and Media Authority](#) (ACMA) and covered under the Radio communications (Citizen Band Radio Stations) Class Licence 2015. UHF-CB radios must comply with the standard [Radiocommunications \(UHF CB Radio Equipment\) Standard 2011 \(No. 1\)](#)”.
- Policy 12: updated to “All NPWS vehicles associated with fire operations will be fitted with a NPWS mobile radio and a NPWS programmed P25 NSW PSN compatible UHF radio”.
- Policy 13: updated to “All NPWS vehicles associated with fire operations will have a VRN which is the 4-digit mobile radio selcall number allocated to the vehicle displayed on the dash; on the top of the vehicle bonnet; on each door of the vehicle, and at the back of the vehicle or appliance as per Appendix 1”.
- Policy 22: updated to “To ensure consistency on mobile devices (*previously iOS devices*) where inbuilt GPS sensors are used, Branches should consider the following applications (apps)”.
- Policy 22, point 3: removed

## 3.3.2 Weather information policies

- Policy 6: new policy “The [NPWS PAWS Weather Viewer](#) is a web based observational portal for displaying real-time weather data from both Bureau of Meteorology automatic weather stations (AWS) and portable automatic weather stations (PAWS)”.
- Policy 7: new policy “The NPWS PAWS Weather Viewer enables NPWS staff to monitor weather conditions and FBI and FDI captured through the weather stations across NSW”.



# Changes since 2022-2023

## 3.4.2 Fire bans, alerts and closure policies

- Policy 1: removed
- Policy 4: new policy “Fire management signs, where installed, should be in accordance with the [NPWS Park Signage Manual](#)”.
- Policy 21: updated to “Gas-fired or electric barbeques or cookers can be used (within NPWS managed lands) if the following conditions are met:”
- Policy 21, point 1: updated to “they are in a public picnic or camping area, where the appliance and this area have been approved by the land manager for this purpose”

## 3.5.2 Equipment standards policies

- Policy 4: updated to “NPWS vehicles will be fitted with red beacons. NPWS vehicles will not be equipped with sirens or combinations of red and blue lights that require State Rescue Board approval”.
- Policy 8: updated to “Team Leader Field Operation and/or Senior Field Supervisors must undertake regular audits to ensure that the required equipment checks are being undertaken”.

## 3.7.1 Learning and development

- Section 3.7.1: renamed from ‘background’ to “NPWS Fire Training Qualification Information” and content removed
- Sections 3.7.1, 3.7.2 and 3.7.3 replaced with:
- Policy 1: “Nationally recognised units of competency and current organisational requirements for fire, aviation and incident management roles coordinated by the Capability Training Unit (CTU) are detailed in the NPWS Training & Qualification Information Handbook (in development).

Information includes:

- [prerequisite](#) requirements
- [currency requirements](#)
- [career pathways](#)
- [how to nominate, enrolment and recognition of prior learning processes, and](#)
- [training records management](#)

Further information about the CTU, the training NPWS offers and updates on the NPWS Training and Qualification Information Handbook is available at [Capability & Training Unit \(sharepoint.com\)](#)”.

# Changes since 2022-2023

## 3.8.2 Policies for personal health and fitness

- Policy 1: new policy “NPWS assesses firefighter health and fitness to ensure staff are physically able to perform strenuous firefighting duties”.
- Policy 3: new policy “The NPWS Firefighter Health and Fitness Program consists of a comprehensive medical assessment, a health questionnaire (PAR-Q) and an annual task-based assessment (TBA, also known as a pack test)”.
- Policy 4: new policy “All NPWS employees with firefighting duties in their role description (firefighting staff) are expected to:
  - pass an initial firefighter medical assessment with NPWS’ Independent provider, InjuryNet, and undertake ongoing firefighter medical assessments with a general practitioner or InjuryNet every one to three years as per [FMC2024-02](#)
  - obtain a minimum Moderate level task-based assessment (Moderate TBA) for general firefighting duties, and
  - maintain their fitness between the annual assessments”.
- Policy 5: new policy “If staff are not able to undertake firefighting duties, and those duties are a requirement of their role, the [Firefighter Fitness Policy](#) provides staff with further guidance on required actions.
- Subsection ‘Medical assessments’ renamed to ‘Firefighting Medical Screening’.
- Policies 8 and 9: removed
- Policy 11: new policy “New NPWS firefighters must pass a firefighter medical assessment with NPWS’ independent provider, InjuryNet as per [FMC2024-02](#) and the [Guidelines for Fire Fighter Health and Fitness \(2018\)](#). This includes new staff members applying for a role with firefighting duties in the role description, current staff members being employed into an NPWS firefighting role for the first time, and current staff members who are seeking to be trained as a NPWS firefighter”.
- Policy 10: updated to “Fire medical assessment results are retained on individual personnel files by branches and confirmation of a current medical is recorded in MyCareer. Access to personal medical information is restricted to the local health and fitness coordinator and Human Resource staff.”
- Policy 18 ‘note’: removed.
- Policy 19: updated to “Remote area deployments require successful completion of the Arduous or Modified Arduous TBA – refer to section [4.8 Remote area deployment](#)”.
- Policy 20: updated to “International deployments require successful completion of the Arduous TBA unless the requesting agency specifies otherwise. The requesting agency’s role requirements will be specified in the initial request for assistance. For example, the USA requires all field firefighters to have successfully completed the Arduous Pack Hike Test”.

# Changes since 2022-2023

- Policy 24: new policy “Interstate deployments require successful completion of the Arduous or Modified Arduous TBA unless the requesting agency specifies otherwise”.

## 4.1.3 Coordinated response arrangements

- Policy 1: updated to “Either NSW RFS or FRNSW (as Fire Services) has ultimate responsibility for any bushfire (including a grass fire) in its jurisdiction, regardless of land tenure ([BFCC Policy No. 01/2024 Management of Bush Fire Operations](#))”
- Policy 2: new policy “All fires are classified in accordance with the fire classification system depicted at [Figure 8](#)”.
- Figure: new figure ‘Fire Classification System’
- Policy 2: updated to “First-response arrangements for fires will be included in a BFMC Plan of Operations (previously *BFMC Operations Coordination Plans*).  
Any firefighting authority may make the first response to a bushfire. In most cases, the coordination of first-response activities on NPWS managed land will be undertaken by the BDO or the Area Manager”.
- Policy 3: updated to “For Class 1 fires, the IC will be the Officer-in-Charge of the first suppression agency on scene, unless relieved or replaced”.
- Policy 4: updated to “For Class 2 fires, an IC will be appointed by the relevant fire service to control firefighting operations having considered a recommendation made by the relevant BFMC Fire Classification Group”.
- Policy 5: updated to “For Class 3 fires, the RFS Commissioner will appoint an Incident Controller under Section 44 of the RF Act, having considered any recommended nominees of the relevant BFMC Fire Classification Group.
  - Under a Section 44 appointment, the Incident Controller will form an Incident Management Team. The Incident Management Team (IMT) must include a person who has local knowledge of the area and can assist the IMT in effecting suppression activities.
  - During periods of a Section 44 declaration, the Incident Controller is subject to the direction of the RFS Commissioner. All personnel operating on a fireground are under the responsibility of the Incident Controller irrespective of their source agency.
  - During firefighting operations, due consideration must be given to the ‘Minimal Impact Suppression and Rehabilitation Guidelines’ attached at Annexure C of [BFCC Policy No. 01/2024 Management of Bush Fire Operations](#)”
- Policy 16: new policy “The MoU between the former Department of Environment and Conservation (NSW) and the NSW Rural Fire Service for a Co-Operative Operational Framework (CM10 DOC15/155220) facilitates cooperation via operational firefighting arrangements and mutual aid activities between the two organisations”.
- Policy 23: updated to “Where actual or proposed fire suppression actions conflict with planning documents or with the Liaison Officer’s advice, the Liaison Officer will report

# Changes since 2022-2023

this information to the Branch Duty Officer, the Branch Director, and State Operations Liaison Officer if activated”.

## 4.2.2 Incident declaration and revocation

- Policy 8: removed.
- Policy 14: updated to “The Local Emergency Operations Controller (LEOCon) is also appointed under the SERM Act 1989 (and listed in the LEMP for the LGA). LEOCon is the Local Police Commander and has access to Police and other emergency resources. The LEOCon can also assist with organising evacuations, road closures or investigations”.

## 4.2.5 Establishing an IMT and span of control

- Policy 2: policy separated into two policies.
- Policy 3, point 1: updated to “Public Information Officer, to liaise with the planning section, intelligence section/unit and other Incident Management Team units to gather information about the incident. They then assemble this information into a form suitable for dissemination to the public, media and other stakeholders”.
- Policy 3, point 2: updated to “Safety Advisor (IMT) report to the Incident Controller (IC) on matters that affect safety. They will monitor safety issues, monitor and report on injuries and provide advice regarding safety messages to crews”.
- Policy 3, point 3: Role of Planning Officer updated to “to manage the development of objectives, strategies and plans for the resolution of an incident based on the outcomes of collection and analysis of information”.
- Policy 3, point 4: Resource officer relocated and updated to “Resource Officer dedicated to resource planning and coordination for the incident”.
- Policy 3, point 4: updated to “Technical advisors provide subject-matter-specific advice where required. They may be present for the duration of the incident or be called in to answer a specific question”.
- Policy 4: new policy: “The NPWS ratio for the AIIMS operations function will not exceed a span of control of 1:5 (e.g., no more than five crew members reporting to one crew leader)”.

## 4.2.6 Strategies for responding to fire

- Policy 3: content error “Decision tool – rapid response and tight containment or extended perimeter containment” removed
- Policy 3: Strategies used in fire management operations updated to:
  - offensive (direct, parallel or indirect attack)
  - defensive (line, ember or backstop)

# Changes since 2022-2023

- safeguarding
  - reconnaissance (ground, air, remote)
  - consolidation (mop-up, blackout, patrol and monitoring)
- Policy 7: updated to “The acceptable strategies for a natural area should be prepared as part of the development of new landscape-specific SFMIs and tactics incorporated into spatial datasets within the NPWS Fire Planning Portal (spatial viewer currently under development)”.

## 4.2.7 Environmental considerations

- Policy 4, point 3: updated to “Conservation Action Plans (CAPs) for AIS declared sites (including, where available, [Fire Response Plans](#))”
- Policy 9: updated to: “NPWS SFMIs / RFMSs, reserve plans of management, AIS Fire Response Plans or interim operational guidelines prepared for reserves will contain:”
- Policy 10: new policy “The NPWS Fire Planning Portal (under development), is intended to house spatial datasets that will guide fire planning and response activities across NPWS managed lands.

## 4.2.8 Cost effectiveness

- Policy 3: updated to “Further information is available in section [6.1 Finance and insurance](#)”.

## 4.2.9 Community support for fire management

- Policy 5: updated to “With the written approval of neighbours, contact details and cooperative arrangements with neighbours may be listed in the NPWS Fire Planning Portal (under development) and BIP”.

## 4.3.1 Background

- Policy 5: updated to “The NPWS ratio for the AIIMS operations function will not exceed a span of control of 1:5 (e.g., no more than five crew members reporting to one crew leader)”.

## 4.3.2 Safety considerations

- Subsection ‘Contract Paramedics’ created, containing:
- Policy 6: new policy “Contract Paramedics are available to support NPWS staff undertaking high-risk remote firefighting operations. A RAFT operation is not an automatic trigger for the deployment of contract paramedics”.
- Policy 7: new policy “Contract Paramedics do not replace NSW Ambulance paramedics. They may be brought in to augment the NSW Ambulance Service when a risk assessment indicates this control strategy is warranted.

# Changes since 2022-2023

- Policy 8: new policy “The NPWS Incident Controller or Deputy Incident Controller, the Director of Fire and Incident Operations Branch, the Manager of Safety Risk and Compliance and/or the NPWS State Operations Liaison Officer (if activated), must assess and agree on deployment”.
- Policy 9: new policy “Contract Paramedics will assess, treat and stabilise the casualty on the fireground until extraction/transport can be provided by NSW Ambulance Service”.
- Policy 10: new policy “A procedure for deployment of Contract Paramedics is available on the [Contract Paramedic ParkSite page](#)”.

## 4.3.5 Hazardous trees

- Policy 1: new policy “Hazardous trees are trees that present an immediate threat to firefighter safety: they are likely to cause injury or impact a control line during fire operations”.
- Policy 2: new policy “During fire operations, firefighters must maintain situational awareness and continuously keep a watch out for hazardous trees”.
- Policy 1: updated to “Firefighters must ensure hazardous trees are identified, assessed, and treated in all prescribed burn and bushfire situations. The [Procedures for managing hazardous trees on the fireground](#) outlines how hazardous trees are managed by NPWS on the fireground. This is consistent with other NSW fire agencies protocols”.
- Policy 4: new policy “These Procedures enable firefighters to safely manage hazardous trees on the fireground via:
  - the identification of hazardous trees
  - marking procedures for hazardous trees, and
  - providing options for risk mitigation.”

## 4.4.2 Conducting a briefing

- Policy 1: updated to “The Situation Mission Execution Administration Command/Communication Safety Questions (SMEACS-Q) format should be used to brief all staff about incident response and prescribed burning operations. IAPs and prescribed burn plans use the SMEACS-Q formula to ensure a recognisable and consistent structure for communicating operational information. This briefing, with reference to the plan, covers the job safety analysis and job safety brief required by WHS Act”.

## 4.5.2 Fire ground maps and marking

- Policy 1: updated to “Fireground maps and marking are an important means of communicating information and essential safety messages to and between fire crews and the IMT”

# Changes since 2022-2023

- Policy 2, points 1 – 5 replaced with the following policies:
- Policy 2: new policy “Fireground maps will be prepared for all fire management operations and provided to all fireground personnel and IMT members. Maps will also be attached to operational plans (i.e., IAPs and prescribed burn plans)”.
- Policy 3: new policy “Fireground maps may be provided in electronic format to fire crews. Printed maps must be available for those who do not have access to electronic versions”.
- Policy 4: new policy “All fireground personnel and IMT members must be briefed on the information provided on maps distributed for the operation”.
- Policy 5: new policy “Maps will be updated as revised as the fire situation changes and/or operational plans are developed. Updated maps will be produced for each new shift or when there is a significant change in the fire situation or response actions required. Electronic maps should be updated on a continuous basis and distributed electronically to fire crews”.
- Policy 6: new policy “Maps should only be produced and printed in colour to ensure symbols remain readable and easily understood. For example, a ‘going’ fire edge would appear as an ‘inactive’ edge on a black and white version of the colour map”.
- Policy 9, point 2: new point “Avenza Maps is a smartphone and tablet app that enables electronic sharing and annotation of maps prepared using corporate GIS, such as MapDesk. Avenza Maps is in common use across fire agencies and enables electronic integration of the operations map with the GPS receiver on a phone or tablet. The use of Avenza Maps to share and distribute fire operations maps is encouraged”.
- Policy 9, point 3: new point “FireMapper is a smartphone and tablet app that provides a full mapping capability and the ability to create maps from scratch. Maps are only available electronically within the app or the FireMapper web-based portal. Maps can be shared and edited by all users with access to the map. Location tracking is available to show real time location of fireground resources and personnel. The use of FireMapper to create and share fire operations maps is encouraged, only when crews also have an electronic or paper copy of the approved fire operations map. The use of FireMapper for initial fire response, when no other mapping material is available, is appropriate”.

## 4.6.2 Communications planning policies

- Table ‘Recommended communication methods – Class 1 fires’: updated Modes of communication.
- Table ‘Recommended communication methods – Class 2 and 3 fires’: updated Modes of communication.

# Changes since 2022-2023

## 4.7.5 Guidelines for air operations

- Policy 4: updated to “Fire suppression chemicals have an impact on the environment, particularly if their use is near watercourses, wetlands or threatened species habitats. [4.12 Fire suppression chemicals](#) and relevant SFMIs/RFMSs, AIS Fire Response Plans and associated spatial datasets should be considered before use”.

## 4.8.2 Policies for remote area deployment

- Policy 8: new policy “Crew Members Under Supervision may be deployed to Remote Area Fire Teams. To address the potential risk posed by the imbalance of inexperienced to experienced firefighting personnel, a limit of no more than one Crew Member Under Supervision per RAFT crew of three or four firefighters is mandated.

## 4.9.2 Policies for fire control lines

- Policy 1: updated to “Existing constructed or natural fire control advantages should be used for containing bushfires wherever possible.

Existing natural fire control advantages should be used as independent control lines or to link into constructed control lines wherever practicable and should be mapped in GIS and identified in the NPWS Fire Planning Portal (under development)”.

## 4.10.2 Policies for heavy plant equipment

- Policy 2: updated to “Heavy plant equipment should be used in accordance with operational guidelines within SFMIs / RFMSs, AIS Fire Response Plans and within BFMC Plan of Operations”.

## 4.11.2 Management framework for burning operations

- Policy 1: updated to “Burning operations should be undertaken with consideration to the operational guidelines contained in SFMIs / RFMSs, AIS Fire Response Plans and BFMC Bush Fire Risk Management Plans”
- Policy 5: updated to “For all prescribed burn activities, a Prescribed Burn IC must be appointed. The Prescribed Burn IC must hold the unit of competency ‘PUAFIR506 Conduct complex prescribed burns or equivalent’. Where a Prescribed Burn IC is not in physical attendance at the burn location, a suitably experienced officer will be appointed as the Operations Officer to manage the tasks and activities to execute the burn in accordance with the Prescribed Burn IAP. The Prescribed Burn IC remains in control and accountable for the burn, regardless of their location. The Operations Officer must maintain regular communication with the Prescribed Burn IC whilst undertaking the burn”.

## 4.11.5 Burn light-up

- Policy 2: amended to “Lighting-up must be in accordance with section ‘Light-up pattern and sequence’ and ‘Determining the light-up pattern and speed’ below”.



# Changes since 2022-2023

## 4.12.2 Policies for fire suppression chemicals

- Policy 4: updated to “SFMI / RFMSs, AIS Fire Response Plans and their associated spatial datasets will identify any restrictions (and the areas where the restrictions apply) on the use of fire suppression chemicals within a reserve. Areas where restrictions may apply include wetlands, watercourses, habitat of threatened species or communities, AIS and rewilding sites. This information will be housed within the NPWS Fire Planning Portal (under development)”.

## 4.13.2 Policies for out-of-branch support

- Policy 1: updated to “NPWS will ensure firefighters, incident management and support personnel will be appropriately trained and equipped to respond to fire suppression across NSW.

Staff who are assessed as competent and have undertaken the relevant task-based assessment should be made available for OOB support across NSW when required”.

## 4.13.3 Requests for firefighters and support personnel

- Policy 2: updated to “If resources are required from outside a branch, requests for support will be sent by the BDO or Branch Resource Officer to the State Resource Coordinator. These requests will then be coordinated by the State Resource Coordinator.

## 4.13.5 Out-of-branch personnel

- Subheading 4.13.5: renamed from ‘Out-of-branch crews’ to ‘Out-of-branch personnel’
- Policy 3: updated to “If chartered flight is required to transport personnel, coordination should be managed by the home branch to the incident. Aircraft weights must be known before flight and staff will be required to advise in advance of their dressed body weight, plus the weight of any equipment they are carrying. Some firefighting equipment, including chainsaws, drip torches and flammable items, may be prohibited from carriage on commercial aircraft. Staff should check with the Pilot-In-Charge prior”.

## 4.13.7 Logistics (travel, meals and accommodation)

- Subheading 4.13.7 renamed from ‘accommodation’ to ‘Logistics (travel, meals and accommodation)’
- Subsection ‘Class 1 and 2 fires (including prescribed burns)’ created
- Policies 1, 2 and 3 replaced with:
- Policy 1: new policy “Logistics including accommodation and meals for OOB personnel travelling to an incident are organised by the IMT, if activated, or the home branch of the incident. ”.

# Changes since 2022-2023

- Policy 2: new policy “Where crews are required to travel in Cat 9s, the vehicles should be resourced by the home/dispatching branch”.
- Policy 3: new policy “Any meals or accommodation required in transit to the incident should be purchased using a corporate purchase card and reconciled with a WBS provided by the IMT for that incident”.
- Policy 4: new policy “Any hire cars or flights required to travel to an OOB incident may be arranged by the IMT, if activated, or by the individual themselves using the NSW Government travel agent with a WBS provided by the IMT for that incident.
- Policy 5: new policy “Any requests for accommodation/travel/special dietary requirements should be clearly noted in the dispatch details in the resource tracker to ensure the IMT are aware of any arrangements that need to be made”.
- Subsection ‘Class 3 / Section 44 fires’ created
- Policy 6: new policy “Logistics including accommodation and meals for NPWS OOB personnel travelling to a Class 3 / Section 44 event should be organised by the requesting IMT. Accommodation may include commercial hotels/motels or dedicated base camps depending on the scale of the deployment”.
- Policy 7: new policy “Travel arrangements for OOB personnel flying or requiring a hire car to travel to a Class 3 / Section 44 event should be organised by the RFS Logistics team at RFS State Operations Centre using the NSW Government travel agent”.
- Policy 8: new policy “Where crews are required to travel in Cat 9s, the vehicles should be resourced by the home/dispatching branch”.
- Policy 9: new policy “Should meals or accommodation be required whilst travelling to the event these can be arranged by the traveller/s using a corporate purchase card and reconciled with a WBS provided by the IMT for that incident”.
- Policy 10: new policy “Any requests for accommodation/travel/special dietary requirements should be clearly noted in the dispatch details in the resource tracker”.
- Subsection ‘General considerations for accommodation arrangements’ created

## 4.13.8 Interstate and overseas support arrangements

- Policy 4: updated to “All interstate and overseas deployments require the prior approval of the Branch Director, plus Executive Director Park Operations Coastal or Executive Director Park Operations Inland and Chief Executive (i.e., Deputy Secretary NSW NPWS). Overseas dispatches also require Ministerial approval. Availability of candidates selected for deployment will be confirmed with the relevant Branch Director”.

## 4.14.1 Background

- Policy 2: updated to “The documentation of fire is essential for fire management. Information is used to establish fire histories and assess the effectiveness of fire management strategies, as well as to allow for the assessment of the ecological

# Changes since 2022-2023

implications of fire. This information is used to prepare landscape-specific SFMIs (and associated spatial datasets) and IAPs”.

## 4.14.4 Fire history

- Policy 2: updated to “The pathway of fire history data recording highlighting the data type, systems required, workflow processes and data definitions can be found in Elements QRG HR 7.04 Recording Fire History GIS Data. This can be accessed via the Support tab within the Elements “All Events Overview” page.
- Policy 3: updated to “Branches will map all burnt areas and enter the information into Elements within 14 days after the fire has been declared out. This will trigger an automated update to the corporate GIS. Further information can be found in the Elements QRGs HR 5.02 Adding Geometry to HR Events and BF 3.07 Upload a Final Burnt Area and Final Ignition Point that can be found within the [Elements Support Tab](#).”.

## 4.16.1 Background

- Policy 1: updated to “Fire may have a direct impact on wildlife through death, injury and loss of habitat. NPWS and wildlife rescue volunteers aim to rehabilitate and treat native animals affected by fires.
- Policy 2: new policy “Following Recommendation 76 of the NSW Bushfire Inquiry (2020), the then NSW Resilience investigated wildlife response in NSW emergency management arrangements. As of September 2022, the State Emergency Management Committee, approved the transition of responsibilities for wildlife under the NSW emergency arrangements to be transferred from Agriculture and Animal Services Functional Area (AASFA) [DPI] to the Environmental Service Functional Area (EnvSFA) [EPA]. This change in functional area responsibilities meant a review of the [AASFA Supporting Plan and Environmental Services Supporting Plan](#) (that sit under the [NSW State Emergency Plan](#)) in a staged approach over 2022/2023”.
- Policy 3: new policy “The statutory responsibility for wildlife in emergencies sits with EnvSFA as defined by the State Emergency and Rescue Management Act 1989 (SERM). NPWS is a support agency for EnvSFA and has responsibilities under the [Wildlife in Emergencies Sub-Plan](#) which was finalised through the State Emergency Management Committee (SEMC) in December 2023”.
- Policy 4: new policy “The [NPWS wildlife response during emergencies guidelines](#) contain further information”.

## 4.16.2 Policies for rescuing wildlife

- Policies 3 to 8: updated to:
- Policy 3: new policy “The decision to request a wildlife response team will be made by the IC once there are potential, suspected or known significant impacts to wildlife. The need for a TAW to be activated may depend on:
  - The number of animals affected.

# Changes since 2022-2023

- Species of animals affected.
- Request from Incident Controller.
- Lead time for a TAW to arrive on site.

For Activation triggers see the [NPWS wildlife response during emergencies guidelines](#)".

- Figure: new figure Structural alignment of TAW and WERT
- Policy 4: new policy: "The TAW primarily advises on wildlife mitigation measures and response strategies to reduce impact on wildlife as well as supports the coordination of a wildlife response (if required). Where necessary, the TAW liaises with the IMT and key wildlife stakeholders to support the coordination of Wildlife Emergency Response Teams (WERT) response to incident affected wildlife. The TAW prepares a Wildlife Response Plan for approval by the IC, with a focus on achieving the best possible outcomes for wildlife. Emergency management principles and human safety are key considerations".
- Policy 5: new policy "For a WERT to be deployed onto a fireground the following provisions apply:
  - WERT members will not be permitted onto the fireground to rescue injured wildlife until it is safe to do so. Approval can be given by the IC during an incident and the Branch Director after an incident. This should occur after the fire has passed, when there is no active fire edge in the area and the area has been burnt out. All relevant personnel will be informed before WERT can work in the area.
  - WERT members must have completed a minimum of the Basic Wildfire Awareness (BWA) or equivalent, and preferably Australasian Inter-service Incident Management Systems (AIIMS) Training.
  - WERT members must be accompanied by a competent, fire-trained Crew Leader appointed by the IC when entering the fireground to rescue injured wildlife.
  - WERT members must receive a task and site-specific safety brief before entering the fireground and always follow the directions of their Crew Leader liaison.
  - WERT members must wear appropriate safety equipment on the fireground (as identified in section [3.6 Personal firefighting equipment](#)).
  - WERT members are required to behave in line with the [Code of Practice](#) at all times and can ask for expert advice from specialists, vets or by means of Televet services (if activated)".
- Policy 6: new policy "NPWS staff can find further information on ParkSite [bushfire emergency response for wildlife](#) and the [NPWS wildlife response during emergencies guidelines](#)".
- Policy 8: updated to "Licensed wildlife rehabilitation providers can be found at [Licensed wildlife rehabilitation providers in NSW](#) or by using the [IFAW App](#)".

# Changes since 2022-2023

- Policy 8: updated to “if necessary, injured wildlife may be humanely euthanised on the fireground by persons who have a s.171 authority under the NPW Act. Any use of firearms must be in accordance with the [NPWS Firearms Management Manual](#)”.
- Policy 9: updated to “The [NSW Volunteer Wildlife Rehabilitation Sector Strategy \(2020-2023\)](#) is a three year plan to support and improve wildlife rehabilitation in NSW.
  - NPWS staff can find more information on the [Bushfire Emergency Response for Wildlife ParkSite page](#).
  - External responders can go to Wildlife First Response Training for NSW firefighters on the Environment website, internal staff can access this information through MyCareer.
  - For information relating to EnvSFA, please contact [EnvSFA@epa.nsw.gov.au](mailto:EnvSFA@epa.nsw.gov.au)”.

## 5.1.2 Conducting operational debriefings and AARs

- Policy 4: updated to “Noteworthy observations or rapid lessons from shift debriefs should be emailed directly to the [Operational Improvement Mailbox](#)”.
- Subsection ‘Section 44 post fire debriefings’ removed
- Policy 13: updated to “[BFCC Policy No. 01/2024 Management of Bush Fire Operations](#) provides requirements for after action reviews”.
- Policy 14: replaced with “A BFMC must hold an after action review following each Class 3 fire within its area in accordance with *RFS Incident Management Procedure 4.06 Conducting an Operational Debrief and Debrief Recommendations*”.
- Policy 15: replaced with “Any organisation/agency that does not have a member on the BFMC but was significantly involved in the fire must be invited to attend”.
- Policy 16: new policy “A BFMC must hold an after action review at the end of each bush fire season and provide a report to the RFS Commissioner via State Operations for consideration”.
- Subsection ‘end of season debriefings’ updated to ‘NPWS end of season debriefings’

## 5.2.1 Critical incident support services

- Policy 3: updated to “The provision of professional counselling services for NPWS staff will be via the [Employee Assistance Program](#) (EAP). The [TELUS Health EAP](#) helpline is available 24 hours a day on 1300 361 008. For the Aboriginal and Torres Strait Islander Support Line, call 1800 816 152”.

## 5.3.3 Strategies for post-fire rehabilitation

- Table titled ‘options for remediating disturbances’:
  - row with cause ‘vegetation removed’ updated to include SoS and FRPs
  - row with cause ‘cultural sites’ updated to include Joint Management Officers

# Changes since 2022-2023

- Policy 11: updated to “Fire trails or clearings created during fire suppression may be maintained if they have strategic value. However, the costs of maintaining these areas cannot be claimed against the NSW Treasury Managed Fund. In this instance, consider designation of trails within BFMC bushfire management plans (including BFRMPs or FAFT Plans).

## 6.1.1 Background

- Policy 1: new policy “The NPWS Fire Management Program is an adaptive management initiative supported by the Climate Change Fund to mitigate the increasing risk of bushfires on communities, assets and environment resulting from the impacts of climate change. The primary activities delivered by the Fire Management Program are the implementation of hazard reduction activities; rapid response to bushfires; bushfire capability including trained firefighters and firefighting assets and infrastructure; and investment in maturing cultural fire management practice”.
- Policy 1: updated to “Allocations are made from the Fire Management Program for funding fire management activities. This includes funding for equipment, fuel management, planning, systems, research and training”.
- Policy 3: new policy “The myWorkZone system is planned for implementation across the NSW Government for administration, payroll, finance, procurement, asset management and real estate activities in October 2024. The myWorkZone system replaces MySAP Gateway and SAP OEH. To find more information about myWorkZone and access resources, visit the [myWorkZone ParkSite page](#)”.

## 6.1.2 Policies for finance and insurance

- Policy 1: updated to “NPWS Fire and Incident Operations Branch oversees the Fire Management Program financials”.
- Policy 2: relocated to 6.1.1 ‘Background’
- Policy 2: new policy “The [NPWS Asset and Infrastructure Branch](#) sits within the NPWS Business Delivery division, and provides centralised administration and support across NPWS for the NSW Government’s self-insurance arrangements under the Treasury Managed Fund (TMF) and the administration of landscape-scale incidents (bushfires and flooding incidents). Information and guidance is available on the [NPWS Insurance ParkSite page](#)”.
- Policy 3: updated to “Under the [Government Sector Finance Act 2018 Instrument of delegation and authorisation](#), ICs and Logistics Officers have financial delegations, including authority to incur expenditure to hire aircraft. Aircraft hire costs may only exceed the delegated limits where this is deemed essential and unavoidable. (Previously, “An officer with the financial delegation must countersign the order as soon as practicable”)
- Policy 4: policy removed

# Changes since 2022-2023

- Policy 9: updated to “It is not necessary to declare an incident to draw on the NSW Treasury Managed Fund, and the Fund may still be drawn on after an incident declaration has been revoked. **Note:** Activities such as hazard reduction activities are not covered by the Treasury Managed Fund”.
- Policy 10: amended to remove “RFS Section 44 Bushfire Emergency Fund”
- Policy 11: updated to “Costs incurred during a Section 44 fire, that are not NPWS-specific, are the responsibility of RFS. NPWS will prepare a claim or invoice for RFS to recover costs. Specific queries should be directed to key contacts identified on the [NPWS Insurance ParkSite](#) page”.
- Policy 12: updated to “Items such as infrastructure, equipment, minor tools and personal fire gear replacements, may be claimable on separate insurance policies if damaged during fire operations or by the fire”.
- Policy 14: updated to “Damage to NPWS assets, facilities or other property may be claimable on separate insurance policies if damaged during fire operations or by the fire”.
- Policy 15, point 1: New point “Initial consultation with the NPWS Insurance Team”
- Policy 16: updated to “All insurance claims are to be submitted to the [NPWS Fire Insurance Mailbox](#)”.
- Policy 20: policy removed

## 6.2.1 Background

- Policy 1: updated to “NPWS staff should seek advice specific to their individual circumstances by contacting [People Advisors within the Workforce Management and Employee Relations Section](#). People Advisors provide:
  - Advice on employment Awards, Legislation and Workforce Management Policy and Processes
  - Clarification of entitlements such as leave types, flexible working etc.
  - Support on administering Establishment within Workforce Management Systems
  - Navigation of our people systems such as myWorkZone, MyCareer, CS Connect etc.
  - Connection to the right specialist support, such as People Partners, Talent Acquisition, Safety and Wellbeing, Case Managers, and People Systems
  - Workforce management resources and tools”.

## 6.2.4 Shift patterns during a declared incident

- Policy 3: new policy “In protracted seasons, to assist with managing fatigue, an extra paid rest day may be granted at Executive Director Park Operations discretion”.

# Changes since 2022-2023

## 6.4 National medal

- Section 6.4 renamed from 'National Medal' to 'NPWS Awards and Honours'

### 6.4.1 Background

- Subheading 6.4.1: renamed from 'background' to 'The National Medal'
- Policy 1: updated to "NPWS staff active for fire and incident response may be eligible for nomination for the National Medal once they have completed 15 years of diligent and active service. Clasps can be awarded for each subsequent 10 years of diligent and active service".

### 6.4.2 Policies for the National Medal

- Subheading 6.4.2 'Policies for the National Medal': removed
- Policy 1: relocated to '6.4.1: The National Medal'
- Subsection 'Demonstrating involvement in firefighting' removed
- Policy 2: removed
- Policy 3: removed
- Policy 4: updated to "Applications for the National Medal should be made in the prescribed manner and endorsed by Branch Director and then submitted to Fire & Incident Operations Branch for processing".
- Policy 5: updated to "Formal presentations of the National Medal will be made at a suitable time and place as soon as possible after the medals are received".
- Subsection 'Additional NPWS awards and honours' created
- Policy 5: new policy: "NPWS staff may be eligible for additional Awards and Honours, such as the National Emergency Medal, through the Australian Honours System".
- Policy 6: new policy: "Further information is available at [NPWS awards and honours](#)".

## 7.1.2 Additional vehicle equipment

- Throughout: Removal of '300L' and '400L' Category 9 firefighting units
- Throughout: clarification of vehicle types entering the fireground
- Policy 1, point 1: updated to "Communication ability for the level of support role; at the minimum an additional Parks VHF radio, UHF and PSN radio (previously '*if network available*')"
- Policy 2: updated to "1 x 4m-long (minimum) suction hose fitted with float and foot valve" (previously 6m-long)
- Policy 2: updated to 1 x can high visibility spray paint (preferably yellow)
- Policy 2: updated to include 'Hygiene Kit containing', with a list of contents

## 8.1.2 Responsibilities under the Rural Fires Act 1997

- Policy 1: new point "initiating appropriate fire suppression actions on all fires detected within all NPWS managed land"



# Changes since 2022-2023

- Policy 1, point 7: amended to “initiating appropriate fire suppression actions on all fires detected up to 8 km from NPWS managed land boundaries, or the distance specified in a bush fire management plan.

## 9.6.1 Introduction

- Policy 2: updated to “In addition, NPWS has specific obligations under the Government Sector Employment Act 2013 and the Public Finance and Audit Act 1983. These are equally as applicable to firefighting as to normal NPWS operations. The regulations of both Acts affect the hire and purchase of equipment and contract services and indicate what constitutes a claimable item versus non-claimable expenses. Chapter [6.1 Finance and insurance](#) provides further information”.

## 10.0 Definitions

- AIS Fire Response Plan: new definition “Site-specific plan that outlines risks posed to an AIS in relation to fire and provides guidance on appropriate fire regimes and operational response measures to help protect the declared land”.
- Area of outstanding biodiversity value (AOBV) updated to remove the four areas of critical habitat.
- Bushfire Risk Information Management System (BRIMS) removed.
- Department of Environment, Climate Change and Water (DECCW) removed.
- Department of Planning and Environment (DPE) removed.
- Feral Predator-free area included: “A feral predator-free area is a conservation strategy designed to protect native wildlife by creating zones that are free of invasive predators like feral cats and foxes. These areas are typically enclosed by specially designed fences that prevent the entry of such predators”
- Fire Danger Rating updated “Fire Danger Ratings provide an indication of the potential consequences of a fire if one were to start. These ratings are crucial because they help people decide what actions to take to protect themselves and others from bushfires and grassfires. The classes in Australia range from moderate, high, extreme or catastrophic”.
- Fire unit included: “Any single vehicle within a suite of appliance types, being a Cat 9, Cat 7, Cat 1 or any other designated category of fire vehicle”.
- NPWS managed land: definition amended to include ‘vested lands’.
- Office of Environment and Heritage removed.
- Rostered day off: new definition “One day off in a four-week roster period, taken at a time which is operationally convenient to the NPWS, except those days that are taken as approved leave including flex leave, time in lieu, or as an allocated day off”.
- Striker definition: updated to “A small 4-wheel drive fire tanker with a water carrying capacity of 500L for firefighting purposes. Also known as a Category 9 fire tanker”.
- Smoke management updated “An agreed method to ensure smoke impacts from prescribed burns are minimised and communicated to affected communities”.

# 1.0 Fire management framework

## 1.0 Fire management framework

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## 1.1 Fire management objectives

### 1.1.1 Primary fire management objectives

- 1 As a public authority, NPWS has a statutory obligation under the *Rural Fires Act 1997* (RF Act) to take practicable steps to prevent the occurrence of bushfire on and minimise the danger of the spread of bushfire on or from lands under its management. As a firefighting authority, NPWS has statutory functions under the RF Act to carry out emergency firefighting activities.

Under the *National Parks and Wildlife Act 1974* (NPW Act), NPWS has legislative responsibility for the conservation of Aboriginal cultural values, historic heritage, flora and wildlife within NPWS managed land.

In addition, there are a range of interacting legislations other than the RF Act and the NPW Act that may apply to Hazard Reduction activities or bushfire operations. See section [8.6 Relevant legislation](#) for more details.

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## 1.1.2 Cooperative fire management

- 1 NPWS has cooperative firefighting arrangements which have been ratified through multi-agency policies, Memorandums of Understanding (MoU) and joint operating protocols.
- 2 NPWS fire management is integrated with fire management and disaster planning at agency, state and national levels via cooperative fire management arrangements with several agencies including:
  - [NSW State Emergency Management Plan \(EMPLAN\)](#): EMPLAN provides a strategic overview to emergency management arrangements in NSW. It is supported by [Sub Plans](#) and [Supporting Plans](#) which detail the response to specific hazards and the roles and responsibilities of individual NSW Government Agencies. NPWS is identified as a support agency under the NSW EMPLAN.
  - [NSW State Bushfire Plan](#): The State Bushfire Plan sets out the arrangements for preparedness, prevention, mitigation, response to, and recovery from, bushfire events by combat, participating and support agencies in NSW. This plan describes the arrangements for the control and coordination of the response to Class 2 and 3 bush and grass fires, including those managed under the provisions of Section 44 of the RF Act, and the provisions for emergency warnings at all classes of fires. The State Bush Fire Plan is a sub plan to the NSW EMPLAN.

[Environmental Services Functional Area \(EnvSFA\)](#): The NSW Environment Protection Authority (EPA) is the coordinating agency for the EnvSFA and is responsible for mobilising arrangements contained within the [Environmental Services Functional Area Supporting Plan](#). The EnvSFA has a key role in responding to emergencies, or leading activities, where the environment is at risk or impacted. The EnvSFA coordinates assistance to combat agencies with managing the response to environmental impacts across the elements of land, air and water. This includes cultural and natural heritage assets, and the coordination of wildlife responses during emergencies in NSW.

Previously, wildlife response was included under the AASFA Plan. The AASFA and EnvSFA supporting plans are being modified to reflect this change, although there will still be areas, such as animal welfare in fires, where there is potential for overlap in responsibilities.

[Agriculture and Animal Services Functional Area \(AASFA\)](#): The NSW Department of Primary Industries (DPI) is the coordinating agency for the AASFA and is responsible for mobilising arrangements contained within [the Agricultural and Animal Services Functional Area Supporting Plan](#). The AASFA has a key role in responding to emergencies, or leading activities, where agricultural and animal impacts may occur.

- Cross-border liaison committees: Coordinated arrangements are prepared with interstate firefighting authorities where a fire-prone reserve is located on the NSW border. Cross-border liaison committees have been established to regularly review these arrangements. NPWS is represented on the Victorian and Queensland committees.
- [NSW Bush Fire Coordinating Committee](#): (BFCC) formed under s. 46-49 of the RF Act is responsible for planning in relation to bushfire prevention and coordinated firefighting and advising the Commissioner on bushfire prevention, mitigation and coordinated bushfire suppression. Membership extends to all firefighting authorities and other organisations with a role in bushfire management.

# 1.0 Fire management framework

NPWS is represented on the BFCC, and the NPWS Senior Executive works with other members of the BFCC to set strategic multi-agency state-wide policy.

- **[NSW Bush Fire Management Committees](#)** (BFMCs): are established under s.50 of the RF Act to develop and coordinate fire management between firefighting authorities. Membership extends to all firefighting authorities and other organisations with a role in bushfire management. NPWS is a member of BFMCs where it has reserves.

BFMCs are responsible for developing and fostering coordinated firefighting arrangements and the reduction of bushfire hazards. They develop joint management plans ('bushfire management plans'), which consist of a plan of operations to coordinate firefighting resources, bush fire risk management plans to reduce bushfire hazards and fire access fire trail plans to manage strategic fire trail networks.

- **[Regional and Local Emergency Management Committees](#)** (REMC and LEMC): LEMCs are responsible for the preparation of plans in relation to the prevention of, preparation for, response to and recovery from emergencies within the local government area over which it presides. REMCs are responsible for implementing emergency management policy and practice across each region. NPWS is a support agency under the REMC and LEMC Plans.
- Memorandum of Understanding: MoU between the former Department of Environment and Conservation (NSW) and the NSW Rural Fire Service for a Co-Operative Operational Framework (CM10 DOC15/155220) that facilitates cooperation in operational firefighting arrangements and mutual aid activities between the two organisations.
- Park neighbours: NPWS encourages and maintains cooperative arrangements with park neighbours. Arrangements are made at Branch and Area level and may include cooperative synchronised prescribed burning, Asset Protection Zone (APZ) management agreements and community awareness and education programs.

## 1.1.3 Conserving biodiversity

- 1 Fire management within NPWS managed land is crucial to the conservation of biodiversity in the NSW landscape. Bushfire management activities carried out by NPWS will be consistent with the [Guidelines for Ecologically Sustainable Fire Management](#) (currently under review) and will promote biodiversity conservation as a major objective of fire management. NPWS will provide advice to and cooperate with other land managers and fire services in this regard.
- 2 The principal goal of NPWS fire management for biodiversity conservation is to avoid the extinction of species that occur naturally within its reserves. This entails avoiding disruption to ecosystem processes that may be associated with the decline and loss of native species. Individual plant and animal species require particular fire regimes for their long-term survival. Such requirements may vary within the ecological and geographic range of species.
- 3 The dynamic nature of natural ecosystems necessitates an adaptive approach to fire management. All fire management planning by NPWS will consider appropriate adaptive approaches.

# 1.0 Fire management framework

- 4 The major mechanisms through which NPWS conserves biodiversity in relation to fire management are:
  - incorporating adaptive management into reserve fire management planning and recovery planning processes
  - collaborating in research activities, and
  - participating in BFMCs and joint agency fire management committees.

## NPWS Zero Extinctions Framework

- 5 NPWS is the first national parks agency in Australia to adopt a zero-extinction target and is committed to creating permanent strongholds for the conservation and recovery of threatened species.
- 6 Around 85% of all threatened species in New South Wales are represented on the national park estate, despite national parks occupying only 10% of the State. The concentration of threatened species and their habitats highlights the critical role of national parks in the effective conservation of threatened species.
- 7 There is evidence that the overall decline in biodiversity in New South Wales is occurring even in the national park estate. Key threats affecting threatened species populations in national parks include feral predators and other feral animals, invasive weeds, changed fire regimes and a range of impacts associated with climate change.
- 8 The [Zero extinctions – national parks as a stronghold for threatened species recovery: National Parks and Wildlife Service Threatened Species Framework](#) (the Framework) outlines a series of actions designed to secure and restore threatened species populations on the national park estate. There are several objectives for threatened species conservation on NSW national parks relating to fire management.
- 9 The Framework provides for a range of actions operating at multiple scales including:
  - the declaration of important habitat as Assets of Intergenerational Significance, attracting special legislative protection
  - the reintroduction of locally extinct species into a network of feral predator-free areas
  - the strengthening of the integration of threatened species objectives in NPWS landscape scale programs such as feral animal control and fire management
  - the delivery of a world class ecological health monitoring framework.

The design and delivery of these actions will occur in partnership with Aboriginal communities, including through joint management arrangements, and will be informed by effective engagement and collaboration with neighbours and other partners and stakeholders
- 10 NPWS is committed to improving the integration of threatened species objectives in the design and delivery of landscape scale park management actions

# 1.0 Fire management framework

## Enhancing threatened species conservation through fire management

- 11 A dedicated Bushfire Risk and Evaluation Team has been established within NPWS. The responsibilities of this team include ensuring that risk to threatened species populations (including AIS declared areas) are factored into new BFMC Bush Fire Risk Management Plans and NPWS landscape-specific fire management planning.

### 1.1.4 Conserving cultural heritage

- 1 NPWS has responsibilities to protect and enhance cultural heritage values within NPWS managed land under the NPW Act. The objectives of this Act require, but are not limited to, the conservation of objects, places or features (including biological diversity) of cultural value within the landscape.
- 2 Under the NPW Act, NPWS in conjunction with Heritage NSW has statutory responsibility for the management of Aboriginal cultural heritage on NPWS-managed lands, including the conservation of Aboriginal objects and declared Aboriginal places.
- 3 NPWS staff involved in operational park management of Aboriginal cultural heritage will seek advice on and apply current best practice methods for Aboriginal cultural heritage management in the planning, assessment and undertaking of any on-park activities (including conservation work). See Section [1.1.5 Cultural Fire Management](#) for further guidance.
- 4 [Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013](#) and its accompanying guidelines are considered the best practice standard for historic buildings and European cultural heritage management in Australia. On NPWS managed lands, the conservation and protection of cultural heritage can be achieved, consistent with the Burra Charter, by managing and reducing risks during fire operations. Application of the Burra Charter to fire management activities is guided by the Burra Charter's comprehensive suite of Practice Notes including:
  - o [The Burra Charter Flow Chart](#)
  - o [ICOMOS Blue Shield Rapid Assessment proforma](#)
- 5 [Bush Fire Environmental Assessment Code](#). Bush fire hazard reduction activities carried out by the NPWS will be in accordance with the Bush Fire Environmental Assessment Code, containing standards for the protection of Aboriginal cultural heritage. Where Aboriginal cultural heritage is indicated to be present, the Code prescribes that works must be undertaken in accordance with [NSW RFS document Conditions for Hazard Reduction and Aboriginal Heritage](#). Alternate environmental assessment pathways are provided under Part 5 of the [Environmental Planning and Assessment Act 1979](#) (EP&A Act).

### Involving Aboriginal people in fire management

- 6 The NPWS supports Aboriginal people to care for Country and seeks greater engagement and partnerships with Aboriginal communities across the full spectrum of fire management activities.
- 7 A key element of involving Aboriginal people in fire management activities undertaken by NPWS is providing a culturally safe environment. Aboriginal cultural safety involves providing Aboriginal employees with a safe, supportive and positive environment where they are comfortable to be themselves and to express their culture and spiritual beliefs.

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FIOB is currently developing cultural safety resources to better integrate Aboriginal cultural safety into its fire planning processes and operations.

- 8 NPWS policy for increasing the involvement of Aboriginal people in fire management activities and protecting cultural heritage values includes:
  - The (interim) [Aboriginal Country, Culture and Heritage Policy](#) (ACCH Policy) is a statement of NPWS's commitment to recognising and realising the roles and responsibilities of Aboriginal people as custodians and managers of their Country and culture. The ACCH Policy is an internal document available to NPWS staff, which will be reviewed, updated and finalised to align with the new joint management model for NSW national parks, currently under preparation. Staff should ensure they are engaging with the latest version.
  - [NPWS Aboriginal Park Partnerships Manual](#) provides a 'how to' guide for DCCEEW staff and Aboriginal communities in NSW who are or will be engaging in a partnership with DCCEEW for parks.
  - [Aboriginal Partnerships Policy](#) fosters partnerships between DCCEEW and Aboriginal people for the management of parks and provides a framework for this to occur.

## Protecting cultural values from the impacts of fire

- 9 In relation to fire, the NPWS will apply the following strategic mechanisms to protect cultural values:
  - ensure cultural values are incorporated into all strategic fire management planning such as BFRMPs, SFMIs (or RFMSs where landscape specific SFMIs are yet to be prepared), FAFT Plans, hazard reduction and prescribed burn programming
  - advocate for local Aboriginal people to be represented on BFMCs and joint agency fire management committees
  - work together to identify, assess and protect Aboriginal sites and places, historic places and culturally significant features known to exist within NSW from damage by fire or fire mitigation works. NPWS will provide advice to and cooperate with other land managers and fire services in this regard.
  - lead by example as a fire authority, encouraging other agencies and authorities to conserve cultural values by utilising best practice fire planning processes
  - work collaboratively with Aboriginal people to protect Country by supporting cultural fire management on NPWS managed lands.
  - deliver on legislative obligations in relation to cultural values at a State and Commonwealth level, focussing on the conservation and protection of cultural values on NPWS managed land, standardise pre-and post-fire assessments, and identifying requirements to protect, conserve and restore cultural values from fire-related impacts.

### 1.1.5 Cultural Fire Management

- 1 For many thousands of years Aboriginal people have developed and shared an intimate knowledge of Country and cultural fire management practice. Aboriginal

# 1.0 Fire management framework

cultural fire management provides an opportunity for current and future generations to practice culture, learn new skills, build capacity and connect with and care for Country.

- 2 NPWS staff involved in operational park management of Aboriginal cultural heritage will seek advice on and apply current best practice methods for Aboriginal cultural heritage management in the planning, assessment and undertaking of fire management activities (including conservation work). Current best practice methods include:
  - Applying the [Indigenous Cultural and Intellectual Property Protocol](#) when referring to Aboriginal heritage, knowledge and cultural expressions in respect to all First Nations cultures and people.
  - Implementing the [Cultural Fire Management Policy](#). This policy supports Aboriginal community aspirations to connect to and care for Country through cultural fire management in parks. This policy is currently under review and staff should ensure they are engaging with the current version.
  - Applying the [Guidelines for Community \(Low Risk\) Cultural Burning on NPWS managed land](#) (under review). This guideline provides an endorsed approach to including Aboriginal communities in planned burning.
  - Applying the [Guide to Aboriginal Cultural Heritage Assessments and Approvals](#), which details the assessment of impacts on Aboriginal objects and Aboriginal places and identifies measures to mitigate impacts.
  - In relation to Fire Access and Fire Trail programs, applying the following:
    - [Fire Access and Fire Trail Aboriginal Cultural Heritage Assessment Guide](#)
    - [Fire Access and Fire Trail Native Title Future Acts Notifications Guide](#)
  - Applying the [Cultural Burning Decision Support Package](#), which has been developed to assist personnel with the environmental assessment and recording of cultural burns on NPWS managed lands. The Cultural Burning Decision Support Package comprises:
    - Cultural Burning Decision Support Tool – offers guidance on the application of the [Bush Fire Environmental Assessment Code 2021](#) and will assist staff in determining the most appropriate environmental assessment pathway for cultural burning activities on NPWS managed land.
    - NPWS Record of Aboriginal Stakeholder Involvement – provides a standard template for recording the decision-making process and consultation undertaken by staff for each community (low risk) cultural burning activity.
    - Quick Reference Guide (QRG) for entering cultural burns into Elements – outlines how to capture cultural burning activities in Elements to improve data quality for reporting.
  - Applying the [NPWS Aboriginal Cultural Heritage Assessment Guide for non-BFEAC bushfire hazard reduction activities](#). This guide applies to the assessment of Aboriginal objects and places where the provisions of the BFEAC do not apply.



# 1.0 Fire management framework

## 1.2 Risk management

### 1.2.1 Background

- 1 NPWS confronts an array of risks related to fire management. These risks occur during planned and unplanned fire events. They can be divided into 5 major areas of responsibility:
  - people – ensuring the health, safety and welfare of park visitors and all persons involved in fire management (both NPWS staff and others)
  - environment and heritage – conserving natural and cultural heritage values
  - community – ensuring cooperation with the public, stakeholders, NSW Government, regulatory authorities and other fire management authorities
  - administration and finance – using resources cost effectively and ensuring financial accountability in its fire management activities
  - compliance – ensuring fire management and suppression activities comply with all statutory and contractual obligations.
- 2 Applying a risk management approach to fire management is intended to minimise the negative impact of planned and unplanned fire. Risk mitigation underpins the majority of policies in this Manual.
  - Successful risk management requires a structured approach and needs to be considered at all levels of an organisation. The agency has adopted a [Risk Management Framework](#) and has committed itself to the use of risk management throughout the organisation. All fire management activities are conducted in a manner consistent with this approach.
  - Introducing a risk-based approach to NPWS fire management required implementing a tested risk management process. An accepted and tested AS process developed by Standards Australia in 2004 (AS/NZS 4360) and superseded by AS/NZA ISO 31000 in 2009 and subsequently in 2018, has been adopted for use in the NPWS fire management context.
  - NPWS adopts a Work, Health and Safety Management System throughout its fire operations. The preparation of this Manual, and related policies and plans, is done in accordance with this approach.
- 3 The Manual specifies SOPs, training, competency and work planning systems that control risks common to the HR burning and fire suppression activities undertaken by firefighters. The Burn Plan is the Job Safety Analysis (JSA) for prescribed burning operations. The briefing to staff before work commences on a HR burn or bushfire suppression is the Job Safety Brief (JSB).

A separate [Cultural burning standard JSA](#) has been prepared, as it varies from the normal operations outlined in the Manual.

# 1.0 Fire management framework

## 1.2.2 Risks to people

- 1 The risk NPWS faces in relation to the health and safety of staff and visitors is the potential for injury (physical or psychological) or death.
- 2 The control mechanisms used to minimise this risk are the development of planning and procedural documentation to guide prevention, preparedness, response and recovery. The procedures detailed in this Manual are followed during decision making for fire events.
- 3 Risk controls relating to safety include the use of assessed and approved equipment, the Australasian Inter-service AIMS, IMS, preparation and compliance with individual burn plans for prescribed burning, IAPs for bushfire suppression, appropriate training and competencies for all personnel involved in fire events, and incident debriefing and counselling.
- 4 Individual staff members are responsible for their personal safety during all fire management activities. While diligence is carried out in the planning and procedural stages of fire management, each staff member's own decisions must also ensure personal safety in all aspects of their conduct.
- 5 Each staff member is required to take responsibility as a partner for other staff members' safety during all fire management operations.
- 6 All supervisors have additional and collective responsibilities above those of an individual. They should be trained and experienced in the role of a team leader to enable them to effectively undertake that role.
- 7 Fire management will be undertaken in a manner that will ensure the health, safety and welfare of all people.
  - Staff will be appropriately trained, equipped and experienced to undertake the functions or roles required of them in fire management.
  - The safety of NPWS managed land visitors, neighbouring communities, contractors and other firefighters involved in cooperative fire management operations will be ensured.
- 8 All supervisors must be mindful of public, political and media commentary (and other information) from a variety of sources and must evaluate its significance for officers on the ground. See: [Protocol for Managing Risks from Public, Political and Media Commentary](#).

## 1.2.3 Risks to natural and cultural heritage

- 1 The protection and conservation of natural and cultural heritage values is one of the agency's key deliverables under its *Act*, and corporate plan.
- 2 Inappropriate fire regimes and mechanical works involving ground and vegetation disturbance are the key risk to natural and cultural heritage conservation on NPWS managed land. This may cause the loss of or impacts upon natural or cultural heritage

# 1.0 Fire management framework

values. To mitigate this risk NPWS identifies and implements priority fire management strategies.

- 3 Natural and cultural heritage values are identified in the preparation, implementation and monitoring of NPWS reserve bushfire planning documents including RFMSs, SFMIs and annual works programs. These documents detail appropriate fire regimes for specific reserves and fire planning landscapes across NPWS managed land.
- 4 Fire management is undertaken in such a way as to minimise environmental and cultural heritage impacts, such as native vegetation clearing, earthworks and smoke impacts associated with fire. In addition, the *Heritage Act 1977* minimum maintenance standards reference the need to consider fire prevention and protection for items of state or higher significance.

## 1.2.4 Risks to the wider community

- 1 The risk NPWS faces in relation to the wider community is disruption of economic activity or social structure and fabric as well as a loss of confidence in NPWS management objectives.
- 2 NPWS fire management is undertaken to ensure continued support for all aspects of its management through public and stakeholder input, by meeting regulatory requirements and by complying with NSW Government statutory requirements.
- 3 NPWS fire management is undertaken to ensure cooperation with neighbours and to minimise the impact of bushfire on private and public assets including impacts on community assets and businesses.

## 1.2.5 Risks to administration and finance

- 1 The risk NPWS faces in relation to administration and finance is an excessive level of expenditure in suppression activities. These issues are managed at 2 levels:
  - NPWS Fire and Incident Operations Branch oversees Fire Management Program financials. These procedures are in addition to those prepared by the BFCC for management of Section 44 fires.
  - At a fire event the IC has authority and responsibility, within delegation limits, for all aspects of managing the fire event and also has financial accountability for expenditure associated with the fire event.
- 2 Placing financial accountability in the hands of the ICs is aimed at providing controllers with the incentive to manage their resources in a cost-effective manner. Section [6.1.2 Policies for finance and insurance](#) has more information on ICs' financial delegations.

# 1.0 Fire management framework

## 1.3 Work Health and Safety (WHS)

### 1.3.1 Background

- 1 Both DCCEE (as a corporate entity) and all DCCEE staff are responsible for maintaining a safe workplace and safe work practices.
  - The safety of firefighters is always the primary consideration during fire operations.
  - NPWS deploys its employees in fire management activities in accordance with their training, fitness and experience.

### 1.3.2 WHS policies

- 1 NPWS and all staff will take all practical measures to ensure the safety, health and welfare of all personnel involved in fire management activities in accordance with the [WHS Risk Management System](#), [NPWS Procedures](#) and [BFCC Policy 3/2000 'Coordinated Firefighting Operations Health and Safety'](#).
- 2 All firefighters will be competent and equipped to safely engage in fire management activities.
- 3 NPWS will at all levels meet its obligations under the [Work Health and Safety Act 2011](#) and associated regulations.
- 4 NPWS recognises the importance of fatigue management for both fireground and IMT personnel in maintaining a safe workplace.
- 5 Critical incident support processes will be initiated immediately on the report of a critical incident (see section [5.2.1 Critical incident support services](#) for more information).
- 6 Peer support services will be available for all personnel and trained Peer Support Officers will be deployed during fires when the need is identified.

### 1.3.3 WHS procedures

- 1 Safety and the protection of human life is the first priority in fire management operations and the primary consideration at all times, followed by protection of community, heritage, culture and natural assets. These priorities will be the basis for determining fire management objectives, strategies and tactics.
  - Objectives, strategies and tactics must be adopted only after assessment of their safety and risk implications.
  - The IC has the overall responsibility for the safety of fire-fighting personnel, but all officers in a supervisory capacity are responsible for those under their supervision.
  - All personnel have the responsibility to ensure that their work is carried out in accordance with safe practice and NPWS policy and instructions to ensure their own and others' safety.

# 1.0 Fire management framework

## Standard operating procedures

- 2 All safe work practices and SOPs should be adopted when planning and conducting fire management operations (prescribed burns or fire suppression operations).

## Safety incidents (hazards, accidents and near misses)

- 3 A process of hazard identification, risk assessment and control will be implemented in all NPWS workplaces in accordance with the [NPWS Work, Health and Safety Management System](#).
- 4 All safety incidents that occur during fire management activities, including safety incidents involving aircraft operations, must be reported to the immediate fireline supervisor and IC using the *First Report* page of the *Fire Incident Reporting Booklet*.
- 5 The IC will report all safety incidents to the Branch Director and the Manager WHS Section and all safety incidents will be investigated as per the procedures in the [NPWS Work, Health and Safety Management System](#).
- 6 All safety incidents will be reported via the agency's web based WHS incident and hazard reporting system CAMMS by following the instructions contained in the [Incident Reporting Hub](#).
- 7 Reports of serious injuries, fatalities and property damage should be made immediately by the IC or Senior NPWS officer to the Branch Director and the relevant Executive Director Park Operations. Notifications must also be given to the SDO, NPWS WHS Duty Officer and Visitor Experience Branch as appropriate.
- 8 During inter-agency or out-of-branch activities, safety incidents shall be reported to the Incident Controller and to the employee's workplace of origin.
- 9 The Executive Director Park Operations for the area will ensure that appropriate interagency notifications have been conducted and that appropriate welfare actions have been initiated.
- 10 The Manager Safety Risk and Compliance or delegate will report notifiable incidents to SafeWork NSW in accordance with the WHS legislation and the agencies safety management system.
- 11 Where a safety incident involves aircraft operations, the Incident Controller or Officer In Charge should inform the [Aviation Duty Officer](#), as per the [Standard Operating Procedures](#) and [Interagency Aviation Standard Operating Procedures 2022](#) (2.7 Accident, Incident, Occurrence and Near Miss Reporting) and an investigation will be conducted (as per 2.8 Accident, Incident and Near Miss Investigation).
- 12 Where a safety incident occurs during a Class 3 (s44) fire, the incident is to be reported via the agency's web based WHS incident and hazard reporting system CAMMS and the NSW RFS WHS Risk Management System.
- 13 Safety incident investigation outcomes will be communicated to relevant affected staff as soon as practical, including those incidents occurring during interagency operations where NPWS is not the primary investigator.

# 1.0 Fire management framework

## 1.4 Governance

### 1.4.1 Background

- 1 Governance identifies who can make decisions, who has the authority to act on behalf of the NPWS and who is accountable for how its people behave and perform. Governance principles are supported by laws and regulations and are used by NPWS to make decisions about managing fire within national parks and reserves across the state.

### 1.4.2 Responsibilities and accountabilities

- 1 *Responsibilities* are tasks or decisions that are required of a person or a position.
- 2 *Accountability* is the level to which a person may be held answerable for the completion of those tasks or decisions.
- 3 For example: a person or a position may have certain *responsibilities* (tasks/roles to undertake) but may not be accountable for their successful completion. This accountability may be held by a more senior or supervisory position.

#### Responsibilities under the National Parks and Wildlife Act 1974

- 4 NPWS meets its fire management and conservation responsibilities under the NPW Act 1974 by:
  - maintaining and improving its fire management, suppression and response capability
  - preparing fire management strategies for all NPWS managed land
  - ensuring that fire management strategies will protect natural and cultural heritage resources (including AIS)
  - promoting appropriate fire regimes within NPWS managed land for the conservation of native plant and animal communities, and
  - engaging in research for the conservation of native plant and animal communities as well as Aboriginal cultural heritage.

#### Responsibilities under the Rural Fires Act 1997

- 5 NPWS meets its fire suppression responsibilities under the RF Act by:
  - being a member of the BFCC and relevant BFMCs (i.e., where NPWS managed lands are located)
  - maintaining an effective, efficient, highly mobile and skilled fire-suppression capability of personnel and equipment
  - assisting with preparing and implementing multiagency bushfire management plans for suppressing fire and mitigating fire hazards across NSW

# 1.0 Fire management framework

- entering into coordinated arrangements with other firefighting authorities to ensure a rapid and effective deployment of staff and resources to detect and control fires across NSW
- taking control of fires in accordance with the policies in this Manual and BFMC Plan of Operations.
- initiating appropriate fire suppression actions on all fires detected within all NPWS managed land.
- initiating appropriate fire suppression actions on all fires detected up to 8 km from NPWS-managed land boundaries, or the distance specified in a bush fire management plan.
- assisting other firefighting authorities, when requested, to suppress fires on tenures other than NPWS managed land
- managing fires on NPWS managed land in accordance with the provisions of BFMC Plan of Operations, NPWS Statements of Fire Management Intent (or RFMSs where landscape specific SFMIs are yet to be prepared) as well as relevant AIS Fire Response Plans.
- ensuring that appropriate arrangements exist with other firefighting authorities for cooperative and coordinated firefighting
- conducting fuel management and hazard reduction programs in accordance with the provisions of BFMC Bush Fire Risk Management Plans, Fire Access and Fire Trail Plans as well as NPWS Statements of Fire Management Intent (or RFMSs where landscape specific SFMIs are yet to be prepared), and
- training NPWS staff for appropriate roles in fire and incident management.

## Executive Director Park Operations Coastal and Executive Director Park Operations Inland

- 6 The Executive Director Park Operations Coastal and Executive Director Park Operations Inland are responsible for:
- approving the deployment of NPWS resources to another state or overseas
  - approving the use of interstate resources to assist NPWS fire operations
  - ensuring that adequate 'standards of cover' for fire management are maintained, and
  - ensuring that adequate numbers of staff are appropriately trained to guarantee an incident response capability.

## Director Fire and Incident Operations Branch

- 7 The Director Fire and Incident Operations is accountable for:
- state-wide monitoring and reporting of incident and fire operations and resources within NPWS
  - assigning priorities for allocating resources across the state in consultation with the Directors of Park Operations Branches
  - reviewing and developing state-wide policies and procedures relating to fire management

# 1.0 Fire management framework

- collecting, collating, reporting and disseminating incident information affecting NPWS
- developing state-wide systems to ensure the cost effectiveness of incident management, and
- maintaining the NPWS Incident Database, which records all required information associated with fire suppression, including ongoing incidents, for reporting purposes.

8 The Director Fire and Incident Operations Branch is responsible for:

- reporting to the Executive Director Park Operations Coastal and Executive Director Park Operations Inland and the Executive on the number of fires, class of fires and issues arising from fires
- maintaining contact with other firefighting authorities on the availability of resources to support the NPWS requirement at a state level, and to contribute to assessing state-wide priorities for fire-suppression resourcing
- advising Branches of:
  - the appointment of ICs for major incidents, and
  - the existence of Class 2 or 3 fires elsewhere in NSW
- requesting that all resources are placed in an appropriate state of preparedness
- developing schedules of equipment and personal equipment standards throughout NPWS
- for planning purposes, liaising with RFS and providing advice to the Executive Director Park Operations Coastal and Executive Director Park Operations Inland in regard to the BFCC, and
- in relation to operations, appointing a SOLO during incidents and SAD Officer during an agreed period.

9 In addition, the Director Fire and Incident Operations Branch is also responsible for:

- providing advice and assistance to the NPWS representative on the BFCC
- initiating policy development processes where necessary and seeking input from the NPWS Fire and Incident Management Executive Steering Committee, BFCC and the Executive Director Park Operations Coastal and Executive Director Park Operations Inland providing a quality control and leadership role
- annually compiling and reviewing fire and seasonal debrief recommendations and comments from staff at the strategic level for inclusion in the Manual, and
- invoking and coordinating the SDO.

## Director Legal Services Branch

10 The Director Legal Services Branch is accountable for responding to requests for advice on NPWS policies, procedures and practices to ensure they accord with relevant legislation.



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## Park Operations Branch Director

- 11 Directors of Park Operations Branches are accountable for the overall coordination of incident and fire operations and resources within their Branch.
- 12 Directors of Park Operations Branches are responsible for:
  - supporting the Director Fire and Incident Operations by providing advice on incident operations issues
  - declaring as an incident a prescribed burn subsequently requiring suppression using the NSW Treasury Managed Fund
  - ensuring compliance with NPWS policy and procedures relating to incident management and OOB deployment
  - ensuring compliance with NPWS systems which promote the cost effectiveness of incident management
  - approving the extension of shift lengths beyond specified maximums, and
  - monitoring staff availability throughout the Branch.
- 13 Directors of Park Operations Branches are accountable and responsible for:
  - overall coordination of fire management planning
  - supervising the implementation of programs
  - determining the allocation of finances for fire management within their Branches
  - declaring incidents and providing an adequate detection and response capability, and
  - reporting serious injuries, death or property damage to the Director, Work Health & Safety Manager and SafeWork NSW.
- 14 Directors of Park Operations Branches are accountable for:
  - ensuring that standards and schedules of equipment are adopted within the Branch
  - ensuring suppression objectives are aligned with the Branches management objectives, and
  - ensuring staff within their Branch are assessed as competent in the fire management duties they are required to perform.
- 15 Directors of Park Operations Branches are responsible for:
  - maintaining the NPWS Incident Database, which records all required information associated with fire suppression, including ongoing incidents, for reporting purposes
  - reporting all bushfire incidents, through ICON, and all other incidents, events and prescribed fire, through Elements
  - maintaining data entry into Elements which records all required information associated with fire mitigation activities
  - ensuring staff undertaking the role of ICs are supported
  - approving the appointment of ICs for Class 1 fires

# 1.0 Fire management framework

- recommending Class 2 and 3 IC nominees to BFMCs
- declaring park fire bans and reserve closures
- making staff within the Branch available for firefighting duties within the Branch or in another Branch
- ensuring equitable access to training, competency development and deployment to fire roles, and
- monitoring the implementation of the NPWS Reserve Bushfire Planning Process including the development of Statements of Fire Management Intent and associated spatial mapping datasets (or RFMSs where landscape specific SFMIs are yet to be prepared) and measuring the success of strategies in achieving desired fire regimes and levels of protection.

## Trusts

- 16 Trusts are responsible for the care, control and management of some state conservation areas and regional parks. Within areas under their jurisdiction, trusts are responsible for:
- declaring park fire bans
  - cancelling activities, and
  - declaring reserve closures.

## Boards of Management

- 17 Boards of Management are responsible for the care, control and management of some reserves pursuant to part 4A of the NPW Act. Within areas under their jurisdiction, Boards of Management are responsible for:
- declaring park fire bans
  - cancelling activities, and
  - declaring reserve closures.

## Rights and responsibilities as a firefighting authority

- 18 As a 'firefighting authority' NPWS staff may:
- enter (as an 'authorised officer') land within 8 km of NPWS managed land and undertake activities reasonably necessary to suppress, or prevent the spread of, a bushfire from that land to NPWS-managed land.
  - be notified (as an 'appropriate officer') by occupiers of adjacent lands of the occurrence and location of bushfires on their land during the bushfire danger period
  - enter (as an 'authorised officer') unoccupied Crown land and other NPWS managed land for the purposes of conducting HR burning, subject to a bushfire HRC or determination under Part 5 of the EP&A Act from the relevant authority.

# 1.0 Fire management framework

## Rights and responsibilities as a public authority

- 19 As a 'public authority' NPWS has a number of rights and responsibilities, including:
- to take any notified steps (as defined by either the BFCC or any bush fire risk management plan), and any other practicable steps, to prevent the occurrence of bushfires on, and to minimise the danger of the spread of a bushfire on or from, land vested in or under its control or management, and to bear the costs associated with this
  - to be notified in writing of any complaint which might be made to the RFS Commissioner about the existence of a bushfire hazard on NPWS managed land, and to carry out bushfire HR work as is specified in a notice issued by the Commissioner following the investigation of a complaint
  - on failure to properly perform the above, or failure to carry out bushfire HR work, to permit an 'authorised officer' (officer of a firefighting authority) to have entry to NPWS managed land for the purposes of conducting HR works at NPWS expense (as per s.73 of the RF Act, subject to a bushfire HRC issued by the Commissioner (in accordance with s.100G of the RF Act)
  - to seek prior approval from a local authority for a bushfire HRC for any work proposed by NPWS on private lands in accordance with s.100F of the RF Act, including the approval of the property owner concerned
  - before the lighting of any fire (anywhere and at any time of the year other than for a back-burn) to give, be given, or cause to be given, written or oral notice that includes particulars of the:
    - location
    - purpose
    - period, and
    - time of the fire proposed to be lit
    - at least 24 hours before the fire is lit, to the occupiers (or, if there are no occupiers, the owners) of all land contiguous to, or that is separated merely by a lane, road or waterway (whether fenced or unfenced) from, the land on which the fire is to be lit, and to also give such notice to the relevant local authority being a FRNSW Station Officer (within a Fire District) or RFS Fire Control Officer (within a Rural Fire District)
  - to be notified by the appropriate authority of the issue of a fire permit within 24 hours if the burn is within 8 km of NPWS managed land
  - to be notified by the appropriate authority of the intention to enter land and to light a fire in accordance with s.70 of the RF Act, within 24 hours, if the burn is within 8 km of NPWS managed land
  - to be notified (i.e., receive a copy of the notice) by the local authority of the issue of a HR notice within 24 hours of the issue of the notice, if the proposed work is nearby NPWS managed land
  - to adopt and carry into effect a relevant bushfire management plan
  - to be protected (as a protected person or body) from action, liability, claim or demand arising from a matter or thing done in good faith for the purpose of executing any provision (other than s. 33) of the RF Act, and

# 1.0 Fire management framework

- to report to the RFS Commissioner no later than 3 months after the end of the financial year on its activities to reduce bushfire hazards on NPWS managed land during the preceding financial year.
  - The report is to include details of the extent of implementation of any scheme for the reduction of bushfire hazards on NPWS managed land as set out in the bush fire risk management plan that applies to the land.

## 1.4.3 NPWS Fire and Incident Management Governance Framework

- 1 The implementation of a new governance structure for fire and incident management commenced in 2022. It aims to provide strategic direction for NPWS fire and incident management and strengthen relationships and linkages across divisions and branch business areas.
- 2 NPWS fire and incident management committees and groups are organised into a three-tiered framework.
- 3 Further information regarding NPWS internal committees is available on ParkSite at [Fire and Incident Management Governance Framework](#).

### Tier 1: Fire and Incident Management Executive Steering Committee

- 4 The NPWS Fire and Incident Management Executive Steering Committee (FIMESC) provides direction and makes decisions to drive the delivery of fire and incident management activities to meet our Service Delivery Commitments (SDCs).
- 5 The Steering Committee also functions as the Program Board for the NSW Treasury Climate Change Funded (CCF) Fire Management Program (FMP), ensuring effective planning and performance of the program.
- 6 Terms of Reference for the Fire and Incident Management Executive Steering Committee are available on ParkSite at [Fire and Incident Management Executive Steering Committee](#).

### Tier 2: Reference Groups

- 7 Reference Groups provide guidance, advice, and manage issues for a particular work theme. Reference Groups can establish Working Groups to lead specific work packages.
- 8 The [Cultural Fire Management Reference Group](#) provides strategic and operational direction for Cultural Fire Management across NPWS.
- 9 The [Bushfire Risk and Hazard Reduction Reference Group](#) provides strategic and operational direction for the NPWS approach to bushfire risk management and hazard reduction delivery. This will include matters related to coordinated firefighting arrangements in NSW, application of risk driven fire management objectives as well as advancements in fire science and modelling.

# 1.0 Fire management framework

- 10 The [Fire and Incident Operational Capability Reference Group](#) provides strategic and operational direction to ensure optimal operational capability arrangements are in place for NPWS fire and incident management. This will include matters related to mobile assets, equipment, resources, technology, fire role succession planning, training and skills enhancement and incident management.
- 11 The [Aviation Reference Group](#) provides advice to the NPWS Executive and input into aviation management, including the development and implementation of an aviation management framework.

## Tier 3: Communities of Practice and Networks

- 12 [Communities of Practice and Networks](#) are thematically based discussion groups where staff can contribute thinking and share knowledge across roles, functions, Branches or Divisions. They are generally not tasked with delivering work packages.

## Fire science and RISK planning governance committee (FRISK)

- 13 The Fire Science and RISK Planning Governance Committee provides direction, decision making and endorsement for fire related information products. This includes methods, modelling and data being developed by the NPWS Bushfire Risk and Evaluation team and Science and Insights Applied Bushfire Science Program to inform risk-based fire planning across DCCEEW for adoption by the NSW RFS, NPWS and other fire-fighting authorities and land management agencies.
- 14 The Committee also functions for transparent collaboration and knowledge sharing between DCCEEW and NSW RFS for risk-based fire planning projects and ensuring communication and knowledge brokering flows to Senior Executives.

## External committees

- 15 NPWS collaborates with and participates in, a range of fire and incident committees and groups that are external to our agency, at state, national and international levels.
- 16 A list of current external committees is available on ParkSite at [Fire and Incident Management Governance Framework](#).

## 1.4.4 Fire policy review process

- 1 NPWS fire management policy operates in the context of the broader policy framework captured in the NPWS Park Policy Manual 2019, which managed by the NPWS Parks Policy Unit.
- 2 The Fire Management Manual is the principal reference document for NPWS fire related policy and procedure.
- 3 NPWS fire policy is reviewed on a regular basis to ensure:

# 1.0 Fire management framework

- that fire management practice is consistent with legislation and other NPWS policies.
  - content is evidence based and informed by the latest scientific research
  - content is relevant, practical and supports effective decision making
- 4 NPWS continues to engage staff from a wide range of technical backgrounds and geographical locations in the formulation of fire policy.
- 5 The development and approval of fire policy follows the process outlined at [Figure 1](#) to ensure it is integrated and consistent with other NPWS, legislative and interagency policy positions.

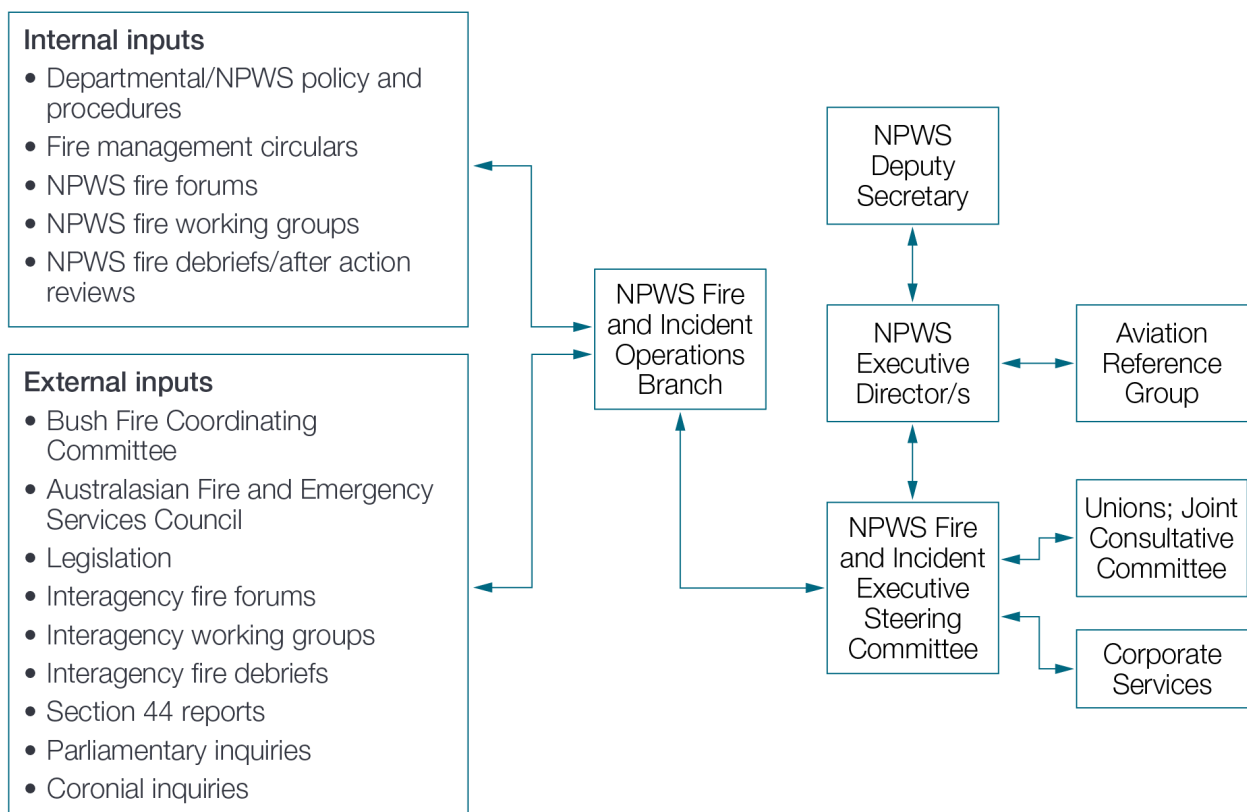


Figure 1: Decision making and fire policy development

## 1.5 Measuring performance

### 1.5.1 Fire Management Program Reporting and Evaluation

- 1 NPWS has identified fire management performance measures and targets to guide and evaluate success of our hazard reduction activities, bushfire response, and conservation of biodiversity and cultural heritage values. These measures are categorised as Service Delivery Commitments, and are reflected in strategic

# 1.0 Fire management framework

documents including the NPWS Fire Management Direction Statement, Fire Management Program Action Plan and the Fire Management Program 2022-2030 Monitoring, Evaluation, Reporting and Improvement Framework (MERI).

- 2 The MERI framework defines the program logic and intended outcomes for the Fire Management Program. It outlines what the Program aims to accomplish, how it will achieve its objectives and how success will be measured and evaluated. The MERI framework uses two approaches to monitoring: activity monitoring and impact monitoring. The framework will undergo periodic reviews and updates across the life of the Program.
- 3 Program activity monitoring in the MERI framework includes a series of metrics to measure the program activities and immediate outputs, with the aim to understand and quantify the outputs. Metric methodology is defined in the MERI Data Dictionary. These activities are reported annually in the Fire Management Program Annual Report (internal document). Service Delivery Commitments and other priority metrics are also reported on regularly throughout the year.
- 4 Program impact monitoring assesses effectiveness through formal periodic evaluations, using both the program activity metrics and other qualitative performance measures, with examination of best practice. The Fire Management Program 2022-2030 will undergo two independent evaluations: a mid-term evaluation during 2025-2026, and an outcome evaluation in the first half of 2029-2030.

# 2.0 Prevention and planning

## 2.0 Prevention and planning

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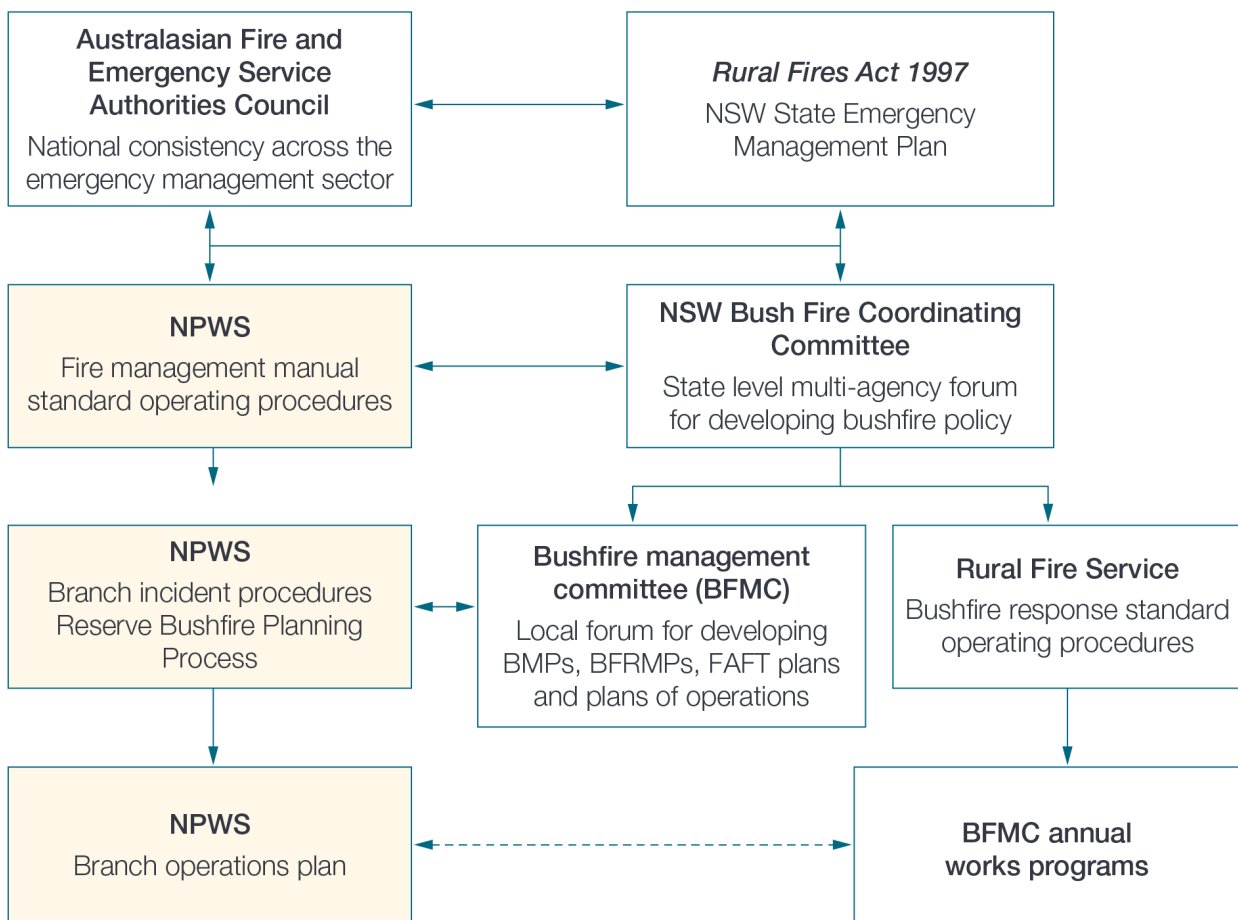
# 2.0 Prevention and planning

## 2.1 Fire management planning

### 2.1.1 Background

- 1 Fire management planning assists in defining the strategies and actions to be implemented to achieve NPWS primary fire management objectives.
- 2 NPWS is a member of the state BFCC and helps it to develop and review its policies and procedures relating to fire management across NSW.
- 3 NPWS is also a member of local BFMCs where it has reserves. Under s. 52 of the RF Act BFMCs are responsible for the development of BFRMP, Plan of Operations, and FAFT plans across BFMC Areas in NSW. These are cooperative plans, and their scope extends to NPWS operations and to the management of fire and fire trails within NPWS managed land. These plans integrate landscape-specific objectives and strategies from NPWS SFMIs (or RFMSs where landscape specific SFMIs are yet to be prepared) and associated spatial datasets into a wider multi-agency framework (see [Figure 2](#)).
- 4 Fire planning and land management is undergoing a period of significant change. NPWS is supporting BFMCs in the development of next generation BFRMP's as well as leading Operations Branch staff in transitioning from RFMSs to the new spatial-based NPWS Reserve Bushfire Planning Process (RBPP). This new process will deliver landscape specific SFMIs, a centralised NPWS Fire Planning Portal (spatial viewer) as well as help to drive [Assets of Intergenerational Significance](#) and [zero-extinctions](#) initiatives across NSW.
- 5 NPWS fire management planning is integrated with fire management and disaster planning at agency, state and national level, via cooperative fire management arrangements (see section [1.1.2 Cooperative fire management](#)).

# 2.0 Prevention and planning



**Figure 2: Integrated fire management planning framework**

## 2.1.2 Fire management planning framework

There are 3 tiers of fire management planning within NPWS:

- 1 Tier 1: Strategic policy – provides for consistency within NPWS and coordination among NPWS and other fire and land management authorities. This Manual is an example of a state-wide policy which sets the framework for more detailed planning such as the new NPWS Reserve Bushfire Planning Process and development of BOP.
- 2 Tier 2: the new NPWS Reserve Bushfire Planning Process produces Statements of Fire Management Intent (and associated spatial datasets), which will be uploaded into the NPWS Fire Planning Portal (under development). Statements of Fire Management Intent (SFMI) define management approaches for either individual or groups of protected areas, consistent with NPWS strategic policy. SFMI (and associated spatial datasets) form the basis for preparing prescribed burn plans and IAPs as well as BOPs. *Note: RFMSs are being phased out and are being replaced with SFMI.*
- 3 Sections 38 and 44 of the RF Act require any fire control officer and the Commissioner of the NSW RFS, respectively, to consider ‘any relevant plan’ of an authority responsible for managed land prior to implementing the powers provided by those sections. In most cases, SFMI and associated spatial datasets (or RFMSs where landscape specific

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SFMI (as yet to be prepared) will be such a 'relevant plan' for managing fire within parks and reserves.

- 4 Tier 3: BOPs – include fire management works programs, which are prepared for the purpose of planning and prioritising the annual implementation of BFMC management plan treatment registers, landscape specific SFMI objectives and strategies, and incident procedures, which provide fire suppression information and procedural guidelines. Additionally, a prescribed burn plan or IAP is prepared for each bushfire management operation on NPWS-managed land.

### 2.1.3 Risk assessment framework

- 1 NPWS encourages the development of objective systems and tools, including SOPs and JSAs, to facilitate risk management approaches to preparing and implementing HR works and bushfire suppression.
- 2 All fire management planning and suppression operations will be based on a risk assessment process detailed in section [1.2 Risk management](#).

### Cultural and historic heritage management

- 3 NSW has a rich cultural heritage that forms an integral part of the contemporary landscape. The landscape encompasses many aspects of Aboriginal tangible and intangible heritage values, including Aboriginal sites and artefacts, landscapes with physical evidence of Aboriginal cultural practices, natural landforms, sites of spiritual or ceremonial significance and native flora and wildlife (totem species, bush foods and medicines). Aboriginal people can use fire to enhance and protect natural and cultural values; to express and maintain culture, kinship and identity; and to continue to share knowledge and practice.
- 4 NPWS manages a broad range of cultural heritage including structures, works such as roads, dams, cultural landscapes, modified landscapes and archaeological objects and sites. Cultural heritage often reflects evidence of a shared history between Aboriginal and non-Aboriginal people. This shared history is recognised and recorded by NPWS. Guidance is provided in section [1.1.5 Cultural Fire Management](#). Further advice can be obtained from the [Aboriginal People, Partnerships and Heritage Branch](#) as well as from [AHIMS](#).
- 5 Fire protection measures will be progressively installed in historic heritage buildings and structures as required in accordance with Australian Standards, and relevant planning and heritage legislation. The NPWS Historic Heritage Team is available for consultation on best practice for heritage relics, items, places and property via their mailbox at: [npws.heritage@environment.nsw.gov.au](mailto:npws.heritage@environment.nsw.gov.au). Further information can be obtained from the [Historic Heritage ParkSite Page](#) and information on historic heritage sites can be obtained from the [HHIMS](#).
- 6 Planning to protect and conserve cultural heritage from the effect of bushfires, planned burns or HR works is to be outlined in [Recovery Plans](#). The prepared Recovery (rehabilitation) Plans are to identify requirements to protect, restore and conserve cultural heritage post fire.
- 7 Access to lands reserved under the NPW Act as an Aboriginal Area (Part 4, Division 10), Aboriginal Land (Part 4A) or which includes an Aboriginal Place (s.84) may be restricted,

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and subject to NPWS protocols. These protocols are to be implemented consistently via authorised access arrangements as specified in section [2.9.7 Access to NPWS-managed lands by other firefighting authorities](#).

### Natural values and fire management

- 11 NPWS acknowledges that fire is an important tool for managing biodiversity and maintaining the ecosystem health on most NPWS managed lands (also refer section [1.1.3 Conserving biodiversity](#) and [4.2.7 Environmental considerations](#). Fire as a tool will be used to:
  - maintain biodiversity, and ecosystem resilience as part of a NPWS integrated ecological and cultural burn program
  - deliver weed control programs where fire has been nominated as a tool to effectively manage landscape level infestations.
- 12 NPWS strategic and operational fire management must consider the conservation and protection of natural values in accordance with the NPW Act. Fire management may compromise natural values, so all operations will need to identify, avoid or minimise adverse impacts, especially to environmentally sensitive or conservation significant lands, such as:
  - land declared as an area of outstanding biodiversity value (AOBV) under Part 3, of the Biodiversity Conservation Act, or AIS under Part 12A of the NPW Act
  - areas with high aesthetic value e.g., World and National Heritage, karst conservation reserves, and important areas, views and landscapes as listed in adopted Plans of Management
  - feral predator-free network areas (established as part of the NSW NPWS Threatened Species Framework to meet our commitment of zero extinctions and restore threatened species populations)
  - lands declared to be vulnerable, which are lands that are steep, highly erodible, or in a protected riparian or special category;
    - scheduled water catchments, including special and controlled areas under Part 4 of the *Water NSW Act 2014* and subject to the Special Areas Strategic Plan of Management (SASPoM)
    - lands within world heritage properties, which have outstanding universal natural values (i.e., Gondwana Rainforests of Australia, Greater Blue Mountains, Willandra Lakes Region).
- 13 The spatial datasets underpinning the NPWS Fire Planning Portal (under development) must include a spatial layer that identifies important natural values and features requiring protection. Fire management zoning shall reflect the significance of features and incorporate measures to protect them.
- 14 Fire management intent for each park or fire planning landscape should contain specific objectives and strategies to guide on-ground actions to protect important natural values. These actions will be reflected in NPWS managed land PoMs, SFMIs (or RFMSs where landscape specific SFMIs are yet to be prepared), the new NPWS Fire Planning Portal (under development) and in the use of appropriate fire management zones.

Guidance should include reference to:

- access to and construction of control lines (see section [4.9 Fire control lines](#))

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- use of fire suppression chemicals and salt water (see section [4.12.2 Policies for fire suppression chemicals](#))
  - use of earthmoving equipment (see section [4.10 Heavy plant operations](#))
  - post-fire rehabilitation (see section [5.3 Post-fire rehabilitation](#))
  - prescribed burning (see sections [2.8 Prescribed burn planning](#) and [4.2 Fire response](#))
  - AIS fire response planning for declared sites (see section [4.2 Fire response](#))
- 15 Directors of Park Operations Branches should ensure that the above actions to protect important biodiversity and landscape features on NPWS managed land are included in the spatial datasets that underpin the new NPWS Fire Planning Portal (under development).

### 2.1.4 Consultation framework

- 1 NPWS is committed to involving key stakeholders in the management of NPWS managed land; consultation is always an important part of any management approach.

In Aboriginal joint-managed parks, the process for Aboriginal community engagement should follow the requirements of those agreements. There may be legal requirements such as Indigenous Land Use Agreements (ILUA's) and Part 4A boards that require consultation with regard to fire management activities and the development of landscape-specific objectives and strategies.

- 2 All access to NPWS-managed lands will be authorised and conditioned to protect Aboriginal cultural heritage values consistent with those specified in section [2.9.7 Access to NPWS managed land](#). NPWS will also:
- seek and sustain partnerships with Aboriginal communities around cultural fire management on NPWS managed land
  - support delivery of cultural fire management practices through an integrated program
  - engage with the local Aboriginal community regarding protection and conservation strategies in order to preserve cultural values and limit the risk of harm from bushfire or HR works
  - prepare strategic fire management documents such as SFMI's in consultation with the local Aboriginal community
  - ensure partnerships, engagement and consultation complies with the NPWS Aboriginal Park Partnerships Manual and relevant joint management agreements and governance processes (leases for Aboriginal owned reserves, Indigenous Land Use Agreements, MOUs)
- 3 NPWS as a manager of public lands and firefighting authority in NSW will:
- advocate and sustain Aboriginal community engagement within the BFMC
  - ensure NPWS operational guidelines for the protection of natural and cultural values are provided to and incorporated in the preparation and review of BFMC Bushfire Management Plans (BMPs) such as BFRMPs, BFMC Plan of Operations and FAFT Plans
  - ensure fire management zones required to protect significant natural and cultural values are translated into the BFMC BFRMPs

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- ensure NPWS landscape specific objectives and strategies developed as part of the new NPWS Reserve Bushfire Planning Process are used to inform (and be informed by) BFMC BMPs.

### 2.1.5 Fire management zones

- 1 The BFCC has developed a standard fire management zoning system for use by firefighting authorities across the State. [BFCC Policy 01/2023: Bush Fire Risk Management \(Annexure B: Guidelines for Preparation of Bush Fire Risk Management Plans\)](#) and [\(Annexure C: Bush Fire Management Zones\)](#) provides a description of the zoning system and its associated fire management intent.
- 2 Five categories of fire management zones are currently identified within this zoning system:
  - Asset Protection Zone (APZ)
  - Ignition Management Zones (IMZs)
  - Strategic Fire Advantage Zone (SFAZ)
  - Land Management Zone (LMZ), and
  - Fire Exclusion Zone (FEZ).
- 3 Further to the provisions of Annexure C, there are two 'firebreak' types identified through the BFRMP process:
  - Linear Fire Breaks
  - Transport Corridor Fire Breaks (*Note: Transport corridor fire breaks are limited to public roads and railways that are vested in, or under the control a local authority (councils) or Transport for NSW*)
- 4 In addition to the above, NPWS will also consider the conservation objectives of a particular NPWS fire planning landscape, existing reserve bushfire planning (including both RFMSs and SFMIs), reserve PoM and pest management strategies when identifying fire management zones. [Table 4](#) outlines the zone objectives and characteristics as per BFCC policy.

The relevant SDCs from the [NPWS Services Framework](#) are listed for each of these zones (see [Table 4: Fire management zone objective, characteristics and NPWS KPIs](#)).

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**Table 4: Fire management zone objective, characteristics and NPWS KPIs**

Zone	Purpose	Suppression objectives	Zone characteristics	Service Delivery Commitment <sup>1</sup>
<b>Asset Protection Zone (APZ)</b>  See also <a href="#">2.6 Asset protection</a>	To protect human life, property and highly valued public assets and values.	To enable the safe use of direct attack suppression strategies within the zone.  To minimise bushfire impacts on undefended assets.	An intensively and frequently fuel reduced area surrounding an asset or value as described by: <ul style="list-style-type: none"> <li>NSW RFS document <a href="#">Standards for Asset Protection Zones</a></li> </ul> Management practices should aim to have fuel levels maintained within the OFH2 low to moderate range	1,802 ha per annum
<b>Ignition Management Zones</b>	To reduce fire escalation in areas where lightning ignitions are considered a high risk (such as ridgetops).  To reduce fire propagation in areas subject to higher levels of human- caused ignitions, including arson.  To reduce fire escalation via ridge-to-ridge ignition and other extreme fire behaviour.	To minimise fire propagation by providing increased opportunities for safe and effective suppression through ground and aerial operations and remote area firefighting.  To prevent ignitions from spreading particularly in parts of the environment that are difficult to access.	An area in the landscape that is maintained at a reduced fuel level in order to minimise the propagation of ignitions and limit the rapid escalation of fires and has an <a href="#">Overall Fuel Hazard</a> (OFH) of less than high.  IMZs should be considered in areas with the following characteristics: <ul style="list-style-type: none"> <li>A high frequency of human and / or natural ignitions</li> <li>High risk for ignitions to impact on assets</li> <li>Known fire paths</li> <li>Limited access or containment options for bush fires and/or</li> <li>Landscape features that have the potential to generate extreme fire behaviour</li> </ul>	N/A

<sup>1</sup> SDCs as per [NPWS Services Framework - Service Delivery Commitments](#)

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Zone	Purpose	Suppression objectives	Zone characteristics	Service Delivery Commitment <sup>1</sup>
			An IMZ should be treated more regularly and thoroughly than SFAZ and/or maintained at a level which depending on fuel type, aims to limit the rapid escalation of fires.	
<b>Strategic Fire Advantage Zone (SFAZ)</b>	To provide strategic areas of fire protection advantage which will reduce the speed and intensity of bushfires, reduce the potential for spot fire development and aid in the containment of bushfires.	<p>To improve the likelihood and safe use of:</p> <ul style="list-style-type: none"> <li>– parallel attack suppression strategies within the zone, and/or</li> <li>– indirect attack (back-burning) in high to very high fire weather conditions within the zone.</li> </ul> <p>To reduce the likelihood of:</p> <ul style="list-style-type: none"> <li>– crown fire development within the zone, and/or</li> <li>– spot fire ignition potential within the zone.</li> </ul>	<p>An area in the landscape that is managed to achieve mosaic fuel reduction patterns so that the majority of the area has an <a href="#">Overall Fuel Hazard</a> (OFH) of less than high*.</p> <p>The SFAZ spatial extent should consider bush fire risk and suppression objectives and should be dependent upon:</p> <ul style="list-style-type: none"> <li>– topography</li> <li>– aspect</li> <li>– spotting propensity</li> <li>– location of adjacent firebreaks</li> <li>– mosaic pattern of treatment.</li> </ul> <p>Management practices should aim to achieve mosaic fuel reduction patterns so that the majority of the SFAZ has an OFH of high or below.</p> <p>*Assess OFH once vegetation communities reach minimum fire thresholds.</p>	50,865 ha per annum
<b>Land Management Zone (LMZ)</b>	To meet relevant land management objectives in areas where APZs or SFAZs are not appropriate.	As per the land management and fire protection objectives of the responsible land manager.	An area in the landscape where land management outcomes are also prioritised such as those related to social, cultural or environmental values, or those	82,333 ha per annum (subject to review over the next 3 years)



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Zone	Purpose	Suppression objectives	Zone characteristics	Service Delivery Commitment1
		To undertake mosaic burning to reduce the likelihood of spread of fires.	related to the management of agricultural and natural resource assets.	
<b>Fire Exclusion Zone (FEZ)</b>	To exclude bushfires	Prevention, preparation and suppression strategies should aim to exclude fire from these areas.	An area in the landscape where land management outcomes require the exclusion of fire to manage fire sensitive cultural, environmental or other specific assets.	Fire exclusion zones are not recommended for use by NPWS. Whilst exclusion of fire may be preferable it is not always possible. Areas of fire intolerant assets should be included in key spatial datasets underpinning the NPWS Fire Planning Portal (under development) as LMZs with appropriate operational management guidelines

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- 5 When locating zones as part of fire management and HR planning, NPWS considers:
  - the risk management approach detailed in section [1.2 Risk management](#)
  - primary fire management objectives detailed in section [1.1 Fire management objectives](#)
  - the presence of threatened species, communities and populations, the presence of Assets of Intergenerational Significance (natural and cultural), and the fire biodiversity thresholds of the vegetation. Practicable alternatives should be sought where the location of an APZ, IMZ or SFAZ compromises conservation objectives. Alternatives include (but are not limited to):
    - relocating the zone to another area where the impacts will be less
    - using a SFAZ in place of an APZ
    - increasing the size of an APZ in place of using a SFAZ or IMZ
    - increasing the resilience of the asset; this includes changing the asset to make it less susceptible to fire or modifying the proposed treatment of the zone to minimise impacts.
- 6 New fire management zones or changes to existing fire management zones must be incorporated in the NPWS Fire Management Block geodatabase. Changes to zone types in the Fire Management Block geodatabase can only be made after they are approved by a Branch Director. When approving changes to fire management zone types in the database, Directors should consider if the changes warrant a major review of the relevant SFMI and associated spatial datasets (or RFMS where landscape-specific SFMIs are yet to be developed). File notes about the changes to fire management zone types should be recorded in the NPWS document management system.
- 7 A precautionary approach should be adopted when identifying IMZs on NPWS managed land. NPWS staff must work closely with BFMCs to ensure that a range of Bushfire Management Zones and other treatment strategies (e.g., community engagement) are applied to appropriately address the risks to the variety of asset types in their area. While the application of all zone types needs to be considered by the BFMC, in certain circumstances some zones (e.g., IMZ's) may not be appropriate or required. Staff should refer to '[NPWS Guideline for identifying Ignition Management Zones \(IMZs\)](#)'.

### 2.1.6 Vegetation biodiversity thresholds and fire interval guidelines

- 1 Guidelines for [Ecologically Sustainable Fire Management](#) (currently under review) based on the NSW Flora Fire Response Database\*, contains indicative fire interval guidelines to support ecologically sustainable fire management. In these guidelines:
  - the minimum interval (i.e., shortest time between fires) is based on the minimum maturity requirements of species sensitive to extinction under frequent fire regimes and should avoid local extinction of such species.
  - the maximum interval (i.e., longest time between fires) indicates the time since fire at which it may be expected that species may be lost from the community due to senescence.
  - within the domains of appropriate intervals calculated, it is important that the actual inter-fire intervals experienced at a site are variable. Greatest species diversity is maintained by ensuring variation in the length of inter-fire intervals.

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For further information on derivation of the fire interval guidelines refer to the summary '[Fire Interval Guidelines for Broad Vegetation Types](#)' on the intranet. **Note:** The fire interval guidelines and the flora and fauna fire response databases are currently being reviewed and updated, due for release in 2024/25.

- 2 When using the [Bush Fire Environmental Assessment Code](#) to issue a HRC, staff should refer to the NSW RFS supporting document [Fire Intervals for Strategic Fire Advantage Zones and Land Management Zones](#) for minimum SFAZ and LMZ thresholds. This table is modified from [Guidelines for Ecologically Sustainable Fire Management](#) for the specific purpose of the Code. **Note:** The fire interval guidelines are currently being reviewed and updated, due for release in 2024/25.
- 3 In cases where the Code does not apply, and an REF is to be prepared for a burn activity, the fire intervals stated in [Table 5](#) are to be applied. However, where more specific evidence-based biodiversity thresholds have been developed for a particular geographical area using local floristic or fire response data (including critical thresholds pertaining to fire severity or season) these will be applied in preference. The use of non-standard intervals must be clearly justified in the REF for approval by the relevant NPWS Branch Director and any variation to spatial data held by NPWS on biodiversity fire thresholds must be documented in accordance with agency metadata policies. For use in management at a landscape scale, it is recommended that the range of intervals indicated should prevail over at least 50% of the area within each extant vegetation formation.

**Table 5: Fire Interval Guidelines**

Vegetation formation <sup>1</sup>	Minimum interval	Maximum interval	Notes
Rainforests	n/a	n/a	Fire should be avoided
Alpine complex	n/a	n/a	Fire should be avoided
Saline wetlands	n/a	n/a	Fire should be avoided
Arid shrublands (chenopod subformation)	n/a	n/a	Fire should be avoided
Wet sclerophyll forests (shrubby subformation)	25	60	Crown fires should be avoided in the lower end of the interval range
Wet sclerophyll forests (grassy subformation)	10	50	Crown fires should be avoided in the lower end of the interval range
Forested wetlands	7	35	
Grassy woodlands	5	40	Minimum interval of 10 years should apply in the Southern Tablelands region
Dry sclerophyll forests (shrub/grass subformation)	5	50	
Dry sclerophyll forests (shrubby subformation)	7	30	
Semi-arid woodlands	6*	40*	There was insufficient data to give definite intervals. Available data

<sup>1</sup> Vegetation formation as per Keith D (2004) *Ocean Shores to Desert Dunes: The Native Vegetation of New South Wales and the ACT*. Department of Environment and Conservation NSW.

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Vegetation formation <sup>1</sup>	Minimum interval	Maximum interval	Notes
			indicates minimum intervals should be at least 5-10 years, and maximum intervals approximately 40 years. A minimum of 10-15 years should apply to communities containing Callitris.
Arid shrublands (shrubby subformation)	6*	40*	There was insufficient data to give definite intervals. Available data indicates minimum intervals should be at least 5-6 years, and maximum intervals approximately 40 years. A minimum of 10-15 years should apply to communities containing Callitris.
Heathlands	7	30	
Grasslands	2	10*	Some intervals greater than 7 years should be included in coastal areas. There was insufficient data to give a definite maximum interval; available evidence indicates maximum intervals should be approximately 10 years.
Freshwater wetlands	6	35	

\* Intervals given are tentative due to insufficient data.

### Fire Regime Thresholds Specific to Land Management Zones

- Fire thresholds are defined for vegetation communities to conserve biodiversity. Guidelines for interpreting the various fire regime threshold status categories for NPWS Land Management Zones are described [Table 6](#).

**Table 6: Fire regime thresholds for LMZs**

Category Name	Guidelines for interpreting fire regime threshold status
<p><b>Too Frequently Burnt</b></p> <p>Consecutive fire intervals shorter than recommended minimum interval</p>	<p>These areas have experienced sustained (two or more) consecutive intervals between fires shorter than the recommended minimum interval for this vegetation type. Any Rainforest / Mangrove / fire exclusion vegetation that has been burnt will be in this category.</p> <p><i>Areas of vegetation that are repeatedly burnt at intervals shorter than recommended for the vegetation type may experience a decline in the abundance of plant species sensitive to frequent fire. If inter- fire intervals shorter than the recommended minimum continue, these sensitive species are at risk of local extinction. Attempts should be made to minimise fire occurrence in these areas.</i></p>
<p><b>Vulnerable to Frequent Fire</b></p>	<p>These areas have already experienced one inter-fire interval less than the minimum interval recommended for this vegetation type and/or the current time-since-fire is less than the minimum recommended interval. All</p>

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Category Name	Guidelines for interpreting fire regime threshold status
Most recent fire interval shorter than recommended minimum interval	unburnt Rainforest / Mangrove / fire exclusion vegetation is in this category.
<b>Within Threshold</b>	The time-since-fire age of the vegetation is greater than the minimum recommended inter-fire interval and less than the maximum recommended inter-fire interval. If a fire occurs before the number of years specified as the minimum interval has been reached it will move into the 'Vulnerable to Frequent Fire' category. If three or more fires occur in close succession the area will move into the 'Too Frequently Burnt' category.
<b>Long Unburnt</b>  One or more fire intervals longer than longest suggested interval	The post-fire age of the vegetation is greater than the recommended maximum inter-fire interval for this vegetation type.  <i>If fire continues to be absent from the vegetation for a prolonged time, it is anticipated that plant species that require fire to stimulate flowering or seed production (and their seed banks) may begin to senescence. Long unburnt areas in some vegetation types are very rare and therefore significant. Long unburnt vegetation may also have other ecological values that make it important habitat for certain species in a given area. Careful consideration should be given before burning these areas, and wherever possible the decision should be based on a scientific assessment and/or recommendation prior to burning.</i>
<b>Unknown</b>	There has been no fire mapped for this area and the maximum recommended fire interval for the vegetation type is longer than the length of time for which fire records are available in the study area. It is not possible to determine if the vegetation is in the 'Within Threshold' or 'Long Unburnt' category.
<b>No Fire Regime</b>	Areas which do not have recommended fire intervals assigned to them, e.g., cleared land, rock etc.

### 2.1.7 NPWS Fire Planning Framework

- 1 The establishment of the new NPWS Fire Planning Framework moves the organisation away from single static hard copy documents for each reserve and instead adopts a landscape approach to fire planning that produces multiple map-based products. These will be live-linked to corporate databases and are designed to deliver multiple organisational objectives. The framework (and associated methodology) replaces the previous NPWS Reserve Fire Management Strategies, including Type 1, 2 and 3.
- 2 This change has been driven by the findings of the NSW Bushfire Inquiry (2020), the NPWS After Action Review of the 2019-20 fire season, the age and currency of existing RFMSs, the ecological effects of the 2019-20 fire season and a consensus across the organisation that RFMSs are no longer meeting NPWS needs.
- 3 A key aspect of the new NPWS Fire Planning Framework is the establishment of a formal five step process (see [Table 8](#)) focussed on logical fire planning landscapes. This is

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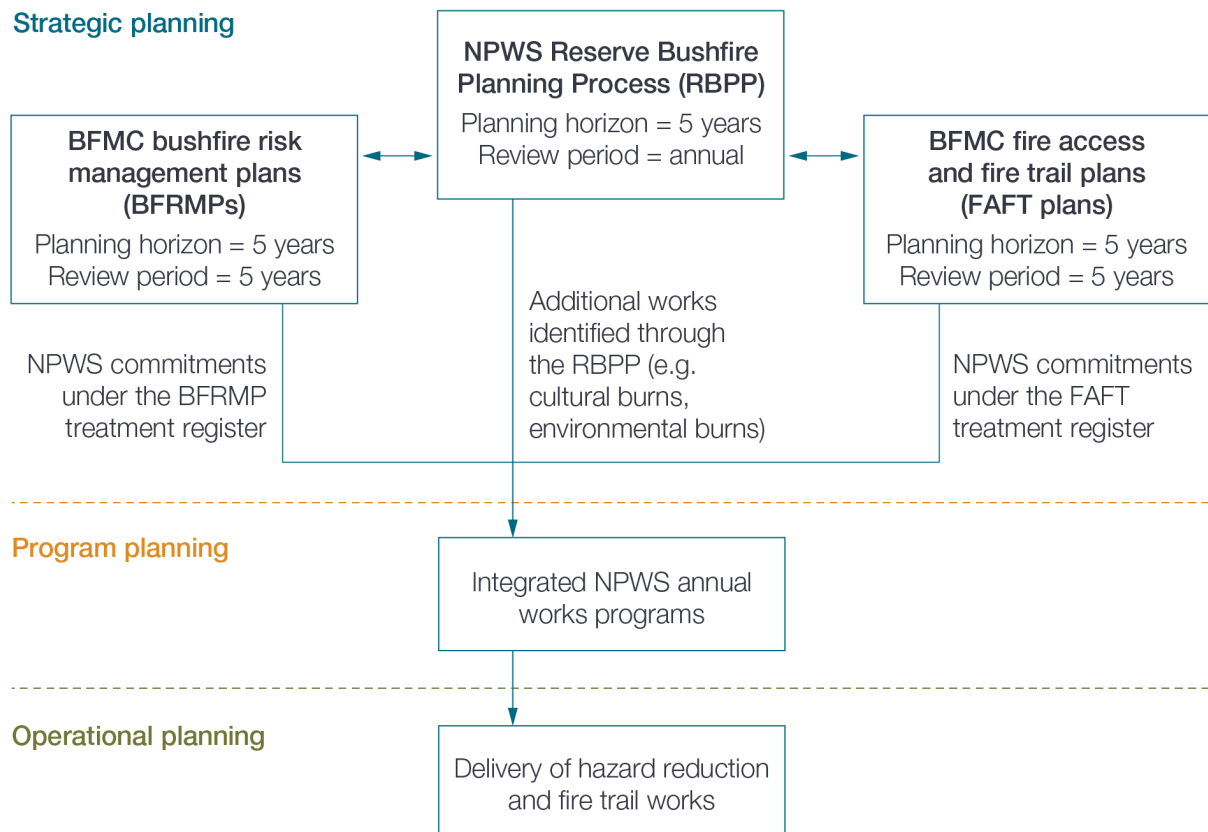
known as the Reserve Bushfire Planning Process (RBPP) and produces two primary products:

- a concise Statement of Fire Management Intent (SFMI) document containing Branch developed and approved landscape-specific fire management objectives and strategies/actions, and
- reviewed and updated corporate data layers that reflect the objectives and strategies identified in the SFMI.

These primary products will be displayed in an internal NPWS Fire Planning Portal (online spatial viewer) that links approved landscape-specific fire management objectives and strategies to a fire planning landscape map.

- 4 Each SFMI guides fire management activities, encompassing planning, preparation, response and recovery strategies, on NPWS managed lands. As such SFMIs are intended to support, inform and complement the development of relevant BFMC planning documents including Bush Fire Risk Management Plans and Fire Access and Fire Trail Plans. It is also intended to inform other NPWS planning, programs and policies including plans of management for NPWS managed land, BOPs, prescribed burning plans, incident action plans, Conservation Action Plans, AIS Fire Response Plans and annual works programs (refer to [Figure 3](#)).

## Strategic planning



**Figure 3: NPWS Fire Planning Framework (including BFMC integrations)**

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- 5 Approved NPWS SFMIs and associated spatial data for protected areas will also be considered as relevant plans for the purposes of Section 38 and 44 of the RF Act and will be communicated to relevant fire control officers during fire incidents.
- 6 The development of an internal NPWS Fire Planning Portal is scheduled to be delivered in the 2024/25 financial year. In the interim, staff can utilise ArcMap or the [NPWS Fire Planning Landscapes PowerBi Dashboard](#) to view key fire planning datasets.
- 7 DIO Spatial Services have the responsibility of setting data governance standards for spatial data across the DCCEEW cluster. All data held within the NPWS Fire Planning Portal will align with the [Spatial Data Publishing](#) requirements. Change requests to corporate data should be made directly with the data creator. Data creators can be viewed via the [Information Asset Register](#).
- 8 RFMSs will continue to be used to guide fire management across NPWS managed lands, where landscape-specific SFMIs are yet to be prepared. This will continue until such time as all NPWS managed lands have transitioned to the new NPWS Fire Planning Framework.
- 9 When a new bushfire prone reserve is acquired by NPWS, an approved reserve fire strategy must be developed within 9 months of gazettal. Completion of the NPWS RBPP (including the preparation of an SFMI and the review of relevant spatial datasets) for new reserves fulfils this commitment and should be scheduled as actions in BOPs.
- 10 SFMIs (and associated spatial datasets) will be checked annually to ensure accuracy of information (e.g., fire history, zoning etc). A major revision of each SFMI will be undertaken immediately prior to any review of relevant Bush Fire Risk Management Plans by BFMCs (generally every 5 years).
- 11 Major revisions of SFMIs will also be required:
  - after significant fire events,
  - in response to receipt of new information that changes the intent of fire planning across a specific landscape, and/or
  - in response to developments or other major changes which require amendments to fire management zoning.
- 12 Both new and revised SFMIs require Park Operations Branch Director approval before they can be formally adopted and shared with other relevant agencies. The annual review of SFMIs and associated spatial datasets will be recorded as an annual action in BOPs. A new 'version number' must be included on each version of an adopted SFMI document within CM10.
- 13 Approval of the SFMI will be recorded via CM10. Other agencies do not sign off on NPWS managed land SFMIs or associated spatial datasets and no other agency logos should be displayed on SFMIs.
- 14 In the case where SFMIs are prepared for NPWS managed lands under Aboriginal Joint Management Arrangements, the relevant Aboriginal Joint Management Board

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representative (i.e., Chairperson or their delegate) must provide written concurrence approving the content within the SFMI document. This evidence of approval must be uploaded into CM10 and attached to the file copy of the relevant SFMI document.

- 15 Spatial datasets associated with SFMIs will remain as live data that changes with each fire season. Relevant information, including zones, roads and operational management guidelines, should be kept up to date electronically within the specified GIS layers.

### Reserve Bushfire Planning Process Methodology

- 16 The NPWS Reserve Bushfire Planning Process consists of two parts. Part 1 involves background work undertaken in preparation for the delivery of workshops ([Table 7](#)), and Part 2 consists of a series of workshops that engage a working group in the planning process ([Table 8](#)). Further information and supporting documentation is available from the [Reserve Bushfire Planning Process ParkSite page](#).



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**Table 7: RBPP methodology Part 1 (Background preparation)**

Steps	Activity	Description
B1	Confirmation of landscapes and reserves.	The Team Leader Fire (or other members of the Branch fire team) liaise with Area staff to confirm the boundaries of the fire planning landscape and the reserves (or parts of the reserves) that are to be included in that landscape. An email request listing the reserves proposed to be included within the fire planning landscape (along with the proposed landscape name), should then be sent to the <a href="#">FIOB Planning Mailbox</a> .
B2	Background data interrogation and mapping.	<p>Landscape boundaries are mapped spatially (and will be incorporated into the 'Fire Planning Landscape' layer by the FIOB Planning Unit). A series of maps can then be produced that display relevant corporate datasets. This mapping typically includes (but is not limited to) the following:</p> <ul style="list-style-type: none"> <li>- locality map (showing the landscape boundary as well as reserve boundaries, surrounding locations and roads, and surrounding vegetation),</li> <li>- land tenure map (showing land tenures within and surrounding the fire planning landscape),</li> <li>- vegetation map (displaying broad vegetation types based on the SVTM layer),</li> <li>- threatened flora, threatened fauna and Assets of Intergenerational Significance maps (showing threatened species records within the landscape),</li> <li>- Aboriginal cultural sites and places (including point locations within the landscape),</li> <li>- historic heritage sites (including point locations for historic sites within the landscape),</li> <li>- fire map (showing the area burned during bushfires and prescribed burns over the previous 10 years),</li> <li>- fire frequency map (a heat map showing the number of times different areas of the landscape have burned during recorded history), and a</li> <li>- fire thresholds map (displaying the output of the fire thresholds analysis for plant communities within the landscape and indicating areas considered long unburned, within threshold, vulnerable to more fire and too frequently burned).</li> </ul>
B3	Background research and reading	<p>This step involves a systematic search for documents and research relevant to the fire planning landscape. This includes a review of:</p> <ul style="list-style-type: none"> <li>- previous <a href="#">Reserve Fire Management Strategies</a> (including Types 1, 2 and 3),</li> <li>- current and previous <a href="#">Plans of Management or Statements of Management Intent</a>,</li> <li>- published research manuscripts, and</li> </ul>

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Steps	Activity	Description
		<ul style="list-style-type: none"> <li>- general information relating to the individual reserves and fire through a general internet search.</li> </ul> <p>Key information from these documents should be summarised and placed in a background document (typically 20 to 40 pages in length). This information should then be further summarised into a set of key features of the landscape (typically 2 to 3 pages in length) in a format that is suitable for presentation to the RBPP working group for the given landscape.</p>
B4	Background metrics calculation	<p>Calculation of landscape metrics should be undertaken by the NPWS Bushfire Risk and Evaluation Unit (requests should be sent via the <a href="#">FIOB Planning Mailbox</a>). These metrics should be then summarised into key points for presentation to the landscape working group.</p>
B5	Development of Draft Objectives and Strategies.	<p>In this step, draft objectives and strategies should be developed from the information collected and synthesised in steps B2, B3 and B4. This is achieved by first identifying fire management themes (issues of high importance for the landscape) and then breaking these down into more specific objectives and strategies. Where appropriate, the wording of objectives and strategies that are common across all landscapes should be taken from the standardised list of objectives and strategies (available from the <a href="#">Reserve Bushfire Planning Process ParkSite page</a>). This ensures a level of consistency between landscape SFMIs across the state.</p> <p>At this stage, draft priority objectives and strategies are placed in a table format ready for presentation at the first online workshop (S2).</p>

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**Table 8: RBPP Methodology Part 2 (Fire Planning Workshops)**

Steps	Activity	Description
S1	<p><b>Online Introductory Session (1 hr)</b></p> <p>(for staff not exposed to the new process previously)</p>	<p>The aim of this session is to provide a thorough briefing to staff who have not previously been exposed to the new NPWS reserve bushfire planning process. It includes an overview of:</p> <ul style="list-style-type: none"> <li>- the previous RFMS approach,</li> <li>- the drivers for a change in fire planning,</li> <li>- the process undertaken to develop a new planning approach,</li> <li>- the various components of the new approach,</li> <li>- progress in the delivery of the new approach and future plans,</li> <li>- the individual steps of the RBPP,</li> <li>- examples of previous fire planning landscapes, and</li> <li>- examples of objectives and strategies developed in previous RBPPs.</li> </ul>
S2	<p><b>First Online Workshop (1 – 1.5hr)</b></p> <p>(to introduce the landscape, review the background information and present draft Objectives and Strategies)</p>	<p>The aim of this workshop is to lay the foundation for the successful delivery of the face-to-face decision making working (S3). Key components of the workshop include:</p> <ul style="list-style-type: none"> <li>- a short revision of the RBPP to establish the purpose of the workshop and identify the various steps in the planning process,</li> <li>- an introduction to the landscape and discussion of the landscape boundaries,</li> <li>- presentation of the key fire management-related features of the landscape (developed in B3),</li> <li>- presentation of draft priority objectives and strategies (developed under B5),</li> <li>- working group feedback and discussion, and</li> <li>- an outline of the face-to-face workshop and description of how working group members could prepare.</li> </ul>
S3	<p><b>Face to Face Decision-making Workshop (minimum 4 hrs)</b></p> <p>(to make decisions on objectives/strategies and to review corporate dataset)</p>	<p>This is the most important step in the RBPP. The aim of the face-to-face workshops is to produce a set of agreed-upon objectives and strategies for the fire planning landscape and to review the accuracy of the corporate spatial mapping datasets for that landscape. The format of this workshop includes:</p> <ul style="list-style-type: none"> <li>- an introduction that reviews the planning process up to date and clarifies the aim of the workshop,</li> <li>- discussion of each of the draft priority objectives and the draft strategies to achieve those objectives, and</li> <li>- a review of the corporate spatial mapping datasets to ensure these reflect the newly developed objectives and strategies.</li> </ul>

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Steps	Activity	Description
S4	<p><b>Second Online Workshop (1 hr)</b></p> <p>(to finalise Statement of Fire Management Intent and corporate dataset changes)</p>	<p>In this workshop a draft Statement of Fire Management Intent for the landscape is presented and discussed. This SFMI contains the output of the face-to-face workshop (S3), and the aim of this session is to reach group consensus on the content of the SFMI.</p> <p>The format of the workshop involves a short recap on the progress of the reserve bushfire planning process to date followed by a presentation on each section of the SFMI.</p>
S5	<p><b>Final version completed and sent to Branch Director for approval</b></p>	<p>In this step the feedback from S4 and any additional email correspondence from the working group is used to complete a final SFMI. This is then sent to the relevant Area Manager(s) for their review prior to escalating the document onto to the Branch Director for approval.</p>

### Consultation Process

- 17 RBPP workshops are designed to be facilitated and delivered by NPWS Branch staff with or without the support of FIOB. Non-NPWS staff may also participate in workshops where fire planning landscapes encompass lands under joint management arrangements (such as with Aboriginal Joint Management Boards or Water NSW) or where significant project partnership arrangements exist (for example with Australian Wildlife Conservancy or Wild Deserts).
- 18 Consultation with the RFS and the wider community on each SFMI will occur through local BFMCs for each landscape. However, NPWS may seek also input from other agencies, neighbours and key stakeholders outside of the BFMC meetings as part of the organisations commitment to establish good working relationships and foster a broader understanding of NPWS' fire management programs.

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## 2.2 Research

### 2.2.1 Background

- 1 Research guides management actions to minimise the risk of harmful impacts of bushfire, while maintaining healthy, biodiverse natural landscapes. To better understand the complex nature of fire and how it interrelates with climate change, biodiversity, fragmentation of natural landscapes, urbanisation, weeds and pest animals ongoing research is required. Establishing a comprehensive knowledge base and keeping up to date with the latest research and current practices ensures that NPWS continually improves the effectiveness of its fire management operations.
- 2 Research is also required to align NPWS fire management with a risk management framework, as recommended by the COAG National Bushfire Inquiry (2004). To meet its statutory obligations of protecting life and property and conserving biodiversity and cultural heritage, NPWS requires access to a wide range of knowledge across an array of fields.

### 2.2.2 Research policies

- 1 Integrated and practical fire research is delivered to NPWS by the Science and Insights Division and external research partners, in line with the [Scientific Rigour Position Statement](#) and Knowledge Strategy. The scientific evidence produced across the research industry supports and complements management actions and ongoing monitoring led by NPWS.
- 2 Knowledge brokering helps generate and share information through networks, across functions and up to policy writers and decision makers. Guidance on how knowledge mobilisation and knowledge brokers facilitate strategic goal development is available in the documents 'Fire and Incident Operations Branch – Operational Improvement Team Strategy 2024–28', '[Knowledge mobilisation in the Science and Insights Division](#)' and '[Science and Insights Knowledge Statement](#)'.
- 3 The FIOB Operational Improvement Team leads the work to identify and advocate for NPWS fire research priorities to deliver safer and more effective fire and incident management outcomes throughout our organisation. The Operational Improvement Team is also responsible for facilitating and coordinating NPWS' connection with industry stakeholders and research partners. This function supports the co-design and co-delivery of outcomes and enable the implementation of decision-ready science, ensuring our fire management operations are industry leading.
- 4 NPWS will continue to contribute to internal, external and joint research projects, which includes the NSW Bushfire and Natural Hazard Research Centre and the Natural Hazards Research Australia.

### Mapping fire

- 5 NPWS will map the extent, patchiness and intensity, where possible, of all bushfires and prescribed burns to enable data collection on fire frequency, intensity, ROS and area burnt. This data will be incorporated into fire management databases. Remote-sensing

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technology will be used increasingly for this purpose. NPWS commits to undertaking research for this purpose.

### Research fields and personnel

- 6 General fields of research for effective fire management include fuel dynamics, fire behaviour, fire weather, remote sensing of fire patterns, species dynamics in relation to fire regimes, and the effects of fire regimes on ecosystem processes.
- 7 NPWS recognises that a mixture of internal and external research will assist fire management. In many cases, collaborative research between NPWS and external institutions will support this purpose.

### Collation of research data

- 8 The collation of research data will be coordinated by relevant research staff (e.g., Biodiversity Conservation Science Division) and Fire and Incident Operations Branch and made available to Branches and other units to assist in the preparation of RFMS and other fire assessment works.
- 9 NPWS will store, use and disseminate the findings of its bushfire research. In particular it will disseminate results of research to the scientific community and other firefighting authorities.

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## 2.3 Community engagement

### 2.3.1 Background

- 1 NPWS seeks to work with the community to foster an understanding and appreciation of fire and its role in the Australian natural landscape. This includes working with the community to minimise any negative impacts of bushfire on community assets which include life, property, natural and cultural assets.
  - NPWS works closely with community stakeholders and other firefighting authorities through forums such as BFMCs to develop and implement fire prevention and suppression plans.
  - Community information and the use of media services can assist fire management activities, lead to better appreciation of the organisation's fire management expertise and promote community support for fire management activities.

### 2.3.2 Community engagement policies

- 1 NPWS will work with the community to improve our understanding of fire behaviour and fire management practices in natural landscapes.

NPWS will support and participate in fire preparation and awareness programs within the community, providing information on the role of fire in the Australian natural landscape and NPWS's role in fire management.

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- 2 NPWS will promote the following principles:
  - Fire is part of the natural landscape.
  - Cooperative effort is the key to effective fire management.
  - Fire management practices in natural landscapes will be consistent with the principles of ecological sustainability.
  - Fire management practices will reflect government legislation and policy.
  - Information provided to the public will be timely, accurate and appropriate.
- 3 NPWS will actively engage the community in the development of SFMI's (see [section 2.1.7 NPWS Fire Planning Framework](#))
- 4 NPWS will promote its cooperative work with other firefighting authorities and land managers, neighbours, the BFCC and BFMCs to foster community understanding and appreciation of fire and fire management.
- 5 NPWS will work with firefighting authorities, the police and park neighbours to investigate suspicious fire ignitions and ensure compliance with fire management objectives.
- 6 NPWS will work with local authorities and park neighbours to rationalise access to reserves and minimise unauthorised access.
- 7 Opportunities to increase public awareness of NPWSs role and objectives in fire management will be actively pursued including participating in community programs such as FireWise, attending field days, organising community meetings and promoting fire management practices through RFMS.

NPWS staff will conduct informal meetings or field days with neighbours, local communities and appropriate NSW RFS brigades to develop better understanding of fire-related issues.

NPWS will help promote the BFMC risk management plan to neighbours and encourage their input to planning.

Branch will keep neighbours informed on the progress of fire prevention works, seasonal fire conditions and changes to access or infrastructure on parks.
- 8 Current information will be provided to park visitors on the park conditions, the safe use of fire and contacts for the reporting of fire.

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## 2.4 Visitor safety

### 2.4.1 Background

- 1 The safety of visitors is a major consideration during the bushfire danger period and during fire management operations.
  - Visitor safety can be encouraged through educational programs on the safe use of fire and by providing facilities that will prevent the ignition of bushfires.
  - Steps will be taken to advise visitors of fire suppression and prescribed burning operations within NPWS managed land.
  - To achieve visitor safety, it is essential that no-one other than a firefighter or authorised support person is located on the fireground.
  - An authorised person is to include members of Aboriginal community who are participating in an endorsed cultural burn that meets all the requirements of [Guidelines to Community \(Low Risk\) Cultural Burning on NPWS managed land](#).
  - All necessary actions will be taken to ensure visitor safety in reserves that have the potential to be impacted by fire.

### 2.4.2 Fire prevention

- 1 The design and management of recreation areas and the conditions under which visitors use fire will be assessed in order to minimise the risk of bushfire ignition and escape.
- 2 Educational programs will be undertaken to inform visitors of the conditions for the safe use of fire.
- 3 In some circumstances, strategic prescribed burning or other fuel management may be conducted to ensure visitor safety (e.g., adjacent to picnic areas or access roads).

### 2.4.3 Communication

- 1 Park fire bans, park closures or cancellation of park activities will be implemented whenever conditions warrant that action, in accordance with section [3.4 Fire bans, alerts and closures](#).
- 2 The public will be advised of fire operations through use of one or more of the following:
  - advertisements in local media
  - notices at park entrances or other strategic locations
  - radio and television announcements
  - letterbox drops
  - neighbour databases
  - “alerts” on NPWS website, and



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- telephone message services.

### 2.4.4 Evacuation

- 1 Visitors will not be permitted into areas where fire suppression or prescribed burning operations are being undertaken. The presence of visitors in or adjacent to the fireground will be immediately reported to the Incident Controller, who will then arrange for an evacuation if necessary, in accordance with the [NSW Evacuation Management Guidelines](#) and this section.
- 2 Visitor trip intention forms should be used to check for visitors in the area. Note that not all visitors will lodge a trip intention form.

### Emergency Management Plans

- 3 EMPs that include procedures for the protection and evacuation of visitors will be prepared for reserves with fire prone visitor nodes in accordance with the [NPWS Emergency Management Procedure](#) and the [Emergency Guide](#). The procedures should be developed in conjunction with Police and other emergency authorities. These procedures should be included in BIPs, BFMC Plan of Operations and other local EMPs.
- 4 Branches should prioritise the development of EMPs. All precincts within parks that are identified as having a 'high' to 'extreme' risk have an immediate need to implement these plans, thereafter EMPs will be developed for 'medium' then 'low' risk precincts. The file path or other unique identifier for the EMP should be recorded with the hazard in CAMMS as a treatment plan referenced in the RFMS.

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## 2.5 Environmental impact assessment

### 2.5.1 Background

- 1 Firefighting works and bushfire hazard reduction activities have the potential to affect the environment, with both positive and negative consequences. NPWS has obligations under both state and national legislation to consider the scale and significance of those impacts.
- 2 Bushfire hazard reduction works implemented by NPWS are to be planned, assessed, programmed and delivered in accordance with the appropriate legislative requirements. In order to meet the legislative requirements at a state level, NPWS will apply one of the following pathways:
  - The Hazard Reduction Certificate (HRC) process where the [Bush Fire Environmental Assessment Code](#) (NSW RFS 2021) (the 'Code') applies.
  - Where the Code does not apply
    - works that are exempt development under a relevant environmental planning instrument (typically the [Transport and Infrastructure SEPP](#)) will be assessed in line with the [NPWS Exempt Development Procedures](#).

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- bushfire hazard reduction work that is an activity under [Division 5.1 of the EP&A Act](#) and prescribed ecological or cultural burns will be assessed via a REF in accordance with Part 8 of the EP&A Regulation.
- 3 Where NPWS is the proponent, the [Guidelines for Preparing a Review of Environmental Factors](#) should be followed and consideration given (where appropriate) to preparing a REF to cover an entire reserve, Branch or vegetation community where possible.
  - 4 If an alternative assessment pathway is required for Aboriginal cultural heritage, further information can be obtained from the [Aboriginal Partnerships, Planning and Heritage Branch](#) or the [Planning and Assessment Unit](#).

### 2.5.2 Application of a Hazard Reduction Certificate under the Code

- 1 The RF Act provides for a streamlined assessment and approval process for carrying out HR work as long as it is in accordance with the Code and the relevant BFMC's [BFRMP](#).
- 2 NPWS as a certifying authority under [s.100E\(2\)](#) of the RF Act will consider the environmental values of the land subject to the HR works and incorporate avoidance and mitigating measures to reduce the risk of adverse impacts, when issuing a HRC subject to [s.100G](#).
- 3 NPWS Branch Directors and Managers (Area or Branch Programs Managers) are delegated to certify the HRC (refer to the [Instrument of Delegation and Authorisation of Functions](#)).

### 2.5.3 Situations where the Code does not apply

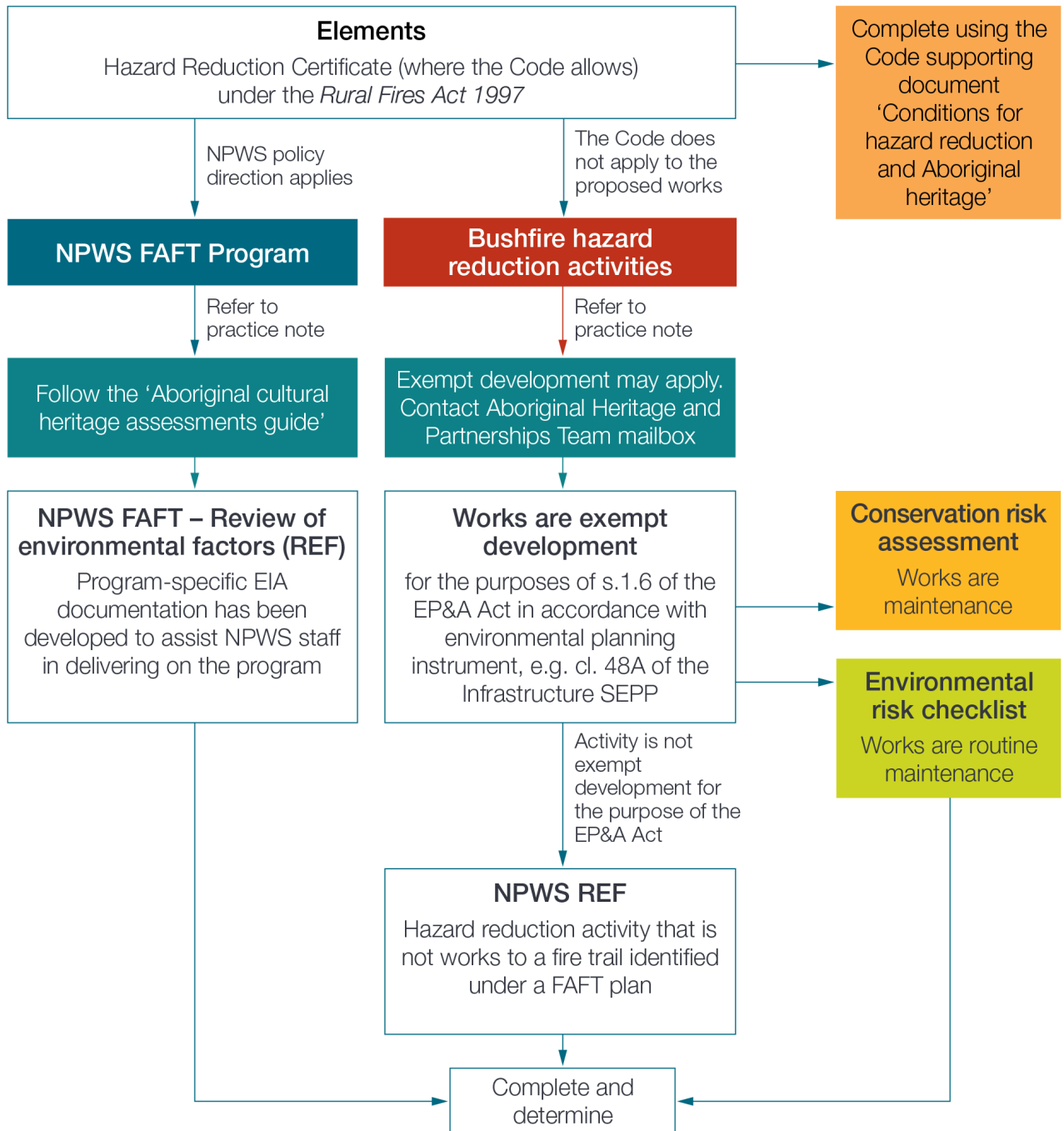
- 1 The Code does not apply to excluded land as identified in section 100A of the RF Act. These lands include critical habitat declared under the former TSC Act (now Areas of Outstanding Biodiversity Value (AOBV) under the BC Act), land mapped as coastal wetlands and littoral rainforests (or land in the proximity area of littoral rainforest) under the [Resilience and Hazards SEPP 2021](#).
- 2 The Code is restricted on certain environmentally sensitive lands, as specified under Section 2.4 of the [Code](#).
- 3 Where the Code does not apply, the planning pathways of the EP&A Act apply (see [2.5.1 Background](#), Policy 2).
- 4 Bushfire hazard reduction works in the following circumstances may trigger a higher level of environmental assessment:
  - lands mapped as a coastal wetland, if reserved under the NPW Act and not consistent with an adopted PoM or on land acquired under Part 11 of the NPW Act, as works may trigger an EIS unless those works fall within the definition of 'environmental protection works'.
  - lands declared as an AOBV, as any works in an AOBV are automatically deemed 'likely to significantly affect threatened species' and will therefore require either a

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Species Impact Statement (SIS) or a Biodiversity Development Assessment Report (BDAR) prepared in accordance with the BC Act. A REF along with a SIS or BDAR must be prepared for AOBV.

- items, places or property of heritage significance under the *NSW Heritage Act 1977* or *Environment Protection and Biodiversity Conservation Act 1999*, which may require preparation of a Statement of Heritage Impact
  - where NPWS policy direction applies and program-specific EIA documentation has been developed (such as NPWS FAFT Program)
- 5 [Figure 4](#) can be used to support the preparation of all environmental and Aboriginal cultural heritage assessments for proposed bush fire hazard reduction works on park that fall outside the Code. Refer to section [1.1.5 Cultural Fire Management](#) for further guidance.

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**Figure 4: Impact Assessment Process for Hazard Reduction and Aboriginal Cultural Heritage**

## 2.5.4 Application of existing approvals and management of AIS

- 1 The Minister for Environment and Heritage can declare any area of exceptional value – natural or cultural – that warrants special protection as an Asset of Intergenerational Significance (AIS). Part 12A (ss153F-ss153I) of the NP&W Act sets out the provisions for the declaration and management lands declared as AIS.

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- 2 Works proposed either within or with the potential to impact upon declared AIS should be assessed against the [NPWS Staff Decision-making Tool](#) to determine the most appropriate environmental assessment pathway. Where an activity (i.e., works) cannot be Code assessed, a REF must be prepared to ensure a robust assessment is undertaken for the activity. The [AIS interactive map](#) will provide the Site ID and AIS information for each site.
- 3 Where an existing approval (e.g., CRA, HRC or REF) is in place for HR works prior to the declaration of an AIS (i.e., that now contains or overlaps with a mapped AIS), the approval and conditions must be reviewed prior to progressing the works to ensure that the land and value subject to the AIS declaration has been adequately addressed.
- 4 Where a CAP has been prepared and adopted for the AIS, the fire management actions specified within the CAP are to be incorporated into the environmental assessment conditions. NPWS staff need to confirm that the activity will not adversely impact on the AIS, prior to proceeding. Further information can be obtained from the [NPWS Threatened Species Unit](#).

### 2.5.5 Multi-agency or multi-tenure hazard reduction activities

- 1 Where HR works are being carried out as part of a multi-agency fire management operation the following provisions apply:

#### On-park hazard reduction work led by another firefighting authority

- 2 All authorities engaged in firefighting acts, bushfire suppression or HR works on NPWS managed lands are to comply with (see also section [2.8.4 Prescribed burns involving other agencies](#)):
  - the RF Act's relevant sections pertaining to firefighting acts, bushfire coordination and interagency communication
  - BFMC BFRMPs and supporting Plan of Operations
  - the park's adopted PoM under the NPW Act and provisions in the relevant SFMI (or existing RFMS where a SFMI is not yet developed)
  - approved burn plans and their supporting environmental assessment, if applicable to the firefighting acts or suppression
  - NPWS fire management policies and directions from senior NPWS officers.

Where HR works are proposed by another agency or authority on NPWS managed lands, an appropriate assessment must be prepared to the satisfaction of NPWS and authorised under the NPW Act. In the case of the HR works:

- subject to a HRC and the Code, NPWS will provide written consent for the proposed works (with or without conditions); in this case, the other authority, not NPWS, will be the certifying authority for the HRC. NPWS templates for consent of HR works assessed by another authority through a HRC (called 'other fire authority' templates) can be generated in Elements.
- Deemed exempt development for the purposes of the EP&A Act, a Conservation Risk Assessment (CRA) or environmental checklist will be prepared in accordance with

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[NPWS Exempt Development Procedures](#) and the works authorised under the NPW Regulation by the relevant NPWS Area Manager.

- which are an activity for the purposes of the EP&A Act, where the preparation of a [Review of Environmental Factors](#) is required, it must be supported by all relevant documents including a burn plan covering IMT and resourcing requirements and be submitted to NPWS for determination by the relevant NPWS Operational Branch Director. Following determination of the REF, NPWS will issue the appropriate authorisation under the NPW Act or NPW Regulation.

### Bushfire hazard reduction burns that include off-park lands

- 3 Where HR works are proposed by NPWS (as the issuing / certifying authority) on lands that are off-park, the environmental assessment must be undertaken by NPWS across the whole burn. This process must be supported by a written agreement for the purposes of s.146 of the NPW Act with the landowner or land manager, entered into by the relevant NPWS Area Manager. The template for such an agreement can be generated in Elements.

To be the certifying authority for the whole burn, NPWS must obtain agreement from the other relevant issuing and certifying authorities who administer the land where the burn is situated. The agreement can be in the form of an email or letter confirming approval for NPWS to be the certifying authority for the whole of the land. Elements provides a place to save these agreements.

This may be the:

- agency or authority responsible for the public land (e.g., Forestry Corporation of NSW, Local Government, Transport for NSW etc.).
- landowner for private land, where the issuing authority is the NSW RFS.

Once in place, NPWS can finalise the HRC or REF for the HR works that cover multiple tenures using Elements.

### 2.5.6 Application of Commonwealth Legislation

- 1 Under the EPBC Act an assessment framework is provided for Matters of National Environmental Significance (Protected Matters).
- 2 As NPWS-managed land includes World and National Heritage listed properties, Ramsar Wetlands, important habitat for threatened species and ecological communities and sites important to migratory species, assessment of these values forms a fundamental component of environmental assessment on park.
- 3 Further formation regarding application of the EPBC Act can be found at [Bushfire management and national environment law](#).

#### Supporting information and resources –

[NPWS environmental impact assessment and planning support](#)

[NPWS Exempt Development on NPWS- managed lands](#)

[NPWS Review of Environmental Factors](#)

[NPWS Fire Access and Fire trail EIA Support](#)

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[NPWS Post Fire Recovery Support](#)

[NPWS Environmental Planning Advice Mailbox](#)

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## 2.6 Asset protection

### 2.6.1 Background

- 1 Bushfire is a natural component of the Australian environment and cannot be excluded from occurring. An inherent risk from bushfire exists for assets situated in or in proximity to bushland and regardless of the risk treatments implemented there will always be residual risk.
- 2 The protection of life and property, including assets, is a both a legislative requirement and NPWS's primary fire management objective. NPWS asset protection obligations extend to all assets and activities on-park as well as off-park.
- 3 NPWS has a responsibility for assets owned by NPWS, or assets on land owned by NPWS and leased to a third party. NPWS also has a role in managing the risk to assets off-park if they are threatened by fire emanating from a park.
- 4 No matter what happens on adjoining land, NPWS has a responsibility to manage the risk of fire spreading from its property. Section 63(2) of the RF Act imposes a duty on NPWS to take any notified steps (as notified in a bushfire risk management plan or by the BFCC) and any other practicable steps to prevent the occurrence of bushfires on NPWS land, and to minimise the danger of the spread of bushfire on or from NPWS land. Thus, NPWS has a responsibility to manage the risk of fire spreading from its property regardless of the actions taken by adjoining landowners. However, what happens on adjoining land affects the level of risk to an asset and therefore how NPWS manages this risk (i.e., the types of treatments etc.).

### 2.6.2 Asset protection policies

- 1 The protection of human life is the highest priority when managing the risk to assets.
- 2 NPWS will manage the risk to assets from fires within and emanating from parks.
- 3 A risk management approach based on the Australian Standard for Risk Management (AS/NZS ISO 31000:2018) will be used to manage the risk of damage to assets from fire.
- 4 A cooperative approach will be applied to managing risks to assets (e.g., with BFMCS and park neighbours). This means that responsibility for the protection of assets against fire is shared among those responsible for managing the fire and those responsible for managing the asset.

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## 2.6.3 Bush-urban interface

- 1 The bush-urban interface is an important consideration in fire management activities because communities and property often adjoin areas of high bushfire potential.
  - Bush-urban interface fire management is complex and should include a suite of measures such as prevention works, specialised suppression strategies, evacuation procedures, public education, land-use planning and specialised training.
  - It is important that bush-urban interface fire management is conducted cooperatively and that all agencies with fire management responsibilities are involved in the decision-making process.
  - When a complaint has been identified on NPWS-managed land via the NSW RFS bushfire hazard complaints process, a representative from NPWS is to be invited to a joint inspection in the first instance. However, this does not mean that the inspection is to be delayed pending NPWS availability (see [RFS Reporting a bush fire hazard](#)).
  - The management of APZs is important for the protection of life and property on both NPWS managed land and adjoining land.
  - The RF Act and the EP&A Act require developments to consider bushfire hazard and enhance bushfire protection through the development assessment process.
  - An important issue which emerged from the 2002–03 fire season was the potential for telecommunications and power distribution infrastructure to be damaged by fire, and this has been observed in several subsequent fire seasons, including 2019-20.

## 2.6.4 Protecting assets

- 1 BFMC [BFRMP](#) and NPWS Reserve Bushfire Planning (including SFMIs and associated spatial datasets) identify where APZs are required to minimise the risk of bushfire damage to life and property. Staff should continue to refer to existing RFMSs where an SFMI has not yet been prepared for a specific area of NPWS managed land.

NPWS will maintain APZs where identified in these management planning documents. Fuel management will be undertaken by various methods, including prescribed burning and mechanical clearing, to achieve the outcomes stated in the plans.
- 2 NPWS identifies and manages APZs to protect assets vulnerable to damage by fire within NPWS managed land.
  - NPWS recognises the primary purpose of APZs is to protect life and built assets. Where areas are zoned as such, this is given due regard in the decision-making process. Lesser consideration is given to meeting biodiversity conservation and other NPWS objectives in APZs.
  - Where possible NPWS facilities should be protected from bushfires by maintaining APZs.
  - Construction of APZ's at historic heritage sites should take into account their heritage values and specific heritage management policies, where the APZ may affect cultural values.
  - The management of APZs is based on risk management principles.



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- Branches should prepare an annual schedule of inspections and works to ensure fire protection equipment (where necessary) and APZs are maintained in and around all facilities, in particular buildings.

### Assets on private property

- 3 Construction and maintenance of APZs around assets on private property should be located on that private property, rather than relying on protective measures implemented on neighbouring lands. APZs on adjoining land are not encouraged and neither the NSW RFS nor a council has the power to impose an APZ on an adjoining landowner (such as NPWS) to support new development (refer to s3.2.5 'APZs on adjoining land' of [Planning for Bush Fire Protection 2019](#)).

However, where existing assets occur on properties that adjoin NPWS managed land, a cooperative approach will be taken to ensure the establishment and maintenance of APZs (with due regard to the point above and below) in combination with other measures.

### RFS publication: Planning for Bush Fire Protection

- 4 [Planning for Bush Fire Protection](#) (NSW RFS 2019) is often referred to with regard to asset protection measures for both existing and proposed development. It is important to note that:
  - Planning for Bushfire Protection only applies to **new development** (i.e., development that has been approved after 1 August 2002) – not existing development.
  - Planning for Bush Fire Protection **does not** apply to development on-park (with the exception of Alpine Resorts located within Kosciuszko National Park), and although NPWS may consider the fire protection standards in this publication, neither RFS nor a consent authority has the power to impose an APZ on NPWS-managed land.
  - For off-park development proposals adjoining a park, the onus is on the proponent to ensure that bushfire protection measures are contained within the development footprint.

### APZs adjoining existing and infill developments

- 5 It can be costly to maintain APZs in a fuel-reduced condition. Prescribed burning on a regular basis requires considerable planning and may be expensive to implement. Cleared breaks in many instances require regular treatment to ensure they remain effective. It is important to consider both the initial establishment costs and the long-term maintenance costs involved in managing APZs.
- 6 It is also important to consider whether establishing an APZ is the most appropriate response. There may be better ways to protect the asset at threat other than through maintaining an APZ.
- 7 In some cases, particularly close to urban areas, APZs on NPWS land may actually be kept fuel-reduced by neighbouring landholders or volunteers. Often this will be achieved by establishing and maintaining a mown grass area.
  - Whenever neighbours or volunteers are involved in works on NPWS managed land they must sign a standard [NPWS Standard Consent Letter](#) which defines the works they are permitted to undertake.

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- Experience has shown that once a cleared break has been established on land adjoining urban areas, neighbours often assume responsibility for the maintenance of the break on NPWS-managed land. In some cases, the width of the break can start to increase over time as people clear further and further into bushland. In other instances, the established break may then be used by neighbours for several other purposes (e.g., gardening, recreation, facilitation of views, etc.) which may or may not be compatible with the intent of the APZ, nor with other reserve management objectives.
- 8 Decisions on where and how APZs should be established or maintained should be based on a site-specific risk assessment and consider the provisions of the Draft [NSW RFS Bush Fire Protection for Existing Development \(BPED\) Guidelines](#) and [BPED Tool](#). This should include an assessment of the potential for fire to spread from the reserve and impact adjoining assets, measured against the potential consequences of fire impacting on adjoining assets. Factors such as asset vulnerability, vegetation type, slope, aspect and bushfire history should be used in making this assessment. Other factors such as cost, loss of visual amenity, potential erosion, loss of natural and cultural heritage values and the indirect implications for the long-term management of the reserve should also be considered.

### Maintenance of APZs

- 9 In many circumstances, particularly in bush-urban interface areas, it may be more effective to establish and maintain cleared APZs than to continually invest in HR by prescribed burning.
- 10 The maintenance of cleared APZs will usually be NPWSs responsibility, but such maintenance may be conducted by park neighbours or volunteers working under a standard [NPWS Standard Consent Letter](#).

### Protection of fences

- 11 The decision as to whether or not to undertake protective measures adjoining a fence line will depend on a number of factors, including:
- the risk of damage to the fence
  - the heritage values of the fence
  - the cost of maintaining the APZ versus potential cost of replacing the fence, and
  - commitment of the adjoining neighbour to maintaining the APZ on their side of the fence line.
- 12 As a general guide, where a decision is made to provide protection along a fence line, a setback of 6 m is considered to be an appropriate distance.

### Protection of NPWS facilities

- 13 NPWS managed land may contain park management infrastructure, such as visitor areas, walking tracks and buildings. These facilities require protection from both bushfires and structural fires.

## 2.0 Prevention and planning

- Fire safety protection for buildings is defined by the [National Construction Code \(NCC\)](#) and [AS3959:2018 Construction of Buildings in Bushfire Prone Areas](#). Fire safety protection for high-capacity visitor facilities is also defined within the NCC.
- The risk of bushfires to existing infrastructure can be reduced by regular facility maintenance and establishment of APZs. In some cases, these APZs can be incorporated into the existing facility landscape e.g., grassed or cleared areas around barbeques and picnic tables.
- The risk of bushfire impacts on new facilities can be further reduced by situating them away from bushfire hazards and using design, construction and materials that reduce the possibility of ignition by fires.
- Where possible, APZs will be established to protect facilities in bushfire-prone areas.
- Fire safety protection for the redevelopment or construction of buildings, including new high-capacity visitor facilities, will conform to the [NCC](#).

### Protection of other assets within NPWS managed land

- 14 There is limited guidance for the protection of assets such as telecommunication and power distribution infrastructure. The [RFS Practice Note 1/11 – Telecommunications Towers in Bushfire Prone Areas](#) provides guidance for telco facilities. The [Guide for the Management of Vegetation in the Vicinity of Electricity Assets](#) provides guidance for bushfire preparedness of electricity transmission and network assets. The document [Burning Adjacent to Powerline Guidelines](#) has recently been prepared by the NSW RFS to support HR burning assessed under the Bush Fire Environmental Assessment Code. NPWS policy for controlling risks to assets from fire should be applied when determining the level of protection required.

NPWS works with NSW RFS to address the issue of defining setbacks and other measures for the protection of telecommunication and power distribution infrastructure throughout NSW.

### Protection of new development on NPWS managed land

- 15 Development on NPWS managed land is not subject to approval by council or by NSW RFS.
- 16 The principles and guidelines related to [Planning for Bush Fire Protection](#) (NSW RFS) and the NCC, including AS3959-2018, will be followed in the protection of new buildings and other facilities from bushfire.
- FRNSW or NSW RFS, where available, will be consulted on the requirements of building fire safety protection during the development or redevelopment of buildings.
  - Fire safety protection equipment will be installed in accordance with a conservation plan or guidelines for that structure and the requirements of FRNSW.
  - The provision of fire safety protection will take into account the conservation of historic buildings and fabric. In some cases the provision of fire safety protection may require Part 5 approval under the [EP&A Act](#) and may also need approval from the [Heritage Council of NSW](#).

# 2.0 Prevention and planning

## Land-use planning

- 17 [Planning Circular PS 21-010 Development on bushfire prone land](#) outlines the planning considerations that apply to development on bush fire prone land, including application to planning proposals, development applications and complying development. This planning circular identifies that Section 9.1 Ministerial Direction 4.3 Planning for Bush Fire Protection requires that planning proposals that will affect, or are in proximity to, bush fire prone land are to have regard to Planning for Bushfire Protection 2019 and consent authorities are to consult with the NSW RFS on these planning proposals.
- 18 NPWS supports bushfire protection planning being addressed in development control plans, local environment plans and development approvals for fire-prone land adjacent to NPWS managed land.
  - Planning for Bushfire Protection identifies that for new developments, bushfire protection measures should be contained within that property.
  - The management of any interface between a designated asset and any NPWS-managed land must be a shared responsibility between NPWS and the landholder or the owner of the asset. Responsibility for the protection of the asset should not fall solely on NPWS managed land.
  - In most cases the only way to achieve effective protection of assets is to come to a negotiated position with neighbouring landholders in which each party accepts responsibility for fire protection. Each party must take appropriate measures on their land to ensure the risk of damage by bushfire is minimised.

## Community preparedness (education and evacuation)

- 19 Neighbours are encouraged to protect their properties from fire through the establishment of fuel-reduced zones and other measures on their own property.
- 20 Bushfire preparedness and home-survival strategies are actively promoted to NPWS neighbours. Where possible, education programs are devised and implemented in conjunction with other firefighting authorities.
- 21 [BFCC Policy 1/2012 'Community Safety and Coordinated Evacuations'](#) governs the actions of all firefighting authorities in NSW.

NPWS assists in developing evacuation plans for communities adjoining NPWS managed land in conjunction with other firefighting authorities and LEMCs.

For visitor evacuation on NPWS managed land see [2.4.4 Evacuation](#).

## Neighbourhood Safer Places

- 22 A Neighbourhood Safer Place (NSP) is a building or a space within the community that has been designated as such by the Commissioner of the NSW Rural Fire Service. It provides for improved protection of human life during the onset and passage of a bush fire. It is a location where people facing an immediate threat to their personal safety or property can gather and seek shelter from the impact of a bush fire. Their function is to provide a place of last resort for a person to seek shelter at during the passage of the bush fire front.

## 2.0 Prevention and planning

- 23 The intended occupation time of an NSP is from a couple of minutes to a couple of hours as the fire front passes. NSPs are not to be confused with Fire Refuges, Recovery Centres, Assembly Areas, Evacuation Centres or Informal Places of Shelter.
- 24 Before a site may be designated as an NSP, a formal assessment is to be undertaken. This assessment is to be completed in line with the [NSP Guidelines for the Identification and Inspection of Neighbourhood Safer Places in NSW](#).
- 25 Where NPWS managed lands are identified to form part of an NSP, advice should be sought from FIOB via the [FIOB Planning Mailbox](#).

### Environmental impact assessment

- 26 The primary role of APZs and NSPs is the protection of life and property. However, the potential environmental impacts of any treatments applied within APZs require consideration (see section [2.5 Environmental impact assessment](#)).

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## 2.7 Fuel management

### 2.7.1 Background

- 1 Fuel management is the practice of maintaining fuels at acceptable levels in areas where assets are at risk from bushfires, or in order to assist in the suppression of fires.
  - The principles for identifying bushfire risk are detailed in [Annexure B to BFCC Policy 1/2023 'Bush Fire Risk Management'](#). Factors that contribute to bushfire risk include climate and bushfire season, ignition potential and location, bushfire history, vegetation type, arrangement and quantity (available fuel), terrain and prevailing weather conditions. Fuel management aims to modify, including reducing the OFH and reducing the bushfire risk. Fuel management and ignition prevention are areas of bushfire risk where agency management practices can be implemented to reduce risk.
  - Bushfire risk and fuel management strategies are outlined in NPWS SFMI and associated spatial datasets (or RFMSs where landscape-specific SFMIs are yet to be developed) and should be consistent with BFMC BFRMPs. These documents specify the fuel standards that apply to different fire management zones within the landscape.
  - Fuel standards specified in SFMIs and associated spatial datasets are based on a risk assessment process and consideration of cultural and environmental values.
  - Fuel management includes a range of activities which modify fuel characteristics, which in turn reduce the behaviour (ROS, flame height, intensity and spotting distance) of subsequent fires. This enables bushfires to be suppressed under a wider range of weather conditions than would otherwise be possible.

# 2.0 Prevention and planning

## 2.7.2 Fuel management policies

- 1 NPWS supports the use of fuel management programs and will plan and undertake fuel management programs to protect life, property, and assets from identified bushfire hazards.

Fuel management programs will be developed and undertaken in accordance with NPWS reserve plans of management, reserve bushfire planning documents (including both SFMIs and RFMSs), and guidelines included in BFMC BFRMPs.

- 2 The fire management zoning system implemented by NPWS will be compatible with the system adopted by the BFCC for use in BFMC BFRMPs ([Annexure B](#) of the [BFCC Policy 1/2023 'Bush Fire Risk Management'](#)).
- 3 Assessments of the level of risk posed by different fuel types will be done in accordance with the [Overall Fuel Hazard Assessment Guide](#)<sup>1</sup>. This method is consistent with that used by all other firefighting authorities in NSW.
- 4 The rationale for using the 3<sup>rd</sup> Edition OFH Assessment is discussed in the document titled [A Rational for the NPWS Fuel Assessment Process – August 2012](#).

## 2.7.3 Fuel hazard assessment

- 1 Fuel hazards or OFH influence bushfire ROS, intensity and suppression difficulty and provide an indication of resources required for bushfires or prescribed burns. OFH measurements guide hazard reduction in SFAZ and APZ.
- 2 NPWS will adopt a consistent approach to the assessment of bushfire fuels to provide information to:
  - identify the distribution of fuel hazard across the landscape to determine potential risks to firefighters and assets
  - identify where triggers for prescribed burning or fuel reduction have been met
  - determine prescriptions for and the potential success of prescribed burning
  - develop fuel accumulation models
  - to provide validation data for CSIRO and input into the national fire behaviour model for dry eucalypt forests.
- 3 Fuel hazard needs to be systematically assessed where it is a trigger for fuel treatment, across APZ and SFAZ in all reserves. Assessment programs should be developed considering time since fire, to target measurement as fuels approach their treatment thresholds.
- 4 Fuel sampling is also undertaken as part of prescribed burn planning and post-burn assessment and may be undertaken opportunistically to fill targeted information gaps.

<sup>1</sup>Tolhurst KG, McCarthy GJ, Chatto K, (1999) *Overall fuel hazard guide*, 3<sup>rd</sup> ed. Fire and adaptive management, report no. 47. Department of Sustainability and Environment, Victoria.

# 2.0 Prevention and planning

## Sampling method

- 5 To achieve consistency state-wide and with national best practice, fuel hazard assessment will be done in accordance with the [Overall Fuel Hazard Guide](#).

## Data management

- 6 OFH results must be recorded in Elements. Further information can be accessed in Elements support tab:
  - HR 7.01 Collect OFH with OCA App
  - HR 7.03 Create an OFH report on Desktop

## 2.7.4 Fuel management practices

- 1 Fuel management can be achieved using a variety of practices including:
  - i. **Prescribed burning:** the planned application of fire, either on the ground or from the air, under prescribed weather conditions and within defined boundaries, to modify fuel characteristics including OFH, continuity and arrangement.
  - ii. **Mechanical activities:**
    - a. **Slashing or mowing** – the use of mechanical mowers, slashers or brushcutters to reduce fuel height and increase fuel compaction.
    - b. **Under scrubbing** – the use of mechanical scrub mulchers, slashers or brushcutters to cut the understorey in forests, which reduces the height and increases the compaction of understorey fuels.
    - c. **Complete fuel removal** – the complete removal of all flammable material by ploughing, grading, bulldozing or the use of herbicides.
  - iii. **Pile burning:** Pile burns can be a useful method for reducing bush fire fuels and allow for the opportunity to burn vegetation that has been cut and stacked as part of an authorised mechanical activity.
- 2 NPWS may prescribe the use of other fuel management strategies (where considered appropriate). Other potential methods include pruning, herbicide application, trail construction, watering, irrigation, and fuel replacement (replacing highly flammable vegetation types with less flammable vegetation types).

## 2.7.5 Preparation of fuel management programs

- 1 Each Park Operations Branch will prepare an annual works program for fuel management, for submission to the BFMC. The works program will include the following provisions:
  - All proposed prescribed burning operations should be planned in coordination with the appropriate and relevant authorities.
  - The Branch Director will ensure that a competent NPWS officer will be present during all prescribed burning operations undertaken by another authority on NPWS managed land.

## 2.0 Prevention and planning

- 2 All HR proposals being considered by BFMCs should be entered into Elements by 31 March of each year. Further proposals can be added to Elements as they are submitted to BFMCs for consideration. Proposals may be altered or cancelled in response to BFMC or agency discussion, as long as the activity has not commenced.
- 3 No duplicate or overlapping HR proposals (burn or mechanical) shall be entered into Elements. Only after proposals are made inactive by setting the HR event to withdrawn, cancelled, or complete can another proposal that overlaps or is a duplicate be entered.
- 4 Fuel management programs, or parts thereof, are eligible for funding by the [Bush Fire Risk Mitigation and Resilience Program](#) (via Guardian) to fund bushfire mitigation works. Works funded should be consistent with BFMC planning documents and approved by the BFMC. All HR proposals wishing to be considered for bushfire mitigation funding, including NPWS proposals, must be submitted to and endorsed by the BFMC via the nominated pathway.

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## 2.8 Prescribed burn planning

### 2.8.1 Background

- 1 A prescribed burn is a managed fire lit for a specific purpose and conducted according to a specific plan. A prescribed burn plan will define the control lines to contain the burn, the required fire intensity to achieve objectives, the weather and seasonal conditions required during the burning operation and the light-up methods and sequences.
- 2 NPWS conducts prescribed burns for several reasons. These are:
  - reducing OFH to assist in the protection of life, property and community assets
  - managing biodiversity to maintain the reproductive viability of a species or a community of species
  - managing introduced species, their spread and impact on native wildlife and flora, and
  - researching fire behaviour and ecological response to fire.

NPWS considers the use of prescribed burning to be essential to achieve life and property protection and biodiversity objectives.

- 3 Each prescribed burn is a complex process. It involves several steps and requires the involvement of a number of people. The three components of organising a prescribed burn are:
  - planning and preparation
  - operations management, and
  - reporting.



# 2.0 Prevention and planning

## 2.8.2 Developing a prescribed burn plan

- 1 A designated person will be appointed to be responsible for the planning, preparation and reporting phases of the prescribed burn. This person will have the relevant competency for developing prescribed burn plans as detailed in section [3.7 Learning and development](#).
- 2 With the permission of the Area Manager, the designated person can delegate tasks related to the planning, preparation and reporting phases of the prescribed burn. The designated person retains accountability for the quality, integrity and validity of the prescribed burn plan and cannot delegate the approval of the plan.
- 3 [Figure 5](#) details the steps involved in planning and implementing a prescribed burn.
- 4 The prescribed burn plan will incorporate the management and operational guidelines specified in the applicable reserve bushfire planning documents (including SFMIs / RFMSs), conservation management plan, CAP (including AIS Fire Response Plans where these have been developed), PoM, site protection plan, pest management plan, threatened species recovery plan or other relevant plan.
- 5 Prescribed burn plans will be developed in Elements with consideration to the operational guidelines referenced in SFMIs / [RFMSs](#) and BFMC Plan of Operations.
  - Risk assessment must be a component of prescribed burn planning.
  - All prescribed burning must be planned so that the fire will be contained within pre-defined control lines.
  - The burn Incident Controller must be identified in the burn plan and be confirmed by the signed approval, or the delegated officers as listed in [2.8.3 Approval for prescribed burn plans](#).
  - Approved burn Incident Controllers must hold the “Conduct Prescribed Burn” competency and be a qualified Division Commander.
- 6 All persons on the fireground must have access to a prescribed burn plan and be given relevant maps. Where possible, all personnel on the fireground should be given access to, or directed to, sources of electronic fire operations maps, burn plans and Incident Action Plans for use in mobile phones and tablets.
- 7 A prescribed burn plan constitutes an IAP. If required a field based/A3 IAP can be produced. The IAP is to be approved by the Incident Controller.

# 2.0 Prevention and planning

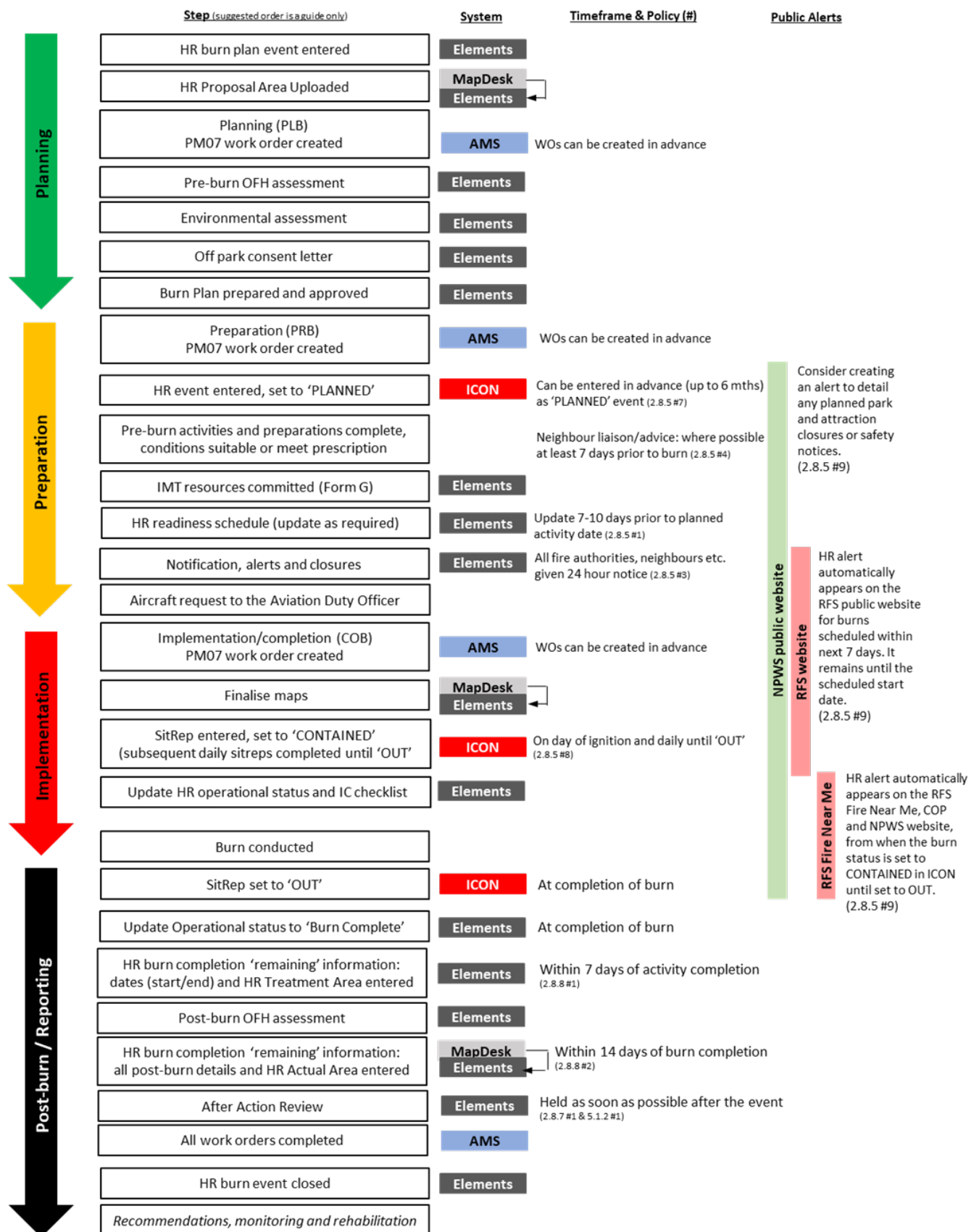


Figure 5: Steps involved in planning and implementing a prescribed burn

# 2.0 Prevention and planning

## Document management and reporting

- 8 Elements is the repository for all prescribed burn documentation, including:
  - the prescribed burn plan
  - environmental assessment
  - approvals and notifications
  - situation reports
  - incident action plans
  - operations maps
  - weather information
  - post-burn reports
- 9 Digital copies of all documents and maps should also be uploaded against the relevant event in Elements.

## Cost and effort of hazard reduction

- 10 Each prescribed burn project must have sufficient funds to ensure all aspects of the burn can be achieved including mapping final burnt area, follow-up monitoring, and regeneration required.
  - All HR activities, including prescribed burns and mechanical works, must be recorded in [SAP AMS](#) as per the [Bushfire Hazard Reduction Activities in AMS User Guide](#).

## Safety and hazard identification

- 11 The prescribed burn plan will take into account the safety of the public, the safety of the personnel participating in the burn operations, the protection of life and property, smoke dispersal and public health, and the protection of environmental and cultural values.
- 12 A comprehensive check of the area of the proposed burn will be conducted for potential hazards. These hazards are related to operational personnel, visitors (including people experiencing homelessness), road users and neighbours.
  - Identified hazards should include post-fire threats to personnel and public safety.
  - Identified hazards will be listed in the prescribed burn plan. In preparing a plan an assessment of potential hazards should be carried out and actions identified in the plan to eliminate, minimise or mark the hazard. This includes visual checks for non-operational personnel, including visitors and staff from other organisations.

## 2.0 Prevention and planning

- 13 Hazards to personnel may include:
- localised steep slopes
  - wind funnels
  - localised areas of high fuel
  - vegetation with flash fuels
  - areas of elevated fuels
  - communication black spots
  - rocky ground
  - scree slopes
  - changes in aspect, slope, vegetation or fuels
  - mine shafts
  - subsidence areas
  - cliffs
  - powerlines
  - gas pipelines, and
  - dead trees and tree limbs
- 14 Checks will be conducted before the ignition of a prescribed burn to ensure burn personnel safety, public safety and operational success. Refer to [4.3 Fire safety](#).
- 15 Extreme caution must be used if cleared easements under powerlines are being considered for control lines. Due to the risk of arcing, smoke must not come within 25 m of transmission lines as a general rule.

Do not position crews to burn underneath powerlines.

### Smoke considerations and management in prescribed burn planning

- 16 Operational guidelines for minimising impact from smoke during prescribed burns will be prepared in accordance with [2.8.2 Developing a prescribed burn plan](#).
- 17 When planning and conducting prescribed burning operations NPWS will apply the Smoke Management and Smoke Communication Protocols that have been developed by the NSW Government Hazard Reduction and Smoke Management Steering Committee.
- 18 The [Hazard Reduction Smoke Management Protocol](#) outlines the smoke impact modelling and risk assessment process. It aims to manage and mitigate potential smoke impacts on communities from planned HR burns.
- 19 The Hazard Reduction Smoke Communications Protocol outlines the delivery of timely and accurate information and advice about HR burning, and the effects of smoke and the likely impact on communities.
- 20 The protocol includes the process of requesting [RFS Smoke Plume Modelling](#) available up to five days prior to the scheduled burn. The RFS will communicate the results of both RFS and DCCEEW modelling to the lead burn agency.
- 21 For NPWS, this will be via the SDO who will evaluate and distribute modelling outcomes to relevant Branch staff. The BDO, Branch Programs Manager, and Team Leader Fire will be notified via email of potential issues resulting from smoke dispersion models. Where relevant, the SDO or delegate will liaise with Branches on mitigation strategies, such as varying ignition patterns, to minimise smoke impacts.
- 22 Since 2020, all burns over 10 ha within the Sydney basin, and all burns over 50 ha in other area of the State, will require smoke plume modelling. Requests for Smoke Plume modelling should be submitted when prescribed burns are scheduled.

## 2.0 Prevention and planning

- 23 To obtain smoke dispersion forecasts from the NSW RFS, staff must complete a [Request for Smoke Plume Modelling form](#) and email to [FBA@rfs.nsw.gov.au](mailto:FBA@rfs.nsw.gov.au).
- 24 NPWS will apply [BFCC Policy 3/2001 'Smoke management'](#) to achieve best smoke management outcomes.
- 25 The [Hazard Reduction Smoke Management Protocol](#) has been developed to:
  - support the coordination of agencies' operations during the prescribed burn season to assess risks related to smoke from planned burns, and
  - minimise potential smoke impacts on communities from planned burns.

### Liaison with other agencies

- 26 NPWS will liaise as necessary with the NSW RFS on bushfire smoke emissions from current and planned fire operations.
- 27 NPWS will liaise with the Environmental Protection Agency (EPA) on:
  - bushfire smoke emissions from current and planned fire operations
  - research into air quality management in sensitive air catchments
  - the preparation and ongoing review of smoke management policies, procedures and guidelines.

### Traffic management

- 28 Traffic management planning considerations must be factored into the development of the prescribed burn plan (refer to the [Traffic Control and Safety Near Roads Procedure](#)).
- 29 Where there is potential for smoke or activities from prescribed burning to impact on public road traffic or public transport (or where road traffic has the ability to impact on staff carrying out prescribed burns), or where an aircraft may be required to cross a public road while bucketing, and traffic needs to be slowed, directed or controlled, the following must be undertaken:
  - liaison in advance with the relevant authority (e.g., Transport for NSW, RailCorp, local council) will take place
  - a Traffic Guidance Scheme will be developed and put in place prior to prescribed burning being undertaken (refer to the [Traffic Control at Worksites](#) and [Technical Manual](#))
  - smoke signs where required will be put in place to warn motorists of any smoke hazard.
- 30 The Incident Controller will deploy certified Traffic Controllers for traffic control where required. Where considered necessary, Police or local council assistance may be requested.

### Toilet Facilities at NPWS hazard reduction burns

- 31 Burn planners are to ensure that staging areas are located to provide access to existing toilet facilities or plan for portable toilets to be provided at a nominated staging area or other suitable location where possible.

## 2.0 Prevention and planning

- 32 Toilet facilities should be included as a standard consideration in the logistics planning process for prescribed burns and details added to the 'staging area and briefing' section of the Prescribed Burn Plan in Elements.
- 33 Branches must cover the cost of hiring or purchasing portable toilet facilities from their existing budget or may include the cost of hiring in any funding application submitted to the NSW RFS under the [Bushfire Risk Mitigation and Resilience Program](#) (via Guardian).
- 34 This requirement has been introduced so that our firefighters have access to suitable amenities when participating in NPWS hazard reduction burns. It is intended that this will provide a more comfortable working environment for staff and promote an inclusive culture in the delivery of NPWS operations.

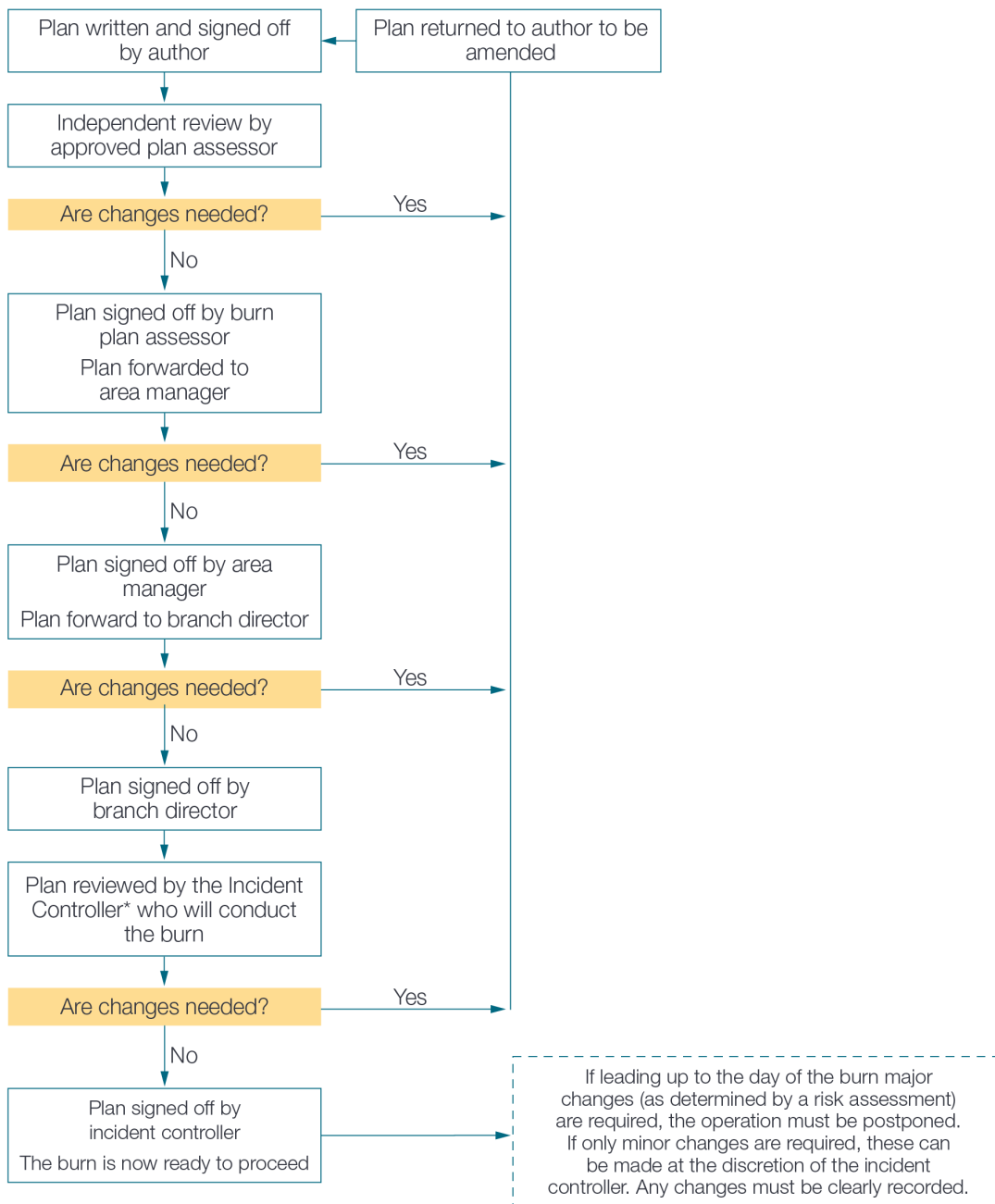
### 2.8.3 Approval for prescribed burn plans

- 1 All prescribed burn plan approvals are completed in Elements via an automated task notification process to nominated delegates.
- 2 All prescribed burn plans will be reviewed by a prescribed burn plan assessor. The prescribed burn plan assessor should be independent from the planning process.
  - Independent review: completed by a person approved by the Branch Director and recognised as being competent to fulfil the burn plan assessor role. They must not have been involved in the preparation of the plan. The burn plan assessor cannot assess the plan if they are the recommended incident controller at the time of the assessment. It is recommended that they come from a different work location.
- 3 NPWS maintains a formal process of approval for prescribed burn plans.
  - A prescribed burn may only proceed after approval from the following delegated officers:
    - Accredited prescribed burn plan assessor
    - Area Manager
    - Branch Director, and
    - Incident Controller.

The process for prescribed burn plan approval is outlined in [Figure 6](#).

- 4 Where a prescribed burn plan has been approved, and it is subsequently found necessary to make major changes, the amended plan must be reassessed via the same approval process as for a new prescribed burn plan.
  - Major changes: A risk assessment is to be conducted to determine if the amendment to a burn plan constitutes a major change. If the risk class increases, then the change must be considered major. The outcomes of the process must be documented and approved by the Area Manager.

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**Figure 6: Approvals process for NPWS prescribed burn plans**

- 5 Approval of minor changes to an already approved burn plan can be delegated to the relevant Area Manager providing the following conditions are met:
  - The Branch Director has delegated approval of minor changes to plans to the relevant Area Manager
  - There have been no major changes to the plan since the initial Branch Director approval; and
  - There is a current environmental assessment covering the operation.
- 6 If a burn is not undertaken or completed within the indicated period, re-approval for the delayed burn need only be sought if the burn plan requires major changes. However, if the

## 2.0 Prevention and planning

environmental assessment has also expired, a new environmental assessment will need to be prepared.

- 7 Private landholders are required to hold a permit to burn when burning during the bushfire danger period. The NPWS Incident Controller (IC) must ensure that a permit has been issued to the landholder when operations are conducted over a burn area that also includes private property.

The NPWS IC must also ensure that the landholder has provided written approval for operations to be undertaken on their land.

### 2.8.4 Prescribed burns involving other agencies

- 1 For multi-agency cooperative prescribed burns **on or affecting NPWS managed land**, NPWS must ensure that:
  - the environmental impact assessment is adequate and fulfils all NPWS requirements for the portion affecting NPWS managed land, if prepared by another agency
  - the prescribed burn plan is adequate and fulfils all NPWS requirements if prepared by another agency
  - supporting agencies are satisfied that the prescribed burn plan and operational arrangements (e.g., IMT and resourcing requirements) are adequate if prepared by NPWS, and
  - the relevant landowner has provided permission in writing for works to extend off-park (written off-park consent letter available in Elements).
- 2 For multi-agency cooperative prescribed burns undertaken **entirely off NPWS managed land**, NPWS may provide crews to assist if:
  - the relevant firefighting authority is the Incident Controller
  - the NPWS prescribed burn plan assessor and Branch Director are satisfied that the prescribed burn plan is adequate
  - appropriate operational controls consistent with this Manual are in place including briefings, command, control and communications, and
  - NPWS crews are allocated appropriate operational control (generally managing a sector or division with NPWS crews).

### 2.8.5 Notifications for prescribed burns

- 1 Park Operations Branches must ensure the activity status for HR burns and proposed scheduled dates are updated in Elements (7-10 days prior to the planned activity). The Elements system will automatically send through scheduling notification to the NSW RFS. Branches should notify local RFS and other stakeholders of HR activity as per the Burn Plan.
- 2 Notifications for all HR burns must be in accordance with the conditions set out in the HRC conditions.
- 3 All firefighting authorities, neighbours and pertinent organisations and contractors must be given at least 24-hours' notice that ignition of the burn will be proceeding.



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- 4 Where possible at least 7 days before the anticipated ignition of a proposed burn, advice should be given to:
  - park neighbours adjacent to the proposed burn, and
  - organisations and contractors likely to have personnel working in or near the area
- 5 Signs may be erected at locations bordering the burn area well in advance of the burn. These should specifically target entry points.
- 6 Branches are responsible for updating the NPWS public website via the Elements Alerts and Closures module with fire and park closure information as per [3.4 Fire bans, alerts and closures](#) and the [Elements Alerts and Closures handbook](#).
- 7 HR burns must be entered in ICON. HR burns can be entered into ICON as a 'PLANNED' event up to 6 months in advance of the burn, but these burns must be updated on the day of ignition by entering a new Situational Report (SitRep) and changing the 'Fire Status' to 'CONTAINED' or 'PATROL'. Burns must be updated daily until set to 'OUT'.
- 8 An ICON SitRep must be entered:
  - On the day of ignition with the 'Fire Status' set to 'CONTAINED' or 'PATROL'
  - One per day throughout the life of the burn operation
  - On completion of the burn set the event to 'OUT'
  - Additional SitReps should be entered when there are significant changes to the burn area, burn plan or resource commitments
  - ICON will automatically state that SitReps are required by 11:00 and 16:00 which can be disregarded for prescribed burns where more flexible timing is required.
- 9 A notification of the HR burn will appear on the NSW RFS Public Website (Hazard Reduction page) once the scheduled date is within the next 7 days. This only occurs when the HR has been scheduled ahead of the start date in Elements. The HR burn remains on the NSW RFS Public Website until the scheduled date only.

On the day of ignition when the ICON event is set to 'CONTAINED' or 'PATROL' a notification will automatically appear on the:

  - NPWS Public website (as a 'Fire' alert containing generic advice similar to that displayed on the RFS Fires Near Me app, referring to the [NSW RFS Website \(Fire Information\)](#) for more information)
  - RFS Fire Near Me app
  - COP

They will remain in place until the ICON event is set to 'OUT'.

Branches should consider creating an alert on the NPWS Public website ahead of the planned start date to detail any planned park and attraction closures or safety notices in preparation for the HR burn.
- 10 Prescribed burns must adhere to the following naming convention across all internal and external agency systems where burn names are captured, including Elements and ICON:

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**Burn location or name** followed by **HR** (e.g., **Devils Hole HR** or **Sandy Creek HR**)

No other acronyms or information will be added to burn names including, for example, Agency, Branch, Area, Reserve or Fire Management Zone. This information is captured in other system fields where appropriate.

## 2.8.6 Conducting a prescribed burn

- 1 Prescribed burns will be conducted according to the approved prescribed burn plan.
- 2 The control and command of the burn operation will be in accordance with the IMS, under overall supervision by the Incident Controller. Additional supervision will be provided by division commanders and crew leaders depending on the scale of the operation.
- 3 All prescribed burning operations will be implemented in accordance with the policies and procedures in this Manual.
- 4 All members participating in the burn operation must be accredited and currently competent to undertake assigned tasks.
- 5 The officer-in-charge of a fireground (whether they are located onsite or offsite) must hold the unit of competency *PUAFIR506 Conduct complex prescribed burns*. Should an officer that is in charge onsite not hold this unit of competency, then they must be reporting to an officer that does hold this qualification.

## Briefing and safety checks

- 6 All persons involved in the burn will be adequately briefed (see [4.4 Briefings and safety checks](#)).
- 7 Guidelines for fatigue management during HR operations can be found on ParkSite under [NPWS Fitness for Work Procedure](#).

## 2.8.7 Debriefing

- 1 All personnel involved in the prescribed burn operation should participate in an operational debriefing. The debriefing will be conducted according to the procedures in [5.1 Debriefing, After Action Reviews and incident analysis](#). For large operations, debriefing may be conducted for individual sectors or divisions.

## 2.8.8 Post-burn reporting

- 1 Branches will commence a HR burn completion in Elements within 7 days by:
  - entering completed dates (start and end), and
  - uploading a HR treated area.
- 2 Branches will finish the HR burn completion in Elements by entering the remaining post-burn report details. Branches must also upload a HR Actual Area of the burnt area in Elements within 14 days of completion of the burn. This triggers an automated update to the corporate GIS.

# 2.0 Prevention and planning

## 2.8.9 Hazard reduction working conditions and shift patterns

- 1 Undertaking HR burning operations is normal work for NPWS staff. [Guidelines for application of working conditions during hazard reduction burning operations](#) have been developed to provide a consistent application of the award provisions for HR burning operations. If you require further clarification, please contact Industrial Relations on (02) 9585 6781.

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## 2.9 Fire access and fire trails

### 2.9.1 Rural Fires Amendment (Fire trails) Act 2016

- 1 Amendments to the RF Act, through the *Rural Fires Amendment (Fire Trails) Act 2016*, established a clear legislative basis for establishing and maintaining a strategic and integrated network of fire trails.

#### Key provisions in the Act include:

- A requirement for Bush Fire Management Committees (BFMC) to prepare a draft FAFT plan and to submit it to the Bush Fire Coordinating Committee (BFCC) for approval
- Powers for the NSW RFS Commissioner to issue Fire Trail Standards (the Standards) which:
  - set out classification, design and construction standards for fire trails
  - prescribe the structure and form of individual FAFT plans
  - require the inclusion of a Treatment Register for the approval of the NSW RFS Commissioner.
- Powers for the NSW RFS Commissioner to:
  - designate identified fire trails which contribute to the fire trail network in an area
  - enter into agreements with landowners for the provision of fire trails on private land
  - certify that a fire trail complies with the Standards and keep a register of trails.
- An obligation to construct and maintain designated or registered fire trails by those responsible for managing public land
- The development of a clear complaints handling process relevant to a registered fire trail that does not meet the Standards
- Powers to the NSW RFS Commissioner for the issuing of rectification notices for fire trails that do not comply with the Standards.

The Act is supported by the following:

- [BFCC Policy 1/2017 'Fire Trails'](#)
- [NSW RFS Fire Trail Standards 2023](#)
- Fire Access and Fire Trail Plan Instructions (including [Model FAFT plan](#))

## 2.0 Prevention and planning

- Guidelines for performance-based solutions ([NSW Fire Trail Standards 2023](#); Section 4)
- [NSW RFS Fire Trail Design, Construction and Maintenance Manual](#)

NSW RFS has prepared additional support documents for use as part of the FAFT plan development process. These documents are closely linked to the Bush Fire Environmental Assessment Code.

Legislative amendments to the RF Act came into effect on 1<sup>st</sup> July 2017. These changes are being progressively implemented. The known changes to NPWS policies have been updated, however not all aspects of implementation of the new legislation are fully resolved. FMCs will be issued as required to keep staff informed of new information for and progress of the transition.

### 2.9.2 Background

- 1 This policy applies to FAFTs on NPWS managed land.

Issues relating to trails can be divided into 5 categories:

- Access for fires –The decision to use a trail during an incident requires an assessment of the conditions at the time.
- Identification and classification of FAFTs – identification of those fire trails that make up the network of trails necessary for fire management
- Construction and maintenance – fire trails are constructed and maintained to contemporary standards.
- Signage for FAFTs, fire control advantages and warnings.
- Access to NPWS managed land by other firefighting authorities – other firefighting authorities may require access to reserves for a variety of reasons.

### 2.9.3 Access for fire management

- 1 The following policies and provisions apply to access for fire management.
  - NPWS will maintain a FAFT network for reserves that complies with FAFT classifications to support fire management operations.
  - NPWS will facilitate the appropriate use of trails for firefighting authorities, including use for training, reconnaissance, fire management activities and fire control.
  - All Branches will maintain current reserve access and trail data within the AMS.
  - Fire trails will be inspected regularly to ensure they are accessible to fire-fighting vehicles.
  - Other accesses that are the primary access to parks and within parks should be inspected annually to confirm status.
  - Remote area firefighting provides a legitimate alternative method of accessing fires in rugged, undeveloped or difficult-to-access landscapes.

# 2.0 Prevention and planning

## 2.9.4 Identification and classification of fire trails

- 1 Amendments to the RF Act, through the *Rural Fires Amendment (Fire Trails) Act 2016* established a new legislative framework for establishing and maintaining an integrated and sustainable network of fire trails across all land tenures.
- 2 BFMCs are leading the identification and classification of fire trails that make up the network of trails necessary for fire management through the FAFT process.

### Fire Access and Fire Trail (FAFT) plans

- 3 Fire trail planning, including preparation of fire trail registers, is to be done in accordance with the BFCC Policy 1/2017 'Fire Access and Fire Trails'.
- 4 There are a variety of access ways across the landscape available for use by firefighting vehicles, including public roads. A fire trail is an access way to assist in the prevention, management and containment of bushfires.
- 5 Fire trails may have multiple uses – additional standards may apply to the trail in relation to those other uses.
- 6 Fire trails may be combined with other works to provide fire breaks, fire containment lines and the like. Fire trails do not, of themselves, constitute these other entities, although they may occupy the same place in the landscape, and provide a part of those features.
- 7 BFMCs must determine the fire trail network required in their area across all land tenures and consider connections to adjoining areas. The fire trail network is to be decided by consensus and with a goal of creating the most effective FAFT plan possible within the landscape.
- 8 The fire trail network will be identified on the strategic or tactical value of the fire trail and classified by the vehicle carrying capacity.
- 9 The fire trail plans capture the current and desired state of existing fire trails and proposals for new fire trails. Works required to meet the desired state of a fire trail will be identified in the FAFT treatment register.
- 10 The current condition information can be used during firefighting operations, while the desired future condition information can inform decisions about upgrades and ongoing management and maintenance.

### Identifying fire trails – strategic and tactical

- 11 The [BFCC Policy 1/2017 'Fire trails'](#) provides for the following terminology for fire trails:
  - **Strategic fire trail:** A fire trail on any tenure identified by a BFMC during the FAFT planning process, or by the NSW RFS Commissioner, to be of significant value in the suppression or management of fire within the landscape. May include multi-purpose trails.
  - **Tactical fire trail:** A fire trail on any tenure identified by a BFMC during the FAFT planning process, or by the NSW RFS Commissioner, that should remain open to support the prevention and suppression of fire. May include multi-purpose trails.

## 2.0 Prevention and planning

- **Track (other):** all other tracks or roads within the landscape which may be used in the event of a fire. These are not part of the fire trail network.
- 12 Additional terminology is used to denote whether a fire trail complies with the *Fire Trail Standards* – the terminology used is:
- **Designated fire trail:** A fire trail that must be upgraded or established to meet the Standards.
  - **Certified fire trail:** A fire trail that has been certified as compliant with the Fire Trail Standards.
  - **Registered fire trail:** A fire trail, regardless of tenure, that has been certified to meet the Fire Trail Standards and is placed on the Public Register.

### Vehicle carrying capacity

- 13 All fire trails are classified on the type of firefighting vehicle that can safely traverse the trail.
- 14 The three categories used are:
- **Category 1 (Cat 1):** This is a fire trail that can be safely traversed by a Category 1 firefighting appliance.
  - **Category 7 (Cat 7):** This is a fire trail that can be safely traversed by a Category 7 firefighting appliance.
  - **Category 9 (Cat 9):** This is a fire trail that can be safely traversed by a Category 9 firefighting appliance.
- 15 The [NSW RFS Fire Trail Standards 2023](#) provide a performance-based approach to fire trail design, construction and maintenance, which allows a degree of flexibility for trails to respond to site specific conditions with the NSW RFS Commissioner's approval. A set of detailed specifications for acceptable solutions are prescribed – these are 'deemed to satisfy' the performance criteria. See the [NSW RFS Fire Trail Standards 2023 \(Section 4\)](#) for more details.
- 16 Vehicle carrying capacity indicates whether the nominated vehicle can physically pass from A to B, not whether it will be safe to do so in certain fire conditions. The decision of whether or not to use a trail under fire conditions must be made by the officer in charge at the time of the fire, taking into account current and forecast conditions.


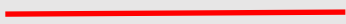








### Map depiction of fire trails

- 17 Fire trails are to be depicted on maps in a consistent manner by all land managers/owners.
- 18 Care must be taken when producing maps containing fire trail data to ensure that the data is accurate and up to date. A note about the currency and reliability of the data must be included on any map.
- 19 Care must also be taken to ensure that maps are clearly marked to indicate whether they are displaying data relating to the current condition or the desired future condition.

# 2.0 Prevention and planning

- 20 Mapping symbols for FAFT Plans are described below. A spatial layer showing the status of the fire trails with FAFT symbology can be sourced from P:\Corporate\Layers\Fire\Fireplanning.

**Table 9: Mapping symbols for FAFT Plans**

Mapping symbols for FAFT Plans	
Unclassified	
Strategic Cat 1	
Strategic Cat 7	
Strategic Cat 9	
Tactical Cat 1	
Tactical Cat 7	
Tactical Cat 9	
Other Cat 1	
Other Cat 7	
Other Cat 9	

## Fire trail registers

- 21 BFMCs must regularly maintain and update the fire trail planning for their area of responsibility. Once a FAFT plan is completed, the BFMC must comply with the FAFT planning requirements.
- 22 NPWS will assist BFMCs to create and maintain the relevant plans and registers by providing relevant information that is available.

## 2.9.5 Design, construction and maintenance of fire roads and trails

- 1 The following policies and provisions apply to construction and maintenance of fire roads and trails:
- Trail construction and maintenance may have social, environmental and economic implications, so new trail proposals should proceed only where the benefit is not outweighed by the impact.
    - Environmental impact assessment will be carried out before the construction of non-emergency access trails or major upgrade activities.
  - BFCC standards for fire trails will be implemented for all design, construction, maintenance and repair of fire trails ([NSW RFS Fire Trail Standards 2023](#) and [RFS Fire Trail Design, Construction and Maintenance Manual](#)). The BFCC standards provide for works to progress that bring fire trails into closer compliance with the standards and recognises that full compliance may take several years.
  - The [NSW RFS Fire Trail Standards 2023](#) provide a performance-based approach to fire trail design, construction and maintenance, which allows flexibility for trails to respond to site specific conditions. A set of detailed specifications for acceptable solutions are prescribed by the Standards – these solutions are ‘deemed to satisfy’ the performance criteria.

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- Where works do not conform with the acceptable solutions, they must meet the desired intent and objectives of the *Fire Trail Standards* and the performance criteria identified.
  - The [NPWS Roads Policy](#) provides guidance on the range of vehicle access types within and adjoining reserved land. The [NPWS \(PWG\) Roads Manual](#) and the [Field Guide for Erosion and Sediment Control on Unsealed Roads](#) provide guidance for applying the standards that apply to different types of accesses. All trails will be constructed, maintained and rehabilitated to the standards prescribed in the relevant guideline.
  - FAFTs should be constructed and maintained in accordance with their identified need to manage or suppress fire, BFMC or FAFT classification and general use. FAFT certified fire trails should be maintained in good condition for fire access.
  - Gravels and soils used in the construction and maintenance of trails should be from local, lithologically similar sources. Where this is not possible, the impacts of imported gravels and soils should be kept to a minimum by the use of appropriate control measures. Materials used should not increase the soil fertility of areas adjacent to the trail. Trail edges should be monitored for the introduction of exotic species and remedial action undertaken when required.
  - Trails should avoid, where possible, important vegetation types, wildlife habitats, rare flora sites, habitats for threatened species, populations and/or ecological communities, geological sites, Aboriginal sites and historic sites.
  - [NPWS Road and Fire Trail Network Program](#) has developed prescribed procedures and processes to identify and assess the surface condition, turning circles, passing bays, trail width, vegetation clearances, signposting and other technical specifications as required by the [NSW RFS Fire Trail Standards 2023](#) to adjust classified fire trails to compliance. This includes introducing performance solutions and justifications where certain specifications cannot be met.
- 2 All fire trail new construction, upgrade, renewal and maintenance works will be recorded in the [AMS](#).

### 2.9.6 Signage for fire access and fire trails

- 1 The purpose of marking fire trails is to convey sufficient information to fire crews on the identification of the trail for firefighting purposes.
- 2 Consistent standards for signposting of fire trails apply across NSW. Updated standards were released in November 2023. These standards are being implemented progressively. This means that existing signs, that comply with the standards identified in BFCC Policy 2/2007 'Fire Trails' will remain in place until the end of their functional life. New and replacement signage for fire trails is to be in accordance with the [NPWS Park Signage Manual](#), which will be updated as required for the transition to the revised signage standards.
- 3 The following policies and provisions apply to signage for fire roads and trails:
- The decision whether or not to erect signage on NPWS managed land and the dimensions of signs is NPWSs responsibility and is based on assessed risk and need.



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- For fire trails on public land to be 'registered', they must have signage installed in accordance with the *NSW RFS Fire Trail Standards 2023*.
- Regardless of the provision of signage, firefighters are responsible for inspecting the condition of a trail before use, driving within their capacities and using maps.
- NPWS and BFCC standards for safety signage (such as for no through roads, bridge load ratings and other information) will be implemented where appropriate and according to assessed risk.
- Fire trails should be named in accordance with the [NPWS Park Names Policy](#).
- The [NPWS Park Signage Manual](#) incorporates the relevant standards for fire trail signage. It includes requirements that signs must be located so that they:
  - are visible to road/trail users considering the design speed of the road/trail, the potential to be obscured by vegetation (background and foreground), parked cars or physical features of an area and illumination by headlights at night.
  - clearly indicate the road/trail direction or location of fire control advantages or hazards and are not safety hazards for road users through coming into contact with signs, or requiring persons to stop at a hazardous location to read or maintain signs.
- BFCC endorsed fire warning and fire control advantage signs should be used where appropriate, based on need and assessed risk. Only endorsed symbols are to be used.

### 2.9.7 Access to NPWS managed land

- 1 The NPWS requires all firefighting authorities, support agencies and utility companies to seek written agreement from NPWS prior to accessing NPWS managed lands, except in the case of emergency response operations.
- 2 In the case of emergency operations, access to NPWS managed land will be in accordance with the coordinated policies outlined in BFMC Plan of Operations. All emergency access is to be reported to the DO as soon as possible.
- 3 The NPWS is committed to facilitating safe and appropriate access to NPWS managed lands. Requirements for fire related activities are documented in [Table 10](#) and the [Vehicle Access Policy](#).
- 4 The NPWS may vary access arrangements according to the sensitivity or management objectives of an area. Examples include nature reserves, areas declared as Assets of Intergenerational Significance, feral predator-free areas, Aboriginal areas or places, wilderness areas or drinking water catchment areas.
- 5 Access approvals are generally considered and granted through the NSW RFS District Command structure. These arrangements promote a coordinated and cooperative approach to fire related activities.

# 2.0 Prevention and planning

**Table 10: Access requirements for NPWS managed lands**

Purpose	Permission
Response to report a fire	No prior arrangements necessary. Fire agencies to advise NPWS as soon as practicable
Patrol of high-risk areas on days of high and above fire danger	Arrangements can be made on the day concerned before entry to NPWS managed land.
Operations in support of other agencies (Police, State Emergency Service, etc.)	The primary agency will provide notification to NPWS as soon as practicable.
Orientation of new personnel	Prior arrangements are to be made.
Hazard reduction planning	All hazard reduction planning will be undertaken in conjunction with NPWS officers.
Checking dwellings located in in-holdings within NPWS areas (e.g., mines, rifle ranges)	If the response is in relation to a fire, no advance consultation is required. If the patrol is routine, prior arrangements are required.
Checking trail conditions	Prior arrangements are to be made.
Training	Prior arrangements are to be made.

**Note:** these conditions do not apply for access to areas that are nature reserves, Aboriginal areas or places, wilderness areas or catchment areas.

## Access to nature reserves

- 6 Nature reserves are valuable refuge areas with significant natural processes, phenomena and wildlife.
- Access to trails in nature reserves is limited to emergency response, where agencies must notify NPWS as soon as practicable on accessing a nature reserve. Access for other purposes requires prior written approval.
  - Access to nature reserves must not impact on research programs or sites, identified significant communities, species or processes.

## Access to Aboriginal areas and Aboriginal places

- 7 Aboriginal areas and Aboriginal places are lands of high significance to Aboriginal people. They may contain high concentrations of Aboriginal objects, including burial sites, or be places associated with ceremony or creation stories.
- Access to Aboriginal Places or Aboriginal Areas is limited to emergency responses, in which case agencies must notify NPWS as soon as practicable after accessing an Aboriginal place or Aboriginal area. Access for other purposes requires a written request submitted no less than 28 days before the scheduled date to ensure contact can be made with relevant Aboriginal communities.
  - Access must not impact on objects or cultural values associated with the Aboriginal area or place and, wherever possible, the planning of any activity should involve the local Aboriginal community and NSW Heritage Operations Officer.
  - Aboriginal areas and Aboriginal places must have Aboriginal community involvement before and after fire management activities to access and assess their cultural heritage.

## 2.0 Prevention and planning

- If an Aboriginal Place has a management plan, fire may be addressed in the document. An Aboriginal area will have a PoM or statement of management intent. Fire may also be addressed within these documents.

### Additional considerations regarding access to drinking water catchments

- 8 Legislation to protect drinking water catchments binds the responsible land manager and NPWS to protect the environment and water quality in the drinking water catchment. This includes catchments within the Sydney drinking water catchment (under [Water NSW Act 2014](#)) and the Hunter ([Hunter Water Act 1991](#)).

Some areas of drinking water catchments are managed as 'closed catchments'; public access is prohibited, and limited access may be permitted only with prior approval. Relevant incident management personnel may be permitted access to closed drinking water catchments for incident response, management and preparation purposes only. Authorised personnel may include fire control officers, their deputies and RFS brigade captains.

The Sydney drinking water catchments are classified as Schedule 1 and Schedule 2 Special Areas.

- Schedule 1 Special Areas are considered sensitive and are managed as closed catchments. Access to schedule 1 areas is restricted to incident response and management and to chaperoned incident preparation purposes.
- Schedule 2 Special Areas are not managed as closed catchments, however, have restrictions on the range of activities that may be done and have some access restrictions.

Notification required to access Sydney drinking water catchments are outlined in the following [Table 11](#).

**Table 11: Access requirements for Sydney drinking water catchments**

Access	Schedule 1 Special Areas	Schedule 2 Special Areas
Annual familiarisation	Catchment authorities and NPWS will identify the personnel to be involved in familiarisation activities in consultation with the BFMC.	Written request is required no less than 28 days before the scheduled date.
Exercises	Incident management exercises will not be permitted in schedule 1 areas	Written request is required no less than 28 days before the scheduled date.
Incident	Catchment authorities and NPWS must be notified as soon as practicable in the event of emergency services entering special areas.	Catchment authorities and NPWS must be notified as soon as practicable in the event of emergency services entering special areas.

- 9 In addition to the criteria specified for access to national parks, all requests for access to a schedule 1 or 2 Special Area should meet the following criteria, and any approval for access must include appropriate conditions to ensure they are met:
- There must be no adverse impact on water quality.
  - Appropriate ablution facilities must be identified and used.

# 2.0 Prevention and planning

## Conditions for key holders

- 10 Conditions for key holders are as follows:
  - Keys may be issued to relevant authorities to facilitate access for emergency and approved incident preparation and management purposes.
  - Keys will be issued to a central agency representative who will maintain a register of keys issued to staff. The key holder will be responsible for key security and use and ensure compliance with the conditions for holding keys.
  - Float access should be with local knowledge supervision at all times.

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## 2.10 Fire detection

### 2.10.1 Background

- 1 Detecting a fire soon after it ignites assists in the early assessment of risk and the development of strategies to deal appropriately with that risk.
  - Early detection and response may lessen the task of suppressing the fire, reduce the cost and lessen the damage caused by the fire.
  - Arrangements for detection and reporting of fires are made at Branch level through coordination with other firefighting authorities and with park neighbours.
  - Systems for reporting the detection of fires as soon as possible following ignition are incorporated in BFMC Plan of Operations and in the FIOB Incident Procedures and BIP.

### 2.10.2 Fire detection procedures

- 1 NPWS develops and enhances procedures and resources to facilitate rapid fire detection and continues to review other technology as it becomes available.
- 2 Fire detection procedures are prepared as a schedule of actions and arrangements and are included in BIP and BFMC Plan of Operations.

Fire detection schedules operate during the fire season. The level of detection capability increases with increasing levels of fire danger.

### Neighbour contacts

- 3 Where applicable, a list of neighbours who can assist with fire detection and reporting will be included in BIP.

### Aerial surveillance

- 4 Consideration should be given to conducting aerial surveillance during high to catastrophic bushfire danger periods or after thunderstorm activity in large areas where there is no adequate ground detection system.

Surveillance flights and staffing of vantage points will be organised with adjoining Branches, land management authorities, neighbours and other firefighting authorities.

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## Towers

- 5 NPWS will continue to maintain fire towers as a method of early detection where it has been agreed that they are a significant part of the BFMCs detection system. These towers will operate cooperatively with towers operated by other firefighting authorities.

## Other detection measures

- 6 Other methods of fire detection include lightning detection systems, fixed fire detection cameras, patrols, use of lookouts and other vantage points and remote sensing.

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## 2.11 Communications planning

### 2.11.1 Background

- 1 The aim of effective communications during fire operations is to provide the ability for all participants to communicate without undue delay.

Planning for effective communications during fire operations is achieved by:

- assessing the effectiveness of existing communication systems including black spot mapping
- developing strategies to best utilise and augment existing systems, using the scenarios of large fire events during extreme conditions, and
- preparing and implementing communications plans during fire operations as part of the IAP or prescribed burn plan.

### Community contacts

- 2 Branches will maintain a register of neighbour and community contacts as agreed with the community, to facilitate quick response and the provision of information on fire management and fire control operations.
- 3 Branches will provide local NPWS contact details and fire response procedures to neighbours and the community to ensure responsiveness to fire issues within the area.

### Media and public information arrangements

- 4 Public Affairs Branch will provide media procedures and contact lists on request for inclusion in BIP.
- 5 A media protocol will be developed between all firefighting authorities to ensure coordinated and accurate reporting on fire management activities.
  - For Class 1 fires on NPWS managed land, media reporting will be facilitated through Public Affairs Branch, in consultation with the Incident Controller.
  - For Class 2 fires involving NPWS managed land, Public Affairs Branch and the media units of other combating agencies involved will develop a cooperative media strategy giving appropriate consideration to the lead agency status, Incident Controller and respective resources committed to the fire.

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- For Class 3 fires, NSW RFS will coordinate all media comment related to fire management strategies and impacts of fire.

## Fire communications

- 6 The NSW RFS is the lead fire agency in NSW and “single point of truth” in relation to fire operations and public information in NSW including bushfires and prescribed burns, this extends to social media platforms.
- 7 Guidance for NPWS fire communications and engagement is available on [ParkSite Fire Communications](#).

### 2.11.2 Pre-planning - communications

- 1 Communications planning will be undertaken for all fire management activities.
- 2 Each Branch will assess the effectiveness of the NPWS radio system and mobile phone coverage across reserves, including the preparation of radio and mobile phone coverage maps, and they may be included in the BIP.
- 3 Communications strategies will be developed for each area. These strategies will include procedures for specialist resources, ground-to-air communications and augmentation of permanent infrastructure, and they may be included in the BIP.
- 4 Assistance will be provided to BFMCs to develop communications sub-plans, as part of BFMC Plan of Operations, for landscapes that include NPWS managed land.

### 2.11.3 Call signs

- 1 Call signs at all fires and prescribed burning operations will follow the standard IMS terminology outlined below in [Table 12](#). Ground crews should continue to use their agency call sign.

Aircraft are allocated a call sign prefix, based on their type, followed by an identifying number. Aircraft types and associated prefixes are shown below in [Table 13](#).

**Table 12: Standard IMS terminology for call signs – IMS position**

IMS position	Call Sign
Incident Controller	IC or Incident Controller
Deputy Incident Controller	Deputy 1, 2, 3 etc. (number sequentially)
Liaison Officer	NPWS Liaison Officer (Identify the officer's agency, e.g., RFS, FRNSW, FCNSW)
Operations Officer	Ops Officer
Planning Officer	Planning Officer
Logistics Officer	Logs Officer
Division Commander	Div Comm (Identify which division, e.g., Div Comm North, Div Comm Greenlands etc.)
Sector Commander	Sect Comm (Identify which sector, e.g., Sect Comm Alpha, etc.)

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Strike Team Leader	Strike Team 1, 2, 3 etc. or home location
Task Force Leader	Task Force 1, 2, 3 etc. or home location
Air Operations Manager	Air Operations
Air Observer	Air Observer
Air Attack Supervisor	Air Attack
Air Base Manager	Air Base Manager
Heli Base Manager	Heli Base Manager
Fire Investigations Officer	Fire Investigations
Medical Officer/Unit	Medical Officer or Ambulance Officer (as appropriate)
Safety Advisor	Safety Advisor
Media Officer	Media Officer
Fire Crew Leader	Normal agency call sign
Fire Crew Member	Normal agency call sign
Non-active Personnel	Normal agency call sign

**Table 13: Standard IMS terminology for call signs – aircraft**

Aircraft type	Call sign prefix
Light helicopters	Firebird
Medium helicopters	Helitak
Fixed-wing fire bombers	Bomber
Fixed-wing large air tanker (LAT) lead plane	Birdog
Fixed-wing observation or air attack	Firespotter
Fixed Wing Line Scan Aircraft	Firescan
NPWS-owned aircraft	Parkair

# 2.0 Prevention and planning

## 2.12 Dangerous goods

### 2.12.1 Background

- 1 Dangerous goods are substances and articles which, due to their physical, chemical and toxicological properties, present an acute risk to life, health, property and the environment, especially when being transported.
- 2 Substances classed as dangerous goods in NPWS fire operations include petroleum fuels, helicopter fuel and oxidising agents. Petroleum fuels include petrol and diesel. Potassium permanganate is a strong oxidising agent and is used in incendiary capsules.
- 3 Requirements for the transport of dangerous goods are set out in the [Australian Code for the Transport of Dangerous Goods by Road & Rail \(ADG Code edition 7.8 2022\)](#), which in NSW is supported by the [Dangerous Goods \(Road and Rail Transport\) Act 2008](#) and associated [2014 Regulation](#).
- 4 Dangerous goods transport regulation is undertaken in NSW jointly by EPA and Safework NSW.
- 5 NPWS officers will have certain legal responsibilities for the transport of dangerous substances where they undertake any of the roles of Consignor, Prime Contractor, Loader or Driver. These legal responsibilities are outlined in the [NPWS Dangerous Goods and Hazardous Substances Transport Procedure](#).

### 2.12.2 Dangerous goods policies

- 1 Dangerous goods used in fire management will be stored, handled and transported in accordance with the [NPWS Dangerous Goods and Hazardous Substances Transport Procedure](#) and the requirements of the WHS Regulation and manufacturers' instructions.

### 2.12.3 Dangerous goods transport

#### When dangerous goods transport controls may not apply

- 1 In certain circumstances, small quantities of dangerous goods are exempt from transport controls. Under Regulation 1.1.6 Exempt transport, dangerous goods transport law would not apply to any NPWS vehicle transporting less than 25% of a placard load (e.g., a small oxy/acetylene set + 5 L chainsaw fuel).
- 2 In addition, under Regulation 1.1.5 Dangerous situations, dangerous goods transported *'by, or at the direction of, an authorised officer or an officer of an emergency service, to the extent necessary to avert, eliminate or minimise a dangerous situation'* are not subject to the Regulations (e.g., transport of aviation fuel in a bushfire emergency). In emergency situations, such transport may only be carried out with the knowledge and approval of the Incident Controller.

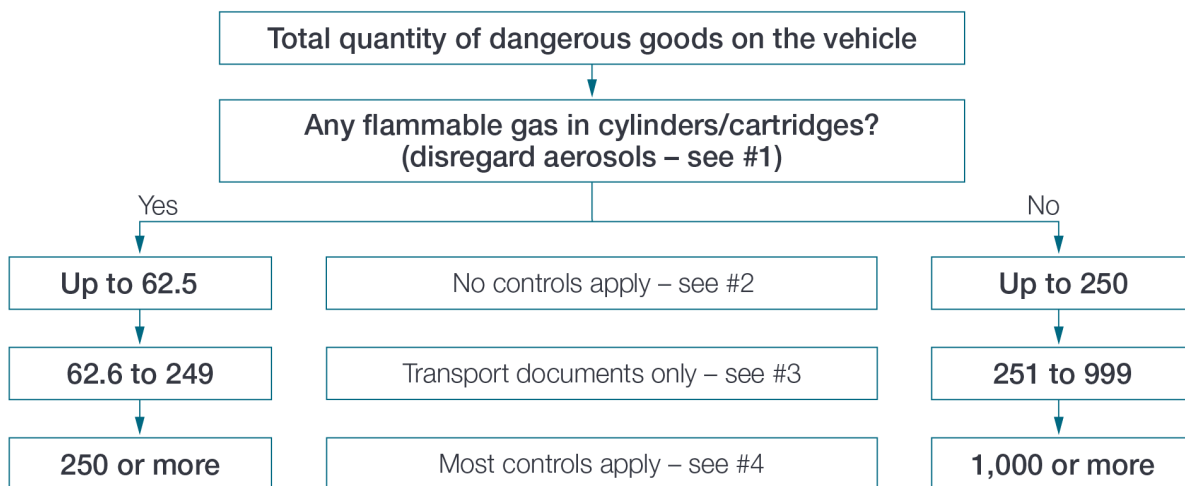


## 2.0 Prevention and planning

- 3 **Exemptions only apply within NSW** and in all cases, dangerous goods may only be transported with proper regard for WHS principles and public safety.

### Transport of 'empty' drums or gas cylinders

- 4 When determining what transport controls should apply, it is the actual quantity of dangerous goods that needs to be taken into account, not the capacity of the containers. For example, a load of used aviation fuel drums being returned to a depot after firefighting operations may contain only a few litres of residues. This would fall under the exempt transport provisions (see [Figure 7](#)).



**Figure 7: Decision tree – do controls apply?**

#1. A load containing dangerous goods is generally a placard load if the total quantity of dangerous goods is 1000 or more. If there is any flammable gas **in cylinders or cartridges** in the load, a placard load is 250 or more. Aerosols using flammable gas as a propellant represent less risk than cylinders and do not trigger the lower placard load threshold.

#2. Regulation 1.1.6 exempts the transport of < 25% of a placard load (in cases such as NPWS transport).

#3. Transport of less than a placard load (other than an exempt quantity - #2) requires only a transport document to be carried.

#4. Most controls apply at the placard load level.

- 5 In the case of a load of 'empty' and full drums, the total quantity would need to be calculated or estimated.
- 6 Gas cylinders are counted according to their capacity in litres. Typical sizes and capacities are:
- D cylinder = 9.4 L
  - E cylinder = 23 L
  - G cylinder = 47 L
  - LPG 9 kg cylinder = 21.6 L
  - LPG 45 kg = 108 L

## 2.0 Prevention and planning

### Dangerous goods transported by contractors

- 7 Where a contractor is engaged for the routine transport of dangerous goods, NPWS and NPWS officers become the Consignor.
- 8 A Consignor must complete and provide the transporter with a transport document which fully describes the items transported, in accordance with the [ADG Code](#) (the pre-printed transport documents included in these guidelines are not acceptable).  
  
A Consignor is also responsible for various other matters relating to how that load is transported.

### Additional controls

- 9 The *Dangerous Goods Transport Regulation* applies the following controls to loads of dangerous goods (see below for further information):
  - transport documents
  - emergency information
  - placarding
  - fire extinguisher
  - protective and safety equipment
  - stowage rules
  - segregation rules
  - general requirements relating to container and vehicle suitability

### Transport documents

- 10 Transport documents are required for the transport of any quantity of dangerous goods, except in the case of 'exempt transport' (< 25% of a placard load – Regulation 1.1.6).
- 11 Three types of pre-printed transport documents have been developed for use by NPWS:
  1. For aerial operations support, when transporting aviation fuel only, the transport document at **Appendix A** of the [Guidelines for the Transport of Dangerous Goods on NPWS Vehicles](#) should be used.
  2. When transporting aviation fuel and incendiaries only, the transport document at **Appendix B** of the [Guidelines for the Transport of Dangerous Goods on NPWS Vehicles](#) should be used. In either case ensure that the vehicle is not transporting any other dangerous goods.
  3. In more routine operations where a range of dangerous goods is transported, the more general transport document at **Appendix C** of the [Guidelines for the Transport of Dangerous Goods on NPWS Vehicles](#) should be used.
- 12 If you have less than a placard load, the relevant transport document must be carried in a conspicuous place in the cabin of the vehicle.
- 13 If you have a placard load, the relevant transport document must be carried, along with emergency information, in the emergency information holder described in the next section.

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## Emergency information

- 14 Emergency information is required for the transport of placard loads of dangerous goods.
- 15 Emergency information consists of a [Standards Australia HB 76-2010 Dangerous Goods Initial Emergency Response Guide](#). This must be carried in an emergency information holder, fitted to either door of the vehicle or in a conspicuous position in the cabin.

## Placarding

- 16 Placards (i.e., class labels) are required to be displayed front and rear of vehicles transporting placard loads of dangerous goods.

## Fire extinguisher

- 17 NPWS vehicles transporting placard loads must be fitted with at least a 30B (rating) dry powder fire extinguisher, preferably located near the driver's door.

## Protective and safety equipment

- 18 The [ADG Code](#) requires that vehicles transporting placard loads must be equipped with 3 double-sided reflector signals, and drivers must carry protective and safety equipment according to the class, division or subsidiary risk of the dangerous good being transported.

## Stowage

- 19 The [ADG Code](#) also sets out rules on how placard loads of dangerous goods are to be stowed on vehicles.
- 20 A significant rule to be aware of is that a placard load of flammable gas in cylinders may not be transported in an enclosed vehicle or enclosed compartment unless it is ventilated to prevent the build-up of vapours.
- 21 In order to allow normal operations, an exemption from stowage requirements has been granted to allow transport of dangerous goods on NPWS vehicles that do not have gates, or rigid sides and tailgates at least 2/3 the height of the containers. This exemption is conditional on the dangerous goods being properly restrained on the vehicle.

### 2.12.4 Dangerous goods storage

#### Storage of fuels

- 1 Fuels will be stored as follows:
  - All petroleum products will be stored in accordance with [AS 1940:2017: The storage and handling of flammable and combustible liquids](#).
  - Drums of aviation fuel may be stored temporarily at helipads and staging areas during fire operations.
  - Limitations apply to the amount of dangerous goods that can be stored on unlicensed premises. The limit for Jet A-1 fuel is 1,000 L. The limit for petroleum fuels is 100 L. A Dangerous Goods Licence must be obtained if more than this is to be stored.

Commercial bulk fuel supply will be used whenever available and feasible.

# 2.0 Prevention and planning

## Storage and transport of incendiaries

- 2 The following provisions apply to incendiaries:
  - The product Safety Data Sheet (SDS) must be referred to for the correct storage and transportation of all incendiaries
  - Incendiaries should be stored in a dry, clean, ventilated and elevated place, in a separate room and away from any possible reagents and petroleum fuels.
  - Potassium permanganate and glycol must not be stored in close proximity to each other.
  - Incendiary capsules should be stored and transported within a lockable box (see section 9.4 of the [NPWS Firearms Management Manual 2022](#)).
  - Potassium permanganate and glycol incendiary capsules should be transported in separate leak-proof containers.
  - Maximum 1,000 kg or litres is to be stored at any one time.
  - The SDS is to be located within the storage shed.
  - A 250 x 250mm “Oxidising Agent 5.1” sign is to be placed on the outside of the storage shed.

---

## 2.13 Asbestos

### 2.13.1 Background

- 1 Asbestos is a naturally occurring mineral with a long, thin fibrous shape. Asbestos fibres are carcinogenic, and, when inhaled, can cause asbestosis and mesothelioma.
- 2 Every person is exposed to some level of airborne asbestos in the air they breathe. Most people who develop asbestos-related diseases have worked on jobs where they frequently breathed in large amounts of asbestos fibres, such as construction worker.
- 3 A large quantity of uncontaminated air is drawn in from the combustion process, in the order of tens of thousands of cubic metres of fresh air or more depending on the size of the fire. This large quantity of fresh air has an effect on diluting airborne asbestos fibre concentrations below both exposure standards and detection limits.
- 4 Asbestos can pose a hazard on the fireground, as structures and materials containing asbestos may be rapidly degraded by both fire and firefighting activities, liberating asbestos fibres into the air, and increasing the risk of inhalation, both directly, and via the contamination of clothing and equipment used on the fireground.
- 5 Due to the risk posed by airborne asbestos fibres in fire situations, precautions must be taken to ensure exposure to asbestos for firefighters is minimised.

### 2.13.2 Asbestos policies

- 1 The Incident Controller or Officer in Charge must assess the conditions to determine the likelihood of an asbestos risk.

## 2.0 Prevention and planning

- 2 The [NPWS Asbestos on Fireground Procedure](#) defines the processes required for NPWS workers to identify and manage WHS risks and obligations associated with naturally occurring or manufactured asbestos on the fireground.
- 3 For all incidents where an asbestos risk has been encountered, the [NPWS Asbestos on Fireground Procedure](#) contains decontamination procedures are to be applied to NPWS personnel and equipment prior to departing the location.

# 3.0 Preparedness

## 3.0 Preparedness

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## 3.1 Preparedness planning

### 3.1.1 Background

- 1 Preparedness is an essential component of effective fire suppression. It allows for the establishment of cooperative arrangements for coordinated fire suppression, the readiness of trained staff and pre-deployment of equipment to areas which will facilitate a rapid response.
- 2 The [Australian Fire Danger Rating System](#) (AFDRS) is a national approach to calculating, forecasting and communicating fire danger.
- 3 Fire danger ratings describe the potential level of danger should a bushfire start.

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- 4 The Fire Behaviour Index (FBI) replaces the Fire Danger Index (FDI) and assists with operational decision making.
- 5 The Fire Behaviour Index has been incorporated into NPWS policy and protocols for response operations.
- 6 Key AFDRS policy is referenced throughout the Manual. Further information including support tools, fuel characteristic guides, and online learning requirements is available at [ParkSite Australian Fire Danger Rating System](#).

### 3.1.2 Preparedness policies

- 1 The Fire and Incident Operations Branch, as well as each Branch and Area will annually review and maintain its organisational competency to respond to and manage incidents, protect its assets and assist where required under the NSW bushfire coordination arrangements.
- 2 NPWS will provide a level of preparedness for bushfire suppression that:
  - is appropriate to mount sufficient initial attack capability given the existing and forecast fire danger
  - recognises the possibility of extreme fire conditions, and
  - aims to reduce the impact of bushfires on private property and natural and cultural heritage values.
- 3 In determining fire suppression and response capability, each Branch will consider:
  - an evaluation of bushfire risk
  - identification of, and appropriate reduction of hazards
  - identification of infrastructure and information systems necessary for fire suppression
  - the provision of a strategically located firefighting force with appropriate training, equipment and readiness
  - the provision of a bushfire detection and response system that is responsive to changes in fire danger, and
  - identification and maintenance of access roads and helipads.
- 4 Before the bushfire danger period:
  - Fire and Incident Operations Branch and each field Branch will prepare [incident procedures](#) to ensure there is an effective and timely response to any bushfire occurring on NPWS-managed land or within the 8 km (or other specified distance) statutory response limit from NPWS managed land (s. 133, RF Act).
  - All Branches will conduct an annual Fire Preparedness Day (FPD).
  - Exercises will be undertaken within NPWS and, in some circumstances, in conjunction with other firefighting authorities, to test equipment, undertake an annual physical check of personal protection equipment and review all parts of incident detection, response and suppression.

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- All Branches will record staff attendance and forward this along with records of staff currency to the Capability and Training Unit prior to 30<sup>th</sup> September in order for this information to be officially recorded in MyCareer.
  - All Branches will complete a pre-season checklist (via Elements) that lists all essential pre-season preparedness activities.
  - Directors of Park Operations Branches will sign off that all pre-season preparedness activities on the checklist are complete.
- 5 During the bushfire danger period each Branch will respond to bushfires in a manner appropriate to the level of risk and bushfire potential and in accordance with the relevant BIP and BFMC Plan of Operations.

### 3.1.3 Incident procedures

- 1 Each year the Fire and Incident Operations Branch will review the FMM for circulation to Branches before the start of the bushfire danger period.
- 2 The Fire and Incident Operations Branch will prepare the FIOB Incident Procedures and Operational Branches will prepare the BIP. These documents will be reviewed to ensure both accuracy and currency prior to the start of each fire season. The review must ensure that incident procedures are consistent with NPWS policy. BIPs will be communicated to the appropriate fire control officers as relevant plans for the purposes of s.38 and 44 of the RF Act and to BFMCs for reference within BFMC Plan of Operations.
- 3 Branch Incident Procedures will include:
- telephone numbers and addresses for all relevant firefighting authorities, emergency response and support agencies
  - contacts for support, including equipment, accommodation and welfare arrangements
  - Branch fire preparedness guidelines, including preparedness levels informed by [AFDRS Bushfire Alerts Matrix and Alert Levels for BIPs](#) and [AFDRS Community Messages and Action Statements for BIPs](#).
  - fire detection procedures – prepared as a schedule of actions and arrangements
  - procedures for detection of and response to other incidents
  - an outline of the process for declaring and revoking incidents
  - information on hazards, risks and procedures relevant to the area
  - information on significant assets, built, natural and cultural
  - all coordinated firefighting arrangements
  - the timing and characteristics of the Branches critical fire season
  - procedures for the protection and evacuation of visitors for all reserves, developed in conjunction with Police and other emergency authorities
  - information about the NPWS radio system and radio systems of other agencies that will allow effective communication during incidents. Local Branch radio



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channels and towers should be listed and include local cross agency and cross border radio channels and procedures where applicable.

- standardised and consistent DO guidelines.
- 4 The following will also be included in BFMC Plan of Operations:
    - fire detection procedures – prepared as a schedule of actions and arrangements
    - procedures for the protection and evacuation of visitors for all reserves, developed in conjunction with Police and other emergency authorities.
  - 5 Each Branch will identify indicators, based on the Keetch-Byram Drought Index (KBDI), FDR and other local indicators as guides to assess the need for bans and closures. These will be set out in the preparedness levels table included in the BIP.
  - 6 All firefighting and support vehicles must carry a copy of the incident procedures relating to their home Branch. This may be in print or electronic format. Electronic format may be carried by fire crew within the vehicle.
  - 7 Under privacy laws, staff home contact details (including BIP containing staff home contact details) may not be distributed externally without the staff member's consent.

### Critical fire season

- 8 Each Branch will define its own 'critical fire season' – for the Branch and for each Area or group of reserves. Predictions will be made annually on the extent of the critical fire season Southern Oscillation Index trends and RFS advice for the geographic area.
- 9 Directors of Park Operations Branches will ensure the predicted range of the critical fire season is incorporated into Branch and Area works programming, ensuring maximum availability of resources during this predicted range.

### Preparedness levels

- 10 Each Branch will include preparedness guidelines in its incident procedures, based on [Table 14: Fire Danger Ratings: preparedness guidelines and public warnings](#)
- 11 Preparedness levels are to be implemented during the bushfire danger period (whether locally declared or during the state-wide declaration period) in all Branches and Areas. Branch will ensure that appropriate systems are in place to initiate the correct level of preparedness.
- 12 Branches and Areas should determine the daily preparedness level using either the FBI issued daily by BOM during the bushfire danger period, or local weather station information.

As the FBI may vary from area to area, Branches and Areas should each day implement the preparedness level that is most applicable for their Branch or Area.
- 13 [Table 14: Fire Danger Ratings: preparedness guidelines and public warnings](#), is a guide for defining preparedness levels in relation to the FDR. Branches and Areas should use this as a template and amend it to suit local conditions and response capacity.

## 3.0 Preparedness

- 14 Preparedness levels are provided as a guideline and Branches may wish to increase or decrease them in response to specific circumstances, e.g., lightning, arson, other fires (local or out-of-branch) absorbing firefighting resources (all agencies).

# 3.0 Preparedness

**Table 14: Fire Danger Ratings: preparedness guidelines and public warnings**

The boundaries of Fire Weather Areas do not align with NPWS administrative boundaries and there will be situations where a single NPWS Area has more than one Fire Danger Rating. Area Managers in consultation with Branch Directors should consider the Fire Danger Rating information available via the Bureau of Meteorology and Australian Fire Danger Rating System Viewer to determine their readiness levels and resource accordingly.

Fire Danger Rating	FBI Trigger	Preparedness	Public warnings
<b>CATASTROPHIC</b> (FBI 100+)	75+	<p>As for Extreme (FBI 50-74) Rating plus:</p> <ul style="list-style-type: none"> <li>Staff to work from local depots and be prepared for immediate response.</li> <li>Branch Director to consider suspending leave and adjusting rosters to ensure maximum staffing levels.</li> <li>Unless explicitly approved by the Branch Director, only fire-ready staff (including other agency) undertaking fire preparedness or response tasks will be permitted on park.</li> <li>Staff living on park will be managed according to site specific assessments and as described in the Emergency Management Plan.</li> </ul>	<p>As for Extreme (FBI 50-74) plus:</p> <ul style="list-style-type: none"> <li>At the discretion of the Executive Director Park Operations and in consultation with the Branch Director:                             <ul style="list-style-type: none"> <li>All national parks and reserves are to be closed</li> <li>All public visitor facilities, lessees, and park residents are to be evacuated.</li> </ul> </li> </ul> <p><i>*A risk assessment may be undertaken to inform decisions on closures and evacuations.</i></p>
	<b>EXTREME</b>	50-74	<p>As for High Rating plus:</p> <ul style="list-style-type: none"> <li>All serviceable fire units (other than those required for plant deployment) available for initial attack.</li> <li>Staff to work from local depots or strategic field locations and be prepared for immediate response.</li> <li>IMT may be pre-emptively established in consultation with other fire agencies.</li> <li>Suspend activities that may cause accidental ignitions, (e.g., slashing, welding and plant operations in areas with rock present).</li> <li>Load heavy plant items ready for transport, if not already pre-deployed.</li> </ul>
<b>HIGH</b>	24-49	<p>As for Moderate + Rating plus:</p> <ul style="list-style-type: none"> <li>A minimum of 4 fire units available for initial attack in each Area, unless otherwise approved by the Area Manager after consideration of risks and mitigation measures. Fire units to carry water.</li> <li>If a TOBAN is declared, the fire units should be crewed by rostered staff, unless otherwise approved by the Area Manager. Area Managers may authorise fire units to be taken home by rostered staff if this will reduce response times.</li> <li>Monitor fire detection systems (e.g., fire cameras and satellite detection platforms) as per local MoUs and protocols.</li> <li>Risk assess activities that may cause accidental ignitions, (e.g., slashing, welding and plant operations in areas with rock present) once FBI &gt;40. Mitigate risks or consider suspending activity.</li> <li>Consider loading heavy plant items ready for transport, if not already pre-deployed.</li> </ul>	<ul style="list-style-type: none"> <li>Consider implementing Park Fire Bans.</li> <li>Close sections of reserves affected by fire operations.</li> <li>Update NPWS website to reflect any closures.</li> <li>Implement any relevant actions of the Emergency Management Plans.</li> </ul> <p><i>*A risk assessment may be undertaken to inform decisions on Park Fire Bans, closures and evacuations.</i></p>
<b>MODERATE</b>	Moderate + 17-23	<p>As for Moderate (FBI 12-16) Rating plus:</p> <ul style="list-style-type: none"> <li>A minimum of 3 fire units available for initial attack in each Area, unless otherwise approved by the Area Manager after consideration of risks and mitigation measures, including weekend resourcing coverage and chance of initial attack being successful. Fire units to carry water. Fire units may not always be fully crewed, and staff may be rostered off but available – this will be at the discretion of the Area Manager.</li> <li>Consider monitoring fire detection systems (e.g., fire cameras and satellite detection platforms).</li> <li>Consider arrangements for rapid response of heavy plant and/or aircraft.</li> <li>All staff travelling in fire units must carry fire PPE.</li> </ul>	<ul style="list-style-type: none"> <li>Normal operations.</li> <li>Nil public warnings.</li> <li>Close sections of reserves affected by fire operations.</li> <li>Update NPWS website to reflect any closures.</li> </ul>
	Moderate 12-16	<p>As for No Rating plus:</p> <ul style="list-style-type: none"> <li>A minimum of 2 fire units available for initial attack in each Area. Fire units may be used on general duties and are not required to carry water. Fire units may not always be fully crewed, and staff may be rostered off but available – this will be at the discretion of the Area Manager.</li> <li>Consider an aerial reconnaissance flight if lightning has occurred.</li> </ul>	
<b>NO RATING</b> (During the declared Bush Fire Danger Period)	0-11	<ul style="list-style-type: none"> <li>Duty Officers rostered at Branch consistent with BIPs, and FIOB Duty Officer Handbook.</li> <li>Consider having 1-2 fire units available for initial attack in each Area during the Bush Fire Danger Period. Fire units may be used on general duties and are not required to carry water. Fire units may not always be fully crewed, and staff may be rostered off but available – this will be at the discretion of the Area Manager.</li> <li>Fire PPE for all firefighting staff is prepared and ready for immediate deployment.</li> </ul>	

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- 15 In FDRs of High or greater, consideration should be given to establishing preformed IMTs, in consultation with other fire agencies.
- 16 In FDRs of Extreme or greater, Branch Director to consider suspending leave and adjusting rosters to ensure maximum staffing levels.

### 3.1.4 Duty Officer system

- 1 The State Duty Officer (SDO) is active year-round 7 days a week on scaled standby, or as determined by the Director FIOB.

The SDO is the primary contact for Branch Duty Officers (BDOs) when reporting notifiable incidents and provides advice to the Media Duty Officer, Director FIOB and other relevant sections of NPWS on notifiable events as per [Figure 14: NPWS fire, Incident and Event Notification Flowchart](#).

- 2 The State Operations Liaison Officer (SOLO) is activated on scaled standby arrangements as required during the bushfire season. The SOLO is the primary NPWS contact for external agencies at State Operations Centres and provides advice to NPWS Executive on the state of active incidents.

When activated, the SOLO may assume some of the tasks of the SDO, including leading the NPWS state coordination team.

- 3 The State Resource Coordinator (SRC) is activated on scaled standby arrangements during the bushfire and hazard reduction season to facilitate effective and timely out-of-branch or interagency resourcing requests as required or as determined by the Director FIOB.
- 4 The Aviation Duty Officer (ADO) is active year-round 7 days a week on scaled standby arrangements. The ADO provides the first point of contact for NPWS Branches for information on suitability and availability of aviation services and maintains a strategic overview of aviation use in NPWS operations.
- 5 The System Support Duty Officer provides advice and assistance across the range of fire and incident management systems, including Elements and ICON.
- 6 The GIS Duty Officer is activated during the bushfire season to provide spatial data and mapping support to NPWS staff and to the SDO or SOLO if required.
- 7 The Radio Duty Officer (02) 66507124 is active all year-round on scaled standby arrangements and provides advice and assistance on NPWS and PSN radio network issues.
- 8 During the designated and local bushfire danger periods, Operations Branches may activate a 'Duty Officer' system to coordinate response to fires.

Branches will appoint a BDO between 0800-2100 seven days per week under the following circumstances:

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- when there is active fire on-park in the Branch
  - when NPWS staff are involved in active (above patrol status) fire off-park within the Branch
  - when there is active Class 2 or 3 fire/s on-park in an adjoining Branch
  - when a TOBAN is declared for any part of the Branch
  - when staff whose normal place of work is in the Branch, including line-of-business Branch staff, are deployed Out-Of-Branch for bushfire or other incident response, and arranged through the SDO and / or the SRC.
  - in other circumstances when directed by the Park Operations Branch Director following discussion with relevant Executive Director Park Operations.
- 9 BDOs must be contactable as required by the Branch Director during the bushfire danger period. At all times the BDO must:
- Be contactable within 10 minutes by phone
  - Be able to contact the Branch Director, Area Managers, other Duty Officers and other relevant agencies
  - Be capable of making an initial assessment of an incident and activating and coordinating an initial response, management of the fire will then be assumed by the appointed Incident Controller
  - Have a high-level understanding of Branch and NPWS Incident Coordination Procedures
  - Be able to update relevant systems including ICON and Elements.
- 10 During the bushfire danger period all rostered DOs must have access to suitable telecommunication facilities (i.e., network connectivity) to allow the timely monitoring and activation of local NPWS response to bushfire.

### 3.1.5 Fire Preparedness Days

- 1 Each Branch will undertake an annual Fire Preparedness Day (FPD) to assess, replace and maintain equipment, refresh staff skills and currencies and provide information on new policy and procedure developments.
- 2 All staff must be recorded in MyCareer as having attended an annual FPD to be eligible to go to fires.
- 3 The main aims of undertaking annual FPDs are to:
- ensure all staff have a refresher of basic firefighting training and safety principles
  - identify areas of deficiency in training or equipment preparedness for Branches
  - learn about new policies and policy changes, and fulfil policy requirements
  - collect data on currency hours from the previous fire season (to be forwarded to the Capability and Training Unit within FIOB)
  - learn about new equipment and standards, and

# 3.0 Preparedness

- obtain valuable feedback from staff regarding current fire practices, equipment standards etc.
- 4 It is recommended that, where possible, FPDs be undertaken in conjunction with another agency to help foster good relationships and assist cooperative firefighting.
  - 5 The duration of a FPD must be sufficient to encompass all learning opportunities and team-based roles.
  - 6 Fire and Incident Operations Branch will annually produce, prior to Fire Prep Days, the [FPD Resource Kit](#) as a tool to help Branches run FPDs.
  - 7 The following must be undertaken at annual FPDs:

**Table 15: List of mandatory FPD activities**

Mandatory Activities	Related policy/procedures
Review new policy and procedures including BIP and preparedness levels including: <ul style="list-style-type: none"> <li>• Branch fire notification, reporting and response procedures</li> <li>• seasonal conditions / fire weather (KBDI, FBI, Drought Factor)</li> <li>• ignition potential</li> </ul>	<a href="#">3.1.3 Incident procedures</a> <a href="#">3.1.4 Duty Officer system</a>
Review vehicle entrapment procedures and undertake training and undertake a vehicle entrapment exercise for all staff.	<a href="#">FMC 2021/15 'Vehicle Entrapment Procedures'</a>
Conduct full inspection of personal protective equipment (PPE) (if not already conducted as a pre-season check)	<a href="#">3.6 Personal firefighting equipment</a>
Review the procedures for managing hazardous trees on the fireground and undertake a practical exercise	<a href="#">4.3.5 Hazardous trees</a>
Review staff competency and record fire management activity hours.	<a href="#">3.7 Learning and development</a>
Record staff attendance at fire the preparedness day	<a href="#">3.7 Learning and development</a>

- 8 Consideration should be given to undertaking optional topics during the annual FPDs. FIOB will provide a selection of optional content annually and/or Branches may develop their own that addresses a key issue in the Branch. Annual optional topics will be sourced from the experience of previous year(s) fire key issues. If critical issues are identified from previous year(s) then the topic may be elevated to a mandatory level.

### Assessments to be undertaken at fire preparedness days

- 9 At annual FPDs, all staff will present their Fire Incident Field Guide for verification.
- 10 The 'Fire Preparedness Day Attendance and Currency Record' included in the [FPD Kit](#) is required to be filled out by all attendees, signed by the FPD Coordinator and forwarded to ERT0 for entry into MyCareer.
- 11 Assessments that can be undertaken at FPDs include:

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- final assessment decisions for Crew Member competency (proof of completion presented in Crew Member passport)
- assessment of Crew Member currency
- assessment of Crew Leader currency

---

## 3.2 Communications equipment

### 3.2.1 Background

- 1 The use of communications equipment is an essential component of fire management operations. Control and coordination relies on the timely flow of information between all personnel and between the fireground and the control centre. Effective communication is essential to the safety of personnel during all fire management operations.
- 2 Communications systems include radio networks, telephone equipment, computer networks and mobile telephone systems.
- 3 NPWS operates one radio system – a very-high-frequency system (VHF) across NSW. The VHF system may be augmented with portable repeaters during incidents. NPWS also uses radios with frequencies assigned to other firefighting authorities for coordinated fire management. Each vehicle that may be used during fire operations is fitted with a radio programmed to a NPWS system.
- 4 All VHF radios are programmed with NPWS profile, RFS fireground and fireground repeaters and Department of Energy, Environment and Climate Action [Victorian Government Department] (DEECA) analogue incident frequencies.
- 5 Radio System Information for the NPWS VHF network are contained in the [radio system information cheat sheet](#).

### 3.2.2 Communications equipment policies

- 1 NPWS will maintain effective radio communication systems to facilitate efficient and safe fire management operations.
  - Each Branch will acquire and operate communications equipment that is required for implementing efficient and safe fire management operations.
  - Each Branch will establish incident management facilities equipped with the communications technology required for implementing efficient and safe fire management operations.
  - No vehicle will be allowed on the fireground unless it has effective communications within the chain of command.

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## Radio equipment

- 2 Each Branch will appoint an officer who is responsible for overseeing the maintenance of the Branch's radio system. Branches should advise the [npws.mobileassets@environment.nsw.gov.au](mailto:npws.mobileassets@environment.nsw.gov.au) upon appointment of this person.
- 3 All NPWS radio system equipment will undergo an annual program maintenance inspection (PMI) prior to the fire season.
- 4 Assets and Infrastructure Branch reviews the NPWS radio profile annually and it is uploaded during the PMI.
- 5 Each Branch will maintain VHF radio coverage maps, where appropriate, and store for ready access during incidents. All maps are to be located in Content Manager-DOC17/243854.
- 6 Branches must ensure the [Radio Call Signs](#) spreadsheet is updated at least twice each year with correct and up to date radio call signs against staff. An update to the Radio Call Sign spreadsheet is required prior to 1 July in order to meet annual radio PMI requirements and again prior to 1 October to meet annual fire preparedness requirements.
- 7 BIP will include information on the NPWS radio system and the systems of other agencies that will allow effective communication during incidents.
- 8 Where there is an identified need, Branches will contact the Radio Assets officer to assist in acquiring radio equipment to allow communication with other fire agencies on their primary systems.
- 9 Consideration will be given to fitting each vehicle that may be used in command roles with an additional radio to facilitate vehicle-to-vehicle radio communications with other agencies or neighbours. Such communication may be on the PSN network or on the ultra-high frequency-citizen band (UHF-CB) network, depending on the location in NSW.
- 10 Use of UHF-CB radios in NSW is regulated by the [Australian Communications and Media Authority \(ACMA\)](#) and covered under the Radio communications (Citizen Band Radio Stations) Class Licence 2015. UHF-CB radios must comply with the standard [Radiocommunications \(UHF CB Radio Equipment\) Standard 2011 \(No. 1\)](#).
- 11 UHF-CB radios should only be used for short range tactical communications. The NPWS VHF system should be the primary communications system for command and strategic purposes during incidents. NPWS will endeavour to program its radios on the NPWS system to include the frequencies used by other fire agencies in the same frequency band.
- 12 All NPWS vehicles associated with fire operations will be fitted with a NPWS mobile radio and a NPWS programmed P25 NSW PSN compatible UHF radio.
- 13 All NPWS vehicles associated with fire operations will have a VRN which is the 4-digit mobile radio selcall number allocated to the vehicle displayed on the dash; on the top



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of the vehicle bonnet; on each door of the vehicle, and at the back of the vehicle or appliance as per [Appendix 1](#).

### Telephone equipment

- 14 Each Branch will assess the effectiveness of mobile telephone coverage across reserves and acquire the equipment necessary for effective communication during fire management operations.
- 15 Each Branch will fit designated command vehicles with hands free technology to legally accommodate smart phones to ensure effective communication during fire management operations.
- 16 Each Branch will acquire, when necessary, telephone and other equipment to effectively operate incident management facilities during incidents.
- 17 Incident management centres should have at least 2 telephone lines connected directly to a public telephone exchange.

### Computer networks

- 18 Each NPWS administrative office will be connected to a computer wide-area-network that facilitates incident reporting and access to weather information.
- 19 Prior to the fire season all staff who may attend an IMT will make sure their systems logins are current (see [Fire Information Systems – Quick Reference Card](#)).

### Mobile Devices

- 20 Mobile devices (e.g., tablets, smart phones) allow rapid transfer of information between the field and the IMT. They are an additional means of intelligence gathering and can form an important part of the overall incident intelligence process.
- 21 The use of mobile technology when managing fires is becoming routine and the use of this technology will continue to change in the future. Current standard mobile devices can be found in CS Connect.
- 22 To ensure consistency on mobile devices where inbuilt GPS sensors are used, Branches should consider the following applications (apps):
  - Avenza PDF Maps (base maps showing NPWS tenure are in Google Drive)
  - FireMapper (standard Australasian All Hazards Symbology Set (AAHS) symbology is used and exports in various formats)
- 23 More information can be found on the [Maps and Data](#) page on ParkSite.
- 24 Mobile devices are not to be relied on as a form of primary communication on a fireground.

# 3.0 Preparedness

## 3.3 Weather information

### 3.3.1 Background

- 1 Meteorological information is used to plan and implement fire management operations, anticipate fire activity and determine appropriate levels of preparedness.  

Up-to-date meteorological information is essential for developing and implementing fire suppression strategies and prescribed burns, and for ensuring the safety of personnel on the fireground.
- 2 The [Bureau of Meteorology \(BOM\)](#) is the main provider of meteorological information. There are a number of other agencies and companies that also provide meteorological information, including lightning data.
  - Most weather information is available on the internet, either on publicly accessible sites or through subscription services. Information pertinent to fire operations can be accessed through the BOM via a registered user webpage provided for NSW fire management agencies or the Fire Weather Viewer available via ICON.
  - BOM can also prepare site-specific special fire weather forecasts for fire operations.
  - Lightning data can be displayed in MapDesk or downloaded from the ICON COP.

### 3.3.2 Weather information policies

- 1 Weather information will be accessible as follows:
  - Each Branch office will have internet access to BOM weather data.
  - The Fire and Incident Operations Branch will conduct annual negotiations with BOM and the NSW RFS on the services and information available via ICON.
  - Access to internet and weather services will be set up as soon as possible after the establishment of an incident control centre.
  - Permanent incident management facilities will be equipped with weather monitoring equipment.
  - Branch will implement appropriate on-site weather monitoring equipment where this is deemed necessary.

### Monitoring weather for fire preparedness

- 2 Each Area office will check seasonal data and weather forecasts on a daily basis during periods of fire risk to:
  - determine the local risk of fires, and
  - implement the appropriate fire preparedness procedures, and
  - have access to and be able to check lightning data through MapDesk or the ICON COP.

## 3.0 Preparedness

### Fire weather warnings, severe weather warnings and total fire bans (TOBANs)

- 3 The Fire and Incident Operations Branch will email or Short Message Service (SMS) to each Branch office the appropriate notices, advising of fire weather warnings and TOBANs only.
- 4 Each Branch office will ensure that fire weather warnings, severe weather warnings and TOBANs are appropriately disseminated to key visitor areas, workplaces and staff working in remote areas.

### Automatic weather stations

- 5 The Fire and Incident Operations Branch will negotiate with BOM, and operations support and coordination units to progressively improve coverage of automatic weather stations across the state.
- 6 The [NPWS PAWS Weather Viewer](#) is a web based observational portal for displaying real-time weather data from both Bureau of Meteorology automatic weather stations (AWS) and portable automatic weather stations (PAWS).
- 7 The NPWS PAWS Weather Viewer enables NPWS staff to monitor weather conditions and FBI and FDI captured through the weather stations across NSW.

### 3.3.3 Monitoring weather during fire management operations

- 1 Weather conditions will be regularly recorded on the fireground by divisional and sector commanders and logged at the incident control centre.
- 2 Weather forecasts and information will be displayed in incident control centres and assembly areas and updated on a regular basis.
- 3 Portable remote weather stations may be placed in suitable locations close to the fireground.

### Wind Adjustment Factors

- 4 Wind speeds listed in BOM forecasts and Automatic Weather Stations are measured 10m Above Ground Level (AGL) averaged over 10mins. Field observations are typically taken at a height of (approximately) 2m AGL. The measurement height of wind speed should always be recorded as part of incident logs.
- 5 10m wind speeds are used in most fire behaviour calculators (Macarthur / Vesta Mk2) and in burn prescriptions for hazard reduction burning. Winds measured at 10m will almost never be the same as winds measured at 2m and require the use of a Wind Adjustment Factor (WAF).
- 6 Three simplified WAF have been agreed upon by NSW fire agencies and should be used as a 'rule of thumb' for predicting wind speeds at 10m from a 2m ground reading. These WAF should not be used when the wind speed exceeds 30km/h at 10m AGL as other weather factors will likely influence wind speed and fire behaviour at 2m AGL.

# 3.0 Preparedness

**Table 16: Wind Adjustment Factors**

Vegetation type	Wind adjustment factors
Open area / Grassland	1.25
Woodland	2.0
Open forest	3.0

## Requests for Incident Weather Forecasts

- 7 The BOM can prepare site-specific Incident Weather Forecasts (IWFs) for the fire operations (both bushfires and prescribed burns). IWFs are requested through an online portal via the [BOM registered users](#) page under 'Incident Weather'.
  - Forecast requests that arrive before 2pm will be issued by 5pm. Forecasts requested after 2pm will be issued as soon as possible after 5pm.
  - To ensure the most accurate forecast, include the following in the request:
    - specific and current locations (latitude and longitude coordinates)
    - elevation and aspect for the bushfire or prescribed burn, and
    - weather observations from the fireground or burn site (including the elevation the observation was taken at and the position relevant to the fireground).
- 8 NSW RFS State Operations has implemented a prioritisation procedure for IWFs. The following process applies:
  - New IWFs can be submitted at any time and the BOM will automatically produce a forecast where possible.
  - Where demand exceeds capacity BOMs ability to supply, Predictive Services will consult the RFS State Operations Controller (SOC) to prioritise new requests.
  - Refer to [FMC 2019/13](#) for further information.
- 9 Forecasts are not automatically issued for Section 44 fires. Daily requests for Section 44 fires will receive an afternoon forecast and a 6:00 am forecast. The daily request form should include current information on fire location, the name of the Incident Controller and weather details.

# 3.0 Preparedness

## 3.4 Fire bans, alerts and closures

### 3.4.1 Background

- 1 During High fire danger, or when an active bushfire is in or adjacent to a reserve, consideration should be given to closing a reserve or a section of a reserve, or activities within the reserve to be cancelled. This action is taken to protect the safety of the public and is used to free resources to fight existing fires.

### 3.4.2 Fire bans, alerts and closure policies

- 1 Each Branch will identify indicators, based on [Table 14: Fire Danger Ratings: preparedness guidelines and public warnings](#) and other local indicators as guides to assess the need for bans and closures. These will be placed in Branch incident preparedness level tables and included in BIP.
- 2 Branches are responsible for managing their fire bans, as well as their fire related alerts and closures. This includes ensuring accurate alert posting to the NPWS public website via the Elements Alerts and Closures Module.
- 3 Fire and Incident Operations Branch is responsible for updating the public website via Elements with TOBAN information and after-hours emergency updates and can assist with park closures or bans that cover one or more branches. For assistance please contact the [State Duty Officer](#).
- 4 Fire management signs, where installed, should be in accordance with the [NPWS Park Signage Manual](#).

### Park fire bans

- 5 The Branch Director can declare an individual park fire ban.
  - Park fire bans may be declared when fuel and weather conditions are conducive to dangerous fire behaviour.
  - Reserves, or parts of reserves, may be closed to the public when the fire danger poses a risk to the safety of visitors.
- 6 Directors of Park Operations Branches may declare a park fire ban affecting all reserves within their Branch if they believe that current or forecasted weather conditions, or current committed resource status, or other such requirements, merit the declaration of such action.
- 7 Partial park fire bans, such as a ban on solid fuel, can be considered.
- 8 Before proceeding with a park fire ban, Directors of Park Operations Branches should consider, weather outlook, visitation, threats to property, usage, staffing and fire activity.

## 3.0 Preparedness

- 9 In addition to the Branch Director, the [Instrument of Delegation and Authorisation of Functions](#) may provide for approval of park fire bans by other Operations staff.
- 10 Branch are responsible for updating the [NPWS public website via](#) the Elements Alerts and Closures Module with details of park fire bans as per the [Elements Alerts and Closure handbook](#).
- 11 Park fire ban signs will be erected at selected locations, as per local arrangements, when a ban is declared for the reserve.
- 12 The use of gas-fired and electrical appliances may be permitted for cooking during a park fire ban where:
  - the appliance is under the direct control of an adult
  - the appliance is placed or located in an area where there is no combustible material within 2 m, and
  - there is an adequate water supply to extinguish fire adjacent to the appliances.
- 13 Designated fireplaces will be clearly identified.

### Total fire bans (TOBANs)

- 14 A TOBAN is declared for days when fires are likely to escape and be difficult to contain.
- 15 The BOM provides advice on forecast weather conditions and FDRs. The RFS Commissioner declares TOBANs based on this advice and other information
- 16 FDRs and TOBANs are declared for [NSW Fire Areas](#), which group together a number of LGAs with similar weather conditions and terrain.

FDRs are generally produced twice daily by the BOM during the bushfire danger period, by 8:30 am and 16:30 pm.

A decision to declare a TOBAN is generally made at around 5pm each afternoon during the Bushfire Danger Period and applies for the following day, starting from midnight and lasting 24 hours.

General weather forecasts are based on NSW weather districts (rather than NSW Fire Areas).

- 17 Branches can apply through the Fire and Incident Operations Branch (for application to NSW RFS) for the declaration of a TOBAN within an NSW Fire Area.
- 18 All relevant staff within the Branch will be advised of the declaration of a TOBAN.
- 19 'Total Fire Ban' signs will be erected in selected locations, as per local arrangements, and the Fire and Incident Operations Branch will place TOBAN information on the [NPWS public website](#) via Elements.
- 20 A TOBAN declaration prohibits the lighting of a fire in the open (including wood or charcoal barbecues) and suspends fire permits.

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- 21 Gas-fired or electric barbeques or cookers can be used (within NPWS managed lands) if the following conditions are met:
- they are in a public picnic or camping area, where the appliance and this area have been approved by the land manager for this purpose
  - they are under the direct control of a responsible adult, who is present at all times while the appliance is operating
  - all flammable materials have been removed from the ground within 2 m of the appliance while it is operating, and
  - a system of applying an adequate stream of water to the appliance and its surrounds is available for immediate and continuous use.

### Total fire ban exemptions

- 22 TOBANs do not restrict the use of gas or electric cookers within a caravan or 3-sided enclosed annexe of a caravan.
- 23 During TOBANs and park fire bans, members of the public are permitted to use permanent fixture gas or electric appliances with totally enclosed flames in park picnic areas. A system for supplying an adequate stream of water must be available for emergency use.
- 24 Where no such permanent fixture gas or electric appliances exist in a park picnic or camping area, Branches may facilitate the use of gas or electric appliances during TOBANs or park fire bans by the demarcation of specific cooking areas e.g., by identifying a cooking area with signs and roping it off. Local conditions and risk factors will determine if it is appropriate to permit the use of gas or electric appliances at specific sites.
- Such areas must have adequate water supplies i.e., a system of applying an adequate stream of water to the gas or electric appliance and its surrounds must be available for immediate and continuous use.
  - These conditions should be determined by the Area Manager, given due regard to the above.
  - Systems for supplying an adequate stream of water for emergency use must be identified by the Area Manager. Such systems could include hose water supply, buckets of water, gravity feed water tanks, knapsacks, etc.

### Reserve closures and cancellation of activities

- 25 The Branch Director can close all or part of a reserve.
- 26 The decision to declare a reserve closure, or to cancel activities, will be based on whether:
- there is a TOBAN in force
  - there is a fire weather warning issued for the weather district covering the reserve
  - the Branch Director considers, after an assessment of the fuel and weather conditions, that there is an unacceptable risk to the safety of visitors
  - there is an active fire in or adjacent to the reserve

## 3.0 Preparedness

- fire behaviour predictions indicate a high to extreme fire danger
  - there is a high risk of arson occurring on the day and the weather conditions are conducive towards the rapid development of a fire should an outbreak occur
  - there is a requirement to do so based on law enforcement of other incident or emergency response activities being conducted within the reserve
  - there is a requirement to do so based on pest species management programs, or
  - Branch resources are, or are likely to be, committed elsewhere.
- 27 Triggers for considering the closure of a reserve should be included in the Branch preparedness levels table and included in the BIP.
- 28 Branch Directors may close all reserves within their Branch if they believe that current or forecasted weather conditions, or current committed resource status, or other such requirements merit this action (see [Table 14: Fire Danger Ratings: preparedness guidelines and public warnings](#))
- 29 Branches are responsible for updating the NPWS public website via the Elements Alerts and Closures Module with details of reserve closures and cancellation of activities as per the [Alerts and Closures Handbook](#).
- 30 Notices advising of reserve closures and cancellation of activities should be displayed at selected locations.

### Risk assessment and the reopening of reserves after a fire

- 31 No reserve or part of a reserve affected by fire activity should be opened to the public until a formal risk assessment has been conducted and, where necessary, any appropriate remedial actions have been undertaken.
- 32 Branches and Areas should use the [risk assessment procedure and form](#). If necessary, this procedure should be modified to reflect any local or Branch requirements.
- 33 The risk assessment must include the inspection of access roads and trails, walking tracks, facilities and infrastructure used by the general public. It may also, at Branch discretion, include other assessment provisions not directly related to the safety of the general public, such as wildlife rescue and rehabilitation.
- 34 Where considered necessary, a JSA and JSB, in accordance with the [WHS Risk Management System](#) should be carried out before crews enter the area to conduct a more detailed risk assessment.
- 35 Where required, qualified expert assessors should be used to estimate the level of risk posed by fire damage to facilities, infrastructure or trees and to identify what remedial works may be required. See the [NPWS Tree Risk Management Policy](#) and the [NPWS Tree Risk Management Procedures](#) for more details.

Staff and qualified expert assessors are to wear appropriate PPE when conducting risk assessments.



# 3.0 Preparedness

## 3.5 Equipment standards

### 3.5.1 Background

- 1 NPWS is equipped with a variety of firefighting vehicles and equipment. This equipment can be deployed across NSW or interstate and is maintained to the prescribed standards listed below. All equipment must be constructed to NPWS standards in order to maintain interchangeability.
- 2 Fire and Incident Operations Branch works in consultation with other agencies to review standards of fire equipment and new equipment, and, where appropriate, to update approved equipment lists.
- 3 The schedules in [Appendix 1](#) outline these standards and have been developed using AFAC guidelines and BFCC recommendations.

### 3.5.2 Equipment standards policies

- 1 Firefighting units and associated equipment will be designed and procured according to Ass, or NPWS standards where an AS does not exist and must meet WHS standards. Firefighting units will comply with the engineering specifications for the tray exchange lockdown system.
- 2 Fire and Incident Operations Branch ([Operations Unit](#)) maintains and coordinates the setting of NPWS fire equipment standards.
- 3 Firefighting equipment will be:
  - provided in accordance with approved schedules – see [Appendix 1](#).
  - in accordance with NPWS-approved equipment lists and the [Fire Equipment Catalogue](#)
  - inspected before the start of the critical fire season to ensure WHS and Transport for NSW standards are met, and
  - used by appropriately trained and licensed personnel.
- 4 NPWS vehicles will be fitted with red beacons. NPWS vehicles will not be equipped with sirens or combinations of red and blue lights that require State Rescue Board approval.
- 5 Directors of Park Operations Branches must ensure these policies and procedures are communicated and implemented throughout their Branch.

# 3.0 Preparedness

## 3.5.3 Firefighting vehicles

- 1 Firefighting units and support equipment will be fitted with the equipment and meet the standards detailed in [7.1 Vehicle equipment schedules](#).

### Fire unit weights and placarding

- 2 The total weight of the vehicle and its full and totally equipped fire unit must be less than the vehicle's GVM and individual axle loading as specified by the vehicle manufacturer or authorised upgrade agent, and as noted by Transport for NSW.

### Vehicle and / or Fire Unit modifications

- 3 Vehicles and / or Fire Units must not be modified away from standard designs.
- 4 Modifications that change the specifications of the fire units may affect operational safety, compliance with road rules and / or void manufacturers warranties.
- 5 Proposed modifications to address operational or performance issues should be forwarded to the Mobile Assets and Radio Unit of Asset Management Branch.

### Vehicle fuel

- 6 The use of petrol-powered vehicles on the fire line is not permitted.

### Maintaining equipment

- 7 All firefighting units and equipment must be checked and serviced or repaired before the start of the bushfire danger period AND immediately following use in firefighting  
  
The standard firefighting vehicle equipment checklist should be signed off by the current driver as a 'release' prior to the vehicle resuming firefighting operations AND before being stored at the end of the bushfire danger period.  
  
To avoid equipment being removed and not returned, fire unit cabinet doors are to be sealed with dated servicing stickers at this final check.
- 8 Team Leader Field Operation and/or Senior Field Supervisors must undertake regular audits to ensure that the required equipment checks are being undertaken.
- 9 Drip torches must be checked and maintained annually. Drip torch fuel must only be mixed with a maximum of 25% petrol and 75% of either diesel or Jet-A1 fuel by volume.
- 10 Recovery equipment must be inspected prior to use to ensure the equipment is in sound working order.
- 11 Vehicle winches and winch cables must be inspected every three months. A maximum (spool out) cable length indicator should be visible on the cable to ensure sufficient cable remains on the drum during winching (as per [Safety Alert 2022/05](#))

# 3.0 Preparedness

## 3.5.4 Chainsaws

- 1 All personnel using a chainsaw must be appropriately trained and competent for the task they are performing.

**NOTE:** Trees must only be felled by trained and competent advanced tree fellers. Information is available in [Safety Alert 2018-05 Tree Felling](#), particularly on tree marking for increased safety.

- 2 Chainsaws must not be used on the fire line without the appropriate safety equipment. This includes both fire PPE and chainsaw safety equipment (as outlined in the [Chainsaw Safety Procedure](#)).
- 3 Toe protection is a standard feature under AS/NZS 4821:2014 'Protective Footwear for Firefighters'. Therefore, all fire boots certified to this standard are compliant to the Chainsaw Safety Procedure.
- 4 Chainsaws should not be used at night during either firefighting operations or prescribed burns other than in exceptional circumstances, for example:
  - when fallen timber is obstructing crew access along fire trails, or
  - when a tree is burning, and there is a high probability that it will allow the fire to escape the containment lines, and there are no other practical measures to secure the fire perimeter.

The use of chainsaws at night must only occur with the approval of the Crew Leader. The person using the chainsaw must also be satisfied they can perform the operation in a safe manner.

- 5 Once total time on duty exceeds 16 hours, staff are no longer permitted to operate chainsaws during that shift, as set out in section [1.3 Work Health and Safety](#).

## 3.5.5 Specialist equipment

- 1 Specialist equipment includes aerial drip torches or other equipment for use in fire management operations.
- 2 Powered Handheld Incendiary Launchers (PHILs) and Powered Incendiary Launchers (PILS) are classed as prohibited firearms and are banned for use in fire management operations within NPWS.
- 3 Any new specialist equipment classified as a prohibited firearm must be approved by the Firearms Management Standing Committee (FMSC). Any new specialist equipment which is an aerial device must also be approved by the ARG.
- 4 Prior to acquisition or procurement of new specialist equipment, a business case incorporating a risk assessment must be undertaken and will require endorsement by the NPWS Fire and Incident Management Executive Steering Committee, the ARG (where required) and Executive Director Park Operations approval.

# 3.0 Preparedness

## 3.5.6 Pumps

- 1 Vehicle-mounted pumps must:
  - operate on diesel fuel (diesel pumps are a mandatory requirement for firefighting appliances following the [‘Recommendations from the New South Wales Inquiry into 1993/94 Fires.’ NSW State Coroner’s Office: Sydney](#))
  - have heat protection guards fitted
  - be recoil or electric start with a manual recoil override
  - have spark arresters fitted to pump exhausts, aimed away from pump and valve controls,
  - have rotating parts enclosed, and
  - be serviced and checked regularly to ensure sufficient pressure for effective operations.
- 2 Non-vehicle mounted pumps must have:
  - spark arresters fitted to pump exhausts, aimed away from pump and valve controls
  - rotating parts enclosed, and
  - heat protection guards fitted.

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## 3.6 Personal firefighting equipment

### 3.6.1 Background

- 1 NPWS provides specific equipment for firefighting personnel. This equipment has been designed not only to be effective in firefighting, but to meet both current WHS standards and appropriate Australian firefighting equipment standards.
- 2 All personal firefighting equipment must meet WHS standards and Australian design standards where they exist. Where required, equipment must also be constructed to meet NPWS design standards.
- 3 AFAC is continually developing standards for firefighting equipment, and these become the Australian Standard. NPWS will adopt these standards as they are developed.

### 3.6.2 NPWS personnel

- 1 All NPWS staff required to engage in active fire management activities, such as fire suppression and prescribed burns, must be issued with the approved personal firefighting equipment as specified in [7.2 Personal protective equipment schedules](#).  
[Schedule 1](#) details mandatory equipment issued to each individual  
[Schedule 2](#) details additional equipment issued to crews, rather than to each individual.

## 3.0 Preparedness

[Schedule 3](#) lists equipment that should be carried by crews undertaking out-of-branch firefighting operations.

[Schedule 4](#) lists equipment that may be carried by RAF firefighters when deployed for remote area operations.

[Schedule 5](#) lists equipment that shall be carried by pilots, crew, airborne trained aviation specialists and ground based aviation personnel

Equipment, including uniform and personal protection equipment, is to be kept in clean and operating condition as per the document "[Looking after your firefighting clothing and equipment: Guidelines for the care and maintenance of personal protective clothing and equipment \(PPC and PPE\)](#)"

- 2 All personnel working on active fire management activities or entering a fireground, including IMT members, wildlife rescuers and media personnel who travel to the fireground, must wear or carry on their person the PPE listed in [Schedule 1\(a\)](#).

They must also have available on the fireground, but not necessarily carry on their person, the other essential firefighting equipment listed in [Schedule 1\(b\)](#). This could be either carried in a backpack or carried in a vehicle, as long as the equipment can be adequately deployed if required.

In addition, each crew must have the equipment listed in [Schedule 2](#) AND, if undertaking firefighting activities out-of-branch (OOB), the equipment listed in [Schedule 3 \(if required\)](#).

- 3 All personnel on the fireground must at all times wear uniform, boots and helmets as prescribed in Schedule 1(a). The only exception to this is that jackets may be removed for trail construction, patrol, mop-up and blackout work, on the condition that:

- there is no active fire in the area
- there is no risk of fire overrun, and
- jackets are carried by the firefighter.

Fire jackets are mandated to be worn at night to ensure visibility. Firefighters should undertake a dynamic risk assessment of their surroundings to determine if helmets should be worn in the vehicle.

- 4 Supervisors and crew leaders must ensure their staff or crew members use and wear the equipment as outlined in this policy and procedures.
- 5 Each crew member required to undertake out-of-branch firefighting is to be issued before deployment an out-of-branch crew member kit containing the equipment listed in [Schedule 3](#).
- 6 Staff will be instructed in the maintenance, uses and limitations of issued personal firefighting equipment. Further information can be found in the "[Looking after your firefighting clothing and equipment – Guidelines for the care and maintenance of personal protective clothing and equipment \(PPC and PPE\)](#)."
- 7 All staff are to undertake a physical check of PPE before or at an annual FPD to ensure they have been issued with all the current approved PPE; this is to be signed off at the FPD.

## 3.0 Preparedness

- 8 Other personal equipment which may assist fire staff includes a fire-resistant jumper, off-duty clothes (shorts or trousers), toiletry gear, money and driver's licence. Staff are expected to provide these items.
  - 9 All standard issue PPE worn on the fireground will be fire resistant and certified to Australian Standards:
    - AS4824:2021 – Protective clothing for firefighters
    - AS4821:2014 – Protective footwear for firefighters
    - AS4602.1:2011 & AS4602.2:2013 – High visibility safety garments for fire service personnel
    - AS/NZS2392:1999 – Textiles – Labelling of clothing, household textiles and furnishings (*pending revision*)
- Other Standards referred to are:
- ISO10528:1995 – Textiles – Commercial laundering procedure for textile fabrics prior to flammability testing
- 10 All clothing (other than standard issue PPE) worn on the fireground, including undergarments, should be ideally made from natural fibres or another proven flame-resistant fabric.
  - 11 Consideration should be given to the wearing of tabards to identify Incident Management positions and Division Commanders, taking into account operational context.

### 3.6.3 Wildlife carers, non-firefighting volunteers, plant operators and media personnel

- 1 All authorised wildlife responders, non-firefighting volunteers, media personnel, plant operators and any other persons entering the fireground must be approved by the Incident Controller. These visitors must wear approved protective clothing detailed in [Schedule 1](#) and fulfil the requirements specified in [4.3.2 Safety considerations](#). The only exemption from the protective clothing detailed in Schedule 1(a) are Aboriginal community members participating in an endorsed cultural burn on NPWS lands. They must meet protective clothing as standards detailed [in Guidelines for community \(Low Risk\) Cultural Burning on NPWS managed land](#) (currently under review).

### 3.6.4 Inspection and maintenance of equipment

- 1 Staff must ensure that all equipment issued to them, including uniforms (and PPE), is maintained in good working order according to the manufacturers' instructions. Garments that are contaminated with smoke particulates or ash should be cleaned before wearing. Any equipment or uniforms that cannot be put into service must be replaced immediately. Staff must determine whether equipment can be put into service before proceeding to the fire line. All PPE is required to be used and maintained as per the specific manufacturers' instructions.

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- 2 There will be an annual inspection of the condition of personal firefighting kits, including PPE. Equipment that cannot be put into service will be replaced as necessary. This inspection will take into account the prescribed life of some items.
- 3 Staff in the possession of equipment that cannot be put into service must notify their supervisor immediately to arrange for a replacement.
- 4 Staff transferred to another work area will take their Schedule 1 personal equipment to that location.
- 5 Directors of Park Operations Branches must ensure that these policies and procedures are communicated and implemented throughout the Branch.

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## 3.7 Learning and development

### 3.7.1 NPWS Fire Training Qualification Information

- 1 Nationally recognised units of competency and current organisational requirements for fire, aviation and incident management roles coordinated by the Capability Training Unit are detailed in the NPWS Training & Qualification Information Handbook (in development).

Information includes:

- prerequisite requirements
- currency requirements
- career pathways
- how to nominate, enrolment and recognition of prior learning processes, and
- training records management

Further information about the Capability and Training Unit, the training NPWS offers and updates on the NPWS Training and Qualification Information Handbook is available at [Capability & Training Unit \(sharepoint.com\)](https://sharepoint.com).

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## 3.8 Personal health and fitness

### 3.8.1 Background

- 1 Bush firefighting is a very strenuous and physically demanding activity that requires good health, aerobic fitness, muscular strength and endurance. Incident management roles can also be physically and mentally demanding and require good health.

## 3.0 Preparedness

Firefighting staff must have fitness and health levels sufficient for tasks assigned to them. Individuals with the necessary levels of health and fitness are better prepared to meet the demands of firefighting and incident management. A satisfactory health and fitness level leads to reduced numbers of injuries, lower stress, safer work and greater productivity, all of which reduce the total cost of firefighting.

- 2 The objectives of this policy are to:
  - improve employee safety
  - maintain a safe and healthy work environment
  - identify potential health problems
  - ensure the physical fitness of employees is appropriate for the tasks assigned to them
  - encourage and educate staff in developing positive attitudes and behaviour and personal responsibility for health and fitness
  - reduce the frequency of incident-related injuries and illness
  - improve employee performance during firefighting and incident management, and
  - improve staff morale and wellbeing.

### 3.8.2 Policies for personal health and fitness

- 1 NPWS assesses firefighter health and fitness to ensure staff are physically able to perform strenuous firefighting duties.
- 2 All NPWS personnel engaged in firefighting and incident management will meet NPWS health and fitness standards, which are aligned with AFAC national standards.
- 3 The NPWS Firefighter Health and Fitness Program consists of a comprehensive medical assessment, a health questionnaire (PAR-Q) and an annual task-based assessment (TBA, also known as a pack test).
- 4 All NPWS employees with firefighting duties in their role description (firefighting staff) are expected to:
  - pass an initial firefighter medical assessment with NPWS' Independent provider, InjuryNet, and undertake ongoing firefighter medical assessments with a general practitioner or InjuryNet every one to three years as per [FMC2024-02](#)
  - obtain a minimum Moderate level task-based assessment (Moderate TBA) for general firefighting duties, and
  - maintain their fitness between the annual assessments.
- 5 If staff are not able to undertake firefighting duties, and those duties are a requirement of their role, the [Firefighter Fitness Policy](#) provides staff with further guidance on required actions.
- 6 Medical and fitness assessments (task-based assessments) will be in accordance with [Guidelines for Fire Fighter Health and Fitness \(2018\)](#).



## 3.0 Preparedness

- 7 Incident personnel will be assigned duties compatible with their health and fitness levels.
- 8 Time will be provided for approved staff to undertake specified training for light, moderate and arduous fitness tests.

### Firefighting Medical Screening

- 9 NPWS has developed medical guidelines for managing its firefighter health and fitness program. These are detailed in the [Guidelines for Fire Fighter Health and Fitness \(2018\)](#).
- 10 All firefighters and selected incident management personnel that need to enter the fireground will be required to complete a medical assessment to determine their physical capacity to undertake firefighting duties and a task-based fitness assessment. Clearance to perform firefighting duties requires a current medical screening (medical assessment or PAR-Q) and a fitness assessment (TBA).
- 11 New NPWS firefighters must pass a firefighter medical assessment with NPWS' independent provider, InjuryNet as per [FMC2024-02](#) and the [Guidelines for Fire Fighter Health and Fitness \(2018\)](#). This includes new staff members applying for a role with firefighting duties in the role description, current staff members being employed into an NPWS firefighting role for the first time, and current staff members who are seeking to be trained as a NPWS firefighter.
- 12 Medical examinations will then be carried out every one to three years as determined by a medical practitioner. Staff are required to answer physical activity readiness questionnaires (Physical Activity Readiness Questionnaire ([PAR-Q](#)): [Guidelines for Fire Fighter Health and Fitness – Appendix A](#)) in the years they are not required to undertake a medical or if there has been a change to their health status since their previous medical.
- 13 Fire medical assessment results are retained on individual personnel files by branches and confirmation of a current medical is recorded in MyCareer. Access to personal medical information is restricted to the local health and fitness coordinator and Human Resource staff.
- 14 A new injury, illness or medical condition that may affect performance in fire management activities will require completion of a PAR-Q to determine if the person requires another medical examination to be cleared for firefighting duties.
- 15 If a medical restriction exists, it is the responsibility of the individual to manage their medical restriction and inform their supervisor. The supervisor will utilise this information appropriately when tasking staff with restrictions to fire activities.

### Task-Based Assessments (TBA)

- 16 The physical capacity or fitness of staff to undertake a firefighting or support role will be assessed through an annual TBA.
- 17 A task-based assessment will be valid until 30 September the following year.

## 3.0 Preparedness

- 18 Firefighters that are medically cleared must complete an annual TBA before engaging in firefighting.
- 19 Fire-fighting personnel will be expected and encouraged to maintain the required level of fitness throughout the fire season.
- 20 Task-based assessment (TBA) requirements for specific firefighting roles are detailed in the [Guidelines for Fire Fighter Health and Fitness – Appendix E](#).
- 21 A task-based assessment will be one of 4 types, as shown in [Table 17: Task based assessment types](#). Each assesses the level of fitness required to undertake specific firefighting roles. Satisfactory completion of these tests is a minimum requirement as follows

**Table 17: Task based assessment types**

Test	Minimum requirement for:	Distance	Pack/Vest Weight	Time Limit
Light walk test	Entering a fireground and carrying out certain support roles	1,610m walk	Not required	15 minutes
Moderate pack test	All general firefighters	3,220m walk	11.3kg	30 minutes
Modified Arduous pack test	Arduous remote area fire team participation for participants weighing 68 kg or less and/or 1.60m in height or less.	4,830m walk	15.4kg	45 minutes
Arduous pack test	Arduous remote area fire team participation and some interstate and international deployments	4,830m walk	20.4kg	45 minutes

- 22 A reduction in the pack-weight requirement for smaller framed persons undertaking the Arduous pack test has been implemented in 2008. The revised [Guidelines for Fire Fighter Health and Fitness – Appendix H](#), now provide that persons weighing 68 kg or less and/or 1.60m in height or less may complete the Arduous-level TBA carrying a pack weighing 15.4 kg. This category is now called *Modified Arduous*.
- 23 Remote area deployments require successful completion of the Arduous or Modified Arduous TBA – refer to section [4.8 Remote area deployment](#).
- 24 Interstate deployments require successful completion of the Arduous or Modified Arduous TBA unless the requesting agency specifies otherwise.
- 25 International deployments require successful completion of the Arduous TBA unless the requesting agency specifies otherwise. The requesting agency’s role requirements will be specified in the initial request for assistance. For example, the USA requires all field firefighters to have successfully completed the Arduous Pack Hike Test.

### Training for task-based assessments

- 26 Details of the TBA criteria and training required to obtain fitness ratings will be provided to all firefighters well in advance of when the assessments will be conducted.

## 3.0 Preparedness

- 27 Staff undertaking firefighting roles that require the moderate or arduous levels of fitness (and have the corresponding medical clearance) will have access to 24 hours over 8 weeks to undertake training within work hours.

It is strongly recommended that all staff prepare for the TBA by training to improve the likelihood of passing the TBA and reduce the risk of injuries.

- 28 Where possible, exercise is to be carried out as a group activity (by work centre). Individual exercise programs may be permitted in exceptional circumstances with manager's approval. Staff undertaking training, whether in a group or individually, should consider use of the *Fire Incident Field Guide (Reporting Booklet)* to record training activities.

- 29 The 8-week training program should be conducted according to the '[Fit to Fight: firefighter health and fitness program](#)' brochure and in accordance with NPWS guidelines and safety policies.

### Implementing task-based assessments

- 30 All TBAs will be conducted and supervised according to agreed procedures approved by the WHS Section.
- 31 Individual TBA results (i.e., level achieved) will be recorded on MyCareer because this information is required for deployment to fires.
- 32 Compiled assessment statistics may be used for TBA program evaluation.

# 4.0 Response

## 4.0 Response

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## 4.1 Coordinated fire management

### 4.1.1 Background

- 1 Coordinated firefighting arrangements ensure the NSW RFS, Fire & Rescue NSW, National Parks & Wildlife Service and Forestry Corporation of NSW, work cooperatively at fires across the State.
- 2 The RF Act provides for cooperative arrangements to enable firefighting authorities to control fires.
  - BFMCS have been established under s.50 of the RF Act to develop and coordinate fire management between firefighting authorities.
  - BFMCS are responsible for the development of coordinated firefighting arrangements and the reduction of bushfire hazards. They develop joint management plans which consist of a plan of operations to coordinate firefighting resources and risk management plans to reduce bushfire hazards.
- 3 Coordinated arrangements may be prepared with interstate firefighting authorities where a fire-prone reserve is located on the NSW border.
- 4 The NPWS is identified under the RF Act as a firefighting authority. The arrangements for coordinated firefighting are set out in the [NSW State Bush Fire Plan](#), generally, NPWS is responsible for the suppression of bushfire on NPWS managed land. NSW RFS is the combat agency in relation to bushfires under the SERM Act and [NSW EMPLAN](#), and NPWS is a support agency to RFS. The NPWS is also identified under EMPLAN as a supporting agency for numerous emergency management activities such as: floods, storm and tempest, earthquake, agriculture and animal (including wildlife) health and welfare emergencies.

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## 4.1.2 Policies for coordinated fire management

- 1 The NPWS Deputy Secretary (or their nominated delegate) represents NPWS on the BFCC.
- 2 NPWS has a representative (preferably an Area Manager) on all BFMCs in areas where it has significant reserves that may potentially be impacted by fire.
- 3 NPWS participates with other firefighting authorities in preparing and implementing BFMC bush fire risk management plans and operational plans.
- 4 The NPWS Bush Fire Management Committee representative ensures that the BFMC plan of operations:
  - states conditions that apply for suppression, prevention, control and command structure for fire management activities on NPWS managed land, in accordance with section [2.1 Fire management planning](#), and
  - promotes protection of biodiversity and cultural heritage on lands other than those managed by NPWS.
- 5 NPWS will develop MoUs, procedures and protocols with other NSW firefighting authorities, including NSW RFS, FRNSW, Forestry Corporation NSW and land management agencies in NSW.
- 6 Arrangements for preparedness, response and recovery procedures, including cooperative arrangements are further documented in FIOB DO Handbook and BIP.

## 4.1.3 Coordinated response arrangements

- 1 Either NSW RFS or FRNSW (as Fire Services) has ultimate responsibility for any bushfire (including a grass fire) in its jurisdiction, regardless of land tenure ([BFCC Policy No. 01/2024 Management of Bush Fire Operations](#))
- 2 All fires are classified in accordance with the fire classification system depicted at [Figure 8](#).

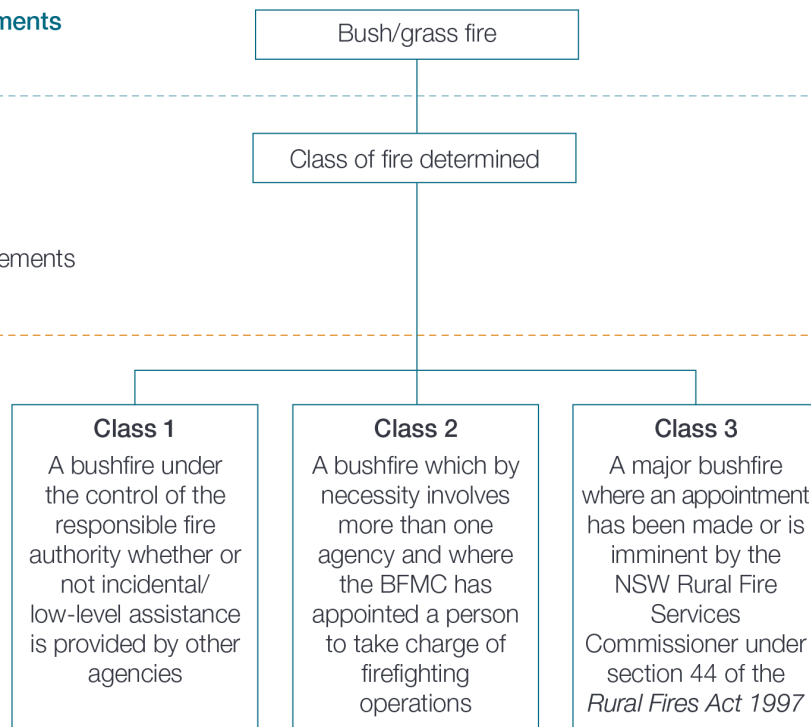
# 4.0 Response

## Normal response arrangements

### Considerations

- actual conditions
- forecast conditions
- resource availability/requirements
- risk to community

### Control arrangements



**Figure 8: Fire Classification System**

- 3 First-response arrangements for fires will be included in a BFMC Plan of Operations.  
Any firefighting authority may make the first response to a bushfire. In most cases, the coordination of first-response activities on NPWS managed land will be undertaken by the BDO or the Area Manager.  
Once first-response arrangements have been established, control of the fire will be by an Incident Controller, as per the following policies.
- 4 **For Class 1 fires**, the IC will be the Officer-in-Charge of the first suppression agency on scene, unless relieved or replaced.
- 5 **For Class 2 fires**, an IC will be appointed by the relevant fire service to control firefighting operations having considered a recommendation made by the relevant BFMC Fire Classification Group.
- 6 **For Class 3 fires**, the RFS Commissioner will appoint an Incident Controller under Section 44 of the RF Act, having considered any recommended nominees of the relevant BFMC Fire Classification Group.
  - Under a Section 44 appointment, the Incident Controller will form an Incident Management Team. The Incident Management Team (IMT) must include a person who has local knowledge of the area and can assist the IMT in effecting suppression activities.
  - During periods of a Section 44 declaration, the Incident Controller is subject to the direction of the RFS Commissioner. All personnel operating on a fireground are subject to the direction of the Incident Controller irrespective of their source agency.

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- During firefighting operations, due consideration must be given to the 'Minimal Impact Suppression and Rehabilitation Guidelines' attached at Annexure C of [BFCC Policy No. 01/2024 Management of Bush Fire Operations](#).
- 7 NPWS must notify the relevant Fire Service of its initial response to the fire as soon as is practicable (See [4.14 Reporting and documentation for fire response](#)).
  - 8 All Incident Controllers of Class 1 fires on NPWS managed land will coordinate fire management activities in accordance with the provisions of the reserves PoM, the relevant RFMS or SFMI, and NPWS fire management policies and procedures.
  - 9 NSW RFS can respond to any fires on NPWS managed land, and NPWS is able to respond to fires within 8 km of NPWS managed land. Adequate notification of the relevant land manager is to be given in accordance with section [4.14 Reporting and documentation for fire response](#).
  - 10 Where NPWS is not the first responding firefighting authority to arrive at a fire on NPWS managed land, a competent officer of the first firefighting authority will direct fire management activities until the relevant Fire Service has directed who is to assume control (unless prior agreements have been made).  

In the interim, the NPWS Area Manager or BDO will establish and maintain contact with the first firefighting authority to confirm fire management objectives and strategies.
  - 11 The management of fire operations on NPWS managed land will be in accordance with the IMS, based on AIIMS.
  - 12 NPWS will have trained and experienced staff listed as nominees for Class 2 and 3 Incident Controllers or Deputy Incident Controllers for each BFMC district where there are significant areas of NPWS managed land that may be affected by fires.
  - 13 NPWS and NSW RFS will cooperate on resourcing when a number of Class 2 or Class 3 fires occur across NSW. This will be coordinated by RFS State Operations.

NSW RFS will contact supporting agencies and organisations to request their presence in the RFS State Operations Centre when required to support interagency fire response.

Depending on the level of fire activity across the state, NPWS will resource the State Operations Centre with state coordination roles including State Operations Liaison Officer (SOLO), State Resourcing Coordination (SRC), State Air Desk (SAD) officers and support staff for those principal roles as required. These officers communicate and share information between agencies, ICs, RFS MIC Teams and IMTs such as forecast weather, aerial line scan images, fire spread predictions, resource requirements and situational information.

Preparedness, response and recovery procedures, including cooperative arrangements and coordination roles are further documented in the [NPWS Incident Coordination Procedures](#). NSW RFS will be made aware of all relevant NPWS plans that need to be taken into consideration and account during suppression operations.



## 4.0 Response

- 14 NPWS will notify the BFMC of any conditions specified in NPWS Statement of Fire Management Intent and associated spatial datasets (or RFMS if an SFMI is yet to be prepared) for the suppression, prevention, and control of fires within NPWS managed land. Such conditions will be incorporated into BFMC Plan of Operations.
- 15 The local NPWS representative on each BFMC should ensure that the relevant contents of the BFMC plan of operations are consistent with NPWS SFMIs and associated spatial datasets (or RFMS if an SFMI is yet to be prepared) as well as the adopted reserve plans of management.
- 16 The MoU between the former Department of Environment and Conservation (NSW) and the NSW Rural Fire Service for a Co-Operative Operational Framework (CM10 DOC15/155220) facilitates cooperation via operational firefighting arrangements and mutual aid activities between the two organisations.
- 17 All coordinated firefighting arrangements will be included in BIP.

### Assistance requested by other authorities

- 18 The BDO should coordinate any requests from other authorities for the assistance of NPWS firefighters, under the BFMC plan of operations. Outside these local arrangements, Fire and Incident Operations Branch will coordinate via State Operations.
- 19 NPWS may provide an IMT and support personnel to take charge of a fire outside NPWS managed land.

### Interstate and international coordinated arrangements

- 20 MoUs will be developed with interstate firefighting authorities to cover Branch with fire-prone reserves along the NSW border.
- 21 NPWS maintains international arrangements with other countries. Requests for assistance and deployment of crews to international locations will be coordinated by Fire and Incident Operations Branch.

### Liaison Officer appointment

- 22 Where the Incident Controller for a Class 2 or 3 fire is not a NPWS officer, and the fire is on NPWS managed land or has the potential to impact upon them, a NPWS Liaison Officer or deputy Incident Controller will be appointed.
- 23 The Liaison Officer will brief the Incident Controller on matters relating to the protection of NPWS managed land, including drawing the Incident Controller's attention to any relevant planning documents (particularly BFMC Plan of Operations and NPWS SFMIs / RFMSs).
- 24 The use of earthmoving equipment, fire suppression chemicals and Aerial Ignition operations will only be permitted subject to the approval of the NPWS Liaison Officer at the incident, or in accordance with the directives stated in NPWS RFMS and BFMC Plan of Operations.

# 4.0 Response

- 25 Where actual or proposed fire suppression actions conflict with planning documents or with the Liaison Officer's advice, the Liaison Officer will report this information to the Branch Duty Officer, the Branch Director, and State Operations Liaison Officer if activated.
- 26 Cross border arrangements include the necessity for early appointment of the Liaison Officer which is often facilitated by NPWS. When an IMT is established in another jurisdiction but has the potential to have impact on NSW national park estate, appointment of a Liaison Officer is required.
- 27 A Principal NPWS Officer is required to be appointed when NPWS workers are involved in an aviation operation being managed by another agency or contractor on or off NPWS estate (refer to [Aviation Safety Policy](#) for details).

---

## 4.2 Fire response

### 4.2.1 Background

- 1 Fire suppression constitutes all the actions or operations undertaken to contain, manage or control fire; from the time it is detected until it is declared out.
- 2 The following control procedures apply to fire management activities for fires on or threatening NPWS managed land. For Class 2 and 3 fires these procedures need to be read and used in conjunction with those outlined in section [4.1 Coordinated fire management](#).
- 3 Under the RF Act, NPWS has a statutory responsibility for fire management and control on the land it manages, and to protect human life, property, the environment, and natural and cultural heritage from the adverse effects of fire.
- 4 It is essential that fire management operations are undertaken in such a way as to minimise adverse impacts and, where possible, foster community support for NPWS fire management practices.

### 4.2.2 Incident declaration and revocation

- 1 The process for declaring incidents and revoking incidents will be outlined in BIP.
- 2 Only the Director Fire and Incident Operations Branch, Branch Director, Executive Director Park Operations Coastal, Executive Director Park Operations Inland or Deputy Secretary may declare an incident.
- 3 Staff are to use Elements to create a Finance WBS Request, Incident Declaration or Incident Revocation.

## 4.0 Response

- 4 Elements is now the central repository for this information, including dates and times of declarations and revocations. Elements also records the WBS code assigned to each bushfire.
- 5 Elements allows for incident declarations/revocations to be approved via two methods. They can be “sent for approval” within the system, or the user has the option to enter that they have received “verbal approval”.
- 6 WBS requests do not require approval. WBS codes will be stored against the bushfire within the system. It is the responsibility of the user/requestor to go back into Elements and enter the WBS code against the incident once the code is received from Finance.
- 7 All incident declarations and revocations must be approved by the Director or Executive Director in Elements and will be automatically forwarded to Corporate Finance ([fire.insurance@environment.nsw.gov.au](mailto:fire.insurance@environment.nsw.gov.au)), for more detail refer to [6.1 Finance and insurance](#).
- 8 A fire may be declared an incident for the purposes of industrial relations awards, but it is not necessary to declare an incident to draw on the NSW Treasury Managed Fund.

### Triggers for incident declaration and revocation

- 9 The [Crown Employees \(DECCW-PWG\) Field Officers and Skilled Trades Salaries and Conditions 2009 Award](#) and the [Crown Employees \(DECCW-PWG\) Conditions of Employment Award](#) define an incident as:

‘an unscheduled activity such as wildfire suppression, wildlife rescue, flood and storm relief, SAR, cetacean stranding, accident and substance spill attendance, or as otherwise approved by the Director General\* or delegate. (Note this does not include HRs)’.

\*The Director General is now called the Deputy Secretary, NSW NPWS

These awards also define incident duties as being:

‘all work involved in emergency incidents effort in which there is Departmental participation from when an event is declared an incident until it is declared over by the Incident Controller. Duties may include: the initial reporting, reconnaissance, organisation of resources, control, mop-up, patrol and completion of incident duties, and may involve office duties in the organisation and direction of the emergency response as well as work at the scene’.

- 10 Incident declarations for field and incident-management team operations will be made when they meet the following provisions:
  - An incident:
    - a. will be declared if it involves participation in a declared Class 2 or Class 3 bushfire, or an incident which has been declared as a State of Emergency under the *State Emergency and Rescue Management Act 1989* or any successor legislation; or

## 4.0 Response

- b. may be declared if it involves attendance at an incident which goes beyond rostered hours of work as defined in the award and where there is an expectation that the operation will continue for at least another 12-hour shift within a 24-hour period from incident commencement; and where there are c.8 or more personnel involved in the management of the incident<sup>1</sup>,
- An incident may be declared whether it is on-park or off-park, but incidents will not be declared for international deployment;
  - An incident may be retrospectively declared but only within 48 hours of the first callout, unless otherwise approved by the Executive Director Park Operations or the Director Fire and Incident Operations Branch for exceptional circumstances;
  - An incident may be declared over once it is classified in the SitRep as being at 'Patrol' status<sup>2</sup>, or at the end of the last 12-hour shift, whichever is sooner.

<sup>1</sup>Declarations may be made when the incident requires much more than a minor or routine incident response, e.g., incidents involving two or more 12-hour shifts of about 8 personnel per shift (including non-NPWS personnel) commencing within a 24-hour period of each other, before 'Patrol' status is reached;

<sup>2</sup>An incident is usually classified as being at 'Patrol' status when the fire perimeter is behind identifiable control lines, major re-ignition is unlikely; mopping up activities have substantially been completed and where firefighting resources are primarily required for patrol purposes only.

### Use of Local Emergency Management Committees (LEMO and LEOCon)

- 11 The LEMC is a legislative committee under s. 28 of the *State Emergency and Rescue Management Act 1989*. The LEMC is made up of representatives of local agencies involved in providing emergency services, such as the local council, NSW Police Force, FRNSW, NSW RFS, Ambulance Service, and State Emergency Service (SES), and is responsible for plans in relation to emergency prevention, preparation, response and recovery in the LGA for which it is constituted.
- 12 The LEMO is appointed under the Local Emergency Management Plan (LEMP) and can be called on to assist other agencies.-They have access to resources such as barricades, toilets and rubbish facilities and, among other things, can be called on to assist other agencies such as the SES or to organise access to local sports fields etc. for helicopter landings or marshalling areas.
- 13 The Local Emergency Operations Controller (LEOCon) is also appointed under the SERM Act 1989 (and listed in the LEMP for the LGA). LEOCon is the Local Police Commander and has access to Police and other emergency resources. The LEOCon can also assist with organising evacuations, road closures or investigations.
- 14 Emergency operations that involve more than one LGA are controlled at district level, with Regional Emergency Operations Controllers (REOCon) operating from a Regional Emergency Operations Centre.
- 15 The NSW Police Force is required to provide executive support for each REMC and the REOCon in the region concerned. These personnel are termed Regional Emergency Management Officers (REMOs). The REMO can assist with determining the level of response to incidents/emergencies and allocating police resources as required.

# 4.0 Response

- 16 Emergency operations involving more than one district, and other major operations when considered necessary, are controlled at state level. The State Emergency Operations Controller controls operations from the State Emergency Operations Centre. Emergency Service Organisation Controllers and Functional Area Coordinators operate from their own control or coordination centres.
- 17 Emergency operations requiring NPWS assistance are managed through the NPWS representative on the LEMC for local level emergencies, or through Fire and Incident Operations Branch for state level emergencies.

## 4.2.3 Interface firefighting and property protection

- 1 Fire suppression activities for property protection may only be undertaken by NPWS firefighters from outside of the structure. Staff should only ever undertake a task they are capable of performing, taking into account their training, PPE and appropriate assessment of risks. Staff safety must always be the priority in tasking firefighters and staff should never undertake asset protection activities where it is unsafe to do so. Defensive firefighting tactics can be used to prepare the property as best as possible, but staff must ensure they are not putting themselves at risk. Pre-operational safety checks include:
  - A detailed briefing has been provided to all fire crews
  - All equipment is checked and operational, including the provision of PPE
  - Communication systems and arrangements are functional
  - Refuge areas and escape routes are known, checked and clear of obstructions
  - Supporting resources have been confirmed
  - Firefighters fully understand the task, have identified all likely hazards and their controls
  - Firefighters are not to work alone
  - Firefighters are not to undertake any task they are not trained or equipped to do

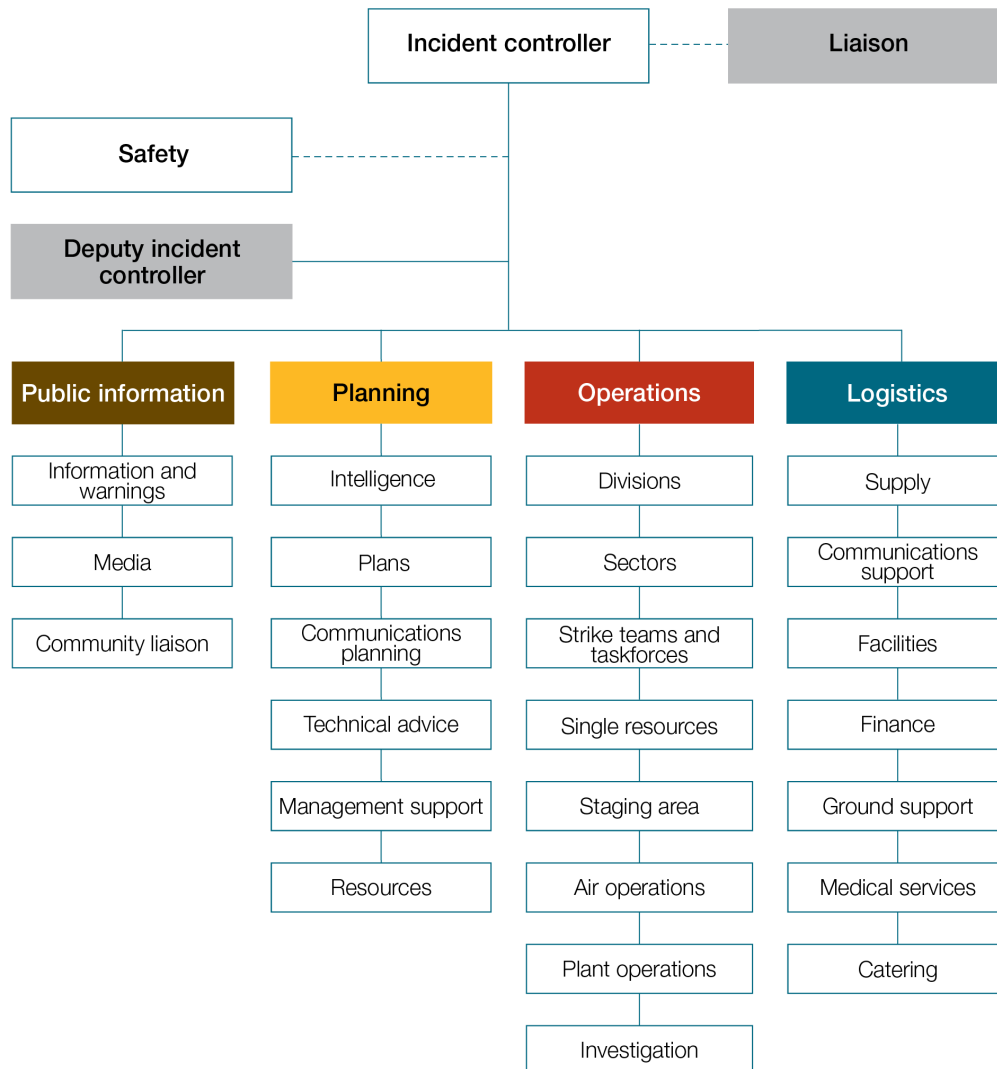
## 4.2.4 Structural firefighting

- 1 Safety is the number one priority for all NPWS staff.
- 2 Structural firefighting involves entering a structure to suppress a fire.
- 3 NPWS personnel are not trained in structural firefighting and must not enter a structure in order to undertake structural firefighting.
- 4 Fire suppression activities for property protection may be undertaken by NPWS firefighters from outside a structure in accordance with this Manual's sub-section [4.2.3 Interface firefighting and property protection](#).
- 5 Defensive firefighting tactics can be used to prepare the property as best as possible where it is safe to do so, but staff should only ever undertake a task they can perform taking into account their training, PPE and appropriate assessment of risks.

# 4.0 Response

## 4.2.5 Establishing an IMT and span of control

- 1 Once first response has been initiated, a competent Incident Controller will assume control of the incident at the earliest practicable opportunity. An Incident Management Structure (IMS) will be established based on the AIMS functional areas (see [Figure 9](#) and [Figure 10](#)).



**Figure 9: Example AIMS structure (can be scaled up/down)**

# 4.0 Response

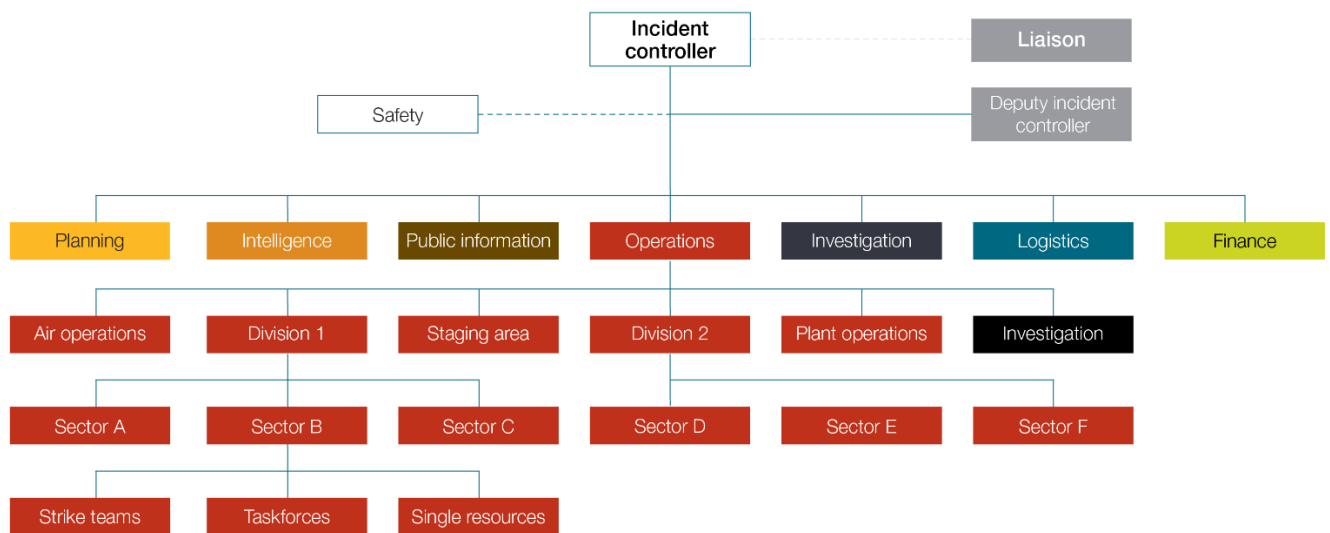


Figure 10: AIIMS 4-2017 Diagram 8

Note: for Air Operations structure see [Figure 13: Model IMS aircraft unit structure](#)

- 2 The AIIMS principle of 'Span of Control' refers to the number of people that can be effectively supervised by one person. The optimal span of control is between 1:3 to 1:7 (that is, no more than seven people reporting to a single person). However, this ratio may vary to reflect the scale and complexity of the incident.
- 3 In consideration of the span of control, Incident Controllers should identify and appoint the key IMT positions required to effectively manage the fire. Deputy Incident Controllers and Section Leaders can be appointed to reduce the span of control.
- 4 The NPWS ratio for the AIIMS operations function will not exceed a span of control of 1:5 (e.g., no more than five crew members reporting to one crew leader).
- 5 Where required, Incident Controllers should give special consideration to resourcing the following positions:
  - **Public Information Officer**, to liaise with the planning section, intelligence section/unit and other Incident Management Team units to gather information about the incident. They then assemble this information into a form suitable for dissemination to the public, media and other stakeholders.
  - **Safety Advisor (IMT)** report to the Incident Controller on matters that affect safety. They will monitor safety issues, monitor and report on injuries and provide advice regarding safety messages to crews.
  - **Planning Officer** to manage the development of objectives, strategies and plans for the resolution of an incident based on the outcomes of collection and analysis of information
  - **Resource Officer** dedicated to resource planning and coordination for the incident.
  - **Technical advisors** provide subject-matter-specific advice where required. They may be present for the duration of the incident or be called in to answer a specific question.

# 4.0 Response

- **Aboriginal Cultural Heritage Advisors** should be considered where appropriate
  - **Historic Heritage Advisors** should be considered where appropriate
  - **Technical Advisor Wildlife** should be considered where appropriate
  - **Fireground Communications Planner**, to establish effective communications strategies for fires in remote areas or large fires involving multiple divisions or agencies (see [Communications Planner appointment](#))
- 6 Field support positions should also be considered for large fires, including Ground Observers to assist Division Commanders where the Division Commander needs to take on an overview and communications role.

Ground Observers can collect essential field intelligence, including weather, resource tracking, fire behaviour and ROS, and can report on the success of tactics etc. A Ground Observer must be a qualified and current Crew Member at a minimum.

## 4.2.6 Strategies for responding to fire

- 1 Response to fire will be determined by incident appreciation and situation analysis and will consider warnings and safety messages contained in SOPs.
- 2 IMTs will undertake fire spread mapping to determine the current ROS and predict the future ROS and direction of the fire. Response strategies should be based on the current and forecast ROS and direction of the fire.
- 3 Strategies used in fire management operations may include, but are not limited to, any combination of:
  - offensive (direct, parallel or indirect attack)
  - defensive (line, ember or backstop)
  - safeguarding
  - reconnaissance (ground, air, remote)
  - consolidation (mop-up, blackout, patrol and monitoring)

Strategies employed will be appropriate to the situation and approved by the Incident Controller.

Selected strategies will protect human life and community assets, aim to minimise environmental disturbance and be cost-effective.

- 4 Under the provisions of the RF Act it is the duty of owners, occupiers or public authorities to take practicable steps to minimise the risk of fires spreading from lands under their control.

Actions to mitigate the environmental risks of fires and fire operations may be identified in SFMIs / RFMSs or reserve plans of management and considered during fire management operations.

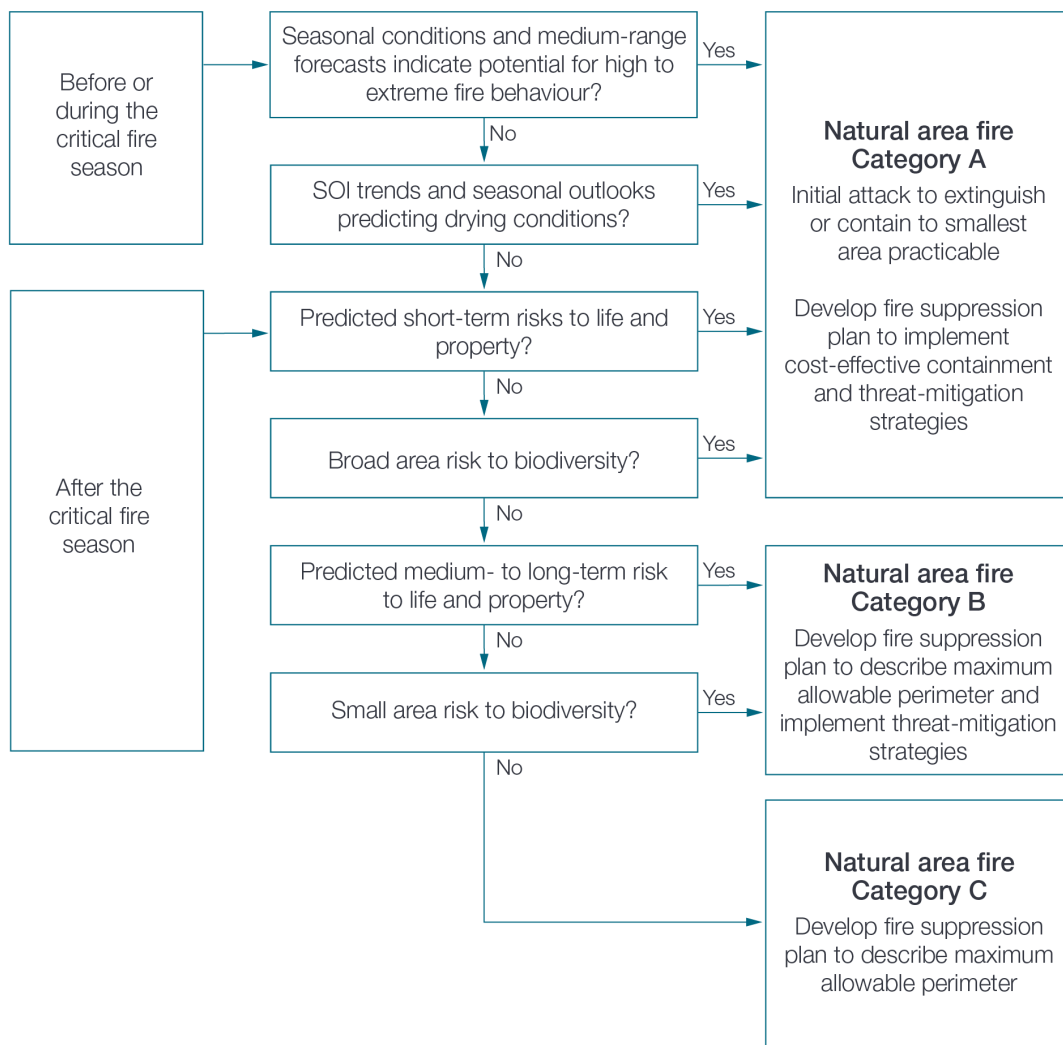


## 4.0 Response

- 5 NPWS has particular expertise and has developed specialised training in natural area fire management. This involves developing and implementing strategies and tactics that minimise the lasting impacts of fire management and fuel management operations.
- 6 Fire management approaches that may be taken in natural areas include:
  - aggressively attacking fire when there is an assessed risk to life and property, or an assessed risk of a large fire event, and
  - allowing the fire to burn within a defined area when the assessment of current and forecast seasonal conditions indicates a minimal risk to life and property.
- 7 The acceptable strategies for a natural area should be prepared as part of the development of new landscape-specific SFMIs and tactics incorporated into spatial datasets within the NPWS Fire Planning Portal (spatial viewer under development).
- 8 Initial attack strategies and tactics should be implemented to contain fires to the smallest area possible, if:
  - seasonal conditions or forecast conditions indicate the potential for a single large bushfire event, or
  - assets or biodiversity values (including AIS) are assessed to be at serious risk from a bushfire event.
- 9 An IAP should be prepared for 'natural area fires, categories B and C' (see [Figure 11](#)) describing:
  - the maximum allowable perimeter for the fire
  - seasonal conditions and trends, and medium-range forecasts
  - anticipated fire behaviour
  - the decision points where active management activity will be undertaken
  - the time span in which the plan will be effective
  - the decision points for revising the action plan, and
  - liaison activities with neighbours and brigades.

The action plan should be communicated to the executive officers of the BFMCs and land management authorities.
- 10 A post-fire rehabilitation plan must be prepared if the fire management strategies and tactics have produced, or have the potential to produce, long-lasting impacts.

# 4.0 Response



**Figure 11: Natural area fire management planning**

## Strategic Planning Officer appointment

- 11 Consideration will be given to the early establishment of a Strategic Planning Officer within the IMT to develop long-term strategies for fires with complicated issues.
- 12 The Strategic Planning Officer will report to the Planner and liaise closely with Operations and Logistics to develop strategies and options based on local knowledge, forecast weather conditions and resource capacity.
- 13 Consideration for the establishment of a Strategic Planning Officer include, but are not limited to:
  - Class 2 or 3 fires with an estimated duration of more than 5 days
  - a fire with multiple ignition points or spot-overs
  - a fire threatening multiple assets or where evacuation of towns or closure of major roads or rail lines is expected, or

# 4.0 Response

- a fire in inaccessible terrain where resources are limited.
- All fires under High, Extreme and Catastrophic FDR.

## 4.2.7 Environmental considerations

- 1 Once all safety considerations are addressed (see [4.3 Fire safety](#)), the strategies and tactics selected for managing fire will be those that are effective while causing the least impact on the environment.

Strategies for protecting natural and cultural heritage, including decision tools to help managers choose an appropriate fire management approach (i.e., rapid response or broad containment strategies) are detailed in section [4.2.6 Strategies for responding to fire](#).

- 2 Fire management strategies will take into account operational guidelines in relevant RFMS or SFMI and BFMC Plan of Operations.

## Protection of cultural heritage

- 3 During fire operations, IMTs should obtain information about Aboriginal and historic heritage. Information sources include relevant:
  - Aboriginal community representatives, including native title holders or claimants, Aboriginal joint management committees/boards, Local Aboriginal Land Councils and Aboriginal community organisations
  - Historic Heritage specialist
  - SFMIs / RFMSs or reserve plans of management
  - BFMC Bush Fire Risk Management Plans and Plan of Operations
  - specialist advice
  - information from corporate GIS data (Spatial Database Engine or P: drives)
  - information from the [AHIMS](#)
  - information from the [HHIMS](#)
  - [State Heritage Inventory](#)
  - [National Heritage Register](#)

The NSW RFS Bush Fire Environmental Assessment Code – Supporting Document [Conditions for Hazard Reduction and Aboriginal Heritage](#) provides guidance on determining site specific conditions to minimise impacts on Aboriginal heritage. These conditions should be used to guide any fire operations and response decisions by the IMT. Wherever possible, sites must be clearly defined and marked prior to undertaking any fire suppression operations.

## Protection of natural heritage

- 4 Where possible during fire operations, in developing an IAP the IC must ensure that information regarding natural heritage is obtained and considered by the IMT. Where appropriate, critical natural heritage information, including AIS, will be incorporated into ICON / COP. Additional information sources may include relevant:

## 4.0 Response

- NPWS SFMIs / RFMSs or reserve Plans of Management
  - BFMC BFRMPs, Plan of Operations, or conservation management plans
  - Conservation Action Plans (CAPs) for AIS declared sites (including, where available, [Fire Response Plans](#))
  - pest management plans
  - recovery plans
  - threat abatement plans
  - specialist advice, and
  - information from corporate GIS data (SDE or P: drives)
- 5 New fire control lines should be located in areas that will avoid adverse impacts on threatened species and their habitats, key species and other species of conservation concern and their habitats.
- 6 Where required, IMTs should obtain expert advice on the protection of species and their habitat (including specialist advice on AIS and rewilding sites).
- 7 The intensive application of fire suppression chemicals must be mapped and recorded as part of the fire history and fire management of the reserve. This information should be stored for future monitoring purposes.
- 8 Fire rehabilitation planning will identify the requirements to conserve natural heritage resources.
- 9 NPWS SFMIs / RFMSs, reserve plans of management, AIS Fire Response Plans or interim operational guidelines prepared for reserves will contain:
- strategies (and tactics) that will minimise the impact of fire management activities
  - locations where earthmoving equipment and fire suppression chemicals may be used
  - information on seasonal conditions and the times of year when various strategies and tactics should be applied, and
  - fuel management strategies.
- 10 The NPWS Fire Planning Portal (under development), is intended to house spatial datasets that will guide fire planning and response activities across NPWS managed lands.
- 11 NPWS will work with BFMCs to develop cooperative fire management plans for landscapes that include natural areas.

### 4.2.8 Cost effectiveness

- 1 Fire management operations will be cost effective. Cost efficiency will be achieved by considering the appropriate allocation of resources and level of response based on best practice and implementing levels of preparedness as detailed in the BIP.

# 4.0 Response

- 2 The largest expense during fire management operations relates to the use of aircraft (section [4.7 Aircraft operations](#)).
- 3 Further information is available in section [6.1 Finance and insurance](#).

## 4.2.9 Community support for fire management

- 1 The need to foster community support will be considered by the IMT when determining objectives, strategies and tactics for all fire management operations.
- 2 Media, public relations and community relations strategies will be prepared in accordance with the policies and procedures in sections [2.3 Community engagement](#), [2.11 Communications planning](#), and [4.14 Reporting and documentation for fire response](#). Media personnel will only be permitted on the fireground in accordance with section [4.3.2 Safety considerations](#).
- 3 During incidents NPWS will work cooperatively with other fire agencies to provide timely and accurate information on threats, proposed fire control strategies and reserve access information. During S44 incidents NSW RFS have the lead on media, public relations and community relations.
- 4 NPWS will update public information about park access and warnings during the bushfire danger period and during fire incidents.
- 5 With the written approval of neighbours, contact details and cooperative arrangements with neighbours may be listed in the NPWS Fire Planning Portal (under development) and BIP.

## Information Officer appointment

- 6 Where required, the IC may appoint an Information Officer to a fire incident. The appointment of an Information Officer will be made in consultation with Visitor Experience Branch.

The Information Officer will be responsible for:

- developing a media and community information strategy, if required
- preparing and distributing information to media services, in consultation with Visitor Experience Branch
- establishing a range of community information services appropriate to the scale and nature of the incident
- coordinating and managing visits to the fireground by media services, ministerial or elected representatives from government (local or state) and approved key stakeholder representatives
- maintaining maps and general incident information for use by the community and media, and
- maintaining records of media releases and community information services.

# 4.0 Response

## Community Liaison Officer appointment

- 7 The IC may consider appointing community liaison officers to help the Information Officer provide specific information to neighbours. This is especially relevant when neighbours' resources, materials or equipment are sought to help with fire suppression.

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## 4.3 Fire safety

### 4.3.1 Background

- 1 Safety and the protection of human life is the first priority in fire management operations and the primary consideration at all times, followed by protection of community and environmental assets. These priorities will be the basis for determining fire management objectives, strategies and tactics.
  - Objectives, strategies and tactics must be adopted only after assessment of their safety and risk implications.
  - The IC has the overall responsibility for the safety of firefighting personnel, but all officers in a supervisory capacity are responsible for those under their supervision.
  - All incident personnel have the responsibility to ensure that their work practices are in accordance with safe practice and NPWS policy and instructions to ensure their own and others' safety.
- 2 AFAC has approved the use of LACES as the national standard safety guide for firefighters: LACES is:
  - L**ookouts
  - A**wareness
  - C**ommunications
  - E**scape routes
  - S**afety zones

LACES will be used to identify and report on safety issues during briefings.
- 3 A discussion of 'Deadman Zone' should be considered during briefings.
- 4 All crews on a fire line are to be provided with an appropriately scaled map.
- 5 The NPWS ratio for the AIIMS operations function will not exceed a span of control of 1:5 (e.g., no more than five crew members reporting to one crew leader).
- 6 As part of risk management prior to and during all aviation activities, employees should have regard [Aviation Watchouts](#).

# 4.0 Response

## 4.3.2 Safety considerations

### Safety Advisor appointment

- 1 The Safety Advisor is a recognised AIIMS role. Safety Advisors should hold qualification of Division Commander. Safety Advisors must be appointed in accordance with [BFCC Policy 3/2003 'Safety Advisor – Standard Operating Procedure'](#).
- 2 A dedicated Safety Advisor must be appointed to:
  - a fire classified as a Class 2 or a Class 3 (Section 44) incident
  - a fire that has the potential to escalate to a Class 2 or a Class 3 (Section 44) incident
  - a fire where the number of personnel or resources allocated to the incident is such that the fireground needs to be sectorised
  - where weather conditions are conducive to erratic fire behaviour
  - a multi-agency prescribed burn
  - a multi-agency training exercise, and
  - where an agency attending an incident requests that a Safety Advisor be appointed.

Notwithstanding the above criteria, an IC may appoint a Safety Advisor during any operation if they believe it is appropriate given the prevailing situation.

- 3 The appointed Safety Advisor is to:
  - identify and ensure that action is taken to rectify any unsafe condition or practice including management of fatigue,
  - exercise delegated authority (in consultation with the IC) to immediately suspend any activity where there is an immediate threat of significant injury or fatality, and
  - operate in accordance with the role and responsibilities as defined in [BFCC Policy 3/2003 'Safety Advisor – Standard Operating Procedure'](#) and the [WHS Risk Management System](#).

### Medical evacuation (medivac) procedures

- 4 Medivac procedures must be included in the IAP or Prescribed Burn Plan. See [Figure 12](#) for the information that should be included. The [RAFT Medical Emergency Response Procedures \(MERP\)](#) can be used as a guide to plan medical evacuations for all fire operations.

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<b>MEDIVAC – current MERP with IMT</b> <b>For serious injury call 000 and notify Fire Control</b>	
<b>Medivac coordinator</b>	Add name and location
<b>Nearest hospital</b>	Add location and contact numbers
<b>Ambulance meeting point IMT contact for evac plan</b>	Add location, contact numbers, latitude, longitude and grid reference Add contact person and contact number
<b>Helicopter landing point</b>	Add potential heli landing point and location e.g. 152° 39'E 30° 15'S, GR 467285E 66107068N
<b>Steps to follow if a person is injured</b>	Provide medical incident details using <b>PAINTER</b>
<ol style="list-style-type: none"> <li>1. Call 000 and apply first aid.</li> <li>2. Obtain and relay medical incident details using PAINTER to 000 and NSW Ambulance</li> <li>3. Advise IC and IMT of nature of emergency, patient assessment and location</li> <li>4. Non-life-threatening and walking: return to Mid North Coast FCC (Wauchope), seek treatment</li> <li>5. Non-life-threatening not walking: call 000, contact IC, seek advice, follow extraction plan from NSW Ambulance</li> <li><b>6. Life-threatening:</b> call 000 contact IC seek advice / request immediate evacuation</li> </ol>	<p><b>P:</b> patient age and sex</p> <p><b>A:</b> area they're in – latitude – longitude if available</p> <p><b>I:</b> injuries</p> <p><b>N:</b> needs of the crew and the patient: first aid, hydration, medical</p> <p><b>T:</b> timing/urgency: life-threatening / non-life-threatening</p> <p><b>E:</b> egress/extraction plan</p> <p><b>R:</b> risks: e.g. trees, slopes, cliffs</p>

**Figure 12: Example of medivac information for IAP or Prescribed Burn Plan**

## Ambulance officers

- 5 Placement of ambulance officers or an ambulance meeting point should be considered in conjunction with medivac plan provisions in the IAP or Prescribed Burn Plan.

## Contract paramedics

- 6 Contract Paramedics are available to support NPWS staff undertaking high-risk remote firefighting operations. A RAFT operation is not an automatic trigger for the deployment of contract paramedics
- 7 Contract Paramedics do not replace NSW Ambulance paramedics. They may be brought in to augment the NSW Ambulance Service when a risk assessment indicates this control strategy is warranted.
- 8 The NPWS Incident Controller or Deputy Incident Controller, the Director of Fire and Incident Operations Branch, the Manager of Safety Risk and Compliance and/or the NPWS State Operations Liaison Officer (if activated), must assess and agree on deployment.
- 9 Contract Paramedics will assess, treat and stabilise the casualty on the fireground until extraction/transport can be provided by the NSW Ambulance Service.



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- 10 A procedure for deployment of Contract Paramedics is available on the [Contract Paramedic ParkSite page](#).

## Managing heat-related illness

- 11 Risk mitigation strategies for managing heat related illness must be considered in all fire operations. Staff should monitor themselves and colleagues for indicators of heat-related illness. Heat-related illness can be fatal and can occur quickly. See [Safety Alert 2020/02 'Heat Exhaustion'](#) and [Safety Alert 2019/01 'Keeping Safe in the Heat'](#) for details on symptoms and treatment.

## Managing exposure to noise from pumps

- 12 Staff conducting fire suppression activities shall not spend more than a total of 2 hours in any 1 day or shift within 1 m of a running diesel engine pump. Where staff may anticipate this happening, measures should be taken to reduce exposure time within the 1 m range – for example job rotation. Hearing protection will allow longer exposure but may compromise normal voice and radio communications with other officers on the fireground.

## Smoke management

- 13 ICs will ensure that smoke-sensitive areas, smoke management issues, and actions to mitigate bushfire smoke impacts, particularly for firefighter, aircraft and public safety, are considered and evaluated during the preparation of IAPs. See also [Smoke considerations and management in prescribed burn planning](#).
- 14 Risks to firefighter health from exposure to high smoke concentrations will be mitigated using the [hierarchy of control for smoke and the use of respiratory protective devices](#). Control options may include fireground task management, crew rotation, and the use of respiratory protective equipment to reduce exposure levels.
- 15 Smoke management will be included routinely during fire debriefs.

## Crew changeovers

- 16 Crew changeovers are a time of disruption and inconsistency on the fireground, and this can lead to safety issues.
- 17 Hot changeovers occur where incoming crews are deployed directly to field locations to assume control from outgoing crews. It is important to ensure adequate shift length time is allowed for incoming crews to travel to the desired location and be adequately briefed by the outgoing crew and for the outgoing crew to brief the incoming crew and travel back to the staging area.

Possible alternatives to hot changeovers include utilising 'swing shifts' where a short shift is arranged to overlap the outgoing and incoming shifts, thus maintaining a consistent presence in the field so the fire is not left unsupervised.

- 18 Where it can be done safely and within the other constraints of fire management, consideration should be given to leaving firefighting vehicles on the fireground and arranging alternate forms of transportation for crews. This practice allows Branch to reduce the number of firefighting vehicles in their fleet whilst still maintaining the same standard of fire cover.

# 4.0 Response

- 19 Where required, consideration should be given to the employment of an Operations Support position in the IMT dedicated to organising crew changeovers.

## 4.3.3 Fatigue management

- 1 Fatigue is an acute or ongoing state of tiredness that affects an employee's performance, safety and health, and requires rest or sleep for recovery. Fatigue can be caused by:
  - number of consecutive night shifts
  - shift lengths and total hours worked in 7 days
  - type of work (physically hard, mentally demanding, boring)
  - environmental conditions (hot temperatures, smoke, excessive noise), or
  - driving.
- 2 The effects of fatigue will be considered in safety briefings and crew shift management.
- 3 No employee should put themselves or others at risk by undertaking firefighting activities or driving when they are tired or if they feel they cannot do so safely.
- 4 The IC is to ensure that shifts are planned and managed to minimise the impact of fatigue. The IC is responsible for the timing of the changeover and setting the level of personnel to be employed on the incoming shift.
- 5 The Planning Officer should regularly update the IC on shift management issues.
- 6 Crew Leaders and other fire crew supervisors must assess environmental factors that increase fatigue levels and monitor crew fatigue during shifts.
- 7 Crew leaders, Safety Advisors and ICs will consider crew fatigue when releasing crews to be stood down, and a risk assessment should be undertaken before allowing crews to drive excessive distances at the end of their shift. This risk assessment will consider:
  - length of break between work and proposed travel
  - distance of travel
  - number of people travelling (more than 1 is better)
  - if driving will be shared
  - length of shift worked (3 days, 5 days, 7 days)
  - type of work undertaken (night, physically demanding etc.), and
  - an assessment of the general wellbeing of the person made by the person and their crew leader.
- 8 The operation of vehicles by personnel who have been on shift more than 24 hours should be limited to exceptional circumstances. In particular, open road driving should be limited to safe staging areas or collection points.

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- 9 Arrangements should be put in place to transport fatigued employees from the work site to the rest location if required.
- 10 Additional guidelines for fatigue management can be found on ParkSite under [Fatigue and Fitness for Work](#).
- 11 This section is relevant to the *FMM* policies set out in [section 6.2 Working conditions](#).

## 4.3.4 Powerlines

- 1 When fighting fires near powerlines the first rules to follow are:
  - Always assume that all lines are live (energised).
  - Contact the local power supply authority if their employees are not already there. (Contact numbers should be detailed in BIP)
  - At all times keep personnel and vehicles a minimum of 25m clear of a head fire or a flank fire burning under or within 25m of the powerlines.
- 2 If fire has extended into the area within 25m of the outer electric phase or under powerlines, then firefighting tactics must anticipate and consider the personnel hazards associated with the powerlines.
- 3 Minimal clearances identified in this section should be increased under high voltage transmission lines.
- 4 Heavy smoke plumes on powerlines may cause a phase-to-ground short and direct attack must be abandoned. The situation should be assessed to determine where to establish a new control line. This should anticipate the ROS of the fire to allow crews to remain more than 25m from both the powerlines and heavy smoke where it passes through the powerlines at all times.
- 5 When working near or under live powerlines, only approach closer than 25m from the fire edge to conduct mop-up of grass fires. Mop-up may include knock-down of low (less than 1 m high) isolated flames, spots or smouldering logs which are not producing a convection column or heavy smoke plume. In such cases:
  - Never direct the hose stream into the powerline.
  - Never direct the hose stream into a smoke plume that is less than 25m from powerlines.
  - Keep the stream no higher than a person's head height.
  - Never direct the hose stream at a burning bush or tree (more than head height) in a powerline easement.
- 6 Bushes or trees burning in power line easements present a real threat of creating a phase-to-ground short – KEEP AT LEAST 25m CLEAR.

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- 7 Firefighting vehicles must also remain 25m from the outer electrical phase of powerlines wherever possible. When it is necessary to cross a powerline easement in a vehicle or earthmoving machine, a distance of 25m must be maintained between the vehicle and any flames or smoke plumes reaching the lines. Drivers should consider removing aerials and antennae from the vehicle prior to crossing the easement.
- 8 Firefighting operations 25m beyond the edge of the overhead outer phase powerline require no unusual firefighting tactics but should consider the powerline to be an exposure requiring protection when threatened by fire. Where possible, establish a control line to prevent the spread of fire to an area within 25m of and parallel to the edge of the overhead outer phase powerline.

### 4.3.5 Hazardous trees

- 1 Hazardous trees are trees that present an immediate threat to firefighter safety: they are likely to cause injury or impact a control line during fire operations.
- 2 During fire operations, firefighters must maintain situational awareness and continuously keep a watch out for hazardous trees.
- 3 Firefighters must ensure hazardous trees are identified, assessed, and treated in all prescribed burn and bushfire situations. The [Procedures for managing hazardous trees on the fireground](#) outlines how hazardous trees are managed by NPWS on the fireground. This is consistent with other NSW fire agencies protocols.
- 4 These procedures enable firefighters to safely manage hazardous trees on the fireground via:
  - the identification of hazardous trees
  - marking procedures for hazardous trees, and
  - providing options for risk mitigation.
- 5 For non-fire situations the [NPWS Tree Risk Management Policy](#) and [NPWS Tree Risk Management Procedures](#) provides guidance on the systematic approach to tree risk management across a broad range of landscapes.

### 4.3.6 Visitor safety

- 1 Visitors will not be permitted into areas where fire suppression or prescribed burning operations are being undertaken.
- 2 All authorised wildlife carers and responders, non-firefighting volunteers, media personnel, plant operators and any other persons entering the fireground must be approved by the IC. These visitors must:
  - wear approved protective clothing (PPC)
  - receive a full safety briefing prior to entering the fireground
  - be accompanied by a competent crew leader or more senior officer, appointed by the IC, and

# 4.0 Response

- always follow the directions of NPWS firefighters.
- 3 The presence of visitors in or adjacent to the fireground will be immediately reported to the IC, who will then arrange for an evacuation if necessary.
  - 4 The requirements of the [Traffic Control at Work Sites Technical Manual](#) will be followed for works undertaken in, or in the vicinity of Transport for NSW, NPWS and local government controlled roads (refer to the [Traffic Control and Safety Near Roads Procedure](#)).
  - 5 Before undertaking prescribed burning, 'Park closed' or 'Smoke hazard' warning signs, or both, must be placed near areas used by visitors. All devices used for traffic control will comply with the requirements of the [Traffic Control at Work Sites Technical Manual](#).

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## 4.4 Briefings and safety checks

### 4.4.1 Background

- 1 Briefings will be conducted before undertaking any fire management activities and **all** staff and other personnel should receive a briefing before starting each shift.
- 2 The IMT will consider assigning briefing responsibilities for crew changeovers in the development of the IAP.

### 4.4.2 Conducting a briefing

- 1 The Situation Mission Execution Administration Command/Communication Safety Questions (SMEACS-Q) format should be used to brief all staff about incident response and prescribed burning operations. IAPs and prescribed burn plans use the SMEACS-Q formula to ensure a recognisable and consistent structure for communicating operational information. This briefing, with reference to the plan, covers the job safety analysis and job safety brief required by WHS Act.
- 2 Briefings must occur on all fire events, at all levels, at the start of each shift or in the event of significant changes in fire activity, strategy or task.
- 3 Briefings will include information on:
  - history of the fire and fire location
  - objective
  - tasks to be completed during the work shift
  - fuel conditions including fuel type, fuel moisture, OFH
  - access, control lines, escape routes and safety refuges
  - potential hazards

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- weather forecasts and current conditions
- fire behaviour and weather monitoring equipment available
- command structure
- location of other crews
- communication arrangements
- equipment and resources available, and
- maps of operational areas provided for all personnel.

In many cases ground checks will be required to verify this information.

- 4 LACES will be used to identify and report on safety issues during briefings (see section [4.3 Fire safety](#)).
- 5 The effects of fatigue will be considered in safety briefings and crew shift management.

## 4.4.3 Safety checks

- 1 Safety checks and the identification of potential hazards will form an essential part of all fire operations briefings.
- 2 Safety checks will verify that:
  - operational personnel are wearing and carrying PPE
  - weather conditions are within safe limits
  - equipment is available and operational
  - communications equipment and facilities are available and operational
  - control line preparation has been completed
  - hazard advice signage has been erected
  - notifications have been undertaken
  - visual checks have been conducted for visitors and non-operational personnel
  - hazardous trees have been assessed and appropriate mitigation actions undertaken.
- 3 Safety checks will be reviewed daily or as new information regarding hazards is obtained from the field.

# 4.0 Response

## 4.5 Incident action plans (IAPs)

### 4.5.1 Incident action planning policies

- 1 An IAP, in the BFCC-approved SMEACS format, will be prepared for all fire management operations on NPWS managed land.
- 2 The type of IAP will be in accordance with the size and complexity of the incident and will include:
  - operational objectives
  - strategies
  - tactics and tasks
  - an appropriately scaled incident map, and
  - resources and organisational structure.
- 3 Consideration should be given to incorporating strategic suppression plans that span the expected duration of the fire, or specific periods, to identify long-term objectives and resourcing requirements.
- 4 A RAF plan will be developed and attached to the IAP where required. A [RAF checklist](#) covering all aspects of RAF deployments has been developed to assist in this purpose.
- 5 The IC must approve all IAPs and any subsequent amendments. The ICs must ensure that reasons supporting amendment of existing, previously approved IAPs are appropriately recorded in-line with the operational significance of the amendment/s.
- 6 The use of ICON to generate IAPs is optional (see [4.14.3 Incident Control Online \(ICON\)](#)). However, if ICON is not used, the BFCC approved Interagency IAP forms must be used.

### 4.5.2 Fireground maps and marking

- 1 Fireground maps and marking are an important means of communicating information and essential safety messages to and between fire crews and the IMT.
- 2 Fireground maps will be prepared for all fire management operations and provided to all fireground personnel and IMT members. Maps will also be attached to operational plans (i.e., IAPs and prescribed burn plans).
- 3 Fireground maps may be provided in electronic format to fire crews. Printed maps must be available for those who do not have access to electronic versions.
- 4 All fireground personnel and IMT members must be briefed on the information provided on maps distributed for the operation.

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- 5 Maps will be updated and revised as the fire situation changes and/or operational plans are developed. Updated maps will be produced for each new shift or when there is a significant change in the fire situation or response actions required. Electronic maps should be updated on a continuous basis and distributed electronically to fire crews.
- 6 Maps should only be produced and printed in colour to ensure symbols remain readable and easily understood. For example, a 'going' fire edge would appear as an 'inactive' edge on a black and white version of the colour map.
- 7 Training and assessment in map interpretation is included in the national competency 'Navigate in urban and rural environments' (PUAOPE003B) for crew leaders. Familiarisation with IMS symbols and practical navigation symbols is also included in this competency unit.
- 8 Map reading prompts and IMS symbols will be included and updated as required within the [Fire Incident Field Guide](#).
- 9 All maps used for fireground operations will be prepared in a manner consistent with this section.

### Map requirements

- 10 Fireground maps will comply with the following requirements:
  - MapDesk is a customised Geographic Information System (GIS) mapping program and should be used by NPWS staff to prepare maps for fire incidents and prescribed burns. A 'How To' guide is available at [Fire Mapping in MapDesk v3.9.6.1](#).
  - Avenza Maps is a smartphone and tablet app that enables electronic sharing and annotation of maps prepared using corporate GIS, such as MapDesk. Avenza Maps is in common use across fire agencies and enables electronic integration of the operations map with the GPS receiver on a phone or tablet. The use of Avenza Maps to share and distribute fire operations maps is encouraged.
  - FireMapper is a smartphone and tablet app that provides a full mapping capability and the ability to create maps from scratch. Maps are only available electronically within the app or the FireMapper web-based portal. Maps can be shared and edited by all users with access to the map. Location tracking is available to show real time location of fireground resources and personnel. The use of FireMapper to create and share fire operations maps is encouraged, only when crews also have an electronic or paper copy of the approved fire operations map. The use of FireMapper for initial fire response, when no other mapping material is available, is appropriate.
  - Fireground base maps will be at a scale and of a type which is most appropriate for the operation. Maps will be legible and easy to interpret.
  - Fireground maps will include all tactical information necessary for the safe conduct of the operation, with particular consideration for the identification of safe refuge areas.
  - Standard reference procedures will be used to communicate locations i.e., map name followed by easting and then northing.



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- Standard IAP Bushfire Mapping Symbols as approved by the BFCC will be used on all fireground maps to indicate fireground features, organisation, ignition patterns and to communicate safety information.
  - All fireground maps will include date and time of preparation, map source or name, key, orientation (e.g., magnetic north), scale and marks and lines sufficient for crews to provide either a 6-figure grid reference (consistent with the mapping base currently available) or a UBD map reference.
- 11 Mapping symbols for planning documents (including IAPs) are to show strategic trails, tactical trails and other tracks as detailed in [BFCC Policy 1/2017 Fire Trails](#) where FAFT Plans have been adopted. In the absence of an approved FAFT Plan, essential, important and dormant fire access as detailed in [BFCC Policy 2/2007 'Fire Trails'](#) should be utilised. See [Fire Mapping and Planning Tools](#) ParkSite page for mapping information.

### Supplementary information

- 12 For the purpose of effectively managing contingencies, Sector Commanders and Division Commanders will carry onto the fireground such other mapped information necessary for the safe conduct of the operation e.g., adjoining map sheets, air photos or orthophoto maps.
- 13 Tactical sketch maps may also be provided to fireground personnel in order to supplement or provide further clarity to base maps.

### Field truthing and flagging

- 14 Sector and Division Commanders are responsible for field truthing fireground maps and for marking significant features on the fireground.
- Sector Commanders are also responsible for referring amendments to the Division Commander and to crew leaders or crew members.
- Division Commanders are responsible for referring amendments to the planning team.
- 15 All personnel are provided with flagging tape as part of their firefighting kit. Flagging tape will be used to mark any significant features on the fireground, and to mark any notable hazards which might pose a risk of injury to firefighters.

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## 4.6 Communications planning during incidents

### 4.6.1 Background

- 1 Communications planning is an essential component of fire suppression operations because it is the means by which firefighters receive direction in the field and communicate field conditions back to the IMT.

# 4.0 Response

## 4.6.2 Communications planning policies

- 1 Communications planning will take into account radio black spots, gaps in mobile and satellite phone coverage and other local circumstances.
  - Communication planning involving cross (state) border communications should refer to the relevant local BIP and cross-border operational guidelines.
- 2 The primary means of communication is by the agency VHF radio system; all other forms of communications will be considered as part of the communications plan for the incident.
  - UHF-CB radios should only be considered for short range tactical communications in order to compliment, but not replace, agency radio systems.
  - The following communication methods in [Table 18](#) and [Table 19](#) should be considered when preparing a communications plan.

# 4.0 Response

**Table 18: Recommended communication methods – Class 1 fires**

Communication level	Mode of communication
Coordination: Incident Control Centre to Operations Officer, Division Commander	NPWS VHF repeater channel PSN Channel Phones (landline, mobile phones)
Command: Division Commander to crews	NPWS VHF repeater channel PSN Channel
Tactical: crew members	NPWS VHF simplex channel UHF-CB simplex channel
Aircraft: Ground-to-air	NPWS simplex channel PSN Channel UHF-CB simplex channel Approved aviation frequency
Aircraft: Air-to-air	NPWS simplex channel PSN Channel RFS Simplex Channels UHF-CB simplex channel Approved aviation VHF frequency (FCTAF)

# 4.0 Response

**Table 19: Recommended communication methods – Class 2 and 3 fires**

Communication level	Mode of communication
Coordination: Incident Control Centre to Division Commander, Air Operations Manager	NPWS VHF repeater channel Phones (landline, mobile phones) PSN Channel RFS PMR Channel
Command: Division Commander to Sector Commander	NPWS VHF repeater channel PSN Channel RFS PMR Channel
Tactical: Sector Commanders to strike teams, task forces, crews, single resources	NPWS simplex channel UHF-CB simplex channel Augmented radio systems RFS PMR PSN Channel
Aircraft: Incident Control Centre, Air Operations Manager or Helipad Managers to Aircraft, Ground-to-air	PSN Channel Air band channels Agency simplex channels UHF-CB simplex channel
Aircraft: Air-to-air	NPWS simplex channel RFS Simplex Channels UHF-CB simplex channel Approved aviation VHF frequency (FCTAF)

## Incident management log book

- Division Commanders and all positions above engaged in prescribed burn and suppression operations will maintain a log of activities and decisions.  
For Class 3 fires, an officer should be appointed to help these positions in maintaining a log of activities and decisions.
- Records of all fire management operations will be kept on the prescribed forms and entered into the prescribed information systems in accordance with the policies and procedures in section [4.14 Reporting and documentation for fire response](#).

## Communications Planner appointment

- Consideration should be given to the employment of a Communications Planner within the IMT to establish effective communications strategies for fires in remote areas or large fires involving multiple divisions or agencies.

# 4.0 Response

## 4.7 Aircraft operations

### 4.7.1 Background

- 1 Aircraft can provide valuable assistance in many aspects of controlling fire. All air operations must be fully integrated with ground operations and incident management to ensure safety and maximise effectiveness.
- 2 Fixed-wing aircraft are used to detect fires, undertake reconnaissance of fire behaviour and boundaries (including via infra-red line scan), transport fire crews from various parts of NSW, provide a platform for airborne radio repeaters and undertake water bombing.
- 3 Helicopters are used to detect fires, transport fire crews onto the fireground (including winching), provide operational support for crews on the fireground, identify hotspots via infra-red sensors, undertake reconnaissance, perform as air attack supervision, command or observational platforms and undertake aerial ignition and water bombing.
- 4 [Large Air Tankers \(LATs\)](#) are used for direct attack and containment and can be loaded with water, foam, gel or retardant.
- 5 Remotely Piloted Aircraft Systems (RPAS) are used in fire management to monitor fire progress, detect hotspots or capture imagery.
- 6 Aircraft and aircrew also provide an important resource for ensuring fire crew safety and welfare by monitoring fire behaviour and development and fire management operations.
- 7 While pilots have ultimate accountability for the safety of aircraft and all those on board, it is important to recognise that all personnel involved in aviation operations have a responsibility for safety. This includes assessing risks, reporting hazards and monitoring operations.

### 4.7.2 Policies for aircraft operations

- 1 NPWS may engage aircraft to suppress fires where this has been assessed as an appropriate and cost-effective method of suppression. IMTs should refer to the document [Effective Aircraft Management – A Guide to Aerial Firefighting](#) to assist in determining effective aircraft types and levels.
- 2 NPWS staff should refer to the [NPWS Remotely Piloted Aircraft \(RPA\) Guidelines](#) for consideration of commercial RPA use on NPWS estate and/or managed by NPWS.
- 3 All aviation operations will be in accordance with the [Aviation Management Framework](#) and the [Aviation Safety Policy](#).
- 4 NPWS will actively participate in the Interagency Aviation Working Group (IAAWG) to promote safe and efficient use of aircraft.

## 4.0 Response

- 5 Only aircraft and pilots on the [NSW Fire Agencies Approved Operators List \(AOL\)](#) will be used by NPWS in fire management operations.
- 6 All aircraft operations will be in accordance with [Interagency Aviation Standard Operating Procedures](#) to ensure safe, effective and efficient aircraft operations.
- 7 Operations are to be carried out in accordance with [CASA](#) requirements and relevant air operations manuals.

### 4.7.3 Aircraft deployment and coordination

- 1 Processes for obtaining aircraft are detailed in the [Interagency Aviation Standard Operating Procedures](#). Only aviation operators on the [NSW Fire Agencies Approved Operators List](#) (AOL) can be used for fire operations.
- 2 Engagement of other operators not on the AOL is not permitted without specific approval of the Director Fire and Incident Operations Branch, with advice to the Branch Director.
- 3 Two distinct processes apply to deploying aircraft. These are described as:
  - Aviation coordinated periods, and
  - Aviation non-coordinated periods
- 4 During aviation co-ordinated periods NPWS interests will be represented at the SAD by an appropriate officer(s).
- 5 The Aviation Duty Officer will represent the interests of NPWS at the SAD. Additional staff may be required to assist the SAD in its daily functions.
- 6 Fire and Incident Operations Branch will advise staff when periods of coordination are declared and revoked.

#### Aviation coordinated periods

- 7 During periods of high demand for aviation resources, for example when there are multiple Section 44 fires or a high demand for specialised aircraft, or continual hot weather patterns and high FDIs, a 'period of aviation coordination' may be declared following agreement by all fire agencies. During these periods:
  - All requests for aircraft to support fire operations must be made through the SAD ([Aircraft Notification and Request form](#))
  - The SAD will allocate aircraft to incidents based on state-wide priorities
  - Branch should request the SAD to preferentially supply NPWS aircraft for any Class 1 or 2 fires as a priority, when they are, or become, available.
  - Requests to retain aircraft deployed must be made to the SAD on a daily basis and the SAD must be notified once it is known that aircraft are to be released from a fire so they can be redeployed ([Aircraft Notification and Request form](#)).
  - NPWS will provide staff to assist the SAD at RFS State Operations as required.

# 4.0 Response

- Further information can be found in [Effective Aircraft Management – A Guide to Aerial Firefighting](#).

## Aviation non-coordinated periods

8 During aviation non-coordinated periods:

- Branches may engage aircraft directly from the AOL after preferably contacting the Fire and Incident Operations Branch [Aviation DO](#) for advice on the suitability and of aircraft on the AOL. Branches should consider the suitability and availability of NPWS aircraft before contracting external aviation services from the AOL.
- Following deployment of aircraft, the [Aviation DO](#) must be advised verbally of deployments within 30 minutes, and in writing within 2 hours on the NPWS [Aircraft Notification and Request form](#). (If the Aviation DO is unavailable the SDO is to be notified).

## Cooperative arrangements for aircraft operations

9 NPWS will participate in the IAAWG to facilitate the development of a coordinated aerial fire management operations policy, aviation plan and SOPs with other fire agencies for approval by the BFCC. This Group will also coordinate training arrangements and will address other interagency issues relating to aviation management.

## Effective and cost-efficient aircraft management

10 Although the benefits of using aircraft for fire management are clear, the increasing costs associated with air operations mean that greater scrutiny must be applied to ensuring that operations are effective and cost-efficient. Further information can be found in the document [Effective Aircraft Management – A Guide to Aerial Firefighting](#).

11 Basic principles of fire aviation operations include:

- While aircraft can assist in 'knocking down' fire and reducing ROS, ground crews are critical to ensure containment.
- All air operations must be fully integrated with ground operations and incident management to ensure safety and maximise effectiveness.
- IAPs need to set realistic and achievable objectives and strategies for aircraft operations. IAPs and operations also need to maintain a degree of flexibility to accommodate changing circumstances.
- Aircraft effectiveness can be significantly compromised by many factors, including:

# 4.0 Response

- weather conditions
  - fire behaviour
  - fuel types and loadings
  - terrain and elevation
  - adequacy of logistical support
  - turnaround times for aircraft to and from water sources
  - communications
  - aircraft and pilot capability, or
  - level of supervision.
- Suitably experienced staff or aviation specialists must direct air operations.
  - Air operations need to be continually monitored for effectiveness, with objectives and strategies modified accordingly. All fire personnel need to be encouraged to provide continual feedback on operations.
- 12 The following questions need to be considered and regularly reviewed to determine the initial and ongoing use of aircraft:
- Will an aircraft increase the effectiveness of the firefighting operation?
  - What role will the aircraft play in the suppression strategies?
  - What sort of aircraft will best do the job?
  - Is the proposed use of aircraft cost-effective?
  - Are suitable aircraft available?

## 4.7.4 Aviation safety

- 1 All aviation operations will be in accordance with the [Aviation Safety Policy](#).
- 2 All staff involved in aviation operations must have completed and be current in Working Safely Around Aircraft training
- 3 The use of qualified and experienced personnel is required for the following specialist positions: Air Operations Manager, Air Attack Supervisor, Aircraft Officer, Air Base Manager, Air Observer and Incendiary Operations Supervisor.
- 4 Qualified personnel will be identified on the 'Aviation Specialists List' available from Fire and Incident Operations Branch. Personnel listed on the Aviation Specialist List are considered to be state-managed resources. Where possible, local resources will be used first, to maximise local knowledge. Consideration will also be given to local requirements, including potential fire danger, before tasking staff to out-of-branch deployments.
- 5 When multiple aircraft are assigned to the same incident, an aircraft unit should be established under the operations section in line with the [Interagency Aviation Standard Operating Procedures](#).



# 4.0 Response

- 6 Flight-following procedures (also known as search and rescue, or SAR, watch) must be observed during all aircraft operations. The agency standard flight-following interval is 30 minutes (top and bottom of the hour), unless otherwise arranged. Flight-following reports should include:

Flight-following reports should include:

- aircraft call sign
- present location and destination
- persons on board (POB)
- next SAR call time.

Fuel endurance and ETA are also useful if known.

If an aircraft is overdue, SAR procedures shall be initiated as follows.

Aircraft more than 5 minutes overdue = **Declare Uncertainty Phase:**

- advise IC or Officer in Charge (OIC)
- attempt to contact aircraft by all available means
- check tracking data to determine location and if still flying
- request other tasked aircraft to contact or search for overdue aircraft

Aircraft more than 15 minutes overdue = **Declare Alert Phase:**

- dispatch available aircraft to search for overdue aircraft
- continue to attempt to contact the aircraft
- advise the ADO on 02 9895 6455 who will contact the aircraft operator

Anytime aircraft is believed to be in danger = **Declare Distress Phase:**

- alert Police on 000 and follow their instructions to assist with SAR.

Further information in the Aviation incident response procedures detailed in the [Interagency Aviation Standard Operating Procedures](#) (Section 5 Flight Safety).

## 4.7.5 Guidelines for air operations

- 1 IMTs should refer to the document the document [Effective Aircraft Management – A Guide to Aerial Firefighting](#).

### Fire intensity

- 2 Under extreme weather conditions, increased fire intensity and reduced aircraft performance will further limit effectiveness. Operations need to be continually monitored for effectiveness and promptly called off if not proving successful, or if safety is compromised.

# 4.0 Response

## Fire suppression chemicals

- 3 Use of straight water in firebombing operations should only be considered where large volumes are available with rapid turnarounds, or when environmental constraints need to be considered.

Fire suppression chemicals should be used whenever possible as they significantly increase the effectiveness of firebombing operations. Further information can be found in the document [Effective Aircraft Management – A Guide to Aerial Firefighting](#).

For further information refer to the ParkSite page [Fire Suppression Chemicals](#).

- 4 Fire suppression chemicals have an impact on the environment, particularly if their use is near watercourses, wetlands or threatened species habitats. [4.12 Fire suppression chemicals](#) and relevant SFMIs/RFMSs, AIS Fire Response Plans and associated spatial datasets should be considered before use.

## Impacts of distance, elevation and atmospheric conditions

- 5 Firebombing effectiveness decreases with increased distance to the fire, as well as with increased elevation and warmer atmospheric conditions.
  - Aircraft are less efficient at higher elevations and may not be able to carry full loads.
  - Hotter weather conditions also reduce aircraft efficiency and strong winds reduce manoeuvrability and accuracy.
  - Poor visibility due to smoke and inversions can also compromise operations.

## Firebombing strategies

- 6 The following strategies should be employed when utilising aircraft for bombing:
  - Air operations need to be fully integrated with ground operations and the IMT.
  - Firebombing operations should always be supported by ground crews.
  - Firebombing is most effective early in the day when fire activity is lowest.
  - Always use natural or constructed fire advantages.
  - Continually monitor the effectiveness of the operation. If firebombing is not productive, has a poor chance of success or is unsafe, call it off and consider other strategies.
  - Aircraft turnaround times should be minimised by staging aircraft closer to operations and establishing temporary water points using buoy walls and portable pumps.
  - Use the most appropriate aircraft available for the task. Refer to ParkSite [Approved Operators List \(AOL\)](#) for aircraft details.
  - unsupported helicopter mop-up operations are generally ineffective and should be discouraged unless they are directed by ground crews.

Further information can be found in the document [Effective Aircraft Management – A Guide to Aerial Firefighting](#).

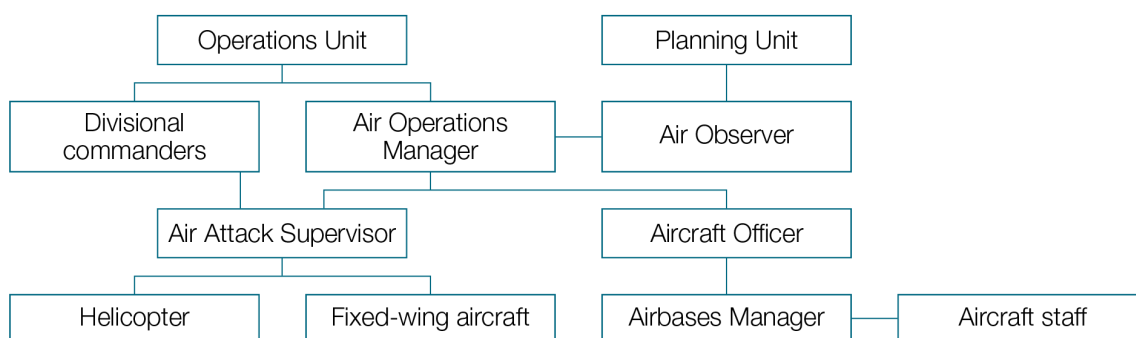
# 4.0 Response

## Air operations management

- 7 Effective and efficient air operations require competent aviation management personnel, adequate ground support, good administration systems and effective integration into the total fire organisation.

Establishing an Aircraft Unit within the IMT should be considered as soon as multiple aircraft are deployed. Strong linkages with the planning function are essential to ensure feedback on strategy development and implementation. Further information can be found in the document [Effective Aircraft Management – A Guide to Aerial Firefighting](#).

Unit structure is shown in [Figure 13](#). The model structure represents a large fire incident with multiple aircraft. Unit structures can be scaled up or down, depending on the fire situation.



**Figure 13: Model IMS aircraft unit structure**

## Aircraft cost

- 8 Aircraft costs vary greatly, cost structure includes a daily standing charge and an hourly wet operating rate. The NPWS ADO can provide an assessment on the most cost-effective aircraft.

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## 4.8 Remote area deployment

### 4.8.1 Background

- 1 NSW has large areas of bushland where rapid response by vehicle is not possible due to access, topography or the distances involved. Fire agencies have developed a high level of organisational skill, expertise and experience in the suppression of fires in remote locations using dry firefighting techniques. Early suppression of fires in remote terrain will often prevent large fires developing and becoming a major threat.

# 4.0 Response

- 2 NPWS has a duty of care to ensure that its staff, volunteers and contractors required to conduct remote area firefighting operations are competent and capable of undertaking the tasks allocated to them and that those tasks are undertaken as safely as possible.

## 4.8.2 Policies for remote area deployment

- 1 The [Joint Operational Protocol for Remote Area Firefighting](#) replaces all previous policies regarding remote area firefighting and operations, and covers the generic requirements NPWS and the NSW RFS will operate under, whether during single agency or multi-agency remote operations.
- 2 Decisions to engage in firefighting or prescribed burning in remote locations will be based on the risk relating to the potential of the fire to have significant impacts on the community, local economies or the environment. The guide these decisions a RAFT Risk Analysis for ICs is contained in the appendix to the [Joint Operational Protocol for Remote Area Firefighting](#).
- 3 There are two classifications of RAF: Moderate RAF and Arduous RAF. In order to participate in an Arduous RAFT, all team members must have completed the Arduous level TBA (or Modified Arduous). In order to participate in a Moderate RAFT, all team members must have completed the Moderate level TBA. Note: Modified Arduous can only be considered for interstate and international deployments if the receiving agency specifically recognises Modified Arduous.
- 4 Arduous RAFT will typically be deployed to:
  - areas that are only accessible by helicopter winch/hover exit insertion
  - areas where crews are more than 40 minutes' walk from mechanical means of extraction (e.g., vehicles, boats, aircraft at airstrips), and;
  - carry out tasks that require a high level of fitness and endurance, over extended periods of time in steep and uneven terrain. Such tasks include extended periods of rake-hoe work and carrying equipment.
- 5 Moderate RAFT will only be deployed to areas where:
  - crews are less than 40 minutes' walk from mechanical means of extraction (note: Moderate RAF personnel may be deployed by winch to areas that are more than 40 minutes' walk from mechanical means of extraction provided the primary task is to cut a helipad).
  - the tasks are achievable for personnel with a moderate level of fitness.
- 6 The deployment of personnel to remote areas is to be implemented only after a risk assessment has been carried out which considers the following:
  - actual and forecast fire danger conditions
  - terrain
  - fire activity
  - availability of 2 means of escape and time required to reach extraction point of refuge

# 4.0 Response

- fire management activities to be undertaken, and
- firefighter health and fitness accreditation.

A [remote area pre-deployment checklist](#) has been developed which should be used to assist in this process.

- 7 Personnel deployed to remote locations as defined above must have current accreditation in helicopter safety, hover entry and exit and winching, and be deemed suitable to undertake remote area tasks and have successfully completed the corresponding current task-based assessment (fitness test).
- 8 Crew Members Under Supervision may be deployed to Remote Area Fire Teams. To address the potential risk posed by the imbalance of inexperienced to experienced firefighting personnel, a limit of no more than one Crew Member Under Supervision per RAFT crew of three or four firefighters is mandated.
- 9 When determining whether an operation is to be classified as Remote, the IC will take into account all aspects that would affect crew egress to a point of mechanical extraction. This would include the capability of the crew, the activities proposed to be undertaken, terrain, accessibility, vegetation and forecast weather conditions.

## Remote area firefighting equipment

- 10 Each remote area crew must be adequately resourced to ensure it is self-sufficient for the duration of its deployment plus 24 hours.
- 11 Each remote area crew member must carry all relevant remote area equipment. See schedules 1, 2, 3 and 4 in section [7.2 Personal protective equipment schedules](#). Each remote area crew is provided with a GPS unit.
- 12 Consideration is to be given to providing remote area crews with
  - a back-up form of communication (e.g., satellite phone), and
  - a personal locator beacon (PLB).

## Remote area fire team briefing

- 13 Before being deployed to a remote location, all remote area crew members must be provided with a specific briefing which must include the safety, tactical, communication and reporting arrangements of their deployment as detailed in the IAP, and details of current and expected weather and fire behaviour. Operational maps will be provided to each remote area crew member. This briefing, with reference to the plan, covers the job safety analysis and job safety brief required by WHS Act.

## Deployment and extraction

- 14 It is preferable for crews deployed by helicopter to be inserted and extracted as close to an anchor point or safe refuge as practicable. The pilot, in consultation with the remote area crew leader, will determine the insertion or extraction point for crews deployed by helicopter.
- 15 The remote area crew leader will advise the pilot or aircrew if they are not satisfied with the proposed deployment, insertion or extraction locations, or if they believe that fire

## 4.0 Response

behaviour or weather conditions have made or may make deployment unsafe for on-ground fire management activities. The remote area crew leader's decision is final.

- 16 Insertion and extraction of crew may be undertaken via landing where possible, if landing is not possible hovering or winching is to be undertaken. Prior to hovering or winching a specific risk assessment is to be undertaken involving the pilot, aircrew and crews to be inserted or extracted.
- 17 The IC will ensure that all remote fire management activities in remote locations have adequate and timely air support.
- 18 An extraction time must be nominated, taking into consideration the task, current and forecast weather conditions, available daylight and pilot flight hour duty time.
- 19 Crews walking in or walking out (or both) should traverse burnt ground where practicable.

### RAFT medivac procedures

- 20 The [NPWS RAFT Medical Emergency Response Procedures \(MERP\)](#) should, as a minimum, include the following:
  - Treat the injury with normal first aid and follow normal injury reporting.
  - If the injury is beyond the capability of first aid treatment, the RAFT leader calls 000 directly and informs IMT of the medivac.
  - Rapid response and extraction of the injured person is crucial to success. The 'PACE' process is used to identify options for extraction.
    - a) **Primary** – Can the existing transport be used? Is there resources close by that can be deployed easily?
    - b) **Alternate** – If the primary cannot be accessed or if the injury is too severe what next? Should additional resources be staged closer?
    - c) **Contingency** – If the injury is severe or life threatening, what resources are able to be activated to assist, how will they be integrated?
    - d) **Emergency** – If the injury is critical can we get help to person or the person to help without delay, what is the response / travel time for the responding vehicles / aircraft?
  - Where 000 does not respond contact the IMT to coordinate extraction and follow the MERP:

# 4.0 Response

- a) **Establish Communication** – this may be with someone on the fireground or directly with the IC / IMT.
- b) **Relay a summary of the emergency** – using the prompts on the back of this card a detailed summary will need to be conveyed to the other party.
- c) **Be ready to receive further communications** – Once contact has been made with 000 or the ambulance, they will likely need more information and will give you some advanced instructions about how to treat the patient.
- d) **Give updates as things change** – It is important to keep the controller informed of any changes in the patient and your situation in general. This may change the priority to the extraction.

- For more information see the [RAFT – Remote Area Fire Teams ParkSite page](#).

## Crew deployment

- 21 All personnel deployed to remote locations will maintain the capacity to communicate with the crew leader, and the crew leader will maintain the capacity to communicate with the Division Commander and aircraft or Incident Control Centre or other suitable monitoring point for the duration of the operation.
- 22 Once deployed, the Crew Leader will test communications. If at any stage during the deployment the communications are found to be inadequate, the crew will be withdrawn.
- 23 If at any stage during the operation the remote area Crew Leader determines that conditions on the ground are unsafe, then it is that Crew Leader's decision to request that the crew be withdrawn. The Crew Leader's decision is final.
- 24 Once deployed, the Crew Leader will confirm with the air crew or Division Commander that the refuge areas and escape routes are suitable. There will be at least 2 escape routes known and assessed.
- 25 The IC will ensure arrangements are in place to closely monitor weather and fire behaviour on the fireground and have that information regularly relayed back to the control centre.
- 26 The IC will ensure that current and predicted weather information is regularly assessed with regard to the safety of crew deployment, and the weather information and assessments are relayed to crews on the ground.
- 27 Decisions to withdraw crews due to deteriorating weather or extreme fire behaviour will be made well in advance of any significant change.
- 28 Only firefighting personnel trained and currently accredited in helicopter safety, winching and hover entry and exit will be deployed.

## Standards of training

- 29 RAF Crew Members will be trained to the following standards:
  - Crew Member or Crew Leader competency, and

# 4.0 Response

- helicopter safety, hover entry and exit and winch accreditation

For further information refer to section [3.7 Learning and development](#)

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## 4.9 Fire control lines

### 4.9.1 Background

- 1 Fire control lines can vary in width and are constructed by various methods. The width of a control line will depend on the strategy used and the intensity of the fire it is to contain. Mineral earth control lines can be constructed either by ground crews using hand tools or by earthmoving equipment. 'Wet' control lines can be created using fire suppression chemicals or water applied either by helicopter, fixed-wing aircraft, fire tankers, sprinklers and hose lays.
- 2 Natural fire control advantages include any area or natural feature that cannot support fire or will inhibit the passage of a fire. These include watercourses and water bodies, moist vegetation types such as rainforests, low-fuel areas, recently burnt areas and rocky outcrops, including cliff faces.
- 3 Permanently constructed fire control lines can include roads, tracks, walking trails and APZs (see section [2.9 Fire access and fire trails](#)). Constructed control lines will often link into natural fire control advantages.
- 4 Temporary control lines may be constructed either as part of the fire suppression operation or as part of the preparations for a prescribed burn.

### 4.9.2 Policies for fire control lines

- 1 Existing constructed or natural fire control advantages should be used for containing bushfires wherever possible.  
  
Existing natural fire control advantages should be used as independent control lines or to link into constructed control lines wherever practicable and should be mapped in GIS and identified in the NPWS Fire Planning Portal (under development).
- 2 Temporary fire control lines may be constructed or established to contain bushfires and prescribed burns within predetermined boundaries.  
  
Consideration should be given to the marking of temporary control lines with signs or flagging tape.  
  
Where necessary, rehabilitation or restoration of temporarily constructed control lines will be undertaken.



# 4.0 Response

## Location and preparation of fire control lines

- 3 The following guidelines will be considered for the location and preparation of control lines for burning operations:
  - Use existing tracks and trails where suitable.
  - Exercise caution in using natural control advantages, particularly during periods of drought.
  - Wherever possible, locate control lines to avoid leaving unburnt fuels down-slope.
  - Avoid if possible: areas of heavy fuel concentrations and potential tree fall, powerlines, and steep terrain.
  - Keep control lines as straight as possible.
  - Avoid sharp and hairpin bends.
  - Widen trails on bends and where fuel concentration increases.
  - Reduce fuel concentrations on the very edge of control lines.
  - Rake fuel away from the base of fibrous-barked trees, and from around logs close to the edge of control lines.
  - Remove overhanging vegetation from control lines.
  - Mark safety hazards for personnel.
  - Consider hazardous trees.
  
- 4 The location of fire control lines should consider:
  - the safety of firefighters
  - the protection of life and property
  - the protection of natural and cultural heritage (including AIS)
  - the minimisation of erosion and pollution
  - trafficability where appropriate, and
  - the effectiveness of control.

Before the completion of an incident, consideration will be given to rehabilitating control lines.

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## 4.10 Heavy plant operations

### 4.10.1 Background

- 1 Heavy plant equipment, including bulldozers, tractors and graders, can be the most effective means of rapidly constructing fire control lines and managing hazardous trees.

## 4.0 Response

- 2 The use of heavy plant equipment can cause serious damage to the environment including soil erosion, damage to natural and cultural heritage and the translocation of weeds and pathogens. Conditions apply to use heavy plant equipment within NPWS managed land to maintain conservation values and meet environmental legislative requirements.
- 3 NPWS operates a range of heavy plant equipment. These are managed to ensure availability for firefighting.
- 4 Heavy plant equipment can be hired during fire operations. All contract operators must be insured and appropriately certified to ensure safe operation of equipment. Operators should also be able to follow instructions to minimise environmental damage when constructing control lines.
- 5 All earth moving contractors and their operators used in firefighting operations must be qualified in trail construction and trained in fire operations. The qualifications and/or equivalent knowledge must be checked prior to engaging the operator.
- 6 From 2021 the NSW RFS altered the way Heavy Plant is managed and sourced. See [Heavy plant use and engagement](#).

### 4.10.2 Policies for heavy plant equipment

- 1 Heavy plant equipment may be used for fire operations, based on predicted success of fire suppression and anticipated impacts to sensitive environments.
- 2 Heavy plant equipment should be used in accordance with operational guidelines within SFMIs / RFMSs, AIS Fire Response Plans and within BFMC Plan of Operations.
- 3 NPWS heavy plant equipment will be in a state of readiness for each fire season.
- 4 All heavy plant equipment used in fire management operations must be fully insured and fitted with appropriate safety devices maintained as specified by the manufacturer.
- 5 All heavy plant equipment operators engaged in fire management operations must wear the approved protective clothing detailed in [Schedule 1\(a\)](#).
- 6 Where more than three pieces of heavy plant equipment are operating on a fire at one time, a Plant Manager should be established within the operations section of the IMT.

### 4.10.3 Guidelines and restrictions on use of heavy plant equipment

- 1 For Class 1, 2 and 3 fires when the IC is not a NPWS officer, approval must be gained from the Branch Director or other senior officer before heavy plant equipment is deployed for use on NPWS-managed land.
- 2 Delegates to BFMCs will ensure that the guidelines and restrictions on the use of earthmoving equipment on NPWS-managed land included within RFMS are reflected within BFMC Plan of Operations.

## 4.0 Response

- 3 Where considered necessary, RFMS and BFMC Plan of Operations will include details of sensitive environments within reserves where specific conditions apply to using heavy plant equipment.
- 4 To ensure that NPWS controls the impact of heavy plant operations on-park into the future, the following actions should be implemented:
  - Active NPWS participation with BFMCs
  - IMT consulting the relevant RFMSs (and COP layers where available) when planning control lines
  - training for plant operators
  - confirming control line extent and constraints in the IAP
  - control lines are to be surveyed, where there is high potential for cultural heritage sites not yet recorded in AHIMS
  - providing detailed operational briefings to plant operators
  - have Plant Supervisors on site during control line construction
  - NPWS officer overseeing all plant operations on-park, and
  - installing vehicle-trackers on all heavy plant.

### Using heavy plant equipment on NPWS-managed land

- 5 Heavy plant equipment must be guided and supervised by an experienced NPWS officer, or a person recognised to be appropriately experienced.
- 6 All heavy plant equipment employed in fire operations must be accompanied by a support vehicle that has equipment available to contact support personnel in an emergency. Heavy plant equipment involved in direct or parallel attack must be accompanied by either a Cat 9 fire unit or fire tanker for safety purposes.
- 7 At the start of a shift, all operators and guides must be briefed on safety considerations and actions to prevent damage to sensitive natural and cultural heritage (including AIS). All equipment used at night must have appropriate lighting.
- 8 All heavy plant equipment should be washed down before entering or moving between sites on NPWS-managed land in order to prevent the potential relocation of weeds or pathogens. A high-pressure hose should remove all visible mud, dirt and debris from the equipment. Disinfectant such as Phytoclean 2% solution (1:50 dilution or 20ml of disinfectant in 980ml of water) or Methylated spirits 70% solution (7:10) dilution or 700ml of Methylated spirits in 300ml of water) should be used to spray the interior and exterior surfaces.

### NPWS heavy plant equipment

- 9 Fire management operations will normally have priority over all other operations for equipment use.
- 10 Equipment will be operated by appropriately certified operators.

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- 11 All heavy plant equipment used in firefighting activities must be fitted with appropriate 'falling object protection structures' (FOPS) and 'roll over protection structures' (ROPS), in accordance with AS 2294.1-1997 and AS 1636.1-1996.
- 12 Heavy plant equipment must be fitted with a seatbelt for the operator. The seatbelt must be correctly mounted, be in good condition and be adjustable to suit a variety of operators. Seatbelts must be used whenever machinery is being operated and be maintained according to the manufacturer's specifications.

## Using interagency heavy plant equipment

- 13 A MoU may be entered into with other local firefighting authorities on conditions for the use of heavy plant equipment on NPWS managed land.

## Contract operators and equipment hire

- 14 Heavy plant contractors will only be hired as per NSW government procurement guidelines. The [NSW RFS Arena HP](#) is a register of pre-approved heavy plant contractors. Currently Arena HP can be used by approved personnel to dispatch equipment during a Class 3 fire. Alternatively, Arena HP can be used as a spatial tool to find nearby available plant.
- 15 Heavy plant contractors engaged using the NSW RFS Arena HP must be fully approved by the NSW RFS and meet all insurance, liability, equipment and personnel standards as required by the [NSW RFS Heavy Plant Register](#).
- 16 Heavy plant engaged not using the NSW RFS Arena HP must comply with all NPWS procurement, health and safety and environmental requirements. Heavy plant engaged not using the NSW RFS Arena HP must be engaged using other approved contractual means pursuant to financial and project risk management.
- 17 All contract machinery operators working within the fire incident must have completed fire awareness training.
- 18 All contract machinery operators are to ensure that they are trained or experienced in the techniques and precautions for protecting waterways for plant hygiene.
- 19 Contracted heavy plant must be fitted with:
  - a seatbelt for the operator; seatbelts must be used whenever machinery is being operated,
  - and appropriate FOPS and ROPS in accordance with AS 2294.1-1997 and AS 1636.1-1996 certified to level II.

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## 4.11 Burning operations

### 4.11.1 Background

- 1 This section covers the procedures to be observed when implementing all burning operations, including back-burning during fire suppression and ignition of prescribed burns on NPWS managed land.
- 2 Back-burning is a tactic used in the control and containment of fires. It involves igniting another fire to consume fuel in the path of the main fire. This tactic has proven to be an effective fire suppression tactic that can be both cost-effective and environmentally sustainable.

A back-burn is generally lit from a secure control line and allowed to burn towards the main fire. The aim of the back-burn is to gain sufficient depth so the movement of the main fire will be stopped, and spotting will not occur across the control line. Back-burning operations can be assisted by the placement of incendiaries to 'deepen' the burn, either from aircraft or with the use of incendiary launching devices.

A back-burn should be conducted only when both fuel and weather conditions are suitable for the containment of the burn. This may be at night when it is cooler and more humid, after a wind shift or lull, or after a cool change. Aerial ignition, and other means of ignition, should be considered as a means of achieving suppression strategies within the necessary timeframe and at the desired fire intensity.

### 4.11.2 Management framework for burning operations

- 1 Burning operations should be undertaken with consideration to the operational guidelines contained in SFMIs / RFMSs, AIS Fire Response Plans and BFMC Bush Fire Risk Management Plans.
- 2 The control and command of the burn operation will be in accordance with the IMS, with overall supervision by the IC. Additional supervision will be provided by the Operations Officer, Division Commanders and crew leaders depending on the scale of the operation.
- 3 Burning operations will be conducted according to:
  - the IAP during fire suppression, or
  - the action plan prepared within the prescribed burning plan.
- 4 Changes to the conduct of the burning operation, before and during implementation, must be referred to the Operations Officer or IC for approval.
- 5 For all prescribed burn activities, a Prescribed Burn IC must be appointed. The Prescribed Burn IC must hold the unit of competency 'PUAFIR506 Conduct complex prescribed burns or equivalent'. Where a Prescribed Burn IC is not in physical attendance at the burn location, a suitably experienced officer will be appointed as the Operations Officer to manage the tasks and activities to execute the burn in accordance with the Prescribed Burn IAP. The Prescribed Burn IC remains in control

# 4.0 Response

and accountable for the burn, regardless of their location. The Operations Officer must maintain regular communication with the Prescribed Burn IC whilst undertaking the burn.

## 4.11.3 Basic principles of burning operations

- 1 Burning operations should **not** be undertaken when:
  - people and property are within the burn area without adequate protection
  - long-distance spotting is occurring or likely to occur
  - the fire edge is too close to the control line to permit safe operations
  - control lines are inadequate for containing the burn
  - there is insufficient time and resources available, or
  - firefighting personnel believe the conditions are unsafe.
  
- 2 Burning operations should be conducted in accordance with the following principles:
  - all burning operations will be planned.
  - all personnel participating in the burn operation must be accredited to undertake assigned tasks.
  - the safety of personnel is paramount during all phases of the burn operation.
  - adequate resources must be committed to ensure the safety of personnel and containment of the burn in the time specified for the operation.
  - adequate means of communication must be available to all personnel involved in burning operations.
  - crews must be briefed on all phases of the burn operation.
  - conditions must be suitable for the containment of the burn.
  - the light-up methods and sequences will ensure containment of the burn and safety of firefighters.
  - the intensity of the light-up should be planned to minimise spotting and to reduce the mop-up and patrol effort.
  - control lines must be sufficient to contain the burn under the conditions anticipated.
  - the burn must be deep enough to prevent the approaching fire front crossing the control line.
  - burning out areas within control lines is an acceptable form of indirect attack.

## 4.11.4 Briefing and safety checks

- 1 Safety Advisors will be appointed to all fires of Class 2 or above in accordance with [BFCC Policy 3/2003 'Safety Advisor SOP'](#).
  
- 2 Operational briefings and safety checks will be conducted before the ignition of a burn to ensure personnel safety, public safety and operational success.

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## 4.11.5 Burn light-up

- 1 Lighting-up of an area will only begin on the instruction of the IC.
- 2 Lighting-up must be in accordance with section [‘Light-up pattern and sequence’](#) and [‘Determining the light-up pattern and speed’](#) below.
- 3 The start of the light-up will be reported to the IC.
- 4 Light-up should begin only
  - from a safe area or where the crew has a safe escape route, and
  - following confirmation that weather conditions are within those prescribed (as per [3.3.3 Monitoring weather during fire management operations](#)).
- 5 The initial light-up should be a test burn to assess the potential fire behaviour and to indicate the light-up pattern that will permit effective containment, patrol and mop-up. The test burn should be extinguished if it exceeds the desired fire intensity and the IC or the appropriate commander advises this.
- 6 Division Commanders, Sector Commanders and crew leaders will:
  - implement light-up patterns that are appropriate to the terrain and vegetation and will maximise personnel safety and minimise the risk of fire outside containment lines, and
  - regularly report progress of the light-up to their supervisor.
- 7 Crew Leaders will
  - specify and supervise the number, positioning and use of drip-torch operators, and
  - ensure that the length of the control line edge lit-up at any one time does not exceed the crew’s capacity to mop-up and patrol.
- 8 The lengths of control line edge that are lit-up at any one time and lighting techniques should vary according to changes in OFHs and fire behaviour.
- 9 All Division and Sector Commanders are to continually assess weather conditions on the fireground and ensure readings are regularly measured and reported both to

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Incident Control and to all field crews. Particular attention should be given to changes in wind speed, wind direction, temperature and humidity.

- 10 Crew Leaders will rotate tasks among Crew Members to reduce exposure to smoky conditions and to spread workloads.
- 11 Consideration will be given to the posting of lookouts to monitor the progress of the fire and the location of crews.
- 12 An under-burnt shrub layer will be considered as a potential safety hazard.

## Light-up pattern and sequence

- 13 The following guidelines will be considered during the light-up to ensure appropriate pattern and sequence:
  - The light-up direction should be into the wind, down-slope and towards safe ground.
  - Light-up pattern will be specified in the burn plan and will depend on topography and weather.
  - The light-up of a saddle should involve lighting the high points on both sides and working to the lowest point.
  - The length of the control line edge lit at one time may vary from a single point ignition every 50 m to a continuous strip.
  - Care should be taken when lighting control lines that will burn upslope. The amount of fire edge lit-up at any one time should be minimised to avoid a broad high intensity front.
  - Where there are 2 control lines, light the upslope or downwind line first.

## Determining the light-up pattern and speed

- 14 When determining light-up pattern and speed the crew leader must take into account the following:
  - **McArthur forest fire spread table under-predicts:** The fire spread table on the back of the McArthur Mk 5 Forest Fire Danger Meter under-predicts the potential ROS over most fire danger indices. **Shrub fuel is important in fire spread:** Forest fires in fuels with a developed shrub layer taller than 1 m can spread up to 3 times faster than predicted by McArthur's forest fire spread table. Fires in litter fuels with a low shrub layer can spread 2 times faster.
  - **Wind Adjustment Factors:** 10m wind speeds are used in most fire behaviour calculators (Macarthur / Vesta Mk2) and in burn prescriptions for hazard reduction burning. Wind speeds measured on the ground will not be the same as at a height of 10m. A WAF should be used to convert a ground level measurement to a height of 10m. See s.[3.3.3 Monitoring weather during fire management operations](#) for more information.
  - **Watch out when the wind speed is 15 km/hour:** There appears to be a threshold wind speed around 12–15 km/hour in the open that makes a huge difference in the behaviour of forest fires. Fires in heavy fuels may spread deceptively slowly, well below their potential ROS, when the wind speed is below



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the threshold. A slight increase in wind speed can result in a big jump in fire behaviour.

- **Forest winds are spatially very variable:** Fire behaviour observed at one location is not the same elsewhere in the forest. Detailed wind measurements showed that gusts under the canopy did not travel more than 40 m. 5-minute mean wind speeds at one location can be  $\pm 20\%$  of the measured value at another location. This can make a big difference in fire behaviour, particularly around the threshold wind speed.
- **Line fires don't wait:** A fire starting from a line greater than 100 m long will burn at its potential ROS immediately. It may take 2–4 minutes for the flames to develop their full dimensions but the fire is already travelling at full speed before this happens. Conversely, a fire lit from a point ignition and whose head fire remains narrow may spread all day and still not reach its potential ROS.
- **Don't underestimate distance:** Research indicates that even experienced firefighters will frequently underestimate the distance between the approaching fire front and control line by up to 50%.

### Lighting-up inside control lines

- 15 Lighting-up inside a control line may be attempted only if the drip-torch operator is accompanied by another crew member. Lighting-up should take place only under the supervision of the crew leader and when:
  - light-up crews are exiting to the control line, and
  - there is no fire between the control line and the crew.
- 16 The Crew Leader will maintain radio contact and, where possible, visual contact with the light-up crew.
- 17 The use of incendiary devices should be considered for deepening heavy and closed fuels.

### Multi-line ignition

- 18 The policies and procedures for lighting-up inside control lines must be observed when undertaking multi-line ignition, and:
  - Multi-line ignition must be undertaken only with the supervision of the crew leader.
  - Multi-line ignition should not be conducted during conditions of high fire intensity and during unstable weather conditions.
  - Multi-line ignition should only be conducted in low and open fuels.
  - No more than 2 short lines are to be lit at any one time, except in discontinuous fuels.
  - The use of incendiary devices should be considered for deepening heavy and closed fuels.
  - The light-up crew deepest from the control line must be ahead of the other light-up crew. Multi-line ignition will not be conducted if there is any risk a light-up crew is located between lines of fire.

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- When a multi-line ignition is being lit down-slope of a control line, additional crew planning and briefing will be required to ensure safety and minimise the risk of fire escape.
- 19 The Crew Leader will advise the appropriate commander if multi-line ignition is essential and seek approval to proceed.

### Aerial ignition

- 20 Aerial ignition must follow the following procedures:
- Aerial ignition of an area will only commence on the instruction of the IC.
  - Aerial ignition must be supervised by an IOS.
  - AI equipment is to be operated by bombardiers.
  - The helicopter drip torch must be operated by an accredited IOS.
  - The pattern for aerial ignition will be specified in the IAP during fire suppression, or the action plan prepared within the prescribed burning plan.
- 21 Specialist aerial ignition equipment (such as aerial drip torch) can only be used in compliance with an approved JSA, agency and manufacturers approved standard operating guidelines, dangerous good handling procedures specified earlier in *this Manual* and within CASA regulations. See [‘SOP – Aerial Drip Torch.’](#) A Job safety analysis is to consider:
1. planning, training, approval and notification,
  2. storage and transport of fuels, their mixing and transfer between vessels,
  3. aircraft boarding and exit, take-off and landing,
  4. aerial drip torch hook up and hook off with aircraft,
  5. in-flight operations, navigation and control of over-spray

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## 4.12 Fire suppression chemicals

### 4.12.1 Background

- 1 The fire suppression chemicals NPWS uses for bushfire control are separated into three categories they are retardants, foam and gels.
- **Retardants** decrease the flammability of fuels, and they are designed to be laid on fuels ahead of a fire in order to reduce or halt fire spread.
  - **Foams** are used in direct suppression of flames (direct attack), or mop-up. They are used to ‘knock-down’ fire intensity to allow ground resources access to the fire edge, but do not have significant flame-retardant properties after the water contained in them has evaporated.

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- **Gels** are used for direct attack to 'knock down' a fire as an alternative to foam and are particularly effective in scrub or forest vegetation as they prevent fuels from heating, charring and catching alight, as well as reducing water evaporation.
- 2 Salt water used in fire operations is classed as a fire suppression chemical due to the potential for environmental impacts. Salt water is occasionally used for water bombing operations in reserves along the coast and estuaries. The adverse impact of salt water on vegetation increases the further the location is from the coast. This is because the further vegetation communities are from the coast the less tolerant they are of salt.

## 4.12.2 Policies for fire suppression chemicals

- 1 The consideration of the use of fire suppression chemicals must be part of the overall fire management containment strategy. They may be used in ground or aerial applications. The decision to use fire suppression chemicals is based on:
- the threat to life and property
  - safety considerations
  - the estimated effectiveness, including cost-effectiveness
  - the potential impacts on biodiversity, water quality and other ecosystem processes
  - the potential impacts on cultural heritage
  - the potential impacts on AIS and rewilding sites
  - the most appropriate product for the strategy

Circumstances where they may be ineffective include:

- combating high-intensity bushland fires
  - areas where there is thick canopy cover
  - areas where there are thick shrub or sub-canopy layers, or
  - areas where there is a high probability of spot fires
- 2 All fire chemicals used on NPWS estate by NPWS staff, and/or other agencies or personnel, must have been qualified under the [United States Department of Agriculture \(USDA\) Wildland Fire Chemical System \(WFCS\)](#).
- 3 WaterNSW has compiled a list of [firefighting chemicals approved for use in NSW drinking water catchment areas](#). Chemicals used in drinking water catchment areas within NPWS estate must qualify under the USDA approved list and the WaterNSW approved list.
- 4 SFMIs / RFMSs, AIS Fire Response Plans and their associated spatial datasets will identify any restrictions (and the areas where the restrictions apply) on the use of fire suppression chemicals within a reserve. Areas where restrictions may apply include wetlands, watercourses, habitat of threatened species or communities, AIS and rewilding sites. This information will be housed within the NPWS Fire Planning Portal (under development).

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- 5 All firefighting chemicals must be used in a manner that prevents the product entering any waterway, as these chemicals can be toxic to fish and amphibians, particularly during runoff in storms following a fire.
- 6 When undertaking aerial application of firefighting chemicals, their application is not to be within 100m of a waterway.
- 7 When using chemicals in aircraft tanks and buckets consideration should be given to the possibility of contamination when sourcing water from wilderness rivers. When draughting water in environmentally sensitive areas, measures to minimise harm include ensuring foot valves are fitted to all suction hoses and pumps have a non-return valve flap fitted to the suction side of the pump.
- 8 For further information visit the NPWS internal website [Fire Suppression Chemicals](#) page.

### Safety considerations

- 9 Where fire suppression chemicals are used, all crews must be briefed about the products being used and where they will be used.
- 10 All chemicals will be used, stored and disposed of according to the directives contained within their respective SDS.

### Monitoring the use of fire suppression chemicals

- 11 The intensive application of fire suppression chemicals must be mapped and recorded as part of the fire history and fire management of the reserve. This information should be stored in the Elements Operation Geodatabase and used for possible future monitoring.

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## 4.13 Out-of-branch firefighting support

### 4.13.1 Background

- 1 NPWS firefighters are trained and equipped for firefighting anywhere in Australia and in some overseas locations. The use of personnel and equipment from another NPWS Branch to assist in fire operations (prescribed burns or fire suppression) is referred to as out-of-branch (OOB) support. NPWS support personnel are also available to provide assistance to other firefighting authorities.
- 2 The use of OOB support is necessary where a Branch does not have sufficient or the closest resources to carry out the necessary prescribed burning and firefighting operations and associated logistics, planning and administrative functions.
- 3 The provision of OOB support is coordinated by the Fire and Incident Operations Branch.
- 4 OOB support is one means of maintaining competency and currency requirements.

# 4.0 Response

## 4.13.2 Policies for out-of-branch support

- 1 NPWS will ensure firefighters, incident management and support personnel will be appropriately trained and equipped to respond to fire suppression across NSW.  
Staff who are assessed as competent and have undertaken the relevant task-based assessment should be made available for OOB support across NSW when required.
- 2 Where possible, Branches will consider developing agreed levels of resourcing and rolling crews where fires of long duration are anticipated.
- 3 On day one of escalating fires, the IC as a priority should dedicate a Resources Officer to develop a resourcing plan with a minimum 5-day outlook, to avoid last minute OOB requests.
- 4 Staff with technical and specialist skills, including those related to cultural heritage, media, GIS, threatened species, wildlife or AIS localities etc., may be made available for specialist fire roles:
  - Technical specialists must wear full [Schedule 1 PPE](#) while on the fireground.
  - Technical specialists must be accompanied at all times by an experienced and competent Crew Leader.

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- 5 Technical specialists who are not competent firefighters should have completed fire awareness training and must be given a full briefing before being engaged. Particular roles will be assigned for interstate and overseas deployments, see [4.13.8 Interstate and overseas support arrangements](#).

## Resourcing principles

- 6 Branches should use resources within close geographic proximity for both crew and specialist roles, with consideration for fire risk, including making an OOB request if they are in fact the closest resources.
- 7 Where applicable, available local RFS resources should be confirmed prior to making an OOB request.
- 8 OOB crew requirements should be forecast in advance, and forecasts shared across Branches on a weekly basis using existing communication arrangements (e.g., DOs).
- 9 Requests for OOB resources must be endorsed by the Branch Director (or their authorised Delegated Officer).
- 10 Reasonable notice of requests must be provided. At least 48 hours' notice, and preferably a minimum of 72 hours, should be given when requesting crews wherever possible.
- 11 All requests must include standard OOB information, including a WBS code, vehicle and equipment requirements, meal provisions and accommodation arrangements where applicable. Note that incident shift patterns do not apply to prescribed burning (i.e., 3-1-3 shifts do not apply).
- 12 Any request to extend an OOB deployment must be made via existing deployment channels prior to the extension (i.e., via the State Resource Coordinator).
- 13 Fire Management is an agency priority, and if resources are available within a Branch which are not committed to fire operations, they should be made available for OOB deployment.

If a Branch is unable to supply resources for an OOB request this decision must be endorsed by the Branch Director.

### 4.13.3 Requests for firefighters and support personnel

#### Requests for Class 1 and 2 fires, and prescribed burns

- 1 If sufficient resources are available within a Branch, requests for support will be coordinated by the BDO or Branch Resource Officer.
- 2 If resources are required from outside a branch, requests for support will be sent by the BDO or Branch Resource Officer to the State Resource Coordinator. These requests will then be coordinated by the State Resource Coordinator.

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- All requests made to the State Resource Coordinator must be entered into the [NPWS Resource Tracker](#) template. A [guide](#) is provided to ensure consistent use of the tracker by all staff.
- Receipt of all requests must be confirmed by a phone call to the State Resource Coordinator.

## Requests for Class 3 (Section 44) fires

- 3 If sufficient resources are available within a Branch, requests for NPWS resources should be sent by the IMT to the BDO or Branch Resource Officer. These requests will then be coordinated by the BDO or Branch Resource Officer.
- 4 If resources are required from outside a branch, requests for support must be sent by the IMT to the respective RFS Major Incident Coordination (MIC) team using the appropriate RFS SAP form. If NPWS resources are required, requests will be sent by the RFS MIC team to the State Resource Coordinator. These requests will then be coordinated by the State Resource Coordinator.

## 4.13.4 Dispatching and tracking firefighters, support personnel and equipment

- 1 Formal records of staff skills are maintained in MyCareer.
- 2 The NPWS State Resource Coordinator will maintain a record of all OOB deployments, including request and dispatch details.
- 3 Branches are to use NPWS corporate systems, or local systems if corporate systems are not available, for tracking all deployments of local personnel and equipment. Any requests from other authorities for NPWS firefighters' assistance and subsequent dispatch should be reported to the SDO. If NPWS firefighters attend a fire managed by another agency that agency must supply SitReps.

## 4.13.5 Out-of-branch personnel

- 1 OOB personnel should bring the equipment outlined in the resource request.
- 2 OOB personnel are expected to carry their NPWS portable radio and spare batteries (where available), camping gear (if required), fire equipment as requested and personal gear for the required duration when deployed to another Branch. The requesting branch is to arrange for recharging facilities and the supply of spare radio batteries during extended incident operations.
- 3 If a chartered flight is required to transport personnel, coordination should be managed by the home branch to the incident. Aircraft weights must be known before flight and staff will be required to advise in advance of their dressed body weight, plus the weight of any equipment they are carrying. Some firefighting equipment, including chainsaws, drip torches and flammable items, may be prohibited from carriage on commercial aircraft. Staff should check with the Pilot-In-Charge prior".
- 4 Where changes to a request are made (particularly to roles or shift lengths) the dispatching branch must approve these changes.

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- 5 OOB crews are representatives of NPWS and their conduct and performance will be in accordance with the NPWS policies and the [Code of Ethics and Conduct](#) when working OOB.
- 6 It is the responsibility of the dispatching Branch to ensure that staff deployed in OOB crews have the appropriate fire currency requirements for the role in which they are deployed.

## 4.13.6 Costs incurred for out-of-branch support

- 1 All costs relating to the allocation of resources to OOB support for bushfires will be charged to the fire operations. These costs should be incorporated into the claim against the NSW Treasury Managed Fund by the host Branch. Details of costs incurred by the OOB crews are to be supplied to the host Branch.
- 2 There are other processes in place for HR resourcing.

## 4.13.7 Logistics (travel, meals and accommodation)

### Class 1 and 2 fires (including prescribed burns)

- 1 Logistics including accommodation and meals for OOB personnel travelling to an incident are organised by the IMT, if activated, or the home branch of the incident.
- 2 Where crews are required to travel in Cat 9s, the vehicles should be resourced by the home/dispatching branch.
- 3 Any meals or accommodation required in transit to the incident should be purchased using a corporate purchase card and reconciled with a WBS provided by the IMT for that incident.
- 4 Any hire cars or flights required to travel to an OOB incident may be arranged by the IMT, if activated, or by the individual themselves using the NSW Government travel agent with a WBS provided by the IMT for that incident.
- 5 Any requests for accommodation/travel/special dietary requirements should be clearly noted in the dispatch details in the resource tracker to ensure the IMT are aware of any arrangements that need to be made.

### Class 3 / Section 44 fires

- 6 Logistics including accommodation and meals for NPWS OOB personnel travelling to a Class 3 / Section 44 event should be organised by the requesting IMT. Accommodation may include commercial hotels/motels or dedicated base camps depending on the scale of the deployment.
- 7 Travel arrangements for OOB personnel flying or requiring a hire car to travel to a Class 3 / Section 44 event should be organised by the RFS Logistics team at RFS State Operations Centre using the NSW Government travel agent.



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- 8 Where crews are required to travel in Cat 9s, the vehicles should be resourced by the home/dispatching branch.
- 9 Should meals or accommodation be required whilst travelling to the event these can be arranged by the traveller/s using a corporate purchase card and reconciled with a WBS provided by the IMT for that incident.
- 10 Any requests for accommodation/travel/special dietary requirements should be clearly noted in the dispatch details in the resource tracker.

### General considerations for accommodation arrangements

- 11 Staff who live within 1 hour's travel (of an incident) should consider sleeping at home.
- 12 If travel times exceed 1 hour, consideration should be given to providing on-site or near-site accommodation, such as establishing a base camp.
- 13 In determining the most appropriate accommodation for night crews, noise, weather factors (particularly temperature and humidity) and proximity to helibases and air bases should be considered.

### 4.13.8 Interstate and overseas support arrangements

- 1 NPWS responds to interstate and overseas requests for assistance as part of a coordinated national response from Australian emergency services, generally coordinated through the National Resource Sharing Centre (NRSC). Additionally, resource sharing between NPWS and other agencies within the Forest Fire Management Group (FFMG) is governed by the FFMG Resource Sharing Arrangement. Local cross-border agreements also provide interstate response capability where NPWS manages estate on state border locations.
- 2 Request for interstate assistance is received via the NSW RFS as the lead NSW agency for bushfire. FIOB will coordinate sourcing the required firefighters and specialists as part of the interagency response in the same way as OOB resourcing for internal NPWS fire response is undertaken.
- 3 In order to expedite rapid overseas deployment and ensure equal opportunity for staff, Fire and Incident Operations Branch will work with the NSW RFS and the NRSC to facilitate staff application to the NRSC online register for overseas firefighting. Staff will have ongoing access to the NRSC online register to enter their application to be in the availability pool for potential overseas deployment. Nominees who meet all the criteria, qualifications and requirements will be placed into an availability pool for consideration if a formal request is received.
- 4 All interstate and overseas deployments require the prior approval of the Branch Director, plus Executive Director Park Operations Coastal or Executive Director Park Operations Inland and Chief Executive (i.e., Deputy Secretary NSW NPWS). Overseas dispatches also require Ministerial approval. Availability of candidates selected for deployment will be confirmed with the relevant Branch Director.

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- 5 Fitness standards for overseas and interstate deployments are determined by the requesting agency's role requirements and will be specified in the initial request for assistance. For example, the USA requires all field firefighters to have successfully completed the Arduous Pack Hike Test.
- 6 An International/Interstate Liaison Officer (ILO) will be assigned to all interstate and overseas deployments. The ILO is responsible for overall management of the deployment, including host country/state liaison, resource allocation/deployment and demobilisation. The ILO is accountable to the Deployment Manager (or Agency Liaison Officer if appointed). All contact with the media must be through the ILO. Where possible, the ILO should be deployed ahead of other resources. The ILO may be filled by NPWS staff if requested by the lead response agency. Any deployment may also request a Deputy ILO role, which is more likely to be filled by supporting agencies under the NSW lead response agency.
- 7 A Deployment Manager will be assigned to all interstate and overseas deployments of more than 6 personnel. The Deployment Manager should provide single point of contact for the ILO. The Deployment Manager manages all domestic aspects of the deployment, including broadcast e-mails to NPWS staff, e-mails to deployed staff family contacts, domestic transport arrangements, IT and finance issues.
- 8 An Agency Liaison Officer may be assigned for interstate/overseas deployments, where the deployment is managed by an intermediary agency. Appointment of this position is at the discretion of the Director Fire and Incident Operations. The Agency Liaison Officer will be based at the intermediary agency control centre. The Agency Liaison Officer works with the intermediary agency to ensure efficient management of resources deployed interstate or overseas. The Agency Liaison Officer is accountable to the Deployment Manager.
- 9 One or more Task Force/Strike Team Leaders will be assigned to all interstate and overseas deployments where field resources are provided. The Task Force/Strike Team Leader is responsible for field management of the deployment. The Task Force/Strike Team Leader is accountable to the ILO.
- 10 Before dispatch, the Task Force/Strike Team will be briefed, preferably in person and as a group. Briefings will include deployment, shift and accommodation information, expected standards of behaviour, reporting structure and uniform requirements.
- 11 Roles, shift patterns and responsibilities assigned to NPWS staff may be varied in line with the requirements established by the requesting authority for the purposes of supervision and WHS.
- 12 Additional procedures may be required for each interstate or overseas request.
- 13 For international/interstate crews, the Deployment Manager should send a group situation update e-mail to the “\_ALL-NPWS-Fire Update Notifications” mailing list every Monday/Wednesday/Friday for the duration of the deployment. SitReps, other information and photos should be obtained from the ILO.

# 4.0 Response

- 14 For international/interstate crews, the Deployment Manager should send a group e-mail to deployed staff family contacts every 2-3 days. Information and photos should be obtained from the ILO and direct from deployed staff.

## 4.13.9 Family notification

- 1 Branches will only notify the next-of-kin (NOK) within 4 hours when staff are deployed to fire management duties if requested by the staff member. Information supplied will include locations to which staff have been sent and expected time of return home. The NOK will also be notified when circumstances change, if requested by the staff member.
- 2 For OOB crews within branches, ICs will notify the host branch of work locations and expected return home dates so the host branch can relay this to home branches and NOK, if requested.

## 4.13.10 Staff availability and leave

- 1 Throughout the fire season each Branch should maintain a list of available staff. Branches may choose to list non-branch staff on their weekly availability list.
- 2 Branches must maintain a level of staff resourcing that is appropriate to the level of bushfire risk. As a guide, it is suggested that at both the Branch and Area level no more than 25% of staff should be on leave at any given time during the bushfire danger period.
- 3 The Branch Director may cancel leave or recall staff where, in the Manager's opinion, the level of bushfire risk or activity warrants additional staff being available.

---

## 4.14 Reporting and documentation for fire response

### 4.14.1 Background

- 1 Timely reporting of fires enables the coordination of firefighting resources within NPWS and between the various firefighting authorities in NSW.
- 2 The documentation of fire is essential for fire management. Information is used to establish fire histories and assess the effectiveness of fire management strategies, as well as to allow for the assessment of the ecological implications of fire. This information is used to prepare landscape-specific SFMIs (and associated spatial datasets) and IAPs.
- 3 ICON is the "single point of truth" for bushfire reporting including SitReps, IAPs and other relevant fire management intel.

# 4.0 Response

- 4 A standardised system of fire management documentation and reporting (used by all NSW firefighting authorities) is used for fire management activities on NPWS-managed land, and for incidents outside NPWS-managed land attended by NPWS personnel. This system is consistent with national documentation standards.
- 5 NPWS uses the IMS structure and approved forms for firefighting operations.

## 4.14.2 Reports of new fires

- 1 Initial notification and on-going reporting of all fires will be in accordance with [Table 20](#) below and [Figure 14: NPWS fire, Incident and Event Notification Flowchart](#)

**Table 20: Initial notification and on-going reporting of fires**

How	When	Who
Notify by phone	Within 1 hour	Notify *Duty Officer who then advises State Duty Officer
SitRep entered into ICON	As soon as possible after first report of fire, and then as required for incident level ( <a href="#">see below</a> )	Area/Branch staff to enter

- 2 Reports of all fires should be via the reporting arrangements in the relevant BIP. Also refer to [Figure 14](#).
- 3 Branches are responsible for updating the public website with fire and park closure information through Elements as per [3.4 Fire bans, alerts and closures](#) and the [Elements Alerts and Closures handbook](#).

## Reports of injuries, death and property damage

- 4 All incidents, including near misses, must be reported to your supervisor immediately. An incident notification must be completed using [CAMMS](#) or via the [incident reporting hub](#). An 'Incident' is any event which causes an injury or disease, or has the potential to an injury, death or disease, for example a near miss. Incidents also include significant property or plant damage. Instructions for reporting an incident are available within the "[How to Report an Incident](#)" webpage.
- 5 Reports of serious injuries, fatalities and property damage should be made immediately to the BDO (who will notify the Branch Director who will notify EDs Park Operations). The BDO will also notify the SDO, who will in turn notify the Executive Director Park Operations Coastal and Executive Director Park Operations Inland, Director FIOB, Public Affairs DO (See [Figure 14: NPWS fire, Incident and Event Notification Flowchart](#) for more details).
- 6 The Executive Director Park Operations Coastal or Executive Director Park Operations Inland will ensure the appropriate interagency notifications have been conducted (including SafeWork NSW in the case of injuries or fatalities) and that the appropriate welfare actions have been initiated.

# 4.0 Response

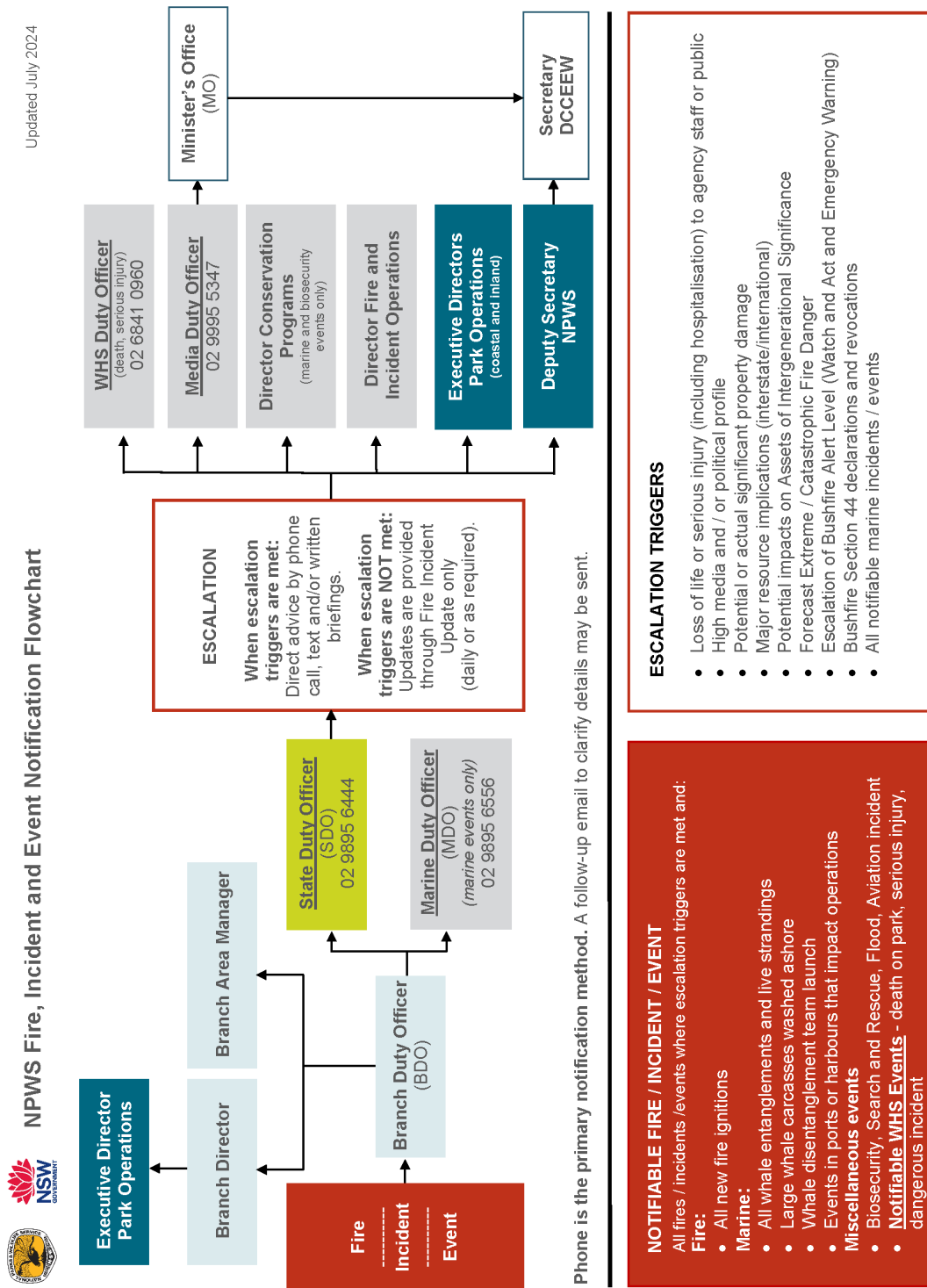


Figure 14: NPWS Fire, Incident and Event Notification Flowchart

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## 4.14.3 Incident Control Online (ICON)

- 1 [ICON](#) must be used to record details of all fires (Class 1, 2 and 3) at NPWS offices where IT capability (e.g., bandwidth) is sufficient to operate ICON satisfactorily and where staff are available who are appropriately trained and authorised in its use.

Where Areas or Branch **cannot** enter fire details into ICON the BDO must endeavour to enter the fire details into ICON on their behalf. RFS State Operations can assist in entering records into ICON if there is no capacity in NPWS to enter the records in a timely manner.

- 2 Reference to the reserve **must** be included in the 'Incident Name' or 'Incident Location Field' (e.g., Turon NP) within ICON.
- 3 In serious or rapidly developing incidents more frequent briefings may be requested to inform the Executive and Public Affairs. IAP may be called for if additional information is also required.
- 4 Fire boundaries should be mapped using MapDesk and uploaded to ICON.
- 5 The use of ICON to generate IAPs is optional. A full IAP or a field IAP (A3 IAP) may be produced in ICON, or Microsoft Word and then uploaded to ICON.

### ICON authorising officers

- 6 'Authorising Officers' in ICON have the ability to approve Sitreps and IAPs for release. Once approved, the Sitreps and IAPs will contain the name and date of the Authorising Officer and this person will be held accountable for accuracy and detail of the information contained within these reports. As ICON is a web-based program, Sitreps and IAPs may be generated by any ICON user and then authorised by an ICON Authorising Officer in another location. In order to be an ICON Authorising Officer a person must:
  - be a trained ICON operator
  - be approved by their Branch Director to fulfil the role of ICON Authorising Officer.
  - for Class 3/Section 44 fires must be an approved S44 IC.

In addition, an IC can delegate authorisation to an appropriate ICON operator. Delegates can apply for permission to authorise documents in ICON by contacting Elements Support ([elements@environment.nsw.gov.au](mailto:elements@environment.nsw.gov.au)).

### Situation reports

- 7 SitReps of each fire will be generated in ICON. As a minimum, the SitRep frequency requirements are:
  - for "Emergency Warning" level incidents – every 30 minutes
  - for "Watch and Act" level incidents – every 2 hours
  - for "Advice" level incidents – by 11:00 and 16:00 hours daily.

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Additional SitReps or Situational Updates (SitUps) should be created whenever there is a significant change to fire activity or resourcing. Reports to other authorities will be in accordance with BFMC Plan of Operations.

- 8 Fire and Incident Operations Branch will maintain state-wide records of all incidents attended by NPWS staff or on NPWS-managed land by updating the NPWS Wildfires Database from information contained in ICON. Branches are responsible for ensuring that all SitReps are correct and entered into ICON according to the procedures set out in this Manual. Fire and Incident Operations Branch will use these records to prepare an annual report on NPWS fire management activities.
- 9 SitReps for prescribed burns will also be generated in ICON. The SitRep frequency requirements are:
  - SitRep entered on the day of ignition
  - One SitRep per day throughout the duration of the prescribed burn operation
  - On completion of the burn set the event to out.

Additional SitReps or SitUps should be entered whenever there is a significant change to the burn area, burn plan or resource commitments.

## 4.14.4 Fire history

- 1 A fire history, including date of ignitions, causes, area burnt and intensity, will be prepared and maintained for each reserve.
- 2 The pathway of fire history data recording highlighting the data type, systems required, workflow processes and data definitions can be found in Elements QRG HR 7.04 Recording Fire History GIS Data. This can be accessed via the Support tab within the Elements “All Events Overview” page.
- 3 Branches will map all burnt areas and enter the information into Elements within 14 days after the fire has been declared out. This will trigger an automatic update to the corporate GIS. Further information can be found in the Elements QRGs HR 5.02 Adding Geometry to HR Events and BF 3.07 Upload a Final Burnt Area and Final Ignition Point that can be found within the [Elements](#) Support Tab.

## 4.14.5 Miscellaneous events

- 1 Miscellaneous events comprise any type of on-park incident that is not a fire (e.g., SAR, HAZMAT, accident, flood, storm or pollution).
- 2 Miscellaneous events are recorded in Elements in the respective modules. Marine wildlife events are recorded in the Marine Wildlife module.

# 4.0 Response

## 4.15 Fire investigation

### 4.15.1 Background

- 1 Human-induced fires may constitute offences against the law and require formal and prompt investigation. Illegal burn-offs, burn-offs that escape because of improper care and suspected arson fires are serious offences that can threaten life and property and have a major impact on the biodiversity of NPWS managed land. These fires can incur major suppression costs, divert NPWS resources away from other functions and expose firefighters to unnecessary risk of injury.

### 4.15.2 Policies for fire investigation

- 1 NPWS fire investigation policies are as follows:
  - NPWS will work within the Interagency Fire Investigation Protocol 2016 to 2021 developed between DCCEE, NSW Police, NSW RFS, FRNSW and Forestry Corporation of NSW.
  - NPWS will work closely with NSW Police, NSW RFS and FRNSW to investigate fires on NPWS-managed land.
  - All suspicious fires occurring on NPWS managed land will be investigated as soon as practicable.
  - NPWS will obtain a NSW Police event number for all fires occurring on NPWS managed land that start under suspicious circumstances.

### Training

- 2 All NPWS firefighters and support personnel will be trained in fire area of origin site protection and observations, as contained in Crew Member competency.

### Record keeping procedures

- 3 Record keeping procedures are as follows:
  - Under the MoU between the DCCEE and the NSW RFS (DOC15/155220), RFS will provide NPWS with a copy of fire investigation reports into fires that start on other tenures and then impact on NPWS managed land.
  - Copies of fire investigation reports will be kept by FIOB and Specialist Investigation Section for further reporting and will be recorded on a central database for analysis in future incidents.
  - Where there is no clear evidence of the cause, the IC must ensure the SitRep shows the cause as 'unknown'. The SitRep should also clearly show whether the fire does or does not require further investigation.

### Investigation procedures

- 4 Investigation procedures are as follows:



# 4.0 Response

- Fire investigations will occur as close to the time of ignition as possible, and preferably within 24 hours.
- If, in the opinion of the IC, a fire is of natural causes but warrants further investigation that fire should be investigated as soon as possible.
- Information pertaining to the investigation will be discussed with the IC, local Police (if not already part of the investigation team) and the executive officer of the BFMC.
  - Note: all evidence relating to circumstances surrounding fires of a suspicious origin must be immediately brought to the attention of NSW Police.
- Total cost recovery will be asked for as part of any prosecution.
- The NSW Police Arson Trend Analysis System is an electronic system for use by managers and fire investigators, which improves the sharing capability between agencies responsible for mitigating and investigating arson related fires.

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## 4.16 Wildlife response, rescue and rehabilitation

### 4.16.1 Background

- 1 Fire may have a direct impact on wildlife through death, injury and loss of habitat. NPWS and wildlife rescue volunteers aim to rehabilitate and treat native animals affected by fires.
- 2 Following Recommendation 76 of the NSW Bushfire Inquiry (2020), the then NSW Resilience investigated wildlife response in NSW emergency management arrangements. As of September 2022, the State Emergency Management Committee, approved the transition of responsibilities for wildlife under the NSW emergency arrangements to be transferred from Agriculture and Animal Services Functional Area (AASFA) [DPI] to the Environmental Service Functional Area (EnvSFA) [EPA]. This change in functional area responsibilities meant a review of the [AASFA Supporting Plan and Environmental Services Supporting Plan](#) (that sit under the [NSW State Emergency Plan](#)) in a staged approach over 2022/2023.
- 3 The statutory responsibility for wildlife in emergencies sits with EnvSFA as defined by the State Emergency and Rescue Management Act 1989 (SERM). NPWS is a support agency for EnvSFA and has responsibilities under the [Wildlife in Emergencies Sub-Plan](#) which was finalised through the State Emergency Management Committee (SEMC) in December 2023.
- 4 The [NPWS wildlife response during emergencies guidelines](#) contain further information.

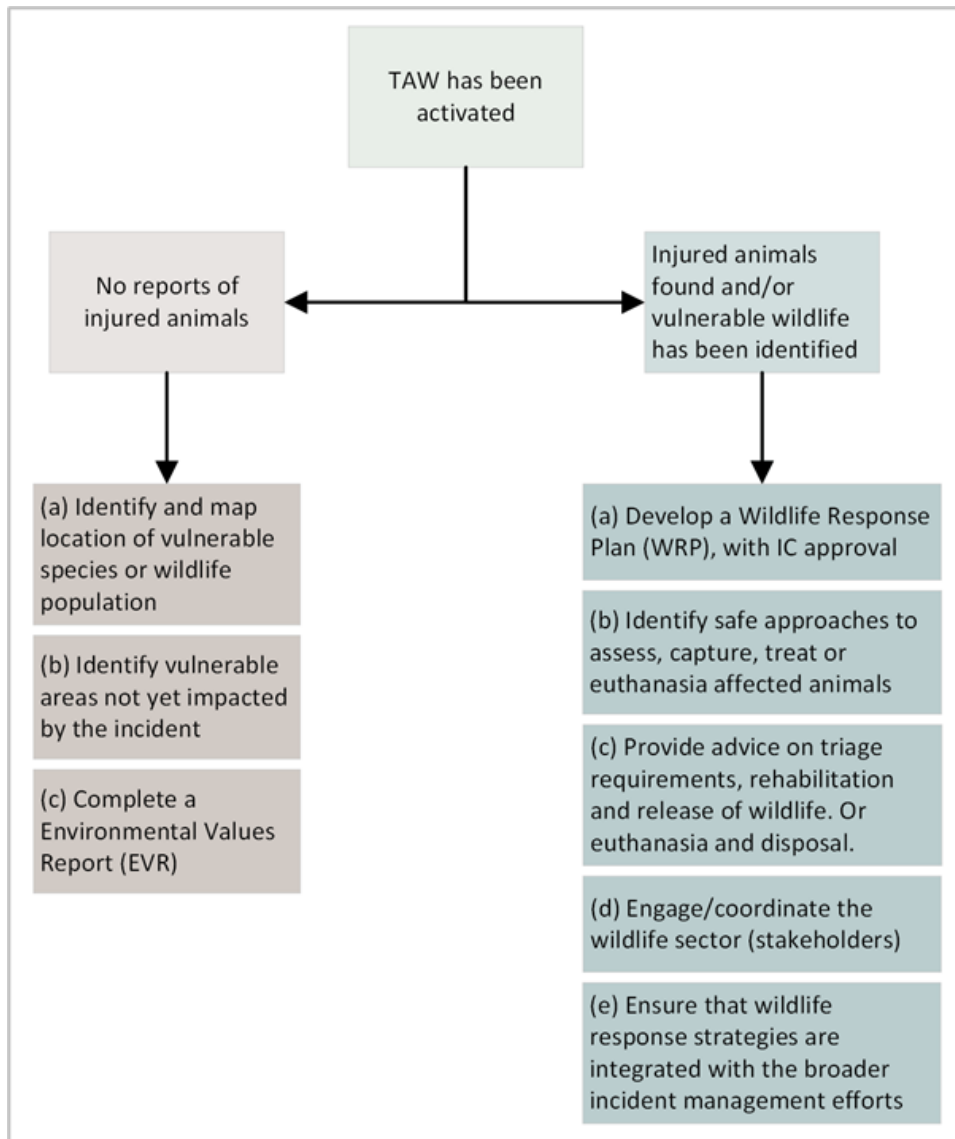
# 4.0 Response

## 4.16.2 Policies for rescuing wildlife

- 1 Necessary action for rescuing injured wildlife will be undertaken during and following fire events. Rescue priority will be given to native wildlife listed under the BC Act.
- 2 Incident controllers and prescribed burn planners should consider resourcing a Technical Advisor Wildlife (TAW) for IMTs for prescribed burns, bushfires and other natural disasters.
- 3 The decision to request a wildlife response team will be made by the IC once there are potential, suspected or known significant impacts to wildlife. The need for a TAW to be activated may depend on:
  - The number of animals affected
  - Species of animals affected
  - Request from Incident Controller
  - Lead time for a TAW to arrive on site

For Activation triggers see the [NPWS wildlife response during emergencies guidelines](#).

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**Figure 15: Structural alignment of TAW and WERT**

- 4 The TAW primarily advises on wildlife mitigation measures and response strategies to reduce impact on wildlife as well as supports the coordination of a wildlife response (if required). Where necessary, the TAW liaises with the IMT and key wildlife stakeholders to support the coordination of Wildlife Emergency Response Teams (WERT) response to incident affected wildlife. The TAW prepares a Wildlife Response Plan for approval by the IC, with a focus on achieving the best possible outcomes for wildlife. Emergency management principles and human safety are key considerations.
- 5 For a WERT to be deployed onto a fireground the following provisions apply:
  - WERT members will not be permitted onto the fireground to rescue injured wildlife until it is safe to do so. Approval can be given by the IC during an incident and the Branch Director after an incident. This should occur after the fire has passed, when there is no active fire edge in the area and the area has been burnt out. All relevant personnel will be informed before WERT can work in the area.

## 4.0 Response

- WERT members must have completed a minimum of the Basic Wildfire Awareness (BWA) or equivalent, and preferably Australasian Inter-service Incident Management Systems (AIIMS) Training.
  - WERT members must be accompanied by a competent, fire-trained Crew Leader appointed by the IC when entering the fireground to rescue injured wildlife.
  - WERT members must receive a task and site-specific safety brief before entering the fireground and always follow the directions of their Crew Leader liaison.
  - WERT members must wear appropriate safety equipment on the fireground (as identified in section [3.6 Personal firefighting equipment](#)).
  - WERT members are required to behave in line with the [Code of Practice](#) at all times and can ask for expert advice from specialists, vets or by means of Televet services (if activated).
- 6 NPWS staff can find further information on ParkSite [bushfire emergency response for wildlife](#) and the [NPWS wildlife response during emergencies guidelines](#).
- 7 Licensed wildlife rehabilitation providers can be found at [Licensed wildlife rehabilitation providers in NSW](#) or by using the [IFAW App](#).
- 8 If necessary, injured wildlife may be humanely euthanised on the fireground by persons who have a s.171 authority under the NPW Act. Any use of firearms must be in accordance with the [NPWS Firearms Management Manual](#).
- 9 The [NSW Volunteer Wildlife Rehabilitation Sector Strategy \(2020-2023\)](#) is a three year plan to support and improve wildlife rehabilitation in NSW.
- NPWS staff can find more information on the [Bushfire Emergency Response for Wildlife ParkSite page](#).
  - External responders can go to [Wildlife First Response Training for NSW firefighters](#) on the Environment and Heritage website, internal staff can access this information through MyCareer.
  - For information relating to EnvSFA, please contact [EnvSFA@epa.nsw.gov.au](mailto:EnvSFA@epa.nsw.gov.au).

# 5.0 Recovery

## 5.0 Recovery

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## 5.1 Debriefing, After Action Reviews (AARs) and incident analysis

### 5.1.1 Background

- 1 Debriefings provide an important forum for staff to discuss the management effectiveness of fire operations and the need for changes to policies and operational procedures. They are an important opportunity to openly recognise and capture good performance and shortcomings during incident management operations.
- 2 Debriefings can take place at many different levels, from informal debriefings within the workplace to more complex multi-agency investigations.
- 3 NPWS applies the recommendations from debriefs to implement policy development and operational change at field, agency and interagency levels resulting in improved incident management coordination.
- 4 AARs are a debrief process for analysing what happened, why it happened and how things can be done better next time. It involves comparing what actually happened with what should have happened and then carefully diagnosing the gap, be it positive or negative. The goal of the AAR is to sustain and improve individual, team and organisational performance.
- 5 Incident analysis is the process of assessing the effectiveness of fire operations and the identifying causes of any problems encountered, and then determining solutions, or mitigating or preventive actions, to improve operations and prevent problems reoccurring.

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## 5.1.2 Conducting operational debriefings and AARs

- 1 Debriefings or AARs, either local or joint agency, should be conducted as soon as possible at the conclusion of all fire operations, regardless of the scale of the event. These can range from a quick chat after the event to a formal joint-agency debrief or AAR.
- 2 The IC is responsible for ensuring that an appropriate debrief is conducted for each fire operation.

### End of shift debriefings

- 3 Shift debriefs of crews should be conducted at the end of a shift or after a critical incident occurs. The findings and recommendations of shift debriefings should be provided to members of the IMT.
- 4 Noteworthy observations or rapid lessons from shift debriefs should be emailed directly to the [Operational Improvement Mailbox](#).

### NPWS After Action Review (AAR)

- 5 An AAR should be held as soon as practicable after the fire event.
- 6 The [Lessons Learned Review Guide](#) outlines the different review types available to NPWS. The guide includes the trigger, purpose, required facilitator and reporting requirements for each of the listed review types.
- 7 For Type 2 and Type 3 AAR's the Branch Director or Area Manager will be responsible for organising the AAR, coordinating the chairing of the review and preparing a report at the conclusion of the review.
- 8 All personnel involved in fire operations should be invited to participate in the AAR process.
- 9 NPWS AARs are a candid professional discussion where participants can share their observations, insights or questions that will help identify issues or concerns. Learning from individual experience will assist the organisation to sustain our strengths and improve our weakness.
- 10 The process used for NPWS AARs is to explore:
  - What did we set out to do?
  - What happened?
  - What are the things that worked well and that we need to sustain?
  - What are the things that we need to improve?
  - What are the specific issues that you want to talk about?
- 11 [NPWS AAR Guidelines](#) – details the process that must be followed to plan and conduct an AAR. The format and structure for the AAR reports is included in the guidelines and should be followed.

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12 The following topics can be used by the AAR facilitator as prompts for discussion to ensure that all issues are covered:

1. Overview by Incident Controller
2. Preparedness
3. Declaration/revocation
4. Response
5. Access to fireground
6. Strategies
7. Incident control centre
8. IMT
9. Field operations and coordination
10. Agencies involved
11. Resources
12. Firefighting (all agencies)
13. Aviation
14. Plant
15. Welfare
16. Communications
17. Catering
18. Accommodation
19. Base camp
20. Transport
21. Health and safety (including near misses)
22. Injuries
23. Media and public awareness
24. Equipment not returned
25. Agency reports
26. Any other issues
27. Summary of resolutions and recommendations.

Information from AARs should be shared as soon as possible after completion to the [Operational Improvement Mailbox](#). This information will be used to analyse trends and look for re occurring issues.

## Multi-agency post fire debriefings

- 13 [BFCC Policy No. 01/2024 Management of Bush Fire Operations](#) provides requirements for after action reviews.
- 14 A BFMC must hold an after action review following each Class 3 fire within its area in accordance with *RFS Incident Management Procedure 4.06 Conducting an Operational Debrief and Debrief Recommendations*.
- 15 Any organisation/agency that does not have a member on the BFMC but was significantly involved in the fire must be invited to attend.
- 16 A BFMC must hold an after action review at the end of each bush fire season and provide a report to the RFS Commissioner via State Operations for consideration.

## NPWS end of season debriefings

- 17 End-of-fire-season debriefing will be conducted at Branch level.
- 18 Branches will collate and forward a summary of recommendations to the Fire and Incident Operations Branch for input into the FMM review.

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- 19 Information from end of season debriefs should be collected and forwarded to the Fire and Incident Operations Branch for collation by end of March each year.
- 20 Receiving all AAR and debrief issues by this deadline is critical to the timely revision of the FMM and other operational documents.
- 21 NPWS will review all outcomes of debriefings. Recommendations will be made at:
  - tactical or fireground level – Branch Director responsibility
  - operational or management level – Executive Directors’ responsibility, and
  - strategic or corporate level – Director Fire and Incident Operations responsibility.

## 5.1.3 Incident analysis

- 1 The decision to conduct an incident analysis can be made by the senior management of any firefighting authority or by the IC. It will be carried out by a person (or persons) independent of the operation.
- 2 Key factors to be investigated include:
  - competency of key personnel
  - adequacy of incident and action plan — objectives and strategies
  - analysis of options
  - briefings of all staff, including crews
  - opinions of IMT, crews and other staff
  - adherence to policies, procedures, codes
  - the tasks to be completed during the work shift
  - fuel conditions, including fuel type, fuel moisture, OFH
  - access, control lines, escape routes and safety refuges
  - potential hazards
  - weather forecasts and current conditions
  - the command structure
  - the location of other crews
  - communication arrangements
  - equipment and resources available
  - fire behaviour and weather monitoring equipment available, and
  - maps of operational areas provided for all personnel.

## 5.1.4 Community relations

- 1 Following a fire incident NPWS will:



# 5.0 Recovery

- consider conducting debriefings with the local community and neighbours to seek feedback on fire preparedness and response
- provide information to the public on any proposed changes to fire management planning and works
- provide information on support services available to those impacted by fire and, where required, direct members of the community to appropriate agencies for assistance, and
- review preparation, preparedness and response components to improve systems of operations, and update community contact details.

---

## 5.2 Staff support services

### 5.2.1 Critical incident support services

- 1 NPWS provides support services to help staff cope with stress and other issues. Information about these services can be found on the intranet.
- 2 NPWS has a confidential [peer support program](#) that is available to all NPWS employees. To access this service staff should contact a peer support person directly in the first instance. The [NPWS Work Health and Safety Duty Officer](#) is contactable on (02) 6841 0960 and can arrange for a peer support person or a counsellor to attend a site or reach out to someone who may need assistance.
- 3 The provision of professional counselling services for NPWS staff will be via the [Employee Assistance Program](#) (EAP). The [TELUS Health EAP](#) helpline is available 24 hours a day on 1300 361 008. For the Aboriginal and Torres Strait Islander Support Line, call 1800 816 152.  
  
Contact numbers for professional counsellors, peer support and chaplains should be included in the BIP.
- 4 Information on critical incident stress management will be included in Branch annual fire preparedness training.
- 5 The IC will contact critical incident support services personnel for any incident involving a fatality, serious injury or other event that could result in critical incident stress.

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- 6 Based on the nature of the critical incident, the IC will take advice in regard to:
  - immediately withdrawing affected staff from the fireground
  - standing staff down from further involvement with the fire operation, and
  - offering affected staff a critical incident debriefing.

The IC will advise the managers of personnel who have been involved in a critical incident.

- 7 During large multi-agency incidents, the NPWS Liaison Officer will ensure that critical incident support services are available to NPWS staff involved in critical incidents.
- 8 Critical incident debriefings will not be recorded and will be conducted separately from operational debriefings.

---

## 5.3 Post-fire rehabilitation

### 5.3.1 Background

- 1 Recovery is an integral component of fire management. The NSW State Emergency Plan ([EMPLAN](#)) defines recovery as encompassing human support services and reconstruction and rehabilitation services.

Emergency recovery may be required when a fire has had an impact on the economic or social wellbeing of a community (e.g., effect on power or water supply, access, stock or income) or when severe environmental degradation is likely to occur without immediate intervention.

For NPWS, the major component of recovery operations is post-fire rehabilitation.

- 2 The [NSW Recovery Plan](#) outlines the strategic intent, responsibilities, authorities and the mechanisms for disaster recovery in NSW. The Recovery Plan, which will be supported by guidelines, allows for the development and implementation of a planned recovery following a natural disaster or other emergency. The Plan is a NSW Government plan which informs the general community, business, government, emergency services, functional areas and those working in disaster recovery.

### 5.3.2 Policies for post-fire rehabilitation

- 1 The rehabilitation process should be addressed in incident action planning.

Assessing the potential requirement for post-fire rehabilitation should begin at the appreciation stage of an incident. Where necessary, a post-fire rehabilitation plan should be initiated as early as possible during the incident and be approved in the IAP by the IC.
- 2 Where necessary, a Situation Officer (recovery and rehabilitation) should be appointed to facilitate the rehabilitation planning process.

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- 3 Rehabilitation activities should be started as soon as possible for immediate works (e.g., erosion controls, neighbour livelihood and welfare impacts).

## 5.3.3 Strategies for post-fire rehabilitation

- 1 Post fire rehabilitation is a staged process involving the identification of disturbances, assessment of rehabilitation options, determination and implementation of the most effective rehabilitation options and monitoring the results of implementation.

### Identification and description of the disturbance

- 2 Disturbances may include:

- destruction of vegetation from activities such as
  - construction of trails
  - widening or clearing of existing trails
  - construction of helipads, staging areas, etc.
  - construction of hand-tool lines
  - high fire intensity
- damage to infrastructure (e.g., creek crossings, bridges, fences) from fire
- impacts on cultural assets
- impacts on water quality from
  - use of fire suppression chemicals and salt water
  - sedimentation and siltation
  - exposure of acid sulphate soils
- weed invasion.

### Acid sulphate soils

- 3 Acid sulphate soils are widespread along the margins of the NSW coast. Potential acid sulphate soils are naturally occurring soils containing iron sulphides (pyrite). They become actual acid sulphate soils when the pyrite is exposed to air. In air, pyrite is oxidised, resulting in production of sulphuric acid. This sulphuric acid can impact soil water, groundwater and surface water (streams and rivers).

Planned and unplanned fire, as well as bushfire management and suppression operations involving earthmoving equipment, can result in vegetation removal and thus enable soil erosion. The erosion of topsoil can expose potential acid sulphate soils where they occur.

### Sedimentation of waterways

- 4 The majority of freshwater streams and waterways in NSW have a tolerance to some level of sedimentation. Vegetation removal and soil erosion may substantially increase

# 5.0 Recovery

natural sedimentation levels and detrimentally affect aquatic vegetation, freshwater fish species and invertebrates.

## Flood risk

- Where vegetation has been removed, the risk of flooding is increased as rainwater does not have the opportunity to be slowed and absorbed into the soil as it does in vegetated areas. This can result in increased run-off which may lead to localised or widespread flooding.

## Assessment of rehabilitation options

- [Table 21](#) provides examples of potential options for remediating common causes of disturbance during fire management operations.

**Table 21: Options for remediating disturbances**

Cause	Condition (effect)	Management strategy
New trails constructed	<ul style="list-style-type: none"> <li>Bulldust present</li> <li>Poor drainage</li> <li>No erosion controls</li> <li>Location not desirable for future management</li> </ul>	<ul style="list-style-type: none"> <li>Use heavy machinery to close and rehabilitate</li> <li>Use machinery to install or reinstate erosion controls</li> </ul>
Old trails	<ul style="list-style-type: none"> <li>Bulldust present</li> <li>Eroded</li> <li>Widened to an unacceptable width</li> </ul>	<ul style="list-style-type: none"> <li>Use machinery to install erosion controls</li> </ul>
Fire suppression chemicals	<ul style="list-style-type: none"> <li>Unknown impacts</li> </ul>	<ul style="list-style-type: none"> <li>Map sites and assess impacts</li> </ul>
Helipads	<ul style="list-style-type: none"> <li>Area cleared</li> <li>Resources remaining (e.g., fuel)</li> <li>Rubbish on site</li> </ul>	<ul style="list-style-type: none"> <li>Use heavy machinery to close and rehabilitate</li> <li>Use machinery to install erosion controls</li> <li>Collect resources and rubbish</li> </ul>
Staging area and assembly area control points	<ul style="list-style-type: none"> <li>Area cleared</li> <li>Resources remaining</li> <li>Rubbish on site</li> <li>Erosion</li> </ul>	<ul style="list-style-type: none"> <li>Use heavy machinery to close and rehabilitate</li> <li>Use machinery to install erosion controls</li> <li>Collect resources and rubbish</li> </ul>
Vegetation removed	<p>Issues include:</p> <ul style="list-style-type: none"> <li>Known threatened species, populations and communities (including AIS and SoS)</li> <li>Pests</li> <li>Slopes &gt; 18 degrees (high erosivity)</li> <li>Fire frequency greater than recommended threshold</li> </ul>	<ul style="list-style-type: none"> <li>Survey vegetation burnt for patchiness and intensity</li> <li>Develop a monitoring plan for natural revegetation</li> <li>Develop intervention strategies (e.g., reconstruction of habitats, erosion controls)</li> <li>Refer to the relevant CAP (including AIS Fire Response Plans) where AIS are affected</li> </ul>

# 5.0 Recovery

Cause	Condition (effect)	Management strategy
Cultural sites	<ul style="list-style-type: none"> <li>Known sites impacted by fire</li> <li>Vegetation removed so unknown sites can be identified</li> </ul>	<ul style="list-style-type: none"> <li>Survey and document (in AHIMS) known and unknown sites and their condition</li> <li>Contact Local Aboriginal Land Council, Native Title Holders, Joint Management Committee (including Joint Management Officers) and Aboriginal Heritage Officers</li> </ul>
Damage to neighbouring property or other assets	<ul style="list-style-type: none"> <li>Water supply depleted</li> <li>Roads damaged</li> <li>Fence lines damaged</li> </ul>	<ul style="list-style-type: none"> <li>Organise meetings to discuss the impacts with neighbours</li> <li>Discuss the need to activate sub-plans of the EMPLAN with the IC if impacts are severe</li> <li>Contact NPWS Historic Heritage Team</li> </ul>

## Determining the most appropriate options

- 7 Factors to consider include:
- environmental and safety risks and their impact on priorities for rehabilitation
  - timeframes for implementation
  - determining which agencies or organisational units will be responsible for implementing rehabilitation strategies
  - total cost of rehabilitation strategies and how these costs will be met, and
  - determining KPIs.

## Monitoring results

- 8 Rehabilitation works should be monitored to ensure continuity with planning processes and to ensure performance targets are met.

## Rehabilitation costs

- 9 The following rehabilitation works are claimable against the NSW Treasury Managed Fund:
- regenerating natural areas cleared to gain access to fires if they generate erosion, degradation or security problems
  - cleaning up debris from existing fire trails if this work is required to make the trail safe
  - removing soil that has been piled up on existing fire trails if this work is required to make the trail safe, and
  - cleaning up trees that have been felled and left lying on the side of public roads if this work is required to make the road safe.

## 5.0 Recovery

Works funded by the NSW Treasury Managed Fund must be completed within twelve months of fire ignition.

- 10 Any regeneration or revegetation costs required for existing fire trails as a result of widening, clearing or heavy traffic use during fire suppression cannot be claimed against the NSW Treasury Managed Fund.
- 11 Fire trails or clearings created during fire suppression may be maintained if they have strategic value. However, the costs of maintaining these areas cannot be claimed against the NSW Treasury Managed Fund. In this instance, consider designation of trails within BFMC bushfire management plans (including BFRMPs or FAFT Plans).

# 6.0 Administration

## 6.0 Administration

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## 6.1 Finance and insurance

### 6.1.1 Background

- 1 The NPWS Fire Management Program is an adaptive management initiative supported by the Climate Change Fund to mitigate the increasing risk of bushfires on communities, assets and environment resulting from the impacts of climate change. The primary activities delivered by the Fire Management Program are the implementation of hazard reduction activities; rapid response to bushfires; bushfire capability including trained firefighters and firefighting assets and infrastructure; and investment in maturing cultural fire management practice.
- 2 Allocations are made from the Fire Management Program for funding fire management activities. This includes funding for equipment, fuel management, planning, systems, research and training.
- 3 Extraordinary expenditure incurred during fire suppression operations is claimed against the NSW Treasury Managed Fund. NPWS contributes to the NSW Treasury Managed Fund as a component of its annual budget.
- 4 The myWorkZone system is planned for implementation across the NSW Government for administration, payroll, finance, procurement, asset management and real estate activities in October 2024. The myWorkZone system replaces MySAP Gateway and SAP OEH. To find more information about myWorkZone and access resources, visit the [myWorkZone](#) ParkSite page.

# 6.0 Administration

## 6.1.2 Policies for finance and insurance

- 1 NPWS Fire and Incident Operations Branch oversees the Fire Management Program financials.
- 2 The [NPWS Asset and Infrastructure Branch](#) sits within the NPWS Business Delivery division, and provides centralised administration and support across NPWS for the NSW Government's self-insurance arrangements under the Treasury Managed Fund (TMF) and the administration of landscape-scale incidents (bushfires and flooding incidents). Information and guidance is available on the [NPWS Insurance ParkSite page](#).
- 3 Cost effectiveness is taken into account when planning and implementing fire management activities.

### Financial delegations

- 4 Under the [Government Sector Finance Act 2018 Instrument of delegation and authorisation](#), ICs and Logistics Officers have financial delegations, including authority to incur expenditure to hire aircraft. Aircraft hire costs may only exceed the delegated limits where this is deemed essential and unavoidable.

### Fire management budgets

- 5 Annual estimates for fire management expenditure will be included in estimates for capital works and recurrent funding budgets.  
  
Estimates should include funds required for vehicles, equipment, all fire operations, fuel management, planning, systems, penalty and standby rates, overtime, research and training.

### Fire suppression expenditure

- 6 The IC should estimate expenditure for the suppression operation after the fire's initial attack. Estimates should be provided with each situational analysis.
  - Estimates for expenditure exceeding the IC's delegation are to be forwarded to the appropriate delegated officer for approval.
  - Suppression operations are to continue while covering approval is being sought.
  - Where necessary, administrative staff should be rostered to assist the BDO or IC with accounting functions.

### Expenditure records

- 7 All expenditure on firefighting operations will be recorded and itemised.
  - The progressive expenditure for a fire will be estimated and recorded.
  - All expenditure should include reference to the incident number for which the cost is to be charged and claimed against.



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## Managed Fund claims on fires

- 8 Extraordinary costs that are incurred for suppression-related activities or NPWS personnel are claimable against the NSW Treasury Managed Fund.
- 9 It is not necessary to declare an incident to draw on the NSW Treasury Managed Fund, and the Fund may still be drawn on after an incident declaration has been revoked.  
**Note:** Activities such as hazard reduction activities are not covered by the Treasury Managed Fund.
- 10 Unless an ignition has occurred, expenses cannot be claimed to the NSW Treasury Managed Fund.  

This is the case even when a pre-emptive Section 44 fire is declared by RFS and as yet no fire ignition exists within that area of declaration. However, once an ignition has occurred, costs are claimable to the NSW Treasury Managed Fund from the time of the ignition onwards.

Directors of Park Operations Branches and ICs need to reinforce that funds claimable from the NSW Treasury Managed Fund are not linked to the declaration of an 'incident' under the NPWS Awards (see [4.2.2 Incident declaration and revocation](#)).
- 11 Costs incurred during a Section 44 fire, that are not NPWS-specific, are the responsibility of RFS. NPWS will prepare a claim or invoice for RFS to recover costs.  

Specific queries should be directed to key contacts identified on the [NPWS Insurance ParkSite](#) page.
- 12 Items such as infrastructure, equipment, minor tools and personal fire gear replacements, may be claimable on separate insurance policies if damaged during fire operations or by the fire. Documents required with claims include:
  - incident number, and
  - copies of all invoices for:
    - purchase card or petty cash expenditure (all other documents are available via SAP)
    - vehicle or plant running cost sheets including the journal.
- 13 Damage to NPWS assets, facilities or other property may be claimable on separate insurance policies if damaged during fire operations or by the fire.
- 14 Claims for damage to non-NPWS property require:
  - Initial consultation with the NPWS Insurance Team
  - NSW Treasury Managed Fund incident claim form
  - public liability incident report by NPWS personnel
  - relevant additional information (e.g., maps, diagrams, photographs), and
  - correspondence received from the third party.
- 15 All insurance claims are to be submitted to the [NPWS Fire Insurance Mailbox](#). Documentation to be forwarded with the firefighting claim must include:

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- NSW Treasury Managed Fund incident claim form
- insurance firefighting claim record
- WBS no. report from the SAP financial system
- itemisation of other costs, and
- vehicle or plant mileage claim record and journal.

## Costs incurred for OOB support

- 16 All claimable costs relating to allocating resources to OOB support will be charged to the fire operations.

## Overtime and incident claim approvals

- 17 The BDO or IC can approve staff to work overtime for firefighting. Claims for work carried out under declared incident conditions must be approved in accordance with the [Declared Incident Claims](#). For interagency and interstate deployments, the incident declaration form must be signed by the deployment manager.
- 18 Staff who work outside normal hours after an incident has been de-declared will be paid in accordance with normal overtime provisions.

---

## 6.2 Working conditions

### 6.2.1 Background

- 1 NPWS staff are covered by various industrial awards and conditions when engaged in fire management (refer to [Salary Rates, Awards and Conditions](#) and [Rates of pay](#) for details).

NPWS and all its staff have a responsibility to maintain a safe workplace and safe work practices.

NPWS staff are required to be aware of all current policies relating to individual responsibility for conduct and performance.

NPWS staff should seek advice specific to their individual circumstances by contacting [People Advisors within the Workforce Management and Employee Relations Section](#).

People Advisors provide:

- Advice on employment Awards, Legislation and Workforce Management Policy and Processes
- Clarification of entitlements such as leave types, flexible working etc.
- Support on administering establishment within Workforce Management Systems
- Navigation of people systems such as MyWorkZone, MyCareer, CS Connect etc.

# 6.0 Administration

- Connection to the right specialist support, such as People Partners, Talent Acquisition, Safety and Wellbeing, Case Managers, and People Systems
- Workforce management resources and tools.

## 6.2.2 Policies for working conditions

- 1 Conditions associated with industrial awards and NPWS policies will be adhered to at all times. Specific incident conditions will be adhered to during declared incidents.
- 2 The FMM provides guidance on fatigue management during fire management activities – see [4.3.3 Fatigue management](#).
- 3 The following policies relating to shift lengths and patterns are applicable to all firefighting during declared incidents (they do not apply to prescribed burning activities).
- 4 Policies relating to conduct and performance as determined from time to time by NPWS must be adhered to at all times, and in travelling to and from incidents, whether local, intrastate, interstate or international.

## 6.2.3 Shift lengths during a declared incident

- 1 The [Declared Incident Claim](#) must be filled out in accordance with the activities undertaken by the staff member, including all travel undertaken for the incident.

### On the first day of a new fire

- 2 On the **first shift** of a new fire:
  - Staff may work a **maximum of 24 hours** including travel, briefing, debriefing, clean-up time and time worked on non-fire related duties. Time worked on non-fire related duties will not be paid at incident rates.
  - For example: An officer starts normal duties at 8:00 am but is called to respond to a newly-declared bushfire incident at 15:00 pm that day. The officer **must** have returned home (or to alternate lodging) by no later than 8:00 am the following day. All hours between 15:00 pm and finish of the shift are paid at incident rates. Hours worked before 15:00 pm are **not** paid at incident rates.
  - During the first shift of the fire only, time worked on the fireground should not exceed 16 hours.

### On subsequent shifts

- 3 On **subsequent shifts**:
  - Staff may work a **maximum of 16 hours** including travel, briefing, debriefing, clean-up time and time worked on non-fire related duties. Time worked on non-fire related duties will not be paid at incident rates.
  - For example: An officer starts normal duties at 9:00 am but is called to respond to a previously-declared bushfire incident at 16:00 pm that day. The officer **must** have returned to their place of residence by no later than 1:00 am on the following day. All hours between 16:00 pm and finish of the shift are paid at incident rates. Hours worked before 16:00 pm are **not** paid at incident rates

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- On subsequent shifts, time worked on the fireground **should not exceed 12 hours**.

## Breaks

- 4 A minimum break of 8 hours between shifts is mandatory, and a break of at least 10 hours should be taken. A break of at least 10 hours is mandatory after working a shift longer than 16 hours. The break will not include travel, briefing, debriefing and clean-up time.

## Extending shift lengths

- 5 Extending shift lengths (both total time on duty and time worked on the fireground) beyond the lengths specified above requires the IC's authorisation.

In providing such authorisation, the IC must evaluate other risk factors such as threats to life and property, and the potential implications of ignoring or disregarding watchout procedures such as changing crews over at night. Where shift lengths are extended, specific consideration needs to be given to managing fatigue-related safety and logistical issues.

- 6 Once total time on duty exceeds 16 hours:
  - drivers should be arranged to transport staff between the fireground and accommodation where required (this includes IMT members).
  - staff will no longer operate chainsaws or earthmoving machinery. Where it is impractical to avoid this situation, close attention must be given to managing the situation. In particular:
    - supervisors must pay close attention to identifying fatigue, and
    - operations should be limited to situations where there is no practical alternative.
- 7 If, on any occasion, the time on duty for staff involved in fire duties:
  - exceeds 24 hours on the first shift of the fire, or
  - exceeds 16 hours on subsequent shifts, or

if time worked on the fireground:

- exceeds 16 hours on the first shift of the fire, or
- exceeds 12 hours on subsequent shifts

then the Park Operations Branch Director (for the Branch in which the fire occurs) will require the IC to prepare a report. The Director will send a report and recommendations to the Executive Director Park Operations Coastal and Executive Director Park Operations Inland for each occasion when shift lengths have been exceeded.

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## Responsibilities of the incident controller

- 8 The IC (or, where the IC is not from NPWS, the senior NPWS officer at the fire) is responsible for ensuring that staff work reasonable shifts and have adequate rest periods.  
The IC will ensure adequate resource monitoring systems are in place.
- 9 ICs should consider a range of strategies for reducing risks. These may include (but are not limited to):
  - resting crews during the shift (i.e., resting while on duty)
  - arranging drivers to and from the fireground or to and from accommodation
  - preparing strategies or assigning duties consistent with fatigue levels that do not require critical decision-making or high-level physical coordination
  - extending break periods
  - minimising travel times, or
  - limiting time worked on the fireground.

### 6.2.4 Shift patterns during a declared incident

- 1 Where staff have been engaged in both incident and normal duties, no more than 8 consecutive days can be worked without a rest day if they were engaged in a declared incident for any one, or more, of those days.
- 2 The rest day is to be a paid rest day off, paid at single rates.
- 3 In protracted seasons, to assist with managing fatigue, an extra paid rest day may be granted at Executive Director Park Operations discretion.
- 4 A staff member who works fewer than 3 consecutive incident shifts will be required to return to normal duties after a 10-hour break.
- 5 Staff performing aviation specialist roles are considered to be IMT staff for the purposes of shift patterns.

### Fireground staff and night-shift IMT staff

- 6 All **fireground staff** and **night-shift IMT** staff will work no more than 3 incident shift days consecutively, followed by 1 paid rest day before a return to either normal or incident duties (3 – 1 pattern).

After a subsequent 3 incident shifts have been worked, the 3 – 1 – 3 shift pattern will be followed by

- 1 paid rest day for those staff returning to normal duties, or
- 2 paid rest days for those staff returning to further incident duties.

Each rest day must constitute a 24-hour period respite from duty.

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## Day-shift IMT staff

7 **Day-shift IMT** staff will work according to **a)** or **b)** below:

a) no more than 3 incident shift days consecutively, followed by 1 paid rest day before a return to either normal or incident duties can occur (3 – 1 pattern).

After a subsequent 3 incident shifts have been worked, the 3 – 1 – 3 shift pattern will be followed by

- 1 paid rest day for those staff returning to normal duties, or
- 2 paid rest days for those staff returning to further incident duties.

Each rest day must constitute a 24-hour period respite from duty.

**b) at the discretion of the staff member, if requested by the Incident Controller,** no more than 5 incident shift days consecutively, followed by 1 paid rest day before a return to either normal or incident duties can occur (5 – 1 pattern).

After a subsequent 5 incident shifts have been worked, the 5 – 1 – 5 shift pattern will be followed by

- 1 paid rest day for those staff returning to normal duties, or
- 2 paid rest days for those staff returning to further incident duties.

Each rest day must constitute a 24-hour period respite from duty.

## IMT support staff

8 All IMT **support staff** (e.g., in administrative or catering roles) will work no more than 5 incident shift days consecutively, followed by 1 paid rest day before a return to either normal or incident duties can occur (5 – 1 pattern).

After a subsequent 5 incident shifts have been worked, the 5 – 1 – 5 shift pattern will be followed by

- 1 paid rest day for those staff returning to normal duties, or
- 2 paid rest days for those staff returning to further incident duties.

Each rest day must constitute a 24-hour period respite from duty.

## Flight crew

9 Flight and Duty limitations for all flight crew operating at incidents must be in compliance with the measures set out in the Interagency Aviation SOPs.

This FMM or the Interagency Aviation SOPs do not absolve an operator, pilots or flight crewperson from their Flight and Duty time regime limitations.

## Responsibilities of the Incident Controller

10 The IC must have strategies in place to monitor and manage fatigue, especially where staff are working up to 8 consecutive days or 5 consecutive-day incident shifts. Shift

# 6.0 Administration

patterns may be modified where considered necessary to ensure a safe working environment.

- 11 During protracted fire seasons where staff are working multiple shift cycles, the IC should consider giving staff a break from fire duties (either a return to normal duties or time away from work). It is the Branch Director's responsibility to manage the IC's welfare in this regard.

## 6.2.5 Staff availability

### Staff responsibility for reporting unfit or unable

- 1 Staff will report to their supervisors when they assess themselves or their colleagues to be **unfit for their assigned duties**. Staff considered unfit will be stood down from firefighting duties. Circumstances where this may occur include (but are not limited to):
  - mental or physical fatigue
  - injury
  - drug or alcohol effects, or
  - insufficient rest.
- 2 Staff will report to their supervisors when they assess themselves or their colleagues to be **unable to perform their assigned duties**. Circumstances where this may occur include, but are not limited to:
  - lack of competence for the role or circumstances, or
  - insufficient physical fitness.

Staff considered unable to perform their assigned duties may be reassigned to alternative firefighting duties.

### Casual employees

- 3 Casual employees who meet competency and fitness requirements may be used for firefighting roles. Incident conditions do not apply to casual employees who are not entitled to rest days and will be paid in accordance with normal provisions.

Casual employees may be used to backfill permanent staff that are on firefighting duties.

### Cadet rangers and trainee field officers

- 4 Cadet rangers employed under the cadetship program and field officers employed under the traineeship program who meet competency and fitness requirements may perform as a crew member at fires for a maximum of one deployment per 28-day period ([FMC 2014/22](#)). Cadets and Trainees MUST ensure that participation at an incident does not affect the formal study requirements of the program they are employed under.

In the event of these fires being declared Class 3, cadets and trainees are to assist the IMT in non-fireground operations for the remainder of their shift.

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- 5 Trainee field officers are employed under the [Crown Employees \(PS Training Wage\) Reviewed Award 2008](#).

## Staff on leave

- 6 Staff on sick leave, workers compensation or leave without pay will not be used for firefighting duties.

Staff will not cancel or return from recreation leave unless directed to do so by their Branch or Unit Manager.

## 6.2.6 Allowances and payments

- 1 Allowances will be paid in accordance with those specified in the relevant award or enterprise agreement.
- 2 Payment is calculated on the basis of the staff member's award conditions and rosters.

## Incident claims

- 3 In accordance with [ED Memo 42/2019](#) and [PC-WPB11 Fact Sheet](#), once you have completed your last shift and completed the [PC-WPB11 – Claim for Emergency Declared Incident form](#):
  - Sign the form and seek approval from two officers:
    - Your NPWS fireline or IMT supervisor, and
    - Your Area Manager, Team Leader, Senior Field Supervisor, Branch Director OR NPWS IC (unless the IC in an RFS officer, in which case the NPWS DIC or the NPWS Liaison Officer may approve your claim)
  - Either hard signatures or a PDF signature tool can be used to gain electronic approvals. [Instructions](#) have been developed for electronic signature process.
  - Only staff performing an 'identified incident responsibility role' are entitled to incident payments and conditions. See [EDPM Memo 47/2008](#) for a list of roles. This role must be listed in the 'Activity' column on form PC-WPB11 for correct processing.
- 4 Staff can process Fire Incident Claims via the following options:
  - [Mobile device](#) – complete claim on your mobile device (either in stages during a deployment or in one go at the end). Once submitted, claims are automatically logged in CS Connect
  - [CS Connect \(no paperwork\)](#) – complete claim online in [CS Connect](#) (either in stages during a deployment or in one go at the end). Approvals are managed by the CS Connect workflow
  - [Paper form claim](#) – complete a paper form, sign it and ensure it is signed by the delegated staff member. Upload it into [CS Connect](#). Approvals are managed by the CS Connect workflow

## Food and drink

- 5 Firefighters need to plan to be self-sufficient for meals and snacks for 24 hours or 4 meals.



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- 6 NPWS will generally provide adequate, appropriate and healthy meals, including breakfast, lunch and dinner. Catering arrangements at the staging area and operations room should be implemented as soon as possible and at least within 24 hours of the initial response. Where NPWS is unable to provide meals, relevant [meal allowances 2023-24](#) will be paid.

## Provision of accommodation

- 7 Accommodation will be selected taking into consideration:

- firefighter fatigue
- travel times
- containing shift lengths
- safety factors
- comfort, and
- special needs of night crews.

If travel times are greater than 1 hour, consideration must be given to establishing a base camp.

## 6.2.7 Conduct

### Alcohol and other drugs

- 1 No alcohol will be provided by NPWS to staff (on or off duty) while they are involved in firefighting duties. When engaged in firefighting activities, NPWS staff are not to consume alcohol while on duty. The definition of 'while on duty' has been extended to all days in the field – which includes rest days between firefighting shifts.
- 2 Any employee observed in an intoxicated, hung-over or drug induced state must be stood down, without pay, and the IC must be notified. All such instances will be referred to the relevant Park Operations Branch Director in accordance with the guidelines on conduct and performance (Government Sector Employment Act 2013).

More detailed procedures relating to alcohol and other drugs are contained in the [Drug and Alcohol Procedure](#).

### Discipline and welfare

- 3 The IC has management responsibility for counselling, disciplinary and welfare matters relating to the incident.

The Park Operations Branch Director (or Executive Director Park Operations Coastal or Executive Director Park Operations Inland where the Branch Director is deployed to fire duties) is responsible for welfare and discipline matters for the IC.

- 4 A Liaison Officer will be assigned to interstate and overseas support personnel to help with coordinating transport, accommodation and information requirements. The Liaison Officer will be part of the IMT.

In addition to a Liaison Officer, a Task Force Leader will be appointed for interstate and overseas support personnel to ensure their welfare and safety on the fire line.

# 6.0 Administration

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## 6.3 Annual reporting requirements

### 6.3.1 Background

- 1 Fire and Incident Operations Branch will:
  - maintain state-wide records of all incidents attended by NPWS staff or on NPWS-managed land, and
  - prepare an annual report on NPWS fire management activities across NSW.
- 2 Each Branch will:
  - prepare notification and reporting procedures as part of its BIP and BFMC Plan of Operations
  - maintain records of incidents and fire management activities; these will be recorded in
    - ICON (for bushfires and HR Sitreps),
    - Elements (for all HR activities, SAR, marine and miscellaneous events, and alerts and closures),
    - Other information related to bushfire and HR activities in relevant corporate systems, such as SAP AMS for HR cost and effort.

---

## 6.4 NPWS Awards and Honours

### 6.4.1 The National Medal

- 1 NPWS staff active for fire and incident response may be eligible for nomination for the National Medal once they have completed 15 years of diligent and active service. Clasps can be awarded for each subsequent 10 years of diligent and active service.
- 2 NPWS will encourage all eligible staff to apply for the National Medal.

#### Applications and presentations

- 3 Applications for the National Medal should be made in the prescribed manner and endorsed by Branch Director and then submitted to Fire & Incident Operations Branch for processing.
- 4 Formal presentations of the National Medal will be made at a suitable time and place as soon as possible after the medals are received.

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## Additional NPWS awards and honours

- 5 NPWS staff may be eligible for additional Awards and Honours, such as the National Emergency Medal, through the Australian Honours System.
- 6 Further information is available at [NPWS awards and honours](#).

# 7.0 Appendix 1

## 7.0 Appendix 1

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## 7.1 Vehicle equipment schedules

### 7.1.1 Essential vehicle equipment

1 Any NPWS vehicle entering the fireground, must:

- be diesel powered.
- be fitted with an operational NPWS VHF mobile radio with the 4-digit mobile radio selcall number allocated to the vehicle displayed at the top of the radio screen.
- have a vehicle radio number (VRN) which is the vehicles 4-digit mobile radio selcall number displayed on the vehicle bonnet, or on the roof if the vehicle has no bonnet, on each door of the vehicle. The VRN supports identification from the air and is a safety feature for crew caught in an emergency burn-over as crew can clearly see the number when placing an emergency radio call.
- have a VRN displayed at the back of the support vehicle or appliance to enable vehicles to be identified from the rear. If displayed on appliances, Branches should ensure the VRN is transferable in order that the VRN displayed on the appliance matches the vehicle VRN.

The VRN specifications are:

- on the bonnet (or roof) each character must be 530 mm high and 80 mm thick, in black characters, and displayed so the top of the characters are towards the front of the vehicle,
- on the door (1 set on each side) and rear the characters must be black and at least 100 mm high,
- see DOC20/393685 on CM9 for photos of VRN placement.
- have a NPWS SMEAC selcall sticker displayed immediately above the vehicle glove compartment. See [Safety Alert 2021/01 SMEAC Selcall Sticker](#) for further details.
- carry a first aid kit appropriate for the number of personnel the vehicle carries; the location of this kit must be clearly identified.
- be fitted with an appropriately sized fire extinguisher.
- carry a copy of the BIP of the home Branch.

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- ❑ carry a Wildland Firefighting fire blanket for each person the vehicle is permitted to carry during fire management operations, and, in plant support vehicles, an additional blanket for the plant operator. The fire blanket must comply with the specification listed in the [Looking after your firefighting clothing and equipment: Guidelines for the care and maintenance of personal protective clothing and equipment \(PPC and PPE\)](#).
  - ❑ be fitted with vehicle recovery equipment (i.e., chassis mount winch, snatch strap, tree guards, block and shackles) appropriate to its GVM. However, for single and dual cab light four-wheel drive vehicles a winch is optional, and if deployed on a fireground without a winch a risk assessment must be performed to assess suitability.
    - **Note:** Synthetic winch cables are susceptible to heat & ember damage.
    - **Note:** Recovery operations must only be undertaken by workers trained and competent in 4WD recovery.
    - **Note:** Cat 7 and Cat 9 vehicles may also have rated recovery points at the front and rear.
- 2 NPWS vehicles entering the fireground may carry a pair of battery jumper leads capable of jump-starting fire vehicles. These must have surge protection fitted.
- 3 All fire appliances must comply to Transport for NSW legislation in regard to safe and legal loading. Therefore, the following must be adhered to:
- All items **MUST** be restrained from coming out of their purpose-built holders using either load restraint straps, tie downs or chains
  - All restraint devices **MUST** be rated to a minimum lashing capacity of 20kg, or to a higher level commensurate to the load in accordance with the load restraint guide
  - Any other loose item (empty water bottles, esky's etc) are either removed and stored in lockers, or restrained on the unit so they cannot become loose (see referenced [Load Restraint Guide](#) in the technical safety bulletin)
  - Ropes should not be used as load restraints.

For further information refer to the [National Transport Commission Load Restraint Guide 2018](#).

## 7.1.2 Additional vehicle equipment

### Additional requirements for support vehicles

- 1 NPWS Support Vehicles used on firegrounds without fire-fighting capability must be fitted with:
- ❑ Communication ability for the level of support role; at the minimum an additional Parks VHF radio, UHF and PSN radio
  - ❑ Basic fire-fighting tools such as rakehoe, chainsaw, axe
  - ❑ Seating for a minimum of 3 people

# 7.0 Appendix 1

## Additional equipment for Category 9 vehicles

### Vehicle cabin

- be fitted with an operational PSN capable P25 UHF radio
- Fitted with an approved Automated External Defibrillator (AED).
- Fitted with radiant heat protection curtains. This additional safety measure relates directly to recommendations made by the NSW 2020 Bushfire Inquiry (Recommendation 40) and adopted by the NSW Government to improve firefighter safety”

### Tray exchange unit

2 Category 9 firefighting units must be fitted with:

- 8 L of drinking water, with its location clearly marked
- 1 x natural fibre towel or cloth (recommended size – hand towel)
- 1 x 4m-long (minimum) suction hose fitted with float and foot valve
- 2 rake hoes
- 2 drip torches ( )
- 10 L of drip torch fuel
- 10 L of diesel pump fuel
- 1 L of diesel pump oil
- 1 x 2.5 kg axe and cover
- 1 x 250 mm flat file (10’)
- 1 chainsaw
- 1 pair of Proban-treated chainsaw chaps
- 1 chainsaw fuel and oil container
- 1 chainsaw kit including:
  - 2 alloy wedges
  - 1 spare chain
  - 1 stump vice
  - 1 socket spanner
  - 1 small flat screwdriver
  - 1 flat file
  - 2 round files
  - 1 sharpening guide
  - 1 depth gauge
- 2 x 25 mm x 30 m lay flat hoses
- 1 x 38 mm x 30 m lay flat hose
- 1 x 25 mm x 5 m lay flat vehicle protection hose
- 1 spare hose nozzle (primary nozzle remains attached to live line)
- 1 adjustable Storz spanner
- assorted spare Storz fittings including:
  - 1 x 65 mm – 38 mm reducer
  - 1 x 38 mm – 25 mm reducer
  - 2 x 25 mm with tails
  - 1 x 25 mm blank
  - 1 x 38 mm blank
  - assorted stainless steel hose clamps
- 1 x 10 L collapsible bucket
- 1 x 300mm shifting spanner (jaws open to 35mm for y-strainer filter cleaning)
- 1 siphon hose
- 1 funnel
- 1 pair of suitably sized bolt cutters
- 1 pair of fencing pliers
- 10 m of light rope.
- 2 x rolls red and white tree marking tape
- 1 x can high visibility spray paint (preferably yellow)
- Hygiene Kit containing:
  - 1x roll toilet paper
  - 1x pump pack or squeeze tube of SPF50+ sunscreen

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1x pump pack of alcohol-based hand sanitiser  
1x liquid soap dispenser or travel soap option  
1x packet of alcohol-based surface wipes  
1x pack of nitrile disposable gloves

5x plastic bags  
2x packs of wilderness wipes (hand, face and skin cleaning)  
2x disposable sick bags  
2x feminine hygiene kits

3 A laminated copy of this equipment list must be fixed to the interior of the unit, positioned within easy view of the operators. A formatted version is available on [ParkSite](#).

4 Category 9 fire units operating in urban or bush-urban interface areas may also carry the following additional equipment:

- 1 standpipe
- 1 hydrant tool
- 2 x 38 mm – 25 mm reducers
- 2 x 38 mm with tails
- 1 x 38 mm controlled branch, and
- 1 x controlled breach

**Note:** Out of Area branch deployments should consider the above equipment for interface firefighting.

5 The equipment listed above has been selected taking into consideration compliance with Transport for NSW regulations on weight restrictions. Hence, Category 9 firefighting units must not carry equipment in addition to that specified in the equipment schedules. Any proposals to modify the equipment schedules must be formally adopted in policy before being implemented.

6 For safety and weight reasons, Category 9 firefighting units will not carry more than 2 personnel when engaged in fire management operations.

## Additional equipment for Category 7 Vehicles

7 Category 7 firefighting units must be fitted with all equipment listed for Category 9 firefighting units, plus:

- 1 suitably rated 3 m (minimum) tow chain
- extra lay flat hose lengths appropriate to the unit's area of operation, and
- extra drip torch and diesel pump fuel

## Additional equipment for Category 1 and 2 firefighting units

8 Category 1 and 2 firefighting units must be fitted with all equipment listed for Category 9 and 7 firefighting units (excepting a tow chain), plus:

- 2 suitably rated 4 m (minimum) tow chains
- an access ladder to the side of the tanker

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- crew heat shields within cabin
- a heavy timber base for jacking
- common air hoses and couplings
- a spare compressor drive belt
- removable front body rail-locking pins
- operator warning signs on PTO controls
- 2 chassis-mounted recovery rated front-towing points
- a single recovery rated rear hook

### Plumbing for all firefighting vehicles

- 9 Plumbing for all Category 1, 2, 7 and 9 vehicles should include:
- Storz couplings on all flexible pressure hoses
  - hose clamps of stainless steel, screw type
  - plumbing that remains within vehicle alignment
  - live reels with at least 30 m of hose
  - live reels fitted with stop valves at pump manifold or live reel spindle
  - strainer and float fitted to suction hose
  - Y-strainer fitted between pump manifold and tank, and
  - valve and pump controls positioned for operation from the ground.



## 7.2 Personal protective equipment schedules

### 7.2.1 Schedule 1: Personal firefighting equipment (PPE)

Every firefighting person on the fireground must have the following PPE, issued by Branch. When fire uniform integrity is compromised replacement is required.

#### Schedule 1(a): Personal protective equipment to be worn or carried on person on the fireground

Item	Quantity
<b>Uniform:</b> 2-piece, consisting of trousers and jacket, complying with AS 4824:2006 and AS4602.2 and related Standards	2 trousers and 2 jackets
<b>Boots:</b> Bushfire boots rated to AS 4821:2014 (Type 1 or Type 2*)	1 pair
<b>Gloves:</b> Bushfire gloves rated to AS 2161.6:2003 (Level 1 or Level 2)	2 pairs
<b>Goggles:</b> Bushfire goggles rated to AS 1337	1 pair
<b>Helmet:</b> Bushfire helmet rated to AS 1801 (Type 3). White with red 'NPWS'	1 item
<b>Hood:</b> Bushfire hood rated to standard NFPA1971	1 item
<b>Smoke mask (or otherwise known as Particulate filtration):</b> Particulate filter rated to AS 1716 (Minimum Class P2)	2 items
<b>Fire Incident Field Guide</b>	1 item
<b>Whistle</b>	1 item

\*All bushfire boots rated to AS 4821:2014 (Type 1 and Type 2) have toe protection.

#### Schedule 1(b): Other essential equipment

Item	Quantity
Personal first aid kit	1 item
Water containers – minimum 2 L capacity in total	1 item
Day-pack (30 L capacity) and/or bum-bag attached to web belt	1 item/2 items
Compass	1 item
Sunglasses rated to AS 1337 and 1338.2:1992	1 pair
Pocket knife	1 item
Wind and waterproof matches	1 packet
Flagging tape – high visibility	1 roll
Head lamp – helmet mounted	1 item
Sunscreen – SPF 30	1 item
Ration pack – 24 hour	1 item
Ear Protection to AS/NZS 1270:2002	1 pair

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## 7.2.2 Schedule 2: Additional equipment that must be carried by each crew\*

Every crew must have the following additional equipment, issued by Branch.

Item	Quantity
Portable NPWS standard hand-held radio and spare battery (minimum requirement)	2 items *All RAFT members must carry a radio <i>each</i>
Weather reading equipment	1 item

## 7.2.3 Schedule 3: Additional equipment to be provided to out-of-branch crew if camping

If staff are required to camp during OOB deployments, then the home Branch will supply suitable camping equipment to the staff member. The dispatching Branch will ensure that there are sufficient kits available for their staff and that WHS requirements are met.

This additional equipment may include items such as:

Item	Quantity
Sleeping bag, liner, mat and ground sheet	1 item
2-person tent or a swag	1 item
Poncho	1 item
Cutlery, plate, mug	1 item each
Small billy	1 item

**Note:** This equipment is in addition to that listed in Schedules 1 and 2.

## 7.2.4 Schedule 4: Additional equipment for Remote Area Firefighters (RAF)

Remote area firefighters may carry the following suggested items when deployed for remote area operations.

The items listed are suggestions only and can be changed to suit the individual firefighter's needs and the tasks being carried out.

These items would be carried in addition to items required to be carried as per 7.2.1 schedule 1(b) and 7.2.2 schedule 2.

Item	Quantity
Additional water bottles or hydration backpack	6 litres volume
Electrolyte solution	As needed
Strobe light	1 item
Torch batteries	As needed
Air blower (backpack and handheld)	1 item
Rakehoe	1 item
Axe or Pulaski tool	1 item
Fuel and oil bottles	As needed
Splat mat	1 item

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<a href="#">NPWS Individual Trauma Kit**</a>	1 Item
Winch bag	1 item
Stilwell flyer *	1 item
Portable water pump *	1 item

\*Large equipment which would be flown in to assist crew

\*\*To be worn on person in a visible location and individuals carrying kit must be trained in Remote Casualty Care

## 7.2.5 Schedule 5: Equipment for Airborne and Ground based aviation

Pilots, aircrew and airborne trained aviation specialists shall wear:

Item	Quantity
Flame resistant flight suit coverall / two-piece coverall	1 item
Flight helmet - for all operations in helicopters and Single Engine Air Tankers (SEATS)	1 item
Leather ankle length boots	1 item
Gloves	1 item
Flame resistant or natural fibre underclothing	1 item
Personal GPS enabled PLB (carried on person)	1 item

Ground based aviation personnel shall wear:

Item	Quantity
Leather ankle length boots	1 Item
Flame resistant or natural fibre underclothing	1 Item
Hearing protection relevant to the operating environment	1 Item
Chemical rated eye protection (removal of eye protection is permissible when not directly in contact with the aircraft or mixing equipment)	As required
Chemical gloves	As required
Protective firefighting jacket / coveralls (removal of the outer jacket is permissible when not directly in contact with the aircraft or mixing equipment)	As required

# 8.0 Appendix 2

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## 8.0 Appendix 2

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## 8.1 AFAC Guidelines

Australasian Fire Authorities and Emergency Services Council (AFAC) guidelines, position papers and publications are available at [AFAC EM Doctrine \(http://www.afac.com.au\)](http://www.afac.com.au).

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## 8.2 Natural Hazards Research Australia

Natural Hazard Research Australia was established on the 1<sup>st</sup> July 2021 and is Australia's national centre for natural hazard resilience and disaster risk reduction. The Centre was funded for 10 years by the Australian Government as a collaborative research organisation to address the major challenges arising from natural hazards. The Centre builds upon the foundations of both the Bushfire CRC and the [Bushfire and Natural Hazards CRC](http://www.bnhcrc.com.au). Hazard Notes, newsletters and publications from the former Bushfire and Natural Hazards CRC are available at <http://www.bnhcrc.com.au>. Bushfire CRC Fire Notes, fire updates, reports and presentations are also still available on the [Bushfire CRC](http://www.bushfirecrc.com) legacy website (<http://www.bushfirecrc.com>), under 'Publications'.

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## 8.3 BFCC policies

[NSW BFCC policies](http://www.rfs.nsw.gov.au) are available via the [NSW Rural Fire Service](http://www.rfs.nsw.gov.au) website ([www.rfs.nsw.gov.au](http://www.rfs.nsw.gov.au)). On the pull-down menu under 'Resources' select 'Publications and documents', then 'Governance' then 'Bush Fire Coordinating Committee Policies'.

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## 8.4 Fire management circulars and memos

NPWS [Fire Management Circulars](#) (current and archived) are available on the intranet. FMCs are issued throughout the year as required. Circulars may be issued to advise of a change in policy, for information only, or to draw particular attention to a fire management issue. Circulars remain current until the annual review of the FMM, when they may be incorporated into the Manual as policy.

Deputy Secretary and Executive Director Memos are available at [ParkSite Executive Office](#).

## 8.5 Aviation Management Circulars

NPWS Aviation Management Circulars are available on [ParkSite Aviation Management Circulars](#).

## 8.6 Relevant legislation

### 8.6.1 Introduction

1 A number of Acts and Regulations govern the powers and responsibilities of NPWS in respect to fire management and suppression:

- [Biodiversity Conservation Act 2016](#)
- [Coroners Act 2009](#)
- [Crimes Act 1900](#)
- [Dangerous Goods \(Road and Rail Transport\) Act 2008 & Regulation 2022](#)
- [Environmental Planning and Assessment Act 1979](#) and [SEPPs](#)
- [Environment Protection and Biodiversity Conservation Act \(1999\) and Environment Protection and Biodiversity Conservation Regulations \(2000\)](#)
- [Fire Brigades Act 1989](#)
- [Fisheries Management Act 1994](#)
- [Heritage Act 1977](#)
- [Local Land Services Act 2013](#)
- [National Parks and Wildlife Act 1974 & Regulations 2019](#)
- [Protection of the Environment Operations Act 1997](#)
- [Rural Fires Act 1997 & Regulations 2022](#)
- [Rural Fires Amendment \(Fire Trails\) Act 2016](#)
- [State Emergency and Rescue Management Act 1989](#)
- [Wilderness Act 1987](#)
- [Work Health and Safety Act 2011](#)
- [Workers Compensation \(Bush Fire, Emergency and Rescue Services\) Act 1987](#)

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- [Workplace Injury Management and Workers Compensation Act 1998](#)
- 2 In addition, NPWS has specific obligations under the Government Sector Employment Act 2013 and the Public Finance and Audit Act 1983. These are equally as applicable to firefighting as to normal NPWS operations. The regulations of both Acts affect the hire and purchase of equipment and contract services and indicate what constitutes a claimable item versus non-claimable expenses. Chapter [6.1 Finance and insurance](#) provides further information.
  - 3 Where there is not agreement about the interpretation of any legislation, refer to the original legislation and consult with the Legal Services Branch, or Industrial Relations where the matter involves interpretation of employment conditions of an NPWS officer, or the WHS Unit if it involves interpretation of WHS or workers compensation legislation.

### 8.6.2 Overview of legislation

#### Biodiversity Conservation Act 2016

The [Biodiversity Conservation Act 2016](#) was introduced to replace the Native Vegetation Act 2003, Threatened Species Conservation Act 1995 and parts of the National Parks and Wildlife Act 1974 as part of a biodiversity conservation reform in 2016. The purpose of the Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The integrated package of reforms features:

- New arrangements that allow landowners to improve productivity while responding to environmental risks
- New ways to assess and manage the biodiversity impacts of development
- A new SEPP for impacts on native vegetation in urban areas
- Significant investment in conserving high value vegetation on private land
- A risk-based system for regulating human and business interactions with native plants and animals
- Streamlined approvals and dedicated resources to help reduce the regulatory burden

#### Coroners Act 2009

The [Coroners Act 2009](#) requires coroners to hold inquests into deaths and suspected deaths and inquiries into fires and explosions. The legislation specifies when a coroner must hold an inquiry into fires and explosions. Where a police officer informs the coroner that a fire has destroyed or damaged any property in NSW, an inquiry must be held. If the coroner believes that the circumstances of the fire have been sufficiently disclosed, the coroner may dispense with holding an inquiry. A coroner must hold an inquiry if requested by FRNSW for a fire in a fire district, or by the RFS Commissioner in the case of a bushfire, or by the Minister for the Environment and Heritage or the State Coroner.

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## Crimes Act 1900

The [Crimes Act 1900](#) describes criminal offences in NSW. Within the Act, there are provisions relating to crimes using fire. It is an offence to:

- maliciously destroy or damage property by fire
- maliciously destroy or damage property by fire with the intention of causing bodily harm to another person
- maliciously destroy or damage property with the intention of endangering the life of another person
- make a threat that property will be damaged or destroyed, that the life of another person is endangered or that bodily injury will occur, and
- make or send a statement that is likely to make another person fear for the safety of a person or property or both.

## Dangerous Goods (Road and Rail Transport) Act 2008 & Regulations 2014

The [Dangerous Goods \(Road and Rail Transport\) Act 2008](#) and associated regulations set out various responsibilities and controls in relation to the road transport of dangerous goods. The legislation is jointly administered by DCCEE and NSW WorkCover (with DCCEE responsible mainly for on-road transport issues).

The [Australian Code for the Transport of Dangerous Goods by Road and Rail \(Edition 7.8, 2022\)](#) sets out the technical requirements for classifying, identifying, packing, labelling and transporting dangerous goods. The ADG Code is given effect by the transport legislation.

## Environmental Planning and Assessment Act 1979 & Regulations 2000

Under the [Environmental Planning and Assessment Act 1979](#), NPWS is the determining authority for all fire management activities on NPWS-managed land. A determining authority has a duty to consider the environmental impact of its activities and shall not carry out an activity or grant approval for an activity that is likely to significantly affect the environment, including threatened species, unless an environmental impact statement has been considered. If an activity will affect the environment, the determining authority should impose conditions on or modify or stop the proposed activity.

The [Rural Fires Act 1997](#) provides that certain planning instruments and provisions of the [Environmental Planning and Assessment Act 1979](#) do not apply to emergency firefighting acts and many bush fire HR activities can be authorised by a HRC if the activity is carried out in accordance with the [Bush Fire Environmental Assessment Code](#). There are several exclusions for HRCs and the Code.

NPWS has taken key components of this legislation and incorporated it into [NPWS Environmental Impact Assessment and Planning Support](#), including [Reviews of Environmental Factors \(REFs\)](#).

## Heritage Act 1977

The [Heritage Act 1977](#) protects the State's natural and cultural heritage. Aboriginal heritage is primarily protected under the National Parks & Wildlife Act 1974 but may be subject to the provisions of the Heritage Act if the item is listed on the State Heritage Register or subject to an Interim Heritage Order. The Heritage Act contains minimum standards of maintenance and repair for a building, or a relic listed on the State

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Heritage Register, the prevention of and the protection of a building or relic by the destruction of fire.

### State Environmental Planning Policies

State Environmental Planning Policies (SEPPs) are made by the Minister for Planning under the *Environmental Planning and Assessment Act 1979* and specify policies and procedures to be applied when dealing with environmental issues which are significant to the state and people of NSW.

A number of SEPPs affect fire management planning within and adjoining NPWS managed land including:

- State Environmental Planning Policy (Transport and Infrastructure): [Part 2.3 Division 6](#) of this SEPP provides that bushfire HR works are permissible on any land (including NPWS managed land) where it is consistent with the applicable BFRMP or FAFT plan. An appropriate environmental assessment should be undertaken – as described in the [NPWS Guidelines for preparing a Review of Environmental Factors](#). Bushfire HR work on NPWS managed land can be assessed via the [Bush Fire Environmental Assessment Code](#) (unless it is an activity to which the Code does not apply or the activity proposed is on land that is excluded or restricted – refer to s2.3 - 2.5 of the Code). SEPP (Transport and Infrastructure) 2021 also provides for some low impact activities as ‘exempt development’.
- State Environmental Planning Policy (Resilience and Hazards) 2021: [Part 2.2 Division 1](#) of this SEPP provides the development controls for coastal management areas. Bushfire HR activities on lands identified in the SEPP (Resilience and Hazards) 2021 as Coastal Wetlands, Littoral Rainforest or proximity area for Littoral Rainforest cannot be assessed or approved by a HRC via the [Bush Fire Environmental Assessment Code](#) (under the *Rural Fires Act 1997*). Any bushfire HR works within Coastal Wetlands or Littoral Rainforest (or the proximity area for Littoral Rainforests) identified in this SEPP must be consistent with the relevant PoM. An Environmental Impact Statement may need to be prepared to support the activity. Further advice should be sought from the NPWS [FIOB Planning Mailbox](#). Works within the proximity area for Coastal Wetlands can be progressed via a HRC (in the first instance). This new SEPP replaces the Coastal Management SEPP and applies across all land tenures.

### Environment Protection and Biodiversity Conservation Act 1999 & Regulations 2000 (Commonwealth)

The objectives of the [Environment Protection and Biodiversity Conservation Act 1999](#) and associated regulations are to:

- provide for the protection of the environment, especially those aspects of national environmental significance
- promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources
- promote conservation of biodiversity
- promote a cooperative approach to protecting and managing the environment, which involves governments, the community, landholders and indigenous peoples
- assist in the cooperative implementation of Australia’s international environmental responsibilities, and



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- recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity.

### Fire and Rescue NSW Act 1989

The [Fire and Rescue NSW Act 1989](#) (formerly known as the Fire Brigades Act 1989) provides for the protection of persons and property from fire and hazardous material incidents. It establishes the New South Wales Fire Brigades as a Department of the Government and outlines provisions for both permanent and retained fire brigades.

### Local Land Services Act 2013

The [Local Land Services Act 2013](#) ensures proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development. The Act defines a list of allowable activities on different categories of land, including ecological and cultural burning on private land.

### National Parks and Wildlife Act 1974 & Regulations 2019

Under the [National Parks and Wildlife Act 1974](#), the Chief Executive\* is responsible for the care, control and management of national parks, nature reserves, Aboriginal areas, historic sites, karst conservation reserves, regional parks and state conservation areas. The Chief Executive\* is also responsible for the protection and care of native wildlife and flora and Aboriginal places and objects throughout NSW. As a result of enactment of the [Rural Fires and Environmental Assessment Legislation Amendment Act 2002](#), certain provisions of the National Parks and Wildlife Act 1974 do not apply to, or in respect of, the carrying out of an emergency firefighting act. This includes the carrying out of emergency firefighting acts being exempt from the offence of harm to Aboriginal objects and Aboriginal places as per s87A(b) of the National Parks and Wildlife Act 1974. Under this exemption s.87A(b) bushfire hazard works are also exempt from the offence of harm to Aboriginal places and objects.

The [National Parks and Wildlife Regulation 2019](#) describes the permitted and prohibited activities in areas of NPWS managed land. The regulation covers closure of parks and reserving parts of a park for particular uses as well as the authority to prohibit certain activities, such as the lighting of fires.

\*The Chief Executive is now called the Deputy Secretary, NPWS

### Protection of the Environment Operations Act 1997

The [Protection of the Environment Operations Act 1997](#) and subsequent Protection of the Environment Operations Amendment Act 2005 have provisions to protect the NSW environment from human activities. In particular, this relates to policies that need to be taken into account by:

- a determining authority when considering the likely impact of an activity under the *Environmental Planning and Assessment Act 1979*; or
- a public authority when there is an inconsistency with the authority's statutory or legal obligations.

The Act also enables the EPA to prohibit the burning of fires in the open or in incinerators.

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## Rural Fires Act 1997 & Regulation 2022

The [Rural Fires Act 1997](#) established the RFS, comprising the Commissioner and other staff of the RFS, fire control officers and deputy fire control officers, and volunteer rural firefighters. The Act also has provisions relating to:

- the prevention, mitigation and suppression of bushfires
- the coordination of bushfire firefighting and bushfire prevention
- the protection of persons and property, and
- the protection of the environment by requiring that activities are ecologically sustainable.

The responsibilities of the BFCC are specified in the Act. The *Rural Fires Act 1997* was amended by the Rural Fires and Environmental Assessment Legislation Amendment Bill 2002 with respect to bushfire prone land, bushfire HR and other matters, including:

- empowering the Commissioner to require or carry out bushfire HR work on public land, including NPWS managed land
- introducing a bushfire hazard complaints process
- requiring subdivision or certain developments on bushfire prone land to meet certain fire mitigation and protection standards, and
- requiring annual reporting by NPWS on bushfire HR.

The [Rural Fires Regulation 2022](#) supports the *Rural Fires Act 1997*. The Act needs to be read in conjunction with the Regulation. It details the eligibility for membership of and the functions of BFMCs. The regulation specifies when it is permitted to burn in rural fire districts. Safety issues for rural fire districts, fire safety equipment, roadside fire protection, lighting of fires for cooking, in rural areas are detailed under the regulation. There are clauses setting out the types of notices and the manner in which they are issued.

The [Rural Fires Amendment \(Fire Trails\) Act 2016](#) amended the *Rural Fires Act 1997* to provide for the establishment, maintenance and protection of fire trails for the purpose of preventing, fighting, managing or containing bush fires. The provisions commenced in 2017 and provide for:

- FAFT plans
- Fire Trail Standards
- directions for the establishment of fire trails on public land
- agreements for the establishment of fire trails on private land
- certification of fire trails as to compliance with the Fire Trail Standards
- registration of certified fire trails
- inspection of fire trails
- issue of notices of rectification work for fire trails

## State Emergency and Rescue Management Act 1989

The [State Emergency and Rescue Management Act 1989](#) relates to coordinated arrangements for managing emergencies across NSW. The Act contains provisions for coordinating the State Emergency Management Committee and preparing the NSW State Emergency Plan (EMPLAN). The Act also details the provisions for the declaration of a state of emergency.

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### Wilderness Act 1987

The [Wilderness Act 1987](#) provides for the identification, protection and management of wilderness areas. NPWS will manage wilderness areas so as to:

- restore and protect the unmodified state of the areas and their plant and animal communities
- ensure the areas can evolve without human interference, and
- enable solitary and self-reliant recreation to take place.

The use of fire can be employed to achieve these objectives.

### Work Health and Safety Act 2011

The [Work Health and Safety Act 2011 and Regulations 2011](#) provides a framework to protect the health, safety, and welfare of all workers at work and of other people who might be affected by the work. Its primary aims are to eliminate or minimize risks arising from work or workplaces and to ensure the highest level of protection from hazards and risks for workers and others, as far as reasonably practicable

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### 9.1 Definitions

The following definitions are taken from the AFAC [Bushfire Glossary](#) and terminology specific to NPWS operations.

A B C D E F G H I J K L M N O P Q R S T U V W

Term	Definition
<b>A</b>	
Accelerant	Any substance (such as oil, gasoline, etc.) that is applied to a fuel bed to expedite the burning process.
Adaptor	A fitting used to couple different sized hoses, hoses of the same size with different threads, or different types of couplings, or to connect the male to male, or female to female parts of the same type of coupling.
Adsorption	The taking in of water vapour from the air by dead plant material.
Advance burn	A prescribed fire that reduces fuel through a forest area before felling operations. It is intended to improve the safety of timber harvesting operations and as a silvicultural tool to protect lignotubers and standing trees.
Advancing fire	That portion of the fire with rapid fire spread and higher intensity which is normally burning with the wind and/or upslope.
Aerial detection	The discovering, locating and reporting of fires from aircraft.
Aerial Drip Torch	An aerial ignition device hung from or mounted on a helicopter to disperse ignited lumps of gelled gasoline. Used for backfires, burnouts, or prescribed burns. (NWCG)
Aerial fuels	See <i>Elevated fuels</i> .
Aerial ignition	Ignition of fuels by dropping incendiary devices or materials from aircraft.
Aerial ignition device (AID)	Inclusive term applied to equipment designed to ignite Wildland fuels from an aircraft.
Aerial Observer	See <i>Air Observer</i> .
Aerial reconnaissance	Use of aircraft for detection of fires and observing fire behaviour, values at risk, suppression activity, and other critical factors to facilitate command decisions on strategy and tactics needed for fire suppression.

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Term	Definition
Aerosol	Airborne solid or liquid particles dispersed or suspended in a gas stream.
Agency representative	An individual, allocated to an incident from an assisting agency, who has delegated full authority to make decisions on all matters affecting that agency's participation at the incident.
AIIMS structure	The combination of facilities, equipment, personnel, procedures, and communications operating within a common organisational structure with responsibility for the management of allocated resources to effectively accomplish stated objectives relating to an incident (Australasian Inter-service Incident Management System, AIIMS).
Air attack	The direct use of aircraft in the suppression of bushfire.
Air Attack Supervisor (AAS)	Primarily responsible for the safety and efficient tactical coordination of aircraft operations when fixed and/or rotary firebombing aircraft are operating at a fire (Air Attack Supervisor Training Manual).
Airbase Manager (ABM)	An experienced, trained person who is appointed to manage all the functions and personnel on an airbase or helicopter base.
Air mass	A meteorological term referring to an extensive body of air within which the conditions of temperature and moisture in a horizontal plane are essentially uniform.
Air Observer (AOB)	The primary role of the Air Observer is to aerially obtain intelligence to assist the planning of fire suppression operations. (RFS)
Air operations	The use of aircraft in support of an incident for the purposes of suppression, transportation of personnel, equipment or supplies, or for aerial reconnaissance.
Air Operations Manager (AOM)	The Air Operations Manager position is responsible for overall coordination of air operations and air support activities in support of an incident.
Aircraft Officer (AOF)	The Aircraft Officer is responsible for ground operations and overall provision of support, enabling a safe and efficient air operation to be conducted.
Airside	The parts of an airport not normally open to unauthorised people. It comprises the apron, taxiways, runways and the areas containing them.
AIS Fire Response Plan	Site-specific plan that outlines risks posed to an AIS in relation to fire and provides guidance on appropriate fire regimes and operational response measures to help protect the declared land.
Allocated resources	Resources working at an incident (AIIMS).
Anchor point	An advantageous location, usually a barrier to fire spread, from which to start constructing a fire line. The anchor point is used to minimize the chance of being flanked by the fire while the line is being constructed (NWCG)
Anemometer	A meteorological instrument used to measure wind speed.

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Term	Definition
Anti-cyclone (high)	An area of relatively high atmospheric pressure. In the southern hemisphere, pressure gradients and the earth's rotation will cause air to move in an anti-clockwise direction around the anti-cyclone.
Aqueous film forming-foam (AFFF)	A synthetic amber coloured liquid concentrate mixed with water to form an agent that is capable of forming water-solution films on the surface of flammable liquids that prevent the escape of fuel vapours, excludes oxygen and maintain the surface when disturbed (self-healing).
Arduous task-based assessment	An annual fitness test or task-based assessment that can be attempted once medically cleared. It consists of a 4.83 km walk with a 20.4 kg pack (or 15.4 kg pack for modified) in 45 minutes on flat ground.
Area ignition	Ignition of several individual fires throughout an area, either simultaneously or in rapid succession, and so spaced that they add to and influence the main body of the fire to produce a hot, fast-spreading fire condition. Also called simultaneous ignition.
Area of origin	General location where the fire started.
Area of outstanding biodiversity value (AOBV)	An area of outstanding biodiversity value is declared under the Biodiversity Conservation Act 2016. These are areas important at a state, national or global scale, and which make a significant contribution to the persistence of one or more threatened species or communities, or irreplaceable biological distinctiveness, or ecological processes or integrity, or have outstanding ecological value for education or scientific research.
Arson	The deliberate setting of a fire where the intent of the person responsible was to cause harm or destruction to life or property.
Aspect	The direction towards which a slope faces.
Asphyxiates	Substances which interfere with the respiratory process.
Assembly area	An area where resources are organised and prepared for deployment. It includes the provision of welfare and equipment maintenance facilities. Non-preferred term. See <i>Staging Area</i>
Assessment	The process of determining if an individual has the prescribed skills, knowledge and experience needed to acquire a specific capability.
Assets of Intergenerational Significance	These 'declared lands' can include any land reserved or acquired for reservation under the NPW Act that is considered by the Minister to be of exceptional value - natural or cultural - that warrants special protection. AIS are defined under section 153G of the NPW Act.
Asset Protection	Is one of actions undertaken during interface firefighting. It involves defending individual assets and other structures threatened by radiant heat or ember attack.
Asset Protection Zone (APZ)	An area surrounding a residential or other significant building, managed to reduce the bushfire hazard to an acceptable level. The width of an APZ will vary depending on slope and construction type.

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Term	Definition
Assets	Anything valued by people which includes houses, crops, forests and, in many cases, the environment.
Assets at risk	The natural resources, cultural heritage, or improvements that may be jeopardised if a fire occurs. Examples include threatened species habitat, rainforests, forestry compartments, human-built structures or infrastructures, park information signs, transmission poles etc., and may also include scenic values. For the fire manager, it may also include natural values that may be threatened by a fire (e.g., water catchment quality).
Assisting agency	An agency directly contributing suppression, support or service resources to another agency.
Atmospheric stability	The degree to which the atmosphere resists turbulence and vertical motion.
Attack time	See <i>Elapsed time</i> .
Attack, methods of	<p>Direct attack: to extinguish a fire by directly applying water, fire suppression chemicals or pushing burning fuel into the fire area with the use of hand tools or machinery.</p> <p>Parallel attack: to construct a fire control line adjacent to a flame front and then burn out the intervening area.</p> <p>Indirect attack: to construct a fire control line some distance from the flame front and then burn out the intervening area.</p> <p>Head attack: to knock down the fire at its fastest and hottest section and then move to the sides of the fire to control it.</p> <p>Flank attack: to commence the control of the fire by attacking the sides and moving to the head of the fire.</p>
Australasian Inter-service Incident Management System (AIIMS)	A nationally adopted structure to formalise a coordinated approach to emergency incident management.
Australian Fire Danger Rating System	The national system for determining Fire Danger Ratings.
Automatic dispatch	See <i>Pre-planned dispatch</i> .
Automatic weather station (AWS)	The Bureau's standard AWSs use sensors to monitor temperature, humidity, wind speed and direction, pressure and rainfall. Various advanced sensors are available for specialised applications. These sensors can monitor cloud height (ceilometers), visibility, present weather, thunderstorms, soil temperature (at a range of depths) and terrestrial temperature. (Developed from BOM.)
Available fuel	The portion of the total fuel that would actually burn under various environmental conditions.
Available resources	The resources at an incident and available for allocation at short notice. (AIIMS)
<b>B</b>	
Back	See <i>Rear</i> .

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Term	Definition
Back-burn	A fire started intentionally along the inner edge of a fire line to consume the fuel in the path of a bushfire.
Backfire	See <i>Heli torch</i> and <i>Ignition pattern</i> and <i>Indirect attack</i> .
Backing fire	The part of a fire which is burning back against the wind, where the flame height and rate of spread is minimal.
Bark fuel	The flammable bark on tree trunks and upper branches.
Bark heaps	Accumulations of bark and branch material resulting from timber harvesting operations. Soil may be mixed with bark heaps, but generally the heap is formed by a machine dropping fresh bark on the top of the heap.
Barometer	A meteorological instrument used to measure atmospheric air pressure. Expressed in hectopascals.
Basal accumulation	Bark fallen from a tree and forming an exceptionally high and localised accumulation of fine fuel.
Base camp	A location where personnel are accommodated and fed for a period of time. A base camp usually contains catering, ablution and accommodation facilities, a water supply and a lighting system, and may include other facilities such as car parking, maintenance and servicing. (AIIMS)
Bay(s)	A marked indentation in the fire perimeter usually located between 2 fingers.
Beaufort wind scale	A system for estimating wind speeds based on observation of visible wind effects. A series of descriptions of visible wind effects upon land objects or sea surfaces is matched with a corresponding series of wind speed ranges, each being allocated a <i>Beaufort number</i> .
Being controlled	See <i>Fire status</i> .
Biodiversity	The variety of life forms, the different plants, animals and micro-organisms, the genes they contain and the ecosystems they form.
Blacking out	See <i>Mop-up</i> .
Blank cap	The metal cap used on delivery outlets and on the suction inlet of the pump to prevent discharge of water.
Blow down	See <i>Wind throw</i> .
Blow up	Sudden increase in fire line intensity or rate of spread of a fire sufficient to preclude direct control or to upset existing suppression plans. Often accompanied by violent convection and may have other characteristics of a fire storm. (NWCG)
Bole	The trunk of a tree.
Bole damage	The damage to the trunk of a living tree by fire, mechanical equipment or disease.



## 9.0 Appendix 3

Term	Definition
Bracken	Bracken fern varies significantly in height and density. If bracken is generally upright (either alive or dead) with the majority of its biomass in the top half of the plant and only the stems in touch with the ground, then it is considered to be part of the elevated fuel. If, however, it has collapsed and most of its biomass is in touch with the ground, then it is considered to be near-surface fuel.
Branch	A tapered pipe, fitted to the end of a hose line, which increases the velocity (converting pressure energy to kinetic energy) of the water or foam solution travelling through the hose, and forms an effective firefighting jet or spray.
Branch	NPWS administrative Branch, comprising a number of Areas.
Branch Duty Officer (BDO)	The Branch officer rostered to take responsibility for initial incident response, until an Incident Controller is appointed.
Branch Incident Procedures (BIP)	Procedures prepared annually by NPWS Branch to coordinate incident response within those Branches.
Breakaway	The points at which a fire, after it has been contained, escapes into unburnt areas across a fire line or fire edge.
Breeching	A device to divide 1 hose line into 2 or collect 2 hose lines into 1.
Briefing	A general overview of an operation.
Broad area hazard reduction	Large-scale removal of selected fuel before the onset of a bushfire danger period.
Broadcast burning	See <i>Prescribed burning</i> (preferred term).
Buffer	A strip or block of land on which the fuels are reduced to provide protection to surrounding lands.
Buildings	The collective term for facilities and premises operated or owned by NPWS, including offices, workshops, residences, historic buildings, camping facilities and visitor centres.
Bulk water carrier	A large tanker used for replenishing water to firefighting tankers.
Burn back	The effect of flames spreading back over an area previously extinguished. See <i>Reburn</i>
Burn off	See <i>Burning off</i>
Burn off illegal (BOI)	Any prescribed burn undertaken <b>without</b> authorisation or permission from a firefighting authority during the permit period
Burn off legal (BOL)	Any prescribed burn undertaken <b>with</b> authorisation or permission from a firefighting authority or during the <b>non</b> permit period
Burn over	A section of fire that overruns personnel and/or equipment.
Burn plan	The plan which is approved for the conduct of prescribed burning. It contains a map identifying the area to be burnt and incorporates the specifications and conditions under which the operation is to be conducted. Also referred to as 'Prescribed burn plan'.
Burning brands	Lofted burning material such as bark, usually flaming.

## 9.0 Appendix 3

Term	Definition
Burning conditions	The state of the combined components of the fire environment that influence fire behaviour and fire impact in a given fuel type. Usually specified in terms of such factors as fire weather elements, fire danger indices, fuel load and slope.
Burning off	Generally setting fire – with more or less regard to areas carrying unwanted vegetation such as rough grass, slash and other fuels.
Burning out	To intentionally light fires to consume islands of unburned fuel inside the fire perimeter.
Burning program	A program of prescribed burns scheduled for a designated area over a nominated time, normally looking ahead over one fire season (for the coming spring to the following autumn) but can also look ahead 5 years or more.
Burning rotation	The period between re-burning of a prescribed area for management purposes.
Burning unit	A specified land area for which prescribed burning is planned.
Burnover	See <i>Burn over</i> .
Bush	A general term for forest or woodland, but normally used to describe indigenous forest.
Bushfire	A general term used to describe a fire in vegetation.
Bushfire alert	A promulgation by the Commissioner that there is a very high probability of a bushfire occurring in designated area(s) due to extremes of weather and prevailing drought indicators.
Bushfire control plan	See <i>IAP</i> .
Bush Fire Coordinating Committee (BFCC)	A committee established under part 3 of the <i>Rural Fires Act 1997</i> to coordinate the planning for bushfire prevention and coordinated bush firefighting.
Bush Fire Danger Period	The statutory Bush Fire Danger Period runs from October 1 <sup>st</sup> to March 31 <sup>st</sup> , however it may vary due to local conditions.
Bushfire hazard	The condition of fuel in an area and the associated difficulty of suppression should the fuel ignite.
Bushfire hazard reduction work	The establishment or maintenance of fire breaks on land. It includes the controlled application of appropriate fire regimes or other means for the reduction or modification of available fuels within a predetermined area to mitigate against the spread of a bushfire, but does not involve the construction of trails.
Bush Fire Management Committee (BFMC)	Constituted under the <i>Rural Fires Act 1997</i> for coordinated fire management and operations within a rural fire district.
Bushfire management plan	A Plan of Operations, FAFT Plan or a BFRMP prepared by a Bush Fire Management Committee.
Bushfire record	A record of the occurrence of a bushfire in a reserve.
Bush Fire Risk Management Plan (BFRMP)	A plan prepared by a Bush Fire Management Committee for the reduction of bushfire hazards within a rural fire district.

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Term	Definition
Bushfire threat	A sum of all factors that affect the ignition, spread and suppression of a bushfire and the damage to assets and natural and cultural heritage that may result.
Bushfire	A general term used to describe a fire in vegetation.
Bushfire danger period	A period of the year either established by legislation or declared by the relevant agency, when restrictions are placed on the use of fire due to dry vegetation and the existence of conditions conducive to the spread of fire.
Bushfire management	All those activities directed to prevention, detection, damage mitigation, and suppression of bushfires. Includes bushfire legislation, policy, administration, law enforcement, community education, training of firefighters, planning, communications systems, equipment, research, and the multitude of field operations undertaken by land managers and emergency services personnel relating to bushfire control. (WA BF) See <i>Fire management</i> (preferred term).
Bush Fire Prone Land	<p>Land designated by the Commissioner of the NSW Rural Fire Service as bushfire prone land, as described in section 10.3 of the <i>Environmental Planning and Assessment Act 1979</i>.</p> <p>Bush fire prone land map (BFPL) - A map prepared in accordance with the Guide for Bush Fire Prone Land Mapping and certified by the Commissioner of the NSW RFS under section 10.3(2) of the <i>Environmental Planning and Assessment Act 1979</i>.</p>
Bush–urban interface	The line, area or zone where structures and other human development adjoin or overlap with undeveloped bushland. Also known as the urban interface, urban–bush interface or urban–rural interface.
Byram-Keetch Drought Index (BKDI)	See <i>Keetch-Byram Drought Index</i>
<b>C</b>	
Cache	A predetermined complement of supplies stored in a designated location. (See <i>CIMS</i> )
Category 1 (Cat 1)	A heavy tanker which can hold 3500 litres (dual cab) or 4500 litres (single cab) of water
Category 7 (Cat 7)	A medium tanker which can hold 1100 litres (dual cab) or 1550 (single cab) of water. May be a tray exchange unit
Category 9 (Cat 9)	A small 4-wheel drive fire tanker with a water carrying capacity of 500L for firefighting purposes.
CAMMS	CAMMS is an online system for reporting hazards and WHS incidents, completing investigations and monitoring incidents.

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Term	Definition
Campaign fire	A fire normally of a size or complexity that requires substantial firefighting resources, and possibly several days or weeks to suppress.
Candle (candling)	A tree (or small clump of trees) is said to 'candle' when its foliage ignites and flares up, usually from the bottom to top.
Candle bark	Long streamers of bark that have peeled from some eucalypt species that form fire brands conducive to very long-distance spotting.
Canopy	The crowns of the tallest plants in a forest – the over-storey cover.
Canopy cover	Canopy cover refers to 2 dimensions (i.e., plan view, area coverage)
Canopy density	Canopy density refers to 3 dimensions (i.e., mass, volume)
Central ignition	A method of prescribed burning in which fires are set in the centre of an area to create a strong convective column. Additional fires are then set progressively closer to the outer control lines causing indraft winds to build up. This has the effect of drawing the fires towards the centre.
Chaining	The process of flattening vegetation (usually mallee or scrub) by dragging a heavy chain or cable between 2 large tractors or bulldozers.
Charged line	A line of fire hose filled with water under pressure and ready to use.
CIMS	Coordinated Incident Management System used in New Zealand.
Class 1, 2 or 3 fire	See <i>Fire classification</i> .
Class A foam	See <i>Foam Class A</i> .
Class labels	Class labels identify the type of hazardous material being stored or transported. These are grouped under broad classifications according to the predominant type of risk involved.
Climate	The atmospheric conditions of a place over an extended period of time.
Clinometer	An instrument used to measure the angle of a slope.
Cloud cover	The amount of sky covered or obscured by cloud, expressed in eighths. 8 eighths is complete cloud cover.
Coarse fuels	Dead woody material, greater than 25 mm in diameter, in contact with the soil surface (fallen trees and branches). Some researchers categorise forest fuels as: fine <6 mm diameter; twigs 6–25 mm diameter; coarse >25 mm diameter.
Code of Practice	Document giving methods developed to assist compliance with Acts and Regulations in the performance of work.

## 9.0 Appendix 3

Term	Definition
Cold front	A cold front is the delineation between cold polar air moving towards the equator and undercutting warm tropical air moving poleward. The temperature differences across a cold front can be extreme and associated with strong winds. The warm tropical air is forced to rise and become unstable with the development of large cumuliform clouds. Severe weather such as thunderstorms, squall lines and severe turbulence may accompany these cold fronts. (BOM)
Cold trailing	A method of determining whether or not a fire is still burning, involving careful inspection and feeling with the hand, or by use of a hand-held infrared scanner, to detect any heat source.
Collecting head	A collecting head is used to collect (usually from 2 to 4) lines into the suction inlet of a pump.
Combat agency/authority	See <i>Control authority</i> .
Combustible matter	Any matter or substance capable of ignition by the application of heat, fire, flame or sparks or that can spontaneously combust.
Combustion	Rapid oxidation of fuels producing heat, and often light.
Command	The direction of members and resources of an agency in the performance of the agency's role and tasks. Authority to command is established in legislation or by agreement within an agency. Command relates to agencies and operates vertically within an agency.
Communications centre	An office designated to disseminate information pertinent to fire management operations.
Communications plan	Details the methods and systems for people to communicate with each other, the incident management structure, including the actual radio channels/mobile phone numbers. (AIIMS)
Compartment	(1) Forestry definition – A basic administrative unit of a managed forest. (2) Building definition – An enclosed space with floor, walls and ceiling.
Competency	Skills and knowledge and their application within an occupation to the standard of performance required in the workplace. (Vic report)
Conduction	See <i>Heat transfer</i> .
Conservation Action Plan	Sets out key risks, prioritises actions to reduce risks and KPIs for each threatened species AIS.
Contained	The status of a bushfire suppression action signifying that a control line has been completed around the fire, and any associated spot fires, which can reasonably be expected to stop the fire's spread. (NWCG)
Contour lines	Contour lines connect points of equal elevation on a topographical map.

## 9.0 Appendix 3

Term	Definition
Control	The overall direction of response activities in an emergency situation. Authority for control is established in legislation or in an emergency response plan and carries with it the responsibility for tasking and coordinating other agencies in accordance with the needs of the situation. Control relates to situations and operates horizontally across agencies.
Control authority	The agency, service, organisation or authority with legislative responsibility for control of the incident. (Also referred to as the responsible authority or agency) (AFAC)
Control line	See <i>Fire line</i> .
Controlled	The stage during fire suppression activities at which the complete perimeter of a fire is secured and no breakaway is expected.
Controlled burning	See <i>Prescribed burning</i> .
Convection	<ol style="list-style-type: none"> <li>As applied in meteorology, atmospheric motions that are predominantly vertical, resulting in vertical transport and mixing of atmospheric properties; distinguished from advection.</li> <li>As applied in thermodynamics convection, along with conduction and radiation, is a principal means of energy transfer.</li> </ol>
Convection burn	See <i>Central ignition</i> .
Convection column	The rising column of smoke, ash, burning embers and other particle matter generated by a fire.
Convective activity	General term for manifestations of convection in the atmosphere, alluding particularly to the development of convective clouds and resulting weather phenomena, such as showers, thunderstorms, squalls, hail, and tornadoes. (NWCG)
Convergence zone	<ol style="list-style-type: none"> <li>The area of increased flame height and fire intensity produced when 2 or more fire fronts burn together.</li> <li>In fire weather, that area where 2 winds come together from opposite directions and are forced upwards often creating clouds and precipitation. (NWCG) See also <i>Junction zone</i>.</li> </ol>
Convoy	2 or more vehicles driving together under the control of a single Convoy Leader.
Coordinated firefighting plans	Plans for coordinated arrangements for fire prevention, detection and suppression, prepared by Bush Fire Management Committees. See <i>Bushfire management plan</i> .
Coordination	The bringing together of agencies and elements to ensure effective response to an incident or emergency. It is primarily concerned with the systematic acquisition and application of resources in accordance with the requirements imposed by the emergency or emergencies. Coordination relates primarily to resources and operates both vertically within an agency as a function of the authority to command, and horizontally across agencies as a function of the authority to control.

## 9.0 Appendix 3

Term	Definition
Cordon	A cordon is the means to maintain an area and is used to restrict movement into and out of an area.
Coupe	A defined forest area in which timber harvesting takes place.
Crew	The basic unit of a bushfire suppression force. It normally consists of 2 or more personnel.
Crew leader	Person responsible for the supervision and management of crews
Critical burnout time	Total time a fuel can burn and continue to feed energy to the base of a forward-travelling convection column.
Critical fire season	The period during the year that has a high incidence of weather patterns that cause sustained high-to-extreme fire behaviour. This is often indicated by the fire history as the period when large fire events have occurred in the past. The timing of this period will vary across the state.
Critical habitat	See <i>Area of outstanding biodiversity value</i>
Critical incident stress	Unusually strong emotional reactions which have the potential to interfere with the ability of personnel to function, either at the incident scene or later, arising from any situation faced during operations.
Critical incident stress debriefing	The process in which teams of professional and peer counsellors provide emotional and psychological support to incident personnel who are or have been involved in a critical (highly stressful) incident.
Critical incident	An event involving death, serious injury or a 'near miss' that threatens the safety of staff and others.
Cross bearings	Intersecting lines of sight from 2 or more points on the same object; used to determine the location of bushfire from lookouts.
Crown fire	A fire that advances from top to top of trees or shrubs.
Crown scorch	Browning of the needles or leaves in the crown of a tree or shrub caused by heat from a fire.
Crowning	A fire ascending into the crowns of trees and spreading from crown to crown.
Crowning potential	A probability that a crown fire may start, calculated from inputs of foliage moisture content and height of the lowest part of the tree crowns above the surface. (NWCG)
Cultural heritage	Aboriginal places and objects as defined by the National Parks and Wildlife Act 1974 or the Aboriginal community, and historic sites, structures and features.
Culturally informed burning	Burn program or burn proposal in which the Aboriginal community is involved in either the proposal, planning, preparation, conduct or post burn monitoring.
Curing	Drying and browning of herbaceous vegetation due to mortality or senescence.

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Term	Definition
Currency	Currency is assessed through periodic evaluations of skills and knowledge required for a unit of competence. This is particularly important for competencies that are critical to safety, particularly where relevant skills and knowledge are not frequently practiced.
<b>D</b>	
Dead fuel	Fuels with no living tissue in which moisture content is governed almost entirely by absorption or evaporation of atmospheric moisture (relative humidity and precipitation). (NWCG)
Debriefing	<p>A review of operations during or after an event that analyses what happened, outlines the consequences and makes recommendations. Debriefings can take the form of:</p> <p><i>Shift debrief</i> — conducted at regular intervals throughout a fire management operation, particularly at the end of each shift.</p> <p><i>Local debrief</i> — conducted after an event and with limited personnel. Generally, run to an agenda and records are made of actions/recommendations. Usually single agency.</p> <p><i>Operational debrief</i> — can be single/dual/multi-agency in which everything is written down and a formal report produced that has wide distribution and numerous recommendations. Has a chairperson and set formal agenda.</p>
Declared incident	A fire may be declared an incident for the purpose of industrial relations awards (see 4.2.2). Different conditions apply when an incident is a <i>declared incident</i> as opposed to an <i>incident</i> which has a broader definition (see <i>Incident</i> )
Deep-seated fire	A fire burning far below the surface – in duff, mulch, peat or other combustibles – as opposed to a surface fire.
Defensive strategy	<p>A firefighting strategy used where the protection of life and assets is a priority, but a fire is:</p> <p>(i) located in inaccessible or remote location OR</p> <p>(ii) too intense to be safely or effectively attacked directly.</p>
Dehydration	Excessive loss of water from the body's tissues. Dehydration may follow any condition in which there is a rapid depletion of body fluids.
Delayed aerial ignition device (DAID)	An incendiary device that will ignite after a pre-determined time.
Deliberate fire	A fire resulting from a person placing burning material to cause ignition. The intent of the person may have been to cause harm or destruction to life or property (arson, criminal offence) or to modify fuels or vegetation for land management purposes (summary offence). See also <i>Arson</i> .
Delivery hose	Hose used to transport water under pressure.
Delivery valve	On a pump, the valved outlet through which water is discharged.
Demobilisation	The orderly release of resources no longer required at an incident.



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Term	Definition
Depth of burn	The reduction in forest floor thickness (cm) due to consumption by fire; most commonly used in connection with prescribed burning.
Desiccant	A chemical that, when applied to a living plant, causes or accelerates the drying out of its aerial parts.
Desorption	The loss of moisture to the atmosphere from dead plant material.
Detection	The discovery of a fire. Individuals, fire towers, reconnaissance aircraft and automatic devices may be used, either alone or in combination.
Dew	The moisture which collects in small droplets on the surface of substances and vegetation by atmospheric condensation, chiefly at night.
Dew point temperature	This is a measure of the moisture content of the air and is the temperature to which air must be cooled in order for dew to form. The dew point is generally derived theoretically from dry and wet-bulb temperatures, with a correction for the site's elevation. (BOM)
Dieback	The progressive dying, from the top downward, of twigs, branches or tree crowns.
Diffused pattern	A spray pattern (as opposed to straight stream) of water or foam.
Direct attack	A method of fire attack where wet or dry firefighting techniques are used. It involves suppression action right on the fire edge which then becomes the fire line.
Dispatch	The act of ordering attack crews or support units to respond to a fire, or from one place to another.
Division	A portion of the incident comprising of 2 or more sectors. The number of sectors grouped in a Division should be such as to ensure effective direction and control of operations. Divisions are generally identified by a local geographic name.
Division Commanders	Personnel operating under the direction of an Operations Officer, each of whom is responsible for the implementation of the incident action plan relating to their Division.
Dominant height	The average of the height of the 3 largest diameter trees selected on a plot by a technique of variable probability sampling.
Downwind	Away from the wind, in the direction opposite to the direction from which the wind is blowing.
Dozer	A crawler tractor fitted with a blade which can be transported to a fire on a tray truck or trailer. Dozer is a shortened form of 'Bulldozer'.
Dozer line	Fire line constructed by the front blade of a dozer.
Drain time	The time (minutes) it takes for foam solution to drop out from the foam mass; for a specified % of the total solution contained in the foam to revert to liquid and drain out of the bubble structure.
Drift	The effect of wind on smoke or on a water drop.

## 9.0 Appendix 3

Term	Definition
Drip torch	A canister of flammable fuel fitted with a wand, a burner head and a fuel flow control device. It is used for lighting fires for prescribed burning, back-burning and burning out.
Drone	A remotely piloted aircraft, other than a rocket, balloon or kite, where the pilot flying the aircraft is not on board the aircraft. RPA is a category of aircraft defined and regulated by the CASA. The term 'drone' is the colloquial term for a RPA and has the same definition (see <a href="#">RPA Guidelines for NPWS staff</a> for more details).
Drop pass	Indicates that the air tanker has the target in sight and will make a retardant drop on this run over the target.
Drop pattern	The distribution of an aerially delivered retardant drop on the target area in terms of its length, width, and momentum (velocity x mass) as it approaches the ground. The latter determines the relative coverage level of the fire retardant on fuels within the pattern.
Drop zone (DZ)	Target area for airtankers, helitankers, or cargo dropping.
Drought	Prolonged absence or marked deficiency of precipitation (rain). (BOM)
Drought index	A numerical value reflecting the dryness of soils, deep forest litter, logs and living vegetation.
Dry-bulb temperature	Technically, the temperature registered by the dry-bulb thermometer of a psychrometer. However, it is identical to the temperature of the air. (Degrees Celsius).
Dry firefighting	The suppression of a fire without the use of water. This is normally achieved by removing the fuel by the use of hand tools, burning or machinery.
Duff	The layer of decomposing vegetative matter on the forest floor below the litter layer, the original structure still being recognisable.
Duty Officer	The officer rostered to coordinate incident response across NPWS.
<b>E</b>	
Ecological burning	A form of prescribed burning. Treatment of vegetation with fire in nominated areas to achieve specified ecological objectives.
Ecologically sustainable development (ESD)	Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.
Ecosystem	The interacting system of a biological community, both plant and animal, and its non-living surroundings.
Edge burning	Perimeter burning of an area in mild conditions prior to large-scale prescribed burning. This practice is used to strengthen buffers and to reduce mop-up operations.
Elapsed time	Time from ignition of fire
Elevated fuels	The standing and supported combustibles not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, bark and creepers.

## 9.0 Appendix 3

Term	Definition
Embers	Glowing particles cast from the fire (as 'showers' or 'storms'). (Vic report)
Emergency centre	A facility where the coordination of the response and support to the incident is provided.
En route resources	Resources despatched to an incident that have not yet checked in. (AIIMS)
Endangered	A species, population or ecological community that is in danger of becoming extinct.
Entrapment	A situation in which individuals are exposed to life threatening or potentially life-threatening conditions from which they cannot safely remove themselves.
Environment	All aspects of the surroundings of humans, whether affecting them as individuals or in their social groupings.
Equilibrium moisture content (EMC)	The moisture content that a fuel element would attain if exposed for an infinite period in an environment of specified constant dry-bulb temperature and relative humidity. When a fuel element has reached its EMC, it neither gains nor loses moisture as long as conditions remain constant.
Equipment	All material supplied to an incident excluding personnel and vehicles.
Escape route	A planned route away from danger areas at a fire.
Evacuation	The temporary relocation of persons from dangerous or potentially dangerous areas to safe areas.
Exposures	<p>Parts of the same structure, or other structures, or property not directly involved in the fire, but at risk of being burnt or damaged if the fire is not controlled. In the bushfire context:</p> <ol style="list-style-type: none"> <li>1. Property that may be endangered by a fire burning in another structure or by a bushfire. In general, property within 12 m of a fire may be considered to involve an exposure hazard, although in very large fires the danger may exist at much greater distances.</li> <li>2. Direction in which a slope faces, usually with respect to cardinal directions (N, S, E, W).</li> <li>3. The general surroundings of a site, with special reference to its openness to winds and sunshine.</li> </ol>
Extinct	A species no longer in existence or not located in the wild during the past 50 years.
Extinguishing agent	A substance used to put out a fire by cooling the burning material, blocking the supply of oxygen or chemically inhibiting combustion (or a combination of these).

## 9.0 Appendix 3

Term	Definition
Extreme fire behaviour	A level of bushfire behaviour characteristics that ordinarily precludes methods of direct suppression action. One or more of the following is usually involved: • high rates of spread • prolific crowning and/or spotting • presence of fire whirls • a strong convective column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.
<b>F</b>	
Facilities	Permanent and temporary facilities where personnel sleep, cook, maintain and repair equipment. (AIIMS)
Fallback fire control line	Any fire control line which is at a distance from the fire perimeter and is the second control line at which the fire perimeter may be stopped should it cross the first fire control line. Also known as 'fallback line'.
Feral Predator-free area	A feral predator-free area is a conservation strategy designed to protect native wildlife by creating zones that are free of invasive predators like feral cats and foxes. These areas are typically enclosed by specially designed fences that prevent the entry of such predators.
Final burnt area	The total area that has been burnt once the bushfire has been declared out.
Fine fuel	Fuel such as grass, leaves, bark and twigs less than 6 mm in diameter that ignites readily and is burnt rapidly when dry.
Fingers	Long and narrow slivers of fire which extend beyond the head or flanks. (AFAC)
Fire	The chemical reaction between fuel, oxygen and heat. Heat is necessary to start the reaction and once ignited, fire produces its own heat and becomes self-supporting.
Fire access track	A track constructed or maintained expressly for fire management purposes.
Fire action	<p>Reconnaissance – the assessment of the fire behaviour and assessment and checking of its perimeter; no firefighters are committed to either extinguish or contain the fire.</p> <p><i>Attack</i> – firefighters have been committed to extinguish or contain the fire. It may be parallel, direct or indirect.</p> <p><i>Defence</i> – firefighters have been deployed to protect life and property.</p> <p><i>Mop-up</i> – firefighters are extinguishing all possible sources for the re-ignition of the fire along established fire control lines.</p> <p><i>Patrol</i> – firefighters are checking that no re-ignition will occur along established fire control lines.</p>
Firefighting authorities	Organisations, including land management authorities, vested by the <i>Rural Fires Act 1997</i> with the responsibility to suppress fires.

## 9.0 Appendix 3

Term	Definition
Fire behaviour	The manner in which a fire reacts to the variables of fuel, weather and topography.
Fire behaviour analyst	Person responsible for developing fire behaviour predictions based on fire history, fuel, weather, and topography. (NWCG, amended)
Fire Behaviour Index (FBI)	A numerical scale that can be used consistently across Australia, allowing users to make decisions that require finer detail than the four Fire Danger Rating Categories allow. The FBI runs from 0 to 100 and beyond, with increasingly high values indicating increasingly dangerous fire behaviour and therefore fire danger risk.
Fire behaviour model	A set of mathematical equations that can be used to predict certain aspects of fire behaviour.
Fire behaviour prediction	Prediction of probable fire behaviour usually prepared by a fire behaviour analyst in support of fire suppression or prescribed burning operations. (NWCG)
Fire behaviour prediction system	A system that uses a set of mathematical equations to predict certain aspects of fire behaviour in fuels when provided with data on fuel and environmental conditions.
Fire blanket	A single-use blanket designed to protect firefighters from heat and flame
Fire bombing	A technique of suppressing a bushfire by dropping water, foam or retardants on it from an aircraft.
Fire brand	A piece of flaming or smouldering material capable of acting as an ignition source e.g., eucalypt bark.
Fire break	See <i>Asset Protection Zone</i>
Fire classification	<p>One of 3 categories which describe the resource commitment to a fire, and one factor (along with fire size, fire status and the degree of threat) which indicates the degree of potential seriousness of a fire:</p> <p><i>Class 1</i> — a bushfire under the control of the responsible firefighting authority, whether or not incident/ low-level assistance is provided by other agencies</p> <p><i>Class 2</i> — a fire that, by necessity, involves more than one agency and where the Bush Fire Management Committee executive has appointed a person to take charge of firefighting operations.</p> <p><i>Class 3</i> — a major bushfire or fires where an appointment has been made, or is imminent, under the provisions of Section 44 of the <i>Rural Fires Act 1997</i>.</p>
Fire climate	The composite pattern or integration over time of the fire weather elements that affect fire occurrence and fire behaviour in a given area.
Fire control	See <i>Fire suppression</i> .
Fire control advantage	Any natural or built feature that assists in fire suppression activities.

## 9.0 Appendix 3

Term	Definition
Fire control centre	A facility established to coordinate firefighting operations, which may be located in the offices or premises of a firefighting authority.
Fire control line	See <i>Fire line</i> .
Fire control officer	A fire control officer is, subject to any direction of the Commissioner, responsible for the control and coordination of the activities of the NSW RFS in the rural fire district for which he or she has been appointed (under section 37 of the <i>Rural Fires Act 1997</i> ). The powers of fire control officers on NPWS managed land are described by section 38(4) of the <i>Rural Fires Act 1997</i> .
Fire crew	A general term for 2 or more firefighters organised to work as a unit. (NWCG)
Fire danger	Sum of constant danger and variable danger factors affecting the inception, spread, and resistance to control, and subsequent fire damage; often expressed as an index. (NWCG)
Fire danger class	A segment of a fire danger index scale identified by a descriptive term (e.g., low-moderate, high, very high, severe, extreme, catastrophic) and/or a colour code. The classification system may be based on more than one fire danger index and an assessment of risk exposure.
Fire danger index (FDI)	A relative number denoting an evaluation of rate of spread, or suppression difficulty for specific combinations of temperature, relative humidity, drought effects and wind speed. The numbers range from 1 to 100.
Fire Danger Rating	Fire Danger Ratings provide an indication of the potential consequences of a fire if one were to start. These ratings are crucial because they help people decide what actions to take to protect themselves and others from bushfires and grassfires. The classes in Australia range from moderate, high, extreme or catastrophic.
Fire district	An area of land recognised as a management unit under the <a href="#">Fire and Rescue NSW Act 1989</a> .
Fire ecology	The study of the relationships between fire, the physical environment and living organisms.
Fire edge	Any part of the boundary of a going fire at a given time. NOTE: The entire boundary is termed the 'fire perimeter'.
Fire effects	The physical, biological and ecological impact of fire on the environment. (NWCG)
Fire environment	The surrounding conditions, influences, and modifying forces of topography, fuel and weather that determine fire behaviour. (NWCG)
Fire exclusion zone (FEZ)	An area zoned to exclude bushfires. Fire exclusion zones are not recommended for use by NPWS.
Fire extent	The area burnt by a bushfire, measured in hectares. Within that area, there will be 'islands' of unburnt vegetation. These islands are generally included in the total fire extent.

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Term	Definition
Firefighting apparatus	All vehicles, equipment and other things used for, or in connection with, the prevention or suppression of fire or the protection of life or property in the case of fire.
Fire frequency	A general term referring to the recurrence of fire in a given area over time (NWCG). See also <i>Fire regime</i> .
Fire front	The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified, the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smouldering combustion. (NWCG)
Fire hazard	A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.
Fire hazardous area	An area where the combination of vegetation, topography, weather and the threat of fire to life and property create difficult and dangerous problems.
Fire history	A map of fire occurrence for an area, or the records of fire occurrence for a site.
Fire intensity	See <i>Fire line intensity</i> .
Fire line	A natural or constructed barrier, or treated fire edge, used in fire suppression and prescribed burning to limit the spread of fire. (Also referred to as fire control line.)
Fire line intensity	The intensity of the fire on the fireline (usually the flank or heel)
Fire lookout	A structure strategically located and manned to detect the occurrence and the location of fires. It may be a tower or a structure on a high point.
Fire management	All activities associated with the management of fire prone land, including the use of fire to meet land management goals and objectives.
Fire management operations	Activities associated with the suppression of fires and/or prescribed burning.
Fire management units	Management areas of a variable size that define containment blocks in the event of a bushfire. Alternatively, they have also been designated as areas of specific ecosystem types defined by management authorities in order to monitor the long-term effects of fire upon those areas.
Fire management zones (FMZ)	Management areas where a specified fire management operational objective, strategy and performance indicator has been developed to mitigate against the threat of a bushfire. Note: a fire management unit is usually a monitoring and containment block while a FMZ is a sub-unit of a fire management unit where fire managers undertake activities, such as prescribed burning, in order to achieve a set outcome (e.g., provide protection or slow the advance of a bushfire).
Fire perimeter	The entire outer boundary of a fire area.

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Term	Definition
Fire permit	A permit issued under section 89 of the <i>Rural Fires Act 1997</i> to conduct hazard reduction burning.
Fire prevention	All activities associated with minimising the incidence of bushfire, particularly those of human origin.
Fire progress map	A map providing information on a fire, detailing the location of its perimeter, deployment of suppression forces and the progress of suppression activities.
Fire regime	The history of fire in a particular vegetation type or area including the frequency, intensity and season of burning. It may also include proposals for the use of fire in a given area. (AFAC)
Fire report	An official record of a fire, generally including information on cause, location, action taken, damage, costs, etc., from start of the fire until completion of suppression action. These reports vary in form and detail from agency to agency (NWCG). See also <i>Report of fire</i>
Fire retardant	A chemical, generally mixed with water, designed to retard combustion. It is applied as slurry from the ground or the air.
Fire risk	Processes, occurrences or actions that increase the likelihood of fires occurring.
Fire run	A rapid advance of a fire front. It is characterised by a marked transition in intensity and rate of spread.
Fire scar	1) A healing or healed-over injury caused or aggravated by fire on a woody plant. 2) A mark left on a landscape by fire.
Fire season	The period during which bushfires are likely to occur, spread and do sufficient damage to warrant organised fire control.
Fire simulator	See <i>Fire training simulator</i> .
Fire spread	Development and travel of fire across surfaces.
Fire status	Can be described by one of a number of terms, depending on the degree to which a fire is under control.  <i>Going</i> – indicates any fire that is spreading on one or more flanks and effective control strategies are not in place for the entire perimeter.  <i>Being contained</i> – effective strategies are in operation or planned for the entire perimeter.  <i>Contained</i> – indicates a fire’s spread has been halted, but it may still be burning freely within the perimeter or fire control lines; the whole of the fire perimeter is behind identifiable control lines and mop-up and/or patrol are proceeding.  <i>Patrol</i> – the fire is at a stage where firefighting resources are only required for patrol purposes.  <i>Out</i> – the fire is at a stage where no further work is required, which allows its removal from the list of current fires.



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Term	Definition
Fire storm	Violent convection caused by a large continuous area of intense bushfire often characterised by destructively violent surface indrafts, a towering convection column, long distance spotting, and sometimes by tornado-like whirlwinds. (AFAC)
Fire suppressant	An additive designed to reduce the surface tension of water and/or to hold water in suspension thus increasing water's efficiency as a fire extinguishing agent. Suppressants are applied directly to the burning fuels. See also <i>Fire retardant</i> . (NZ)
Fire suppression	Actions to control a fire, from the time of detection to extinguishment.
Fire suppression organisation	<ol style="list-style-type: none"> <li>1. The personnel and equipment collectively assigned to the suppression of a specific fire or group of fires.</li> <li>2. The personnel responsible for fire suppression within a specified area.</li> <li>3. The management structure, usually shown in the form of an organisation chart of the persons and groups having specific responsibilities in fire suppression. (NWCG)</li> </ol>
Fire suppression plan	See <i>Incident action plan</i> .
Fire tetrahedron	An instructional aid in which the sides of the tetrahedron (comprising 4 triangular-shaped figures) are used to represent the 4 components of combustion and the flame production process: fuel, heat, oxygen and the chemical chain reaction.
Fire threat	The impact a fire will have on a community.
Fire tower	Tower strategically located and manned to detect and report the occurrence and location of fires. A type of fire lookout.
Fire trap	Any location or situation in which it is highly dangerous to implement fire suppression activities.
Fire triangle	Diagrammatic expression of the 3 elements that are necessary for a fire to occur: fuel, heat, oxygen. The removal of any one of these will extinguish a fire.
Fire unit	Any single vehicle within a suite of appliance types, being a Cat 9, Cat 7, Cat 1 or any other designated category of fire vehicle.
Fire weather	Weather conditions which influence fire ignition, behaviour, and suppression. (NWCG)
Fire weather forecast	A weather prediction specially prepared for use in bushland fire operations and prescribed fire. (NWCG)
Fire whirl	Spinning vortex column of ascending hot air and gases rising from a fire and carrying aloft smoke, debris, and flame. Fire whirls range in size from less than 1 foot to over 500 feet in diameter. Large fire whirls have the intensity of a small tornado. (NWCG)
Fire wind	The inflow of air at the fire source caused by the action of convection. It is not to be confused with a prevailing wind.

## 9.0 Appendix 3

Term	Definition
Firefighter	Any employee, volunteer or agent of any firefighting agency who occupies, or is designated, to undertake a role for the purpose of fire suppression.
Firefighting operations	Any work or activity directly associated with control of fire.
Fireground	The area in the vicinity of fire management operations, and the area immediately threatened by the fire. It includes burning and burnt areas; constructed and proposed fire lines; the area where firefighters, vehicles, machinery and equipment are located when deployed; roads and access points under traffic management control; tracks and facilities in the area surrounding the actual fire; and may extend to adjoining areas directly threatened by the fire.
Fire line	A natural or constructed barrier, or treated fire edge, used in fire suppression and prescribed burning to limit the spread of fire.
Fire line intensity	The rate of energy release per unit length of fire front, usually expressed in kilowatts per metre (Kw/m). The rate of energy release per unit length of fire front is defined by the equation $I = Hwr$ , where $I$ = fire line intensity (kW/m), $H$ = heat yield of fuel (kJ/kg)- 16,000 kJ/kg, $w$ = dry weight of fuel consumed ( $\text{kg}/\text{m}^2$ ) (mean total less mean unburnt), $r$ = forward rate of spread (m/s). The equation can be simplified to $I = w r/2$ , where $I$ = fire line intensity (kW/m), $w$ = dry weight of fuel consumed (tonnes/ha), $r$ = forward rate of spread (m/hr).
Fire line sector	A defined section of the fire line being constructed or used to contain or suppress a bushfire or being constructed as a backup to other lines being used to suppress a bushfire.
Fire suppression	Activities and actions taken to suppress a fire
Fire suppression organisation	The management structure, usually in the form of an organisation chart, of the personnel collectively assigned to the suppression of a fire.
Fire suppression plan	See <i>IAP</i> .
First attack	See <i>Initial attack</i> .
Fixed-wing aircraft	A heavier than air aircraft which obtains lift for flight by forward motion of wings through the air.
Flame angle	The angle of the flame in relation to the ground, caused by wind direction or the effect of a slope.
Flame depth	The depth of the zone within which continuous flaming occurs behind the fire edge.
Flame height	The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope. (NWCG)
Flame length	The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface), an indicator of fire intensity. (NWCG)

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Term	Definition
Flame Weeder	Portable propane, kerosene or other hydrocarbon burners designed to use flames to control weeds as an alternative to herbicide or mechanical control. Can be vehicle mounted or hand held. Also called Flame Gun, Flame Wand, Weed Burner or Gas Weeding Wand.
Flammability	The ease with which a substance is set on fire.
Flammable	Capable of being ignited and of burning with a flame.
Flank attack	Obtaining control of a fire by attacking its side/s (flank).
Flanks of a fire	Those parts of a fire's perimeter that are roughly parallel to the main direction of spread. (NWCG)
Flare-up	Any sudden acceleration of fire spread, or intensification of fire, or a part of the fire. A flare-up is of relatively short duration and does not radically change existing control plans. (NWCG)
Flash fire	A fast-moving fire consuming most of the fine fuels available.
Foam	Foam is a mass of bubbles formed by mixing air with water and a foam concentrate in specific proportions. It is used as a firefighting agent to form a smothering, cooling or ignition-preventing layer of the surface over a fuel.
Foam blanket	A layer of foam which forms an insulating and reflective barrier to heat and is used for fuel protection, suppression and mop-up. (NWCG)
Foam Class A	A mixture of foam concentrate and water specifically formulated for extinguishing bushfires. The foam is biodegradable, non-toxic and is used at very low concentrates. It may be delivered aspirated or non-aspirated. See also <i>Foam solution</i> .
Foam Class B	A foam formulated for application on Class B fires
Foam concentrate	The concentrated foaming agent as received from the manufacturer which, when added to water, creates a foam solution; use only those approved for use in bushland fire situations by the authority having jurisdiction. (NWCG)
Foam inductor	Equipment consisting of an inlet connection, ejector pump and a discharge assembly, for the induction of foam concentrate.
Foam solution	The mixture of water and foam concentrate.
Forest	An area of land thickly covered with an ecosystem of trees and bushes.
Forest fire	A fire burning mainly in forest or woodland.
Forest type	A description of the predominant tree species in a forest.
Forward control point	A selected location at or near a fire which provides coordination, control and communication for the sectors at the fireground.

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Term	Definition
Forward looking infrared (FLIR)	Hand-held or aircraft-mounted device designed to detect heat differentials and display them. FLIRs have thermal resolution similar to IR line scanners, but their spatial resolution is substantially less; commonly used to detect hot spots and flare-ups obscured by smoke, evaluate the effectiveness of firing operations, or detect areas needing mop-up. (NWCG)
Forward rate of spread	The speed with which a fire moves in a horizontal direction across the landscape. (NWCG)
Front-end loader	Earthmoving equipment designed to move loose earth or loads into vehicles. A multi-purpose bucket is fitted to articulated arms at the front of the vehicle. May be either wheeled or tracked.
Frontal fire intensity	See <i>Fire line intensity</i> .
Fuel	Any material such as grass, leaf litter and live vegetation which can be ignited and sustain a fire. Fuel is usually measured in tonnes per hectare. Related terms: available fuel, coarse fuel, dead fuel, elevated dead fuel, fine fuel, total fine fuel, ladder fuels, surface fuel.
Fuel age	The period of time elapsed since the fuel was last burnt.
Fuel arrangement	A general term referring to the spatial distribution and orientation of fuel particles or pieces. (NWCG)
Fuel array	The totality of fuels displayed in a location: fine and coarse, live and dead. (Vic report)
Fuel assessment	The estimation or calculation of total and available fuel present in a given area.
Fuel bed	The arrangement and vertical profile of all readily combustible materials lying on the ground.
Fuel bed depth	Average height of surface fuels contained in the combustion zone of a spreading fire front. (NWCG)
Fuel break	A natural or manmade change in fuel characteristics which affects fire behaviour so that fires burning into it can be more readily controlled.
Fuel break	See <i>Asset Protection Zone</i> , <i>Strategic Fire Advantage Zone</i> and <i>Linear Fire Break</i>
Fuel break system	A series of modified strips or blocks tied together to form continuous, strategically located fuel breaks around land units.
Fuel continuity	The degree or extent of continuous or uninterrupted distribution of fuel particles in a fuel bed thus affecting a fire's ability to sustain combustion and spread. This applies to aerial fuels as well as surface fuels.
Fuel depth	The average distance from the bottom of the litter layer to the top of the layer of fuel, usually the surface fuel.
Fuel load	The oven-dry weight of fuel per unit area. Commonly expressed as tonnes per hectare. (AFAC). (Also known as fuel loading.)

## 9.0 Appendix 3

Term	Definition
Fuel management	Modification of fuels by prescribed burning or other means. (AFAC)
Fuel map	A map showing areas of varying fuel quantities and types and usually indicating past fire history.
Fuel model	Simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified. (NWCG)
Fuel modification	Manipulation or removal of fuels to reduce the likelihood of ignition or lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling or burning). (NWCG)
Fuel moisture content	The water content of a fuel expressed as a % of the oven-dry weight of the fuel particle. (% ODW)
Fuel moisture differential	Describes the situation where the difference in the moisture content between fuels on adjacent areas results in noticeably different fire behaviour on each area.
Fuel plan	A plan showing areas of varying fuel quantities and types and usually indicating past fire history.
Fuel profile	The vertical cross-section of a fuel bed down to mineral earth.
Fuel quantity	See <i>Fuel load</i> .
Fuel reduction	Manipulation, including combustion or removal of fuels, to reduce the likelihood of ignition or lessen potential damage and resistance to control.
Fuel reduction burning	The planned application of fire to reduce hazardous fuel quantities; undertaken in prescribed environmental conditions within defined boundaries.
Fuel separation	The action of separating fuel for the purpose of providing a mineral earth firebreak. Also means the actual gap between fuel layers or particles e.g., gap between individual hummock grasses or gap between surface and canopy fuels.
Fuel type	An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause predictable rate of spread or difficulty of control under specified weather conditions. (AFAC)
Fuel weight	See <i>Fuel load</i> .
<b>G</b>	
General origin area	The larger area where the fire started that is readily identifiable based on macro-scale indicators and witness statements. (NWCG)
Geographical information system (GIS)	A computerised system of hardware and software used for storage, retrieval, mapping and analysis of geographic data.
Going fire	Any bushfire on which suppression action has not reached an extensive mop-up stage. (NWCG)
Grass fire	Any fire in which the predominant fuel is grass or is grass-like. (NWCG)

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Term	Definition
Grassland curing	The proportion of dead material in grasslands – usually increases over summer as tillers die off and dry out, increasing the risk of grassland fire.
Grid ignition	A method of lighting prescribed fires where ignition points are set individually at a predetermined spacing through an area.
Ground crew	See <i>Hand crew</i> .
Ground fire	Fire that consumes the organic material beneath the surface litter ground, such as a peat fire. (NWCG)
Ground fuels	All combustible materials below the surface litter, including duff, roots, peat and sawdust dumps that normally support a glowing combustion without flame. Synonym: subsurface fuels. Note: aerial, surface and ladder fuels.
Guardian	A state-wide online reporting system used by the NSW RFS to track hazard reduction proposals and activities, permits, complaints, certificates and other related information.
<b>H</b>	
Habitat	The place in which an animal or plant lives.
Hand crew	A fire suppression crew trained and equipped to fight fire with hand tools.
Hand line	A fire line constructed with hand tools. (NWCG) (Bushfire context)
Hand trail	See <i>Hand line</i> .
Hang up	A situation in which a tree is lodged in another and prevents it from falling to the ground.
Hardwood	A conventional term used to describe a tree, or the timber of a tree, belonging to the botanical group of flowering plants that include red gum, ironbark and jarrah.
Hazard	A source of potential harm or a situation with potential to cause loss.
Hazard reduction (HR)	See <i>Fuel management</i> .
HR actual area	The total area that has been burnt in a hazard reduction burn.
HR proposal area	The area that is proposed to be treated by a hazard reduction activity.
HR treated area	The total area that has been treated to achieve the hazard reduction activity objectives.
Hazchem incident	The release or potential release of substances classified as dangerous in the <a href="#">Australian Code for the Transport of Dangerous Goods by Road and Rail</a> .
Head	See <i>Head fire</i> .
Head attack	Directly knocking down the head of a fire. Recommended only for low intensity fires where firefighters can be sure that the fire will not flare-up unexpectedly.

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Term	Definition
Head fire	The part of a fire where the rate of spread, flame height and intensity are greatest, usually when burning downwind or upslope.
Heat exhaustion	A form of shock, due to depletion of body fluids resulting from overexposure to a hot environment.
Heat stress	Illness caused by the body overheating.
Heat stroke	A life-threatening condition that develops when the body's temperature-regulating and cooling mechanisms are overwhelmed, and body systems begin to fail.
Heavy fuels	See <i>Coarse fuels</i> .
Heavy tanker	See <i>Tanker</i> .
Heel	See <i>Rear</i> .
Heel fire	See <i>Backing fire</i> .
Heli torch	See <i>Aerial drip torch</i> .
Helibase (HB)	A location for parking, refuelling and maintenance of helicopters operating in support of an incident.
Helicopter	A form of heavier-than-air, rotor-wing aircraft whose lift is produced by engine-driven rotors which behave as if they were both propellers and wings.
Helipad (HP)	A designated location which meets specific requirements for a helicopter to take off and land.
Helitack crew	An initial attack crew specially trained in the tactical and logistical use of helicopters for fire suppression.
High intensity fire	Fires with an average intensity greater than 3,000 kW.m <sup>-1</sup> and flame heights greater than 3 m, causing complete crown scorch or possibly crown fires in forests. Uncontrollable by direct attack. The term is also applied to stationary fires burning in very high fuel loads (such as logging slash).
Hold-over fire	See <i>Sleeper</i>
Hop over	See <i>Breakaway</i>
Hose bandage	A temporary repair to a canvas or synthetic hose.
Hose strangler	A crimping device for stopping the flow of water in a hose.
Hot refueller	A trained person responsible for the operation of the equipment for the 'hot' refuelling of helicopters.
Hot spot	A particularly active part of a fire.
Humus	Layer of decomposed organic matter on the forest floor beneath the fermentation layer and directly above the soil. It is that part of the duff in which decomposition has rendered vegetation unrecognisable and mixing of soil and organic matter is underway. See also <i>Duff</i> and <i>Litter</i>
Hygrometer	An instrument which measures the humidity in the air.

## 9.0 Appendix 3

Term	Definition
I	
I zone	See <i>Urban–rural interface</i>
Ignition	The beginning of flame production or smouldering combustion; the starting of a fire.
Ignition pattern	The manner in which a prescribed burn, backfire or burnout is set, determined by weather, fuel, ignition system, topographic and other factors having an influence on fire behaviour and the objective of the burn.
Ignition source	A source of energy sufficient to initiate combustion.
Incendiarism	See <i>Arson</i>
Incendiary	A burning compound or metal used to produce intense heat or flame, like a bomb.
Incendiary device	Device designed and used to start a fire.
Incident	Any unplanned event requiring emergency intervention. (AIIMS).
Incident Action Plan (IAP)	The plan used to describe the incident objectives, strategies, resources and other information relevant to the control of an incident. (AIIMS)
Incident analysis	Analysis carried out during an incident usually as a result of an accident, a breach of the IAP or a procedural failure. Conducted by an individual or a small team to collect evidence, data and information, analyse what occurred, determine causal factors and make recommendations.
Incident control	See <i>Incident management</i>
Incident control centre	The location where the Incident Controller and, where established, members of the IMT, provide overall direction of response activities in an emergency situation.
Incident control system (ICS)	A command structure to systematically and logically manage suppression of emergency incidents including bushfires, from small, simple incidents to large, difficult or multiple situations. It is designed to develop in modular fashion from the top (Incident Controller) downwards. Refer NIMS, AIIMS, CIMS
Incident Controller	The individual responsible for the management of all incident control activities across a whole incident. (AIIMS)
Incident database	A computer program used to store data on bushfire occurrence, fuel management programs and miscellaneous incidents.
Incident management	The process of controlling the incident and coordinating resources. (EMA)
Incident Management Team (IMT)	The group of incident management personnel comprising the Incident Controller, and the personnel he/she appoints to be responsible for the functions of Operations, Planning and Logistics (AIIMS).



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Term	Definition
Ignition Management Zones	An area in the landscape that is maintained at a reduced fuel level in order to minimise the propagation of ignitions and limit the rapid escalation of fires and has an Overall Fuel Hazard (OFH) of less than high.
Incident objective	An incident objective is a goal statement indicating the desired outcome of the incident. Incident objectives guide the development of the Incident Action Plan and must reflect the policies and needs of the control authority and supporting agencies. All factors affecting the incident and its potential impact must be considered before determining the objective. (AIIMS)
Incident strategies	The incident strategies will be developed from the incident objectives and will describe how the Incident Management Team plans to resolve the incident. There is a requirement for strategies to be developed throughout the incident and they should be reviewed for each operational period. (AIIMS)
Indirect attack	A method of suppression in which the control line is located some considerable distance away from the fire's active edge. Generally done in the case of a fast-spreading or high intensity fire and to utilise natural or constructed fire breaks or fuel breaks and favourable breaks in the topography. The intervening fuel is usually backfired; but occasionally the main fire is allowed to burn to the line, depending on conditions. (NWCG)
Induced wind	See <i>Fire wind</i>
Information Officer	Person responsible for media and public liaison during fire operations.
Infrared scanning	Use of an optical-electronic system for identifying or obtaining imagery of thermal infrared radiation to detect non-smoking fires or fire perimeters through smoke.
Initial attack	The first suppression work on a fire.
Instability	The tendency for air parcels to accelerate when they are displaced from their original position; especially, the tendency to accelerate upward after being lifted. Instability is a prerequisite for severe weather – the greater the instability, the greater the potential for severe thunderstorms. (Weather Zone)
Interface	See <i>Urban–rural interface</i>
Interface firefighting	Is the control and suppression of fire at the urban-rural interface, while managing public safety and protecting the built environment and other assets.
Inversion	A layer of the atmosphere in which temperature increases with increasing elevation. A condition of strong atmospheric stability.
Island	An unburnt area within a fire perimeter.
Isobar	Lines on weather maps joining places which have the same air pressure. (BOM)

## 9.0 Appendix 3

Term	Definition
<b>J</b>	
Jump fire	See <i>Spot fire</i>
Junction zone	An area of greatly increased fire intensity caused by 2 fire fronts (or flanks) burning towards one another.
<b>K</b>	
Keetch-Byram Drought Index (KBDI)	A numerical value reflecting the dryness of soils, deep forest litter, logs and living vegetation, and expressed as a scale from 0–200 where the number represents the amounts of rainfall (mm) to return the soil to saturation.
Key species	(1) Species that are the potential dominants of a community and whose removal will significantly change the structure of the community. (2) Species that can be used to indicate the behaviour of a larger group of similar species. (3) Threatened species, populations and ecological communities identified under the NSW Biodiversity Conservation Act 2016, their habitat, and other species of conservation concern.
Knock down	To reduce the flame or heat on the more vigorously burning parts of a fire edge. (NWCG)
<b>L</b>	
Ladder fuels	Fuels that provide vertical continuity between strata. Fire is able to carry surface fuels into the crowns of trees with relative ease.
Lag time	The time delay in fuel moisture content responding to changing environmental conditions (for example, relative humidity). Technically, it is the time necessary for a fuel particle to lose approximately 63% of the difference between its initial moisture content and its equilibrium moisture content.
Land Management Zone (LMZ)	An area of land zoned to meet relevant land management objectives.
Large Air Tanker / Very Large Air Tanker (LAT/VLAT)	A fixed wing aircraft used in aerial firefighting with a firebombing capacity between 10,000 and 45,000L per load. Generally, LAT aircraft types are a Boeing 737, RJ85 or a Hercules C130, and a VLAT is a DC10.
Lead agency	The organisation with the legislative or agreed authority for control of an incident.
Lee (leeward)	Away from the wind, on the sheltered side of something that the wind is blowing on.
Legislation	A set of rules made by a State, Territory or Federal Government; includes Acts and Regulations.
Liaison officer	Senior officer of an agency who represents the interests of that agency.
Light fuel	An assessment of fuel quantity indicating a low weight.
Light patrol unit	See <i>Tanker</i>
Light tanker	See <i>Tanker</i>
Lighting formation:	See <i>Ignition pattern</i>

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Term	Definition
Lighting pattern	See <i>Ignition pattern</i>
Lightning	The flash of light accompanying a sudden electrical discharge which takes place from or inside a cloud, or less often from high structures or the ground or from mountains. A large electrical spark. Caused when the negative charge in the lower part of the cloud and the positive charge in the upper part of the cloud become so great that they can overcome the natural resistance of the air and a discharge between negative and positive takes place. (BOM)
Lightning fire	A fire caused by lightning.
Lightning formation	See <i>Lightning</i>
Linear Fire Break	Linear fire breaks are designed and managed to provide fuel reduced areas from which fire can be suppressed. They are a strategic fuel reduced feature in the landscape and are mapped / described within BFRMP.
Litter	The top layer of the forest floor composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves and needles, little altered in structure by decomposition. (The litter layer of the forest floor). (NWCG)
Litter bed fuel	Dead fine fuel, including surface fuel and fuel lower in the fuel profile.
Litter fall	The addition of litter that falls from vegetation to the forest floor.
Living fuels	Fuels made up of living vegetation.
Living shrub fuel	Living understorey fine fuel less than 2 m above ground level.
Local winds	Winds which are generated over a comparatively small area by local terrain and weather. They differ from those which would be appropriate to the general pressure pattern. (NWCG)
Log	Documentation of information and actions arising during an incident.
Logistics	The provision of facilities, services and materials in support of an incident.
Logistics officer	The person responsible for providing the facilities, services and materials required in support of an incident.
Lookout	<ol style="list-style-type: none"> <li>1. A person designated to detect and report fires from a fixed vantage point.</li> <li>2. A member of a fire crew designated to observe the fire and warn the crew when there is danger.</li> <li>3. For structure see <i>Fire lookout</i>.</li> </ol>
Lookout tower	See <i>Fire tower</i>
Low intensity fire	A fire which travels slowly and only burns lower storey vegetation, like grass and lower tree branches, with an average intensity of less than 500 kW.m <sup>-1</sup> and flame height less than 1.5 m. Usually causes little or no crown scorch and is easily controlled.

## 9.0 Appendix 3

Term	Definition
<b>M</b>	
Managed lands	Areas under the care and management of a statutory authority as defined under the <i>Rural Fires Act 1997</i> . This includes NPWS managed land.
Medium fuels	See <i>Coarse fuels</i>
Mineral earth	When used in the context of fire control refers to a non-flammable surface (either natural or prepared) which provides a break in understorey, litter and humus fuels and hence a barrier (of varied effectiveness depending, amongst other things, on its width and the intensity of the approaching fire) to fire travelling on or near the ground surface.
Mobilisation	The processes and procedures for organisations to activate, assemble and transport the requested resources to an incident.
Moderate task-based assessment	An annual fitness test or task-based assessment that can be attempted once medically cleared. It consists of a 3.22 km walk with a 11.3 kg pack in 30 minutes on flat ground.
Modified Arduous pack test	An annual fitness test or task-based assessment that can be attempted once medically cleared. Persons weighing 68 kg or less and/or 1.60m or shorter in height receive a 5kg reduction of the Arduous Pack Test weight of 20.4kg. The Modified Arduous pack test consists of a 4.83 km walk with a 15.4 kg pack in 45 minutes on flat ground.
Moisture content	See <i>Fuel moisture content</i>
Mop-up	The practice of making a fire safe after it has been suppressed, by extinguishing or removing burning material along or near the fire line, felling stags, trenching logs to prevent rolling, and the like.
Mosaic	Used in reference to the spatial arrangement of burnt and unburnt fuels at either a local or a landscape scale.
Move-up method	Progressive method of fire line construction on a bushfire without changing relative positions in the line. Work is begun with a suitable space between workers; whenever one worker overtakes another, all of those ahead move one space forward and resume work on the uncompleted part of the line. The last worker does not move ahead until work is completed in his/her space. Forward progress of the crew is coordinated by a crew boss.
Multi-agency response	An incident of high fire incidence over short periods of time in any administrative unit, usually overtaxing the normal initial attack capability of the unit.
Multi-line ignition:	The practice of lighting 2 or more parallel lines of fire as part of a prescribed burning or firefighting operation. Where this practice involves ground crews, it will often involve the crews leaving the control line and traversing areas of unburnt fuels.

## 9.0 Appendix 3

Term	Definition
<b>N</b>	
National Parks and Wildlife Service (NPWS)	The National Parks and Wildlife Service is part of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW). NPWS manages national parks and reserves in NSW. NPWS is part of the Environment and Heritage Group.
Natural area fire	Fires burning in natural areas and classified into different categories according to the potential area of the fire, threats to life, property and biodiversity.
Natural barrier	Any area where lack of flammable material obstructs the spread of vegetation fires.
Natural resources	All elements of the natural environment.
Near miss	An incident that, had it occurred, either earlier or later, would have had real potential to cause injury or death.
Near-surface fuels	Fuels with a vertical component to their structure and generally less than about 30 cm above the ground, but may be as high as 60 cm.
Needle bed	A fuel bed consisting mainly of pine needles.
Neighbour	Landholder with properties adjoining or adjacent to NPWS managed land.
Notifiable fire	A fire that must be reported according to the requirements of section 64 of the <i>Rural Fires Act 1997</i> .
Nozzle	A fitting that is used with a branch to control the size, pattern or velocity of water or extinguishing medium being discharged.
NPWS managed land	Areas administered by NPWS under the National Parks and Wildlife Act 1974. These include national park reserves, nature reserves, historic sites, state conservation areas, karst conservation reserves, regional parks, Aboriginal areas and vested lands. These areas constitute managed lands under the <i>Rural Fires Act 1997</i> , accordingly, fire management activities on such lands are NPWS responsibility.
<b>O</b>	
Objective	A goal statement of what is to be achieved.
Objective strategy	See <i>Strategy</i>
Occupier of lands	The person who has the management or beneficial use of the land (whether a resident on the land or not) or, if the land is a public reserve or park, the trustees or any person having the care, control and management of the land.
One-lick method	A progressive system of building a fire line on a bushfire without changing relative positions in the line. Each worker does one to several 'licks', or strokes, with a given tool and then moves forward a specified distance to make room for the worker behind. (NWCG)
On-Park / Off-Park	Referring to activities undertaken either within or outside NPWS managed land.

# 9.0 Appendix 3

Term	Definition
Operations	The direction, supervision and implementation of tactics in accordance with the Incident Action Plan.
Operations Officer	The person responsible for directing and supervising all work on the fireground under the direction of the Incident Controller.
Operations point	The location from which the overall field operations are commanded by the Operations Officer. (AIIMS)
Operations room	A room or area within an office or other firefighting authority's premises that is used to coordinate fire operations and other emergencies.
Out	See <i>Fire status</i>
Out-of-branch support	Staff assisting in fire operations outside their own branch.
Oven-dry weight	The weight of wood or other cellular material that has been dried in an oven at 105°C until it ceases to lose moisture.
Overall fuel hazard (OFH) assessment	Method of assessing the level of risk posed by different fuel types.
<b>P</b>	
Paid rest day	Rest day at single time to be taken after the prescribed shift pattern.
Parallel attack	Method of fire suppression in which a fire line is constructed approximately parallel to, and just far enough from the fire edge to enable workers and equipment to work effectively, though the fire line may be shortened by cutting across unburned fingers. The intervening strip of unburned fuel is normally burned out as the control line proceeds but may be allowed to burn out unassisted where this occurs without undue delay or threat to the fire line. (NWCG)
Parallel fire suppression	See <i>Parallel attack</i>
Parallel method	See <i>Parallel attack</i>
ParkAir	The call sign prefix for NPWS-owned aircraft.
Park	A short-hand term to refer to NPWS managed land.
Parts of a fire	See definitions for <i>Bays, Fingers, Flanks of a fire</i> and <i>Head</i> .
Patch burning	Burning in patches to prepare sites for group planting or sowing or to form a barrier to subsequent fires. (NWCG)
Patrol	<ol style="list-style-type: none"> <li>1. To travel over a given route to prevent, detect, and suppress fires. Includes interaction with the public for bushland fire prevention and educational purposes.</li> <li>2. To go back and forth vigilantly over a length of control line during or after construction to prevent breakaways, suppress spot fires, and extinguish overlooked hot spots.</li> <li>3. A person or group of persons who carry out patrol actions. (NWCG)</li> </ol>

# 9.0 Appendix 3

Term	Definition
Peat	An amorphous organic material formed by anaerobic decomposition which usually means that the area is seasonally or permanently inundated with water. Peat fires burn by smouldering combustion and generate very high amounts of energy per unit area.
Perimeter	See <i>Fire perimeter</i>
Permit burn	A burn carried out under permit from a firefighting authority.
Personal Protection Equipment (Personal Protective Clothing)	The equipment and clothing designed to mitigate the risk of injury from the chemical, physical and thermal hazards that may be encountered at an incident.
Plan of attack	See <i>Incident Action Plan</i> (preferred term).
Plan of operations	A strategy developed by Bush Fire Management Committees and respective fire agencies to coordinate firefighting resources.
Planned burning	See <i>Prescribed burning</i>
Planning Officer	The individual responsible for the collection, evaluation, and dissemination of information about the incident, under the direction of the Incident Controller. This individual is also responsible for the preparation and documentation of the IAP.
Pocket	See <i>Island</i>
Point of attack	The part of the fire on which work is started when suppression forces arrive.
Point of origin	The specific location where the fire started.
Portable dam	A temporary water storage used in conjunction with power pumps and hose lines.
Power hand-held incendiary launcher (PHIL):	Gas-powered incendiary launcher.
Predicted rate of spread	The rate of spread predicted by the application of fire spread models using appropriate inputs of fuel conditions, topography and weather. See also <i>Rate of spread</i> .
Pre-incident plan	Advanced planning and preparation for an emergency situation.
Prepared community	A community that has developed effective emergency management arrangements at the local level, resulting in: <ul style="list-style-type: none"> <li>• An alert, informed and active community that supports its voluntary organisations</li> <li>• An active and involved local government</li> <li>• Agreed and coordinated arrangements for prevention, preparedness, response and recovery.</li> </ul>
Preparedness	(1) The degree to which an agency is prepared to respond to a potential fire situation.  (2) A mental readiness to recognise changes in fire danger and to act promptly when action is appropriate.
Pre-planned dispatch	The pre-planned dispatch of designated suppression forces to fires in predetermined zones. It is usually dependent on the location of the fire, and the forecast fire danger.

# 9.0 Appendix 3

Term	Definition
Prescribed burn	A fire used for prescribed burning.
Prescribed burn plan	See <i>Burn plan</i>
Prescribed burning	The controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity, and rate of spread required to attain planned resource management objectives. It is undertaken in specified environmental conditions.
Prescribed fire	Any fire ignited by management actions to meet specific objectives. A written, approved burn plan must exist, and approving agency requirements (where applicable) must be met, prior to ignition
Prescription	A written statement defining the objectives to be attained during prescribed burning.
Pre-suppression plan	See <i>Pre-incident plan</i> .
Prevention	See <i>Fire prevention</i> .
Profile litter moisture content	The moisture content, expressed as a % of oven-dry weight, of the entire leaf litter bed above the mineral soil surface.
Profile moisture content	See <i>Fuel moisture content</i>
Provide First Aid	Refers to National unit of Competency HLTAID011 - Provide First Aid. It includes HLATID009 Provide cardiopulmonary resuscitation (valid for 12 months from the date of course completion) and HLTAID010 Provide Basic Emergency Life Support (valid for 36 months (3 years) from the date of course completion). The First Aid certificate remains valid for 36 months (3 years) from date of course completion.
Psychrometer	The general name for instruments designed for determining the relative humidity of the air. A psychrometer consists of a wet-and-dry-bulb thermometer, generally with the aid of psychrometric tables or a psychrometric slide rule. (BOM)
Pulaski tool	A combination chopping and trenching tool widely used in fire line construction, which combines a single-bitted axe blade with a narrow adze-like trenching blade fitted to a straight handle. (NWCG)
Pulsation	See <i>Flare-up</i>
Pumper	A firefighting vehicle equipped with a large capacity pump, water tank and hose. Generally intended to be operated when stationary, from reticulated or static water supplies.
<b>Q</b>	
Quick-fill pump	A high-volume water pump used for filling tankers.
<b>R</b>	
Rain gauge	The general name for instruments designed to measure the amount of rain that has fallen.
Rakehoe (McLeod tool)	A hand tool used for bush firefighting, consisting of a combination of a heavy rake and hoe.



## 9.0 Appendix 3

Term	Definition
Rare flora	Flora species listed within <a href="#">Schedule 1 of the Biodiversity and Conservation Act 2016</a>
Rate of spread	The forward progress per unit of time of the head fire or another specified part of the fire perimeter.
Reaction time	The time taken between the report of a fire or incident and the departure of the crew. See also <i>Response time</i> .
Readiness	See <i>Preparedness</i>
Rear	<ol style="list-style-type: none"> <li>1. That portion of a fire spreading directly into the wind or downslope.</li> <li>2. That portion of a fire edge opposite the head.</li> <li>3. Slowest spreading portion of a fire edge. Also called heel of a fire. (NWCG)</li> </ol>
Reburn	Repeat burning of an area over which a fire has previously passed, but left fuel that later ignites when burning conditions are more favourable. (NWCG)
Reconnaissance	Examination of a fire area to obtain information about current and probable fire behaviour and other related fire suppression information. (NWCG)
Recovery	The coordinated process of supporting affected communities in the reconstruction of physical infrastructure and restoration of emotional, social, economic and physical wellbeing.
Recovery plan	A document that identifies the actions to be taken to promote the recovery of a threatened species, population or ecological community.
Regeneration burn	A burn lit under prescribed conditions for the purpose of achieving regeneration of a particular vegetation type.
Re-ignition	The action of a material that ignites again after it has been extinguished.
Relative humidity (RH)	The amount of water vapour in a given volume of air, expressed as a % of the maximum amount of water vapour the air can hold at that temperature.
Relay pumping	Using a series of pumps positioned at intervals along a line (or lines) of hose to share the workload of pumping water over a long distance.
Relief and relief crew	The replacement of personnel whose period of time at the incident has concluded.
Remote area firefighting	Fire management activities in areas that are accessible only by helicopter winch or hover exit insertion or where crews are more than 40 minutes walk from mechanical means of extraction.
Remote area crew	A crew tasked to a remote area.

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Term	Definition
Remotely Piloted Aircraft (RPA)	A remotely piloted aircraft, other than a rocket, balloon or kite, where the pilot flying the aircraft is not on board the aircraft. RPA a category of aircraft defined and regulated by the CASA. The term 'drone' is the colloquial term for a RPA and has the same definition (see <a href="#">RPA Guidelines for NPWS staff</a> for more details).
Report of fire	The notification of the detection of a fire to the fire service. (AFAC)
Reserve fire management strategy (RFMS)	(Previously known as 'reserve fire management plan'.) A document that details the desirable fire management regimes and objectives for NPWS-managed land. It assesses bushfire threats within the area, the type and nature of natural and cultural heritage, assets and other facilities within the reserve and includes guidelines for any suppression activities or hazard reduction work to be undertaken within that area.
Reserve	Referring to a particular land parcel of NPWS managed land.
Residence time	The time required for the flaming zone of a fire to pass a stationary point; the width of the flaming zone divided by the rate of spread of the fire.
Resources	All personnel and equipment available, or potentially available, for incident tasks.
Response	Actions taken in anticipation of, during, and immediately after an incident to ensure that its effects are minimised, and that people affected are given immediate relief and support.
Response time	The time between the report of a fire or incident and arrival at the scene. It includes both reaction time and travel time.
Responsible authority	See <i>Control authority</i>
Retardant	See <i>Fire retardant</i>
RFS	The NSW Rural Fire Service.
Risk	The exposure to the possibility of such things as economic or financial loss or gain, physical damage, injury or delay, as a consequence of pursuing a particular course of action. The concept of risk has 2 elements: the likelihood of something happening and the consequences if it happens. (AS/NZS ISO 31000-2009)
Risk analysis	A systematic use of available information to determine how often specific events may occur and the magnitude of their likely consequences.
Risk control	That part of risk management which involves the implementation of policies, standards, procedures and physical changes to eliminate or minimise adverse risks.
Risk treatment	Selection and implementation of appropriate options for dealing with risk.
Rostered day off	One day off in a four-week roster period, taken at a time which is operationally convenient to the NPWS, except those days that are taken as approved leave including flex leave, time in lieu, or as an allocated day off.

## 9.0 Appendix 3

Term	Definition
Rural	Any area wherein residences and other developments are scattered and intermingled with forest, range, farmland, native vegetation or cultivated crops.
Rural fire district:	An area proclaimed under the <i>Rural Fires Act 1997</i> for administration and management by the district Bush Fire Management Committee and rural fire brigades. These are proclaimed over the whole or part of local government areas. NPWS managed land may be included in these districts.
Rural fire officers	Collective term for fire control officers and rural fire brigade officers.
Rural–urban interface	See <i>Urban-rural interface</i> .
<b>S</b>	
Safe	The stage of bushfire suppression or prescribed burning when it is considered that no further suppression action or patrols are necessary.
Safety incident	Any event which causes an injury or disease or has the potential to cause an injury or disease.
Safety zone	An area cleared of flammable materials used for escape if the line is outflanked or in case a spot fire outside the control line renders the line unsafe. In fire operations, crews progress so as to maintain a safety zone close at hand, allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks. They are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of a blow-up in the vicinity. (Vic report)
Scorch height	<ol style="list-style-type: none"> <li>1. The height above ground level up to which foliage has been browned by a fire.</li> <li>2. A measurement for determining the acceptable height of flame during prescribed burning.</li> </ol>
Scout	A person who checks and reports on conditions in the fire area.
Scrub	Refers to vegetation such as heath, wiregrass and shrubs, which grows either as an understorey or by itself in the absence of a tree canopy.
Scrub fire	Fires burning in scrub.
Secondary fire control line	See <i>Fallback fire control line</i>
Sector	A specific area of an incident which is under the control of a Sector Commander who is supervising a number of crews.
Seen area	The ground, or vegetation, that is directly visible from an established or proposed lookout point, or aerial detection flight route.
Shift	The period resources are allocated during an operation at the incident or on the fireground.

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Term	Definition
Shift change	Replacement of allocated crews and or equipment during operations.
Shift length	A normal shift is 7 hours. However, employees may only be required to work a maximum of 12 hours on site. The initial shift following the declaration of an incident may extend to maximum of 16 hours on site (according to Award section 31(v)).
Shift pattern	A pattern of incident shift days and rest days; either 3–1–3 or 5–1–5 (according to Award section 31(vii)).
Situation report (Sitrep)	Situation report of an incident usually given at regular intervals.
Size up	The evaluation of a fire to determine a course of action for suppression.
Slash	Accumulated fuel resulting from such natural events as wind, fire, snow breakage, or from such human activities as logging, cutting or road construction.
Slash burn	A prescribed burn conducted to consume slash for fire hazard reduction or silvicultural purposes.
Sleeper	<ol style="list-style-type: none"> <li>1. A fire that starts up again after appearing to have been extinguished.</li> <li>2. A fire that is detected some time after an ignition opportunity (usually from lightning or hop-over events).</li> </ol>
Slip-on or slip-on tanker	See <i>Tanker</i>
Slip-on unit	A tank, a live hose reel or tray, a small capacity pump, and an engine combined into a single one-piece assembly that can be slipped onto a truck bed or trailer and used for spraying water or foam on bushfires.
Smoke management	An agreed method to ensure smoke impacts from prescribed burns are minimised and communicated to affected communities.
Smoker	An isolated small burning item such as a log, stump or tree, in an area of fire otherwise mopped-up.
Smoke-sensitive areas	Environments and assets that could be impacted by bushfire smoke, including residential areas, schools, hospitals, retirement villages, other community assets and transport corridors.
Softwood	A conventional term used to describe a tree, and the timber of trees, belonging to the group of plants with cones, such as pine and cypress.
Soil Dryness Index (SDI)	A form of drought index, usually with slightly more detailed inputs than the Keetch-Byram Drought Index. May be on a scale of 0–200 like the KBDI, but some versions have different scales (for example, Western Australia: 0–2000).
Southern Oscillation Index (SOI)	The Southern Oscillation Index compares surface air pressure differences between Tahiti and Darwin and shows a strong correlation with rainfall.

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Term	Definition
Span of control	A concept that relates to the number of groups or individuals controlled by 1 person. A ratio of 1:5 is recommended.
Spark arrestor	A device fitted to the exhaust system of machinery for trapping carbon sparks.
Species	A group of organisms that are biologically capable of breeding and producing fertile offspring with each other, but not with members of other species.
Spot fire	<ol style="list-style-type: none"> <li>1. Isolated fire started ahead of the main fire by sparks, embers or other ignited material, sometimes to a distance of several kilometres.</li> <li>2. A very small fire that requires little time or effort to extinguish.</li> </ol>
Spotting	Behaviour of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire. (NWCG)
Stag	A large, old tree, either dead or with significant dead upper branches, often hollow with an opening at ground level. Once alight, a stag represents a major hazard.
Staging area	An area where resources are mustered and prepared for allocation to an incident. It may include the provision of welfare and equipment maintenance facilities. (AIIMS)
Stand by	The period during which personnel are to be immediately available at home or other location for fire suppression purposes.
Standards of cover	The minimum protection required – will be an Australian Standard or NPWS standard.
Standing Committee	See <i>Work groups</i>
State Air Desk (SAD)	The state-level unit responsible for coordinated aviation operations.
State Duty Officer	The Fire and Incident Operations Branch officer rostered to coordinate incident response across NPWS.
State emergency agencies	Agencies with the legislative role of responding to state emergency declarations and natural disasters under the State Emergency Response and Rescue Management Act 1989. Within NSW, both RFS and State Emergency Service (SES) have this responsibility.
State Incident Procedures (SIPs)	Procedures prepared annually by FIOB to coordinate NPWS-managed fire activities, including formats and mechanisms for reporting and documentation. Prepared as an appendix to the State Incident Plan. This is now the FIOB Duty Officer Handbook.
Static water supply	A supply of water in a reservoir or pond, of limited capacity.
Strategic Fire Advantage Zone (SFAZ)	Land zoned to provide strategic areas of fire protection advantage
Step-up method	A method used by a team of firefighters to construct a firebreak in which each firefighter completely constructs a section of the firebreak after which the entire team 'steps up' to the next section.

## 9.0 Appendix 3

Term	Definition
Stevenson screen	A white-painted timber box with louvered walls, designed to give standardised conditions of ventilation to weather recording instruments, commonly thermometers.
Strategy	A statement detailing how an objective is to be achieved.
Strike teams	A set number of resources of the same type that have an established minimum number of personnel. Strike teams always have a leader (usually in a separate vehicle) and have a common communications system. Strike teams are usually made up of 5 resources of the same type such as vehicles, crews, earthmoving machinery, etc. (AIIMS).
Striker	A small 4-wheel drive fire tanker with a water carrying capacity of 500L for firefighting purposes. Also known as a Category 9 fire tanker.
Strip burning	<ol style="list-style-type: none"> <li>1. Burning by means of strip firing.</li> <li>2. In hazard reduction, burning narrow strips of fuel and leaving the rest of the area untreated by fire. (NWCG)</li> <li>3. Setting fire to a narrow strip of fuel adjacent to a fire line and then burning successively wider adjacent strips as the preceding strip burns out.</li> </ol>
Strip ignition	See <i>Strip burning</i>
Stripping	See <i>Strip burning</i>
Structure	A constructed object, usually a free-standing building above ground.
Subsurface fire	See <i>Ground fire</i>
Suction hose	Hose used to draught from static or open water. It has a hard, usually reinforced, exterior to prevent it collapsing when a partial vacuum exists within the hose.
Supply hose	Hose feeding from a water supply to a pump.
Support agency	An organisation contributing services or resources directly to a lead agency.
Suppression	See <i>Fire suppression</i> .
Surface fire	Fire that burns loose debris on the surface, which includes dead branches, leaves, and low vegetation. (NWCG)
Surface fuel	Fuels lying on or near the surface of the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low-stature living plants. (NWCG)
Surface moisture content	The moisture content expressed as a % of oven-dry weight of the top 5–10 mm of leaf litter.
Suspicious fire	Any fire starting under suspicious circumstances and where the cause of the fire is not readily apparent.

# 9.0 Appendix 3

Term	Definition
<b>T</b>	
Tactics	The tasking of personnel and resources to implement the incident strategies. Incident control tactics are accomplished in accordance with appropriate agency procedures and safety directives. (AIIMS)
Tail fire	See <i>Backing fire</i> .
Tanker	A mobile firefighting vehicle equipped with a water tank, pump, and the necessary equipment for spraying water or foam on bushfires.
task	A job given to any firefighting force or unit.
Task-based assessment (TBA)	Fitness test modelled on the tasks firefighters are required to undertake in their jobs. 3 hike tests have been developed to test the physical fitness, strength and endurance of firefighters. They provide a fair, equitable and objective measure of fitness.
Task force	A combination of resources assembled for a specific purpose. Task forces always have a leader (usually in a separate vehicle) and have a common communications system. Task forces are established to meet tactical needs and may incorporate a mixture of different resource types. (AIIMS)
Task force leader:	Person delegated responsibility for the welfare of a task force.
Technical advisors	Advisors with special skills needed to support incident activities or functions. (AIIMS)
Temperature (dry-bulb)	The ambient air temperature recorded by an exposed thermometer.
Temperature (wet-bulb)	Wet bulb temperature is measured by placing a moist, single-layer, muslin sleeve over the bulb of a dry bulb thermometer. The difference between dry- and wet-bulb readings is used to determine relative humidity and dew point values.
Test fire	A controlled fire ignited to evaluate fire behaviour.
Thermal imagery	A display or print out from an infrared scanning device.
Thermohygraph	An instrument that simultaneously and continuously measures and records temperature and relative humidity, normally by tracing each onto a revolving chart. Charts can either cater for 1 day or 1 week of continuous recording.
Threat abatement plan	A document under the Biodiversity Conservation Act 2016 that identifies the action to be taken to abate, ameliorate or eliminate the adverse impacts of threatening processes on threatened species, populations or ecological communities.
Threatened species	Species listed within Schedule 1 of the Biodiversity and Conservation Act 2016
Threatening processes	Processes such as habitat disturbance or destruction or pollution that threaten the survival, abundance or evolutionary development of a species, population or ecological community. Inappropriate fire regimes, whether too frequent or infrequent, may threaten specific threatened species, populations or ecological communities.
Time lag	See <i>Lag time</i> .

## 9.0 Appendix 3

Term	Definition
Tongues	See <i>Fingers</i> .
Topography	The surface features of a particular area or branch. It may include mountains, rivers, populated areas, roads and railways and fuel types.
Tops disposal burning	The burning of forest debris resulting from harvesting operations.
Torch and torching	See <i>Candle</i>
Travel time	The time taken between the departure of a crew and arrival at the incident. See also <i>Response time</i> .
Trust	The authority appointed under the National Parks and Wildlife Act 1974 to a state conservation area with the responsibility of care, control and management of that area.
<b>U</b>	
Understorey	The lowest stratum of a multi-storeyed forest.
Unplanned bushfire:	See <i>Bushfire</i>
Urban	Area in which residences and other human developments form an essentially contiguous covering of the landscape; includes most area within cities and towns, subdivisions, commercial and industrial parks, and similar development whether inside city limits or not.
Urban interface	See <i>Urban–rural interface</i>
Urban–rural interface	The line, area, or zone where structures and other human development adjoin or overlap with undeveloped bushland.
<b>V</b>	
Values at risk	The natural resources or improvements that may be jeopardised if a fire occurs.
Vehicle-mounted flamethrower	Mobile incendiary device.
<b>W</b>	
Warning device	Audible device fitted to fire bombing aircraft to alert ground crews of pending drop.
Water bombing	The dropping of water onto a bushfire from an aeroplane or helicopter.
Water point	Any natural or constructed supply of water that is readily available for fire control operations.
Water tank	A container capable of storing a large volume of water.
<a href="#">Weather District</a>	A BOM administrative area for which weather forecasts are issued.
Wetting agent	A chemical added in low concentration to water. It is used in firefighting to break down the surface tension of the water and to improve its penetration into fuels.
Widow maker	See <i>Hang up</i> .
Wildfire	An unplanned vegetation fire. A generic term which includes grass fires, forest fires and scrub fires.



## 9.0 Appendix 3

Term	Definition
Wildfire control plan	See <i>Incident Action Plan</i>
Wildland Urban Interface (WUI)	See <i>Urban–rural interface</i>
Wildlife Emergency Response Taskforce (WERT)	WERTs are groups of up to five personnel in various roles deployed to provide timely and effective wildlife emergency response on firegrounds in NSW, with a focus on human safety and animal welfare. WERTs are comprised of personnel from a range of organisations across government, wildlife rehabilitation, veterinary, non-government and private sectors operating under AIIMS in cooperation with relevant authorities including the NSW RFS, DPI, NPWS and other fire and emergency response agencies.
Wind Adjustment Factor	'Rule of Thumb' calculation used for converting windspeeds between 10m and 2m. Not to be used when wind speeds exceed 30km/h at 10m AGL as other weather factors will likely influence wind speed and fire behaviour at 2m AGL.
Wind direction	The direction from which the wind blows.
Wind speed	The rate of horizontal motion of the air past a given point expressed in terms of distance per unit of time. In the NZ Fire Danger Rating System, wind speed is measured at the standard height of 10 m in the open, averaged over a 10-minute interval and in km per hour.
Wind throw	An area of previously standing timber which has been blown over by strong winds or storms.
Windfall	See <i>Wind throw</i>
Windrow	A long line of piled slash or debris resulting from forest or scrub clearing.
Windrow burning	The burning of windrows.
Windward	Towards the wind. You are windward if the wind is blowing on your face.
Woodland	A plant community in which the trees form only an open canopy, the intervening area being occupied by lower vegetation, usually grass or scrub
Work groups	Short-term groups devised to work on projects that require a specific focus or specialist input. They include representation from the Branches. Also referred to as 'Standing Committees'.