

# NATIONAL BURNING PROJECT

Towards a more holistic and consistent approach to prescribed burning

Greg Esnouf  
National Burning Project Manager

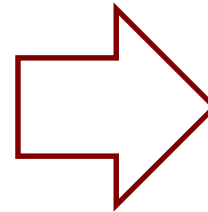


# The National Burning Project (NBP)



## National Burning Project Mission:

To bring together inter-related aspects of prescribed burning across Australasia to design guiding frameworks and principles for a more holistic and consistent approach to prescribed burning.



# National Burning Project themes

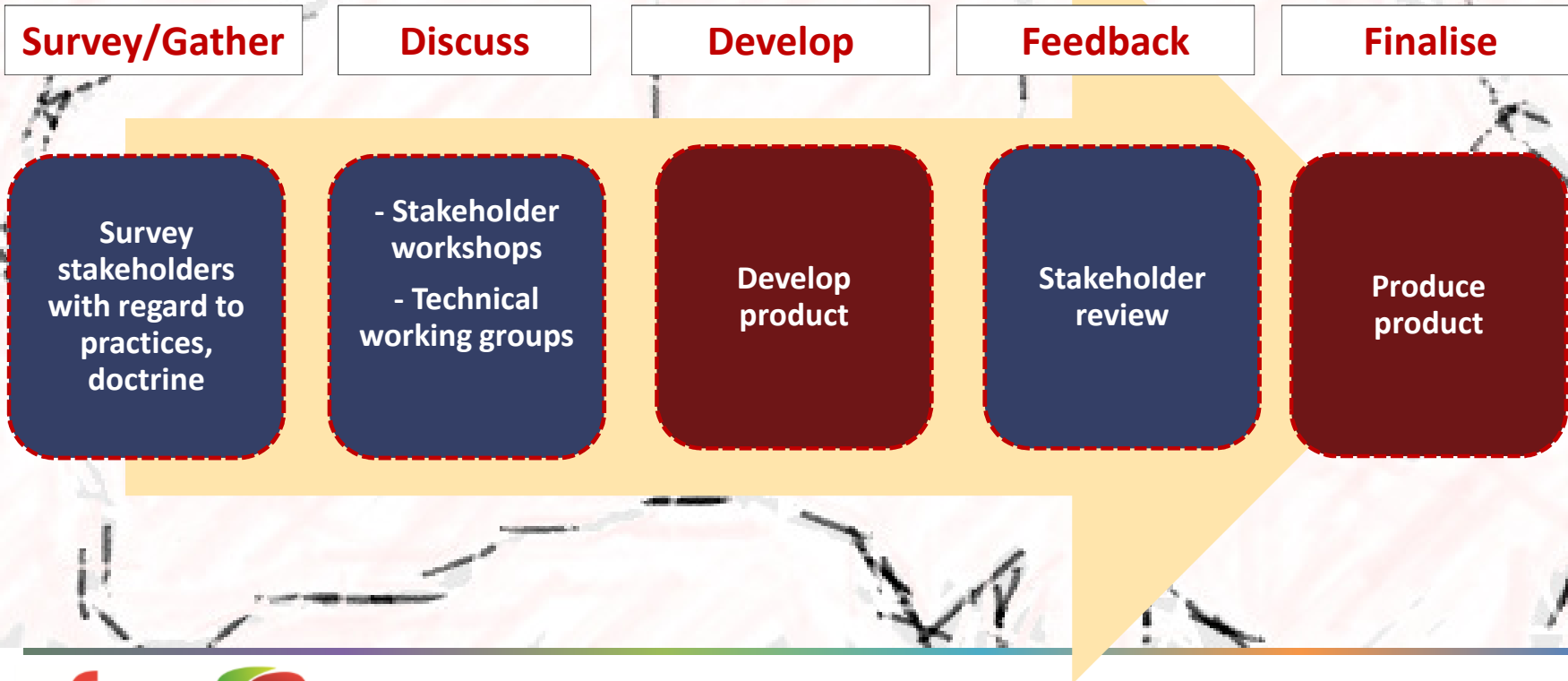
- A national position on prescribed burning
- Reviews of science, knowledge and best practice
- Objective setting and monitoring
- Risk management frameworks
- Best practice guidelines
- Training review and materials
- Resource sharing report
- Toolbox



# What has the project achieved?

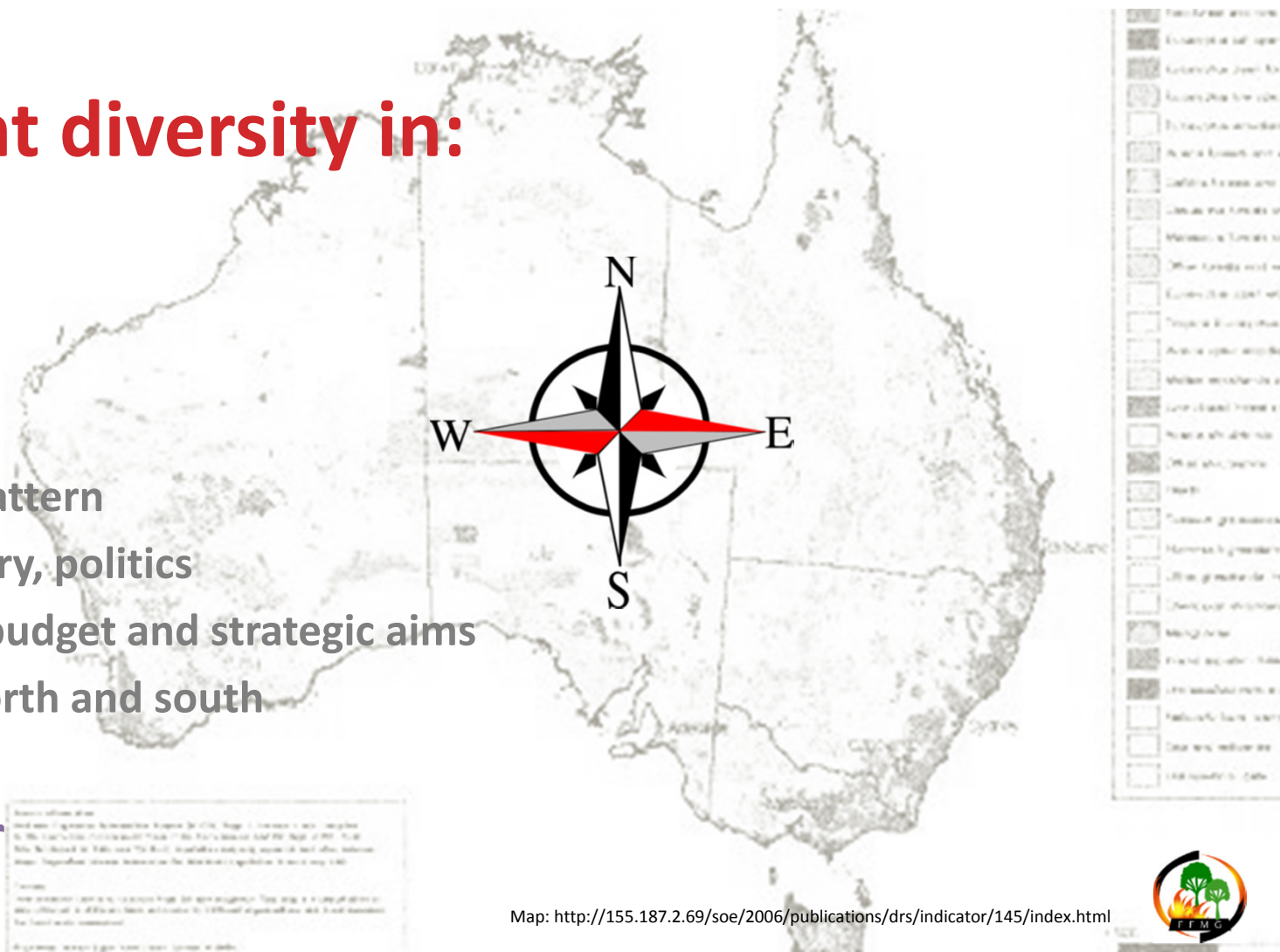


# General Collaboration Model



# Significant diversity in:

- Climate
- Landform
- Vegetation
- Landuse
- Settlement pattern
- Culture, history, politics
- Agency size, budget and strategic aims
- East, west, north and south differences



# A national position



## The position:

“ AFAC and FFMG member agencies take the position that prescribed burning is an essential part of bushfire mitigation across the Australian landscape to reduce risk to communities and ecological health. ”

## The position is supported by ten principles:

- Protection of life is the highest consideration
- Landscape health is linked to fire and fire management
- Prescribed burning is a risk management tool
- Engagement with community and business stakeholders is important
- Prescribed burning is done in the context of measurable outcomes
- Informed knowledge of fire in the landscape is important
- Capability development is important
- Traditional Owner use of fire in the landscape is acknowledged
- An integrated approach is required across land tenures
- Prescribed burning is carried out under legislative, policy and planning requirements.

# Reviews



## Overview of prescribed burning in Australasia

- Historic uses
- Current uses
- Evidence base

## Review of best practice

- Review of agency approaches
- Summary of best practice

## Review of science and knowledge

- Review of scientific knowledge and perspectives
- Review of practitioner knowledge and perspectives
- Traditional Owner knowledge and perspectives
- Review of case study evidence



# Objectives and monitoring



## Objective setting tool

- Tool to balance competing objectives in burn programs
- Benefits costs analysis approach

## Performance measures

- Development of national performance measures framework

## Objectives and monitoring framework

- Principles for objective setting
- Principles for monitoring
- A framework linking objectives and monitoring

# Risk Management Frameworks



Fuel hazard / bushfire risks



Smoke and greenhouse gas emissions risks



Ecological and environmental risks



Operational risks including:

- Burn containment
- Crew safety
- Public safety
- Impact on values



# A consistent structure for planning and implementation

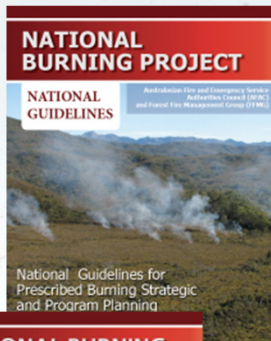
Strategic planning	Program planning	Operational planning	Burn implementation
Long-term planning driving the scale and nature of an agency's prescribed burning program.	Programming the scheduling of burns one to five years ahead.	Advance planning for individual burns usually resulting in a burn plan.	Mobilisation, briefings, test burn, light up, mitigation measures, control strategies, mop-up, patrol and reporting.
=> 5 years	1 – 5 years	Months/year	Days
Jurisdiction, region, property	Jurisdiction, region, property	Individual burn	Individual burn

# Risk Management Approach

- ISO 31000:2009
- Communication
- Monitoring and evaluation
- Dimensions
  - Fuel
  - Smoke / Greenhouse
  - Ecological / Environmental
  - Burn containment
  - Crew safety
  - Public safety
  - Impact on values

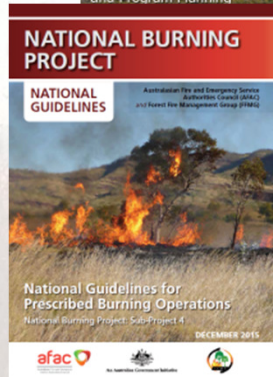


# National Guidelines for Prescribed Burning



Strategic and program planning


- 27 High-level principles
- Across two documents
- Includes four phases of burning
- Targets practitioners and policy makers





Operational planning and implementation

# National Guidelines case studies


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 1 – Soya and mallee and mallee health burning in South Australia  
National Burning Project: Sub-Project 4

afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 2 – Bush-urban interface burning in the Blue Mountains of NSW  
National Burning Project: Sub-Project 4

afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 3 – Burning young silvertop ash regrowth forests in NSW  
National Burning Project: Sub-Project 4

afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 4 – Burning of spinifex grasslands in the arid interior of Western Australia  
National Burning Project: Sub-Project 4

afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 5 – Multi-year landscape mosaic burning in forested mountain terrain using natural boundaries (Victoria)  
National Burning Project: Sub-Project 4

afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 6 – Burning for eucalypt forest health in Southeast Queensland/Northern NSW  
National Burning Project: Sub-Project 4

afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 7 – Burning for greenhouse gas abatement in Northern Australia  
National Burning Project: Sub-Project 4

afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)





**National Guidelines for Prescribed Burning Operations:**  
Case Study 8 – Low intensity burning in tall moist karri forests in Western Australia  
National Burning Project: Sub-Project 4


afac  


**NATIONAL BURNING PROJECT**  
Australian Fire and Emergency Service  
Authorities Council (AFAC)  
and Forest Fire Management Group (FFMG)



**National Guidelines for Prescribed Burning Operations:**  
Case Study 9 – Buttongrass moorland burning in Tasmania  
National Burning Project: Sub-Project 4

afac  





Nine case studies online

# National Guidelines for Prescribed Burning

## Strategic planning example principles

Phase	Associated Principle(s)	Key Actions:
<b>Strategic planning</b>	Principle 1 Strategic planning must comply with relevant laws, policy and agency requirements relevant to prescribed burning - start strategic planning with an up-to-date understanding of relevant legal requirements, policies and objectives.	Orient planning team to current policies and organisational requirements
	Principle 2 The planning scale (duration and spatial coverage) should reflect regional vegetation growth, fuel accumulation and fire occurrence cycles, and be relevant to how assets and fire prone areas are arranged in a landscape.	Determine appropriate plan scale and duration
	Principle 3 Fires do not respect land tenure differences, institutional responsibility demarcations or administrative boundaries – planning scope should address how prescribed burning objectives are to be optimised and managed across different tenures and administrative boundaries, in partnership with all stakeholders.	Determine land tenures to be covered by the plan and the relevant stakeholders to be engaged in planning
	Principle 4 Resourcing capacity, planning systems and capability maturity are key factors influencing the design of a strategic planning model - the model selected should be well-matched to the available planning capability and planning complexity.	Select an achievable strategic planning model appropriate to the degree of planning area complexity and planning capability
	Principle 5 Not all ecosystems are suitable or feasible for prescribed burning, and burning opportunity is limited by factors including suitable	Identify vegetation types appropriate for

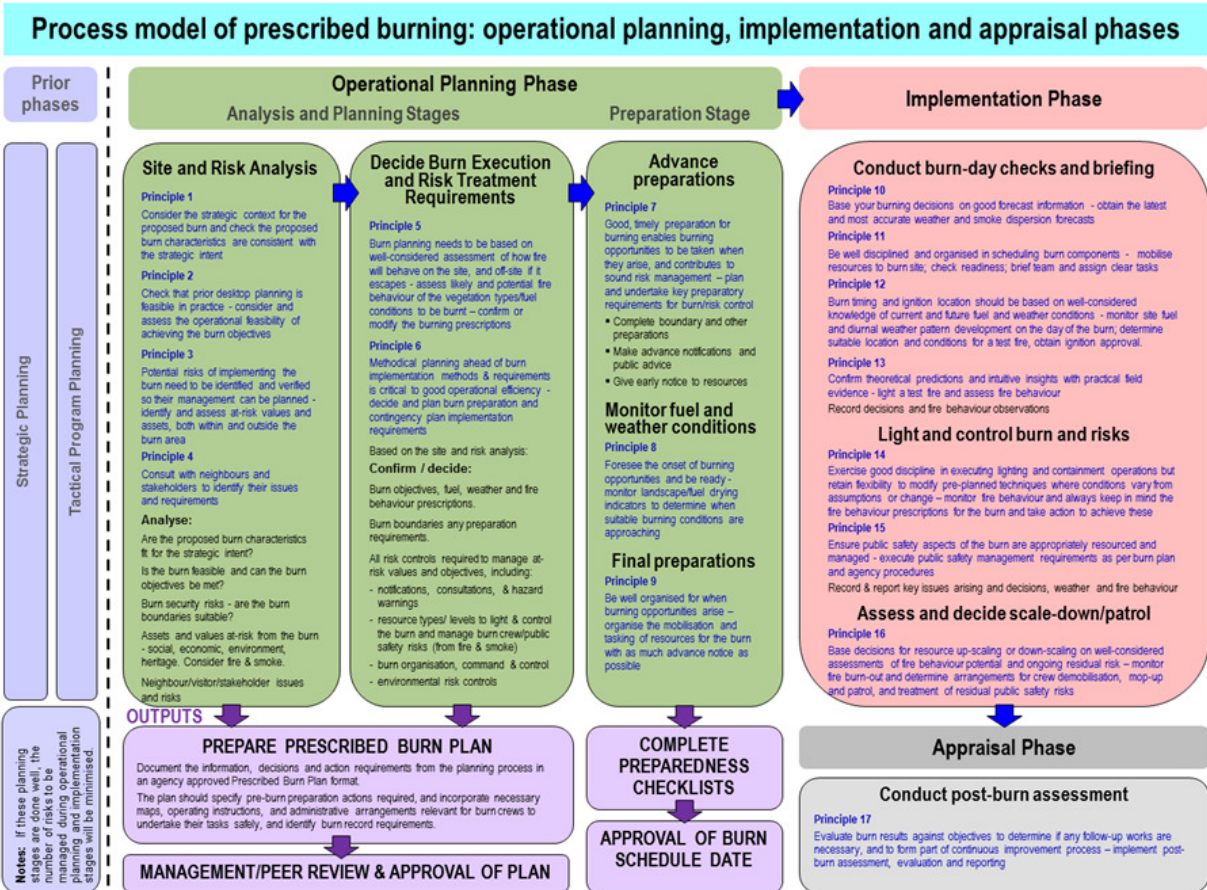
## Operations example principles

Phase	Associated Principle(s)	Confirmation of:
<b>Burn Area Analysis Phase</b>	<b>Principle 1</b> – Consider the strategic context for the proposed burn and check the proposed burn characteristics are consistent with the strategic intent	Strategic zoning
	<b>Principle 2</b> – Check that prior desktop planning is feasible in practice – consider and assess the operational feasibility of achieving the burn objectives	Burn feasibility
	<b>Principle 3</b> – Potential risks of implementing the burn need to be identified and verified so their management can be planned – identify and assess potentially at-risk values and assets, both within and outside the burn area	Site specific risks
	<b>Principle 4</b> – Consult with neighbours and stakeholders to identify their issues and requirements	Stakeholder and neighbour issues
<b>Operational Planning Phase</b>	<b>Principle 5</b> – Burn planning needs to be based on well-considered assessment of how fire will behave on the <u>site</u> , and off-site if it escapes. Assess likely and potential fire behaviour of the vegetation types/fuel conditions to be burnt and confirm or modify the burning prescriptions	Consider fire behaviour potential and decide burn prescriptions
	<b>Principle 6</b> – Methodical planning ahead of burn preparation and implementation methods and requirements is critical to good operational efficiency – decide and plan burn	Burn plan preparation

# National Guidelines

- Process of prescribed burning
- Principles embedded in process
- Relevant nationally
- The thinking that underpins prescribed burning

## Example for operations





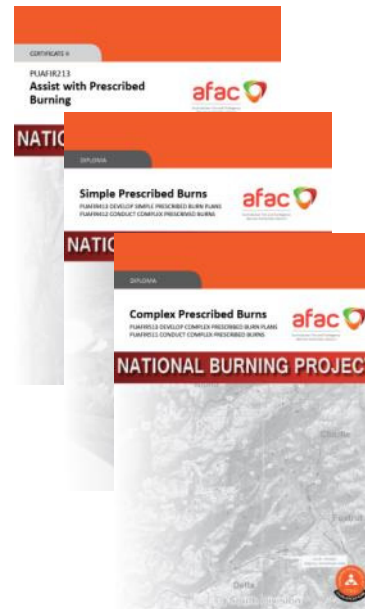
# Training



## Review of Training


- Review of existing national training competencies
- Review of how training is delivered
- How to improve training

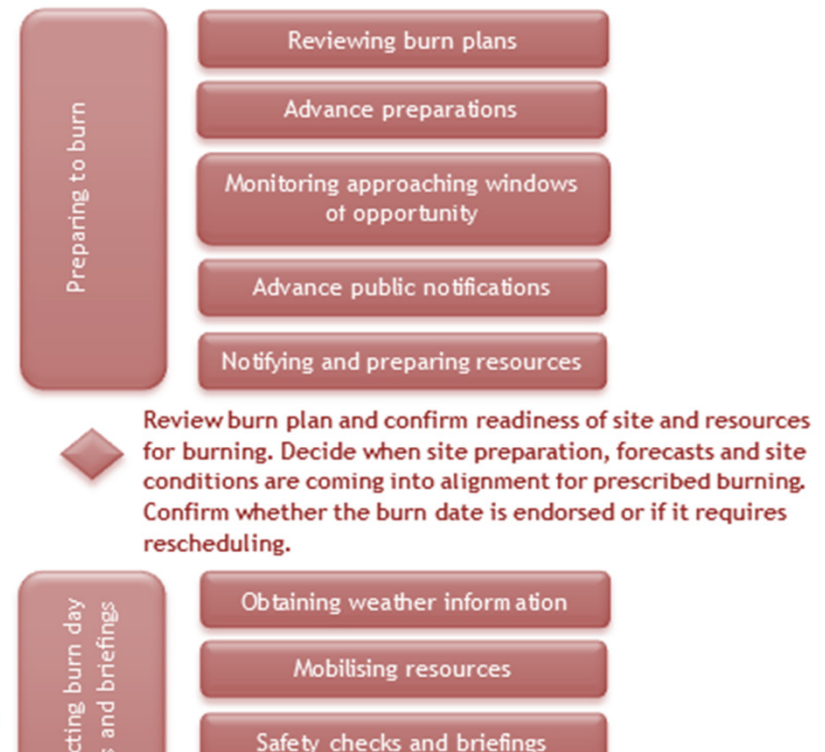
## Training resource kits



<i>Learner Resource</i>	<i>Competency</i>
Assist With Prescribed Burning	PUAFIR213 Assist With Prescribed Burning
Simple Prescribed Burns	PUAFIR413 Develop Simple Prescribed Burn Plans
	PUAFIR412 Conduct Simple Prescribed Burns
Complex Prescribed Burns	PUAFIR513 Develop Complex Prescribed Burn Plans
	PUAFIR511 Conduct Complex Prescribed Burns

# Training resource kits

- Three new learner resources
- Prescribed burn trainers and students
- Aligned to NBP best practice guidelines
- Can be used or adapted anywhere in Australia
- Contains:
  - Policy
  - Objectives
  - Theory
  - Practice
  - Process 
  - Activities and scenarios



# Review of Capability

- Existing equipment and personnel
- National classification for equipment
- Cross-border competencies, job titles etc.
- Options for resource sharing
- Building national capability, supporting systems, data



# National Toolbox

- Collate prescribed burning tools
- Present them online



**Step 2. Likelihood** - This table attempts to quantify the likelihood of a prescribed burn escape as part of the assessment process. The factors have been grouped into five broad groups, each has a likelihood score. A score is then calculated. This figure then provides an overall likelihood of escape score from which appropriate risk mitigation can be determined from the risk matrix table. Note that the descriptors in the coloured matrix are applicable to NSW and ACT experience. Each agency or state may wish to modify these descriptors to suit their local risk guides. The framework however remains constant.

	Factors	Low (1)	Mod (2)	High (3)	
1	Burn Day Conditions	Wind	0-5	10-15kph	>15kph
		RH	>60	50-40	40-30
		FDI	0-5	5-12	12 - 24
2	Long Term Conditions	Rainfall deficiencies	Average	Above Av	Very High
		Season	Winter / Autumn	Autumn	Spring
		KBDI / SDI	<63	>63 - 100	100-150
3	Fuels	FMC	>16%	12% - 15%	8-12%
		OFH - Internal	Moderate	Mod - High	VH
		OFH - External	Low - Moderate	Mod - High	VH
4	Control	Hard Control Lines	Cat 1 standards	Cat 7 standards	Cat 9 standards
		Soft Control Lines	All Hard	wide	Effemeral drain
		Resources available	> Plan	As per plan	contingency



# Ready to use summaries (coming soon)

- Ready to utilise steps
- Diagrammatic summaries
- Targeted at practitioners
- Synergies between products
- Brochure sized



- **Process map** of prescribed burning
- **Best practice** principles for prescribed burning
- **Risk management** framework for prescribed burning
- **Program Logic** for prescribed burning

- Department of Defence
- Wildlife Conservancy
- Ten Rivers
- Department of Agriculture and Fisheries – Queensland
- Department Natural Resources and Mines – Queensland
- Powerlink Queensland
- Public Safety Business Agency – Queensland
- Queensland Fire and Emergency services\*
- Queensland Parks and Wildlife Service\*
- Quandamooka Yoolooburabee Aboriginal Corporation
- Southeast Queensland Fire and Biodiversity Consortium
- Sunshine Coast Regional Council
- The City of the Gold Coast
- Firescape Science
- Fire and Landscape Strategies
- Githabul Working on Country Rangers
- Savanna Solutions
- Nature Conservation Council of NSW
- NSW National Parks and Wildlife Service\*
- NSW Rural Fire Service\*
- Office of Environment Heritage – NSW\*
- Department of Environment, Land, Water and Planning – Victoria\*
- Parks Victoria\*
- University of Melbourne
- University of Tasmania
- Tasmanian Fire Service\*
- Department of Environment, Water and Natural Resources – South Australia\*
- Office of Bushfire Risk Mitigation Western Australia\*
- Department of Parks and Wildlife – Western Australia \*
- Department of Fire and Emergency Services – Western Australia\*
- ACT Parks\*
- Department of Land and Resource Management – Northern Territory
- Parks and Wildlife – Northern Territory
- Bushfires – Northern Territory\*
- Charles Darwin University
- ACT Emergency Services Authority\*
- Parks and Wildlife Tasmania\*
- CSIRO
- Forestry Corporation NSW\*
- Bushfire and Natural Hazards CRC
- Forestry South Australia\*

\* Denotes AFAC member agency



Not Just AFAC members. Anyone who does prescribed burning



# NATIONAL BURNING PROJECT

Further information about NBP and products (free PDFs for members):

[www.afac.com.au/initiative/nbp](http://www.afac.com.au/initiative/nbp)

Hardcopy products available in AFAC shop:

[www.afac.com.au](http://www.afac.com.au)

[prescribed.burning@afac.com.au](mailto:prescribed.burning@afac.com.au)

