Developing an Effective Prescribed Burning Workforce: A Call to Action

Forestry Australia Fire Summit
June 2024

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National Manager
Prescribed Burning Strategy

1. Land Use Changes and Declining Capability in Using Fire
2. FFMG-AFAC National Burning Project (2011-2017)
3. Rebuilding Capability: A Masterclass Program in Using Fire
4. The Bigger Picture: What Else is Needed?

Land Use Changes and Declining Capability in Using Fire

- Declining influence of forestry and foresters in Australian bushfire management and research over several decades
- Declining use of fire in agriculture – land clearing, stubble burning, cane burning, grazing land management, woody weed control etc. – and research by ag scientists
- Fewer workers in rural Australia, and fewer workers with bush skills as well as fire knowledge
- Agency changes, workforce demographics and succession issues
- Victoria 1939, Dwellingup 1961, Victoria 2009, Productivity Commission Report 2015

Land Use and Land Management Contrasts: South and North

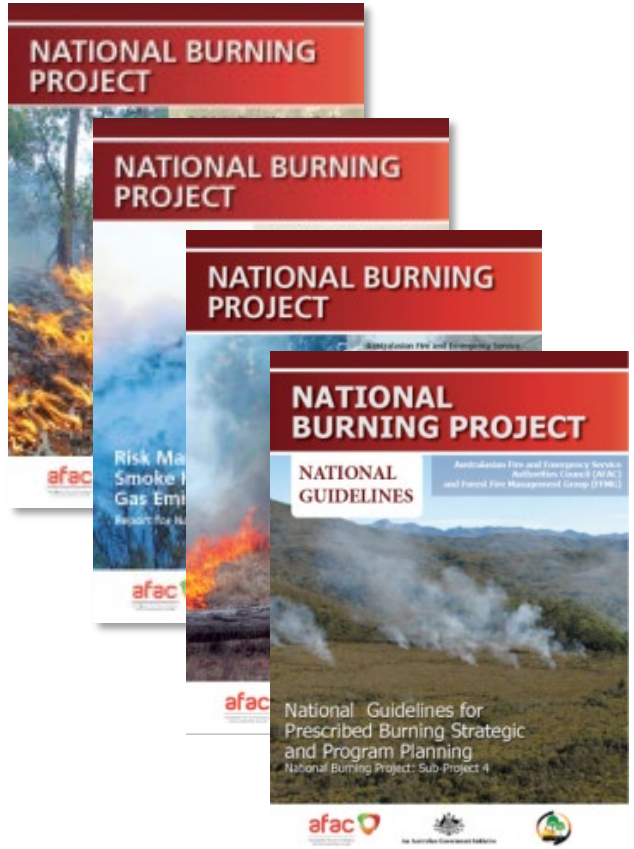
- Southern Australia – mainly AFAC member agencies with burn programs, minimal broadscale private burning
- Urbanisation, smoke, traffic, environment, land use conflicts, desktop science
- Indigenous cultural burning – small steps, needs much more support and time
- Northern Australia – TOs, pastoralists, conservation land managers etc.
- Northern Australia – ALRA 1976, Native Title Act 1993, carbon farming legislation, Aboriginal ranger programs, support personnel from diverse backgrounds, aerial ignition programs, GLM courses

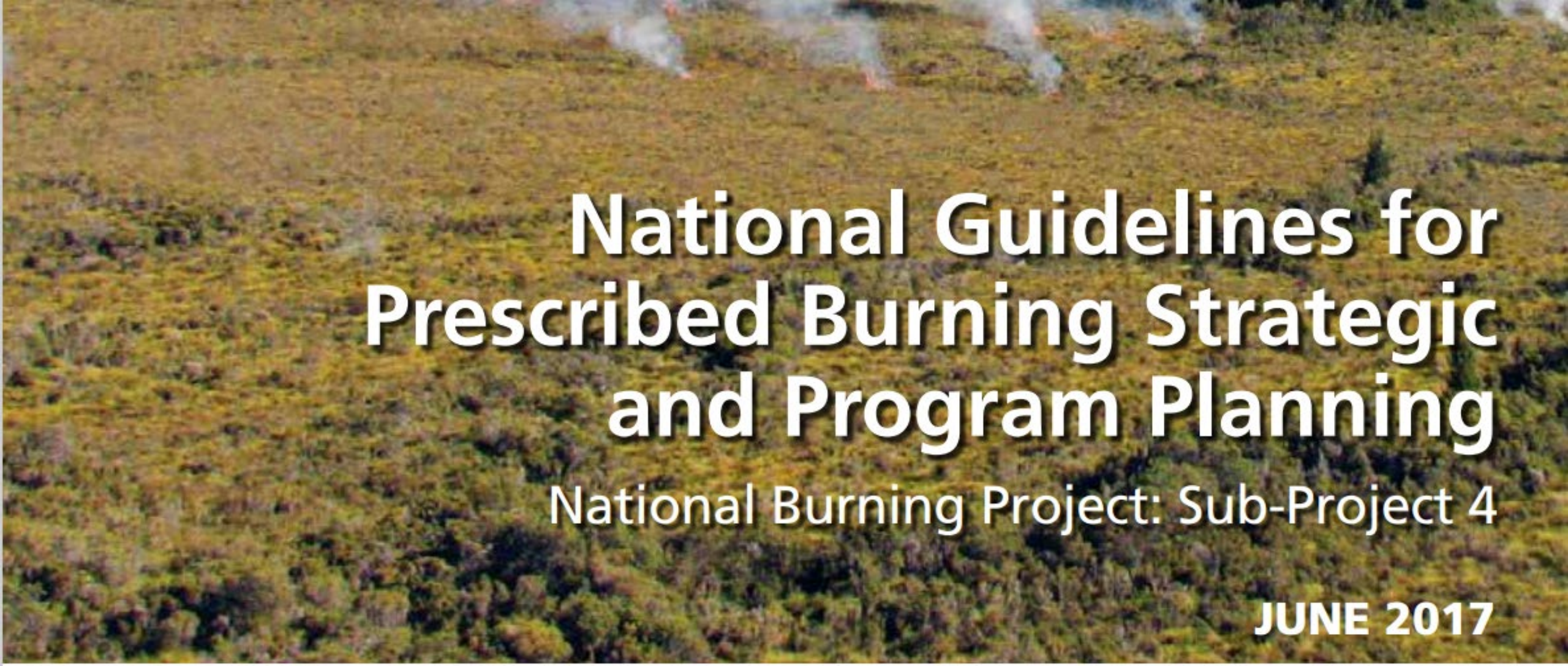
FFMG-AFAC National Burning Project (2011-2017)

- Workshops across Australia
- Analysis of procedures and practices
- Case studies

Frameworks, Guidelines, Principles

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 Guidelines for Prescribed Burning Strategic and Program Planning

National Burning Project: Sub-Project 4

JUNE 2017

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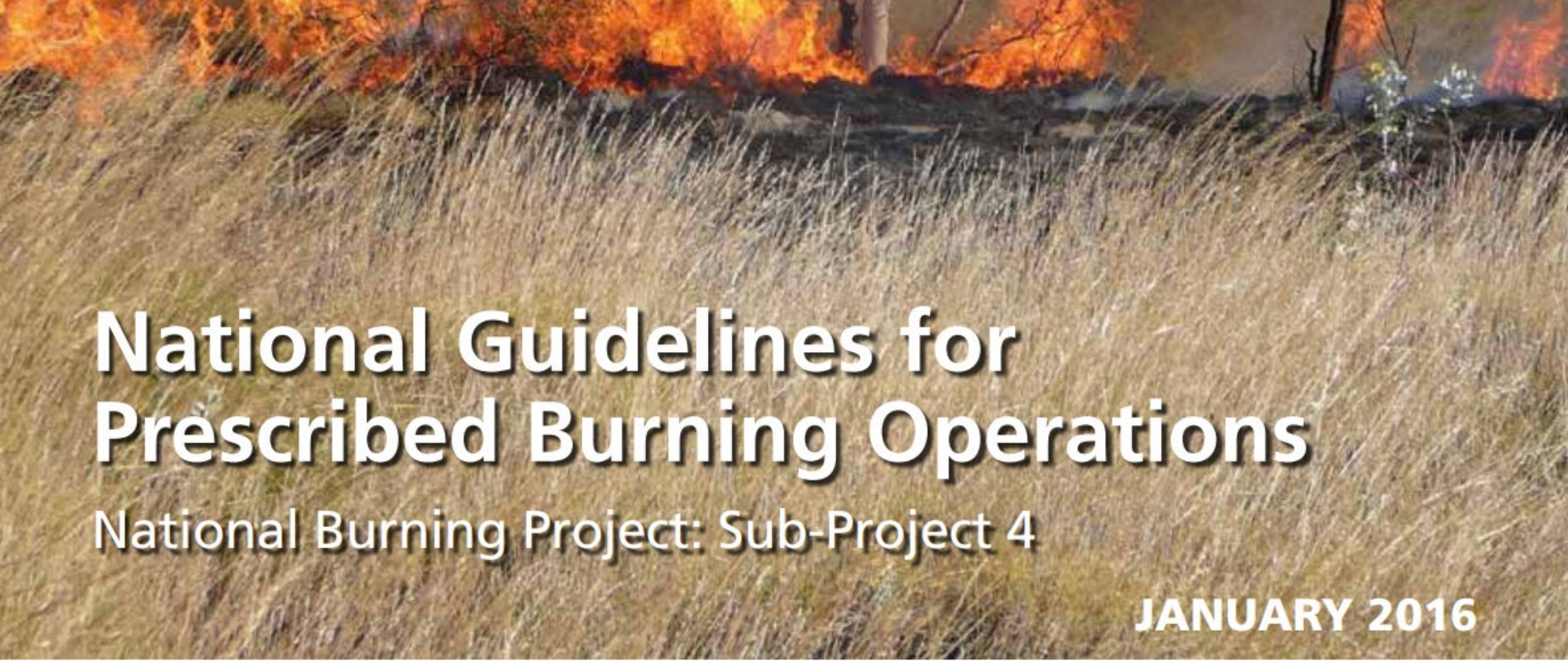

National Guidelines for Prescribed Burning Operations

National Burning Project: Sub-Project 4

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Table 1 | Risk dimensions against phases of prescribed burning

REF.	RISK DIMENSION	STRATEGIC PLANNING PHASE	PROGRAM PLANNING PHASE	OPERATIONAL PLANNING PHASE	IMPLEMENTATION PHASE
Figure 4	**Fuel**	Models/simulators, hazard/risk assessments, strategies/zones	Fire history, fuels, targets, staging	Prescriptions, fuel reduction measurable objectives	Ignition strategies, post fire assessment of measurable objectives
Figure 5	**Ecology/ environment**	Knowledge, systems, strategies	Prioritisation trade-offs, fire intervals and seasons	Prescriptions, specific risk controls	Ignition strategies, specific risk controls, post fire evaluation
Figure 6	**Smoke**	Pollutions standards	Cumulative smoke issues, scheduling	Prescriptions and constraints (e.g. wind direction)	Smoke dispersal models/ simulators, forecasts, ignition strategies
Figure 7: Operational risks	**Burn containment**	Systems, procedures, standards	Scheduling of burn and works, cumulative impact on resourcing	Planning suitable boundaries, resources and contingencies	Assessing control lines, adjusting ignition patterns, monitoring fire and conditions
	Crew safety	Systems, procedures, standards, training	Allocation of suitable resources and staff, being realistic when programming burns	Burn complexity matched to crews/ burn manager, contingencies, identify safety hazards	Safety and site checks, briefings, equipment, command structure, debriefs
	Public safety	Regulation, policies and procedures	Burn area selection	Prescriptions, risk controls, traffic control contingencies	Signage and notifications, site checks and resources to manage public and traffic
	Impact on values	Knowledge, guidelines, systems, strategies	Seasons, scheduling, timing requirements	Prescriptions, boundaries, risk controls	Ignition strategies, monitoring fire and conditions, post fire evaluation

A Risk Framework for Ecological Risks Associated with Prescribed Burning

National Burning Project: Sub-Project 3

MAY 2016

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Australasian Fire and Emergency Service Authorities Council

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Risk Management Framework – Smoke Hazard and Greenhouse Gas Emissions

Report for National Burning Project: Sub-Project 3

MARCH 2015

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National Guidelines for Prescribed Burning Operations:

Case Study 3 – Low intensity burning in tall moist karri forests in Western Australia

National Burning Project: Sub-Project 4

Objectives, Monitoring and Evaluation Framework for Prescribed Burning

Key Principles from the 2021 AFAC National Position on Prescribed Burning

1. Traditional custodians' use of fire in the landscape is recognised and respected
2. Landscape health is linked to fire and fire management
3. An integrated approach is required
4. Prescribed burning has multiple benefits
5. Prescribed burning is carried out under legislative, policy and planning requirements
6. Prescribed burning programs are informed by research, knowledge, and experience
7. Prescribed burning requires engagement with community and business stakeholders
8. Prescribed burning is done in the context of measurable outcomes
9. **The practice of prescribed burning requires ongoing capability development**

Rebuilding Capability: A Masterclass Program in Using Fire

1. Intended for experienced burn practitioners, to create an ongoing networked community of practice, and to develop future leaders

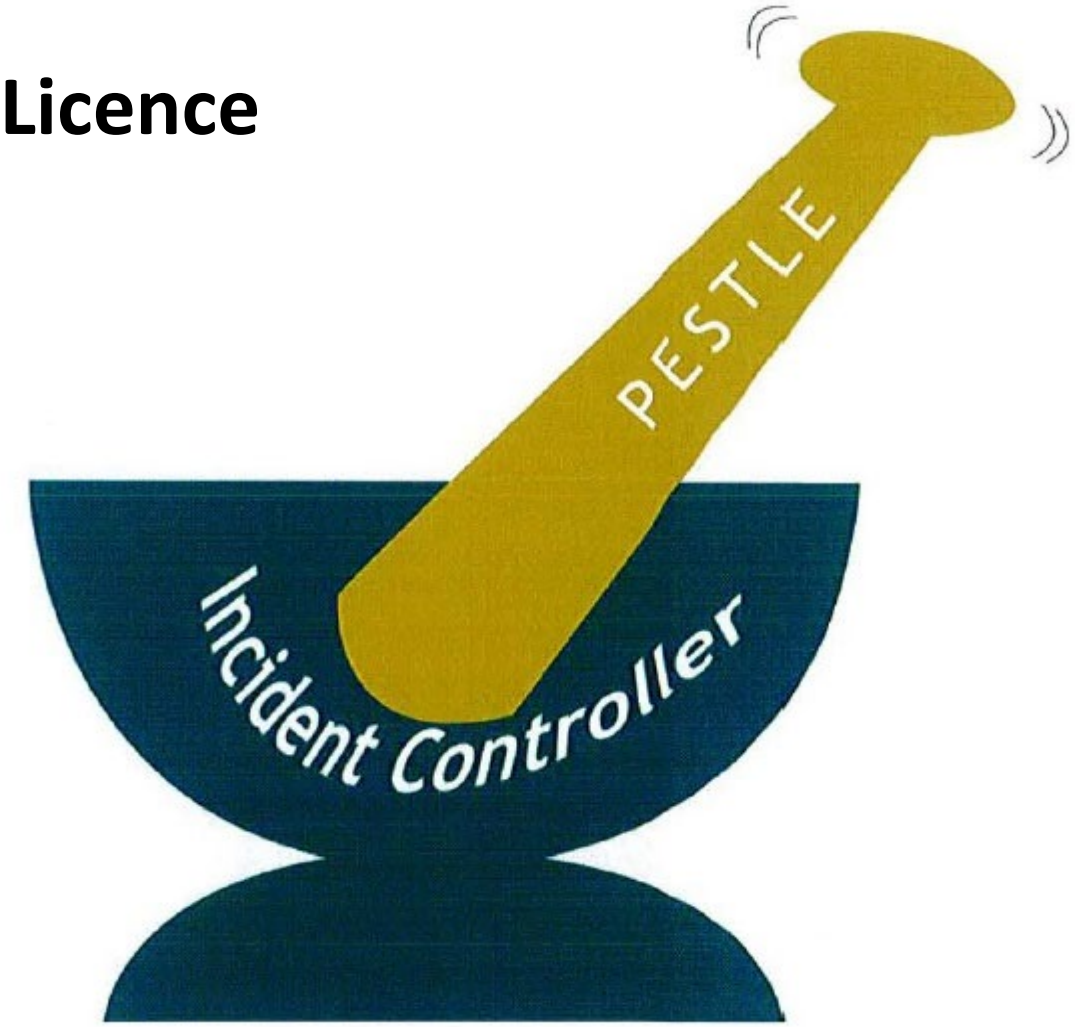
2. Two intakes a year, with a week of classroom activities followed by three weeks of mentoring and burning in unfamiliar environments – SW, SE and Nth Australia

3. Subject matter experts, science, practitioner experience, Indigenous knowledge

4. Appropriate governance, candidate selection, facilitated learning, recognition

5. Supported by all jurisdictions, *AFAC Strategic Plan*, but currently unfunded

Risk and Social Licence



If an IC does not pay attention to the PESTLE environment it is likely that the components of PESTLE will grind the IC to dust.

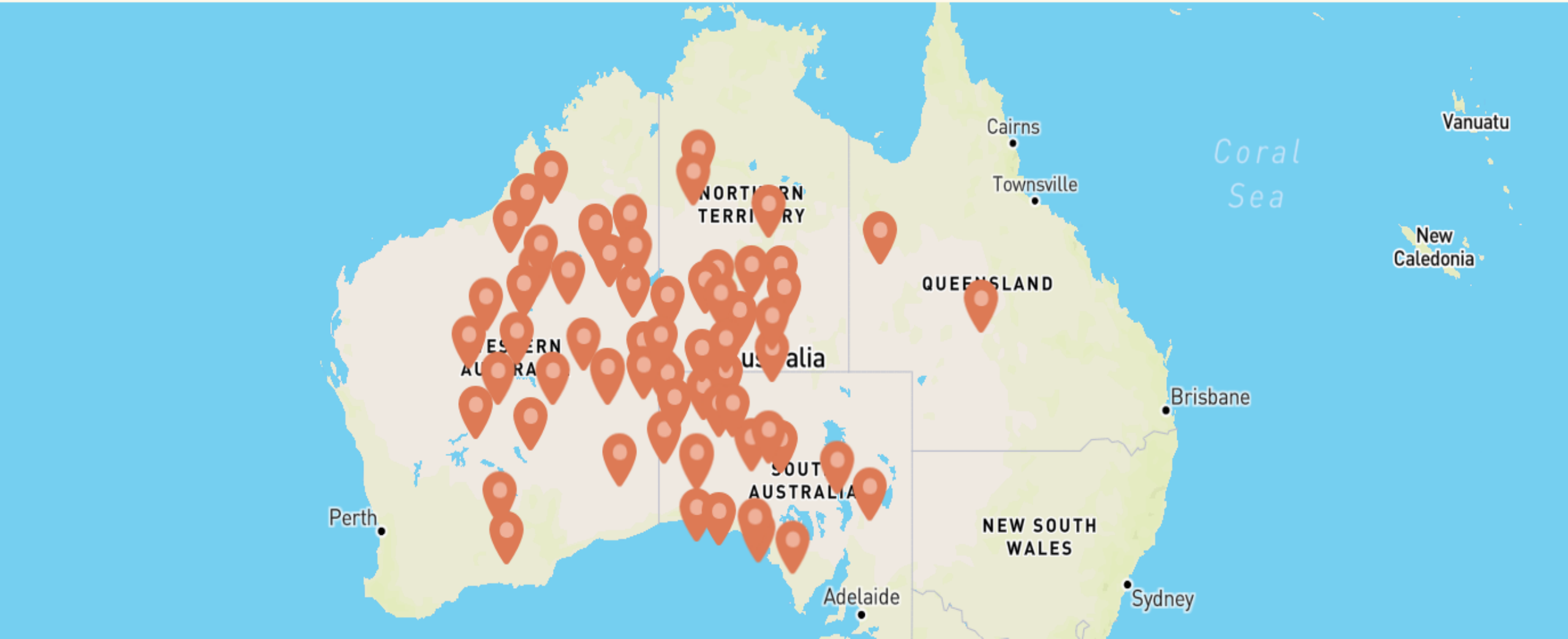
(Dept of Environment and Conservation, 2010)

The Bigger Picture: What Else is Needed?

- Prescribed burning
    - Different realities, modellers, minorities, misinformation, ideology and influence
    - Social licence is paramount!
    - Rebuilding capacity and capability within agencies – and beyond
    - Attraction, recruitment and retention – new sources of practitioners and managers?
    - Supporting non-agency stakeholders – Indigenous, conservation NGOs, pastoral, local government etc.
- Bushfire suppression
    - Backburning knowledge and skills – acquired through prescribed burning
    - Aerial ignition – AFAC doctrine, but limited adoption
- A National Master Class Program + what other initiatives?

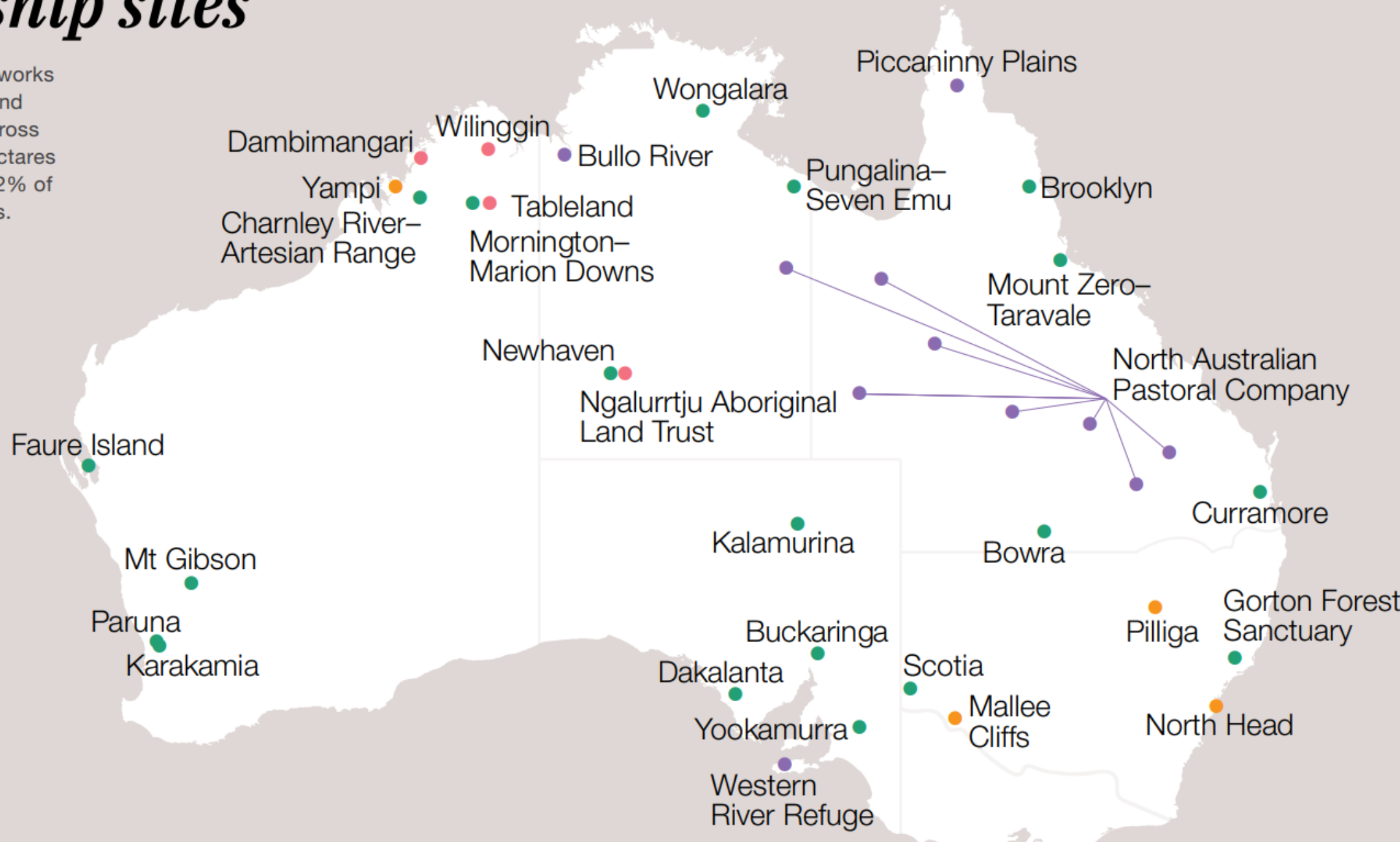

DFES
Karla Katitjin
Bushfire Centre of Excellence
Kaya, the Bindjareb people have embraced the establishment of the Bushfire Centre of Excellence on our Bindjareb boodja, as we share old traditional and new fire practices and beliefs to create a stronger future.
May all visitors to this region on which they stand have a safe visit and may they care for country and in turn it will take care of them. Boorda.
Karrie-Anne Kearing Salmon, traditional owner of Bindjareb Nyungar Boodja

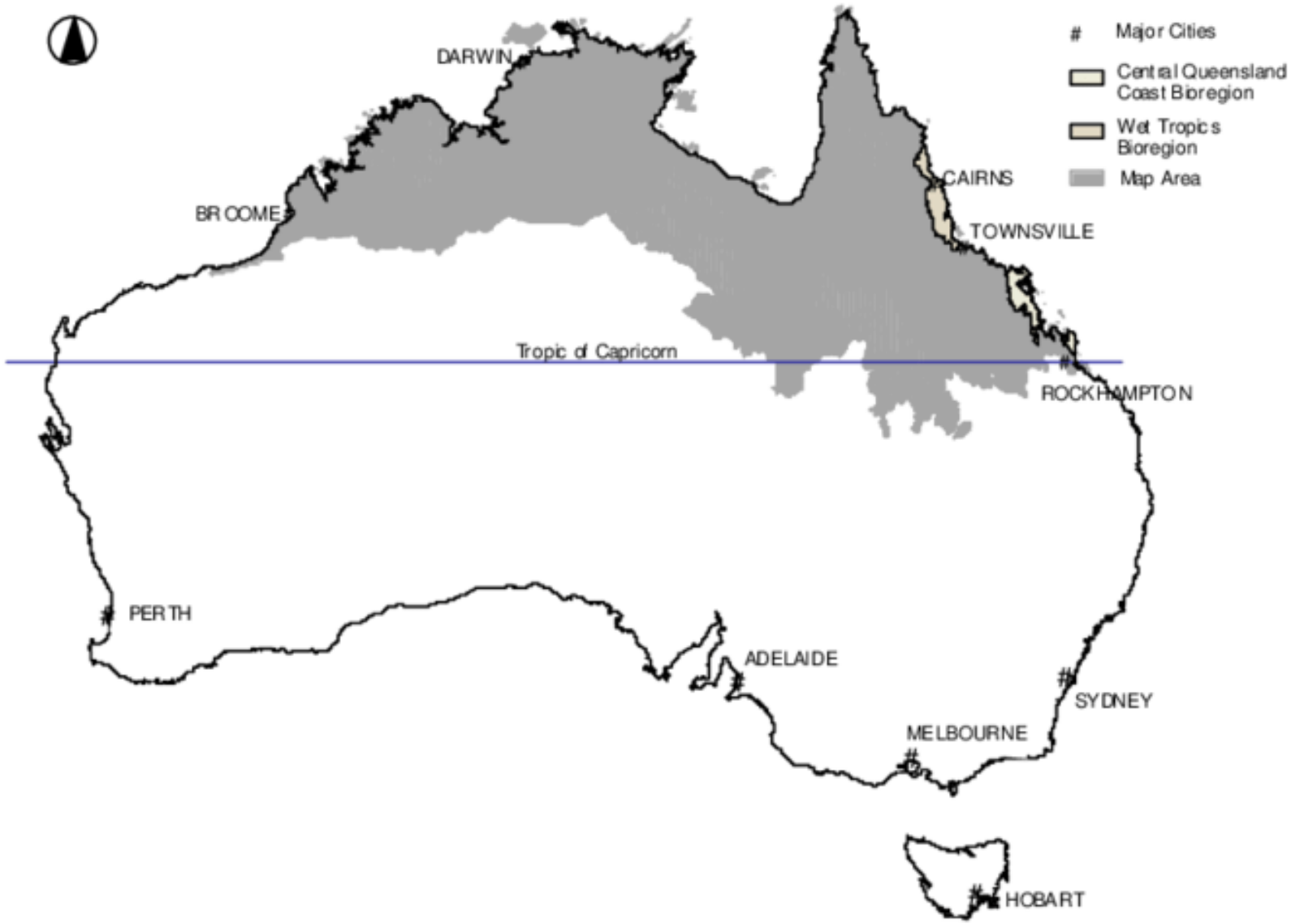
The IDA is proud to work with ranger teams across Australia's desert country. Together, these diverse ranger groups are delivering major regional collaborative land management projects.



Sanctuaries & Partnership sites

AWC owns, manages, or works in partnership to deliver and influence conservation across more than 12.9 million hectares – for scale, that's almost 2% of Australia's total land mass.

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ROCKHAMPTON
PERTH
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SYDNEY
MELBOURNE
HOBART
Major Cities
Central Queensland Coast Bioregion
Wet Tropics Bioregion
Map Area

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RESEARCH PAPER
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International Journal of WILDLAND FIRE
International Association of Wildland Fire

The 1986 Annaburroo experimental grassland fires: data

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ABSTRACT

Background. In 1986, CSIRO conducted a large program of experimental fires in grassland at Annaburroo Station, Northern Territory, Australia, with the objective of quantifying the effect of fuel condition (load and height) on fire behaviour. **Aims.** This paper provides the data collected during this program, representing a unique set of observations and measurements of large, free-burning experimental fires conducted in a multi-factor experimental design. **Methods.** Data are collated by experimental burn plot, providing detailed measurements of weather (wind speed, air temperature, relative humidity), fuel state (load, height, moisture content, curing) and fire behaviour (rate of spread, flame depth, flame height, head fire width), as well as processed information (e.g. steady-state rate of spread). **Data availability.** The data are made available for free download on the CSIRO Data Access Portal (https://data.csiro.au/collection/csiro:58746) and include detailed metadata descriptions of the data and their structure, also provided in this article. **Conclusions.** We have made the data available for fire behaviour researchers around the world to use in their research under the Creative Commons Attributions licence. It is hoped they will analyse these data and extract new and innovative insights to help improve our understanding of wildland fires burning in grass fuels.

Keywords: Experimental fires, fire behaviour, fuel state, grassland fire.


NORTHERN TERRITORY
Kidman Springs long term fire experiment
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Queensland Government

Final report

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Prepared by: **Michael Jeffery**

Department of Agriculture and Food WA

Date published: **December 2009**

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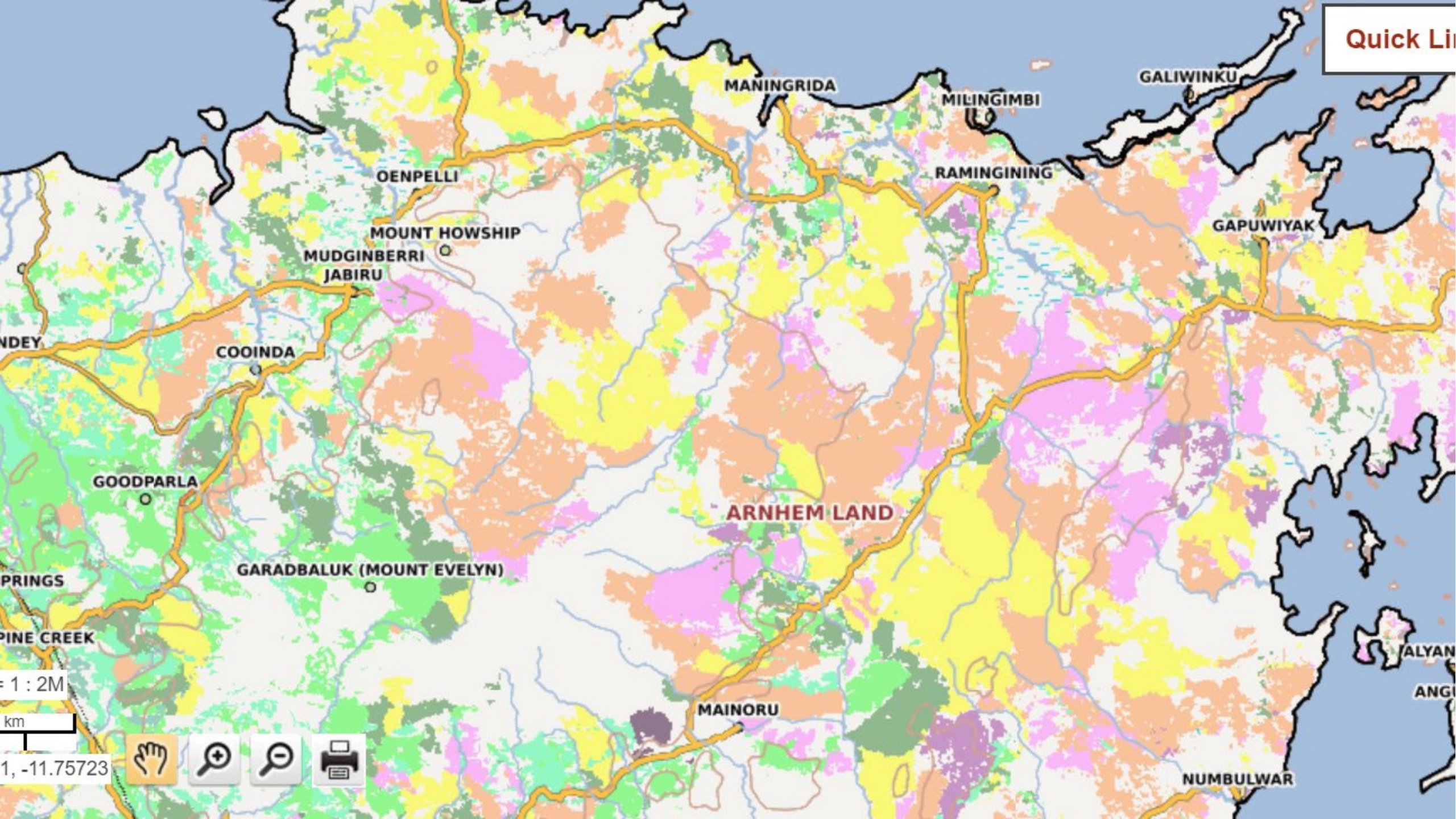
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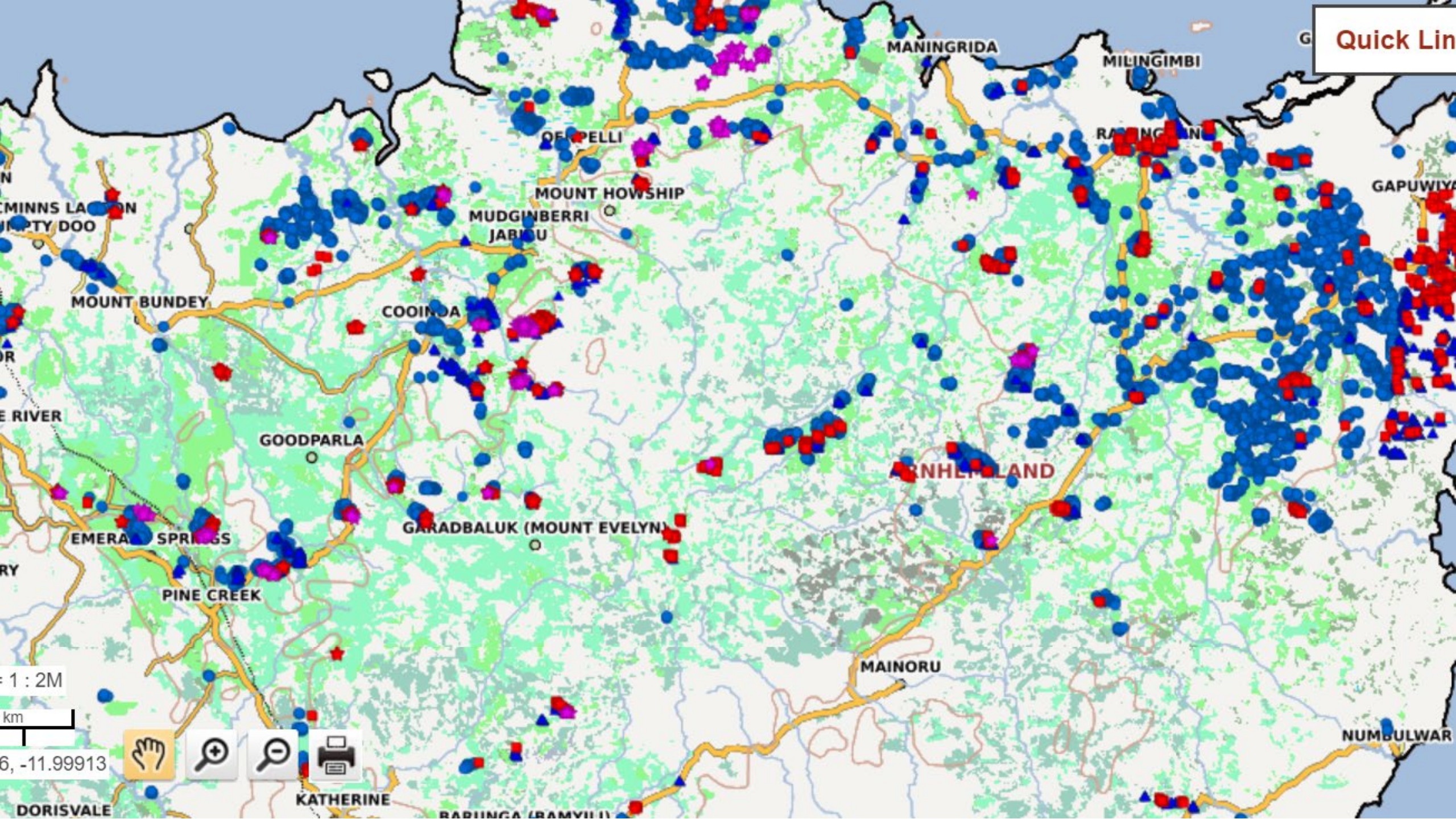
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1. Communications and advocacy to strengthen social licence

2. A multi-week masterclass program for experienced practitioners

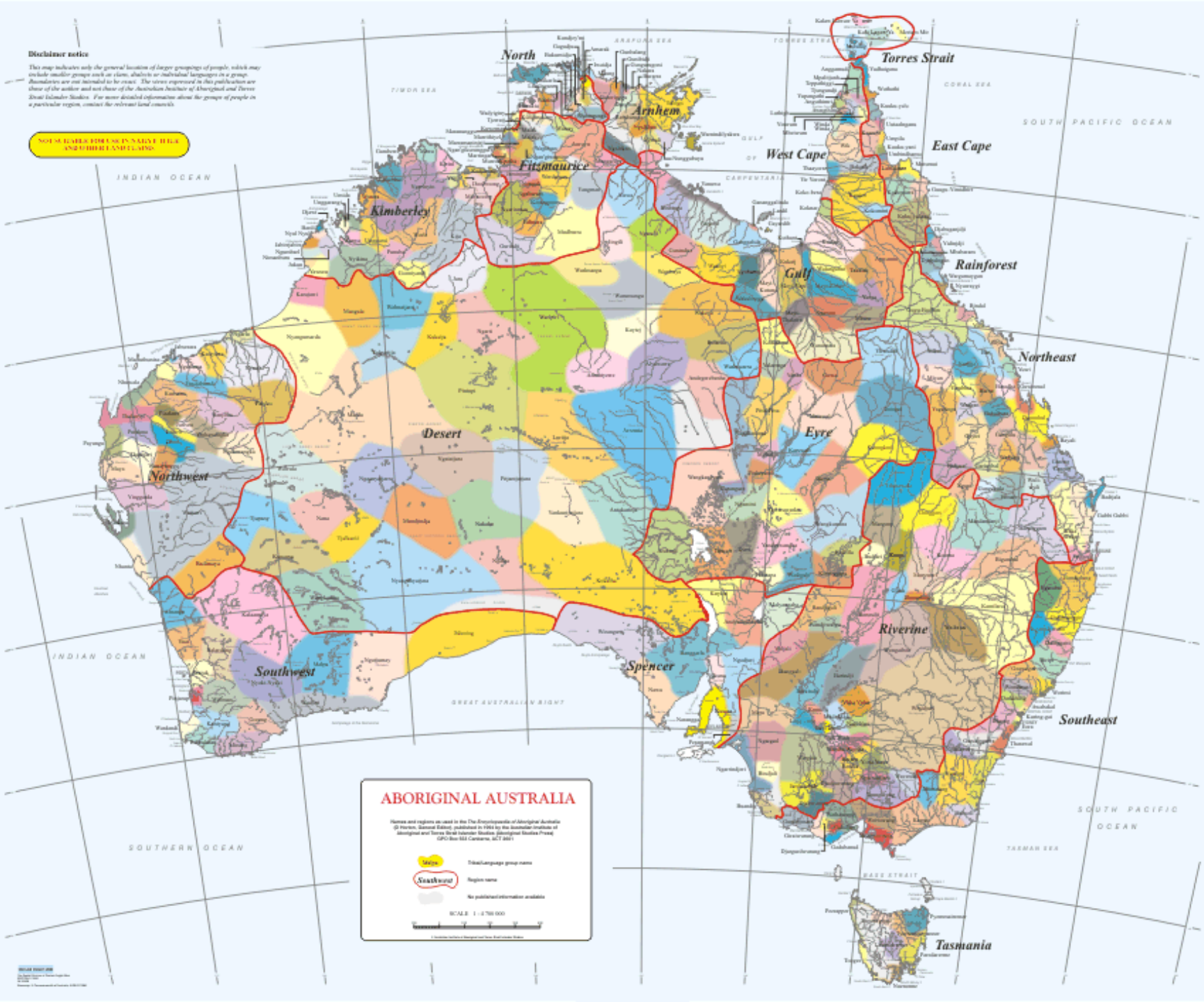
3. Multi-level professional development for managers and decision makers

4. Communities of practice, sharing of knowledge and lessons learned, and support for research utilisation

5. Engagement and extension activities with agencies, national NGOs, the carbon sector, aerial ignition providers and users, etc.

6. National doctrine and best practice guidelines, tailored for new and emerging audiences

7. Assurance services including program reviews and support for continuous improvement


Disclaimer notice
This map indicates only the general location of larger groupings of people, which may include smaller groups such as clans, dialects or individual languages in a group. Boundaries are not intended to be exact. The views expressed in this publication are those of the author and not those of the Australian Institute of Aboriginal and Torres Strait Islander Studies. For more detailed information about the groups of people in a particular region, contact the relevant land councils.
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East Cape
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Kimberley
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Gulf
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Eyre
Northwest
Riverine
Southwest
Spencer
Southeast
Tasmania
INDIAN OCEAN
SOUTH PACIFIC OCEAN
SOUTHERN OCEAN
GREAT AUSTRALIAN BIGHT
CORAL SEA
TASMAN SEA
ARAFURA SEA
TIMOR SEA
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BASS STRAIT
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Tribal/Language group name
Region name
No published information available
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ON FIRE: The Report of the Wildland Fire Mitigation and Management Commission

A STRATEGY TO EXPAND **PRESCRIBED FIRE TRAINING** IN THE WEST

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