



8TH
INTERNATIONAL
WILDLAND FIRE
CONFERENCE

GOVERNANCE
PRINCIPLES:
Towards an
International
Framework



NSW Bushfire Risk Management
Research Hub

Australian Developments in Wildfire Preparation and Prevention

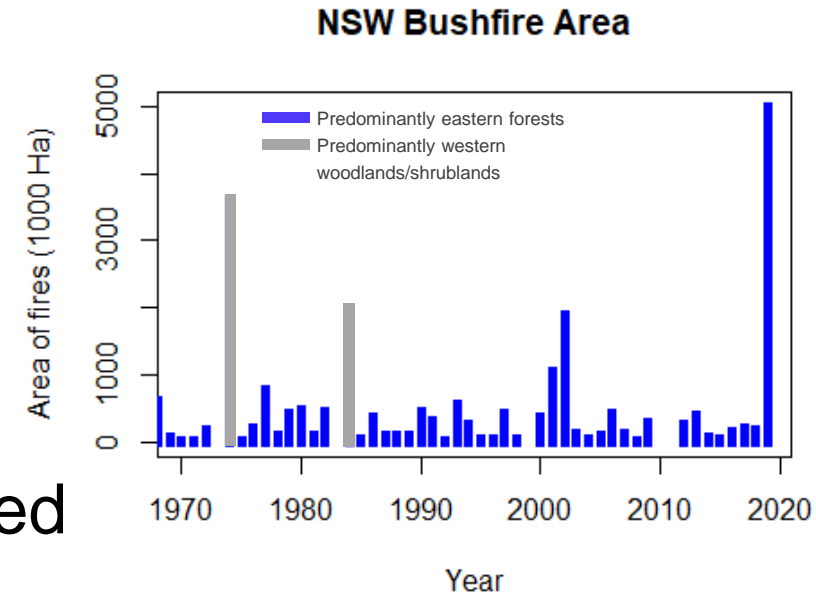
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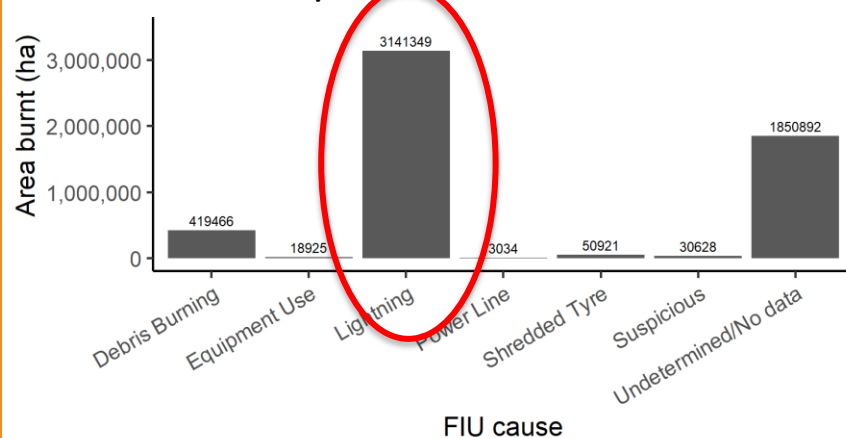
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The 2019/20 Bushfire Mega-season

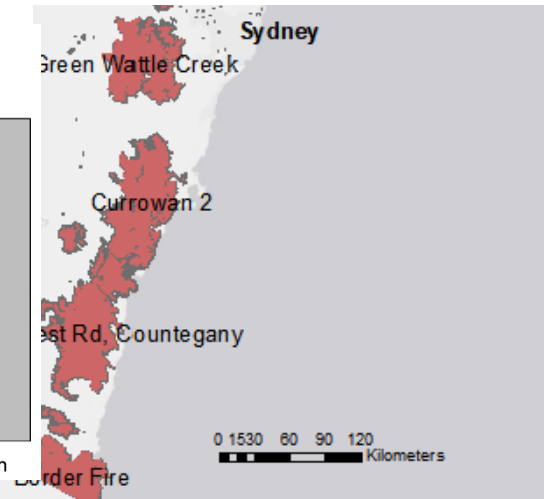
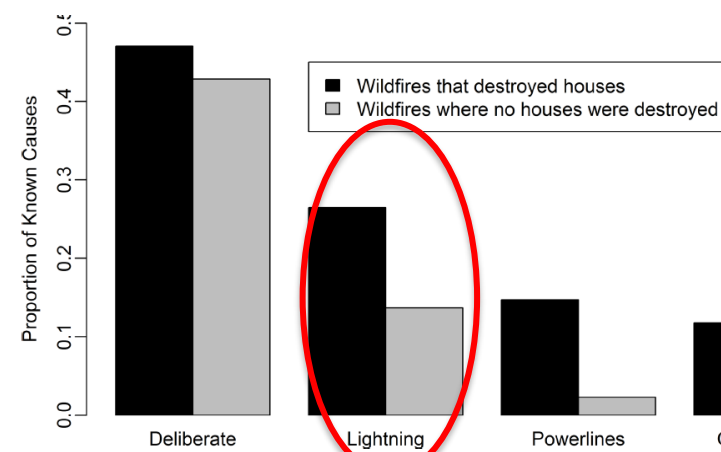
- Largest area of forest fire in recorded history
- Longest season
- Largest number of fires
- Largest house loss
- **But not largest deaths**
- Cause was predominantly Lightning
 - Historical fire predominantly human-caused



Causes of 2019/20 Bushfires



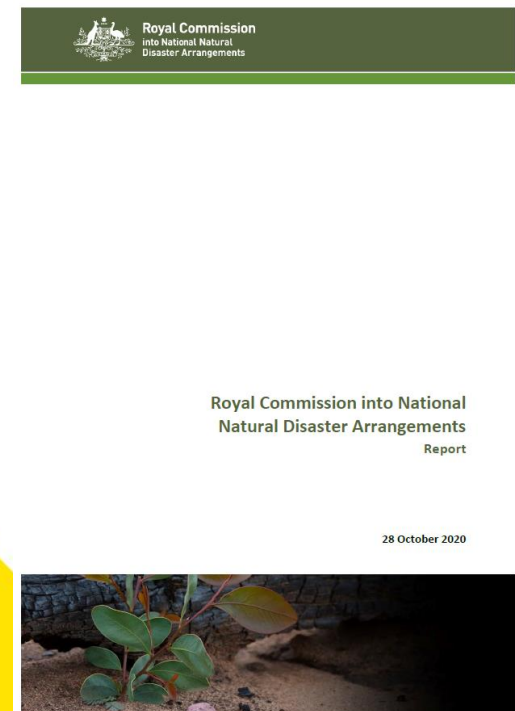
Causes of Bushfires 1998-2009



2019/20 Bushfire Inquiries

- Final Report of the NSW Bushfire Inquiry
- Inquiry into the 2019–20 Victorian fire season
- Royal Commission into National Natural Disaster Arrangements
- Common themes among the recommendations:
 - This is the new normal so we need to improve in several ways
 - New ideas in fuel management
 - Coordination, data gathering and provision
 - Improved community relations
 - Improved detection and reduction of ignitions
 - Protection of biodiversity

Let's look at some of these



Fuel Management

- Prescribed Burning is shifting toward a risk-based approach
 - Rather than simple area target (e.g. burn 5% of the forest)
- Indigenous burning is on the rise
- Trialling ‘novel’ approaches such as goat grazing and mastication
- NSW is introducing a new “Ignition Management Zone” for prescribed burning

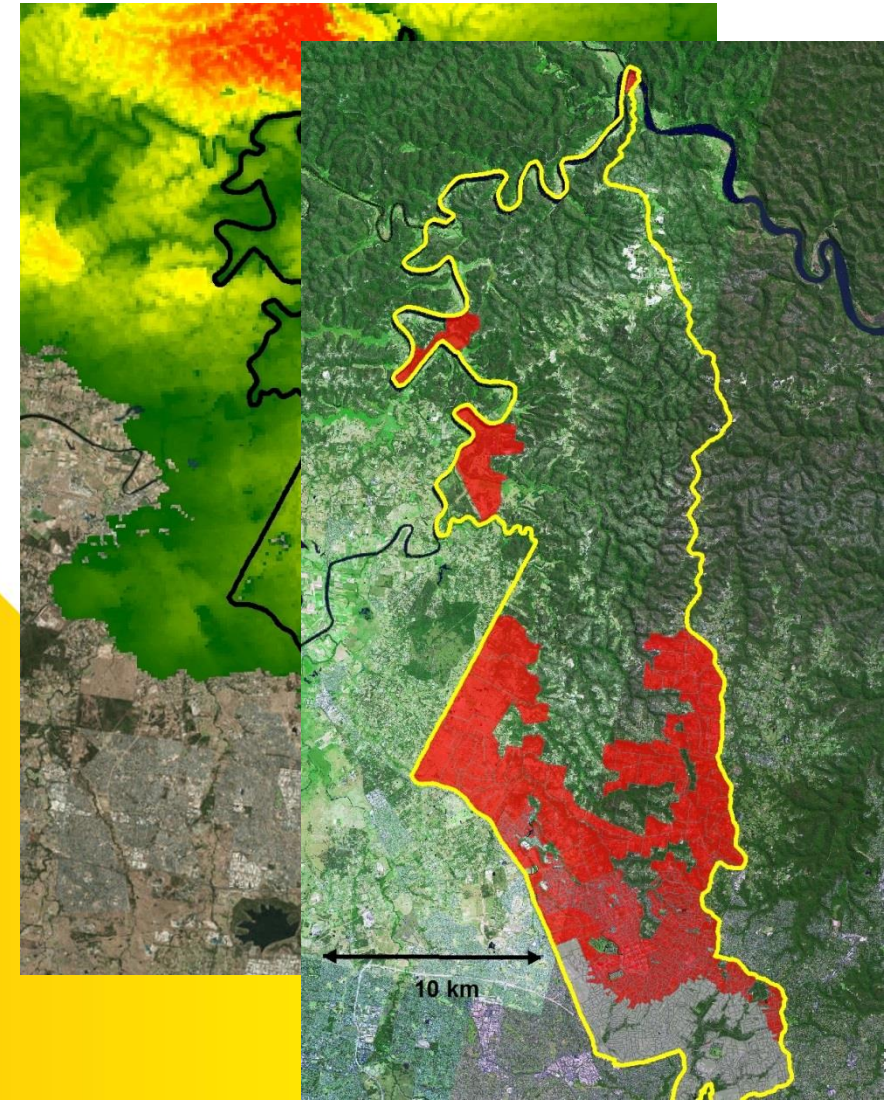


Fuel: New Fire Risk Planning (NSW)

- PHOENIX fire simulation used to map high risk areas
- Committee prepares a draft 5 year treatment
- Simulations re-run with that treatment
- Public consultation

- Hybrid area/risk based approach because National Parks still has area targets

“The Hills” risk map (RFS unpublished)



Fuel: Indigenous Burning

- Frequent, small, low-intensity fires
- Common practice in northern Australia (savannas)
- Strong push to do more in south
- Its benefits:
 - Empowers Indigenous people
 - Reconnects them to country
 - Good for biodiversity
 - Some fuel reduction benefits
- A lot we do not know



Fuel: Smoke

- The 2019/20 Bushfires caused record exposure to smoke
- But prescribed burning also causes smoke
- Research is finding that increasing prescribed burning will probably **increase** average exposure



Detection and Ignition

- Lots of research on early detection (satellites, drones, lightning sensors)
- “Ignition Management Zone” in NSW (fuel treatment where ignitions are likely, such as hilltops)
- Not aware of any initiatives targeting people who start fires



Community Engagement

- All states have programs targeting
 - Preparing a Bushfire Survival Plan
 - Fuel management (in the Defensible Space zone)
 - Planning for vulnerable people
- New focus is community-led



Fire Prediction

- New fire simulators being deployed (e.g. SPARC and coupled weather-fire models)
- Improved weather modelling
- Australian Fire Danger Rating System (AFDRS)
 - More accurate and spatially targeted index

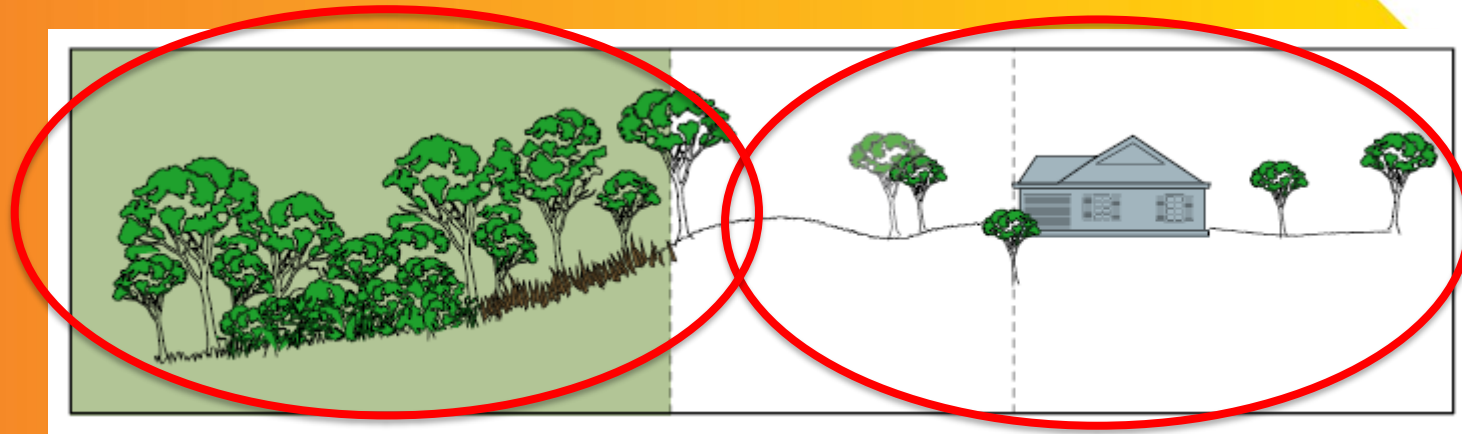


The screenshot shows the AFDRS website interface. At the top, the AFAC logo (National Council for Fire and Emergency Services) is displayed alongside navigation links: Home, About, Communications, Shop, Contact us, and SIGN IN / REGISTER. Below the logo is a navigation menu with categories: MANAGING EMERGENCIES, DOCTRINE, COLLABORATION MODEL, EVENTS & CONFERENCE, and INITIATIVES. A search bar is located on the right side of the menu.

The main content area features a breadcrumb trail: Home > Australian Fire Danger Rating System > AFDRS Overview > AFDRS Design. A sidebar on the left lists various initiatives, with 'AFDRS Design' highlighted. The main heading is 'Australian Fire Danger Rating System' with a sub-heading 'AFDRS Design'. Below this, there is a section for 'Fire Danger Information' and 'Fire Danger Ratings'. A diagram titled 'The Australian Fire Danger Ratings (AFDRS) levels are:' shows a semi-circular gauge divided into four segments: MODERATE (green), HIGH (yellow), EXTREME (orange), and CATASTROPHIC (red). A needle points to the MODERATE level. To the right of the gauge, four colored boxes provide corresponding actions: MODERATE (Plan and prepare), HIGH (Be ready to act), EXTREME (Take action now to protect life and property), and CATASTROPHIC (For your survival, leave bushfire risk areas).

Development Planning

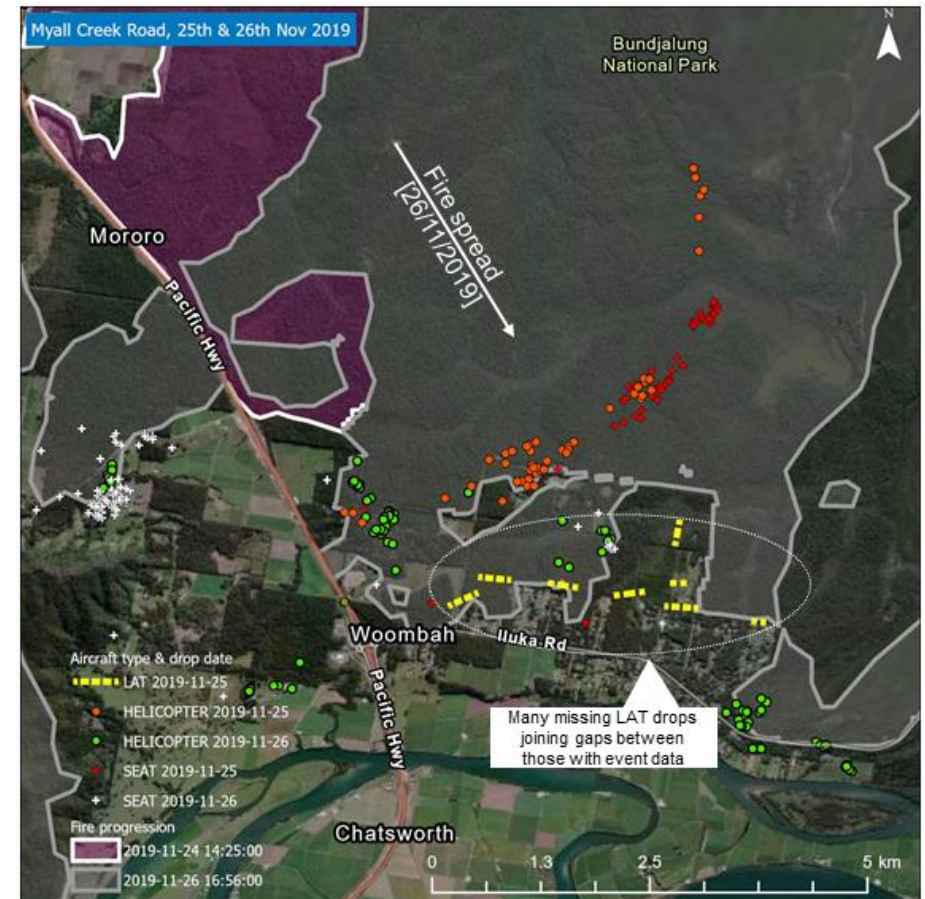
- New subdivisions require a strategic bushfire plan (upgraded in 2019 in NSW)
- The National building code (AS3959) is under review
 - Maintenance is one focus
- There is a renewed focus on Asset Protection Zones (which were poorly maintained in 2019/20)



Data and Information

There are ongoing improvements to:

- Intelligence from the fireground and air observation
- Weather prediction and observation
- Vehicle and Aircraft tracking



Some other issues

- Defence is very effective
 - (but is not popular)
- Aircraft are the most expensive
 - and not well understood
- Backburns are common
 - and sometimes go wrong



The effectiveness of strategies

Fuel management (Prescribed burning)

- Modest risk reduction
- Treatment near the WUI is best
- All other fuel treatment methods are limited in extent

Defensible Space

- Critical for reducing risk
- Household holders know their risk
- But do little about it
 - Maintenance is a big issue

Preparedness

- Most household holders are under-prepared
 - Even those who defend their houses

Concluding Remarks

Let's be realistic.

Fire weather is getting worse: So what can we not achieve?

- A substantial reduction in ignitions
- A substantial reduction in burnt area

So What can we achieve?

- A reduction in death and house loss via:
 - Support for householder defence and maintenance of Defensible Space
 - Better education about risk
 - Better prediction and warning
- Better targeting of suppression
- Better targeting of prescribed burning