



Australian Government
Australian Institute of Criminology



ACT DEPARTMENT OF JUSTICE
& COMMUNITY SAFETY

Human caused: Reducing the impact of deliberately lit bushfires

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Costs of arson: measurable and hidden

Physical Impacts

- Endangerment of property.
- Cost of fire agencies attending and fighting fires.
- Cost to volunteers – time away from family or businesses.
- Endangerment of fire-fighters lives.
- Take valuable resources away from other fire-fighting efforts, particularly during peak fire fighting efforts.
- Environmental impacts – biodiversity, weed infestation, loss of fire sensitive species.
- Interference with land management practices.
- Pollution – smoke, greenhouse gas emissions, visual.
- Reduced amenity to recreational areas.

Psychological Impacts

- Detrimental impact on the psychological well-being and cohesiveness of the community – affect community confidence.
- Strong media reactions focus community and political attention – backlashes against the policies / practices of fire services and land managers.
- Psychological impact on fire fighters who devote time and risk their lives in fire-fighting efforts.
- Potentially deep and long-terms psychological impact on victims.

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How common is arson the cause of vegetation fires attended by state and territory fire authorities?

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Data sources?

- We gratefully acknowledge the generosity of fire agencies from around Australia that contributed data to this study, including:
- Australian Fire Authorities Council
- Australian Capital Territory Forests
- New South Wales Fire Brigade
- State Forest of New South Wales
- New South Wales National Parks and Wildlife Service
- New South Wales Rural Fire Service
- Northern Territory Police, Fires and Emergency Services
- Queensland Department of Primary Industry
- Queensland Department for Parks and Wildlife Service (EPA)
- Queensland Fire and Rescue Service
- South Australian Country Fire Service
- South Australian Department of Environment and Heritage,
- Tasmania Fire Service
- Victorian Department for Sustainability and the Environment
- Melbourne Fire Brigade
- Victorian Country Fire Authority
- Western Australian Fire and Emergency Service Authority
- Western Australian Department for Conservation and Land Management

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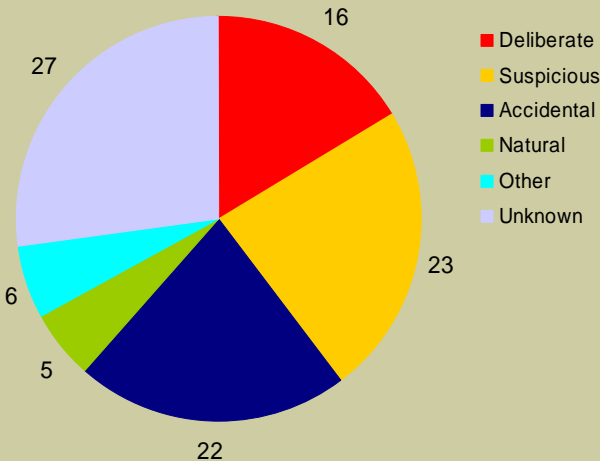
Limitations & problems

- **Data quality**
 - geocoding differences
 - variable resources
 - inconsistency
- **Cause determination**
- **Temporal imprecision**
- **Lack of physical evidence**

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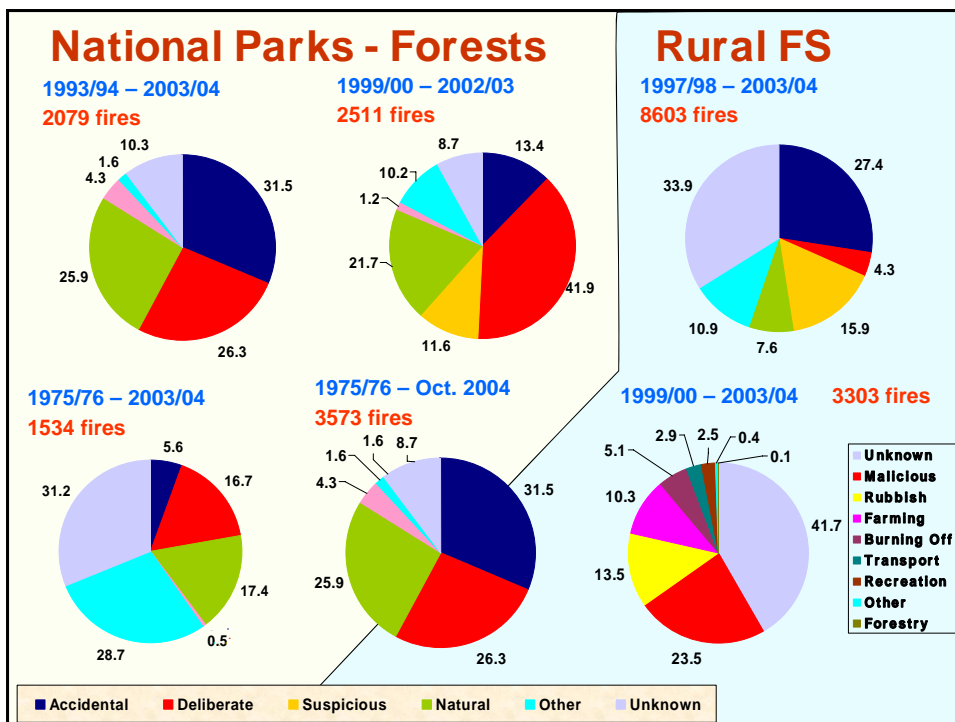
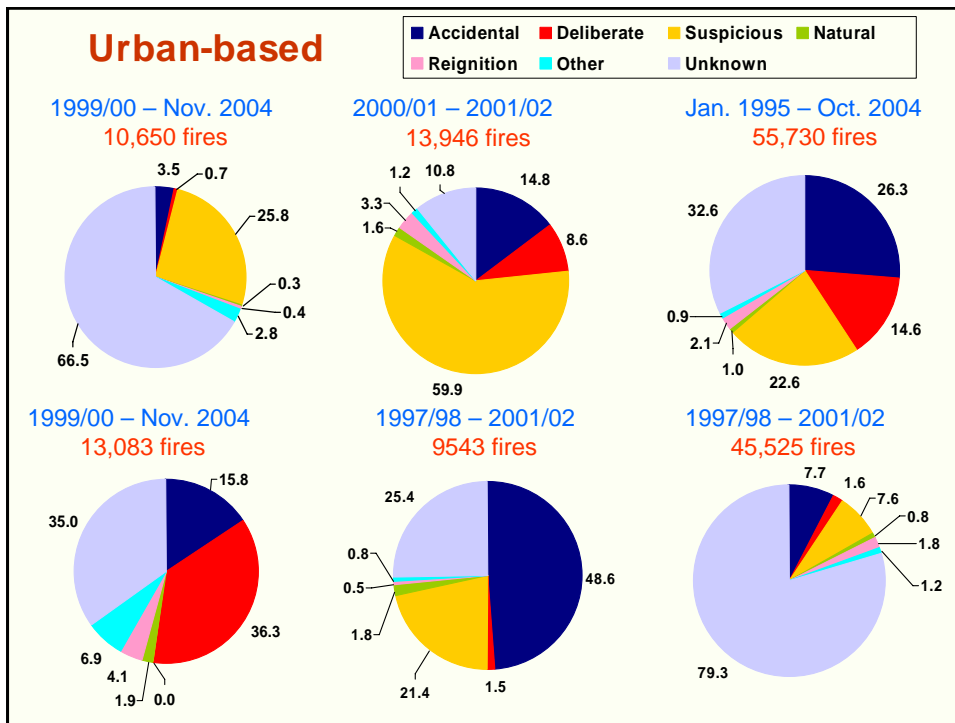
Bushfire causes - Australia



Source: Australian bushfire causes (AIC file)

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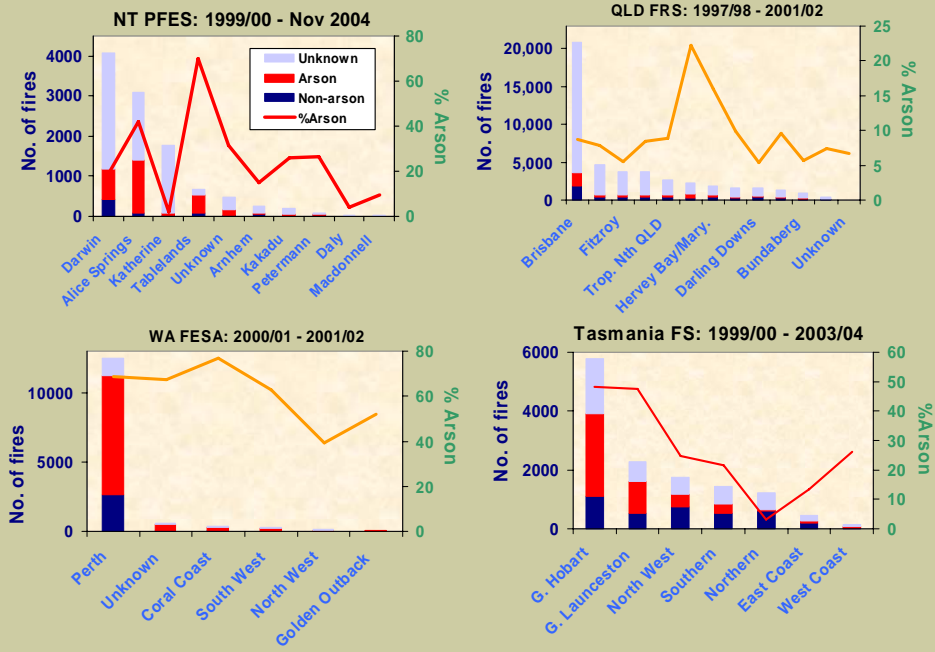
Where?

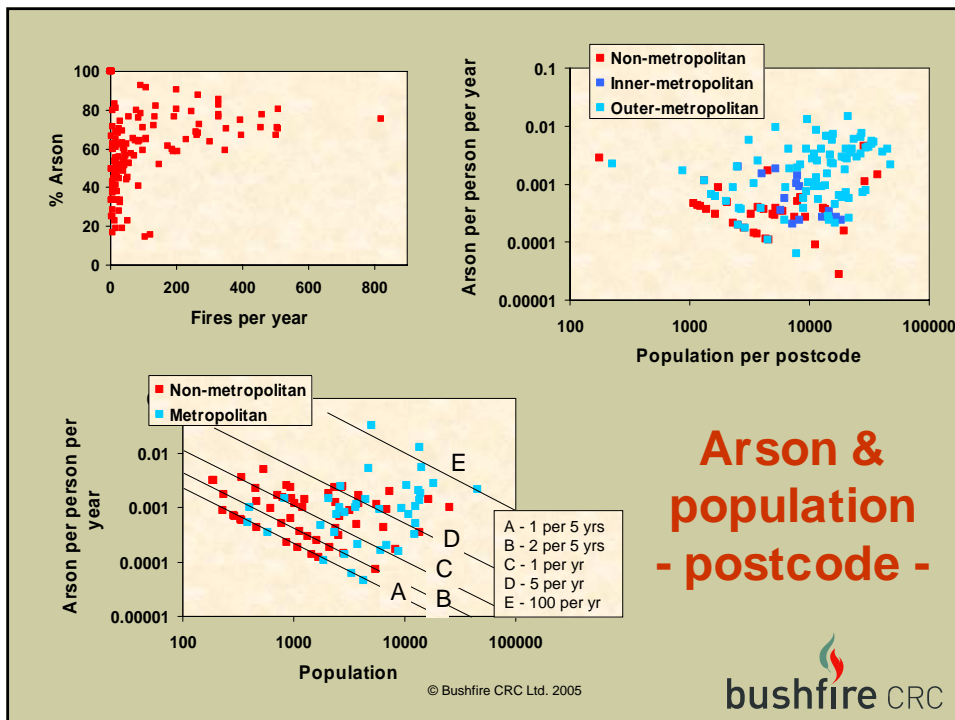
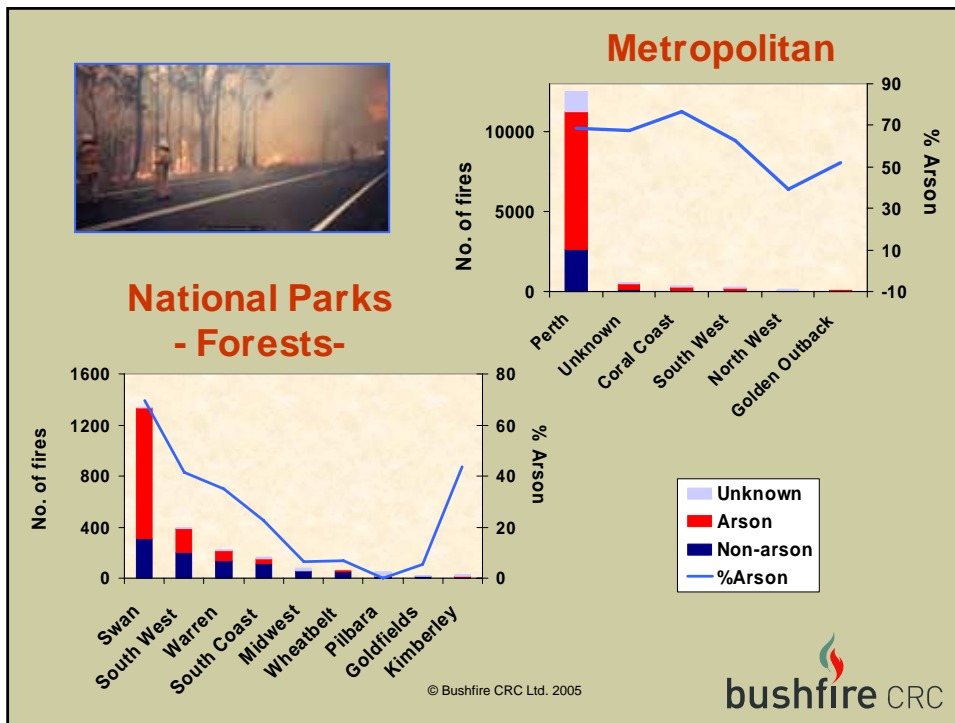
Relationship to population densities

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Distribution across the states - territories







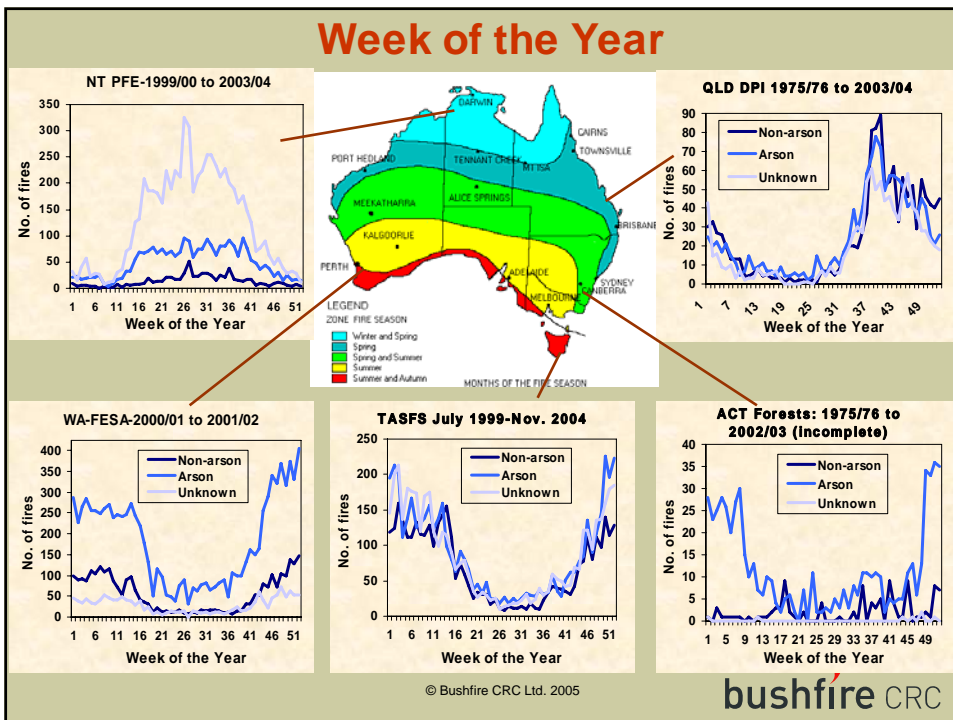
When?

Patterns of human fire setting

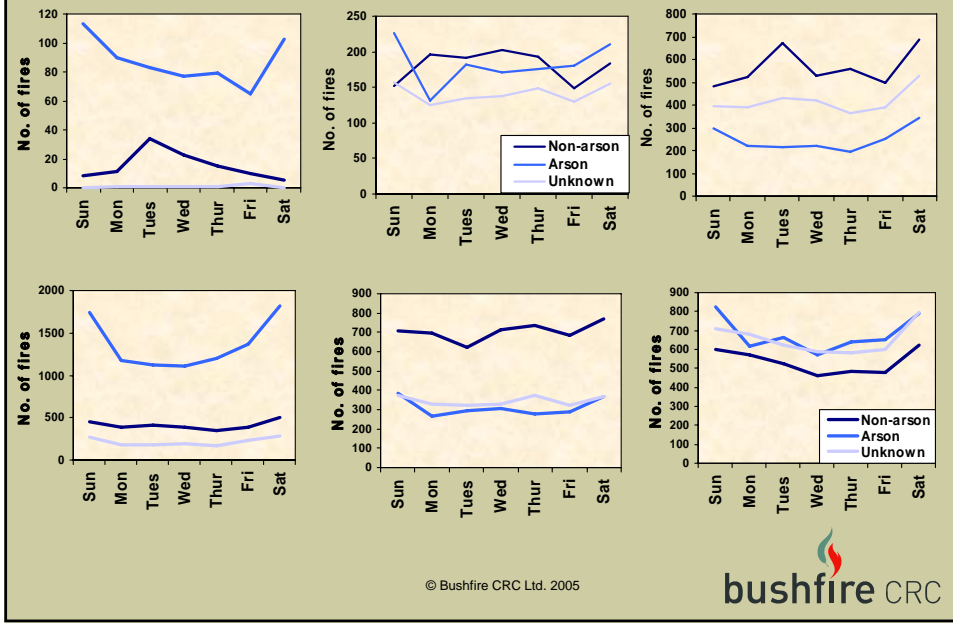
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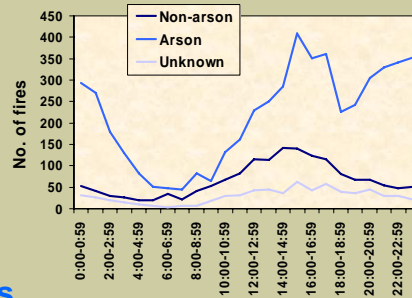
Week of the Year



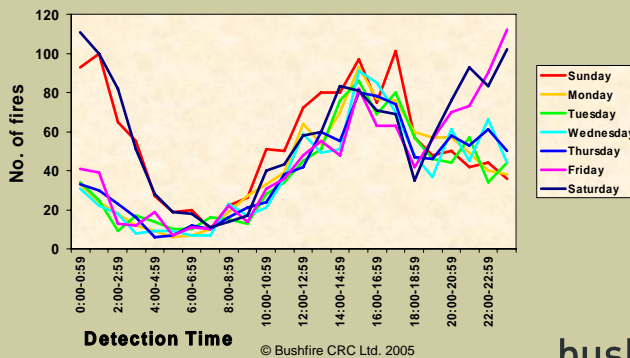
Day of the Week

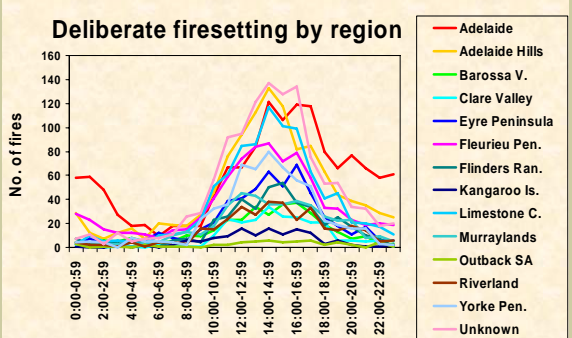
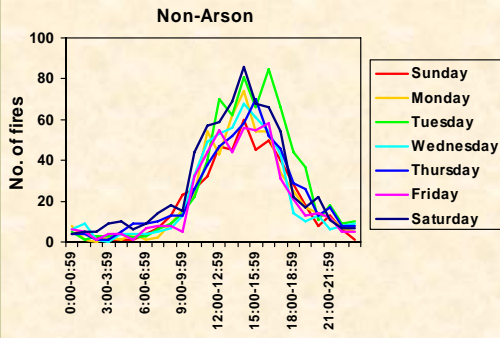


Time of the Day Metropolitan Region



Deliberate fires

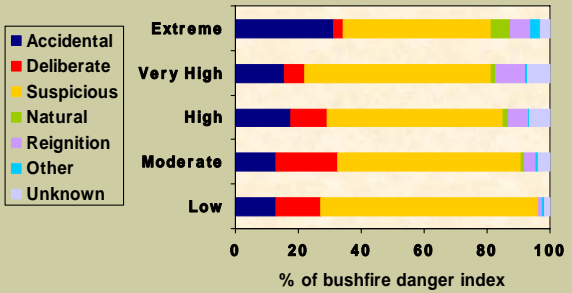
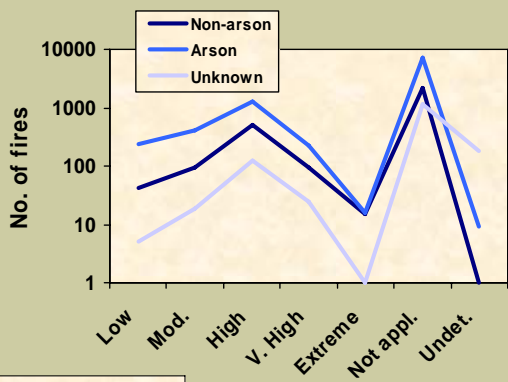




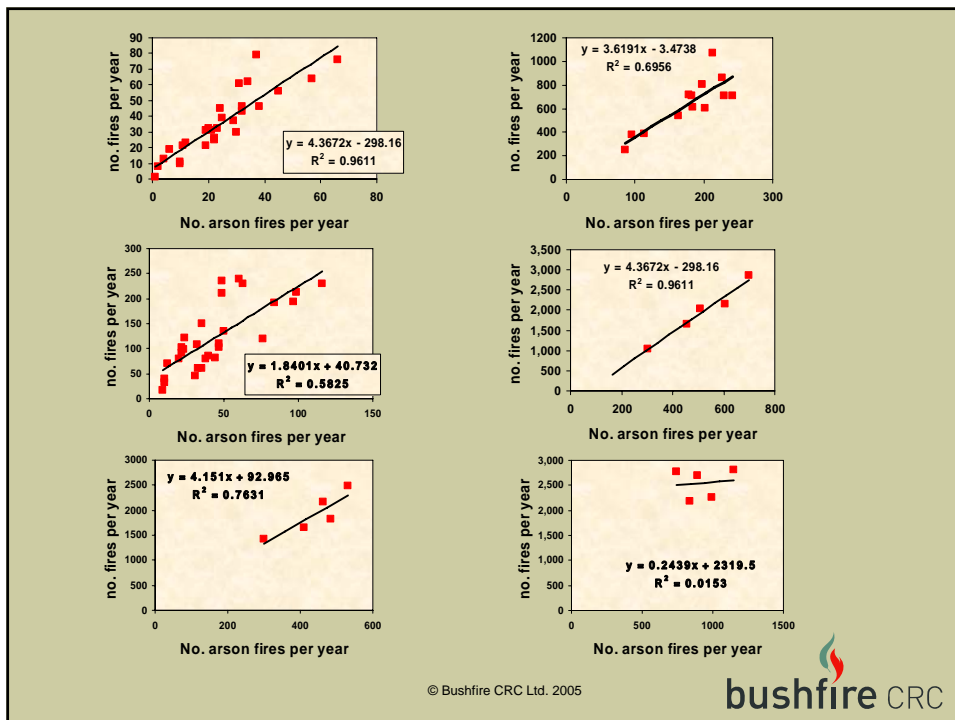
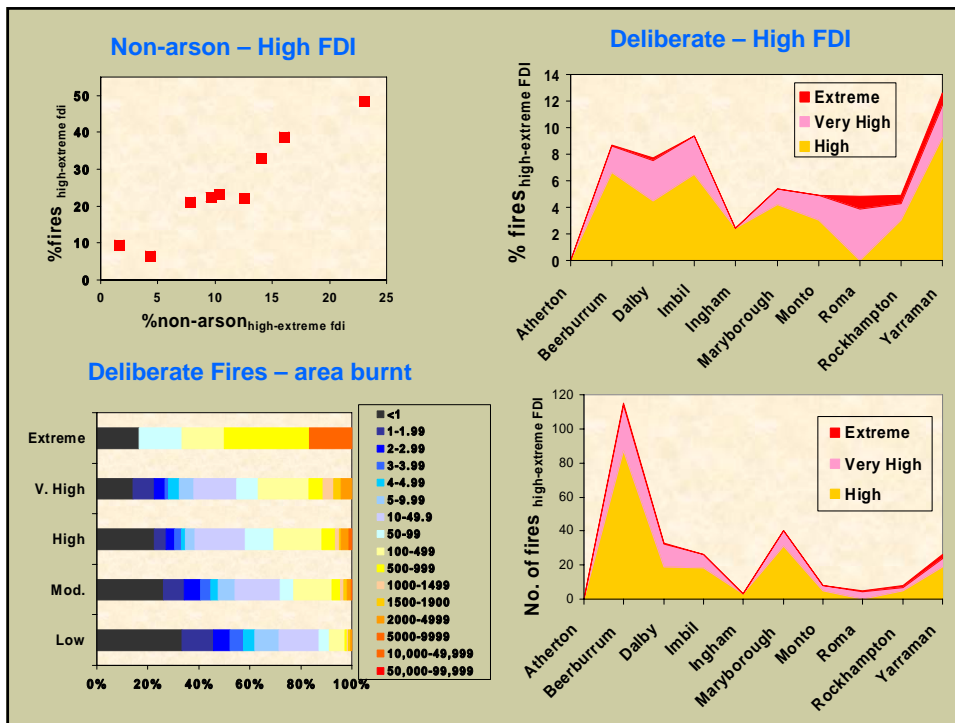
**Time
of
day**



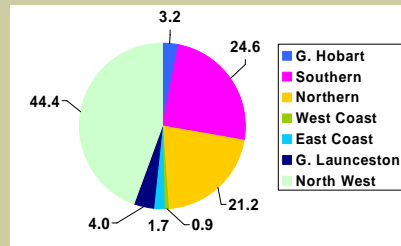
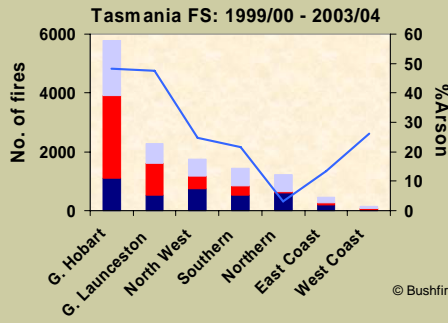
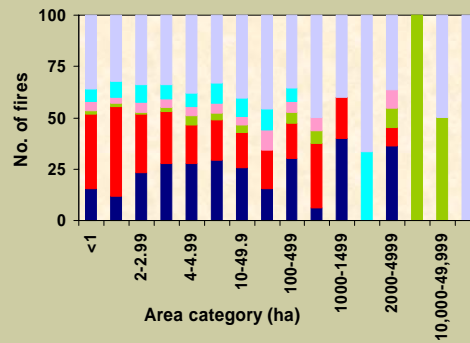
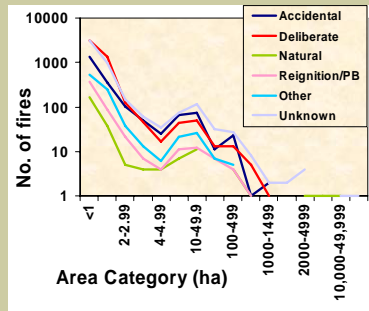
**Relationship to
bushfire
danger
- Jurisdiction #1 -**



**Proportion of
fires relative to
fire danger**



Area burnt by arson: example from Tasmania

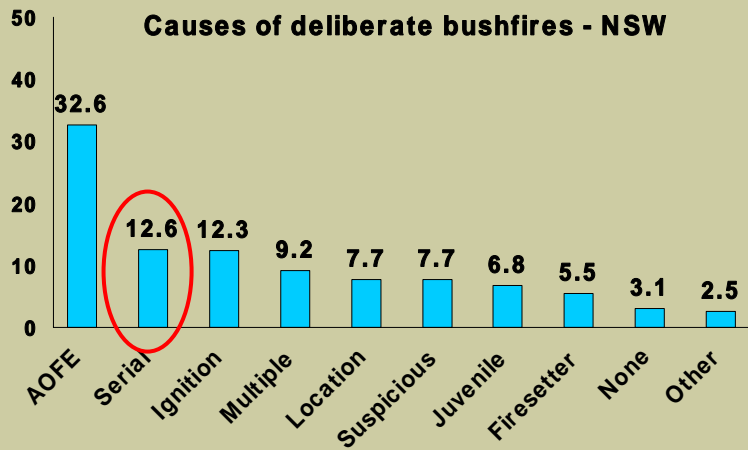


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Serial bushfire arson

Causes of deliberate bushfires - NSW



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Day of the Week

	Sun	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
1		3	1(2)	(2)	1(1)	(2)								
2	3(2)	(1)	3	(1)	(2)	2(1)	1(1)							
3	1(3)	1	2(3)	2(3)	1(1)	(1)	4(2)							1
4	2(1)		1		1		1							
5	6(2)	3	4(1)	2(1)	2(1)	1								
6	(1)	1	2	3	1	(1)	(2)			(1)				
7						1	1	(1)		1	(1)		1	
8							1	1(1)	1		(1)			1
9		(2)	(1)			(1)			2	1(1)		1	(3)	1(2)
10		1				1		4(1)	2(1)	1	1(1)	1		(1)
11						1		1	(1)	1	1	2	(1)	
12			(1)					4(2)	(1)	1		1	4	
13				1		(1)			2			2	1(1)	(1)
14		(1)						(1)	1	1(1)	(2)	1(1)		
15						1		(2)	(1)	(1)				(1)
16		1	1(2)							(1)				
17								(1)		(1)	(1)	(2)		
18								1(2)	(1)	(1)				1(1)
19								1(1)	1					1(1)
20								(1)	1	(1)				
21									1					


Week of the Year



Conclusions: Bushfire Arson

- Arson is singly the greatest cause of bushfires across Australia – estimate: 30-60% of all fires.
- Frequency increases in or near metropolitan or major urban centres – higher frequency – higher proportion of arson
- The majority are small - potential to cause significant damage – costly in terms of fire-fighting resources, and on the environment.
- There are distinct patterns of firesetting activity – primarily during bushfire season – commonly more frequent on weekends (?night-time social activities).
- Serial arson is significant (likely 10% of fires): motivations vary: intention is not necessarily to cause significant harm.
- Child/juvenile fire-setting: difficult to estimate - likely significant.
- Reduction in bushfire arson: Community awareness campaigns, treatment of problem behaviours and utilising the criminal justice system.
- Understanding when, where and why people light fires - target arson reduction accordingly.

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Motivations of arsonists

A bushfire arson typology (Willis, 2004)

1. Bushfires lit to create excitement or relieve boredom

- **Vandalism** – by individuals or groups; with or without intention for fire to spread.
- **Stimulation** – seeks excitement/stimulation of seeing fire crews and possibly media arrive; property damage usually unintended but potential for damage may heighten the experience.
- **Activity** – fires lit to generate activity and relieve boredom or tension.

2. Bushfires lit for recognition and attention

- **Heroism** – may gain positive recognition/rewards by reporting or suppressing fire.
- **Pleading** – ‘cry for help’; seeks recognition and attention as a means of securing help.

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A bushfire arson typology

3. Bushfires lit for a specific purpose or gain

- **Anger** – revenge or as an expression of anger or protest.
- **Pragmatic** – lit where other means of obtaining the objective are impractical or illegal, e.g. land clearing.
- **Material** – fires are lit for material gain; e.g. firefighters seeking overtime.
- **Altruistic** – fire believed to benefit others; e.g. clearing fuel loads prevent future fire.

4. Bushfires lit without motive

- **Psychiatric** – psychological or psychiatric impulses derived from mental disabilities; no other motive; lack of control over their actions; lacks capacity to form malicious intent.
- **Children** – firesetting was a form of play or experimentation; without malicious intent.

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A bushfire arson typology

5. Bushfires lit with mixed motives

- **Multiple** – several of the above motives arise at one time.
- **Incidental** – results from spread of a fire that was lit with malicious intent, but without any expectation that a bushfire would result.

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Children - Juveniles

Children who set fires:

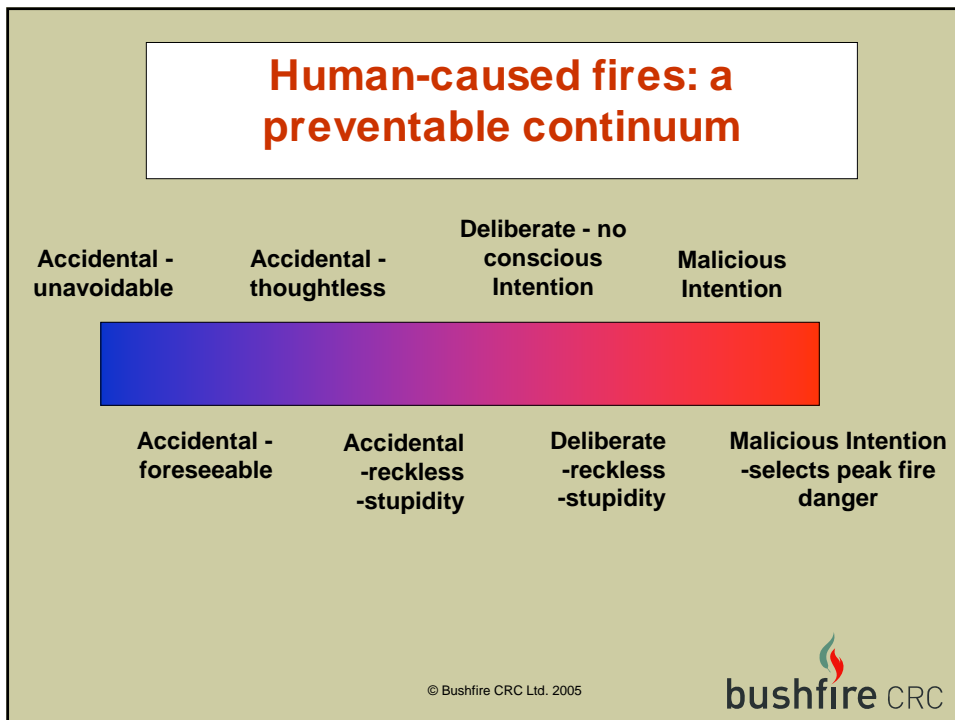
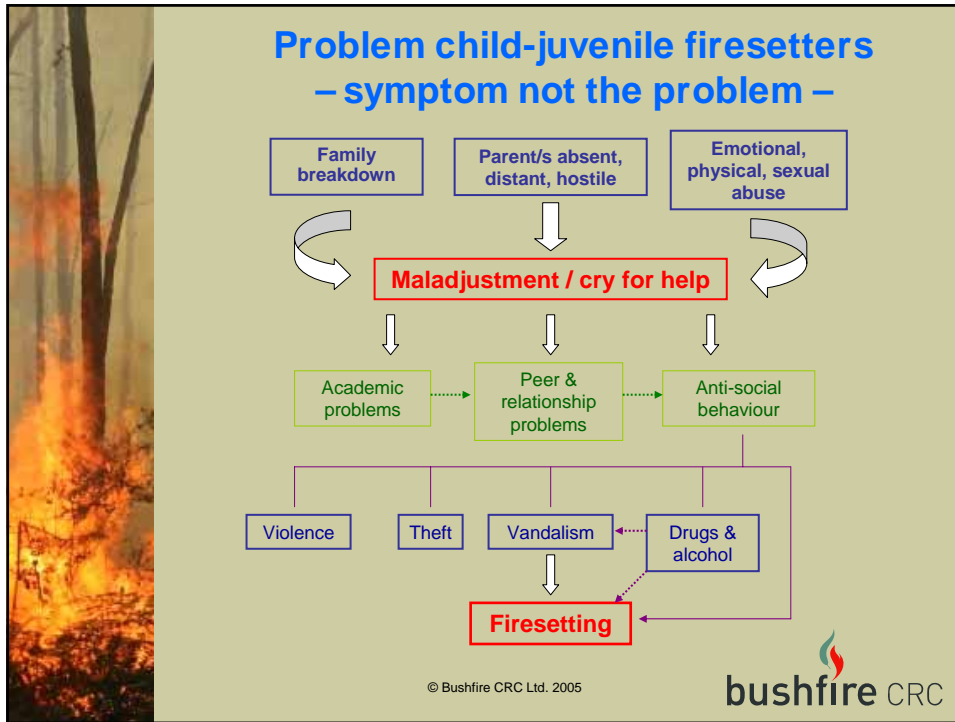
- Fire-players:** usually <7 years, 45% of 99 boys 5-9 yrs or age (Kafry, 1980), 18% before 3 yrs of age
- Curiosity firesetters:** usually 8-12 yrs, usually set one fires out of curiosity/experimentation: no malicious intent
- Firesetters:** usually older children – juveniles, known to have intentionally set one fire to cause damage
- Repeat firesetters:** older children – juveniles, known to have intentionally set one more than one fire to cause damage

Increasing diversity in types of firesetting behaviours and locations of firesetting with age

Proportion: ?

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Justice Responses

- Identifying the problem, investigating the crime, profiling, interviewing, apprehending the offender, prosecution, sentencing.

Investigation

- Specialist investigators-limited resources
- Requires effective co-operation between police and fire authorities – difficulties in the investigation of nuisance fires.
- Intensive efforts to detect and prosecute bushfire arsonists, e.g., Operation Tronto (NSW) investigated 1500 fires.

Prosecution - sentencing

- Most states have developed separate criminal offences relating to starting a bushfire.
- Model Criminal Code for Bushfire Arson – 15 yr imprisonment for causing a bushfire and being reckless to the spread of the fire to vegetation or property belonging to another – significant - no need to establish intent.
- Effectiveness of justice response depends on not only sentences but people must believe that there is a reasonably strong chance of being caught.

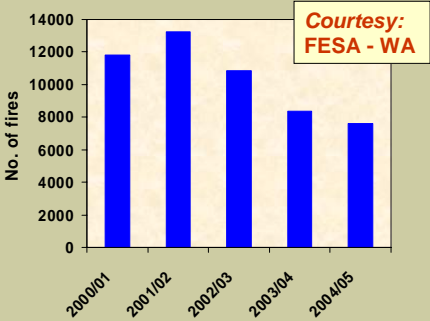
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Targeted Programs for Reducing Bushfire Arson

Prevention – Education – raising community awareness –

Example:
Community Centered bushfire (arson) reduction – a targeted united campaign undertaken in Western Australia



Courtesy: FESA - WA

Other targets - e.g., Friday-Saturday night firesetters, the discarding of cigarettes in metropolitan areas, serial arson (provisions for continuous monitoring).



Education – Treatment Programs

Currently Exist

- Arson prevention programs for young people currently exist across all Australian jurisdictions - diversity styles and emphasis.
- Some jurisdictions conduct education programs for young people.

Significant need:

- Treatment programs for adult arsonists.
- Better provisions for dealing with psychological issues that underlie firesetting behaviour.

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