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

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
Limitations & problems

- Data quality
  - geocoding differences
  - variable resources
  - inconsistency

- Cause determination
- Temporal imprecision
- Lack of physical evidence

Bushfire causes - Australia

Source: Australian bushfire causes (AIC file)
Where?

Relationship to population densities

Distribution across the states - territories

NT PFES: 1999/00 - Nov 2004

QLD FRS: 1997/98 - 2001/02

WA FESA: 2000/01 - 2001/02

Tasmania FS: 1999/00 - 2003/04
When?
Patterns of human fire setting
Deliberate fire setting by region

No. of fires

Time of day

Relationship to bushfire danger
- Jurisdiction #1 -

Proportion of fires relative to fire danger
Area burnt by arson: example from Tasmania

Serial bushfire arson

Causes of deliberate bushfires - NSW
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.
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.

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.
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.

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: ?
Problem child-juvenile firesetters – symptom not the problem –

- Family breakdown
- Parent/s absent, distant, hostile
- Emotional, physical, sexual abuse

Maladjustment / cry for help

Academic problems → Peer & relationship problems → Anti-social behaviour

Violence → Theft

Vandalism

Drugs & alcohol

Firesetting

Human-caused fires: a preventable continuum

- Accidental - unavoidable
- Accidental - thoughtless
- Deliberate - no conscious Intention
- Malicious Intention

- Accidental - foreseeable
- Accidental - reckless -stupidity
- Deliberate - reckless -stupidity
- Malicious Intention - selects peak fire danger
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 a reasonably strong chance of being caught.

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

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.