Rapid Response Study
2017 NSW Heatwaves

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### Australia’s Top Five Natural Hazard Killers

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Period of Coverage</th>
<th>Fatalities</th>
<th>High Risk States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme heat(^{1})</td>
<td>1900-2011</td>
<td>4,555</td>
<td>Vic, NSW, SA</td>
</tr>
<tr>
<td>Flood(^{2})</td>
<td>1900-2015</td>
<td>1,859</td>
<td>Qld, NSW</td>
</tr>
<tr>
<td>Tropical cyclone(^{4})</td>
<td>1900-2015</td>
<td>1,216</td>
<td>WA, NT, Qld</td>
</tr>
<tr>
<td>Bushfire(^{3})</td>
<td>1900-2011</td>
<td>825</td>
<td>Vic, NSW, SA</td>
</tr>
<tr>
<td>Wind storm(^{4})</td>
<td>1900-2015</td>
<td>525</td>
<td>NSW, Vic, Qld</td>
</tr>
</tbody>
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\(^{1}\) Coates et al., 2014  
\(^{2}\) Haynes et al., 2016  
\(^{3}\) Blanchi et al., 2014  
\(^{4}\) Recent updates to PerilAUS (May)
THE RESEARCH PROJECT

Our research:
- Identified impacts of heatwaves on households and businesses
- Responses to heatwave warnings
- Possible future adaptation to extreme heat

A total of 250 households and 60 businesses were surveyed by telephone. Most respondents were over 60.
People perceived heatwave as a risk more significant than other hazards to personal health and safety.
Most households thought temperatures last summer were much hotter than previous years.
Impacts on physical health and discomfort were the most prevalent concerns.
I was not affected
I just felt hot / uncomfortable
I wasn’t able to sleep
I felt lethargic
I felt unwell (headaches, dizziness, feeling faint, heat cramps, heat stroke)
I felt unwell and sought medical treatment (headaches, dizziness, feeling faint, heat cramps, heat stroke)
I felt distressed / mentally fatigued (mentally stressed / depressed)
I was concerned about increased costs (e.g., from electricity bills)
I was concerned about other friends/family who might be more vulnerable
I lost power to my home
I got sunburnt
Garden was damaged
Transport was disrupted
I spent time off work
I wasn’t able to sleep
I just felt hot / uncomfortable
I was not affected
PERCEIVED WORKPLACE ABSENTEEISM

- Workplace absenteeism affected small to medium size firms.

- 38% of businesses that use machinery or require physical labour reported higher absenteeism, as did 35% of businesses in the retail and dining sector.
PERCEIVED LEVEL OF BUSINESS PRODUCTIVITY DURING HEATWAVE

- Machinery or physical: Lower
- Retail: About normal
- Office: About normal
- Health: About normal
- Outdoors: About normal
PERCEIVED LEVEL OF BUSINESS TURNOVER DURING HEATWAVE

- Machinery or physical: About normal
- Retail: Lower
- Office: Higher
- Health: Higher
- Outdoors: Lower

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USE OF ELECTRICITY BY BUSINESSES

Number of respondents

- Much more than normal
- More than normal
- Unchanged
- Less than normal
- Much less than normal
- Unsure
HOUSEHOLD PROTECTIVE ACTIONS
WESTERN SYDNEY

- Stayed inside at home in a cool part of the home
- Closed windows / blinds / shutters
- Used air conditioning at home
- Used a fan at home
- Reduced / rescheduled outdoor activities
- Altered / reduced physical activities
- Kept well hydrated (water)
- Went swimming at private home
- Went swimming at beach or public pool
- Checked in on neighbors or relatives
- Visited a public space with air conditioning
- Visited friends and family who had a cooler house
- Wore lighter clothing
- Used cool packs
- Watered the garden
- Applied sunscreen
- Looked after pets
- Visited a public space with air conditioning
- Reduced / rescheduled non-essential travel
- Used cool packs
- Kept well hydrated (water)
- Altered / reduced physical activities
- Reduced / rescheduled non-essential travel
- Reduced / rescheduled outdoor activities
- Used a fan at home
- Used air conditioning at home
- Closed windows / blinds / shutters
- Stayed inside at home in a cool part of the home

The Hills
Western Suburbs
BUSINESS PROTECTIVE ACTIONS WESTERN SYDNEY

- Closed business early
- Provided briefings to workers about the heat safety
- Rescheduled tasks
- Adjusted work practices
- Sent employees home
- Provided increased hydration to employees
- Employees took more breaks
- Used fans
- Used air-conditioning

Number of respondents:
- Machinery or physical
- Retail
- Office
- Health
- Outdoors
MODE FOR RECEIVING WARNINGS

70% of all households received a warning. 78% of businesses.

Western Sydney

TV most popular mode to receive warnings. Social media may not reach the most vulnerable.
PREPAREDNESS ACTIONS TAKEN

• Of those households that received a heatwave warning 64% in Western Sydney and 45% of those on the North Coast undertook actions to prepare.
• Motivations were high temperatures, common sense and frequency of warnings.
• People who didn’t prepare did not think it was necessary, or that there was little that could be done apart from using air-conditioning.
• Most popular actions:
  1) Rescheduling outdoor activities
  2) Developing plan for the day
  3) Looking after pets
  4) Watering plants
FUTURE HOUSEHOLD PREPARATION

• Most said they did not need to undertake further preparation for future events.

• Some would consider installing air-conditioning or buying a fan.

• Of interest some would consider permanently moving to a cooler location:
  • 10% in Western Sydney
  • 8% in Northern Rivers.
HOW COULD GOVERNMENT ASSIST?

Respondents nominated:
• Subsidies for low income earners to install air-conditioning and solar power.
• Subsidies for low income earners for running air-conditioning.
• Support for energy efficient homes.
• Improvements to the resilience of the energy grid.

Others nominated that there was nothing Government could do or should do, and accepted personal responsibility.
CONCLUSION AND DISCUSSION

• Impacts of heatwaves are significant and more needs to be done to understand costs of heatwave events.
• Communities have significant concerns about heatwaves.
• Need to evaluate some existing heatwave management strategies for example encouraging vulnerable people to attend cooler places.
• Warnings and advice appear to be largely heard but not all respond proactively.
• Energy security and heatwave response by the community is linked.