



The role of worst case scenarios in bushfire decision making: Research findings and recommendations

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WORST CASE SCENARIOS

Worst Case Scenarios (WCSs) are rare events, which make them difficult to manage because they are unlikely to be experienced before.

WCS thinking involves: identifying possible WCSs, planning for possible WCSs, and implementing actions to prepare for the possible WCSs.

A good example of WCS thinking is defensive driving; if you coast through an intersection with your foot resting on the brake in case a car incorrectly turns in front of you, then you have prepared for a possible WCS.

PHD RESEARCH

For my PhD research, I conducted three interview studies to explore WCS thinking. Semi-structured interviews were conducted with a range of bushfire fighters.

Overall, findings indicated that bushfire fighters tend to inconsistently consider possible WCSs. Various factors can act as barriers to effective WCS thinking:

1. Inexperience
2. Tunnel vision
3. Underestimation of risk
4. Suboptimal attitudes
5. Situation characteristics
6. Interpersonal issues
7. Standard procedures

EXPERT STRATEGIES

Expert incident managers had developed strategies to improve their WCS thinking and reduce the impact of potential barriers.

Multiple scenarios – experts considered the best, most likely and worst case scenarios.

Forecasting – experts consciously looked ahead in time and space.

Long-term planning – experts recognised the importance of looking beyond the short-term.

What if thinking – experts questioned their understanding of the situation and imagined how things could go wrong.

Back up plans – experts had a number of back up plans to deal with a range of eventualities, often with trigger points indicating when to change plans.

Critiquing plans – experts encouraged respectful discussion and dissent from their team members.

Adaptive decision making – when required, experts changed processes and structures to suit the situation.

Focus on fundamentals – experts identified and focused on fundamental rules of safety to ensure internal concerns or external pressures did not undermine planning.

Motivation to learn – experts recognised the importance of balanced debriefing with team members and reflected on how their own decision making performance could improve.

RECOMMENDATIONS

Nine recommendations for Australian fire agencies reflect the substantial practical implications of my research into the role of WCSs in real-world decision making.

For some fire agencies, these recommendations may be consistent with current practices and, therefore, provide evidence-based support. However, other agencies may need to determine which issues require further attention.

To improve WCS thinking I recommend that Australian fire agencies:

1. Recognise the importance of WCS thinking and adopt a range of strategies to improve the way WCS thinking is incorporated into decision making during bushfire incidents.
2. Consider the extent to which a WCS Decision Tool could be used in training to assist decision makers in incident management to better manage and prepare for possible WCS events.
3. Consider the benefits of developing and implementing a comprehensive training regime to improve WCS thinking.
4. Maximise the use of scenario exercises in training to improve performance of WCS thinking.
5. Assess the efficacy of their current approach to mentoring and, if required, advance an evidence-based mentoring program to ensure personnel develop and implement effective WCS thinking skills.
6. Maximise the opportunities for learning and communicating lessons, both organisational and individual, to improve WCS thinking.
7. Assess the extent to which the current practices of team composition effectively facilitate WCS thinking skills.
8. Examine the extent to which training decision makers in a formal process of critiquing plans (e.g., premortem) would improve WCS thinking.
9. Consider the extent to which the training and implementation of current planning protocols and upgrading practices interfere with the ability of incident managers to perform effective WCS thinking.

