

## Grass fire and bushfire behaviour



### Feedback Survey

#### Q9 - Please provide details of the most informative parts of the webinar

##### Summary

The webinar provided valuable insights into bushfire behavior, particularly regarding grass fires and their impact on homes. Key takeaways include understanding the vulnerability of houses to ember attack, the importance of considering wind patterns, and the necessity of prioritizing mitigation efforts. Presenters Justin and Kevin delivered informative and engaging presentations, covering topics such as grass fire behavior, ember attack patterns, and the dynamics of wind during bushfires. Attendees gained a deeper understanding of the factors influencing fire risk and learned practical strategies for protecting their homes and properties.

##### Detailed audience responses

- 1 I always thought more houses and lives were lost after the south west wind change. Justin explained the majority of houses were lost on and during the south west wind change due to significant additional wind, its erratic nature and the larger fire front.
- 2 Fire behaviour and the differences between grass and forest fires and how this relates to houses in different circumstances - and what we can do to make our homes safer. I was glad it was mentioned that fire is also necessary in our bushland. It cannot just be about people and our buildings when lack of fire is causing species to become extinct. Understanding about the 'invisible' combustible thatch. Understanding about spot fires starting up on the leeward side of buildings not just the side the wind is coming from. We'd always presumed the leeward side would be a safer place to shelter.
- 3 I'm completely new to rural living so, understanding the difference dynamics of grass & bushfires and their behaviours was very informative.
- 4 How a fire can ignite a house from any side, often the leeward side rather than the side facing the fire. The need to check nooks and crannies for ember attack.
- 5 It is just so useful to hear what Kevin and Justin have to say about any aspect of bushfire risk and mitigation. The whole webinar, and both presenters were fantastic. Relevant, up to date, considered, trustworthy and experience-based and research-based advice is always provided by Justin and Kevin. Professionally delivered, and in a way that is so engaging and easy to absorb and remember.
- 6 I learnt that some beliefs I had were wrong i.e. fires generally come from NW; grass fires are not powerful or lethal; green grass was "safe". I learnt about thatch.
- 7 Kevin Tolhurst and Justin Leonard have an excellent understanding of the important issues and explained the science behind the recommendations and how to implement them. As I know both personally I know that their science is solid and recommendations are credible. Most importantly both were able to explain to house holders how to implement the recommendations.
- 8 The invaluable knowledge of such talented speakers provided insight into grassfire/ bushfire behaviour is great.
- 9 The details of how and why grass fires burn so fast. Understanding these features helps me plan mitigation action. Very important to understand why embers often ignite houses from the lee side not the fire facing facade. Excellent diagrammatic information from both Kevin Tolhurst and Justin Leonard.

- 10 The Q&A was excellent and answers by presenters were very informative. Kevin's analysis of grass fires (continuity of fuel and heat i.e. thatch) was well presented.
- 11 How grass fires travel. How they continue to burn in their thatch for some time which might not be evident. How some eucalypts can shield a property from radiant heat. The rate a fire travels depends in part on the slope of the land (I live at the top of a north facing slope. The house faces north. The land around it is fairly clear and the grass is kept short, but the property abuts a national park so I am aware of the high fire risk) History shows that houses are most vulnerable to catching fire as the wind changes direction.
- 12 Slashing not as effective as burning or grazing. Convective heat 80% of fire, radiant heat 20%. More houses burn down from embers at leeward side of house not fire front. Relative fuel load greater in forest fire than grass fire.
- 13 Thought last night's was the best. Easy to consider if the grass is cut you are safe from a grass fire. Not so! More thinking on my part re preparation and awareness. Need awareness re the potential of a fire starting on leeward side of the building when you are focusing on the frontal face
- 14 Confirmation of what I think I already knew about grass fire behaviours, the need to prepare my property including against ember attack from bushfires. Also the emphasis on the crazy wind patterns on bushfire days and that most property loss comes from during and after the wind change. We're on the leeward side of the N and NW hot winds, and hence we might be more at risk!
- 15 How trees can provide protection from ember attack and that houses in fires often start on the leeward side not the fire front.
- 16 Wind patterns being chaotic with differing topographic. Fire can come from any direction. Prepare your leeward side of the house.
- 17 The bushfire behaviour myth busters e.g. lee side (down wind) side of house is more vulnerable. Eastern facing properties more affected than north and western facing on Black Saturday 2009. Clear explanation of grass fire behavior.
- 18 I thought both presenters provided very useful information, both practical and theoretical. Was useful to learn that the leeward facing part of the house could be even more vulnerable than the windward side.
- 19 I learned that the chance of embers taking hold and impacting a structure can actually be greater on the lee side of the building. This is something I was unaware of and may not have looked out for.
- 20 The discussion about the 'most damaging' wind direction was really informative; confirming that NW winds are concerning in general in bushfire weather, that fire can come from any direction once it is within a 20km zone plus the info about fire damage to a property on the leeward side.
- 21 The presentations and advice given were really appropriate and worthwhile.
- 22 The answers to the questions. The difference between grass and forest fire, and the fact that fires are more likely to start on the leeward side of a building.
- 23 Grass fires, matting of vegetation. Smoke plume related to oil content of burning fuel. Take away message: keep grass short and well watered.
- 24 Fire behaviour, windward and leeward fires.
- 25 Info re speed of fire. The need to attend to fuel load under house structure.
- 26 How to expect fire threat to come from the down wind side of a fire.
- 27 The information about the fires from embers starting on the lee side of buildings.

- 28 Details of "thatch" and how combustible it is. Against all intuition, embers are dropped in the recirculation zone on the lee side of the house, so you have to be aware of the lee side even more than the upwind side.
- 29 Describing how embers start fires and travel distances before the fire front reaches you
- 30 Lots of facts.
- 31 Grass fire behaviour and how we can plant to slow and change fire behavior.
- 32 Speed of a grass fire.
- 33 How to protect your home.
- 34 Both presenters were able to cover their areas in such a way that I felt more informed going forward.
- 35 Fire behaviour - important lesson about not assuming the direction fire will approach from.
- 36 Two excellent presenters with informative, relevant and practical information.
- 37 Behaviour and impact of wind on fire fronts + ember attacks on lee side of buildings.
- 38 The amount of depth and understanding of how people may react in fire situations and how it affects their ability to make positive, prompt and effective decisions.
- 39 Information about speed of grass fires and information regarding the direction of fire.
- 40 Littered with valuable information and insights.
- 41 Kevin Tolhurst's presentation.
- 42 Movement if gases influencing ignition.
- 43 Dr Tolhurst on grass fire behavior.
- 44 Always learn new stuff: Thatching insidious/ vulnerable attack spots, ember persistence, trees slowing wind & rate at which grasses dry.
- 45 As a newbie all was informative. Hopefully our architect and builder can produce an efficient, fire safe and cost effective home. At the council now waiting for a response to a planning permit.
- 46 Weather effects on light fuels. The other was crown fires. A row of trees and how much speed is slowed. As we've seen from aircraft before now it makes sense.
- 47 Fire behavior.
- 48 Grass fire behavior at different heights of fuel.
- 49 Differences between grass and forest fire speed and behavior.
- 50 Fire coming from behind the house.
- 51 Describing the difference between fire intensity in a forest fire versus a grass fire.
- 52 How fire behaviour is affected by certain vegetation and the advanced weather prediction for the coming season.
- 53 All of it.

- 54 I found it interesting/concerning that when a fire is within 20 km of you the wind could come from any direction. I'm mostly clear to the north and west but treed on the east - and not much I can do about that!! Having 'thatch' described was useful, also how standing upright grass behaves.
- 55 The explanation about grass fire in area where understory growth had been removed from trees was interesting.
- 56 I learnt that although low cut grass in paddocks is needed, the grass can still carry a grass fire.
- 57 Fire behaviour around windbreaks, lightly wooded and heavily wooded areas.
- 58 The aerial photos of the results of burning showing the types of vegetation. The speed of burning as a result of the types of trees and vegetation and structures.
- 59 Learning about houses burning from the downwind side, planting shelter / fire breaks.
- 60 House vulnerability from other than fire front side.
- 61 The effects of wind and duration of risk.
- 62 Quality presentations from very knowledgeable and easy to understand presenters. Grateful for this service. Thank you.
- 63 Understanding how grassfires burn gave me an overall better understanding of drivers for how any fire would behave. Having it said that ember proofing is priority #1.
- 64 Grass fire behavior.
- 65 The interaction between grassland and forest floor in wooded areas. This is a subject not dealt with as much as straight out forest or grassland.
- 66 Understanding the impact of defending our house with dried grass paddocks surrounding, the type and dryness of grass, burning rate and ember behavior, involvement of gum tree lined roadway. Learning that fire can impact house on opposite to wind.
- 67 The different vegetation and how it burns.
- 68 Use of deciduous trees to reduce ember attack.
- 69 Information about thatch and its effects on fire.
- 70 The breakdown of grass i.e. thatch part that burns also the items around the house i.e. bins etc.
- 71 Grass fire behaviour in relation to types of fuel, information on hierarchy of mitigations.
- 72 Information about grass fires in general. I now understand much better how grassfires operate.
- 73 Questions at the end were very useful but the answers used the earlier information.
- 74 The behaviour of embers during a fire.
- 75 Wind maps.
- 76 The speed of grass fires. How the terrain impacts the fortress and speed.
- 77 Understanding grassland fire behaviour as recently become very important in many local government areas in NSW.
- 78 That ember attack to rear of property is common.

- 79 What to do around the home to reduce embers.
- 80 Learning from Justin how to prioritize tasks to make your home less vulnerable to attack.
- 81 Didn't know about grass fires.
- 82 Ember attack patterns, fire behaviour on slopes.
- 83 So much interesting information to guide me.
- 84 Fires can start on the leeward side of the building.
- 85 Timely reminder about the speed of grassfires, and of dangers of thatch.
- 86 The understanding of the makeup of grass fires, quite fascinating and very informative.
- 87 Focus on grasslands and Justin's house embers flow focus.
- 88 Ignition of structure on leeward side.