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Submission details

I am making this submission as	Other
Submission type	I am submitting on behalf of my organisation
Organisation making the submission (if applicable)	Ginninderra Falls Association
Your position in the organisation (if applicable)	President
Consent to make submission public	I give my consent for this submission to be made public

Share your experience or tell your story

Your story	The Ginninderra Falls Association (GFA) is located in the Capital Region of ACT-NSW and has concerns about proposed development in the Murrumbidgee River area downwind of the Brindabella Range. Over the past summer, our members experienced the apocalyptic atmosphere that hung over the ACT and NSW vicinity for two months due to smoke pollution from the fires to our east and south in NSW. Holiday homes at the coast were threatened and access to the coast over summer was

interrupted. In 2003, fires started in NSW to the west in the Brindabellas and were driven by the prevailing north-westerly winds into the Canberra suburbs causing loss of 500 homes on the western edge. The speed and ferocity with which that fire came out of the McIntyre's Hut area and leapt across the Murrumbidgee River was frightening. Since then, there has been considerable research into this dynamic type of fire but it has not yet been incorporated effectively into Bushfire Management Plans or the Bushfire Standard.

Terms of Reference (optional)

The Inquiry welcomes submissions that address the particular matters identified in its Terms of Reference.

1.1 Causes and contributing factors	The 2019-20 bushfire season featured extreme bushfires with dynamic bushfire propagation in south-east Australia, particularly south-eastern NSW, which came at the end of a long period of drought when the land everywhere was bone dry. This had resulted in a very high level of fuel availability, as described by Dr Jason Sharples in his submission to the Senate Select Committee into Lessons to be Learned in Relation to the Australian Bushfire Season 2019-20. The behaviour of the Green Wattle Creek fire in the Wollondilly area and the Green Valley fire near Jingellic was not predicted by the quasi-steady state models of fire behaviour traditionally used and on which fire management and planning are based. Eruptive fire behaviour, vorticity-driven lateral spread and mass spotting are characteristic of dynamic fire propagation and all are highly likely to have played a part in the escalation of the 2019/20 fires into extreme bushfires. These extreme bushfires are coupled fire-atmosphere processes, involving high-altitude pyrocumulonimbus often with lightning and wide-ranging spotting. Coalescence of multiple spot fires can produce fire intensities much greater than that of a single fire in the same fuel load. Rugged terrain is particularly prone to dynamic fire behaviour, depending on wind strength and orientation of hillslope, but is also where such fires are difficult to fight and fuel reduction is difficult to achieve. Such fires usually cannot be controlled until they leave the rugged terrain area. As the climate warms and droughts become more severe, there has been a rapid increase in the incidence of pyrocumulonimbus storms, leading to more uncontrollable bushfires. The incidence of pyrocumulonimbus events coincides with the occurrence of extreme dryness of vegetation. Also, the window of time suitable for prescribed burning in each year is narrowing because of warming climate. Under extreme conditions, hazard reduction burning is of diminishing effectiveness in slowing fires. There is some indication that extensive areas of very young fuels (1-2 years old) might reduce the intensity of extreme fires in some cases but will not prevent the fire from spreading further.
1.2 Preparation and planning	Building standards for fire protection are based on radiant heat from a design fire, which is the result of quasi-steady fire behaviour. The standards need to be revised in view of the increasing severity of fires and acknowledgment of the fact that, in extreme bushfires, the bushfire attack mechanism is predominantly massive ember attack, not radiation from flames.

	There are issues with bushfire standards and regulations not being fit-for-purpose when it comes to extreme fires. Agencies have told the public, landholders and landcarers, through a variety of opportunities since the 2003 fires, that “lessons have been learnt”, that there is full inter-agency cooperation and that emergency departments and teams work co-operatively and through state of the art technological connections and networks. Yet there were still fatal flaws when the bushfires came through. The most effective form of information and warning during the 2019-20 bushfires was by mobile phone. Basic mobile phone coverage, however, is not always available in all areas of NSW, especially the more remote areas with small, scattered populations. A GFA member who visited the South Coast before the Covid-19 restrictions were imposed was struck by the narrow difference between urban areas that burned and those that did not, e.g. at Mogo. Very often the difference was the width of a major road, perhaps 100 metres, where firefighters were able to contain the fire to the forested side of the road. This indicates that the width of hazard protection zones is very important along with good access for fire trucks and equipment. Much of Mogo was saved. The areas that were not saved were those not served well by APZs. These should be at least 200 metres, it seems, to have any chance of being effective. The Batemans Bay industrial area was not ringed by adequate APZs and some businesses got burnt. Although the fire destroyed some houses in North Rosedale adjacent to bushland and burnt bush all the way down to the beach, most of Rosedale escaped fire damage because of a wide APZ comprising the main road and adjacent paddocks. The fire fighters did a good job fighting ember attacks even though there are trees around houses throughout the Rosedale urban area. Local volunteers and equipment seem to be critical requirements.
1.3 Response to bushfires	Nothing will stop ember attacks but community fire services and equipment and training should be improved. Those people who choose to build and farm in the bush must be made aware of the risks and be prepared to lose their homes and animals if they do not have APZs of at least 200 m and adequate dam water and pumps. Fire simulation models such as Phoenix might, in the future, be better able to predict expected fire behaviour but, at present, these still do not work well for extreme, dynamic bushfires where rugged landform plays a major role. In the meantime, the precautionary principle must prevail in land planning.
1.4 Any other matters	An example of the conditions that potentially generate extreme bushfires is in the Parkwood area of Yass Valley. This is located to the east of the Brindabella Range at the junction of the Murrumbidgee River with Ginninderra Creek. At this point, both waterways are edged by steep slopes, some almost vertical. The Ginninderry cross-border urban development along the Murrumbidgee in the ACT and Parkwood NSW is intended to house 30,000 residents of whom approximately 13,000 will be in NSW in roughly 5,000 dwellings. The area is exposed to extreme bushfires because of the Brindabella Range to the west, where lightning strikes frequently start fires, and because of the steep slopes that generate dynamic fire behaviour in close proximity to the proposed urban area. At the request of GFA, extreme fire behaviour expert, Prof Jason Sharples, assessed the exposure of Parkwood to dynamic bushfires. His report is attached. The Ginninderry planning proposal has been ticked off by the ACT Government (who have a 60/40 profit-sharing agreement

with the developer). The NSW section of the proposal is currently with the NSW Government for final approval of rezoning for residential use.

GFA considers that the ACT Planning Authority and the other proponents are failing to adequately consider the risks that new residents will face at Ginninderry because the focus is on income – revenue from land sales. Further, developers play a large role in commissioning planning reports for fire, threatened species and other environmental issues. They are also involved in organising the 'peer review' of research or reports, particularly those that pose a risk to their bottom line.
The developers already show complete distain for the Ginninderry-Parkwood area by insisting on:
• Building into the Murrumbidgee River corridor and its scenery;
• Planning Asset Protection Zones that do not protect species or people from bush fire embers;
• Building into a Dynamic Bushfire Zone area that will be impossible for first responders to protect.

Research by Prof Sharples, and others, found that the modelled potential ember load for the Ginninderry development area was 13-115 times the maximum modelled ember load for locations where property damage was sustained in the 2015 Hastings Bushfire on the Mornington peninsula in Victoria. In this fire, 32 houses were damaged, with ember attack the cause of all property damage.

A conservation corridor, managed by a conservation trust, is being created along the steeper slopes beside the river and creek. This will, however, inevitably cause conflict between suburbia and the extreme fires generated by the steep slopes. Whilst such fires, historically, do not occur as frequently as ordinary grass fires, they are expected to increase in frequency with climate change. If an inadequate buffer zone is provided, then residents will expect severe measures to be taken to protect them and their dwellings from damage by fire which will, most likely be caused by embers. Such measures would include pressure to perform more hazard reduction burning than is desirable for protecting the biodiversity of the conservation corridor. Profit from residential development will, then, override protection of the natural environment.

The fact that there are issues with bushfire standards and regulations not being fit-for-purpose when it comes to extreme fires is highly pertinent to this proposed development.
It seems that the strength of dynamic fires is such that building standards can never be adequate to ensure the survival of buildings. Damage might be minimised to some extent but residents will not be protected. The speed of these fires can, in some circumstances, make it difficult for residents to flee the area in time to avoid the fury of the embers. It is, therefore, obligatory upon the Governments of NSW and the ACT, if the development is approved, to ensure that potential residents of these areas are fully informed of the likely risks from extreme bushfires before they commit to purchase there.

GFA believes that no such development should be approved in this area. There are two reasons for this, firstly to ensure no human lives are endangered in new residential areas and, secondly, to reduce the possibility of further threats to local flora and fauna occasioned by the need to protect residential areas in close proximity, despite the fact that such control burns are ineffective in extreme bushfire conditions.

With the expected increase in frequency and severity of these extreme bushfires, it is incumbent upon governments to identify vulnerable locations and assess their likely exposure to

devastating bushfires. Such areas should be placed in a zone prohibiting residential development. The precautionary principle should prevail.

Supporting documents or images

Attach files	• MODSIM2017-Revised_JJS.pdf • Sharples_GinninderryPreliminaryReport.pdf • roberts-bushfire.pdf