

Bushfire: the recovery phase, path to resilience and future readiness

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The 2019-20 summer bushfire on the New South Wales south coast caused massive damage to public and private property, bushland and livestock. The author, the Chair of the former Recovery Committee and now Shoalhaven Recovery into Resilience Project Co-ordinator, provides personal insights into the recovery effort and the follow-on path to resilience and future readiness. He discusses futuristic scenarios and alternative pathways and concludes by describing the biggest threats now faced in the aftermath of the bushfires.

Key words: Australia; bushfire; communications; Currowan; electricity; firefighting capability; futures thinking; market-driven solutions; pandemic; rail; roads; Recovery Committee; Shoalhaven; social media.

In the spring and summer of 2019-20, there were severe bushfires in much of south-eastern Australia. I reside in the Shoalhaven local government area (LGA) on the New South Wales south coast some 200km south of Sydney and, following the fires, was appointed Local Recovery Co-ordinator and Chair, Shoalhaven Bushfire Recovery Committee and now that its work has concluded, have become the Recovery into Resilience Project Co-ordinator and Project Team Chair. In this paper, I will present some personal perspectives regarding the now-concluded recovery phase and the ongoing transition-into-resilience phase of the Shoalhaven bushfire.

2019-20 Bushfire in the Shoalhaven

The 2019-20 Shoalhaven bushfire commenced on 27 November 2019 at Currowan in the far south of the LGA. By the time the fire was extinguished on 8 February 2020, it had destroyed some 320,385ha, 82 per cent of the Shoalhaven's land area of 4600km². Most of the destroyed land (80 per cent of the LGA) comprised national park, forest or coastal parkland. The residual 2 per cent was urban and agricultural land. Some 1890 homes were saved, but 309 homes and 170 buildings were destroyed and other infrastructure was destroyed or damaged – repairs took a long time. Livestock losses included 307 dairy cattle (from one of Australia's largest dairy producing areas), 179 beehives destroyed and 14,200 beehives affected – significant, as bees play a key part in vegetation and flora reconstitution after a fire.

Personal Observations

Throughout the bushfire, it was evident that the worst of nature brings out the best in humankind. There

were some extraordinary deeds of kindness across the whole community. With backs to the wall, Australian culture is to support and help a mate. More specific observations follow.

Firefighting capability

The capacity to fight a fire in an area the size of the Shoalhaven is limited. The Shoalhaven is diverse and includes the world's second largest fluvial canyon; beautiful areas around The Pigeonhouse mountain and the Sassafras area; village hamlets on the coastal estuaries; and a hinterland of amazingly rugged, mountainous terrain. Many of the fires were in inaccessible places. The Currowan fire itself started in inaccessible terrain. In some instances, it was a matter of waiting for the fire to reach a place where you could harness and control it.

We have much firefighting capability, but we need to start thinking more broadly about what additional equipment we should invest in across the community. Current equipment is not of a consistent standard or age as found by the Royal Commission into Natural Disaster Arrangements (Binskin *et al.* 2020).

Communications and electricity

Communications and power are huge issues on the south coast. There are few terrestrial masts to transmit mobile phone signals. During the disaster, people attempted to escape from the fire by car. They needed petrol. If, however, the power was out, petrol stations could not pump petrol. If by chance they could pump petrol, the masts may have been out and so they could not bill customers for it because the point-of-sales machines (which allow credit/debit card payments) were down. In many cases, both pumps and masts were out-of-order.

The other problem is how under-serviced the Shoalhaven is. Under normal circumstances, it suffers significant power and communications outages as a

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matter of course. The electricity supply company advises that outages generally are caused by wind, or wind and water, but not fire. If you get a decent breeze, trees adjacent to power lines break or fall across the power lines. The cost of repair of poles and wires for an area of this size and weather conditions outweighs the profits made from selling energy.

Roads and rail

There is only one main road in and out of the area, the Princes Highway. If it gets blocked, problems arise not only in evacuating people but more importantly getting assistance. If the Princes Highway is impenetrable from anywhere south of Albion Park, the only way around is to go inland to the Hume Highway, but the narrow bridge at Kangaroo Valley renders this route impractical. The Princes Highway is a one-road in and out route servicing the whole southeastern seaboard of Australia, including a crucial piece of defence infrastructure – the main armaments depot for the Royal Australian Navy at Eden. Eden has no rail head and only one road in and out. If the wharf is out-of-service, you are restricted to lighters. It is a significant shortfall.

Unreliability of market-driven and census-driven solutions

The depth, dependability and reliability of market-driven solutions have to be questioned. Commercial enterprises will only invest where they are likely to achieve a return on investment. Their primary loyalty is to shareholders. Take the example of a telecommunications provider (telco). They base themselves on the market. Most of the data which commercial operators and even governments rely on is census data. The census occurs once every four years in mid-August (in the middle of winter) when small coastal hamlets have a small population. This is not so in mid-January when a hamlet population of 200 can rise to 5000. That means the number of masts that a telco is going to erect, and the number of main roads, police, hospital beds and other services that governments are going to provide, will be determined by the disposition of the population as revealed by a census taken when the population is at its low point, not its high point. If you are a commercial company, you will prefer to invest where there is a large, concentrated population as in Sydney rather than a small, dispersed one as in the Shoalhaven. This is not unique to the Shoalhaven.

A difficulty in employing market-driven solutions is in deciding what is actually needed. In the Shoalhaven, there is only sufficient telco bandwidth to service a population of about 96,000 and there are only three main transmitter masts along the Princes Highway between Kiama and Batemans Bay (there are several repeater masts). Hence, the available bandwidth gets saturated very quickly in the summer when you have many additional people there for their holidays.

Reliance on social media

Social media can be a strength, but also a significant weakness and threat. It enables people to transmit information which may not be accurate. During the Shoalhaven fire, we had some extraordinary scenes. People had their backs to the sea, they could not see the sky and the smoke made breathing difficult, they could hear the fire (it was very loud), and the heat was unbelievable. The power had gone down, the 'phone apps' were not working and could not be refreshed because of bandwidth saturation or mobile towers going down. People were faced with total sensory deprivation and whatever they heard or saw gained traction in their perception of what was happening.

Social media can be helpful in that regard, but it can also be extremely dangerous. Some people were using their own scanners to listen into the Rural Fire Service (RFS) teams, many of whom were from out-of-town, so their local geographic knowledge may have been poor. When they sought assistance to identify where they were, there were folks with scanners recording that information and then putting it onto social media. That generated a lot of discomfort for readers. It also led to an unfair public perception of exactly where RFS resources were deployed and what they were doing to help. This fed into community expectations about how the fire should be managed, even though perceived needs were not necessarily in line with actual needs. This issue needs to be addressed.

Recovery Committee Achievements

A notable success of the Recovery Committee was **waste management**. We were able to take just under 18,000 tonnes of non-contaminated waste (*i.e.* not asbestos or chemicals) off the fire ground and recycle or repurpose all but 214 tonnes of it at the West Nowra Waste Management Depot. Had we filled the domestic waste cells with recyclable material, we would have run out of cell space in the depot and, within 2-3 weeks, municipal waste would have had to be sent elsewhere costing c. \$1 million a month. It was a huge win.

There were incredible **environmental efforts** made across the Shoalhaven to restore the hinterland national parks, state parks, estuaries, waterways, urban areas and coastal villages.

We succeeded in replacing destroyed **bridges** with bridges of better quality – four in particular. We used a regional design house, used components made in Newcastle, and then put the bridges together on-site using local companies. I saw a three-lane bridge being assembled by five men, one with a crowbar, plus a mobile crane driver, in the space of a morning.

The Shoalhaven **registration process** was excellent, despite significant challenges in understanding who had been fire-affected and to what extent, and who were or were not landowners. Shoalhaven City Council wrote to all registered landowners who had

paid rates over the preceding 12-18 months. Notwithstanding all the available electronic connectivity, what worked was a posted letter to registered ratepayers who owned the properties so as to obtain approvals to start the clean-up to allow rebuilding.

A **recovery helpline** for Shoalhaven residents with problems was staffed with four people from eight till five, five days a week. When they were not receiving calls, operators were making follow-up calls to everybody who had registered. Other initiatives implemented included mobile recovery hubs and collating information tailored to specific areas. Issues that we were unable to address were referred to other agencies.

The **COVID-19 pandemic** controls hit the Shoalhaven in March 2020. On Easter Monday, we shifted almost everything that we were doing in-person to the virtual domain of either phone or email contact with the Council directly. We pioneered a couple of webinars, one of them to invite local businesses to register so we could use them in the clean-up. During a 'Get-Ready' campaign, we used webinars and Facebook live-streams, on one night attracting 13,000 visits for a 45 minute presentation, demonstrating that we could reach many more by webinar than we could have by several concurrent community hall meetings.

We also had good **inter-council co-operation**. We had 42 staff from other councils assist us with routine local government duties, which enabled Shoalhaven staff to be diverted onto higher priority repair tasks.

The **Australian Defence Force** (ADF) was a terrific help. We had 80+ people operating in the Shoalhaven for about 6 weeks. 'Grey nomads' of the BlazeAid organisation also assisted. For the price of a sausage roll, they repaired fences and replaced all sorts of things. Many other agencies also helped.

The Future

Now let us consider the path from recovery to resilience and future readiness (SCC 2020). The way we looked at such issues over the past 50 years is not going to work today. We need to start thinking in terms of futuristic scenarios and adaptive pathways. For example, in May 2019, Griffith University led a study in the Shoalhaven on community-led resilience. It utilised futuristic scenarios and alternative pathways. One event considered for study was a pandemic. It was dismissed as too far-fetched to be examined – interesting, because 10 months later we were in the middle of a pandemic and we still are.

There are some really important concepts to grasp in futures thinking. One is the importance of understanding what is a threat and what is a vulnerability. If you address vulnerabilities, the threats largely look after themselves, because the more effective you are in addressing a vulnerability, the less likely a threat is to gain traction. It may do so, but you will be ready for it.

The second concept is cause and effect. We do a lot of managing effects, so when we see a problem, the tendency is to fix the problem. But if you do not address the cause, it most likely will happen again. Now that goes for everything, including the realities of a changing weather pattern which (in other than *La Niña* times we are experiencing now), in our part of the world, dries the bush out and generates a great deal of fuel to burn. It then becomes a risk management discussion about what we may be able to do to minimise or mitigate the effect. If the answer to that is there are things we can do, then we had better start thinking about them and roll our sleeves up!

The final concept is third-order consequence. Again, because we tend to look at effects and deal with those, we do not necessarily give too much thought to the second-order or the third-order consequence of not addressing the cause.

An additional concept is that, if recovery is to lead into resilience and future readiness, it is really essential to have the right information – authoritative information and timely information flow.

By way of illustration of these concepts, I am now involved in the Recovery into Resilience Project which is establishing local information hubs at 22 Council sites across the Shoalhaven. Each hub, in effect, will be an electronic notice board connected directly to Council's Emergency Operations Centre (EOC). A citizen will be able to go to the local village hall, have a look at the screen and see what is happening at the EOC. If there is nothing happening, the screen will be a lovely pattern. If there are things happening which are of importance during times of emergency, you will be able to see what the emergency controller is seeing. We plan to make those a two-way communications path for the exchange of intelligence between the community and the EOC. We will do this preferably using a system which employs satellite communications and which is not vulnerable to a loss of power, such as a system which uses solar power coupled with battery storage, making it autonomous. Such a system would take out three of the potential failures – a lack of authoritative information; a loss of power; and a loss of communications.

We have obtained some state and federal government funding to develop such a system. We hope it will become a real-time 'noticeboard' on a 140cm screen powered by the sun and connected to the EOC by satellite. There are challenges in getting that established, but it illustrates what the right information and timely information flow are about. If you do not have that, people cannot make decisions on their own next steps. Chapter 9 of Binskin *et al.* (2020) addresses the issue in more detail.

Power and communications are everything. They affect information flow, community awareness, and community health and well-being. When you have your back to the sea and smoke reduces visibility, if you are

devoid of any sort of communication as well, it is not a good place to be and that really frightens people.

The final issue about recovery, resilience and readiness, is community ownership. Communities need to ramp up their involvement and rethink the time-honoured Australian tradition of believing the government or the council is responsible. This community involvement has to be tactically focused at a level of response which ultimately will bear the full brunt of what needs to change.

Conclusions

Here are my thoughts about the biggest threats we face in the aftermath of the bushfires.

The first threat is the view that everything now is okay – we are **back to normal**. I despair when I hear the COVID-19 pandemic being referred to as “back to normal”. The COVID health orders which may lock a place down from time-to-time are not a punishment. Rather, we do not have the capacity or the infrastructure to deal with the results of a pandemic which is allowed to run its course. If you doubt that, look to the United Kingdom, Europe and the United States. Whole trenches of people being buried, hospital corridors completely full, lack of respirators, having to triage who you are going to treat or not. I doubt we are going to see ‘normal’ for some time in all sorts of areas: bushfires, floods or pandemics. We have just got to be ready ‘to roll with the punches’.

The second threat is the **concurrency of emergencies**, such as bushfires and pandemics. Community expectation can be an issue here. Certainly, we need more evacuation centres, but we have to be wary. The reason for accurate communication and information flow is so that we can make the right decisions; and, if one of those decisions is to evacuate, to actually evacuate.

A reliance on the old-style evacuation centre where one goes to have a cup of tea, something to eat and meet friends, does not stack up in the context of a pandemic. In January 2020, a local civic centre had a population of about 1400, all in sleeping bags on camp stretchers, mostly travellers from out of town. You just need a few that are contagious and overnight you have a sizable infection problem. The Shoalhaven Hospital has about 30 emergency beds and probably half-a-dozen respirators. You would fully utilise this capacity in about the first five visits and we may not have the ambulances to get patients hospital. So the concurrency of emergencies has to be considered as a third-order consequence.

If we evacuate, it would not make sense if our firefighters were using shared or pooled equipment. They would need their own kit. They do, but these are the sorts of things we have to start looking at – adaptive pathways to start thinking about.

Third, there are no **‘silver bullets’**. There is much expectation of big technological solutions. I am not

sure that we should be wedded to that path. For example, if we modified some ADF aircraft to become fire bombers, but we were reliant on imported fuel and/or fire retardants, we might find ourselves with ‘a beautiful white stallion but no horseshoe nails’.

The fourth threat is our reliance on **market-driven solutions**. There are some things which a nation should own; there are some things a nation must control; and there are some things a nation must be ready and willing to use, and if necessary lose, and that includes military equipment. So a market-driven solution, such as having a fuel reserve in another country like the United States, is not an answer to the need to have fuel reserves in Australia. Having assets that we borrow to achieve just the basics in life is not an answer. I am not saying we have to make everything here, but we should be making more and we should be less reliant on the market providing our needs in a timely manner.

The fifth threat is **expectation management**. I get disheartened, as do many of my former ADF peers, when I see young sailors, soldiers, airmen and airwomen being used in hotel foyers to push luggage in quarantine circumstances or to feed wildlife in the bush following a bushfire. Some say the ADF is there for one thing only – to fight a war. Adaptive pathways, however, may require the use of highly specialised and technical service people for different tasks in an emergency. With imagination, doing so can be made good training for a military context, such as practising delegated command responsibility. That, above all else, is about futuristic scenarios and adaptive pathways.

Finally, we have seen in recent times that you can disrupt someone's life effectively without firing a shot. We have to start thinking about those **disruptive elements** and what alternative pathways we can apply to continue to work in spite of them.

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