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<b>Title</b>	Mr
<b>First name</b>	Andrew
<b>Last name</b>	Dix

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<b>I am making this submission as</b>	Resident
<b>Submission type</b>	Personal

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<b>Organisation making the submission (if applicable)</b>	
<b>Your position in the organisation (if applicable)</b>	

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<b>Consent to make submission public</b>	Public
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<b>Your story</b>	<p>I wrote an account of the fire from my perspective, as a resident who remained to protect property, for the purposes of a post fire discussion with other residents of North Bendalong. The aim was to provide a basis for discussion about future measures that could be taken to improve our preparedness, minimise risk etc. I also wrote up what I considered to be a few key points which arose from my experience.</p> <p>North Bendalong is a small hamlet in Shoalhaven Shire, consisting of five streets with about 50 houses, bounded on three sides by National Park and Crown Land, and by beaches on the east, with a small forested escarpment between the beaches and the easternmost road in the hamlet. All the bush was burnt out on the three sides, and between the beach and the houses. The fire came up to the perimeter on every side, but no houses or structures were lost. A number of spot fires that got behind the front line were caught and extinguished.</p>
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I note that the account is my perspective only, as the only resident who remained in our street, and is focussed on our street. Several other residents in other streets remained in the rest of N Bendalong to protect, and may have seen things differently.

I mention this in my account, but I would like to record again the wonderful job done by the various crews of volunteer firefighters who turned up throughout this period to fight the fires and offer advice and support to those of us who stayed.

My account follows, and the points for discussion that I prepared are at the end of the factual account.

#### OBSERVATIONS ON THE 2020 NEW YEAR FIRE AT NORTH BENDALONG

This is how I saw the fire unfold. There are probably incorrect assumptions and mistakes, plus it is amazing how blurred and confused it seems, particularly regarding the sequence after a couple of days. Also, the residents who were in Pine, Cypress, and Holly Streets will have had a different perspective from those who were in Belah Glen.

On New Year's eve a fire started (mysteriously) near the lagoon, and it burnt out much of the bush to the north of the Holly St/North Bendalong Rd carpark, down to the Lagoon. While it was of some concern to residents in Holly Street, it only crept forward towards them slowly, as the wind was holding it back. In one way, it may have been a good thing, as it created a burnt out buffer to the north, but on the other hand, it meant that there were probably hot spots still sitting in that area waiting for the north westerlies on Saturday to get going again.

For several days before New Year, the Currowan fire had been burning beyond the fire trails to the west of North B. A red line of retardant had been laid by half a dozen bombing runs between the hamlet and the fire front, a couple of hundred metres into the bush. A new fire break was bulldozed parallel to this. A lot of scrub behind Pine St was also bulldozed. Several outbreaks were extensively water bombed by choppers and fixed wing planes. It was amazing how much energy was thrown into it. Once the outbreaks were under control, I think there was some back burning between the retardant/firebreak line and Pine St. The prevailing wind for these days was east or nor-easterly, though it eased off and stopped most nights.

On Thursday fires connected 2 fire hoses at the top of Belah Glen and one (without a nozzle) at the bottom, and on Friday, a few of us attempted to drench the scrub and saplings in the APZ on the south side of the fire trail.

At about 2pm on Saturday, the NE wind swung round to NW, and the temperature jumped to 40 degrees. Within ten minutes, a fire had started somewhere near the Cypress St/Broken Rd corner. The wind pushed it towards Cypress St and Belah Glen, and within minutes it was about 50m from BG. I was on a firehose and a NPWS crew had arrived at the turning circle, and a minute or two later it was crowning in the last big trees before the circle. Miraculously the wind changed or dropped or something, and there was no more crowning, as it looked for a moment as though it was going to get into the crowns of the big trees due west of no ■, and then down behind the fire road, which could have been catastrophic. A wall of fire about 2-3 m high and 100m long seemed to be running down the 2nd fire trail (that comes out opposite Dee Beach carpark, much loved by trail bike riders), and then started moving up the slope towards our Belah Glen

houses. It was pretty fierce, but not getting into the canopy, and with constant blasting with fire hoses, we were able to stop it getting into the 10m strip that I had cleared and mowed the day before to the west of the 1st fire road which was immediately to the west of our house at [REDACTED]. Spot fires then started to the east of the APZ, and within minutes they had spread along the edge of the APZ towards the beach. During all of this the wind was crazy, shifting around constantly, sometimes strong and sometimes dropping right away. At the height of the action, my weather gauge was reading 47.7 degrees.

All the time the RFS, NPWS etc fires were coming and going. I think I saw at least 5 different crews over the course of the afternoon. Sometimes a couple were there at once, and sometimes i was on my own for maybe ten or fifteen minutes. What was amazing was that they always seemed to turn up when things began to get a bit tricky. Also several times when things got hectic, the choppers and bombers would appear and dump water on it for a while. I'm sure someone was coordinating it, but sometimes the fires seemed to be lost or supposed to be on their way somewhere else. Regardless, they were magnificent.

I lost track of time but I guess at about 1530 the immediate threat to the top end of Belah Glen seemed over, although spot fires kept bobbing up in a few places, requiring a lot of running back of forth and putting Locky Rombout's innovative water-filled plastic bags to good effect. Down at the corner with the North Bendalong road it was looking tricky, with the surfboard on the thong tree on fire, the fire jumping the road and looking as though it might blow back along the nature strip towards No 1. Firetrucks arrived and made sure this didn't happen. I think many on old surfer/camper would shed a tear for the demise of the brown pintail board up the tree.

I am not sure what was going on in the rest of North Bendalong during this time. My impression is that our SW corner of the hamlet bore the brunt of this initial phase, though I think it was also a bit hectic for a while at the top of Cypress Street. The dozing and back burning undertaken on the preceding day meant that there was much less of an understory fuel load to the west of Pine St which helped enormously.

After crossing North Bendalong Rd, I understand that the fire burnt down to Dee and Flatrock, moving relatively slowly north westerly. There was clearly quite a bit of preventative action needed to stop it jumping back across the road to the houses in North Bendalong Rd as it burnt along the escarpment.

Predictions for the southerly buster were vague, suggesting that it would arrive sometime between 1800 and 2200 hours. While spot fires sprang up from time to time, there was an hour or so of relative calm (time to grab a bag of chips and a long tepid drink) before the southerly hit ferociously at about 1900. An RFS crew warned me ten minutes before that it was about to hit, and I was able to relocate a hose from the west of [REDACTED] through the yard to the south at the back.

The southerly was crazy, blowing all the smoke back up from the burnt out bush down to Washerwoman's Creek, with leaves and huge strips of bark flying in all directions. Visibility dropped to about 50m, and the sound was incredible. Mercifully it didn't pick up any significant quantity of embers, and even more so, it didn't get into the crowns which by then must have been super hot and dry due to all the undergrowth having burnt. So it was mad for about 15 minutes and then it began to ease. A few spot fires flared up but it could have been a lot worse.

While the worst of the drama was over with the easing of the

southerly, fires continued to flare up in odd places, usually due to a fire that had ignited 20 or 30 feet up a tree that then proceeded to drop sparks, limbs etc. This was not a problem so much in the bush where there was no leaf litter left to get going but several trees within the housing perimeter in back yards etc caught fire up high and remained problematic through the night, particularly if there was leaf litter, mulch or similar in the vicinity. The rapidity with which a pretty shower of sparks in the canopy could turn into a blaze on the ground within a 20 metre radius of the tree was sobering. I suspect a couple of these fires could have easily got away and burned that houses that were not considered to be in the front line, if they hadn't been caught early.

One major spot fire flared up in the vacant lot [REDACTED] around 2000 or 2100 hours (as best I recall - it may have got going earlier but I can't remember the sequence). It was both high up in the trees and in the leaf litter underneath and threatened to spread in all directions. Another recurrent spot fire in the vacant block on the north side at the turning circle flared up dramatically at about 0030 hours, and falling limbs, sparks and embers ignited leaf litter beneath the burning tree and on adjoining properties.

Over the next couple of days fire trucks patrolled regularly, with arborists marking dangerous trees to be cut down, and crews putting out smouldering fires, and cutting down the identified trees. Particularly in the first 24 hours after the fire, the sound of limbs or whole trees crashing down in the bush was regular and sobering.

It's now Thursday 9 January, nearly a week after the fire, and there are many places where the fires are still smouldering.

#### SOME POINTS FOR DISCUSSION ARISING OUT OF THE FIRES

##### Contact details

I had a few phone numbers and email addresses in various inaccessible and disorganised locations. I grabbed the first one I could find (Adam) and sent him a text asking him to convey relevant information to whomever he could. I didn't have time to do more. A lot of unsystematic effort, with consequent duplication, was expended trying to keep everyone in the loop. And this is important not just during the crisis but also afterwards when people need to know about road closures, power supply, ice, food provisions etc.

I appreciate that not everyone may want to share details, but I guess this whole exercise is dependent upon a degree of community spirit and sharing, where opting out weakens the whole scheme.

Ideally we should have a shared list of relevant contact details and info so everyone can be contacted quickly and reliably if needed. And on a platform that is accessible by us all.

##### Vulnerability to ember attack

While on the face of it, this looks like this would apply more to the residents on the south side of Belah Glen, the worst ember attack

on Saturday occurred on the northern side of the street, and several hours after the southerly had passed through. For a while it looked as though it was going to start a chain reaction through its neighbours and then onwards through Cypress St etc. I think we were lucky this time in that there didn't seem to be a lot of embers flying about, but clearly that is often not the case.

Having seen how this fire worked, the danger from embers and spot fires was as great as, and more insidious than, the immediate drama as the fire front hit. Every pile of leaves in a corner, dry mulch heap, unscreened underfloor space is a potential ignition point, and most of the spot fires that I saw were in leaf litter under trees, and were caused by sparks or limbs falling from fire in the tree above. When resources are stretched, it is very difficult to be dealing with the main fire front and also looking out for and extinguishing spot fires which have a good chance of being out of sight behind a house. A fire started on one messy block can take out several more fastidious neighbours. We could all be victims of the failures of the weakest link.

Minimising leaf litter and combustible material in all our yards and surrounds is paramount and we need a mechanism to ensure this happens.

#### Maintenance of the Asset Protection Zone (APZ) and beyond

I believe our APZs extend to our boundaries, and that technically speaking, we have no responsibility for the land beyond it. The limit of the fire front shown by the edge of the burnt ground shows the importance of keeping the strip beyond the fire road free of scrub and undergrowth. This has been done on most of the southern strip, with the exception of the SW corner, where I have previously cleared, but not in as ruthless a manner as I will be doing in the future. It probably doesn't need to be absolutely tree free, and maybe a practice of culling and leaving only a few new small trees every so often is the way to go. A few of us did a blitz on it the day before the fire hit, with pooled tools etc.

It is vital that the APZ is regularly cleared, particularly in late winter, early spring. We need a mechanism to ensure this happens.

#### Information, power and useful items

Access to information was problematic, with lots of gossip, misinformation, repetition etc, compounded by the lack of power. I guess there is little that can be done about the information flow during the crisis period, apart from having a good contact list, and listening to the ABC emergency channel, but having some localised central information point would be helpful.

Belah Glen was without power for over a week. Lots of time was spent in cars charging phone batteries. There were some generators around, but access to them depended on who you knew. I plan to install a simple solar powered system with a deep charge battery and a charging station to charge phones etc off a cigarette lighter socket.

When the fire and smoke are intense, it can get very dark in the middle of the day, necessitating the use of torches and headlamps. The smoke caused breathing difficulties for some. I found a \$50 cartridge breathing mask was invaluable. Smoke in the eyes got very painful, and ski type goggles which seal around your eyes are the best. Swimming goggles will do at a pinch apparently.

Residents should consider assembling a kit of essential items like a heavy-duty facemask, goggles, leather gloves, solar phone and computer charger, solar/wind up/battery radio, and solar/battery headlamps.

#### Community watch

The fires don't respect bedtime hours and they need to be watched 24 hours a day. There were watches mounted in North Bendalong, but they were ad hoc and infrequent.

We need an equitable and effective mechanism to mount 24 hour watches as needed, so there is always someone awake to check on spot fires, embers etc.

#### Cleaning up

The last few days have seen an enormous clean up effort undertaken by virtually everyone here, plus at one stage a group of volunteers who turned up from Manyana with rakes etc. Because there was no actual property damage, most of it has involved clearing leaf litter and brush from the couple of places outside the North Bendalong perimeter which did not get burnt, and more importantly from around and under quite a few houses within the perimeter. Quite a few owners who were not here when the fire struck came back to do this as well. Gene (Bob the Tree Man) and his wife Lee Ann and their front end loader and truck were engaged to clear and take away loads of material, and after about three solid days, the place looks very neat.

Everybody chipped in to help each other, and to clean up places where owners weren't around or had not been contacted. Tools were shared to minimise unnecessary work.

One bad/good thing about the fires is that they have revealed how much rubbish there is in the bush, especially bottles and cans along the side of paths. It is a great time to clear these up. Good gloves and a strong container like a laundry basket are required, as the bottles are often quite brittle after the fire.

It is a bit early to say at the moment, but I suspect that weeds like thistles etc will rush in to colonise burnt areas on the margins of NB where they have previously had a bit of a foothold. It would be helpful to get advice as to how best to manage this, and root them out when you see them.

#### Rebuilding infrastructure

This may be a bit outside the scope of this document, but I think some thought needs to be given to how this is going to happen. I am thinking primarily about the stairs down to Dee and Flatrock beaches, which are completely burnt (though there is a weird 'shadow' of the steps made by the packed earth, which presumably will crumble and disappear with the first rain). I assume that in the fullness of time, Council will repair them, but this will be subject to their priorities. I also suspect that they will restore one set each for each beach. I'm not sure about Flatrock, but my suspicion is that most residents prefer to access Dee Beach via the track and steps in the middle of the beach, but that the Council is more likely to fix the steps down from the carpark.

How do we handle this? Do we wait and see, or should we think about getting someone to do it for us.? Do we seek permission, or do we do it, and seek forgiveness if they don't like it?

Overall, I feel we were very fortunate in many respects.

One thing I think I have learned is that each fire is different.

The wind was not as strong as expected, and it fluctuated in terms of strength and direction, often to our advantage. If it had been much stronger and more consistent, it could well have been a very different story.

Perhaps because of the relatively light wind, there was not a lot of ember attack. There were spot fires started by embers in leaf litter etc, or by canopy trees within the hamlet perimeter ignited by embers presumably which caused problems as they dropped fire onto the ground below, but this seemed to be relatively infrequent.

Quite a lot of preparatory work was done by owners in the houses on the outside perimeter of the hamlet. However there was less clearing leaf litter, mulch etc undertaken in relation to houses not in the front line, and this proved to be a vulnerability when ignition by radiant heat or ember happened away from the perimeter. We are all exposed to the risks posed by the weakest link

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### **1.1 Causes and contributing factors**

#### Causes and contributing factors

I don't think there were any unusual immediate causes or factors that contributed to the fires at N Bendalong. It was hot, dry, quite windy, and there was a quite heavy load of undergrowth in the surrounding bush.

However I am obliged to express my view, shared by many who experienced the fires that ANTHROPOGENIC CLIMATE CHANGE is the most significant ongoing factor. Unless serious steps are taken to address this, all the efforts to identify causes, solutions etc are simply band-aid solutions.

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### **1.2 Preparation and planning**

#### Preparation and planning

As outlined in my text submission, a number of steps were taken by local residents and authorities to prepare for the fires, and may have been significant in preventing property loss.

On Friday 3rd January, ie the day before the major fires, the N Bendalong Manyana RFS connected and laid out fire hoses in several locations. The two hoses located at the end of Belah Glen proved invaluable in keeping the fire at the perimeter, although a bit of extra length would have been handy to give them further reach.

Unfortunately a second hose located at the other end of Belah Glen did not have a nozzle, so when a serious spot fire broke out near it, a nozzle had to be cannibalised and taken away from the where it was being used.

There should be enough spikes, hoses and nozzles in good working order so that all hydrants can be fitted if required. The fact that we had good water pressure throughout was very significant.

Lachy Rombouts, a local tradie of his own initiative set up a number of cubic metre 'water stations' at key points. These were made of 1 cubic metre poly bags (used by landscape suppliers) lined with builders paper, supported by star pickets, and filled in advance with water. These were very useful for putting out spot fires early with a few quick bucketfuls of water, rather than having

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to drag fire hoses from the fire front, or try to use any garden hoses lying about which just couldn't supply enough water fast enough.

For several days before the fires locals had taken measures to clean up the perimeter, remove scrub from the APZ etc. This was clearly beneficial. Also quite a bit of work was done cleaning up leaf litter, mulch piles etc, but this was not so consistent, as many owners were not there to do so. These proved to be problematic with spot fires.

Apparently a hazard reduction burn of the land to the south of N Bendalong had been planned for 2020. It will no longer be necessary! but while recognising that HRB is not necessarily going to prevent loss in severe fires, wider more frequent implementation (with indigenous input) should be considered

A number of older houses were built long before the BAL system was introduced. While it would be unreasonable to require a full upgrade to meet requirements, are there some relatively low cost, high value improvements that could be mandated. An example is enclosing underhouse/underdeck spaces which often have junk, leaves etc accumulated, and are easy targets for embers. Experts may be able to come up with a list of what gives most bang for the buck.

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**1.3 Response to bushfires**

Response to bushfires

The use of choppers and fixed wing planes was very reassuring. I am in no position to judge their efficacy, but their continual presence at the worst times was very comforting.

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**1.4 Any other matters**

I think there is a lack of clear understanding in the community about the nature of, and responsibility for APZs. Thought should be given as to how this can be addressed, to find the balance between those who think all trees etc should be removed in a broad swathe, those who think the principles don't apply to them, and those who don't know or care.

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**Upload files**

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