

Conference Proceedings – Speaker Transcript

Operational planning and logistics – introducing fire into the landscape

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Where we're starting off is the area where European people in Australia first recorded their observations of fire being introduced into the landscape, this was on the 28th May 1788. Dr Geoff Lambert has done a lot of research into this, and it occurred up at North Head, the main entrance to Port Jackson, Sydney Harbour (slide 2). There was an expedition party of early explorers that went up to North Head to use the trig points. Whilst up there they observed the Indigenous people introducing fire into the landscape in what was essentially a land management role. From these observations and the information from the trig points that the explorers recorded, Dr. Geoff Lambert has brought together all the information and pretty much narrowed down the location to within about a 20 meter square area where the fire was first observed being used as a restoration tool. This is where European people first observed fire being introduced into the landscape within Australia (slide 3). I think that's pretty amazing so great work Dr Lambert. I think it's brilliant.

This location is where Fire and Rescue New South Wales once again are introducing fire and using it as a restoration tool for an endangered ecological community. This has been done working together with National Parks and Wildlife Service, the Sydney Harbour Federation Trust and also the North Head Sanctuary Foundation.

Eastern Suburbs Banksia Scrub (ESBS) only exists in the eastern part of the Greater Sydney area. From an original estimated area of 5300 hectares there's only 146 hectares of this community left and it's basically between North Head and La Perouse. From the 3% that's actually left only 18% of that ESBS is on managed lands. A lot of it is in areas like golf courses, people's backyards along coastal parts in the Sydney eastern suburbs and small pockets on Council reserves, most locations of it are quite sparse in area, with the North Head community being the largest portion in total area remaining.

Back in 2004 key stakeholders developed a recovery plan, with National Parks working with other land management agencies to try and protect and manage this EEC of ESBS. One of the recommendations from the plan was burning, the fire regime for this community is anywhere between eight and 15 years. There are a couple of variations on that but generally it's considered to introduce high intensity burning between eight and 15 years.

Fire and Rescue New South Wales have been working with the land managers and we've conducted three types of burns in this vegetation. We've done broad area burning out at North Head, some windrow burning out at La Perouse on the site of the NSW Golf Course and pile burning at Centennial Park in the Moore Park area.

Looking at the broad area burning we conducted at North Head the burns were quite small, we did three sites; third quarantine cemetery was 0.8 ha, North Fort 1.5 ha with the largest being Blue fish drive at 1.8 ha, but the operational logistics and the operational planning to go ahead with these small burns was incredible. The operational side of it was the smallest portion. Planning, took me about two, two and a half years, to get the plan together and then we just had to sit and wait.

Somebody said it yesterday, you've got to get all those ducks to line up and that's very true. So then we were waiting to get all of the ducks to line up in the right place at the right time. If someone's got a crystal ball bring it over, I needed it.

At North Head we had a burn at the Old North Fort which was an old Defence facility, then right adjacent to the third quarantine cemetery and then over at Bluefish Drive which is just near the Sydney Water treatment plant. Of the three burns North Fort and the quarantine cemetery burns were being managed by Fire and Rescue NSW and the Bluefish drive burn was being done by National Parks and Wildlife Service.

Historically every person that has burnt out on the headland has lost it, and we get a lot of 'bonus hectares' out of the burns. But I didn't want to be that person because I don't know about you, anyone here who comes from Bourke, I hear it's a lovely place, but I don't want to be working in Bourke for the rest of my career, I'm a coastal dweller. The decision was made that if we were going to burn on the headland we were going to shut the headland and restrict public access. As a result of this all of the burning had to happen on the one day to minimise disruption.

All these three burns were very small burns, the largest one was Bluefish Drive, 1.8 hectares, so we're burning on postage stamps. It's not a lot, but that behind me (slide 9) is the operational structure that was put in place. It's pretty complicated isn't it? There was an overall incident controller, Superintendent Kel McNamara, for the headland, we called that the North Head complex. From that starting point we put divisional commanders in charge of each of the burns. The divisional commanders essentially were running their individual burns with operations officers and the resources below that.

We had multiple agencies involved. We had Sydney Harbour Federation Trust, National Parks Service and the Police. We also had the State Emergency Service assisting us with closing down walking trails and making sure people weren't actually coming onto the headland. The other thing that we put out on the Headland was a fire truck (Flying Pumper) that was literally sitting there as if it was in a fire station, so if any spot fires occurred they could go and deal with the fire and we could still carry on with our prescribed burning that we were undertaking.

From this we ended up with 10 firefighting appliances (trucks) and including the incident management and logistical appliances we had a total of 36 resources; remember we're burning on postage stamps. So we had 36 fire resources, we had appliances from Fire and Rescue New South Wales, from National Parks and Wildlife Service and we also had the Rural Fire Service from Pittwater-Warringah to come and assist us because of water issues out on the headland. With all of that we had 121 fire fighters for our postage stamps. So that was quite interesting. It was very much an exercise in planning for the fail, not failing to plan.

We all know about operational planning. Most people in the room have seen burn plans or put burn plans together, you guys do it, it's pretty easy, and you just follow that process. So down on the side

there you can see all of the things that you need to go through and tick those boxes in your burn plan (slide 11). I thought this is not too hard, I do this every day, and this is part of my normal working job. You try and put a burn in at North Head and see how you go. So these are the other things that we have to worry about (slide 12-14).

First off we got mitigation funding through the NDRP funding, National Disaster Resilience Funds, to do some mitigation work around the stone walls. If you don't know North Head it's got historical stone walls criss-crossing the headland itself. We did some clearing along those walls and the reason for the clearing was twofold, one to protect the historical significance of them. We had to remove some of the vegetation to stop the fire if it was to escape and to stop the heat flux damaging the stone walls. Secondly also it gave us an opportunity to put in a strategic fire advantage zone over the headland. So if we did get 'bonus hectares' occurring we had an area where we could contain the fires and pull them up.

Next the timeframe. We could only burn in certain seasons. We had to take into account the breeding seasons of the bandicoots and also the penguins that are out at North Head. Also with the bandicoots there was a study that was being done by the University of New South Wales, they came out and did some research on the bandicoot's pre and post-fire introduction.

We also had to worry about the Quarantine station. They get a lot of school groups in there, on the day of the burns; I had 400 kids on the headland, which was worrying. I tried to encourage them to go into Manly for the day but they wanted to stay on the headland for their planned activities at the Q Station. Because of that I then had to go through steps in the local emergency management plan and arrange with Sydney Ferries to make sure there was a ferry ready and available in case we needed to evacuate the headland as we could only evacuate by water. Also we had to speak with Harbour Control in case we had 'bonus hectares' again and too much smoke. This was in case we were going to shut down the shipping channels coming into Port Jackson, oh it gets better!

Along with all of that and given the risk of burning on the headland, and historically with people losing it, I had to get buy-in from senior management of Fire and Rescue NSW to trust that I knew what I was doing and that we were going to get things done and it was going to work out as planned. We did get that buy-in, and from all the other land managers as well which was fantastic. Then we had to put in a notification strategy. The weather window that was going to present itself with all those ducks lining up was going to be very narrow. We put out an email notification system where we were literally going to give people anything from 24 hours notice up to 48 hours notice to actually go ahead with the burn.

One of the other things I had to deal with was underground ventilation. There's historical war tunnels through North Head with ventilation intakes that I had to make sure were covered and insulated so we weren't dragging smoke into the underground tunnels, increasing the carbon monoxide load down there. This was so if people walked in there after the burns they weren't going to asphyxiate themselves. The bonus carry over from Defence was possible unexploded ordinance out on the headland. As you can read through on the list there are all these other considerations that I don't have time to go through. The big kicker for me which I really loved was the Sydney Water treatment plant which was opposite the blue fish drive burn. 80% of the energy to run the plant is through dragging off biogas from the process of treating the waste water. There is a big bubble full of biogas sitting out on the headland in an above ground storage bubble. Mushroom clouds, I dreamt it every night.

Now to the burns. That video is the North Fort burn (video 1). You can see on the edges of the burn there's still the crown of the vegetative layer. You have to try and stop the fire fighters from putting the fires out. Once the fire got into the burn area it got a head of steam up and got some really good intensity running. You can see the type of environment that we were burning in. The buildings were quite close and they were very small parcels of burns. We burnt on such a small scale to start with to see what type of regeneration we were going to get from broad area burning out on the headland and the results have been fantastic.

The burns that we did on North Head coincide with the work that Dr Judith Lambert has done with the rabbit fences, we had control sites, controlled thinning sites and then the burning sites, that were all in the study. The regeneration that we're getting out at North Head is fantastic. But the biggest problem that we have is the newly sprouted post fire vegetation degradation from rabbits and the bandicoots. So we suggest for any burning in ESBS, the advice is that it needs to be fenced post-burn to encourage the regeneration to thrive.

Moving off North Head we go over to La Perouse where burning is quite differently. Over at North Head the vegetation is in-situ the vegetation strata layer was still standing. What they do out at the New South Wales golf course at La Perouse is they go through and cut the dominant species which is tea tree and drop that on the ground. They let it cure and then they come in and burn it. Burning it out on the golf course is a lot easier, nowhere near the amount of planning. There are windrows that are surrounded within the golf course constraints and if they lose it the Great Eastern Firebreak is going to catch it, the Pacific Ocean. Which is always handy.

The preparation requires the vegetation to be cut and dropped, the vegetation is cured and it's then burnt in isolated pockets. With this type of environment and preparation we can get extremely high intensity burns which are required for the ESBS. Once again the land managers out there, the golf course, will fence the area to stop exposure to rabbits. Across the golf course site we're not burning sequentially but rather with a mosaic pattern which allows for wind bourn seeding and maintains fauna habitat.

At the La Perouse golf course site, we had arson this fire season so we had 21 hectares of wildfire burning out there in the ESBS as well. We've put measures in place to monitor what introduced fire has done compared with what wildfire has done in the same vegetative area along Henry Head.

From La Perouse let's go to Centennial Park, in the middle of Sydney (slide 23). The Park has an area of ESBS as well, it's not even a hectare. The Park's owners, the Centennial Park Trust, have been doing manual clearing of the ESBS, piling it and then coming in and doing pile burns on the area and spreading the ash from that. Once again some really good regeneration out there and that area is also fenced off to stop rabbits.

That's our story of how Fire and Rescue has been involved in broad area burning, windrow burning and pile burning, working with land managers for the recovery of Eastern Suburbs Banksia Scrub.

Questions from audience

Q – What was the timing of the burns?

RS - It was early September 2012

Q – What sort of results did you get at Centennial Park?

RS - Over at Centennial Park they did manual thinning to start with and then piling. The piles sat there for about a year and a half before they were burnt, but the regeneration has been fantastic. It's very sandy soil there as well but once again the exclusion of rabbits is very much the key to ensuring the regrowth actually gets an ability to sustain itself.