

Conference Proceedings – Speaker Transcript

The NCC Firesticks Project: Applying Aboriginal knowledge, science and integrated fire, weed and pest species management to restore and maintain biodiversity, habitat connectivity and landscape resilience

Richard Brittingham & Sian Hromek
Nature Conservation Council of NSW

[Link to Slides](#)

[Link to Video](#)

Sian: To start we'd like to acknowledge the traditional owners of this land and the traditional owners of the partners that we work with in the NCC Firesticks program. The question of this session now is how can we manage the interactions of fire, weeds and feral animals more effectively?

We have two case studies, from two Indigenous Protected Areas (IPAs), facing some of these challenges as they manage the interactions of fire, weeds and feral animals in highly modified landscapes. Unfortunately, the rangers couldn't come here today, so Richie and I will do our best to share their stories. At the end we have a short video, so you will hear their voices and see the work that they are doing.

Richard: The four key words that I've heard out of this conference are adaptation, integration, innovation and collaboration. The NCC Firesticks Project is a five year project funded under the Federal Government's biodiversity fund. It is effectively going for another four weeks, as are a lot of other biodiversity funded projects around Australia. There have been some amazing projects, including Firesticks and the Coldstream Projects by NCC. We are all in a similar situation because that funding came from the previous government, the current government is not that interested in telling any good news stories from it. We are trying to do that ourselves.

I want to acknowledge the fact that this Firesticks project has come from a long legacy before the actual funding was applied for. It has been a five year project. Before that there are many people that worked on the ground in this space before we came on board. I want to acknowledge the NCC staff, like Greg Banks, Waminda, Mark and Michelle, there are many people behind this project that have put in a huge amount of effort before Sian and I came on board.

There was a seminal paper written by Lyn Baker and Claude McDermott, OEH staff, about 10 years ago, called Cultural Connections. I want to acknowledge that, because it set up a lot of

the groundwork for where Firesticks came in in terms of those communities. My understanding is that before that paper was written, there was really no engagement with Aboriginal communities in northern New South Wales, certainly not in regards to managing threatened species or fire. Jim Morrison was also integral in terms of a lot of the groundwork for this project, too. I would also like to acknowledge the OEH Cultural Burning Policy. That is a really brilliant step forward.

Our project area includes four IPAs and a number of local Aboriginal-owned properties. All these properties have unique challenges in applying fire, including diverse vegetation communities, invasive species, access, capacity and resources, knowledge, community support, lack of legislative understanding, issues in gaining relevant approvals, and fear of litigation, to name a few. IPAs currently make up about 46% of the national reserve system. In New South Wales, they are lacking formal recognition and long term funding is particularly difficult.

In considering all the presentations that we've had in this conference, I wanted to see if our project could represent a good example of culturally integrated natural resource management in terms of trying to get all these stories and kind of put it into one package.

Five years of baseline data collection has happened. Our long term monitoring plots were a critical component of this project. We had an amazing ecologist on board, David Milledge. It has been a real privilege to work with him doing seasonal monitoring on these IPAs.

We monitored three terrestrial vertebrate groups and we looked at pre- and post-fire on those plots. Out of the 16 plots that we had, we burnt nine of them, two by wildfires and the remainder by the IPA ranger groups, with some assistance from the Rural Fire Service, and in some cases with fire contractors from Queensland.

Through ongoing systematic monitoring, the project has recorded a total of 57 threatened species, many of which the IPAs provide core habitat. 11 of these species are listed under the EPBC Act. As mentioned by Allan earlier today, there is a need for long term research: if anyone wants to continue this research past the five years, we've only got preliminary results at the moment, in terms of the fauna assemblage's reactions to fire, pre and post. The preliminary results will be published in a journal article.

Applying fire in highly modified landscapes can have very unpredictable results, both positive and negative. Adaptive management is the key. We have two case studies from the project to illustrate this, Minyumai and Willows Boorabee IPAs. These are two very different ecological systems that both require an integrated management approach for effective restoration.

Sian: Minyumai IPA is about 2000 hectares in size. It's located south west of Evans Head on the northern New South Wales coast. It is being managed for conservation reasons by the Bandjalang people. The rangers at Minyumai would love to have emus back on their country. Back in 2005 they were seen, then a wildfire came through and they haven't been seen since. As a part of that restoration, the IPA got a grant from the Environmental Trust, along with the

NCC Firesticks funding, and IPA funding, to do a restoration of the Red Gum Floodplain Wetland, an endangered ecological community. The project is focused on the removal of the invasive pasture grass, setaria, which dominates the central section of the wetland.

30 monitoring plots were established to measure the response of native regrowth to three treatments, the treatments being spray using herbicide, spray followed by a cool burn and spray followed by a hot burn. The rangers have found that the most effective treatment is herbicide spray followed with a hot burn. The hot burn appears to stimulate both the seed bank and the basal shoots better than cool burns. They also found that the complete burns regenerate better than the patchy burns. Normally we advocate for patchy burns, but in this case complete burns worked a lot better. They also found that 23 native species, including 7 tree species, regenerated after the hot burns.

A small herd of abandoned cattle and feral pigs soon discovered the regenerating plots. They messed up the ground, trampled the regrowth and threatened the project. Brad Nesbit, a specialist in pest management, has been engaged to help work with the rangers and together they've held some wildlife tracking workshops and set up monitoring cameras and an electric fence around the project area to keep the pigs and the cows out.

As a strategy to keep them away they burnt a paddock away from the trial area, so that the cows would be attracted to that. They set up molasses and salt licks and some cameras to see what the cows were up to. They also set up feed troughs for the pigs as a future baiting program, so that the pigs get comfortable coming in and eating.

The interesting thing is that although the cattle are abandoned, they are still the legal property of the owner, and he has no interest in looking after them or helping get them off the property. At the moment, the substantial cost of removing the animals goes to the IPA.

Basically, persistence beats resistance. Although the feral animals slowed down the regeneration process, the rangers persisted and worked through the problems. Now they have a plan in place to remove the animals. With the feral animals removed, we expect to see the area one day to look similar to this photo, which is Daniel Gomes, the head ranger, checking out the neighbouring property, where they did a similar thing. Hopefully one day we'll see emus there too.

Richard: This is the Willows IPA, up in the New England table lands. It is 2900 hectares. It is on the western slopes, and managed by the Ngorabul people for its cultural values and biodiversity. The Firesticks long term research plots have provided important information on the distribution of invasive species on the IPA. There are large amounts of feral herbivores there, with deer, pigs, rabbits and particularly goats. All are having severe impacts on native vegetation. With such intensive grazing, the land won't carry any fire. When areas are overgrazed, more tea tree grows, which the animals don't eat and this creates more fire-prone vegetation.

We once again engaged Brad Nesbitt, who has worked a lot with a mob in Central Australia as well. He came along to assist the IPA rangers to develop a strategy and control program to reduce the goat numbers, and this has been a very successful initiative. I'll just put on a bit of film, so Jayden can explain some more to you himself.

VIDEO (link not available)

Richard: IPAs are managed under the National Reserve system. They don't have the resources or the capacity of National Parks, and they don't have the recognition. These guys don't have the funding it takes to do the integrated land management, they are all working with very small grants. Minyumai's got three grants going on at the moment and Firesticks has been contracting out to them every year, helping them to get the skills and capacity to be able to do the work that they need to do to manage these properties.

When we put camera traps around those properties, and this is an example of innovation, we noticed that all the abandoned picnic shelters that were spread around the property were being used by the goats for shade. So the rangers decided to use them as trap paddocks. We put up gates and trap yards around those shade structures, and then put in a lure and eventually some spear gates. They managed to trap the goats using the infrastructure that was already there.

Coolatai grass is a major issue at Willows. It is a really nasty grass. It is an invasive, drought, fire and herbicide tolerant tussock. It has become a major invasive species in northern New South Wales and it is one of the few perennial grasses capable of invading undisturbed natural systems. You can see on the slide where the burn was put in, and slowly that grass has taken over - the burn has actually resulted in that grass spreading on a broader scale. Anecdotal evidence from the rangers suggests the goats and cattle don't graze on the *Coolatai*. That says something, when they've seen goats eating grass trees and eucalypts and almost everything else on the property.

Restoring balance to this complex and heavily disturbed system requires reducing grazing pressure, tackling *Coolatai* and bringing back fire on a broader basis, with intervals of 10 to 15 years, as results show the land takes a long time to recover.

We're going to finish our talk today by playing a short film about the Firesticks project made by film maker, Jamie Robertson. This illustrates the importance of cultural connection to country and the benefits of all of us working together.

Thank you very much to all the Firesticks project partners.

[Video link](#)