PhD – Evaluation of a Project called Hotspots which trains landholders to use fire to manage their land for biodiversity conservation.

Today focus on one aspect of phd and look at how knowledge about fire ecology and fire management is created, and benefits and risks of sharing that with Hotspots participants, bearing in mind that participants have a huge range of knowledge, experience and opinions about sustainable fire management.
The Hotspots Fire Project is a comprehensive Training program which provides landholders and land managers with the skills and knowledge needed to actively and collectively participate in fire management planning and implementation for the protection and enhancement of biodiversity conservation.

Objective One: On-ground fire management is informed by the best available fire ecology research and operational knowledge.

What exactly is Hotspots? This is their words...

Two days of workshops, usually one month in between.

At the end of the workshops, participants are expected to have produced a Fire Management Plan for their property which indicates how they propose to manage their native vegetation (possibly through fire).
Emotionally and politically charged. Up there with climate change and refugees.

This presents a real challenge to a program such as Hotspots:

Should they share and embrace the controversy during workshops?

Or

Should the workshops be about transmitting a pre-selected body of information that supports their view of sustainable fire management?
Clark summed up the challenges in 2008. He said there are issues around

(1) *What we* should be aiming for. What is the range of ecologically acceptable outcomes for fire management?
(2) *How* can we achieve these outcomes given the highly modified and fragmented nature of the habitats being managed.

Since then books have been written and published on these issues by my worthy colleagues at the Bushfire CRC.
Another challenge to Sustainable Fire Management – what we’ve got in the first place.

Focus on this because less obvious than the other issues but it is something that Hotspots participants struggle with.

My background is in Ecology, I’m not here to denigrate Science. I am here to deconstruct it. Because that’s what Hotspots participants do.

If you’re familiar with all the information, I’m about to give you, try to imagine what it would be like coming to this for the first time.
Now going to look in more detail at some of the controversies around each of these issues.
Impractical to measure total biodiversity: sustainable fire management focuses on specific taxonomic groups (Jurskis 2003). Focus on plants

Not ideal because plants and animals respond very differently to fire. Plants have epicormic buds, lignotubers, seeds. If animals can’t get away from fire they die. When animals die they die! Don’t reproduce babies in their death throes. Each species can only recolonise if there are populations nearby and if all the key resources that they need remain in the locality after a burn.

But it’s not just animals that we marginalise.

Estimate that we’ve identified about a quarter of Australian fungi. Nearly 40000 species out there that we haven’t identified, so we certainly don’t know anything about their ecology or what effect fire will have on them.

Moving focus between taxa leads to very different conclusions about impacts of fire on biodiversity.
So we look at some vegetation and then we chop vegetation into chunks to assign fire regimes to it. In NSW, these chunks or classes, are usually Keith classes: first described by David Keith.

Keith did a good job BUT no classification system is perfect – it’s an artificial process of forcing vegetation into defined units that don’t exist on the ground. There’ll always be argument about whether the classes are too narrow or too broad, whether some have been missed altogether.

Some people also argue with the way Keith combines broad floristically derived units (based on species) with a structural classification system and he’s not always consistent about the way he does that.

Overemphasis on the role of fire in almost all of the vegetated systems discussed. In some cases, flooding (Inland Riverine Forests) or long-term climatic cycles (grasslands) might be as or more important than fire.

(Hunter, 2006)
So we have a book which has classified some vegetation into chunks and we say to people, take the book, decide which of these classes your land fits into.

In one of my previous incarnations as a science teacher, I used to teach high school kids. They’d look down a microscope and ask, “Ms Edwards, what can I see?” This question’s not as stupid as it first sounds. When scientists look down a microscope, or approach a classification exercise, they bring with them a perceptual field that’s steeped in training in a particular culture and tradition. They know what they’re looking for. And they still disagree.

UK – 7 professional surveyors mapped the same upland site. The average area of agreement between maps was 77.6% at the habitat level (e.g. Heathland / woodland / swamp). Due to classification issues.

All sorts of reasons for that, plants being hidden from vision by other plants, observer preconceptions about the existence of certain species within the area, fatigue or lack of focus, plants not being in a recognisable phenological stage, non-native invaders looking like natives, rarity of a single indicator species.)
That’s the experts. Hotspots is asking landholders with no experience or training in classification to classify their land.

They ask these perfectly reasonably questions but they don’t have nice neat answers.

Some landholders give up and just call their land Wet / dry sclerophyll forest.
Hotspots participants range from tree-changers on life-style blocks with no knowledge of land, through hippies who want to tread lightly on the land, through conservation agency staff members with land, to traditional farmers who’ve been burning for decades.

Some perfectly comfortable with matching selected aspects of their land to selected parts of a system described in a book and applying an associated management technique.

For some it’s just anathema. These quotes are from indigenous people views shared by some, perhaps many, Hotspots participants. They want to know their land, to observe it, to know how their patch responds to drought, to flood, to fire. And until they can do that, they’re more comfortable with methods that they perceive as being less drastic – slashing / grazing. Or even using fire to help individual species.

Donna: If Hakea needs fire to reproduce why not just burn the hakea?
Many possible approaches to workshops. I’ll look at two models because I’ve seen Hotspots workshops that have elements of both:

Transmission of information
Co-production knowledge.

Talk about each approach.
You can see how Hotspots could fit into this model:

They come in, they say

The problem is loss of biodiversity
The relevant information is about specific vegetation types, Keith classes and fire regimes
The solution is prescribed burning
Targets: x number of sustainable fire management plans developed and implemented
Major advantage: funding. Because funding is usually short term

Targets are usually about how many workshops are held and how many plans are made, how many landholders change their attitudes. Assumption that those things will impact on biodiversity BUT there’s many a slip twixt cup and lip!

Long-term ecological monitoring is necessary to identify impacts on biodiversity

Most of us grew up being taught in this way. Comfortable with it, particularly if you’re not that familiar with a subject.
Emotional and political nature of fire management means that some people won’t even attend the workshops, some will come and be trouble-makers as some of us were known in school.
1. No fear of controversy – it’s welcomed. The whole point is to get people together and talking.
2. Nobody’s automatically granted expert status

Hotspots might approach participants by saying:

Fire is both a threat and a regenerative force in our landscape. How do we envisage a future landscape that recognises this role of fire and how do we get there?
If you have no fixed agenda then people are more likely to come to the debate and start to realise what they’ve got in common overcome language barriers (again rooted in culture and training).

It could be argued that until all Australians are engaging with the debate about sustainable fire management, we’re going to continue going round in negative circles of blame and protest.
It’s hard to get funding if you say, “We’re going to open up debate about fire in Australia!”

Scary for the facilitators and Hotspots HQ staff – we’re more accustomed to telling people what to do, to being the expert, to getting immediate, tangible results.

And participants
Pannell and Vanclay argue it’s not failure of communication that stops landholders from adopting conservation initiatives, it’s failure to manipulate them into thinking that the proposed changes are consistent with their goals.

But perhaps that’s because extension projects have traditionally said, “This is the problem, this is what you should do about it.” Some landholders, particularly those who are less confident on the land, may respond well to that.

But others may well prefer a more open approach that says something like,

In Australia, Land, People and Fire do, and always will, co-exist. How do we, as a community, want to shape that existence?