



An Australian Government Initiative

national science week 2010

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Starting the fire - the influence of fire on native invasive species

What interested you in science as a child?

My first interest in science when I was little would have been seeing butterflies stuck together and then separating, the changing colours of trees' leaves. I just liked to know how things worked and why certain things would happen if something changed.

What did you study at university? And why did you choose to go to uni?

I chose to go to university to study a Bachelor of Science, after my dismal chemistry and physics tests in year 11 and 12 decreased my chances of going to vet school. I then thought I could do more, no, I wanted to do more, than just help animal and owner - I wanted to help a wider community of people and things. I started at Griffith University in 2005 straight out of school. After our first careers night near the end of Year 1 we were told that most available jobs were in water treatment. So I looked for other alternatives and found myself in 2007 in Tasmania, at UTAS, doing the same course, but oh, how different it was.



I graduated in 2009 after majoring in Plant Science. From here, doors of opportunity opened to work in parks and wildlife, council, government bodies and community groups – this is where I wanted to go, a single degree that could potentially let me help many people.

What is your current research project?

My current research project is looking at the influence fire history plays on the stand structure of a native invading species *Allocasuarina verticillata* (a.k.a. drooping she-oak). Due to much negative perception about the quality and vital role fire plays in the Australian bush, this fire-sensitive species is invading native grasslands and open woodlands, threatening biodiversity and habitat for many rare flora and fauna. *A. verticillata* tends to form monoculture stands, that is, a forest with that species as the dominant, and often only, tree. It does this by mulching and shading out the competition with its compacted needle mats and dense canopy. This species has expanded and taken over many habitats which were dependant on fire at certain frequencies to maintain biodiversity and ecosystem 'health'.



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But due to a lack of knowledge and a negative view of fire, incorrect management regimes have created a very visible community shift in a time frame as short as 10-15 years.

Now management is trying to combat this invasive native, however, once established *A. verticillata* proves to be a much more formidable foe. It can resprout from the base or limbs when exposed to mechanical damage or if the main plant is killed during a fire. Its leaf litter interrupts the fire front (mostly cool grass fires) which quickly becomes extinguished.

I've used transects and am looking at basal diameters and diameter at breast height to assess if a relationship between tree size and fire history can be established. From this, population data can be generated and hopefully, a vulnerable age of the species will be exposed at which it can then best be managed.

What are your future aspirations?

My future aspiration is to work in an environmental job where we get things done and can show results. I hope to show that the task of combating invasive and exotic flora and fauna can be done.

What do you love about science?

The thing I most love about science is the fact that the knowledge bank is always growing. Any one person can challenge another's ideas or processes and create their own project, to either prove other research is incorrect or support their findings. Anything at all that you can think of, has science involved.



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