

Walking in the Steps of History

by Margrit Beemster

Charles Sturt University PhD student Robyn Whipp's research project on 'Historical Vegetation Change in the Pilliga State Forests in Northern NSW' involves a fascinating link to Australia's forestry history.

As she describes her research, where she has been and what she has done, Robyn, 28, reverently shows me the original hand-written records in old books that she is using to compare with what exists in the forests today.

The detail in the books is astounding. There is page after page of tiny pencilled markings, letters and numbers with the occasional written note offering further explanation. The fact that Robyn has been able to decipher what looks like an encrypted code is quite amazing. But, with the help of colleague Andrew Deane (who was working with NSW Forests but is now with the NSW National Parks and Wildlife Service), Robyn has been able to decipher the tally system and the code used by the foresters and forest workers who surveyed the forest more than 60 years ago.



Photo: courtesy Border-Mail

"The old books provide a fantastic summary, written in a nearly forgotten code, of the sizes and species of trees that grew across the Pilliga in the 1940s," says Robyn, an associate member of CSU Institute for Land, Water and Society. "It is an extraordinarily accurate summary of what the forest used to look like. The books, which were being stored in the old NSW Forestry office at Baradine, represent six years worth of work (from 1946 to 1951) for the foresters who surveyed one tenth of what they considered the commercial areas of the forest. Robyn selected about 50 of the books to compare with and study in detail.

For her field work, Robyn used old and new maps and the modern day advantage of a Global Positioning Systems to retrace the steps of those foresters over a number of selected sample sites. She has been impressed by the accuracy of her predecessors who only had compasses, and landmarks such as blazes on trees and old tracks, to go by. "I'm overwhelmed by how much work those foresters did," says Robyn. "I only sampled a very small selection of sites in comparison."

Robyn, who did a double degree Bachelor of Science and Bachelor of Forest Science at Melbourne University, is in the final year of her PhD studies which are funded by the Australian Post Graduate Award and the CRC for Plant Based Management of Dryland Salinity. She decided on forest science "because I've always had an interest in conservation and ecology but I felt I needed to work out where the balance between conservation and sustainable natural resource use should lie."

Robyn's research (under principal supervisor Dr Ian Lunt, from CSUs Institute for Land, Water and Society) combines her skills in forestry/ecology and a personal interest in history. It has taken her up into the Pilliga State Forest, a 400,000ha (a million acres) state forest - predominantly *Callitris* (White Cypress-pine) and a variety of eucalypts - between Coonabarabran and Narrabri. Close to the Warrumbungles, it's dry, tough country with an average rainfall of 450 to 700mm a year. As Robyn explains, forestry activities in the Pilliga State Forest have long made an important contribution to the local economy. As Australia has only a few softwood species (*Callitris* is one of these and is also termite resistant) good stands of *Callitris* are valued by foresters.

Robyn says while *Callitris* regenerated poorly in the first half of the 19th century and foresters were becoming concerned that they were losing this resource, between the 1950s and 1960s it regenerated very well right across NSW. However in 1951 a bushfire went through more than half of the Pilliga State Forest. Robyn has been investigating a number of research questions mainly: how much did the forest in the Pilliga thicken up in the 1950s; what effect did the bushfire in 1951 have on the forest; and what effect has timber harvesting had on the forest.

She has found that:

- the forest in the Pilliga has thickened up (the three main species – *Callitris*, Ironbark eucalypts and buloke) over the last 50 years by an estimated threefold
- the bushfire of 1951 didn't kill as many of the cypress as expected (despite the fact that *Callitris* is a fire sensitive species) and they regenerated better than the eucalypts in the burnt areas;
- there were more cypress now of a merchantable size where the forest had been harvested than where it hadn't. Robyn believes this is due to a change in timber harvesting practices in the 1940s when commercial thinning techniques were introduced.

"In an age of increasing demands on our forests, coupled with climate change, long term studies of how our forests are changing are vitally important," says Dr Ian Lunt. "In trying to manage forests sustainably, it's helpful to know how they have changed over time, and effects various management practices have had. The forester's old notebooks from the Pilliga provide an invaluable resource to document how our native forests are continuing to change over time. This study will hopefully help the people who manage this type of forests to understand them better, and provide some clues as to how to manage them into the future."

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