

Healthy Country: Healthy People

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Healthy Country: Healthy People is a research project of the Institute of Advanced Studies, Charles Darwin University. It aims to inform policy regarding sustainable Aboriginal futures in northern Australia by exploring the relationship between landscape health and Aboriginal health. The project involves Aboriginal communities, Aboriginal stakeholders and a trans-disciplinary research team and is funded by Land and Water Australia, NHMRC, the Northern Territory Government, GPET and Pfizer.



Welcome to the second newsletter from the Healthy Country: Healthy People project.

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Landscape ecology team report

Team: Aaron Petty, Dr Don Franklin, Lou Elliot and Prof David Bowman
School of Environmental Research, Institute of Advanced Studies, CDU

Contrasting Landscape Health across the Top End

By Aaron Petty Aaron.Petty@cdu.edu.au

The goal of the landscape ecology portion of this project is to assess, on a broad scale, the ecological impact of Aboriginal activity on country. For the 2005 field season we are contextualizing the ecological status of lands under Aboriginal tenure with lands managed by various government agencies. We will be working in five climatically similar areas: Maningrida and Oenpelli in Arnhemland, Kakadu National Park, Mary River National Park, and the Mount Bundy Defence Training Area.



Aaron measuring grass quadrats at Maningrida

To compare and contrast these areas we are using four indicators of ecological health: grass fuel load in stringybark/wollybutt savannas, feral animal impact on billabongs, the degree of weed invasion on floodplains, and fire history. Three of these indicators, fuels, ferals, and weeds, involve extensive fieldwork, making this year an ambitious one. However, the field season is well underway, and I have nearly completed the fuel surveys, having surveyed fuel loads in 85 sites around Maningrida, Kakadu and Wildman (Figure 1).

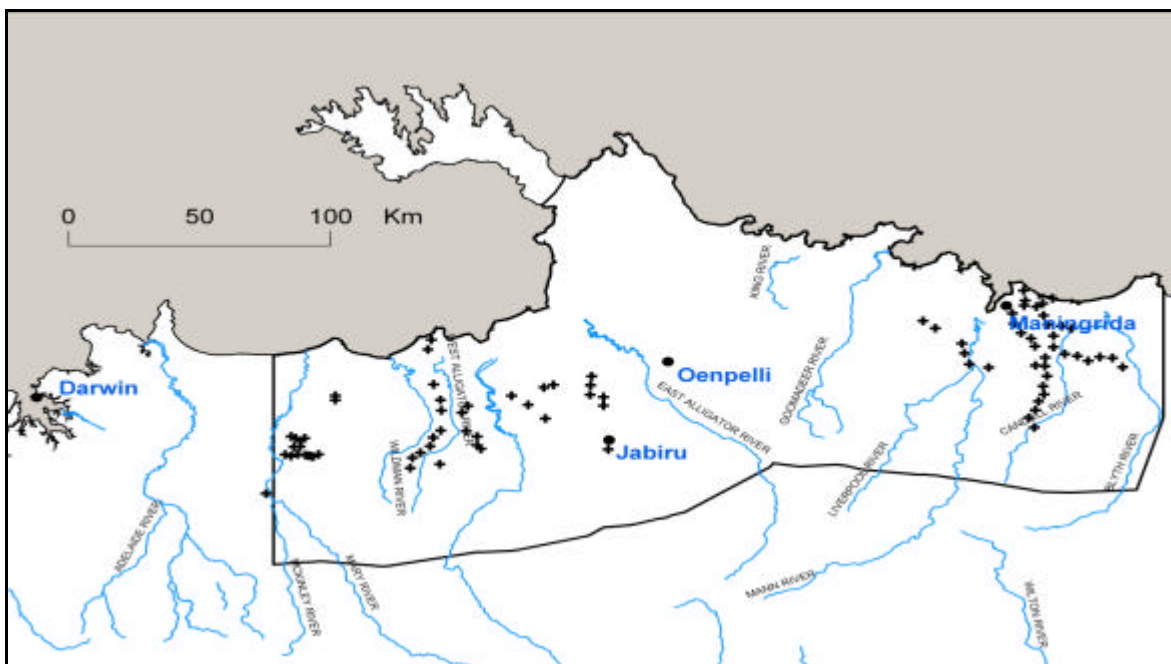


Figure 1: Study sites completed as of 18 June

I have had enormous support from the Djelk Rangers, the natural and cultural resource management teams at Kakadu, and the Wildman Rangers, and thank them all. To complete the fuel surveys, I will be visiting sites in Oenpelli and Mt. Bundy the final week of June. I look forward to working with the Adjumarllarl Rangers this week, and hope for a very productive finish to the fuels work.

Our preliminary results show statistically lower fuel loads in Maningrida when compared to Kakadu (Figure 2), which is in accordance with Don Franklin’s findings from last year. See report in this newsletter.

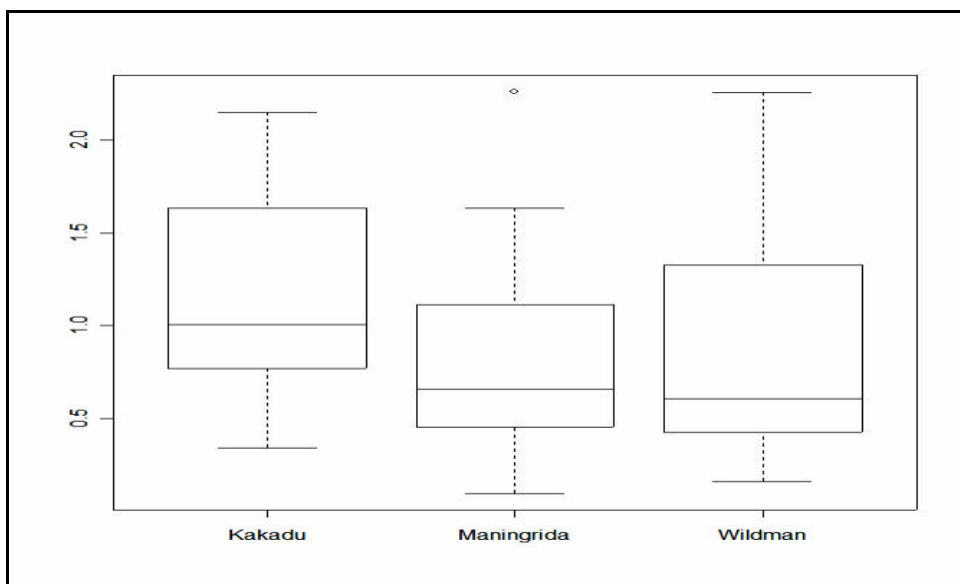


Figure 2: Grass fuel loads by region (Tonnes/Hectare) showing generally lower fuel loads in the Maningrida and Wildman regions compared with Kakadu National Park.

Interestingly, Mary River National Park, to the west of Kakadu, has a mean fuel load that is comparable to Maningrida's, although fuel loads in Mary River are extremely variable.

In addition to using satellite-derived fire history data provided by the NT Bushfires Council as an ecological health indicator, we will also correlate fire history, particularly the spatial extent of fires, with fuel loads at each site. This will shed more light on whether the different management approaches to fire in each of these regions have resulted in differing fuel loads.

I will be starting work on feral animal impacts along billabongs in September. I'll be following a methodology developed to study feral animal impacts on turtles by Damien Fordham, a Ph.D. student based in Maningrida. The same comparative approach looking at five regions across the Top End will be used for the feral animal work, as well as for the weed encroachment survey, which will take place in the wet season.

For the 2006 field season, our plan is to focus on the Maningrida and Oenpelli regions, and to compare and contrast different areas within Arnhemland under different management conditions. This will include populated and de-populated areas, areas under formal Aboriginal ranger management, and areas managed informally by Aboriginal residents.

Spear-grass and fuel loads

By Don Franklin

Our survey of herb-layer fuel loads in Stringybark (*Eucalyptus tetradonta*) savannas revealed that loads are higher where annual spear-grass (*Sarga* spp.) is prevalent. Since then, we have made considerable progress in considering why this is so. We have identified that spear-grass is more prevalent in areas with higher rainfall, where there are less trees and shrubs, and where soils are heavier. No great surprise there. But of considerable interest is that these effects explained only about 20% of the variation in the prevalence of spear-grass. So what accounts for the other 80%?

We believe that this must be largely an effect of management. But what is the management impact? Its not as simple as how often the country is burnt, because parts of Arnhemland have little spear-grass (and consequently low grass fuel loads) even though they're burnt as often as areas near Darwin where spear-grass is abundant. We are currently investigating the idea that the answer lies in the patchiness of burning – where the landscape is burnt with numerous small fires, annual spear-grasses may have trouble tracking the set of circumstances that suits it.

A manuscript reporting our results has recently been submitted for peer review.

Introducing Louis Elliott

Lou has recently joined the team as an Honours student. His project is to assess grass fuel loads and composition in Woollybutt (*Eucalyptus miniata*) savannas at sites around Darwin. His work should provide an independent test for the conclusions about spear-grass made during the above study



Health Team Report

Team: Dr Paul Burgess, Dr Fay Johnston, Prof Kerin O’Dea, Prof Gary Robinson

Menzies School of Health Research, Institute of Advanced Studies, CDU and School for Social and Policy Research, CDU. Contact - fay.johnston@cdu.edu.au

Paul Burgess and Amy Jo Vickery, in collaboration with Maningrida Community Health Centre, have had a busy three months conducting adult health checks on over 300 people from the town and surrounding homelands. The health checks have been successful in the early detection and intervention for potentially debilitating communicable and chronic diseases. The task ahead is to examine for connections between individual health status and a range of indices of engagement with country. This is the first of many steps and approaches our team is taking to gather evidence to help understand these complex connections. Although Aboriginal people have repeatedly raised the concept of the unity between the health of country and people, this project is the first example of the research community seriously responding. It is an important step as currently there is very little in the evidence base that is useful to help shape future policy in this area.

In the last 3 months our team has had much support from many people and organisations at Maningrida including the staff and students of Maningrida Community Education Centre who conducted a T-shirt design competition. Special thanks also to John Cooper and board members of Malabam Health board, Bawinanga Aboriginal Corporation, Hellen Williams and Dean Herreen from the executive of Maningrida Council, Michael Jenkins the clinic manger, and to all the health staff and students who contributed to the success of this program.