

## FDI Feature Interview

25<sup>th</sup> February 2016

### Use of Grazing and Controlled Burning in Kimberley Pastoral Land Management: Mr John Henwood

#### Key Points

- The Kimberley region of northern Western Australia has a long-standing, robust pastoral industry.
- A significant proportion of Kimberley pastoral leases are currently operating below peak productivity with over-grazing often being a contributing factor.
- Controlled, intensive grazing can be employed to promote the regeneration of native plant species
- The introduction of periodic, controlled burning of vegetation in the cooler, wetter time of year avoids hot destructive fires at the height of the dry season and also promotes regeneration of the vegetation.
- Stewardship of the land and sound economic management are complementary and are essential for the long-term sustainability of pastoral properties.

#### Introduction

The Kimberley is the most northerly of the nine regions of Western Australia. It is bordered by the Indian Ocean, the Timor Sea, the Great Sandy and Tanami Deserts and the Northern Territory. It encompasses an area roughly twice the size of Great Britain and twice the size of the State of Victoria. Much of the Kimberley is comparatively unchanged by European settlement as it has not been subject to the large-scale land clearance that occurred in the agricultural regions in the south of Western Australia. The southern area of the region, however, has been affected by more than 100 years of pastoral grazing and the introduction of foreign plants and animals such as cocklebur, parkinsonia, bellyache bush, castor oil plant and feral cats. It has also been affected by the declining incidence of traditional Aboriginal land

regimes such as periodic, deliberate burning for ease of land access and hunting which in turn, provided the additional benefit of eliminating hot fires.

For more than a century, the region and the State have benefited from a robust Kimberley, pastoral industry. In financial year 2012/13 the total value of cattle and calf disposal from the Kimberley was \$161 million. In recent decades, however, some pastoral properties have experienced a decline in the productivity of their natural pasture. This has been contributed to by overgrazing and the lack of other land management practices. It has been recently assessed that of the 93 pastoral leases currently in the Kimberley at least thirty were below peak production. Given the significant contribution the industry continues to make to Western Australian's economy, and the potential for growth in domestic and overseas markets, particularly Indonesia, halting and reversing this trend is a significant economic and environmental priority. The identification and introduction of improved land care practices may be one way to achieve this with low environmental impact and high sustainability.

Not all properties in the Kimberley have experienced the productivity decline described above. A number have been able to buck the trend thanks to decades of stock and land care management improvements arrived at through the careful nurturing and stewardship by those directly involved in the industry, the pastoralists. Some properties have seen the return of high quality native plants favoured by stock for feed. These native plants have high nutritional content and are also environmentally beneficial with the potential to enhance and stabilise the landscape.

FDI recently took the opportunity to speak with and interview pastoralist, Mr John Henwood, the former co-owner and manager of Fossil Downs Station. Mr Henwood oversaw the introduction, over a long period of time, of pastoral and land care practices that establish Fossil Downs as one of the show-piece pastoral properties of the Kimberley.

### Commentary

**FDI:** *Mr Henwood would you please explain the land management practices you introduced and employed in the pastoral management of Fossil Downs Station?*

**JH:** From the start, there were areas of Fossil Downs that were in need of pastoral repair. Initially we employed the accepted methods of the time such as [ploughing and ripping?] but the results were less effective than we would have hoped for. Following successive flooding events in the early 1980s, however, we realised that these techniques were unsustainable and the land wasn't improving indeed it was degrading and we had to do something different. In some ways it was a process of trial and error. If something worked we promoted it. If it did not then we tried something different. We found, however, that management of two of our fundamental activities, grazing and burning, firstly stopped the deterioration that had been occurring and, most importantly, started the process of regeneration and the establishment of a pastoral property that worked with the natural environment.

The prevention of over grazing by moving stock from paddock to paddock is not a new concept. Cattle are routinely mustered from location to location for grazing purposes. The availability of drinking water is used as the incentive for the cattle to move but we use the

supply of feed as the motivation to move from a grazed paddock to one where good feed was more plentiful. We intensively grazed our cattle in large paddocks until the stock themselves were ready to move to areas with more feed. We observed that once the cattle had been conditioned to the routine they would graze the feed down to a level and then gather at gates ready to move to a new pasture. Large scale mustering was not necessary. By doing so, we found the cattle thrived and the pasture was never damaged by over grazing. Stock would not over-graze unless forced to by hunger. We found that when we moved the stock off the grazed pasture it triggered the regrowth of native plants in a way that we had not been able to previously achieve. We found we could accelerate the regenerative process by collecting the seed from beneficial plant species and spread the seed in areas we thought would provide suitable growing conditions. This was so successful that in time we were able to give seed away in order to promote regrowth on neighbouring properties.

We felt that the careful and planned use of fire was just as important as managed grazing for the sustainable maintenance of pasture. In close consultation with the Fire and Emergency Services Authority (FESA) and again with a degree of trial and error, we established a process whereby the entire property was selectively burned in a mosaic pattern over a four to five year period. Most importantly, we avoided burning during the hottest and driest months of the year when fires would burn destructively.



Figure 1. Fossil Downs pasture. Source: [www.abc.net.au](http://www.abc.net.au)

It is absolutely essential to avoid these hot destructive fires that can occur when the quantities of available fuel get too high and fires are lit, naturally or by human activity, at the height of the dry season. The positive effects of cooler fires were two-fold: firstly they genuinely facilitated regeneration rather than destruction and, secondly, they reduced fuel levels so that the hot fires could not occur. We would commence burning as soon as possible after the wet

season. At this time there is sufficient moisture left in the vegetation and soil to prevent fires becoming too hot. Initially, we had difficulty getting the fires lit and to burn sustainably but with improved methods of ignition, we were able to achieve the level of combustion we needed in order to effectively burn at that time of year. There was a positive side effect to this method of burning; we noticed there was less incidental destruction of wildlife. The hot fires would attract scavenging birds to feed on small creatures killed in the blaze. This did not happen with the cooler fires.



Figure 2. Droughtmaster cattle on Fossil Downs Station. Source: [www.abc.net.au](http://www.abc.net.au)

**FDI:** *Globally, the trend for decades has seen the properties that have succeeded and thrived are those that are run under sound business arrangements. Land care is a commendable achievement but has it contributed to the economic viability of Fossil Downs?*

**JH:** The answer to that question is quite simple; when you break it down to the business benefits the justification is uncomplicated. Firstly, we were able to significantly increase the grazing density or, in other words, we could graze a greater number of cattle on each square kilometre for longer periods. Secondly, we were able to significantly reduce or eliminate our need for stock feed supplementation. Prior to the introduction of these grazing and burning regimes we would routinely require 150 tonnes of additional supplements each year. Most years we eliminated altogether the requirement for supplementary feed. In one particularly poor season recently, we did need to supplement some feed but we only required additional 50 tonnes.

**FDI:** *It would appear that the environmental management and business management of a pastoral property are closely connected. Are there other ways that sound environmental management and commercial management go hand-in-hand?*

**JH:** Pastoral management in Northern Australia is very different from agricultural, crop based farming found in the south and east of the country. If you are cultivating a crop or even maintaining livestock on fertile soils with reliable, high rainfall it is possible, and even desirable, to limit the number of competing plant and animal species in the agricultural ecosystem. I note as an aside, however, that these practices have caused significant land degradation in other parts of the country. In northern Western Australian, for instance, pastoral properties are necessarily large and can only sustain limited stock densities. The establishment of limited species, agricultural ecosystems such as crops and high density livestock management (dairy, wool and some meat production) is not desirable or even possible. Stock must be incorporated into the natural environment. It is the responsibility of the land managers to ensure stock take a place in this system in a way that is sustainable and not destructive. This can be achieved by understanding the environment and implementing management practices like those I have discussed above. I believe it is possible, with these appropriate management methods, to incorporate pastoral stock into the northern Australian environment in a balanced way where they contribute to the environment by controlling the growth of vegetation and by returning nutrients to the soil. It makes much better economic sense to work with the natural environment to provide all or most of stock feed rather than having to utilise expensive feed supplementation. It also makes sound commercial sense for stock to fill a balance place in the environment and not promote the need for expensive environmental repairs.

**FDI:** *What you achieved with Fossil Downs did not occur overnight. It has been a family concern for well over one hundred years. For other properties to make similar changes to their pastoral management practices, and for them to identify management issues that may be specific or even unique to their circumstances, it is likely to come at an initial financial cost or capital investment. Can you suggest ways of easing the burden of this initial outlay?*

**JH:** There is no question that halting and reversing land degradation and fostering the regeneration of the landscape will come at a cost. It is, however, a national resource and a national investment in the future and the cost should not be borne by the landowner alone. That said, throwing tax payer's money at the problem without appropriate accountability isn't the most efficient way of dealing with it either. Given the potential for long term financial returns, I believe Governments, State and/or Federal, should consider the introduction of a system of repayable grants, perhaps even using the resources of lotto, that would allow the landowner to restore and establish pastoral properties as sustainable concerns. The accountability of the grants would have to be rigorous and applications would have to be expertly assessed for business and environmental sustainability. I also strongly believe that the grants must be secured in some way, either by the property itself or by some other asset equal in value to the grant. The asset would be relinquished if the grant was not repaid in appropriate time. Over time the fund would be largely self-perpetuating, as grants were repaid or in the worst case, as secured assets were relinquished, and monies would then be available for re-allocation to other properties.

**FDI:** *The land management techniques and practices that you found worked best at Fossil Downs, particularly in relation to burning and grazing, are in some way contrary to the management opinion of the time. It would appear that there is a need for adjustment and*

*tailoring of land care and pastoral practices to suit each property. Do you believe others can benefit from the experience and knowledge you have gained as a Northern Australian pastoralist and, if so, how could this sharing of experience best be facilitated?*

**JH:** What you suggest is absolutely correct. The system that worked for us at Fossil Downs is unlikely to provide a template that could be applied to another property and achieve exactly the same results. There are far too many variables in agriculture and components such as climate, rainfall, soil type, vegetation and stock type all interact to produce unique and dynamic outcomes. That said, I do believe that many of the lessons we learned, and certainly methods we used to solve environmental problems, are broadly applicable and other properties could benefit greatly from our experience. I am not sure what would be the best way of sharing this information or at least making it available for those who wish to seek it out. Departments of Agriculture and Departments of the Environment fulfilled this function in the past but unfortunately have not been particularly interested in our outcomes but I do believe there is still a place for this role. There is a need for a coordinating and communicating organisation that maintains links between our geographically dispersed pastoral and agricultural properties and other bodies connected with the land such as education, research and the private sector. A government department may be the best way to achieve this.

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#### **About the Interviewee:**



Mr John Henwood and his wife Annette were both raised on pastoral properties in the Kimberley region of Western Australia: John at Noonkanbah Station and Calwynyardah Stations, and Annette at Fossil Downs where she was born. For a relatively brief period following their marriage John worked other Kimberley pastoral properties but in 1966, on the request of Annette's mother, the couple took over the management of the family property, Fossil Downs. The station became their life's work and a labour of love for the next 49 years. Together they developed Fossil Downs into a property that has been described as both a show piece and an icon of the Kimberley cattle industry.

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*Any opinions or views expressed in this paper are those of the individual interviewee, unless stated to be those of Future Directions International.*

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