Vegetation Management (Reinstatement) and Other Legislation Amendment Bill 2016

Submission to Agriculture and Environment Committee

by

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Introduction

After growing up on [redacted], a property of diverse soil types and ecosystems in the Einasleigh Uplands of north Qld, I studied Rural Science at UNE before returning to the family property in 1967. In 1973 I moved to a property on the Mitchell grass downs country east of Winton.

With the benefit of scientific training and fifty years of successfully managing pastoral properties in several different ecosystems, which has involved focused observations regarding cause and effect, I believe I am in a position to make some constructive comment on past and proposed Government policies concerning vegetation management.

In 1994 the family purchased a property, [redacted] in the Barcaldine district, that had clearly been subject to major encroachment by Gidyea (*Acacia cambagei*) over a period of many years. After improving that property significantly by pulling areas of Gidyea scrub (that had apparently formed since the early 1900s), the property was sold in 2002 to facilitate a partnership restructure. In 2005, another property, [redacted] was purchased north-west of Winton. This property has suffered and continues to suffer from serious encroachment of its grasslands by Gidyea.

Observations

Up to the time I left [redacted] (1973) mustering of the open country there was done almost entirely on horseback and musters were generally regarded as being thorough. Use was made of a fixed wing aircraft at times, especially in the basalt and more heavily timbered country. By the year 2000, no attempt would be made to muster any paddock on [redacted] without the use of a helicopter to assist horsemen for it was no longer possible for a rider on horseback to see much further than 200m (except in the open country black soil country). As time has progressed the thickening appears to have continued.

At [redacted] Barcaldine I learned that a Gidyea scrub as it thickens often becomes a monoculture with no understory of vegetation or pasture present. Such an ecosystem can only be a negative for preserving biodiversity and it should be recognised as such.

The Pre-European Landscape

Two hundred years after the First Fleet it is easy to make wrong or erroneous assumptions as to the nature of the native vegetation and ecosystems that existed at the time when various parts of the country were first settled by Europeans. A good indication can be gained from the diaries of the early explorers. Their descriptions are quite often at odds with what exists today.

On one of his exploratory trips, travelling west from Bowen Downs Station Aramac and to the west of what is now Winton, William Landsborough, on 13th March 1866, noted in his journal that the party "*traversed along the north bank of the river*" (Western R) and passed over *"high unwooded downs"* and *"we all remarked that we never had seen finer looking country anywhere."* On 14th March Landsborough noted a change to firmer soil covered with stones, but makes no mention of heavy gidyea or thick timber as is the case in this area today. See **Image 1** and compare **Image 2.**

After reaching a large river, which he named the Diamantina, Landsborough recorded that on the western side of the river,"*The country is much wooded with gidya,*(sic) *but not too thick for pastoral purposes".* Today, no stretching of the imagination could reasonably arrive at the phrase, "*not too thick for pastoral purposes*" as the density of the vegetation in places has now crowded out almost all grasses.

Image 1: *Senator James McGrath inspecting Gidyea encroachment and thickening near the site of the old Twenty Mile Hotel and Dam on the Stockroute 33km west of Winton, April 2015. Note the dense vegetation and total absence of grass. [Landsborough would have passed very close to this site in March 1866].*

Beattie Legislation

The assumptions and assertions supporting and underlying the Beattie government's vegetation management legislation were basically flawed for it appeared to contend that most, if not all, the land that had been cleared in the past was virgin bush in a state similar to that when it was first selected, or had been previously cleared. Changes in ecosystems that have occurred over one hundred and fifty years were either ignored or denied.

Image 2: Lake Nash bullocks on the Stockroute near the Twenty Mile Hotel 33km west of Winton, 1952. Note the open grassland with a few scattered trees. (Photo C Phillott)

There is little doubt that Australia's rangelands have experienced a regime of fire for the past forty thousand years or more. Eucalypts, right across Australia, from WA, Northern Territory, Cape York to Kosciusko, all possess a mechanism for survival of fire. It is known as a lingo-tubor and is a store of energy just below ground level that allows regeneration after fire. Young plants, up to four or five years of age are, however, susceptible to hot fires as they have not developed a store of energy sufficient to allow them to regenerate.

Large areas of the pastoral lands in Queensland have in the past been subject to, and still are experiencing, thickening of and encroachment by native vegetation. This has been happening for the past one hundred plus years due primarily to:

- Fewer fires in the pastoral lands generally, due to the lower fuel loads resulting from heavier grazing pressures from a combination of both livestock and macropods. [Macropod populations in many parts of Qld, especially the arid inland, are clearly much higher now than when settlement first occurred because the provision of artificial stock watering points has extended their grazing range enormously].
- Widespread use, in the past thirty years, of non-protein nitrogen supplements in the grazing industry has allowed higher stocking rates which has further reduced fuel loads and therefore a much lower incidence of fires.
- The absence of annual mosaic burning, once a widespread practice of indigenous tribes and later by the early pastoralists.

The thickening experienced typically results in thousands more young trees per hectare than that which the ecosystem carried in its natural state. See **Image 3 and 4.**

Image 3: *Eucalypt thickening east of Pentland, taken from the Flinders Highway, April 2016.*

Having travelled the Flinders Highway regularly for forty years, I have observed thickening as a work in progress. There are many sites along the Flinders Highway east of Hughenden that could be used as examples of the damage being done to pastures by thickening of vegetation.

My observations appear to be supported by a recent scientific paper published in *Nature Climate Change* (Liu *et al.* 2015) revealing that the woodlands of northern Australia (predominantly in Queensland) are continuing to increase in biomass (i.e. “thicken up” = increase in stem number, stem size or crown cover). In fact the study indicates that aboveground biomass has increased by c.1200 kg/ha/yr over a 20 year observation period (1993-2012). This result was obtained from passive microwave observations made with calibrated satellite sensors.

Young Eucalypts and Acacia species are shallow-rooted. Consequently they actively compete with grass and pasture species for moisture, reducing pasture density to the extent that in times of drought there is little grass cover. The net result is, of course, a lower carrying capacity for livestock and a reduction in ground cover, making the soil more susceptible to erosion during rain events.

This is a serious consideration for programmes aimed at reducing erosion in river catchments draining into the waters of the Great Barrier Reef. There is no doubt in my mind that a heavy tree population reduces ground cover and makes the soil more prone to erosion because the trees roots bind the subsoil, but not the top soil and surface. An absence of pasture grasses leaves the soil surface vulnerable to heavy rain events.

Image 4: *Eucalypt thickening west of Pentland, with an older seed tree in the foreground, taken from the Flinders Highway, April 2016*

Encroachment of Mitchell grasslands

Encroachment of grasslands by native vegetation is experienced in the Mitchell grasslands of the west and central west of the state for much the same reasons as with thickening in Eucalypt communities. However the species involved are different. Encroachment in these areas is mainly by Acacia species and is a major problem in parts of these grasslands, especially along their boundaries with adjoining eroded hills and tablelands where the Gidyea occurred prior to European settlement, probably due to a lower incidence of fires in those local environments. In lower rainfall country, Gidyea, in particular, tends to totally eliminate pasture. **See Image 5.**

The invasion of Mitchell grasslands is an ongoing phenomenon wherever Gidyea occurs. These grasslands, in the past, were typically home to an occasional aged Gidyea tree (perhaps 1 or 2 per hectare). Livestock and macropods made use of them for shade and denuded pasture under and close to the tree, such that following big wet seasons, large numbers of seedlings would germinate in the immediate vicinity of this "mother" tree, creating a small thicket. *See* **Image 6**. This small thicket will, over time expand when conditions for germination and establishment are favourable and gradually take over the immediate area. In this way thousands of hectares of productive grassland have been rendered useless by encroachment.

Prior to the land being utilised for grazing, fires (often started by lightening strikes) would burn unabated on the heavy fuel loads after big wet seasons. Seedlings, such as those in **Image 6,** would not survive a hot fire.

Image 5: *Immature Gidyea at Cathedral station Winton, having eliminated the Mitchell grass through competition for moisture. April 2016.*

Impact on Production

Observations at both [redacted] have clearly demonstrated that encroachment and thickening by Gidyea are accompanied by a significant increase in numbers of macropods, such that pastures bordering the Gidyea are overgrazed very soon after the wet, followed by the sweet annual grasses along the frontages and claypans and lastly the Mitchell grass away from tree cover. Because of this pattern there is perennial pressure on the most vulnerable pastures – those along the frontages and claypans and that bordering the timber.

Productivity in terms of carrying capacity is seriously compromised and as this is progressive and ongoing, affected property owners need to have a cost effective means of dealing with encroachment and thickening. In any business a regime of reduction in annual sales has to be turned around if the business is to remain viable.

Biodiversity

Under the Beattie legislation, a recurring 'Performance Requirement' was stated as 'To prevent loss of diversity'. By disallowing property owners the ability to cost-effectively clear encroachment and thickening, the legislation actively **promoted a loss of diversity** due to the loss of habitat for a large number of ground dwelling birds and small animals.

Singing Bushlarks, Quail, Budgerigars and Flock Bronzewing pigeons are just some of the birds so affected. The threatened Julia Creek Dunnart is one of a number of small native mammals also impacted by loss of habitat.

Flock Bronzewings can be seen from time to time in the Winton district, but not regularly, nor in the numbers indicated by the writings of the early pioneer settlers in the district. I quote below from the memoirs of RC (Bob) Ramsay, whose family owned Oondooroo and Elderslie stations,

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Image 6: *A lone Gidyea 'Mother Tree' with young (2 years of age) seedlings in Mitchell grass pasture. Cathedral station Winton April 16.*

Winton in the early 1900s, as well as properties in the Hughenden and Richmond districts. He was a past Shire Chairman and highly regarded in the community. Following an early morning "shoot" of Flock Pigeons as they came in to water at a dam Ramsay wrote, "*We picked up nearly four hundred but we did not take much trouble to hunt about. I do not think we picked up half of what we shot……There must have been millions of pigeons in the district that year as for hundreds of miles around they were with us wherever there was a bit of unstocked country".*

While Flock Bronzewing Pigeons are still seen, especially after a run of good years, they are not seen in numbers anything like those that Ramsay has described. They are more common in small

groups of two to ten. Budgerigars are no longer seen in large numbers as they once were and as Mitchell grass seed is a major component of the diets of both species, it is hardly surprising.

Image 7: *Senator James McGrath with an old Gidyea mother tree and immature seedlings (possibly germinated 1974) at the old rubbish tip at the Twenty Mile Hotel site on the Stockroute 33 km west of Winton, April 2015. The Twenty Mile Hotel ceased to operate in 1953.*

The Department of Environment and Heritage Protection website states that, *"Prickly acacia (Acacia nilotica), mesquite (Prosopis spp.) and parkinsonia (Parkinsoniaaculeata) are a major threat to the biodiversity in the Mitchell Grass Downs. Prickly acacia shades out understorey plants, and its extensive root system inhibits the cracking of clay soils (that is an important dunnart habitat).*" https://www.ehp.qld.gov.au/wildlife/threatened-species/endangered/endangered-animals/julia_creek_dunnart.html

The website goes on to say, *"The recovery plan for the Julia Creek dunnart (External link icon) suggests that maintaining areas which support suitable habitat has the greatest potential for conserving wild populations."*

While no studies have been carried out, I would contend that a dense population of Gidyea would result in a very similar outcome to that produced by Prickley Acacia. (**See Image 5**). Consequently, the uncontrolled spread of Gidyea into the Mitchell grass downs should be identified as a similar threat to biodiversity generally, and especially to the Julia Creek Dunnart.

It is absolutely ludicrous for one arm of government to spend public funds protecting the habitat of an endangered species whilst another arm of the same government adopts policies that are in direct opposition to that outcome.

Another stated objective of the Beattie legislation was to "reduce the emissions of greenhouse gases". When the great bulk of greenhouse gases produced in a modern industrial economy are generated from activities in the cities, it is most inequitable to place a large burden of the cost to achieve a reduction on to rural properties owners, expecting that they should shoulder most of the load. That is no more than a political solution and any government that follows such a course stands condemned.

Proposed Legislation

I understand that the proposed legislation is basically aimed at returning to the Beattie legislation with the tightening up of provisions in some categories, but to provide for the continuation of self-assessment for clearing of encroachment and thickening.

This may appear a generous concession, but the obvious issue with it is that of a possible misinterpretation of the provisions of the act, wherein the property owner would be charged for a breach of the law and will be deemed guilty until he is able to prove his innocence. This "Third World" type law has no place in the legislation of a Western democracy and the "Reversal of Onus of Truth" provision should be scrapped.

Government legislation to facilitate cost-effective measures to protect grasslands against the invasion by native vegetation is essential if Queensland is to have a robust and viable pastoral industry with the attendant investment and employment opportunities flowing through to rural towns and communities. Any legislation that ties property owners up in red-tape and threatens harsh treatment for even innocent and unintended errors will be counterproductive to society as well as to the long term viability of rural industry.

If the government is really serious about maintaining ecosystems and biodiversity it should aim to see those that existed prior to European settlement re-created in its National parks.

On grazing properties it should be giving property owners the tools and incentives to maintain healthy ecosystems in concert with profitable operations that contribute to the state and national economies.

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