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ECOLOGICAL GRAZING MANAGEMENT: THE BULGA DOWNS STORY

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ABSTRACT

The keys to the successful ecological restoration of Bulga Downs station have been conservative stocking rates and the use of natural early warning indicators of stress on the land. An ecological approach to grazing management has enabled increased asset values, maintenance of high equity, the building of a family business and an optimistic outlook, based on healthier landscapes and hence pastures.

In this article I tell the story of how listening to the land has allowed us to build what I see as a bright future for our family and business. This approach means managing different areas and seasons according to their needs and opportunities.

BULGA DOWNS STATION

Bulga Downs homestead is about eighty kilometres south of Sandstone and about three hundred kilometres north, north-west of Kalgoorlie in the arid (<250 mm rain/year) mulga/salt lake zone of Western Australia. The station occupies approximately 300,000 hectares from Lake Barlee in the south to Lake Noondie in the north. Rainfall occurs in both summer and winter, but is generally most effective and reliable in winter. Main landscapes are banded ironstone ranges, granite outcrops and breakaways, stony plains, mulga wash plains, sandplains and salt lakes and their fringing floodplains. Major creek systems are rare, but usually scoured down to cemented subsoil or rock and fragile upland soils derived recently (geologically) from remnant weathered rocks are particularly fragile. Otherwise, these landscapes are generally quite stable, but subject to major changes to their vegetation from grazing and natural disturbances such as fire and insect outbreaks. Luckily, fire is not a major threat in most productive and fragile landscapes, and is a tool to improve pastures in spinifex grasslands on sandplains.

UNDERPINNING APPROACH TO BEING ON THE LAND

My family and I aim to be on Bulga Downs for a long time, not just for a good time. We think we can do this by respecting each other, our pastures, our stock and the ecosystems upon which we depend. By contrast, we do not aim to rape the land for short term profit, and we believe that there are abundant opportunities for off-station earning in tough times. We do not believe that the survival of our business needs to be at cost to our ecosystems. Similarly, we make sure that we do not get caught in the "Dad did it this way" trap; whilst my father and mother are partners in the business with much experience and knowledge of the land, and they have retired back to Bulga Downs, I have been at the wheel. This is appropriate, because decisions in managing Bulga Downs are many and varied, and they need to be made based on local knowledge with experience of the eco-systems, which I thank my father for instilling in me at an early age and on an ongoing basis.

If I could distil our overall approach in one sentence, it would be that we stock conservatively; listen carefully to the land between periods of major decision-making, and have targets for every section of the station. Progress is incremental; it usually happens in good years, and in poor years the challenge is to hold and consolidate the position.

When my brother and I arrived at Bulga Downs as the working component of a 4-way partnership with our parents I saw a run down property. I also felt a compelling desire to make things right, and I believed – and still do – that we could do so. Bulga Downs began as our mission, and it is one that I now share with my family. However, this is not a fairytale; we have prevailed (and better) by being

tough on ourselves and our business. We have made many sacrifices to avoid being tough on the land, and we are reaping the rewards today.

Pastoral management is a very personal issue. I tell this story partly because I was asked to, and partly to offer support to other pastoralists facing the challenges we have and continue to face. I do not mean this to be a prescription. This is just our story.

What has happened on Bulga Downs?

Bulga Downs was a run down and degraded property when we arrived. Department of Agriculture staff will tell you about the open (bare) flats and lack of ground cover in the mulga country. We have not turned Bulga Downs into Eden, but we have turned things around. I summarise the main changes in Table 1.

Table 1: Then and now on Bulga Downs

On arrival	Today
➤ Dysfunctional infrastructure	➤ Functional and improving infrastructure
➤ Derelict homestead and shed	➤ Two homesteads and an adequate workshop
➤ “Quiet”, almost eerie land	➤ Lively landscapes
➤ Pastures based entirely on rainfall	➤ Pastures based on palatable perennials
➤ Much land unproductive	➤ More land in production
➤ Single man operation	➤ Family operation
➤ 1, 700 poor sheep	➤ 6,500 sheep and 400 cattle

How did this turn-around happen?

Luck was only the icing on the cake. We have always planned carefully - for seasons, for paddocks and for wider and longer frames. Planning and monitoring (feedback) have been my main tools. We try to minimise the degree to which we are victims of circumstance by planning; monitoring makes us better planners as time goes by.

We recognise and plan separately for five major sections of the property, which reflect their age since development and overall (ecological, pasture, infrastructure etc) condition. We manage these sections quite differently and while we have the same ultimate goal for them; my more immediate targets also vary. I discuss these sections in chronological order below.

Section 1: The earliest block around the homestead in the north

- worst condition considering infrastructure, ecosystems, pastures
- remaining resilience and potential was not clearly understood at first because there were no isolated positive signs
- initially stocked sacrificially in the belief that that was as good as the country could be
- now shifting from sheep to cattle to partially rest a rejuvenating understorey and vigilant control of feral goats
- rebuilding paddocks, not necessarily along old fence-lines and not simply to land type (the issue is far more complicated than that)
- strategic conservative stocking and resting to support the ecological rejuvenation
- the immediate aim in this section is to set up the infrastructure and grazing management that will make money while the rejuvenation is nurtured
- ground cover and a developing understorey make this section bearable to the eye today, but there is a long way to go.

Section 2: The second stage of development in the middle of the property

- initially poor but clearly recoverable overall condition
- was probably developed after degradation of the north section
- totally rested and vermin controlled for the last ten years to enable recovery

- infrastructure largely in place to resume sensitive and conservative stocking
- target is to allow this section to recover to full potential as ecosystems and pastures

Section 3: The youngest area in the south of the original property

- best overall condition, with local “headaches”
- aim is to maintain condition and recover the locally poor areas
- use conservative stocking rates, strategic resting (see later) and fine-tuned infrastructure
- have “raised the bar” on this section, based on reference to section 4

Section 4: The new, undeveloped block out to the east

- “pristine country”; undeveloped and only a few sources of long lasting natural surface water
- has become a regularly visited benchmark area and improved my understanding of landscape potential
- provides beacons for grazing management and a guide to monitoring rejuvenation
- raised my expectations for grazed areas
- proposed use was for best breeding stock, in prolonged poor seasons
- sold recently for nature reservation (possibly co-operatively managed with CALM)
- with assured access, the section will continue to help me benchmark the station

Section 5: The newly acquired section

- enabled by selling the undeveloped block and an undeveloped area to the west through the Gascoyne-Murchison Strategy and NHT
- provides a more compact, practical station configuration
- already developed and stocked, good shearing shed and breeding country
- similar running costs to the undeveloped block, but with greater returns and the “benchmark area” is still accessible
- similar to section 2 in terms of overall condition; poor but quite recoverable

This section reminds me of the suppressed section two when I first arrived on Bulga Downs. We believe that we can rejuvenate this new section to at least the state of section three; the best functioning grazed land on the station. It is a new mission, but one grounded in economic reality; Bulga Downs now has the range of country types and configuration to run successful cattle and sheep enterprises together.

THE OPERATIONAL APPROACH

In my experience, degradation usually happens quickly, but is preceded by a period of downward slide into a dangerous area when the slightest disturbance can bring on devastation. Unfortunately, it is far easier to make mistakes out here than to correct them. The challenge is to integrate seasonal influences, mixed land condition and enterprise objectives so that realistic and long-term enterprise objectives are enhanced in future. To me, that is sustainable management and living.

We make one major stocking rate decision per year for each paddock (at different times for sheep and cattle) and then monitor closely how appropriate that decision was during the following management cycle. The major decisions blend immediate enterprise objectives with current ecological status of the areas and an assessment of risks and opportunities based on my experience and prevailing climatic influences. I want to make as much money as I can while being long term sustainable

While we rest paddocks that seem to be slipping into the shallow phase of decline and also when there is a major opportunity for recruitment of key perennial plants, we do not have a regular resting strategy. The various key plant species seem quite capable of replacing themselves under our conservative continuous grazing strategy. I have discussed with Hugh Pringle (Ag Dept) options such as four paddock rotations based on resting bottom lands for a winter-summer-winter sequence and may consider this.

We manage total grazing pressure because we provide abundant available drinking water that can be used by herbivores other than our stock. In particular, we constantly “trap and truck” feral goats. Where goats are reluctant to enter traps we shoot them. The financial rewards for harvesting goats is a bonus, not an addiction. The objective is to keep goats to a minimum, rather than to farm them. An addiction to feral goat farming is a clear sign that the fundamentals of the business are flawed and the land suffers. Do it properly, or don’t do it at all. Feral farming is “bouncing along the bottom” farming at great cost to pastoralists, their families and the environment. It gives the industry a bad name.

Kangaroos are a bit confusing. They certainly belong in the landscape, but not in the numbers that are supported by today’s waters. We shoot kangaroos when they build up in stressed areas and get professional shooters in when overall numbers increase dramatically. However, seasons are the greatest influence on kangaroo numbers and their behaviour, body condition and reproductive activity can be used to check assessments of landscape stress.

Using natural indicators as early warning

In recent times, the management of biodiversity (as opposed to pastures alone) has become part of compliance with pastoral lease conditions. However, I have always used biodiversity in our management. Given my intuitive commitment to ecosystems as the basis for my grazing enterprises and family’s fortunes, I naturally “listen to the land” carefully. It isn’t something I do consciously, it is just what I do, and it is difficult to explain. I observe many things when at work and they don’t fit neatly into a system that I could prescribe to other pastoralists, perhaps new pastoralists. There is always the juggling act of seasonal influences and longer-term patterns, and many of my natural indicators are sensitive to both. Nothing is definitive in the short-term when you manage a complex system like a station. But short-term changes can help you make wise decisions that accumulate in the long term. That is what I try to do, and below I describe briefly this approach.

Declines in wildlife during a year give me an early warning to start scrutinising carefully the grazing behaviour of our stock, ground feed quality and quantity and utilisation of key palatable perennial species (eg. shy and mulga bluebushes and warty-leaf poverty bush). If we think total grazing pressure is high, I’ll firstly trap and shoot as many feral goats as possible. If that is inadequate to release the stress, I will shift stock if there are areas that can safely take them, or will sell the excess numbers.

If there is a worrying decline in wildlife over a series of seasons, then I know it is time for a major review of my overall grazing management before the decline turns into a collapse (that is, before I cross the threshold of in-built landscape resilience). I have to question my overall stock numbers, how I distribute them and whether large areas need a rest or very light stocking for a few seasons. I know that if I wait for stock to show the same decline it will be far too late; the ecosystems will be in a down hill spiral already.

The chain of wildlife sensitivity

There is a chain of sensitivity to habitat decline amongst most major groups of wildlife. I find birds the most useful indicators, because they are easily observed, and even if I don’t know their scientific names, I know them and have learnt how they live (what they see as resources on Bulga Downs). Fair-weather friends disappear and reappear from the station as a whole. Wetland birds in the lakes are a classic example.

However, many birds live on Bulga Downs and surrounds, and their abundance and distribution tell me what is happening at an ecosystem level. Specifically, I use short-term fluctuations as an early warning of seasonal decline, and consistent declines as a reality check. Intuitively, I digest what I see as signs of what is happening and whether I have been reading the land correctly in making our decisions. Even if I can’t separate climate from grazing in short and longer-term patterns, the synthesis does not change the implications for our management. When things are tough, it is important not to slip into the ecological danger zone.

As an overview, I look to the diversity of life on the station. More king brown snakes means more small animals and better habitat quality. I don't like confronting big snakes, but their presence tells me that their ecosystem is structured adequately to support them.

Within the birds, nectivores and diamond doves decline quickly as conditions deteriorate (pigeons are far more resilient). Clearly this is linked to the life cycle and vegetative status of perennials. The berry eaters are also sensitive to declining conditions, perhaps less so than the nectar-eaters. The emu is the most obvious example in this group. Their condition is critical; they can be abundant but as stressed as the land. Because they eat the "sweets" of the land, they tell me when fruits are gone and in the longer term, they and other species tell me that perennials aren't able to produce fruits under my management. The sheep and cattle will need new plants, which requires fruits and so I value the messages from this group of birds.

Many of the seed eaters seem tolerant of declining habitat conditions. Zebra finches seem to be able to find a feed most of the time. Quails are useful indicators of understorey conditions. They need perennial undergrowth to breed successfully.

I could expand into discussion of individual species' behaviour and the inferences that can be made from them. However, the point is that the whole landscape is talking to you if you want to listen. It is an extraordinary learning process, you cannot capture in a recipe book. It is a way of living, as much as a way of managing.

The EMU Exercise

I have recently joined the growing list of "EMU" pastoralists, through the Gascoyne-Murchison Strategy and NHT. The EMU Exercise empowers me to accelerate my ecological understanding and improve my management. It is based on recording your knowledge of your station on clear overlays of your station map and adding to that as you learn. Formal ground and aerial monitoring are key components of the learning process. The EMU Exercise is a tool that will fortify our business and focus my ecological management. It is appropriate that the EMU Exercise is a partnership between Agricultural and Conservation Departments; that is consistent with what we are doing locally.

The EMU Exercise neatly formalises much of what we already do. It helps me focus on the key issues on the station and the inter-related processes that need to be worked with to meet local and wider objectives. The Exercise is also a valuable reality check and I intend to use it to its maximum potential. I hope my neighbouring land managers (including CALM) will also use the EMU Exercise so that we can bounce ideas off each other and learn more about our ecosystems together.

CONCLUSION

If you want a long time - rather than a good time - on the land, an ecological way of living and managing is needed. Plan carefully and listen to the land just as carefully; it has much to teach those who are prepared to listen. The land will give you plenty of warning when things are getting tight, or you are subtly suppressing your ecosystems. The EMU Exercise will help simplify and focus my ecological management of Bulga Downs.

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