

Improving grazing management through infrastructure development

Background

Improving infrastructure on an extensive cattle property can be an expensive venture. Looking at the different options on a cost-benefit basis and seeing how they may fit with your business may save you thousands of dollars in the long term.

In the Queensland Gulf, *Greenhills Station*, owned by the Ryan family, has been investing in fencing and water infrastructure to improve herd productivity and grazing land management, with the aim of improving profitability.

Fencing

Location of fences within a property should be planned and take into account factors such as pasture types, location of waters, land types, slopes and best cattle management (NT DoR, 2012).

Fences will most commonly be made from steel end assemblies, pickets and barbed wire, with wood seen less often nowadays due to its susceptibility to fire and termite damage. Steel is also readily available, durable and easily used. Consideration also needs to be given to location (such as on ridgelines to avoid erosion) and clearing of trees for the fence. Residual herbicides may need to be used to control regrowth along the fenceline in future years. The use of these may also decrease the need for mechanical (grader) regrowth control; having time, cost and soil benefits (NT DoR, 2012).

Fencing is the main development required to improve grazing management and it is essential that paddocks have been planned in advance. Fences play a role in restricting cattle from selectively grazing some areas, such as frontage country, as well as assisting with cattle management. For example, segregating heifers from the main breeding herd. Creating a larger number of paddocks will give the ability to use paddock rotation systems, allowing for wet season spelling and fire programs to be implemented.

The use of fencing on *Greenhills* has allowed the Ryan's to split one large 11 475 ha paddock into three paddocks of varying sizes: 1– 4307 ha, 2– 4710 ha and 3– 1958 ha, on the southern half of the property.

Instead of using traditional barb-wire fencing, *Greenhills* has utilised electric fencing for internal fences.

Fast facts:

- Improving infrastructure can have productivity, grazing management and profitability benefits
- Use of electric fencing can be cheaper than installing traditional fences
- Installing additional fencing may assist in controlling grazing and improving pasture quality
- Additional waters will improve pasture utilisation of previously ungrazed areas
- Productivity gains from infrastructure development may lead to improved profitability of the beef business.



Single strand electric fencing infrastructure on Greenhills, with steel corner assemblies for a durable fence.



Boundary fence showing benefits of moderate stocking rates on pastures (left of fence) and use of fencing to control grazing.

Traditional vs electric fencing costs

Costs	Traditional 3-barb fence (km)	Greenhills electric fence (km)
Barb wire	\$1000	
Plain wire		\$123
Tie wire	\$15	
Steel posts	\$875	\$245
Other materials (insulators, cable etc)		\$62
Gateway	\$500	\$500
Corner/end assembly	\$50	\$50
Energiser		\$57 (\$981 total)
Battery		\$8 (\$138 total)
Clearing	\$500	\$500
Labour	\$2000	\$1176
TOTAL	\$ 4940	\$2721

*Note: The cost of electric fencing may be somewhat diffused over a larger area as energisers can be used over multiple fenceline areas.

Water

Improving water infrastructure can assist with improving grazing land management. Ensuring that waters are placed in paddocks to minimise the distances between each point, can ensure that pasture utilisation is maximised and grazing is spread evenly throughout a paddock.

Cattle spend more than 90% of their time within 3 kms of a water point. This is equivalent to 28.3 km² or 2830 ha grazing area. With a moderate stocking rate of 1 Adult Equivalent (AE):15 ha, an extra 188 AEs could be carried in that newly watered area (assuming it was a totally ungrazed area prior to the water infrastructure being installed).

Installing additional water points on *Greenhills* has allowed the Ryan's to improve their grazing management and improve pasture utilisation within their newly formed paddocks.

Through the improvement in fencing and water infrastructure, the Ryan family have also been able to improve grazing management and implement a wet season spelling program on their property. Breeders are now rotated around a three paddock system, with 60% of the newly fenced country being spelled each year.

Through the use of 10 monitoring sites across all land types, early results indicate that the spelling program has resulted in an increase of 3P species (perennial, productive, palatable) and an overall increase in carrying capacity. Turnoff weights have increased over the 5 years from 2007 to 2011 and the age of turnoff of sale cattle has decreased as a result of this.

From the infrastructure improvement program implemented in 2009, the Ryan family have been able to make advances in productivity, grazing land condition and profitability. Through increased stocking rates and higher animal turnoff, resulting from improved pasture utilisation and quality, Greenhills have increased their gross margin by 14% over the five year period from 2007 to 2011.

For more information or enquiries contact

Queensland DAFF FutureBeef Team
www.futurebeef.com.au
 Cloncurry 07 4742 1311 Mareeba 07 4048 4600



Installing water infrastructure on Greenhills, Oct 2009



Traditional three barb fence



Greg Ryan in spelled paddock, May 2011

The following is an estimated cost of improving water infrastructure on Greenhills:

Bore	\$9200
Generator and pump	\$20 110
3 x 10 000 gallon tanks	\$16 680
2 x 5 000 gallon tanks	\$5226
Fittings etc for tanks	\$500
Grader for trench digging and covering	\$2440
16 km poly pipe (80 x 200 m rolls)	\$37 760
Fittings for pipe-	\$1700
5 x 12 ft troughs and fittings	\$6315
Total	\$99 931
Total per water point	\$19 986

*Note: This cost could be offset in future by utilising existing infrastructure and simply adding more water points to existing tanks.

Sources: Northern Territory Department of Resources (2012). Cattle and land management best practices in the Top End region. Chapter 1: Infrastructure and station development. Northern Territory Government: Darwin