

# Recovering poor land condition

Recover any poor or declining land condition by:

a) Managing grazing pressure and timing with:

- Reducing stocking rate,
- Fencing,
- Wet season spelling ([video link](#)), and/or,

b) Controlling exotic woody weeds as part of an integrated pest management plan.

Please note that photo monitoring ([video link](#)) is recommended for all practices.

## Farm systems

We recommended you assess your specific farming circumstances before changing any management practices. You can find a list of extension providers at the end of this information.

[FutureBeef](#) is an excellent resource for beef growers, providing information on all aspects of the cattle enterprise. It is a collaborative program for northern Australian beef growers with partners DAFF, Northern Territory Department of Resources - Primary Industry, Department of Agriculture and Food Western Australia and Meat & Livestock Australia.

## Water quality

Wet season spelling combined with low pasture utilisation has been shown to maintain land condition or improve areas of degraded land. Wet season spelling of paddocks increases groundcover, which in turn reduces sediment loss. Using appropriate low utilisation rates and wet season spelling can recover land in poor condition and improve pasture species composition. Sustainable utilisation varies with land type and long term rainfall but is usually between 15-25 % of pasture grown. Land in good condition has more groundcover and improved water infiltration which leads to reduced runoff. Wet season spelling will improve species composition which is a vital part of land condition.

### Burdekin

A trial in the upper Burdekin on a number of land types compared varied pasture utilisation rates. A pasture utilisation rate of 25% maintained good land condition and improved land in poor condition. Utilisation at 50%, combined with annual wet season spelling for 8-10 weeks at the beginning of the growing season, achieved a similar result (1G).

### Fitzroy

Improving groundcover from 20-60% reduced annual rainfall runoff by 30% and sediment movement was reduced (4G and 21G).

## Costs and benefits

### 4a) Managing grazing pressures and timing with reduced stocking rate

#### *Wet Tropics*

In 2004, a small study in the Tully-Murray region assessed typical farms in the shire of 20 graziers holding 212ha of land each and 10 mixed farmers holding 163ha of land each (16G). General outcomes showed that matching average stocking rates to pasture carrying capacity led to an increase in profitability as well as a small reduction in sediment runoff. Profitability in this case was seen as an increase in the gross margin, or net profit after variable costs were deducted.

#### *Long term grazing trial in Burdekin*

A 14 year grazing trial in the upper Burdekin has shown that moderate stocking rates, at long term carrying capacity (LTCC) were more profitable, provided a constant annual gross margin and a lower level of risk, as compared with a heavy stocking rate (stocked at twice LTCC).

The trial demonstrated that pasture condition was maintained or improved under moderate stocking but declined under a heavy stocking rate (at twice LTCC). Stocking rates in the heavy stocking treatments also had to be reduced in dry years due to a loss in carrying capacity. Heavy stocking had the most variable profitability with a negative gross margin in a number of years and a loss in carrying capacity. Heavy stocking rates could only be maintained in dry years through the use of supplementary feeding.

After 14 years variable stocking based on available pasture, with or without the use of the Southern Oscillation Index, was no more profitable than moderate stocking and had greater environmental and economic risk. The initial high profits in good seasons were cancelled out in drier years due to forced sales, and reduced animal condition and product value. Pasture condition was also adversely affected by heavy stocking rates preceding drier years.

These specific trial outcomes were dependent on variables such as rainfall, interest rates, the cost of supplement and the existence of a price premium for better condition animals (15G). It should be noted that the change in the economic value of the land condition was not accounted for in this trial.

#### *Long term grazing trial in Burnett-Mary*

In a long term stocking rate trial in the Burnett Mary on black speargrass, annual live weight gains per animal were consistently highest at light stocking rates and decreased with an increasing stocking rate. A range of practices were investigated including legume-over sowing on native pasture with spring-burning and supplementary feeding. It was concluded that average pasture utilisation rates of 30% were the most sustainable management practice (3G & 8G).

The heavy stocking rate treatments of about 60% pasture utilisation provided the greatest economic returns but this was to the detriment of the pasture. Therefore the heavy stocking was not considered a viable long term business option. Sustaining these heavy stocking rates would require supplementary feeding, spelling of pastures and/or reduced stocking rates. Profitability of a grazing business can be greatly affected by costs variables (3G) so it is recommended that you assess your current and specific business circumstances.

#### **4a) Managing grazing pressures and timing with fencing and wet season spelling of land in poor condition**

##### ***Fitzroy - Case studies of Brigalow blackbutt and narrow-leaved ironbark woodlands***

Two case studies, of Brigalow blackbutt and narrow-leaved ironbark woodlands in the Fitzroy, analysed the economics of land regeneration for:

- D condition to B condition land
- C condition to B condition land

Land regeneration practices included adjusting stocking rates and fencing.

For Brigalow blackbutt, a highly productive land type, land regeneration from both C and D conditions (9G) is a feasible option for investment, offering substantial economic returns over a relatively short period of time.

Both management options (destocking a degraded portion with fencing; or destocking the entire paddock) gave a positive return for all the analysed land areas to be regenerated. The positive net present value indicated that the accumulated economic benefit over 20 years was sufficient to cover the capital costs. Therefore it was in a landholder's best interest to restore Brigalow blackbutt.

For narrow-leaved ironbark woodlands (a less productive land type) the grazier had considerably more challenges for profitable land regeneration. Economic challenges result from:

- high investment cost
- longer regeneration time periods
- relatively lower gross margins
- low productivity gains

However, land regeneration is a positive investment if a large percentage of a property is in poor land condition (20G & 18G).

#### **4b) Controlling exotic woody weeds**

##### ***Stem-injection as a method of controlling Yellow Oleander***

On a grazing property near Charters Towers, a stem injection trial was undertaken as a means of controlling yellow oleander. Yellow oleander is a highly toxic weed that grows in to high densities, once established it can outcompete native species for nutrients and water.

The trial determined that stem injection was an effective way of killing the exotic woody weed, it was also less damaging to the environment and water quality than other weed eradication methods. Off-target damage was eliminated as there is no run-off of herbicides; the use of diesel was also not required in the herbicide application.

Stem injection also required less herbicide (though it is applied in higher doses), thus it was determined to be a cheaper method of exotic woody weed control. It was less labour intensive than the alternative practices compared in the trial (cut stump and basal bark spray application) as it was easily conducted by one operator. It was also quicker than basal bark application on larger

woody weeds. The equipment required for stem injection is also cheaper and lighter than the equipment needed for cut stump or basal bark spray application (24G).

### **Comparing bellyache control methods in the Burdekin region**

A trial conducted over four years on a cattle property north-west of Charters Towers compared once off treatment strategies with 15 combinations of treatment strategies to determine which was most effective in removing medium-high density bellyache bush infestations. The five singular treatment options were:

- foliar spraying
- slashing
- stick raking
- burning
- do nothing (control)

The treatment combinations involved repetition or alternation of treatment options, conducted once a year for four years.

While foliar spraying and slashing were more costly to implement than burning (cheapest) and stick raking, annual foliar spraying was determined to be the most cost-effective method of control, with no bellyache bush plants remaining at the end of the four years.

Pasture yield was higher under all treatment options (including singular treatment) as compared to the control areas. Annual foliar spraying over the four years, also recorded the highest pasture yield of all options (28G).

Exotic woody weeds differ in their physiology, toxicity and preferred habitat types. As such control measures for different species must be evaluated individually. Further information on individual weed species and their control can be found on the Department of Agriculture, Fisheries and Forestry website (23G).

## **Grazing economic tools**

### **Breedcow and dynama software**

The Breedcow and Dynama package has been the industry standard tool for evaluating beef cattle businesses and management options since 1988. Its uses include herd growth projection, cash flow budgeting (including projections on property purchase), financial counselling, research evaluation, analysis and improvement of herd productivity, and a demonstration of the impact of changed husbandry practices on herd structure, turnoff and financial outcome. It has also been used to 'test' drought destocking and restocking strategies, and work through the consequences of disease eradication campaigns for individual producers.

Website: [http://www.daff.qld.gov.au/16\\_6886.htm](http://www.daff.qld.gov.au/16_6886.htm)

Phone: 13 25 23 (cost of a local call with Queensland) or 07 3404 6999

## Better decisions in the business of beef

This two-day workshop is based on using Breedcow and Dynama software to evaluate beef businesses and identify opportunities for improved performance. Key components are:

- comparing profitability of different turnoff options, husbandry and grazing practices
- estimating future profit, cash flow, indebtedness and net worth based on herd projections under various scenarios
- comparing cattle purchase options for fattening or backgrounding
- comparing sales options for drought or cash relief
- evaluating investment opportunities using discounted cash flow analysis

Phone: 13 25 23 (cost of a local call within Queensland) or 07 3404 6999

## Business edge

This two-day workshop, delivered by MLA EDGENetwork provides finance and business management training to beef producers.

Website: [www.mla.com.au](http://www.mla.com.au)

Phone: 3620 5200

Email: [businessedge@jkconnections.com.au](mailto:businessedge@jkconnections.com.au)

## Rural profit system

This is a four-step program for graziers or mixed farmers, delivered by RCS. The first step of the program is focussed on holistic integrated management with goals of increased sustainability and profits. Participants control the extent of their learning by determining how many of the programs steps they complete.

Website: [www.rcs.au.com](http://www.rcs.au.com)

Phone: 1800 356 004

Email: [info@rcs.au.com](mailto:info@rcs.au.com)

## Extension services

### BreedingEDGE

This workshop, delivered by the Department of Agriculture, Fisheries and Forestry for MLA EDGENetwork. Its focus is on helping landholders to develop or improve a breeding program and looks at six key areas:

- examining a properties current situation
- reproduction
- genetics
- setting breeding objectives
- livestock selection

- managing the herd to capture benefits

Website: [www.mla.com.au](http://www.mla.com.au)

Phone: 3620 5200 (MLA) 13 23 25 (DAFF)

Email: [beef@daff.qld.gov.au](mailto:beef@daff.qld.gov.au)

### **Commercial operators accreditation**

Under Agricultural Chemicals Distribution Control Act 1966, operators may require a license in before the ground-application of herbicides. This legislation is enforced by Biosecurity Queensland. Phone: 13 25 23 (cost of a local call within Queensland) or 07 34046999

### **Grazing BMP**

The Grazing BMP was developed by the Department of Agriculture, Fisheries and Forestry, the Fitzroy Basin Association and AgForce Queensland. The program is a voluntary, industry led process which assists graziers to identify improved practices which can improve the profitability of their business.

Website: [www.bmpgrazing.com.au](http://www.bmpgrazing.com.au)

Phone: 4999 3800 (Fitzroy Basin Association) 3236 3100 (Agforce).

### **Grazing land management EDGE**

This is a three-day workshop, delivered by the Department of Agriculture, Fisheries and Forestry for MLA EDGENetwork. The workshops are regionally targeted, providing landholders with a practical and planned approach for improving the productivity and sustainability of their land. It looks in particular at:

- long-term stocking rate calculations
- forage budgeting
- land condition assessment
- sown pastures
- fire
- weeds

Website: [www.mla.com.au](http://www.mla.com.au)

Phone: 3620 5200 (MLA) 13 23 25 (DAFF)

### **Grazing land management (land condition assessment)**

This 3 day workshop, delivered by the Department of Agriculture, Fisheries and Forestry, for MLA teaches:

- how to assess paddock condition
- understanding grazing ecosystems
- how to meet target markets and sustainably

The workshops have been customised to 13 Queensland regions, providing location specific information.

Website: [www.mla.com.au](http://www.mla.com.au)

Phone: 3620 5200 (MLA) 13 25 23 (DAFF)

### **Healthy grass, cattle and soils program**

The program is a series of workshops offered by Grazing BestPrac. Grazing Bestprac also offer private consultancy for producers who wish to have one-on-one support on their property/farm.

This includes:

- whole of property planning
- mapping and computerized mapping
- GPS training and vegetation mapping
- business facilitation
- business planning (Centrelink)
- grass budgeting and pasture programs

Phone: 1300 780 872

### **MLA livestock production assurance**

This is a simple on-farm food safety program which focuses on 5 key elements:

- property risk assessment
- safe and responsible animal treatments
- stock foods, fodder crops, grain and pasture treatments
- preparation for dispatch of livestock
- livestock transactions and movements

This program is accredited by Ausmeat.

Website: [www.mla.com.au](http://www.mla.com.au)

Phone: 3620 5200

Email: [lpa@mla.com.au](mailto:lpa@mla.com.au)

### **NutritionEDGE**

This 3 day workshop, delivered for MLA by the Department of Agriculture, Fisheries and Forestry, teaches:

- minerals and managing deficiencies
- pasture growth and quality
- grazing management

Website: [www.mla.com.au](http://www.mla.com.au)  
Phone: 3620 5200 (MLA) 13 25 23 (DAFF)  
Email: [beef@daff.qld.gov.au](mailto:beef@daff.qld.gov.au)

### **Property computer mapping**

These workshops, delivered by AgForce Projects provide landholders with the latest satellite imagery of their property and train them to use these images and mapping software, to build effective property maps. This gives landholders greater ability to plan infrastructure, monitor land condition and improve productivity.

Website: [www.agforceprojects.org.au](http://www.agforceprojects.org.au)  
Phone: 3238 6048

### **SMARTtrain**

This national program is provided through a combination of correspondence education and workshops and aims to train users of agricultural and veterinary chemicals.

Website: [www.smartrain-publications.com](http://www.smartrain-publications.com)  
Phone: 1800 138 351

### **Stocktake**

This is a one-day workshop developed and delivered by the Department of Agriculture, Fisheries and Forestry. Focuses on land condition and monitoring and also demonstrates field assessment techniques using a database.

Website: [www.daff.qld.gov.au](http://www.daff.qld.gov.au)  
Phone: 13 23 25 (DAFF)  
Email: [beef@daff.qld.gov.au](mailto:beef@daff.qld.gov.au)

## **Supplementary resources**

### **FutureBeef**

Is a collaborative program, aimed at north Australian graziers, with the Department of Agriculture, Fisheries and Forestry (Qld), Northern Territory Department of Resources – Primary Industry, Department of Agriculture and Food Western Australia and Meat and Livestock Australia. The website covers topics related to all aspects of beef production, with regional information where appropriate. It also links to external papers and resources.

Website: [www.futurebeef.com.au](http://www.futurebeef.com.au)  
Phone: 13 25 23 (DAFF) 1800 023 100 (MLA)  
Email: [info@futurebeef.com.au](mailto:info@futurebeef.com.au)

### **Managing grazing lands in Queensland**

Developed by the Department of Environment and Resource Management, this guide looks at pasture management, soil conservation, biodiversity, pests, salinity, riparian vegetation and water resources.

Phone: 13 74 68 (Queensland Government).

## Reef and rainforest research centre

This facility is undertaking development, trial and validation of land management practices that improve water quality outcomes in the sugar and grazing sectors. Reports regarding the scientific outcomes of these management practices are available on the website.

Website: <http://www.rrrc.org.au/>

Phone: 4781 5513

## Wetlands management handbook

Farm Management Systems (FMS) guidelines for managing wetlands in intensive agriculture. Developed by the Australian and Queensland governments, as part of the Queensland Wetlands Program. The guide provides information to landholders and extension officers on:

- identifying wetlands
- wetland management
- artificial wetland creation

The guide was designed to complement other industry FMS programs, for holistic farm management.

Website <http://wetlandinfo.ehp.qld.gov.au/wetlands/resources/publications/reports.html>

Phone: 13 74 68 (Queensland Government)

## Regional supplementary resources

### ABCD management practices framework for dry rangelands

Developed for Terrain NRM by the Department of Agriculture, Fisheries and Forestry, this framework is used as part of the Reef Rescue Program to priorities practices for dry land been properties.

Website: [www.terrain.org.au](http://www.terrain.org.au)

Phone: 4043 8000

Email: [info@terrain.org.au](mailto:info@terrain.org.au)

### Reef protection legislative requirements - ERMP guide to the great Barrier Reef protection legislation

Developed by the Department of Environment and Resource Management to help landholders determine whether their property is affected by the legislation as well as explain the legislation and what is required of property owners. It also provides sources of information, support and advice.

Website: <http://www.reefwise farming.qld.gov.au/pdf/guide-gbrpl.pdf>

Phone: 1300 130 372 and press option 8 (DERM)

## Farm systems message

We recommended you assess your specific farming circumstances before changing any management practices. You can find a list of extension providers at the end of this information.

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DAFF, Northern Territory Department of Resources - Primary Industry, Department of Agriculture and Food Western Australia and Meat & Livestock Australia.

## More information

If you would like to contact DAFF about the information presented in this factsheet, contact us on: 13 25 23, for the cost of a local call within Queensland, or 07 3404 6999, or email us at; [ReefPlan@daff.qld.gov.au](mailto:ReefPlan@daff.qld.gov.au)



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