RECORD OF GRAZING EVENTS

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Agricultural Information & Monitoring Services

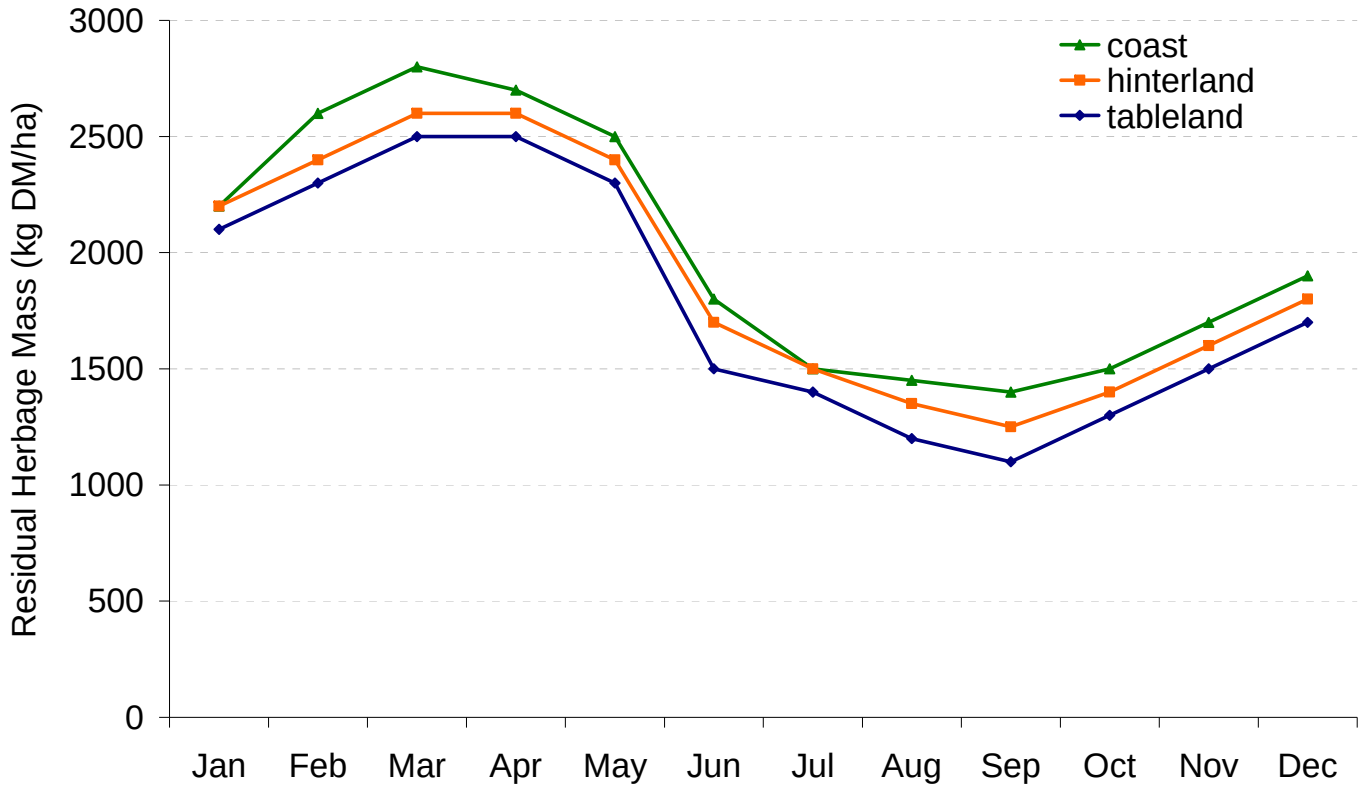
AIMS
Agricultural Information & Monitoring Services

Northern Rivers CMA CATCHMENT MANAGEMENT AUTHORITY

Low and ideal values for the 12 key pasture checklist points

	Low *(less than)*	Ideal
Herbage mass (kg DM/ha) - sheep - cattle	 800 1,200	 1,200 – 3,000 2,000 – 4,000
Herbage mass - % edible	80%	100%
Percentage green *spring, summer & autumn*	60%	more than 75%
Ground cover	95%	100%
Broadleaf plant component	5%	10 – 15%
Legume component *spring to early summer*	10%	15 – 25%
Annual grass component *autumn, winter & spring*	5%	10 – 15%
Perennial grass component	30%	60 – 80%
Diversity of perennial grasses	3	more than 7
Pasture growth rate - spring - summer - autumn - winter	 15 15 10 0	 45 50 25 10
Water use efficiency	6	more than 10
Pasture utilisation rate - spring - summer - autumn - winter	 35 – 40% 15 – 20% 25 – 30% 100 – 110%	 55 – 60% 35 – 40% 45 – 50% 140 – 150%

Residual herbage mass varies throughout the year



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Disclaimer
This publication is intended to provide general information on stock management and pasture assessment. The authors acknowledge that pasture types may vary and will not be responsible for any loss caused by reliance on this publication.

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The purpose of this record of grazing events

The aim of this booklet is to allow you to record grazing events for your paddocks. This record keeping will assist you to update your grazing plan using the Graze Plan Calculator produced by AIMS. Instruction is also provided for estimation of herbage mass, the percentage of the herbage that is edible and calculation of a feed budget. Tables of DSE values for cattle and sheep are provided at the end of this booklet.

We recommend that you update your grazing plan at least every month by transferring the grazing details from this booklet into the Graze Plan Calculator.

Estimating herbage mass

- Measured as kg dry matter/ha (kg DM/ha)
- Controls feed intake of animals and pasture regrowth rate
- Used to calculate feed budgets and set appropriate stocking rates

Low: less than 800 kg DM/ha (sheep); 1,200 kg DM/ha (cattle)

- Feed intake and pasture growth rate will be greatly restricted and desirable species may not persist

Too much: more than 3,000 kg DM/ha (sheep); 4,000 kg DM/ha (cattle)

- No advantage for feed intake, pasture quality and growth rates decline, shading may reduce the number of plants

Ideal: 1,200 – 3,000 kg DM/ha (sheep); 2,000 – 4,000 kg DM/ha (cattle)

- Feed intake, diet selection and pasture growth rates optimised

To calculate:

Step 1: Measure pasture height (cm) from the ground to the top of the bulk of leaves; do not extend leaves and do not measure to the top of seedheads. See pasture height photo.

Step 2: Estimate pasture density in terms of kg DM/ha for every centimetre of pasture height

Table: Guide to the estimation of pasture density (kg DM/ha/cm)

Pasture density (kg DM/ha/cm)	Description
150	Ground readily seen through sparse pasture
200	Ground seen through sparse pasture (see ground cover photo)
250	Ground occasionally seen through average pasture
300	Ground not visible through average pasture
350	Good pasture density (see ground cover photo)
400	Dense pasture
450	Very dense pasture

See pasture density photos

Step 3: Multiply pasture height x pasture density

(eg. 10 cm x 250 kg DM/ha/cm = 2,500 kg DM/ha herbage mass)

Pasture density

150 kg DM/ha/cm	**200 kg DM/ha/cm**
250 kg DM/ha/cm	**300 kg DM/ha/cm**

Pasture height

Pasture height
= 10 cm

(B) Herbage mass – *percentage edible*

- Percentage of herbage mass that would be eaten by livestock
- Measured as percent of herbage mass (%)
- Your estimate may change with season. For example, Poa tussock may be considered not edible during spring, when other green pasture is present but at the end of winter may be considered as a valuable source of roughage
    - Low: less than 80%
    - Marginal: 80 – 99%
    - Ideal: 100%

Feed budgeting

- Is a process used to determine how many stock can be run on an area for a given period of time
    - Feed budgeting does <u>not</u> determine feed quality requirements of livestock which should be assessed separately
- Is a process to guard against over and under grazing
- Requires knowledge or estimates of:
    - Grazable area, which may be a paddock or a farm
    - Type of stock to be run during a nominated period
    - DSE rating of the type of stock based on their nutritional requirements and estimated growth rate (*provided at the end of this booklet*)
    - Herbage mass at the start of the period
    - Desired herbage mass at the end of the period
        - Consult herbage mass targets provided earlier in this checklist
        - Minimum herbage mass should only be reached at the very end of the non-growing period, if at all. If minimum herbage mass is reached this should not be less than 800 kg DM/ha for sheep and 1,200 kg DM/ha for cattle.
        - Grazing to below these minimum levels will limit the rate of pasture regrowth and likely result in inadequate ground cover
- Feed budgets should be conducted in Autumn and cover the intervening period till Spring. For example, areas to the west of the Tablelands should cover the period 1st March – 1st September and areas to the east of the Tablelands 1st April – 1st October. This feed budget will aid stocking decisions over a difficult time of year
- Feed budgeting is an important tool which can be used in conjunction with a grazing plan

Feed budgeting

Information required:

Farm area (ha)
Length of period (days)
Type of stock during period
DSE rating for stock type
Herbage mass at start of period
Desired herbage mass at end of period
Estimated pasture growth rate (PGR)

A	Farm area (ha)	
	Start of period (date)	
	End of period (date)	
T	Length of period (days)	
S	Type of stock	
D	DSE rating (DSE/stock unit)	
HM1	Start herbage mass (kg DM/ha)	
HM2	Desired end herbage mass (kg DM/ha)	
PGR	Pasture growth rate (kg DM/ha/d)	
1	Available feed (kg DM/ha/d)	
2	Number of stock units/ha	
3	Number of stock units	

1. Available feed $= \frac{(HM1 - HM2)}{T} + PGR$

2. Number of stock units/ha = $\frac{\text{available feed}}{\text{DSE rating '}\mathbf{D}\text{'}}$

3. Number of stock units= (number of stock units/ha x paddock area '**A**')

Record of grazing events

Grazing details

Paddock name	Date in	Date out	Days grazed	Herbage mass in	Herbage mass out	DSE in mob	Supplement type and amount
Example: *Dam paddock*	*12/2/09*	*15/2/09*	*2.5*	*2700*	*2300*	*4200*	*Cottonseed meal* *100 g/hd/day*

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DSE rating for dry cattle

Weight of steer or dry heifer (kg)	Growth rate (kg/day)	DSE rating
200	0	3.5
250	0	4.5
300	0	5.0
350	0	6.0
400	0	7.0
200	0.5	6.0
250	0.5	7.0
300	0.5	7.5
350	0.5	8.5
400	0.5	9.5
200	1.0	8.5
250	1.0	9.5
300	1.0	10.0
350	1.0	11.0
400	1.0	12.0

DSE rating for cows

Weight of cow (kg)	Pregnancy/ lactation	DSE rating
400	dry	7.0
400	pregnant early	8.0
400	pregnant late	9.5
400	lactating early	14.0
400	lactating late	17.0
500	dry	9.0
500	pregnant early	10.0
500	pregnant late	11.5
500	lactating early	16.0
500	lactating late	19.0

DSE rating for dry sheep

Weight of sheep (kg)	Growth rate (g/day)	DSE rating
30	0	0.7
40	0	0.8
50	0	1.0
60	0	1.2
30	50	0.9
40	50	1.0
50	50	1.3
60	50	1.5
30	100	1.1
40	100	1.2
50	100	1.5
60	100	1.7

DSE rating for ewes

Weight of ewe (kg)	Pregnancy/ lactation	DSE rating
40	dry	0.8
40	pregnant - single	1.0
40	pregnant - twin	1.1
40	lactating – single	2.0
40	lactating – twin	2.6
50	dry	1.0
50	pregnant - single	1.1
50	pregnant - twin	1.2
50	lactating – single	2.2
50	lactating – twin	2.8
60	dry	1.2
60	pregnant - single	1.3
60	pregnant - twin	1.4
60	lactating – single	2.4
60	lactating – twin	3.0