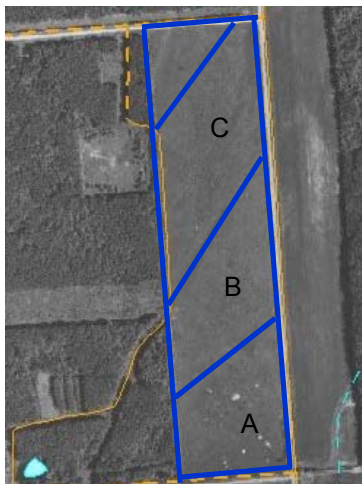


Cowgers Beef Up Carrying Capacity



Cowgers' Original Concept

The field was seeded in 1985. By 1993, the Cowgers were frustrated that 12 head of cattle ran out of grass in a 40 acre pasture after 3 weeks. Since this pasture was close to their home and calving area, it was an ideal pasture to improve.

They began a series of improvements. In 1998, they broadcast red clover, brome and timothy seed mix. They used grazing animals and a "Cowger modified" Aerway type implement to incorporate the seed.



Manure piles before spreading at the lower rate in the middle paddock B.

Field Location: NE 25-85-20-6



The "Cowger modified" blade worked well for spreading manure evenly over the pasture.

The Treatments

The manure was a well rotted, dry, granular solid when it was hauled to the paddocks. It was spread with a "Cowger-modified" blade pulled behind a tractor in 2000 and again in the fall of 2002.

The Cowgers divided their pasture into 3 paddocks for rotational grazing and to manure at 3 rates :

- A. Control or pasture left as was
- B. Manure applied at 1.5 tons/ ac (20 piles/ 13 ac)
- C. Manure applied at 2.9 tons/ac (40 piles/ 14 ac)



Photo illustrating before spreading (left) and after spreading manure (right).

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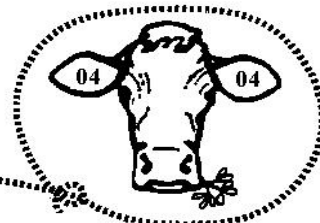
Bench marks were set up in each of the paddocks, where monitoring was done over the season. Soil samples were taken to determine field variability. Growth was monitored and photographs taken. Cowgers set up an enclosure so that clipped yields could be taken as a measure of dry matter produced.

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Soil Landscape Type

Alcan-Buick soil: is a moderately well drained, loamy soil on weakly calcareous & saline, morainal on gently sloping plateaus near Charlie Lake

Table 1 Cattle & Bison	Wt (lb)	AU / head
Large cows	1500	1.5
Med. cows	1250	1.25
Small cows	1000	1.00
Yearlings	800	0.8
Bull for cows	1500	1.5
Bull for heifers	1200	1.2
Weaned calves	500	0.5

Table 2 Paul's Economics

Indicators	1993	2003
# head	20	25
grazing days/ 40 ac	21	94
AUM	11.3	61.5
Value of an AUM	\$12	\$12
Value of total AUMs	\$138	\$742
\$ grass/ac	\$3.50	\$18.50

“ One of the things we learned is not to leave the cattle in too long. If we move them after 3 days, the grass rebounds quickly.”
Paul Cowger, Montney

Manure Improved the Soil

We can get glimpses of how manure improves the soil by comparing composite samples taken at Cowgers in the fall of 2002 (see graphs to right). There were dramatic increases in the levels of nitrate-nitrogen (N on graphs), potassium (K on graphs) and sulphur (S on graphs). For example, before manure was applied nitrate-N levels were deficient (graph 1). After manure was applied and under the piles, nitrate-N levels were optimal (graph 2). Where piles were left longer, nitrate-N levels were in slight excess (graph 3). These graphs also illustrate the importance of spreading the piles quickly for a more uniform field response and less of the mobile nutrients, such as nitrogen, going to waste.

Grazing Days Increased

There was definitely an increase in grazing days and carrying capacity for the Cowgers' pasture. The number of head was converted to animal units (AU) using information supplied by Bill Wilson and Keith Carroll (see table 1 to left). A combination in changes in Cowgers' management resulted in over a 5 fold increase in animal units of grazing (AUMs) and in over a 5 fold increase in the value of the grass per acre (see table 2 to left).

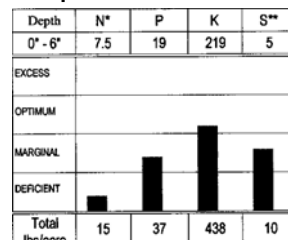


Carrying capacity of Cowgers' pasture was increased to 25 head for 94 grazing days in the 2003 season (left photograph). There was still considerable forage left or stockpiled in paddock C when heifers were taken out (right photograph).

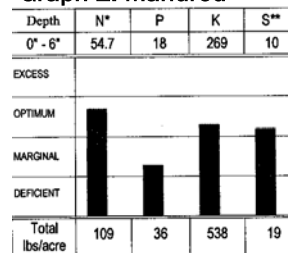
What did we learn with Cowgers?

The Cowgers attribute their success in improving the 40 acre pasture and increasing the carrying capacity to a systems approach. They feel their success was a combined response to reseeding, aerating/ incorporating manure and managed rotational grazing. The addition and even distribution of nutrients definitely played a role in improving their land.

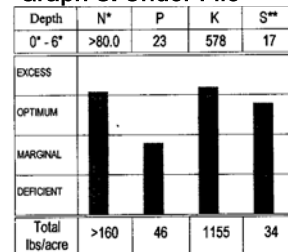
Graph 1: Before manure



Graph 2: Manured



Graph 3: Under Pile



Compiled by: Sandra Burton & Julie Robinson in April, 2004.

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