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Few field days would offer the diversity of country, altitude and subject-matter of the recent New Zealand Grassland Association's excursion around Marlborough. The 280 or so people in Blenheim for the association's conference, which was held from November 1 to 4, toured hill and flat country from the Wairau Valley to Kekerengu.

It was a full day without such time-wasters as morning or afternoon tea, and it was not until the last session was completed that those who wished to partake were rewarded with a can of beer.

While most people were starting work, six large buses of pasture enthusiasts were crawling carefully up a dirt track which rose along a spur top on the "Bankhouse" property of Mr Tony Shield and disappeared at about 520m into the misty sky. The drive above the southern edge of the Wairau Valley held the interest of the travellers, who asked questions like, "Can you see the track on your side of the bus?"

The 4054ha property, which is more than half hill country, has undergone a persistent development programme since Mr Shield took it over in 1964. Then, only 610ha was developed and the property was carrying 9000 stock units. From 1964 to now, Mr Shield has had 230ha of flat land chisel ploughed and sown in pasture, 445ha of easy hill topdressed and oversown, 890ha of remaining flat land chemical ploughed and direct drilled with lucerne, and 712ha of steeper hill country scrubbraked, oversown, and subdivided into blocks of an average 46ha. He wintered 21,400 stock units this year. Next year, work will begin on 594ha of the remaining hill country, which will also be scrubbraked, oversown and subdivided.

Mr Shield said that he had sown Ruanui seed, and when asked to comment, Dr J.A. Lancashire of the DSIR's Grassland Division in Palmerston North said he was reasonably happy with the choice, but that Wana cocksfoot would have been better in the mixture than Apanui.

"Bankhouse" has 346ha of forestry planted between 1968 and this year. Mr Shield said that he had planted the trees because broom was a problem on the hill country, he did not want all his eggs in one basket, and because he believed in the future of forestry.

To help with controlling broom, Mr Shield runs goats, and when asked for his thoughts on these animals he answered with a rude word, but added that they were necessary. On "Bankhouse" stock are rotational grazed, with sheep in three main mobs. There is no feed conservation or supplementary cropping, and the lucerne has not been persisted with on the flat country.

While everyone was comfortably settled on the steep hillside, Mr Ron Clare, a senior research officer with the MAF in Blenheim, talked on lucerne over-sowing. Vegetation should be killed chemically, adequate nutrients and lime should be applied, and about 35kg per ha of coated seed should be sown, then trodden in, he said. Mr Clare estimated the cost at \$360 per hectare (using Roundup), and Mr Shield dismissed this, as "plain uneconomic".





To view the seed production area of Mr Garth Neal, a local farmer, the buses drove slowly past his pastures of Grasslands Maku lotus, Grasslands Moata tetraploid Italian ryegrass and Grasslands Maru Phalaris.

Next stop was "Fifteen Valley" on the other side of Blenheim. The property is owned by the Waitaki N.Z. Refrigerating Company, which is building the new Marlborough freezing works there.

Soil conservation and restoration work on the extremely erosion-prone Wither Hills near the new works was discussed by Mr Ron Sutherland of the Marlborough Catchment Board and Mr Jim McLusker, the farm manager. Some years, the area receives as little as 400mm of rain a year, and it is subject to searing north-west winds. At the beginning of the Wither Hills catchment control scheme, vegetation was mostly danthonia and scabweed, and the hill country was carrying about one stock unit to the acre in good years. Most of the eight properties covered by the scheme struggled to manage even this. Now stock carried per treated hectare is around eight or nine units, and the Wither Hills Soil Conservation Reserve has managed more than this in wet seasons. The area now runs mostly cattle. The scheme's secret of success has been the bulldozing of about 1200ha of deep tunnel gullies, contour cultivation and sowing. A major start on rescue work has been made on "Fifteen Valley" and more than 120ha have been covered during the last two years.

The Grassmere solar salt works was the next stop, and here a rundown was given on production by Dominion Salt Ltd.

Mid-afternoon found the pasture enthusiasts standing in wet grass on "Kul-nine" the 632ha hill country property of Mr Simon Chaffey, near Kekerengu. Mr Chaffey and his neighbour Mr Don Moore, discussed farming of the largely developed hill country with its dry summers.

Both farmers rotate their sheep for grazing, and Mr Chaffey said that he did not believe in set stocking now that he had seen the benefits of rotation. Mr Moore said that the rotation on his 283ha farm, "Valhalla" was intensive. He had been rotating stock for seven years, and although he still had not found the perfect management, he had made an improvement. Also, to increase the fertility of his pasture, he would continue to oversow with white clover, sub-clover and ryegrass.

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COLOUR INFRARED AERIAL PHOTOGRAPH TAKEN ON DECEMBER 7, 1981 (Scale c.1:16,500) SHOWING EROSION CONTROL SEQUENCE AT WITHER HILLS, BLENHEIM, NEW ZEALAND.

X indicates the location of a field stop on the N.Z. Grasslands Association Annual Conference field day (3.11.82). Red colours at A contrast with the light greyish-blue colours at D and B indicating aspect differences. On the southerly aspects A the dark red/brown, coarse textured areas are manuka-kanuka-gorse scrubland.

The impact of erosion control is dramatically illustrated in the erosion control sequence B₁ to B₃. The area at B₁ was treated for tunnel gully and sheet erosion in 1969 by bulldozing and sowing with white and subterranean clover, *Phalaris aquatica* and lucerne. Lucerne has since disappeared and other introduced species and danthonia have appeared. Area B₂ was treated in 1986, — the deep red colours indicated improved pasture species (clover and lucerne). Area B₃ was treated in 1981. Heavily bulldozed areas show up as bluish-white colours. Comparison of areas B₁ to B₃ with area C (untreated) shows the extent of bare ground associated with gully, tunnel gully and sheet erosion.

At E the effect of poor drainage and saline soils on vegetation can be seen. The bluish colours indicate areas of bare ground.

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Photography by: Remote Sensing Group*, Water and Soil Science Centre, Aokautere, New Zealand.

* *The Remote Sensing Group was established in 1978 to develop cost effective remote sensing techniques for soil conservation research and surveys. The group conducts small format multi-emulsion aerial photography in light aircraft and provides a specialist colour infrared aerial photographic service, which includes interpretation assistance. Colour infrared photography is very useful for detecting eroded ground, different vegetation types and differences in vegetation vigour.*

There is a strong multidisciplinary approach in the groups application research, as several of our current projects involve collaboration with New Zealand Catchment Authorities and other Government Departments, especially those working in the Agricultural sector.

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