

FARMING IN SOUTHLAND

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This paper is confined to a discussion on farming in two counties, Southland and Wallace. In this territory is comprised some 5,000 square miles of occupied land, which represents 7.8 per cent. of the Dominion total. In the Southland County there are 4,241 holdings averaging 476 acres, and in Wallace 1,514 averaging 793 acres. The combined figure of 5,755 holdings gives an indication of the number of farmers in the two counties.

EARLY HISTORY

Apart from sealers and whalers there was no settlement in Southland until about 1856, some three years after the purchase of Murihiku (as it was then called) from the Maoris. It was farmed in large blocks for wool by squatters, and subsequently large-scale oat cropping was practised in the Centre Bush and Riversdale areas. In 1882, the first cheese factory was erected at Edendale, largely under the direction and encouragement of Mr Thomas Brydone, a superintendent of the Australian and New Zealand Land Company. With the development of dairying, liming, refrigeration, and transport facilities, closer settlement followed in the wake of the subdivision of the large pastoral runs, and farming operations became more diversified.

KIND OF FARMING PRACTISED

Sheep farming has ever been the main Southland industry, but of recent years greater reliance has been placed on fat lamb production than on wool. Nevertheless an extremely uniform type of Crossbred Romney ewe has been maintained by farmers for replacement purposes and for crossing with the South-down ram for fat lamb. Next to sheep farming in importance ranks dairy farming, which is confined mainly to the coastal and higher rainfall districts. In the inland light rainfall districts mixed arable farming assumes some importance.

Southland's dependence on sheep can be gleaned from the fact that on the occupied area representing 7.8 per cent. of the Dominion total, 9.82 per cent. of the sheep shorn are carried and 12.08 per cent. of the Dominion total of lambs are tailed.

RAINFALL

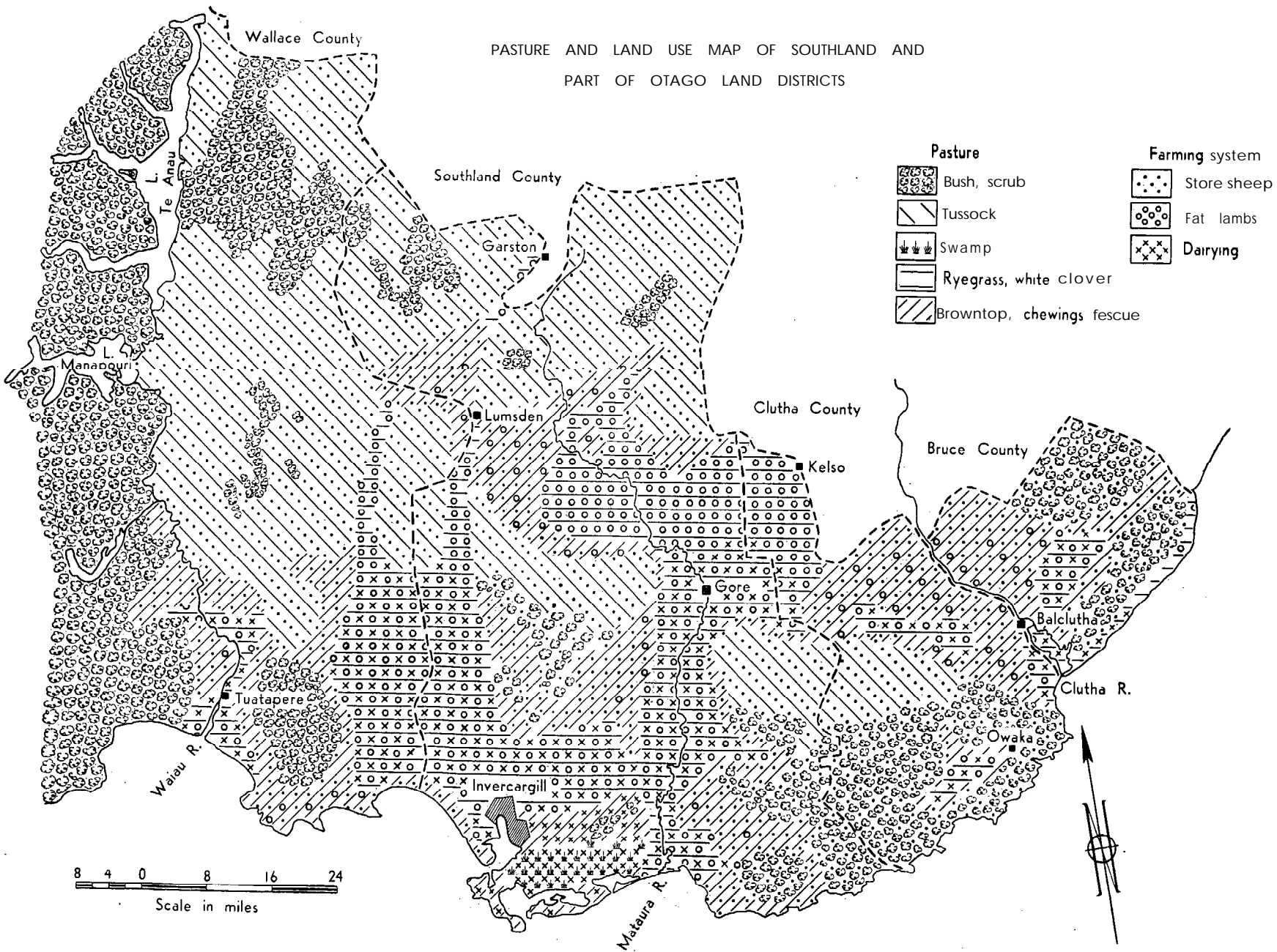
The prevailing rain-bearing winds in Southland are mainly from the west and south, and accordingly the coastal portions of these counties receive the heaviest precipitation, averaging 45 to 50in per annum. Northward of a line joining Matura and Otatau the rainfall decreases to 35ins. North of Lumsden and to the east of the Hokonui Hills it again decreases to 30in., and the distribution throughout the year is much more uneven.

TOPOGRAPHICAL FEATURES

The most extensive belt of more or less level country is that of the Southland Plain lying between the Aparima and Oreti Rivers and comprising a block extending some 40 miles from the coast and approximately 20 miles in width. It is broken in places by undulating country built up by wind-borne material, and this derivation also applies to the country east of Invercargill extending through Woodlands to Spur Head. A second large belt of country includes three adjacent plains in Eastern Southland—the Waimea Plain west of the Matura River, the Waikaia Plain east of the Matura River, and the Five Rivers Plain east of the Oreti River adjoining Lumsden and Mossburn. Other extensive areas of cultivated land include the Edendale Plain, consisting of alluvial terraces formed by the Matura River, and the 'West Plains-Wallacetown Plain formed by the Oreti River and its tributaries. The total area of cultivated land approximates 1.4 million acres.

Rising from these plains and valleys are the foothills and lower montane country of which some 1.9 million acres are occupied, giving a total occupied area of 3.3 million acres. Thus the main volume of farm production is derived from the 1.4 million acres of cultivated land (three quarters of which is situated in the Southland County) assisted by approximately 1.4 million acres of tussock and native grass (of which Wallace has approximately 44 per cent.) The remaining $\frac{1}{2}$ million acres of occupied land consists mainly of fern and scrub, some native bush, and a little barren land.

PASTURE AND LAND USE MAP OF SOUTHLAND AND PART OF OTAGO LAND DISTRICTS



Unoccupied land represents only a small area in Southland County, but in Wallace the reverse is the position, the largest area being north of Te Anau township and west of Lake Te Auau (included in the National Park Territory), a second area comprising the Longwood Range, and a third the bush country to the west of Tuatapere.

FARMING ON THE: PLOUGHABLE COUNTRY

Of the total area cultivated some 1.25 million acres are in grass. This area of sown grassland is on the plains and the easier rolling foothill country previously mentioned. The Southland Plain, Edendale Plain, and West Plains-Wallacetown Plain are in the main capable of carrying first-class pastures of perennial ryegrass, cocksfoot, timothy, white clover, and red clover swards either alone or in combination, and capable of wintering 5 ewes per acre. The Waimea, Waikaia, and Five Rivers Plains are of lower fertility, but many farms, particularly on the Waimea, have built up fertility over the past 20 years to a point where 3 ewes are wintered comfortably.

Dairy farming is confined mainly to the coastal regions, but the main production is obtained from the alluvial terraces of the Mataura River centred on Edendale and referred to as the Edendale Plain.

It is on the plains of Eastern Southland and the northern half of the Southland Plain in Western Southland, all of which are situated in the lighter rainfall belt, that grass and clover seed production assumes greater importance, combined with the usual sheep farming. The sheep-carrying capacity ranges from 1 to 2½ ewes per acre.

In general, fertility or potential fertility decreases from the coastal regions inland in the same way as does the rainfall. Although the greatest part of this southern region is capable of dairy production, at present it is mainly utilised for fat lamb production and wool. The number of dairy cows in milk has declined since 1934 and is now under 50,000.

GRASS AND CLOVER SEEDS

Seasonal conditions are reflected in the area closed annually for seed production, although with chewings fescue (of which commodity a monopoly is held) and browntop seed, the acreage is more constant, as both demand a special farm management. Taking an average over a recent period 50,000 acres are seeded annually, including chewings fescue 15,000 acres,

browntop 8,000 acres, crested dogstail 7,000 acres, white clover 6,000 acres, ryegrasses 6,000 acres, cocksfoot 4,000 acres, and red clover 3,000 acres.

The straw, after threshing of these crops, with the exception of chewings fescue and browntop, is usually saved for feeding purposes, which is in addition to the 30,000 acres saved for hay and silage. Silage, however, has a very limited appeal to farmers.

CROP PRODUCTION

From an analysis of the crop figures it is evident that farmers' efforts are directed mainly to providing supplementary feed for their stock during the late autumn, winter, and early spring when grass growth is either scanty or dormant. Being unable to rely completely on grass growth, the farmer is forced to grow roots and green fodder crops for the period of low grass production in order to be able to carry a reasonable stocking throughout the year.

The annual acreage in crop is approximately 200,000 acres, which can be apportioned into 140,000 acres of root and fodder crops and 40,000 acres of grain and cereal crops.

Some of the grain from the 14,000 acres of oats threshed is used as stock feed. The area grown for chaff and for green feed usually exceeds the area threshed. Similarly the area of barley fed off exceeds the area threshed.

The growing of oats for threshing in the main is centred on Drummond on the Southland Plain and Riversdale on the Waimea Plain. Wheat growing is confined mainly to the Dipton, Knapdale, and Waikaka districts. Barley and peas do exceptionally well in the Garston district, where excellent samples are produced. Linseed production has been centred on the Wendonside, Heddon Bush, and Wairio districts.

A noticeable feature in the cropping programme is the high percentage of pasture sown with nurse crops. The main nurse crops are spring-sown cereals, chiefly oats, and feed crops of turnips and rape, alone or in combination. This area of nurse crop taken over a period varies from 30 to 60 per cent. of the total area sown to grass each year. Of late years the trend has been to decrease the area of nurse crop, which may be due to increased areas of grass being sown in the autumn for feed purposes. (See map showing land utilisation).

TYPICAL FARMS

In order to present the farm management practices in operation the following thumb-nail sketches of 5 different types of farms are given.

(a) Fat Lamb Farm on Southland Plain : 200 acres carrying 1,000 Romney ewes and 25 Southdown rams. Lambing 120 per cent. (1,200) lambs of which 50 to 60 per cent. are drafted fat off the mother. Remainder fattened on young grass, rape, and swede tops. Ewes retained for 4 seasons. Approximately 220 culls ewes sold fat; 270 two-tooth ewes and 7 rams purchased as replacements. If surplus feed is available, additional store lambs may be purchased and fattened.

1st year-10 acres swedes, 5 acres rape.

2nd year-10 acres Resistant turnips, 5 acres oats.

3rd year-15 acres grass sown with lamb feed.

A green feed crop may be grown on the oat stubble for winter and early spring use. Usually some hay is saved, and in other cases a grass seed crop may be harvested.

Under this system 15 acres of lea is ploughed yearly, and pastures are renewed at intervals of 13 years.

N.B.-Very few fat lamb farmers in Southland adopt the principle of a flying flock, but some purchase full-mouth ewes yearly to replace those culled, which approximate half the ewe flock.

(b) Dairy Farm on Edendale Plain: 100 acres carrying 40 dairy cows in addition to young stock and 100 old ewes purchased annually for ragwort control. Southdown rams used.

Butterfat, production 250lb. per cow or 100lb. per acre. Milk used for cheese production and whey utilised for sugar of milk. Ewes produce 100 lambs, which are disposed of as fat, mainly off the mother. Approximately 80 ewes sold fat.

Crops:

1st year-10 acres swedes, 2 acres soft turnips.

2nd year-12 acres chou moellier.

3rd year-12 acres grass, bulk of which has oats as a nurse crop.

Under this system 12 acres of lea is ploughed yearly and pastures are renewed at intervals of 8 years.

(c) Farm specialising in wheat in Dipton District : 400 acres carrying 800 Romney ewes. Southdown rams used. Lambing percentage 110. Ewes retained

for 5 seasons. Possibly 300 lambs sold fat off mothers, remainder fattened on feed; 180 two-tooth ewes purchased and approximately 160 old ewes disposed of each year.

Crops:

1st year-20 acres wheat, 20 acres swedes.

2nd year-10 acres' Aberdeen turnips, 10 acres oats, 20 acres wheat.

3rd year-40 acres grass sown with lamb feed.

Under this system 40 acres of lea is broken annually, resulting in pastures being renewed at intervals of 10 years. Montgomery red clover or white clover is often harvested for seed.

(d) Farm on the foothill country at Nightcaps and Waimumu : 600 acres carrying -1,000 Romney cross ewes and 285 hoggets. Romney rams used, and ewes retained for 4 seasons. Lambing percentage 100. Up to 200 lambs may be drafted fat off their mothers, 285 ewe lambs retained, and remaining 515 sold mainly as stores for fattening. Approximately 200 full-mouth ewes sold annually.

crops :

1st year-30 acres swedes.

2nd year-15 acres kale, 15 acres oats.

3rd year-30 acres grass sown with lamb feed.

Under this system 30 acres of lea is ploughed annually, but as probably one-third of the farm is unploughable, pastures are renewed every 20 years, and in many instances reach the browntop-dominant stage and may be harvested for seed.

(e) Farm on lower montane run in Northern District: 7,000 acres carrying 2,000 sheep (including 800 wethers), together with 540 hoggets. The 1200 ewes produce 960 lambs (80 per cent. lambing) of which 540 are retained. Sales include up to 240 sound mouth ewes, 260 fat or forward wethers, and 420 store lambs.

If arable ground is available in the valley bottoms, some winter feed is grown, at least enough to winter the hoggets, but in some cases no cropping can be undertaken. Actually the trend has been to replace half-bred and Corriedale sheep with fine-woolled Romneys on this class of country. Today sheep of a distinctive breed number under 250,000 compared with over 3 million crossbreds. These quarter million sheep include 150,000 Romneys and 50,000 Southdowns. The number of half-bred sheep in the counties under review is less than 20,000.

Many of the runs and the larger holdings maintain a herd of beef cattle. The surplus cattle are disposed of either as calves or 1 or 2 year old steers and spayed heifers and cull cows, depending on the management and need of the cattle on the properties. Hereford,, Shorthorn, and Polled Angus breeds are favoured.

SUMMARY OF DEVELOPMENT

In less than 100 years vast progress has been made, and today some 2 million lambs are killed annually, representing a four-fold increase in the numbers killed 20 years ago. Carrying capacity and production are still mounting as more and more adequate drainage works are being completed, coupled with the extensive use of lime quarried within the area, and resowing with improved strains of grass and clover seed harvested mainly within the area to which dressings of artificial fertilisers (mainly phosphate) have been applied.

During the year ending January 31, 1948, some 427,744 acres were topdressed as follows:—

	a c r e s
-With lime only	115,989
-With artificial fertiliser only	99,652
With both lime and artificial fertiliser	212,103
TOTAL	427,744

This acreage represents little more than one-third of the area in sown grassland, practically all of which would derive benefit from topdressing, apart from any consideration of the occupied unploughable areas.

The sketches of farm management quoted illustrate the relatively slow changes that occur, even with the progressive farmer, as under the system practised pastures on the majority of ploughable sheep farms are 10 to 20 years old before being reploughed and resown to improved strains. That the improved strains can be relied on to increase carrying capacity and production has been demonstrated by many farmers, and at the Winton Experimental Area 10,000lb. of dry matter per acre has been measured from grass cuttings, a figure which compared favourably with results from the Marton Experimental area in that particular year.

All indications point to a 'steady increase in production for many years to come, as the average farmer in this area is progressive and, above everything else, is one who is not afraid of hard work.