Stock Number Survey

as at 30 June 2020

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Executive Summary

Table 1 Livestock Summary

	30 June 2019 (million)	30 June 2020e (million)	% change
Breeding Ewes	16.85	16.86	+0.1
Hoggets	9.14	8.40	-8.1
Total Sheep	26.82	26.21	-2.3
Estimated Lamb Crop	23.26	22.28	-4.2
Beef Cattle	3.89	3.89	+0.1

e estimate | Source: Beef + Lamb New Zealand Economic Service, Statistics New Zealand

Breeding Ewes +0.1%

For the year to 30 June 2020, New Zealand's breeding ewe flock was unchanged. Regional differences were due to drought, although farmer optimism for good returns held up.

Hoggets -8.1%

Overall, the number of hoggets decreased 8.1 per cent to 8.4 million. This was largely due to decreased numbers in East Coast and Marlborough-Canterbury due to feed shortages from the dry conditions and substitution with dairy winter grazing.

Total Sheep -2.3%

The total number of sheep for the year to 30 June 2020 decreased 2.3 per cent to 26.21 million. This was due to a decrease in hoggets from destocking in response to dry conditions.

Ewe condition

Ewe condition during mating was poor to average due to lower overall feed availability.

Scanning

Ewe pregnancy scanning results were 5-10% lower due to dry conditions and feed shortages. This reduces the potential lambing percentage achievable.

Lamb crop -4.2%

The result of the above factors is a forecast decrease in the lamb crop of 980,000 head (-4.2%) compared with spring 2019. This season fewer ewe hoggets were mated, leading to a lower expected lamb crop from hoggets. Climatic conditions leading into spring, and any adverse weather events may impact this change further.

Beef cattle +0.1%

The number of beef cattle was unchanged at an estimated 3.89 million at 30 June 2020. More older cattle were retained due to the COVID-19 lockdown preventing processing, but fewer calves were purchased due to weak meat prices.

Introduction

Livestock numbers as at 30 June 2020

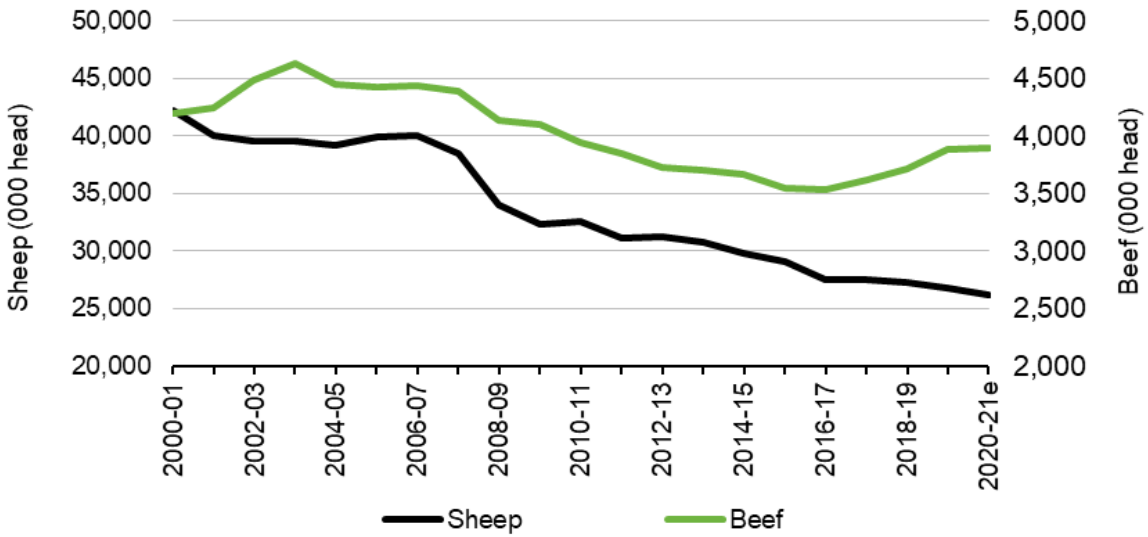
This paper summarises the results from a survey carried out to estimate the number of sheep and beef cattle on hand at 30 June 2020. This survey uses the Sheep and Beef Farm Survey framework, which is a statistically representative sample of over 500 commercial sheep and beef farms. Economic Service Managers based throughout New Zealand collect information from farms at various points during the year.

The livestock on hand at 30 June 2020 described in this report are the productive base for meat and wool production in the 2020-21 farming and meat export years.

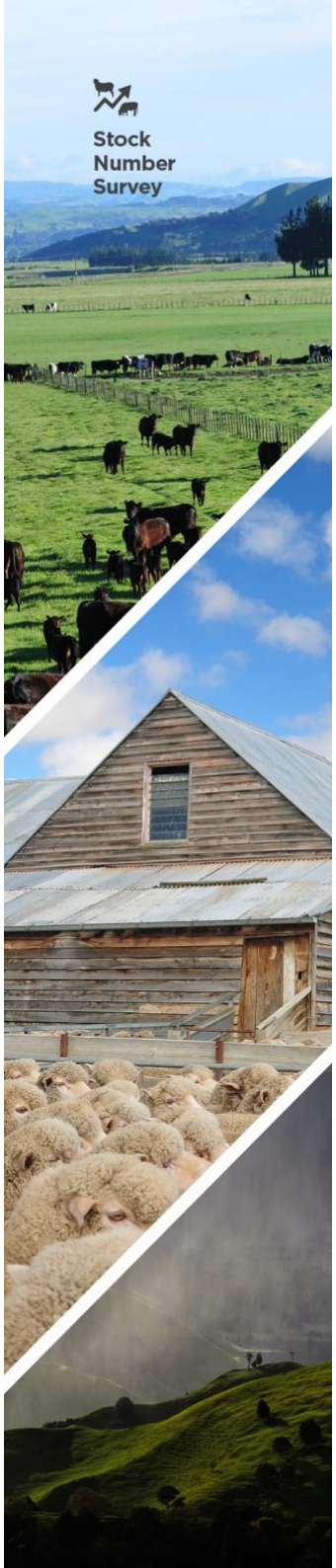
In addition to the survey results, other information was used to estimate how changes in the size of the dairy herd impact on sheep and beef cattle numbers.

The results of the survey are reported by region for sheep in Table 2 and for beef cattle in Table 5. Longer-term time-series of livestock numbers are shown at the national level in Table 3 for sheep and in Table 4 for beef cattle.

Figure 1 Livestock Numbers



Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand



Climatic Conditions

2019-20 Summer Summary

Rainfall

Prolonged dry conditions in the North Island resulted in rainfall totals that were mostly below normal (50-79% of the summer normal) or well below normal (<50% of the summer normal) with the latter observed largely in Auckland, Northland, parts of Waikato and the coast southeast of Napier. In the South Island, periods of heavy rain during December and February resulted in above normal (120-149% of the summer normal) to well above normal (>149% of the summer normal) summer rainfall totals across much of Southland, Otago and southern West Coast. The northern portion of the South Island mostly received near normal (80-119% of the summer normal) rainfall except for coastal Canterbury between Christchurch and Kaikoura where rainfall was below normal.

Temperature

Summer temperatures were near average (-0.50°C to +0.50°C of the summer average) for much of the South Island with a large portion of Canterbury and parts of Otago and Tasman experiencing above average temperatures (+0.51°C to +1.20°C of the summer average). Above average temperatures also occurred for most of the North Island although near average temperatures were experienced along most of the west coast and in parts of Gisborne and Waikato.

Soil Moisture

At the end of summer, soil moisture levels were below or well below normal across most of the North Island, the upper South Island, and much of Canterbury. Soil moisture levels were wetter than normal for parts of the West Coast, Otago, and Southland but otherwise near normal for the lower South Island.

Meteorological drought developed for parts of the country during January and became more extensive during February. According to NIWA's New Zealand Drought Index, by the end of summer, meteorological drought was present across much of the North Island (excluding southeast North Island and coastal Taranaki) with severe drought widespread across Northland, Auckland, Great Barrier Island, and Waikato. Drought conditions were also present in several northern South Island locations, including parts of Tasman, northern Canterbury, and much of Marlborough.

2020 Autumn Summary

Rainfall

Rainfall totals were below normal (50-79% of the autumn normal) or well below normal (<50 % of the autumn normal) in parts of nearly every New Zealand region. The exceptions were West Coast, Marlborough, Wellington and Wairarapa where near normal (80-119% of the autumn normal) rainfall totals were observed.

Temperature

Temperatures across the country were mostly near average (within 0.50°C of the autumn average).

Soil Moisture

An ongoing lack of rainfall throughout autumn resulted in below normal soil moisture for many parts of the country. Meteorological drought receded significantly during March, but remained in place across parts of Northland, Auckland, and far northern Waikato in early April, with severe meteorological drought across the Coromandel Peninsula. By the end of autumn 2020, soils were drier than normal for many northern, central and eastern parts of the North Island, as well as eastern, inland and southern parts of the South Island. Soil moisture was generally near normal for remaining parts of the country.

Source: National Institute of Water and Atmospheric Research Ltd (NIWA)

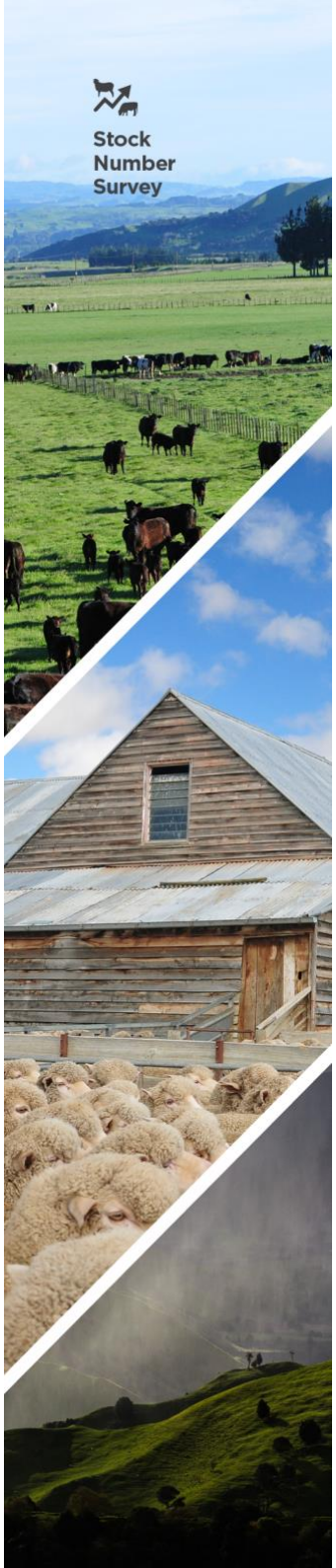


Figure 2 Soil Moisture Deficit - March

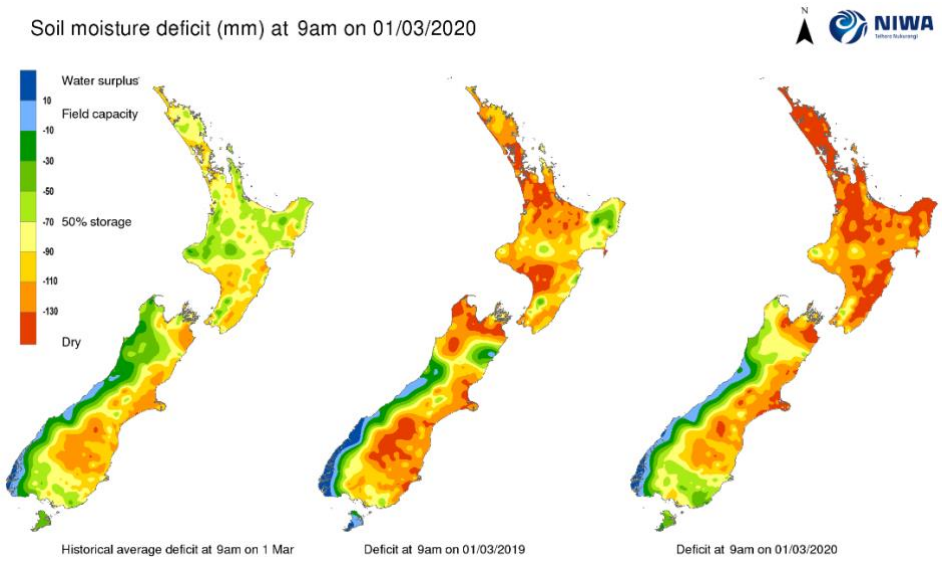
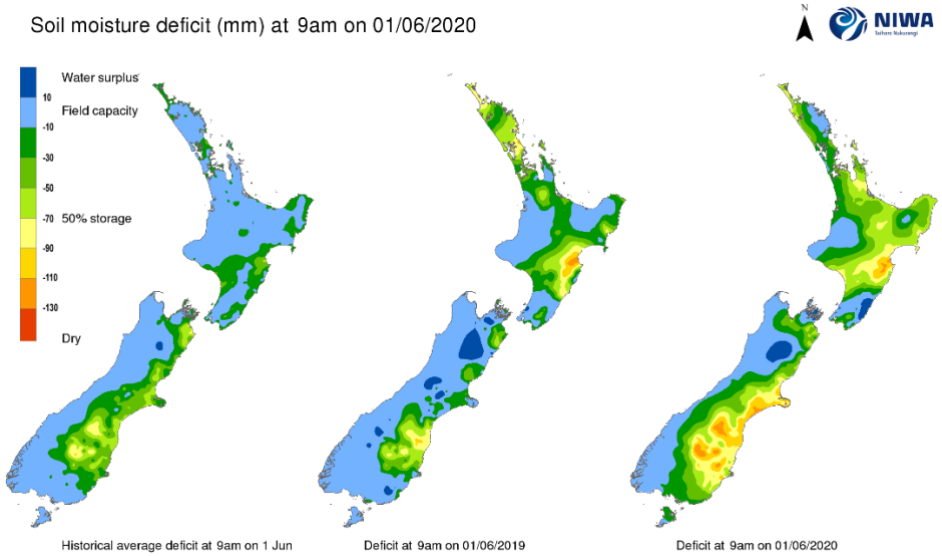
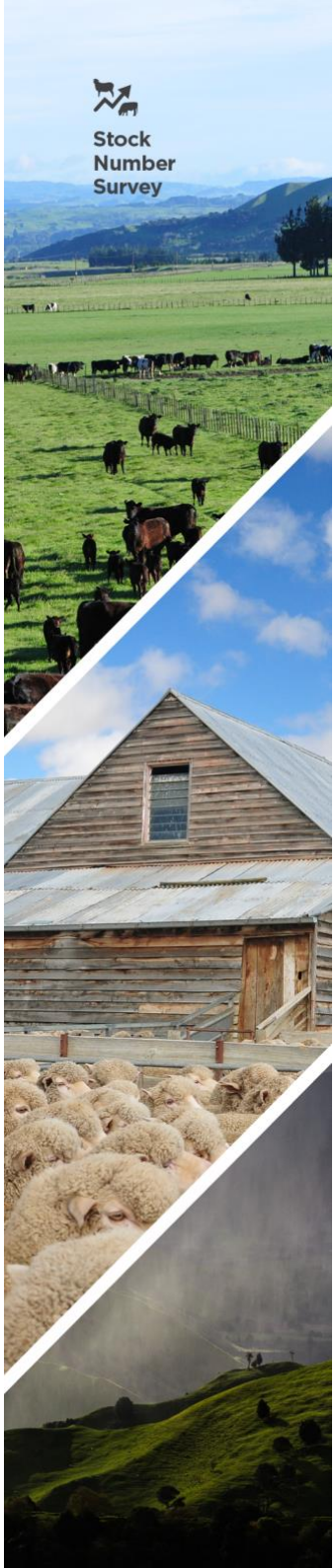


Figure 3 Soil Moisture Deficit - June



Source: National Institute of Water and Atmospheric Research Ltd (NIWA)



Sheep

Total Sheep -2.3%

Overall, the total number of sheep decreased an estimated 2.3 per cent (616,000 head) on the previous year to 26.21 million at 30 June 2020.

Region Numbers

North Island -3.5%

The total number of sheep decreased 3.5 per cent (466,000 head) to 12.70 million at 30 June 2020.

Northland Waikato-BoP

Total sheep decreased 0.5 per cent to 3.24 million head, due to fewer hoggets on hand at balance date. Fewer lambs and low feed levels forced farmers to destock replacement hoggets, and instead retain capital breeding stock. Processor prices for lamb and ewes remained strong, especially before Christmas. COVID-19 slowed processors with physical distancing rules, and prices declined but picked up towards the end of the season. Store lamb markets resumed buoyancy when sale yards resumed.

East Coast

Total sheep declined by 5.8 per cent to 6.47 million. Drought and lack of dry matter growth prevented many finishing operations completing lamb trades. Farm Class 5 finishing farmers closed with 36 per cent fewer trade hoggets than 2019, and for Farm Class 4 hill country farmers had 20 per cent fewer.

Taranaki-Manawatu

Total sheep decreased 2.3 per cent to 2.99 million, with declines across all sheep classes. The number of ewes declined due to a drought in late summer and early autumn, a decline in mutton and lamb prices, and a struggling wool industry.

South Island -1.1%

The total number of sheep decreased by 1.1 per cent (150,000 head) – to 13.51 million at 30 June 2020.

Marlborough-Canterbury

Total sheep were down 3.7 per cent, largely due to reductions in breeding and trading hoggets. Fewer replacements were retained as ewe numbers settled and lambs were processed before winter due to feed supply shortages.

Otago-Southland

Total sheep increased 0.7 per cent to 7.79 million head, driven by the increase in breeding ewes on hand. There was a small increase in unmated ewes on hand – cull ewes not sent for processing. Increased numbers of ewes more than offset the decrease in the number of hoggets on hand. Fewer trade hoggets will likely translate to fewer available for processing in the fourth quarter.

Breeding ewes +0.1%

The number of breeding ewes, at 16.85 million, was unchanged (+0.1%) compared with the previous June.

North Island -1.2%

In the North Island, the number of breeding ewes decreased 1.2 per cent to 7.96 million.

Northland-Waikato-Bay of Plenty increased 1.6 per cent to 2.12 million, the first increase in 15 years, despite prolonged drought, due to optimism around sheep meat returns, especially on hard hill and hill country farms. The number of hoggets mated decreased 2.8 per cent due to low feed levels and fewer hoggets achieving optimum liveweights for mating. Around 35 per cent of ewe hoggets were mated.

East Coast decreased 2.7 per cent to 3.89 million. This was driven by a period of wide-ranging drought, which persisted into early June 2020 for central areas of the region. The greatest decline in the number of ewes occurred on finishing properties, which tend to be in the areas most affected by drought.

Taranaki-Manawatu decreased 1.5 per cent to 1.95 million.

South Island +1.2%

In the South Island, the number of breeding ewes increased 1.2 per cent to 8.89 million.

Marlborough-Canterbury increased 1.6 per cent to 3.14 million, as extra hoggets carried in 2019 entered breeding flocks. Returns for breeding-focused farms were dented by falls in store lamb prices during COVID-19 restrictions, but farmer confidence in sheep meat was strong. Although below 2019 and 2018, lamb and mutton prices remained historically strong.

Otago-Southland increased 1.1 per cent to 5.51 million. Breeding ewes increased in all farm classes except for South Island High Country (Farm Class 1), which moved to higher ratios of cattle. Feed conditions were tighter than usual in Southland as pasture growth rates were below normal. Stock was held on farm for longer into autumn as processing was severely reduced for weeks due to COVID-19 physical distancing requirements. Farmers offloaded as much trading stock as possible before 30 June.

Hoggets -8.1%

The total number of hoggets at 30 June 2020 is estimated at 8.40 million, down 8.1 per cent.

North Island -8.6%

The total number of hoggets decreased 8.6 per cent (410,000 head) to 4.36 million at 30 June 2020.

Northland Waikato-BoP

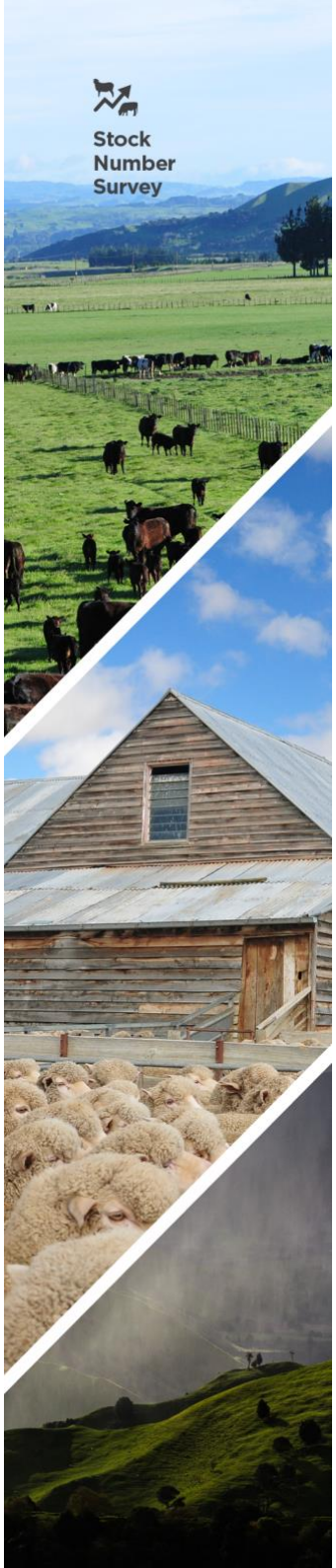
In Northland-Waikato-Bay of Plenty, a decline in the spring 2019 lamb crop of 134,000 head contributed to an overall decline of 5.2 per cent in the number of hoggets on hand at balance date. A tough summer and autumn also resulted in traditional winter lamb finishers not purchasing their usual quota of store lambs. Future stocking will depend on winter feed levels. The number of hoggets declined 5.3 per cent, with a decrease in ewe hoggets by 7.0 per cent and trade hoggets by 2.2 per cent.

East Coast

In East Coast, the number of hoggets fell 11.6 per cent to 2.38 million.

Taranaki-Manawatu

In Taranaki-Manawatu, the percentage of ewe hoggets mated was down 5 percentage points to 32 per cent, due to the drought during late summer and early autumn. Ewe hoggets were reported to not be at acceptable weights for mating.



South Island -7.5%

The total number of hoggets decreased 7.5 per cent (326,000 head) to 4.04 million at 30 June 2020.

Marlborough-Canterbury

Marlborough-Canterbury decreased 13.2 per cent to 2.05 million.

Marlborough was particularly affected by the very dry summer and autumn. Trading hoggets were limited by feed, typically grazed on vineyards during the winter months. Mixed cropping farms also reduced trading hoggets due to low forage crop yields and substitution with dairy stock requiring winter grazing.

Otago-Southland

Otago-Southland decreased 0.7 per cent to 1.99 million.

Increases occurred in both regions with a slightly greater increase in Southland (+1.6%) than Otago (+0.7%). The increase in ewe hoggets retained for breeding in Southland in 2019 helped bolster the number of ewes. More ewe hoggets were retained in Otago, which suggested lower ewe culling rates than 2019.

Ewe hoggets retained for breeding were the same as 2019 in Southland (+0.3%) but declined 1.4 per cent in Otago. The number of other hoggets held over balance date was fewer in Southland but more in Otago. Total hoggets decreased 1.5 per cent in Southland, with fewer trade hoggets; and were the same as 2019 in Otago. An increase in the number of trade hoggets offset the reduction in hoggets kept for breeding. In general, more hoggets were present on hill country farms, and there were fewer on the plains (Farm Class 7) and in the high country (Farm Class 1) in both regions.

The proportion of ewe hoggets mated increased slightly in Southland but was lower in Otago. Not mating hoggets was a strategy actively used by a large proportion of farms to conserve winter and spring feed supplies, particularly as there were more ewes on hand this season.

Outlook for Lambing 2020

Ewe condition

Overall, the body condition of ewes during mating was poor to average due to lower overall feed availability.

Northland Waikato-BoP

The outlook for lambing remained positive even with scanning slightly behind 2019. Farmers saw a benefit in fewer ewes with multiple lambs. Improved lamb survival is expected. The region is still recovering after the drought so feed requirement pressure will be lower. Sleepy sickness for ewes in regions recovering from drought is a concern. June pasture growing conditions were kind and farmers hope for pasture covers to lift and an absence of spring storms.

East Coast

Lambing in spring 2020 will be lower as 2019 was close to a record. This year, ewe condition was average, with many ewes below optimal condition due to prolonged drought. Shearing was delayed due to cost, lack of wool revenue, and additional feed requirements of a shorn animal, which may cause issues at lambing with cast sheep, ewes not seeking shelter with their lambs in adverse weather conditions and lambs struggling to locate nipples for suckling. Pregnant ewes in suboptimal condition, on lower than desired pasture covers were more likely to suffer from metabolic diseases such as hypocalcaemia, hypomagnesaemia and ketosis. Weather conditions up to and during lambing will be pivotal in the outcome of this year's lamb crop.

Taranaki-Manawatu

Lambing will be similar to last year due to the positive weather outlook. Most of the region recovered from a dry autumn with favourable weather during the early winter, resulting in improved pasture covers. Parts of Rangitikei had lower than normal feed levels and water levels in dams were still down for the time of year. Nitrogen-based fertilisers were used throughout May and June as the weather was favourable, helping to rebuild winter pasture covers.

Marlborough-Canterbury

Farmers anticipated a slightly lower lambing percentage than 2019, due to lower scanning results. Better survival due to fewer multiples may mitigate this somewhat but prolonged lambing is expected as some rams were left out for longer. The total lamb crop is expected to be similar or slightly higher than 2019 due to the small increase in ewes.

Otago-Southland

Clutha District enjoyed the best autumn for pasture growth in three years. The previous two seasons were dry, especially late summer and autumn. Good pasture growth resulted in ewes in better condition at mating and early ewe pregnancy scanning results were good. In other parts of the region, ewes maintained well despite the challenges of having higher stocking rates for longer into the autumn. Winter feed crops did not yield as well, and were late to establish due to unfavourable spring conditions. However, mild and dry conditions in the first half of winter helped improve feed utilisation. The arrival of colder and wetter weather in July put more pressure on winter feed budgets but replenished soil moisture reserves. Weather conditions at lambing will have the largest impact on the potential lamb crop. The outlook is positive for the region with ewes in reasonable to good condition. There were more ewes on hand, which will offset the decrease in lambs born to hoggets.

Scanning

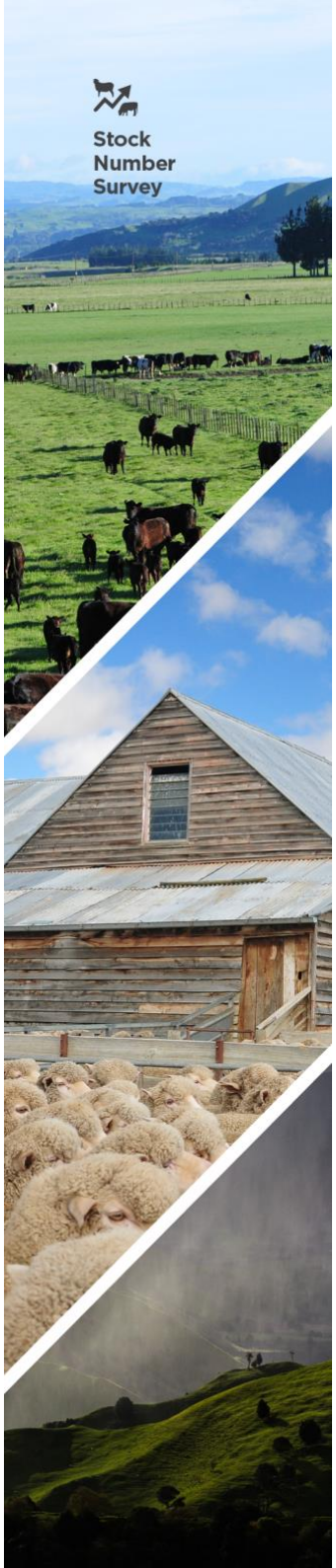
Scanning results were 5-10% lower due to dry conditions and feed shortages.

Northland Waikato-BoP

Overall, ewe pregnancy scanning results were described as back on the previous year by 5–10%. The drought caused ewes to be in mixed condition when mated so a drop in scanning percentage was expected. Farmers and vets were pleasantly surprised with the results.

East Coast

Scanning results were reported down by 15-30 per cent, with a wide range of results. Farmers who destocked early and had the ability to maintain or flush ewes over mating with grains or fodder crops and maintained typical



scanning percentages. Farmers who were slow or unwilling to react to the dry conditions suffered scanning results down to 120 per cent. Most farmers were relieved with their own results as the reduction was largely attributed to fewer multiple foetuses, with the barren rate in the ewes only up slightly on previous years.
Two-tooth ewes had the biggest check in conception rates, with increased dry rates and reduced multiples for most farmers when compared to the mixed age ewes. Some attributed this to facial eczema exposure as lambs.

Taranaki-Manawatu

Early ewe pregnancy scanning results across the region were down 5-10% due to poor grass growth and ewe body condition at mating caused by drought from February to April. Main flocks scanned slightly down (5-10%) on 2019. Farmers reported lower overall scanning percentages with fewer twin and triplet-bearing ewes, but fewer dry ewes. COVID-19 caused scanning delays.

Marlborough-Canterbury

Scanning reports were normal to 10 percentage points lower, depending on ewe supplementation pre-mating. Strategic grain use helped maintain scanning results in drier districts (Marlborough, North Canterbury, Ashburton). Many farmers reported fewer triplets than usual but near normal rates of dry ewes.

Farmers slow to react to feed shortages for ewes reported drops of up to 20%. The proportion of hoggets mated appeared similar to last year. Ewe hoggets were down, particularly in Marlborough and North Canterbury where fewer hoggets reached mating weight in dry conditions. Many lighter ewe hoggets were processed to reduce winter feed demand, although some farmers opted to send ewe hoggets to winter grazing.

Otago-Southland

Scanning began in July. Early results were promising for Clutha District and satisfactory from other parts.

Lamb crop -4.2%

The North Island lamb crop is estimated to decrease 9.5 per cent to 10.28 million head, largely driven by 42 per cent fewer lambs from hoggets.

The South Island lamb crop is estimated to increase by 0.8 per cent to 12.00 million head, also due to 8 per cent fewer lambs from hoggets.

In South Island regions, spring feed will be reliant on climatic conditions, with spring lambing conditions being a key factor determining the final lamb crop, which will be reviewed in November when Beef + Lamb New Zealand's Lamb Crop Survey is completed.

With 16.86 million ewes, each one percentage point change in breeding ewe lambing percentage is equivalent to around 170,000 lambs.

Table 3 shows the trend in the numbers of breeding ewes and total sheep.

Table 3 Sheep Numbers at 30 June

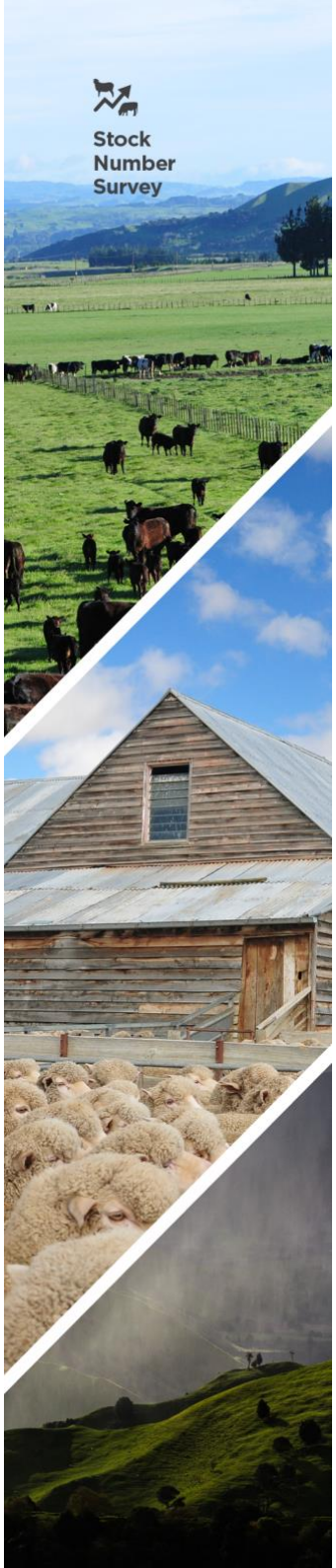
June	Breeding ewes (million)	% change	Total sheep (million)	% change
2010	21.79	-1.7	32.56	+0.6
2011	20.48	-6.0	31.13	-4.4
2012	20.41	-0.4	31.26	+0.4
2013	20.23	-0.9	30.79	-1.5
2014	19.78	-2.2	29.80	-3.2
2015	19.07	-3.6	29.12	-2.3
2016	18.14	-4.9	27.58	-5.3
2017	17.76	-2.1	27.53	-0.2
2018	17.16	-3.3	27.30	-0.8
2019	16.85	-1.8	26.82	-1.7
2020e	16.86	+0.1	26.21	-2.3

e estimate | Source: Beef + Lamb New Zealand Economic Service, Statistics New Zealand

Table 2 Sheep Numbers at 30 June

	Actual 2018			Actual 2019			Estimate 2020			% changes 2020 on 2019		
	Ewes to Ram (m)	Total Hoggets (m)	Total Sheep (m)	Ewes to Ram (m)	Total Hoggets (m)	Total Sheep (m)	Ewes to Ram (m)	Total Hoggets (m)	Total Sheep (m)	Ewes to Ram (%)	Total Hoggets (%)	Total Sheep (%)
Northland-Waikato-BoP	2.124	1.127	3.356	2.088	1.068	3.257	2.121	1.011	3.240	+1.6	-5.3	-0.5
East Coast	4.213	2.681	7.051	3.998	2.690	6.859	3.890	2.378	6.468	-2.7	-11.6	-5.7
Taranaki-Manawatu	2.016	1.092	3.178	1.975	1.012	3.051	1.953	0.970	2.993	-1.1	-4.1	-1.9
North Island	**8.353**	**4.900**	**13.584**	**8.061**	**4.769**	**13.167**	**7.964**	**4.359**	**12.701**	**-1.2**	**-8.6**	**-3.5**
Marlborough-Canterbury	3.218	2.292	5.750	3.331	2.365	5.921	3.378	2.053	5.714	+1.4	-13.2	-3.5
Otago	3.068	1.209	4.474	3.023	1.190	4.408	3.044	1.188	4.434	+0.7	-0.2	+0.6
Southland	2.524	0.834	3.488	2.430	0.812	3.327	2.469	0.800	3.357	+1.6	-1.5	+0.9
South Island	**8.809**	**4.335**	**13.711**	**8.784**	**4.367**	**13.655**	**8.891**	**4.041**	**13.505**	**+1.2**	**-7.5**	**-1.1**
NEW ZEALAND	**17.162**	**9.235**	**27.296**	**16.845**	**9.136**	**26.822**	**16.855**	**8.400**	**26.206**	**+0.1**	**-8.1**	**-2.3**

Source: Beef + Lamb New Zealand Economic Service, Statistics New Zealand



Beef Cattle

Total Beef Cattle

New Zealand +0.1%

North Island -1.0%

Northland-Waikato-Bay of Plenty

The number of beef cattle increased 2.2 per cent to 1.31 million head with a 7.4 per cent increase in weaner cattle. Weaner cattle on hard hill country farms increased 11.2 per cent, due to the COVID-19 level 4 lockdown period, which resulted in annual beef weaner cattle fairs being delayed or cancelled, and left private paddock sales as the only way to sell. The total number of beef cattle on these farms increased 4.7 per cent. There was a 9.6 per cent increase in weaner beef cattle and a 1.6 per cent increase in the total beef cattle on hill country farms, which paid less for weaner cattle than in 2019. Weaner cattle declined 12.2 per cent on intensive finishing farms, as the lack of weaner cattle sales and drought conditions made restocking difficult. The number of older trade cattle was up 13.1 per cent, due to limited processing capacity after Christmas, when wait-times for processing were up to six weeks. Total beef cattle on these farms increased 2.8 per cent, and sellers of older cattle had time to restore pasture levels, preferring to restock with older cattle for earlier finishing and selling.

East Coast

Total weaner cattle declined by 14.3 per cent compared to a year earlier, due to reduced demand from finishers as the drought impacted pasture growth rates. The total number of beef cattle declined 5.5 per cent as older cattle that would normally be sent to processing and replaced with weaners were held over balance date due to their lighter condition. Bovine tuberculosis caused issues for farmers intending to destock as animals had to be tested before they were cleared to move.

Taranaki-Manawatu

Total beef cattle were similar to 2019, at 455,000. Weaner calves on hand increased 4.2 per cent due to the decline in breeding cattle, as farmers chose to keep the number of stock constant, so more weaners were on hand as at 30 June. The number of other trading cattle was down 3.4 per cent.

South Island +2.5

Marlborough-Canterbury

The total number of beef cattle rose 5.3 per cent as extra finishing cattle compensated for reduced breeding stock and replaced sheep on some farms. There were fewer cattle on hill country farms in drier North Canterbury/Marlborough districts, and more finishing cattle on lower country and the south.

Some farmers held finishing cattle when prices fell under the COVID-19 lockdown. Some stock were to be sold shortly after this stock number survey closed due to winter feed pressures.

Dairy grazers on sheep and beef farms remained steady although breeding finishing farms favoured lighter dairy heifers ahead of heavier cows. Some mixed cropping farms opted for the certainty of winter cow grazing income in place of economic risks in finishing lambs.

Otago-Southland

Total beef cattle decreased 2.0 per cent to 450,000. In Otago, the total number of beef cattle increased 4.1 per cent but in Southland decreased 10.4 per cent. All age groups of beef cattle in Otago increased, especially breeding cows. In Southland, all age groups decreased, especially weaner calves (-15.9%), heavily influenced by Farm Class 7.

Fewer weaners were bought in response to processing backlogs of older cattle in April, which is the traditional time to buy weaner cattle. Heavy stock did not sell, so fewer calves were bought, and the reduced feed demand helped offset low pasture growth. Farms considered buying more stock in the spring yearling market. By 30 June, the number of heavy cattle fell below 2019 levels as feed was limited and beef prices were not strong.

Cows Mated

New Zealand -6.3%

North Island -7.9%

Northland-Waikato-Bay of Plenty

Breeding cows declined 6.3 per cent to 260,000 head. The number on Farm Class 3 hard hill country farms declined 4.5 per cent, with west coast Waikato farms hit hard by drought, while the number on Farm Class 4 hill country farms, which typically fluctuate, declined 6.2 per cent. On Farm Class 4 farms, there was an increase in the number of dairy grazers and the number of weaner cattle on hand. The breeding herd decline concerned farmers as integration with the dairy industry for dairy beef stock will be needed to maintain future beef supply.

East Coast

Breeding cows declined by 11.3 per cent, a loss of 34,000 head, due to poor pasture growth and outbreaks of bovine tuberculosis and M. bovis. Fewer rising two-year-old (“R2”) heifers were mated.

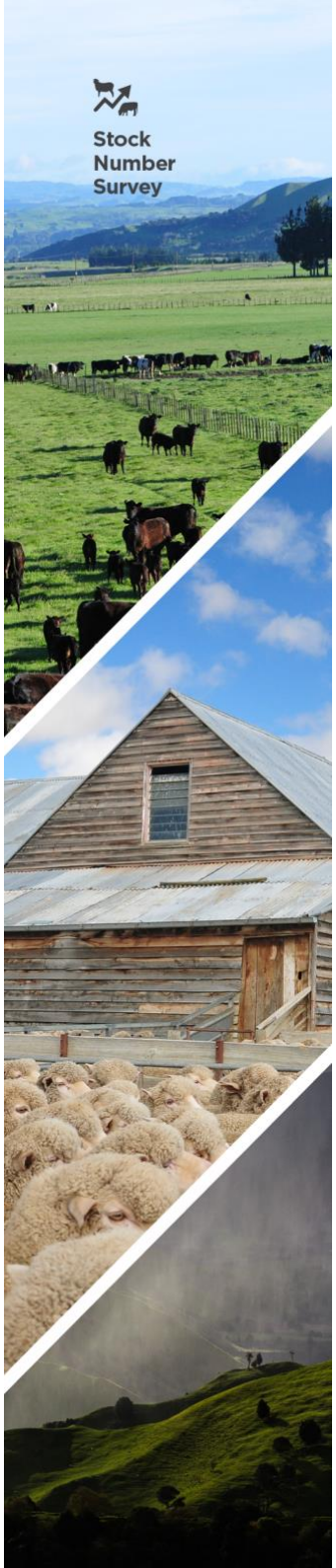
Taranaki-Manawatu

Breeding cows declined 3.5 per cent to 120,000 head, due to drought, particularly on hard hill country farms. There was a slight increase in the proportion of R2 heifers mated compared to 2019, due to the favourable 2019 winter and spring that led to adequate pasture covers for mating. Some farmers culled their older cattle, leaving younger in-calf heifers.

South Island -3.4%

Marlborough-Canterbury

Breeding cows and mated heifers fell 7.8% due to reduced numbers on hill country and breeding finishing farms, especially as Marlborough and coastal North Canterbury hill country farmers responded to the summer/autumn dry. In some cases, trading stock replaced breeding cattle to boost flexibility under uncertain climatic conditions and to take advantage of cheap beef weaners.



Otago-Southland

Beef breeding cows increased 2.4 per cent to 168,000 in Otago-Southland, continuing a trend supported by good beef returns until COVID-19 caused disruption. The number of cows increased in the hill and high country and decreased on the plains (Farm Class 7). Prices for weaner calves substantially fell in autumn, which will affect the number beef breeding cows in future.

Outlook for 2020 Calving

Calving percentages are expected to be lower than 2019 for most regions.

Northland-Waikato-Bay of Plenty

Fewer calves are expected, driven by the reduction in the number of breeding cows mated, and an 8.1 per cent decline in the number of rising two-year-old ("R2") heifers mated to 28.2 per cent.

Feed conditions varied across the region and farmers hoped the winter continued to be mild.

East Coast

The outlook for calving is poor, with similar points as the ewe flock of lower than optimal animal condition exposing these animals to the same metabolic issues as the ewes, and tight pasture covers providing less than optimal feed intake. It is these lower pasture covers that will impact the cows as they compete with ewes on reduced pasture residuals. Farmers will have to supplementary and/or separately feed these animals until surplus pasture becomes available later in spring.

Taranaki-Manawatu

With excellent weather conditions during mating in October-December 2019, high in-calf rates were expected, but did not materialise. Several veterinary practices reported pregnancy-tested empty results were on par with last year at approximately 10 per cent. The drought in late summer/early autumn affected breeding cow condition and farmers culled more than normal to preserve feed levels. Slightly fewer calves are expected to be born across the region this spring given the 3.8 per cent decline in the number of breeding cows and heifers.

Marlborough-Canterbury

Fewer calves are expected than 2019 due to reductions in the breeding herd and disappointing reproductive rates. Beef cow in-calf rates were normal to lower than normal due to slow spring growth and poorer cow condition at mating. Some farms with high non-pregnant rates also noted health issues such as BVD. Fewer R1 heifers were mated, further reducing potential calves for spring 2020. Lower liveweights at mating following cold wet spring conditions led farmers to avoid mating small animals; lower in-calf rates were common where light heifers were mated.

Otago and Southland

Breeding cows were largely located in the hills. A favourable season in the high country allowed good feed levels available. Cows were generally in good condition although there were some reports of higher than usual scanned empties. With an increase in breeding cows, an increase in the number of calves born this spring is expected.

Table 5 Beef Cattle at 30 June

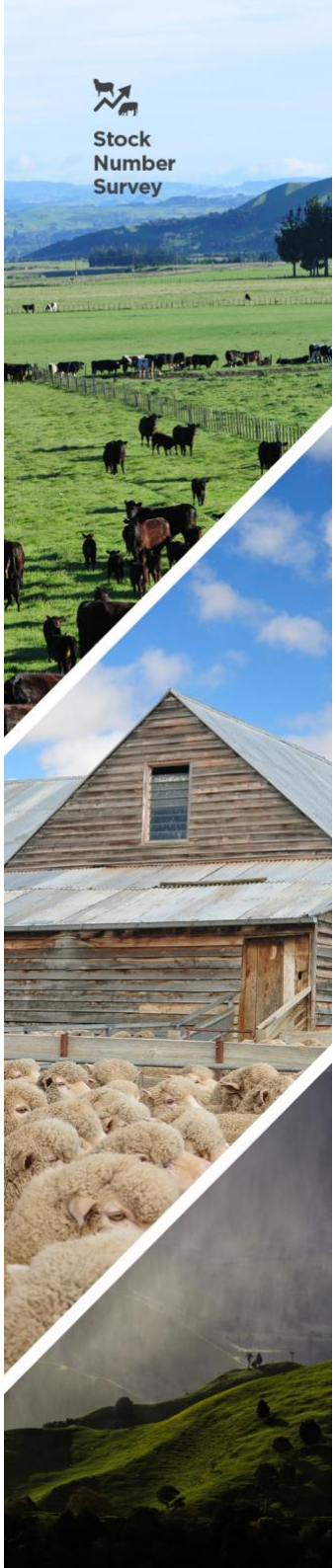
June	Breeding cows (million)	% change	Total beef cattle (million)	% change
2010	1.12	+2.0	3.95	-3.7
2011	1.05	-5.8	3.85	-2.6
2012	1.06	+0.7	3.73	-2.9
2013	1.02	-3.8	3.70	-1.0
2014	1.01	-0.7	3.67	-0.8
2015	0.98	-3.0	3.55	-3.3
2016	0.95	-2.9	3.53	-0.4
2017	0.98	+2.4	3.62	+2.4
2018	1.03	+5.4	3.72	+2.9
2019	1.10	+7.3	3.89	+4.5
2020e	1.04	-6.2	3.89	+0.1

e estimate | Source: Beef + Lamb New Zealand Economic Service, Statistics New Zealand

Table 4 Beef Cattle Numbers at 30 June

	Actual 2018			Actual 2019			Estimate 2020			% changes 20120 on 2019		
	Breeding Cows/Heifers (m)	Total Weaners (m)	Total Beef (m)	Breeding Cows/Heifers (m)	Total Weaners (m)	Total Beef (m)	Breeding Cows/Heifers (m)	Total Weaners (m)	Total Beef (m)	Breeding Cows/Heifers (%)	Total Weaners (%)	Total Beef (%)
Northland-Waikato-BoP	0.266	0.416	1.253	0.277	0.433	1.277	0.260	0.465	1.305	-6.3	+7.4	+2.2
East Coast	0.282	0.275	0.934	0.300	0.285	0.972	0.266	0.244	0.918	-11.3	-14.3	-5.5
Taranaki-Manawatu	0.123	0.131	0.434	0.125	0.154	0.459	0.121	0.162	0.458	-3.4	+4.9	-0.1
North Island	**0.670**	**0.822**	**2.620**	**0.702**	**0.872**	**2.707**	**0.646**	**0.871**	**2.681**	**-7.9**	**-0.1**	**-1.0**
Marlborough-Canterbury	0.209	0.216	0.683	0.239	0.236	0.724	0.221	0.249	0.762	-7.6	+5.7	+5.3
Otago	0.095	0.084	0.245	0.102	0.088	0.267	0.107	0.091	0.278	+5.3	+3.6	+4.1
Southland	0.055	0.071	0.172	0.062	0.072	0.192	0.061	0.060	0.172	-1.6	-15.8	-10.4
South Island	**0.359**	**0.370**	**1.101**	**0.403**	**0.395**	**1.183**	**0.389**	**0.400**	**1.212**	**-3.4**	**+1.3**	**+2.5**
NEW ZEALAND	**1.029**	**1.193**	**3.721**	**1.105**	**1.267**	**3.890**	**1.035**	**1.271**	**3.894**	**-6.3**	**+0.3**	**+0.1**

Source: Beef + Lamb New Zealand Economic Service, Statistics New Zealand



General Comment

Drought caused higher supplementary feed utilisation, disruptions

Northland-Waikato-Bay of Plenty

Prior to Christmas 2019, pasture condition and feed supplies were good, however below average rainfall and high temperatures led to a prolonged drought.

After Christmas, cattle processing slowed with the price dropping by April. Drought conditions persisted, making it difficult to sell animals on the store market. Stock condition declined. Some farmers held stock longer waiting to reach appropriate weights for processing, while others destocked at lighter weights.

There was less facial eczema in ewes, worm burden was minimal, and fly strike was less of an issue.

While pregnancy scanning indicated conception rates were 5-10 per cent lower than in 2019, this was considered positively as an opportunity for better survival.

Reasonable rainfall in June, and soil temperatures above 10°C, helped some areas recover. Pasture levels improved but a lot of supplementary feed was fed.

East Coast

There was ample rainfall and exceptional growing conditions in the previous two summers (2017-18 and 2018-19). The surplus feed grown in those two summers provided farmers with the feed and confidence to carry increasingly higher stocking rates over the winter. Stocking rates, which improved by almost 10 per cent during this time, over-corrected in the drought.

Sheep and beef farms emerged from winter 2019 with livestock in good condition, pastures short but growing well, and close to ideal growing conditions. The lambing percentage was close to record, boosting feed demand.

November 2019 was the first of seven months of below-average rainfall, so pasture levels were well below ideal when winter 2020 started, and livestock were in sub-optimal physical condition. Although the drought broke in June, farmers still had to feed their remaining stock for the rest of the winter and into early spring and supplementary feed was increasingly scarce and expensive. In July 2020, underfoot conditions were wet and slippery, making feeding more dangerous and more destructive to the environment. Feed utilisation percentage plummets in conditions such as these, and farmers must markedly increase feed volumes to ensure livestock feed demand is met.

Fertiliser with a nitrogen component was applied to boost pasture covers on many farms.

Farmer resilience is under pressure, with an increase in mental health issues.

Taranaki-Manawatu

Winter and spring of 2019 were very mild, which improved feed levels. There were no major storms, and survivability at lambing was good with minimal losses reported.

Surplus pasture on low-lying farms was converted into baleage and hay.

High temperatures and low rainfall created a late summer and early autumn drought. Rangitikei and northern Wanganui were the worst affected. River flows and dam levels were well below normal. Taranaki and Horowhenua were least affected.

Slow growth rates and insect damage affected summer crops.

Early winter 2020 was mild with warm rains through May and June helping rebuild pasture levels.

Marlborough-Canterbury

Spring was slow to arrive, apart from Nelson, which enjoyed warmer conditions. Lambs grew slowly, were weaned at lighter weights, and fewer than normal were processed at weaning. Further issues arose when processing capacity was reduced under COVID-19 restrictions, and livestock sales ceased. Pasture growth was significant through November/December for most of the region. Spring-sown forage crops established well. Summer forages fared better than winter crops, which were affected by poor growing conditions later in the season.

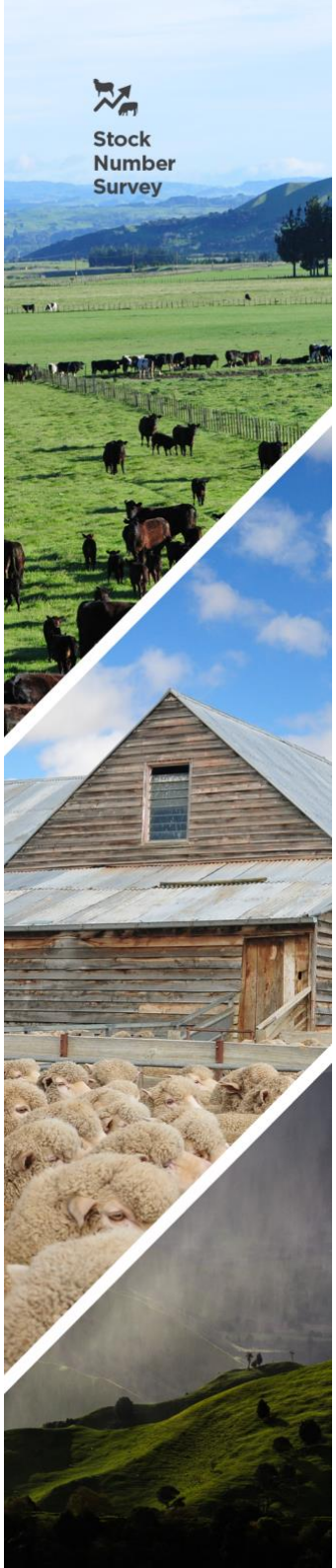
Spring/summer was short as dry conditions set in. Marlborough, and North and Central Canterbury dried out earliest and received little moisture for the remainder of the season. Severely dry conditions occurred in Ashburton and Timaru districts, but growth was better in North Otago. Irrigation buffered production in many districts, however restrictions were applied in Central Canterbury during periods when river flows were low.

The season was ideal for cropping resulting in yields among the best ever, including a world record wheat yield of 17.4 tonnes/ha in Canterbury. Abundant feed grain supplies were sold into drought-affected areas.

Although rain eventually arrived in mid-March for Central/North Canterbury, it did not arrive until May with many farmers continuing to supplement feed. Winter crops did not yield as well as expected due to moisture stress and slow establishment of later-sown feed such as greenfeeds sown after harvest on mixed cropping farms. Feed supplies for winter were further reduced as animals were held on-farm longer than usual in autumn due to COVID-19 limitations.

Lower than budgeted lamb prices led to some farms wintering lambs they would normally sell by April/May. Hill country farms were more likely to have sold slow-growing lambs as store stock over retaining winter stock. Mild winter conditions in May and June, coupled with nitrification following the dry autumn resulted in atypically good recovery growth in North Canterbury/Marlborough. Dry winter weather was welcomed because it resulted in improved forage crop utilisation and minimal weather stress for stock.

Ewe body condition at pregnancy scanning was normal to lighter-than-normal so lamb survival and colostrum output will depend on maintaining or boosting ewe condition to lambing. Some farmers who normally shear Longwool ewes pre-lamb in second shear or eight-month shearing policies are considering foregoing this to save feed and reduce costs given low wool returns.



Otago-Southland

The disruptions to the flow of livestock due to processing restrictions as a result of COVID-19 restrictions on processing had a significant impact on southern South Island farms. The restrictions, which started in late March, coincided with peak processing. Prime stock remained on farms for longer than usual, and the market for store stock almost came to a standstill as sale yards were closed and few paddock sales occurred. The closure of sale yards directly affected autumn weaner sales, so livestock agents had to work particularly hard to connect buyers and sellers.

Some southern farmers felt particularly aggrieved because they felt their farms were being used to hold stock as animals from drought-affected regions further north were transported south for processing.

The delay for processing cattle was considerably longer than that for lamb. Volumes of cull dairy cows increased steadily in the south over recent years with little expansion of processing capacity. Selling prime beef in the autumn was increasingly difficult. For this reason, some farmers decided to exit prime beef production.

Bull beef processing was also affected with many more stock on farm for longer. In some cases, condition deteriorated to such an extent that animals were withdrawn from wait lists, while in other cases stock were sent despite a loss in condition due to feed constraints.

Data from AgResearch Woodlands Research Station near Invercargill showed lower pasture growth rates with the biggest deficit from November to February. Total season pasture dry matter was 17.6% below normal, putting pressure on feed budgets. Some farms reacted quickly and sold store lambs before Christmas.

Clutha District had a much better season for pasture growth than the previous two seasons, which were affected by a late summer and autumn dry spell. Central Otago received timely rainfall through spring and early summer. Overall, a good growth season for the high country.

Autumn and early winter conditions were mild and dry allowing an easy transition on to winter feed and good crop utilisation. Cold and wet conditions with snow falls and frosts were prevalent in early July. Total stock units on farm were lower this winter than 2019, which will alleviate pressures on the feed budget.

COVID-19 limited processing capacity and depressed product demand, wool on hand soared

Northland-Waikato-Bay of Plenty

Before Christmas prices were strong for sheep and beef, but after Christmas demand from China fell and the beef price declined. Slowing processing caused a back log of beef. Lamb prices also declined but remained strong for much of the year, except during the COVID-19 lockdown.

Store livestock were described as good buying throughout the year. Beef weaner cattle fairs that normally occur in March/April were delayed or cancelled, so many weaner cattle were sold privately. Prices were back on previous years. Older trade cattle were in demand, with traders preferring the flexibility to be able to shift them off farm sooner if required.

Store lamb prices were back on 2019; they still averaged near $100/hd for the season. Prices for ewes were strong but back on 2019 with two-tooth ewe prices down around 15 percent and mixed age ewe prices back around 12 percent.

Wool on hand increased significantly, with strong wool return less than the cost of shearing. Wool in storage on farm was 1.6t/farm, three times the amount on hand in 2019.

East Coast

The drought reduced profitability, and for some properties the compounding effects of bovine tuberculosis and M. bovis increased financial issues and physical workloads.

For farmers who destocked in response to drought, the profit and loss statement and cashflow were favourable, at the cost of a depleted balance sheet. For farmers who decided to feed supplements and retain stock, balance sheets were stronger but cashflow was negative and the profit and loss statement impacted by increased feed costs and a reduction in sales.

Unlike the previous two years the market value of the livestock on farm was likely to be worth less than their valuation at closing due to a lack of demand and poorer than average conditions.

Sheep continued to be displaced by cattle as the workload from cattle was lower. The lack of any profitability for wool disappointed farmers and large quantities of wool remained on hand.

Farmers were aware their financiers were looking for capital repayments, but the change of banking policy from interest only will make the ability to cashflow operations much harder.

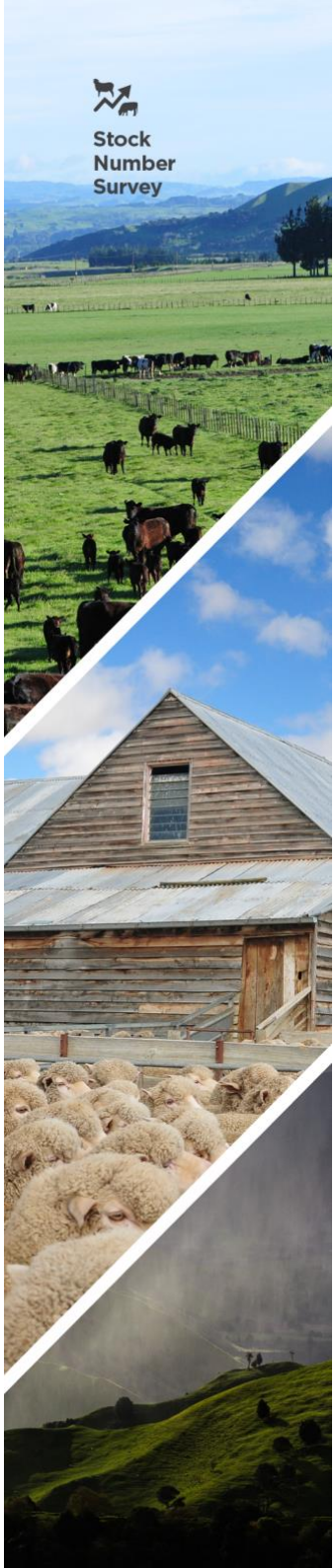
The expected strong spring demand for livestock as farmers restock from the drought may not be reflective of in market conditions for exporters. Certainly, farmers are wary of buying back into a market pressured by plentiful pasture and processor procurement pricing.

Taranaki-Manawatu

Pre-Christmas record prices were received for both sheep and beef, with very favourable weather for farming. After Christmas drought conditions occurred and prime and store prices fell. Prices received for stock were up on historical levels but down on the past two seasons.

The COVID-19 lockdown disrupted processing of prime stock and prevented sale yards for two months. Many farming activities were postponed or had logistical challenges.

The wool industry continued a steady decline over the past 12 months with the cost of shearing now above the wool returns received by farmers. The amount of wool in wool sheds or stores was the highest in past six years and coarse wool prices were at a historical low.



Marlborough-Canterbury

COVID-19 effects on sheep meat and beef prices caused farmers to re-assess target weights and sale timing for finishing stock. Processing delays eroded winter feed supplies, but some farmers chose to add weight to restore per animal returns.

Weaner cattle sales were hit hard by sale cancellations under COVID-19 restrictions. Some weaners traded in electronic sales or privately, while other farmers held weaners on-farm until sales resumed. Prices were below 2019.

Horned cattle traded at a discount across all stock classes, especially dairy-beef calves. Polled breeding bulls earned premiums while horned bulls were harder to sell.

Farmer uncertainty about the profitability of finishing lambs reduced numbers on some mixed cropping farms, with farmers adding winter dairy cows or grazing hoggets from hill country farms with lower than normal pasture cover at the start of winter. Farmers preferred a known return from grazing to relying on uncertain processor prices.

Stocks of crossbred wool on hand increased. Most half-bred wool was sold, and Merino growers reported minimal wool on hand at 30 June.

Farmers expected to apply similar amounts of fertiliser in 2020-21 as they used in 2019-20, although reductions may be necessary if meat prices are lower. Discretionary spending will be heavily influenced by returns for wool, or the ability to sell in the case of poorer quality crossbred lines.

Otago-Southland

Fewer ewes mated and a lower lambing percentage reduced lamb numbers in spring 2019, continuing a trend.

Some storms significantly reduced lamb survival. Tight feed conditions affected lamb growth rates and early-season processing volumes and carcase weights followed similar patterns to the previous season.

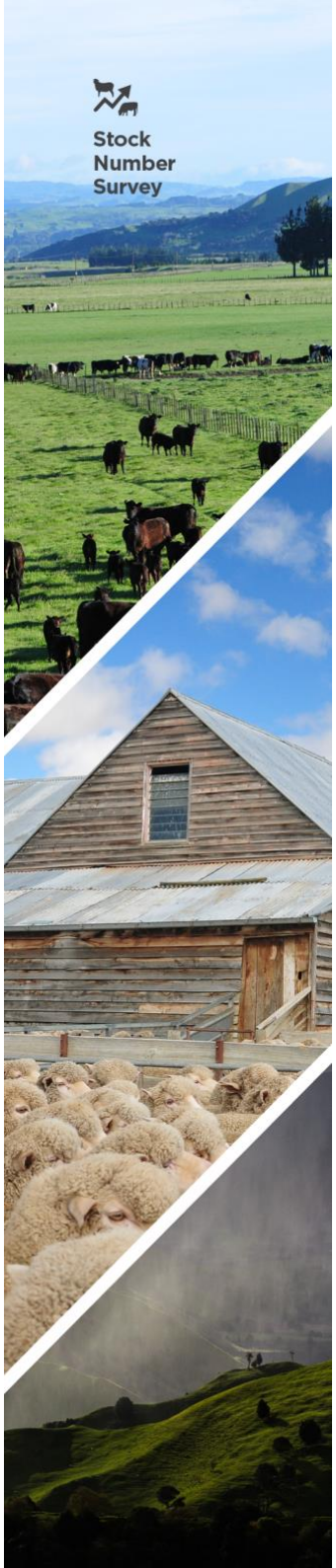
Physical distancing measures were introduced to protect workers from exposure to COVID-19. From late March, lamb processing rates dropped to half, and slowly increased to full capacity again in early May. Lambs continued to grow, and the average carcase weight increased almost one kg per head but reversed once capacity was restored.

Stocks of frozen product built up in New Zealand as international trade flows were disrupted. Store stock offered for sale reduced.

Volumes of wool on hand at 30 June were more than double last season as many farmers refused to accept low prices. Others did not want unsold wool and wrote off shearing as an animal health expense. Most of the 2019-20 season production of fine wool sold before Christmas.

Some farm expenditure was deferred because contractors were not available during lockdown. Application of nitrogenous fertilisers increased to help feed supplies for the higher number of stock that had to be kept for longer in the autumn.

Farmers were cautious about prospects for next season. Conservative budgets were developed and expenditure items were reviewed including fertiliser, animal health, and repairs and maintenance. However positively, it appears that interest rates will remain low.



Land use changes in the North Island driven by forestry conversions

Northland-Waikato-Bay of Plenty

Dairy grazing was still an important component of sheep and beef farms, despite a slightly lower number of dairy cattle grazed. Farmers continued to be selective of sources, with *M. bovis* still a concern.

Sheep milking around Waikato noticeably increased, with new entrants to this market from conversions of dairy farms or dairy farm run-offs. Both Maui and Spring Sheep sought sheep breeders to breed first cross milking ewe replacements.

Trees and plantation pines converted hill country farms, and high prices for productive farmland caused concern for young people looking to enter the industry.

Employment concerns grew as more Pinetree companies chased carbon credit income.

Farmers felt that the government was not listening to their concerns and will not be able to reverse these changes.

East Coast

Pastures planted in pine trees continued to be the dominant form of land use change in eastern North Island as plantings continued for sheep and beef properties purchased for carbon sequestration and forestry. These properties were typically hard hill country, which as sheep and beef farms often supplied finishing properties with stock.

Apple orchard development was a leader for horticultural land use change, particularly within Hawke's Bay.

Squash and pea growers extended their reach into southern and Central Hawke's Bay as more high value crops such as beetroot and onions outbid better-located properties with irrigation.

There was some dairying and dairy support land converted to sheep and beef finishing as environmental compliance or winter grazing dairy cows became untenable. Dairy farms must increase investment in effluent storage and dispersal in order to mitigate their environmental impact and for some dairy farmers this extra capital expenditure is uneconomic.

Taranaki-Manawatu

The major land use change reported was from farmland replaced with commercial or carbon forests. With the government's One Billion Trees programme and carbon farming incentives there were many farms looking to exit or partially diversify into more forested areas. Some farmers looked to plant Manuka rather than pines in order to diversify their businesses, while others let existing Manuka regenerate.

Other dairy grazing remained steady on sheep and beef farms. *M. bovis* was not an issue, with only a few Notices of Direction issued throughout the year.

The venison industry suffered from COVID-19 with the traditional Northern Hemisphere markets declining in sales and prices falling from $10/ kgCW to $6/kgCW. Velvet returns remained strong.

Ongoing changes to environmental regulations were of concern to farmers. Further detail and policy updates are expected later in 2020.

Marlborough-Canterbury

Real estate agents reported minimal enquiries for land for production forestry or carbon farming. This was likely due to long tree rotations in colder environments and distances from port limiting returns compared to warmer northern regions.

Sales of larger rural properties over $10 million declined following limits on overseas investments in land.

Demand for sheep and beef land to lease appeared to increase but it was difficult to secure agreements offering suitable returns for both lessee and lessor.

Otago-Southland

The number of dairy cattle grazing on sheep and beef farms declined. One farm completely converted to grain. Fewer dairy calves were present on sheep and beef farms, albeit off a small sample.

Dairy conversion stopped in this region as a result of changes to environmental regulations. In Southland it will become increasingly difficult for dairy farmers to find grazing on sheep and beef farms if those farms have not been involved in the activity before. A resource consent will be required for land use change that demonstrates no additional impact on the environment from the dairy grazing activity.

Other

Northland-Waikato-Bay of Plenty

Waikato Regional Council's Healthy Rivers-Wai Ora Plan Change was at the forefront for many farmers in the region. After Commissioners recommended changes to the plan, the Environment Court appeal process began with industry groups submitting appeals. A positive move from the Commissioners was to remove the "grandparenting" rule for historic Nitrogen leaching and move towards an input-based restriction.

The balance of the region is preparing for more regulation like the Zero Carbon Act, Essential Freshwater, and farming with consent for stocking rates depending on Land Use Capability (LUC) class. Several farmer-led catchment groups took ownership of their individual catchments by looking at what is required to be done.

Marlborough-Canterbury

Deer numbers dropped by 6 per cent. Farmers who reduced numbers commented that they were considering management changes prior to COVID-19 but the venison price shock confirmed their decision.

Otago-Southland

The recently released NPS Freshwater has major implications for farmers growing winter feed crops on slopes of greater than 10º, which includes nearly all farmers on hills in the southern South Island. A resource consent will be required to continue using this practice, which is currently a cornerstone of winter feed budgets in the south.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