

MANAGING A SHEEP AND BEEF FARM THROUGH DROUGHT – RIDGECLIFF

Hamish and Annabel Crow run 'Ridgecliff' – a 350-hectare (effective) property in Canterbury – share their experience of the 2021 drought.



ABOUT RIDGECLIFF

Ridgecliff is a 350-hectare (effective) sheep and beef breeding and finishing business at Banks Peninsula, Canterbury. About 80 ha of the farm can be cultivated, with the balance of the property being steep hill country which rises to 760 metres above sea level.

Hamish Crow runs the property with help from his wife Annabel. Hamish has a Diploma in Agriculture (Lincoln University) and 25 years' experience farming at Banks Peninsula. Annabel has expertise in agribusiness strategic planning.

The Crow's have been a Beef + Lamb NZ Innovation Farm, a Sheep Profit Partnership Farm with a focus on improving legume content and are in a NZ-wide RMPP Action Group. They also run a farm accommodation business.

CURRENT SITUATION

This is the most significant drought during Hamish's 25 years on the farm. The 80 ha of the farm drilled/cultivated in autumn 2020 only produced four t/DM/ha. Of this, 50 ha was redrilled in autumn 2021 with annual ryegrass and clover. Seed germinated but has minimal growth due to lack of moisture.

Stock water is sourced from springs and is still flowing but has become very slow. For this reason, cattle were not able to be grazed on about 30% of the farm although feed was limited there anyway.

Domestic water has been limited. Mists and cooler weather have seen pressure come off the system, but the Crow's are



KEY POINTS

- It's the third dry autumn in row. The property has had 18 months of below average rainfall.
- Rainfall between 1 January and May 2021 was 124 mm. The property only received 503 mm in 2020.
- Stock units have been dropped from 3500 to 2578 (with 21% of the 2578 off on grazing).
- All trading stock have been sold, with a focus on feeding capital stock better, to keep per head production high.
- Strategic supplementary feeding (during tupping and late lactation) has been used to protect future income.
- Weekly feed budgets are done to help with farm management and decide which livestock will be sold next.
- If rain arrives, ewes will continue to be mobbed up and fed on a sacrifice block, to allow pastures to grow during any recovery.
- Find off-farm grazing as close as possible and with a trusted business. Stock losing weight away on grazing is disappointing and counterproductive.
- Seeing well-fed animals is important to feeling positive about farming, even if it costs money at the time.

Table A: Ridgecliff stock units June 2020 and May 2021, showing response to dry

Stock class	Stock units June 2020	Stock units May 2021	Change
Romney/texel ewes	1450	1170	20% drop
Ewe hoggets	750	0	340 grazed off from May 2021
Mixed age angus cows	70	2	58 grazed off since Dec 2020
R1 heifers & steers	75	21	Sold early Oct (normally taken prime to spring)
Calves	80	40	Heifers only
Trade cattle	10	10	
TOTAL	3300		Dropped to 2578 (includes 21% off grazing)

concerned recharge has been so low that they will not run next summer.

The native plantings undertaken in the winter of 2020 have been impacted, especially on exposed sites. Only the plants in the gullies have survived.

Twenty-four months ago, the Craw's changed their long-term policy to a more flexible stock class make-up. This involved keeping more home-bred calves as trading cattle and selling down ewes. As the drought tightened its grip, all trading cattle were sold, and now capital livestock are grazed off or are on a diet of almost 100% supplementary feed.

Covid-19 travel restrictions and increased marketing have seen an increase in income from Ridgecliff's farm accommodation.

DECISION-MAKING

Hamish and Annabel work as a team. They use a mix of eye appraisal as well as measurements and calculations to base their decisions. Having information in a spreadsheet provides a platform to have robust discussions together and make informed decisions.

They use a Feed Budget Spreadsheet (provided by a farm consultant) to run different scenarios. This is usually done four times a year but, as the drought worsened, they run it weekly.

The Craw's aim to be proactive in their decision-making. For example, prior to lamb weaning, they contacted an Alliance livestock representative to book in numbers, dates and truck space for lambs (prime and store) at the meatworks.

It was a tough decision for the couple selling lambs early (at 25 kg liveweight instead of usual 40 kg). In hindsight, it was a great decision to wean early.



Hamish Craw with George. The three Craw children are the seventh generation on the farm.

OPTIONS TAKEN TO GET THROUGH

As the dry started 18 months ago, the Craw's have made difficult but proactive decisions over time.

"There is a balance between being optimistic but also realistic too. Do you push it and keep stock on?" says Hamish.

Below the couple outline some of their key decisions and the reasons behind them.

Feeding barley to lactating ewes after tailing

In early spring 2020, the feed budget showed Ridgecliff ewes were going to have their intake restricted during peak lactation.

Hamish used a 'home-built' spreadsheet to calculate what supplements would be needed to keep growth rates of lambs high.

Hamish's table B below shows a 0.350 kg growth rate/day (instead of 0.2) would see lambs weaned at 29 kg on 18 November, instead of 23.75 kg. At \$3.50/kg the 5.25 kg weight difference is worth \$18/head.

Table B: The predicted weight of weaned lambs at different daily growth rates, and age, Ridgecliff flock. The blue shaded area was target date and weight range in 2020.

(Average birth date 9 September of lambs at 4.5 kg)

Growth rates (g/day)	0.2	0.25	0.3	0.35
21-Oct	18.15	18.5	18.85	19.2
28-Oct	19.55	20.25	20.95	21.65
4-Nov	20.95	22	23.05	24.1
11-Nov	22.35	23.75	25.15	26.55
18-Nov	23.75	25.5	27.25	29
25-Nov	25.15	27.25	29.35	31.45
2-Dec	26.55	29	31.45	33.9
9-Dec	27.95	30.75	33.55	36.35
16-Dec	29.35	32.5	35.65	38.8

The benefits of feeding were:

- heavier store lambs were more marketable as they fitted within finishers' tight weight ranges. This was very important in December when store lambs became harder to shift.
- the lambs get to a good weight early, allowing earlier weaning and saving overall feed.
- maintaining ewe body weight over a dry summer is easier/cheaper than trying to add weight.

Barley was fed for four weeks from tailing to weaning. Ewes/lambs remained spread out across the farm and were fed from a hopper. Lambs were weaned at two different dates and everything was sold prime or store, apart from a handful of tail enders.

The first lambs weaned were only 60 days old (8.5 weeks) but were over 25 kg and "looked great". The second cut of lambs were weaned at 85 days and averaged 29 kg.

"Doing the calculations helped us decide to bring the weaning date forward," says Hamish.

“Feeding a lactating ewe with twins is a good return on investment – probably around 30–40 cents per kilogramme of dry matter, so supplements were worth it.”

“Ewes were weaned in good nick so were set up for the following dry autumn, as it turned out,” he says.

Change in capital stock ratio

Ridgecliff used to carry 3500 stock units, at a ratio of 85% sheep and 15% cattle. As a way to build more flexibility in the system, the Craw’s dropped ewe numbers from 1600 to 1450 during the first dry autumn 2020.

The new policy is to retain more home-bred calves to finish, when feed allows.

Sold down all trading and some capital stock

Ewes were culled on condition and fewer replacements were taken through (excess replacement ewe lambs were sold in winter 2020). Lighter condition ewes and those which didn’t match the Craw’s breeding objectives were sold at weaning in December 2020. In April 2021, lighter condition ewes were culled and the flock is now 1170.

This autumn only 40 replacement heifer calves were kept and all other calves were sold. Only 21 R1 heifers were kept as capital replacements. Ewe hoggets were culled to 340.

Supplements to ewes for tugging

The Craw’s decided they would invest in feeding capital stock well, to protect next year’s lamb income.

They supplementary-fed ewes pea vinings (medium square) and hopper-fed barley over mating, in both 2020 and 2021. Pregnancy scanning was close to average in 2020 and Hamish was pleased with the result. For this reason, the Craw’s repeated the formula in autumn 2021.

The two-tooths were introduced to grain four weeks before the ram was joined, to make sure they were familiar with it. No ewes were lost to acidosis, despite getting close to 500 grams of barley per day. Hamish noticed they definitely looked better when there was some green pick to balance the dry grain and pea vinings. Ewes are all over condition score three. Thirty light ewes were culled in April 2021.

Ewe hoggets to the ram

The Craw’s decided to put the 340 hoggets to the ram as they were at good weights (49 kg two weeks before joining) and it



Ewes being fed barley pre-mating.

Table C: Daily cost of barley and pea vining supplements fed to 1170 ewes (excluding tractor, labour but includes transport)

Feed	Weight DM/day/head	Total KG DM/day	\$/kg DM	Cost/ewe/day
Barley	367 grams	430	\$0.46	\$0.17
Pea vinings (11 MJME)	580 grams	675	\$0.28	\$0.16

helps bring the new genetics through the flock. They were priority fed on pasture to ensure they continued to reach target weights.

Tugging date 2021 moved forward

As ewes were in good condition, the ram was joined ten days earlier, on 23 March.

“We put the ram out when ewes were still in good nick rather than risk them going backwards,” says Hamish.

Redrilled paddocks

In autumn 2020, 50 ha were drilled. Rain did not arrive until June, so these areas did not establish well and only grew an estimated four tonnes/ha.

“This put us on the back foot and compounded the feed shortage,” says Hamish.

In autumn 2021, 50 hectares were direct drilled with an annual ryegrass/legume (Persian and sub clover) mix. Any weeds were not sprayed as they at least helped keep the soil protected from wind erosion, even if they didn’t supply much feed. As of mid-May the new sowings have just germinated after 10 mm of rain earlier in the month. However, no further growth has occurred as soil has zero moisture.

Grazing off

Hamish said this is the toughest decision as it relies on a lot of trust with the graziers. In late December, 60 mixed age breeding cows were grazed off until early February. As the drought continued the cows have been sent away to another property for grazing again. Regular visits to the grazed off stock are important but difficult in a drought when you have feeding out at home. Fortunately, both graziers have been nearby.

340 in-lamb ewe hoggets were sent to Dunsandel in May. “A plus is it is only 1.5 hours’ drive away,” says Hamish.



Direct drilling on unsprayed coastal block late April.

PLANNING THROUGH TO LAMB WEANING

Mid-May pasture covers were only 800 kgDM/ha, which is very low.

Hamish ran different feed budget scenarios looking towards lambing in mid-August. He used growth rates from 5 to 15 kgDM/day. It became evident growth was going to be on the lower end and reaching the target lambing pasture of 1300 kgDM/ha was not going to happen.

“Without rain this is not achievable, and it shows us that for every ten days further without rain, it makes a bigger hole in the feed budget,” says Hamish.

For this reason, the Craw’s decided to graze the ewe hoggets off, as they were the deficit breaker. Hamish said it was a huge relief to find a place close by with someone they know and trust.

The plan to fill the feed gaps from May to set-stocking is:

- Feeding pea vinings and barley to continue through to June to allow farm to reach 1300 kgDM target pasture cover at lambing.
- Graze ewe hoggets off the farm.
- Apply 80 kg/ha of urea in May on permanent hill country that could take a tractor.
- Graze cows off.

If it does rain, the hills will be too slippery for feeding out. Ewes will need to come down to a flat paddock.

If ewes are once again restricted in feed in October, then the Craw’s will feed barley to ewes with lambs at foot, to get the growth rates higher.

THE BUDGET

The biggest cost of the drought is in the form of lost income from a significant reduction in carrying capacity. Direct and indirect drought costs on Ridgecliff estimated to date over two years:

- Net income lost from destocking by 22% (around \$60/ewe su).
- 1900 lambs sold at \$87.50 instead of \$140 = \$99,750 difference (in 2020).
- Lost opportunity on trade cattle 80 steers/heifers at \$900 = \$72,000.
- 50% yield reduction autumn sown crop on 50 ha (four tonnes feed less/ha each year = 8 tonnes).

Direct costs:

- 40 tonnes barley
- 385 bales pea vinings
- Cattle grazing off – 23 weeks
- Ewe hoggets grazing off – 15 weeks
- Extra freight \$6000.

This doesn’t include labour and wear on machinery.

MINDSET TO MANAGING A FARM THROUGH THE DRY/LOOKING AFTER YOURSELF

“Try and remain positive that it will end sooner rather than later,” says Hamish.

Having supportive livestock agents/businesses around you helps. The local trucking company was prepared and quick with sourcing supplementary feed.

Seeing well-fed animals is important to feeling positive about farming, even if it costs money at the time.

“Hungry animals drag you down,” says Hamish. “Talk things through together.”

“Discussing it helps give us confidence in our plans,” says Annabel.

“Make calls early. Any decision is better than no decision – delays will get you stuck.”

Help others. The Craw’s worked with local farmers to initiate feed budget sessions in their area. It worked best when divided into small groups of farmers on sub regions like Port Levy, Pigeon Bay. People are more comfortable sharing in smaller groups.

Hamish is on weekly calls with Federated Farmers and the Ministry for Primary Industries (MPI), providing updates on conditions at a farm level.

The Craw’s make a real effort to eat well with lots of vegetables, nutrients, and smoothies in the morning. Hamish enjoys running for fitness.

“The drought is relentless so make a conscious effort to stay fit,” he says.

“Get off the farm and talk to others on a different topic than the dry. Kid’s sport is great for this as games are at Lincoln, Tai Tapu and Springston.”

Annabel said in summer they decided to make the most of the sunny dry weather and go for regular swims and surfs at the beach on the edge of the farm.

“Let’s not forget we live in a beautiful place and enjoy it,” she says.



This case study was funded by the Ministry for Primary Industries (MPI) through the Feed Working Group. Prepared by Jo Grigg and Hamish and Annabel Craw.