A great environment for profitable deer farming

by Phil Stewart, Deer Industry News Editor

Careful management of the environmental footprint, feeding and the benefits of comprehensive monitoring were the focus for a P2P Regional Workshop at Landcorp’s Stuart Farm in Southland on 9 March.

ABOUT 40 PEOPLE, including other members of the Southland Advance Party, attended the event in perfect weather.

The 3,057 (2,721 effective) hectare flat-to-rolling property southwest of Te Anau is an important cog in Landcorp’s deer machine. It carries 3,700 red commercial hinds and 750 stud hinds (the stud has absorbed animals from Landcorp’s Rangitaiki Station in the North Island). Eighty percent of the commercial hinds are mated to red stags, with the balance put to wapiti terminal sires. The deer make up 55 percent of the stock units on the property with sheep accounting for 24 percent and cattle 21 percent.

Red deer genetics are supplied to other Landcorp properties in throughout the South Island and this reach will soon extend to the North Island.

Stuart Farm is one of 11 FarmIQ demonstration farms throughout the country and the only one among this group that is focused on deer. The farm joined FarmIQ in 2013 and, with three red meat-producing species on one property, is ideally placed to pick apart the performance of each enterprise.

Landcorp Farming Innovation Manager Paul McGill told visitors how FarmIQ is being put to work. It was introduced as part of a three-year Primary Growth Partnership programme to boost performance at the farm.

The programme had three simple goals:

- $1m EBIT (earnings before interest and taxes)
- Expenditure no more than 67% of income
- 180kg of product (average price $6.50/kg) per hectare.

McGill explained that the farm had topped $1 million EBIT in 2011, but commodity prices for both sheep and deer that season were very high, so recapturing that performance would be challenging. While cattle are part of the mix at Stuart, the programme focused on deer finishing and sheep breeding to help achieve their goals.

Visitors to the P2P Regional Workshop at Stuart Farm on one of the farm stops.

In the case of deer, weighing in autumn revealed the weaners that were likely to hit spring chilled season weights and they were mobbed up and fed accordingly.

The progress made over three seasons has been exceptional (Table 1). For the first three full seasons, the average kill date was brought forward by a month, while the total number of carcasses produced and liveweight gains in grams per day increased by about 35 percent. Performance for the current (2016/17) season to date appeared to be following the trend.

McGill said that of the different genotypes, wapiti cross stags (not surprisingly) grew the heaviest at the earliest dates. They returned a healthy 36c/kg dry matter (DM) consumed. The wapiti cross hinds returned 25c/kgDM and the red stags, 27c/kgDM.

Deer don’t have the place to themselves, and one of the
challenges was to get the deer and sheep systems working together better, within the environmental constraints of the farm.

Traditionally the ewes at Stuart Farm were lambing in late July/early August. This was putting pressure on the system at the expense of the deer, as the ewes were spread over the whole farm at light stocking rates while the deer were still on crop.

The current manager Mark Bolger has pushed the lambing date out to reduce cross-species competition and provide ewes with better conditions for lactation. Reducing some of the head start that sheep had might seem counter-intuitive, but the results were very positive. McGill said delaying lambing had allowed better growth within a shorter timeframe, which flowed through to good mating weights for their hoggets and two-tooths. Running FarmIQ meant the effects of these changes could be monitored closely with tweaks where necessary.

Bolger said nothing would lamb before 15 September this year; this way would allow more feed to be carried through for hinds and fawns, he said.

While performance in any one season can be pushed up or down by external conditions such as market prices and weather, the trend at Stuart Farm over the three years of the project was impressive (Table 2).

The EBIT return had doubled in just three seasons while production per hectare had been growing about 6 percent a year.

McGill said it is very difficult to drive expenses down, especially with the need for winter cropping; the better performance stemmed mainly from the higher income. The changes they had made allowed more deer to be finished earlier and heavier, opening up the way for better sheep productivity later on.

Lambs were being born a month later and weaned a month earlier than before, so overall lamb production was down, but they were no longer competing against other stock classes, Bolger explained. “It’s always about prioritising feed into the most productive class. Sometimes its lambs or cattle, but mostly it’s the deer.”

McGill said FarmIQ had evolved from being purely animal performance focused to encompass people and safety, farm environment and systems and processes. Creating a Land and Environment Plan could be done within FarmIQ with an action plan allocating tasks and links to the farm budget.

He said the future would see more integration and data sharing with external systems like FARMAX.

It is used to record animal health treatments and integrates well with NAIT. “It will be perfect for electronic Animal Status Declaration forms when they’re introduced,” he added.

“Staff find it easy to put in information on things like pasture covers, deer sales and animal health records. It’s a good idea to start out with a basic system and then grow it as you need to.”

**Making a good business better**

Attendees at the Regional Workshop brainstormed opportunities for Stuart Farm, while also exploring how the Southland Advance Party could take things to the next level. This is what they came up with.

Opportunities at Stuart Farm

- Modify water troughs to keep the deer out.
- Make better use of cattle to clean up pastures on the fawning blocks.
- Consider using plantain or lucerne (although cultivation for these is tricky at Stuart Farm).

### Table 1: Carcass performance, Stuart Farm, 2013/14 – 2015/16.

<table>
<thead>
<tr>
<th>Season</th>
<th>No. carcasses</th>
<th>Average kill date</th>
<th>Average carcass weight (kg)</th>
<th>Average growth rate (g/head/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td>1,705</td>
<td>3 January 2014</td>
<td>52.1</td>
<td>118</td>
</tr>
<tr>
<td>2014/15</td>
<td>2,039</td>
<td>28 Nov. 2014</td>
<td>54.2</td>
<td>154</td>
</tr>
<tr>
<td>2015/16</td>
<td>2,316</td>
<td>4 Dec. 2015</td>
<td>53.5</td>
<td>157</td>
</tr>
</tbody>
</table>

Source: Landcorp, FarmIQ

### Table 2: Stuart Farm performance 2012/13 – 2015/16.

<table>
<thead>
<tr>
<th></th>
<th>2012/13 (prior to PGP programme)</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital value</td>
<td>$22m</td>
<td>$22m</td>
<td>$24m</td>
<td>$24m</td>
</tr>
<tr>
<td>Gross farm income</td>
<td>$2.58m</td>
<td>$2.81m</td>
<td>$3.09m</td>
<td>$3.14m</td>
</tr>
<tr>
<td>Farm expenditure</td>
<td>$2.06m</td>
<td>$2.06m</td>
<td>$2.24m</td>
<td>$2.12m</td>
</tr>
<tr>
<td>EBIT (per ha)</td>
<td>$521,000 ($190)</td>
<td>$757,000 ($275)</td>
<td>$853,000 ($310)</td>
<td>$1,018,000 ($395)</td>
</tr>
<tr>
<td>Expenditure: Income</td>
<td>79%</td>
<td>73%</td>
<td>72%</td>
<td>68%</td>
</tr>
<tr>
<td>Return on capital</td>
<td>2.4%</td>
<td>3.2%</td>
<td>3.6%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Kg product/ha</td>
<td>162</td>
<td>172</td>
<td>180</td>
<td>192</td>
</tr>
</tbody>
</table>

Source: Landcorp, FarmIQ
• Improve the lanes, using lime rock to help reduce foot injuries.
• Wean R2s and R3s earlier to help lift conception rates.
• Use FarmIQ to better analyse what paddocks or blocks are performing best.
• Feed post-rut weaned hinds and their fawns as well as possible in autumn to take best advantage of that growth period.

Advance Party
• Bring in a specialist to help run group-wide trials to manage issues such as grass grub that are common to all in the group.
• Greater use of benchmarking, recording and information sharing.
• Better use of tools such as FARMAX with emphasis on automating data capture.
• Encourage hind retention and growth of deer enterprises.
• Greater clarity of outcomes and finding ways to translate lessons learned for the wider industry.

Environment work
Regional workshop guests were taken on an extensive farm tour, with a stop to look at the work being done to minimise losses of sediments, nutrients and bacteria.

The group was joined by Dave O’Connor and Fiona Young of Environment Southland’s Land Sustainability Team, along with Nicol Horrell, Environment Southland Chair, and Councillor Maurice Rodway.

O’Connor said Southland was a complex and challenging farming environment, especially in winter and early spring. Winter crops presented a risk of contaminants getting into waterways, namely sediments, phosphorus, nitrogen and E. coli. In the case of deer, the risk centred around sediments and phosphorus, mainly thanks to deer behaviour (wallowing and fence pacing). This could also lead to E. coli contamination when wallows were connected to waterways. Careful management of “critical source areas” (CSAs) and ephemeral waterways was vital, O’Connor said.

Anything that could channel contaminants into waterways – overland, through free-draining soils or via tile drains – was considered a CSA. On deer farms, areas around gates, along fencelines and wallows were also vulnerable. “They’re not so much waterways as pathways,” he said.

The sloping gully system on show at Stuart Farm was an ideal example of a series of ponds and sediment traps that could keep contaminants on the property and help protect water quality.

“The ponds can be cleaned out periodically and all those valuable nutrients returned to the farm.”

O’Connor said careful evaluation was needed before committing a paddock to winter cropping. “What’s going to be downstream? If there are too many critical source areas it might be best to go grass-to-grass.”

Ideas to avoid losses included:
• avoid overstocking
• fencing around CSAs or leaving a buffer
• excluding stock from sensitive areas as long as possible by grazing crops from the top of the slope down to the bottom (the “last bite” technique)
• avoid ploughing near CSAs
• minimum tillage
• plough across the slope, not down
• well positioned water troughs
• encouraging stock away from wet areas
• long breaks
• a “bail-out” option in case of bad weather (a dry or more sheltered paddock)
• cut and carry crops
• use well positioned sediment traps downhill of any block grazing.

O’Connor urged farmers to seek advice when planning to identify CSAs and minimise losses of nutrients and contaminants. He said it wasn’t necessary to fence off every last small runner, but noted that ephemeral (intermittent) streams needed to be included in planning. Tile drains could be an expensive option, he warned. They were still responsible for sediment losses and other options such as buffering could be preferable in some situations.

Deane Carson, who facilitates the Southland Advance Party, noted that fencing off waterways could sometimes exchange one problem for another. While it might reduce sediment and phosphorus losses, the gorse and broom that grew in the fenced-off areas, if left uncontrolled, could become a big source of nitrogen losses into waterways. “Some areas lose 50kg per hectare nitrogen per year from this.”

Fiona Young, Environment Southland Sustainability Team, said it was important to plan fencing for environmental reasons in the context of the whole farm system. Works like sediment traps should be placed strategically to make the most of opportunities to “polish” the water leaving the property.

Deane Carson noted that sediment traps can be quite small. As long as the water movement through them is slow, they will do their job. “They don’t need to be expensive. It might be just a couple of scoops with the digger, as long as they are cleaned out regularly.”

Fiona Young said submissions on the Environment Southland proposed water and land plan had closed. Nearly 1,000 had been received, including a submission from the NZDFA. Once the report had come out there would be hearings from submitters by a panel, which will take up the latter half of 2017.

Stock exclusion rules for cattle were set for introduction in 2018 and for deer in 2020. Young said that, in hill country physiographic zones, only land with a slope of less than 16° would require stock exclusion. (She noted that the proposed rules could change once the hearings had finished.)

Where it wasn’t possible to meet the stock exclusion deadlines it would be possible to apply for a consent. This would require a farm plan, which would allow a strategic timetable for fencing off the relevant areas. The plan would include some mapping and thinking about practices to minimise losses of nutrients, sediments/phosphorus, etc. At this stage no exclusion deadlines have been set for sheep, although some general conditions still have to be met for sheep farmers.

There are still decisions to be made about the consents. There is a $1200 deposit, but no final cost has been decided. Neither has the term of the consent. “We’ll be helping people as much as possible to make the consent process run smoothly.” Young said the plan covered wintering on crops in two specific areas:

1. Requirement for a buffer between cultivated areas and waterways.
2. Depending on land type (physiographic zone) and area, consent may be required.

“If you were wintering on, say, Old Mataura soils or on peat wetlands, on more than 20 hectares, or if you had intensive forage crops on more than 50 hectares on any of the other types such as the oxidising clays, you would need a consent.” (For more on Old Mataura soils: http://bit.ly/2roD3sA)

Young said these requirements aren’t planned to kick in after May 2018, so it is time to start thinking about consent when planning next winter’s crops. “Do your homework.”

Deer as land developers

Stuart Farm manager, Mark Bolger, said deer had been invaluable when it came to farm development over the past 25 years. They had helped strip back the natural tussocks to make way for improved pastures, but in the process had probably been somewhat underfed. Nutrition is a much higher priority now.

One land attribute that even the deer can’t help with is the rocky soils in some paddocks. Bolger said surface rocks are gathered up where possible in to help avoid damage to equipment when direct drilling crops like swedes. When that’s not possible oversown seed is spun on and then heavy-rolled, thus avoiding cultivation or damage to seed drills.

Southland Advance Party lessons

Members of the Southland Advance Party shared some of their stories, showing plenty of progress has been made. Here are the highlights.

Richard Greer, Sunnyside
• Doubling the number of hinds on the self-feed silage using protective boards to keep their feet out of it has halved the
amount of wastage.

- Changing from breeding only to breeding and finishing has lifted gross margins by 54 percent over the whole farm and per hectare.
- Fodder beet has been the best option for feeding the finishers through winter but, as on other farms, they seem to hit the growth rate wall after about 60 days. They are keen to know how to extend the 60-day window – nothing tried has really worked yet.

Bruce Allan, Waimumu

- Feeding grain with an Advantage feeder in January gave only a small growth margin in the fawns.
- Mineral injection trial with split mob in autumn showed no advantage.
- Trying sub clover to help boost growth in the shoulder season.

Des Ford, Deer Improvement, Balfour

- Lifted fawning pasture covers to about 2500 kg DM/ha to improve fawn survival, especially in R2s, and achieved a lift of about 3 percent over the entire herd. No negative pasture quality side effects to date.
- Trying to improve weaner growth using grain pre- and post-rut weaning, with high-quality red clover based pasture.

Simon Wright, Fairlight Station

- Wintering the lightest 120 weaners indoors and trying to optimise feed didn’t produce big cost benefits but overall confirmed it brings the smallest animals up to the middle of the weight range while taking pressure off the main weaner mobs.
- Earlier weaning to bring fawning forward: Taking out the stag earlier (6 April) reduced the conception rate only 2 percent (96 percent down to 94 percent) but had the effect of cutting off the late tail end.
- This year the weaning/stag joining date has been split in the mixed age hinds – half in mid-February and the rest at the end of the month. Simon will see what impact if any this has on conception dates.

Richard Cook, Makarewa

- Runs a small, heavily stocked block that was suffering pasture damage.
- Purchased a neighbouring block and leased another, and expanded operation with encouragement of Advance Party.

Robert Legg, Montevue

- Applied nitrogen and sulphur onto 40 hectare hill block to boost spring production.
- Response was 15 kg dry matter/1 kg nitrogen, and +480 kg dry matter/hectare (cost 20c/kg DM).
- Not enough stock to control feed, so quality declined.

A sight for sore feet

Mark Bolger said foot problems in young deer needed to be addressed as they sapped productivity. As a straightforward first step they are installing rubber matting in the yards (see photo). They are also looking to pay attention to the lanes and approaches to the sheds to reduce injuries and stress. That’s more of a challenge, Bolger admitted. “It’s not so easy to shift lanes or yards.”

- Failed to boost weaning weights but hind condition at weaning was better and can now finish animals faster and at 2 kg heavier.
- Now have fewer deer but increased sheep and use lambs to eat extra growth left by finishers.

Andy Dennis, Manapouri

- Changed from pre-rut to post-rut weaning and better feeding of hinds.
- Body condition of hinds improved by 0.5 and fawns put on an extra 20 kg between February and April.
- Running some R2s on lucerne after new year gave them a 4 kg advantage over grass-fed R2s and improved conception rates (98 percent versus 88 percent).

Rick Whyte/Ben Beadle, Landcorp Lynmore

- Finishes 3,000 weaners for other farms.
- Trialled three forage mixes for finishers: plantain/clover, grass/clover and lucerne.
- All performed OK, but grass fell away as the season progressed and plantain gave better quality throughout the season.
- To pay for itself the plantain needs to last several years, to pay for the eventual cost of regrassing.

Dave Nind, East Dome

- Ten percent of the farm is regrassed annually.
- Grass grub is a major challenge; also porina, Argentine stem weevil and clover root weevil.
- Seeking expertise via AgResearch to find economic solutions.