



## ADAPTING TO A CHANGING CLIMATE: CASE STUDY 12

# THE STEYNING

# Setting the future direction for deer farming

### THE STEYNING

- A 316-hectare deer farm 20 minutes west of Waipawa, Hawke's Bay, New Zealand.
- One of the four New Zealand Deer Industry Focus Farms aimed at lifting the sustainable production of venison.
- Runs an annualised 3500 stock units.
- Developing a wetlands area with the assistance of the Hawke's Bay Regional Council.



*Tim Aitken and Lucy Robertshawe have a long-term view of land management; understanding lessons learnt after generations of farming, yet adapting to the changing physical and economic environment, and looking to the future.*

The couple run two livestock enterprises, a deer breeding and finishing enterprise, and a bull beef enterprise.

Their farming decisions are based around ensuring early calving of their deer. This enables them to market their venison when the prices are generally at their highest, and before the high-risk period later in spring when pasture supply is predicted to become more variable.

In 2008, The Steyning received 1000 mm of rainfall, the lowest level yet experienced, and most of the province of Hawke's Bay experienced severe drought.

## FARMING IN A CHANGING CLIMATE

### DEER BREEDING AND FINISHING

The deer enterprise is the key to Tim and Lucy's business. The couple aims to achieve an early calving combined with good feeding so that the progeny get to slaughter weights very early, typically in early spring.

Seven hundred hinds are mated, with 630 kept to winter through. Four hundred of the hinds are wintered on a pad and fed silage, with any effluent run-off channelled into a settling pond system. This takes some of the hinds off the pasture during the wet months which helps avoid pasture damage and consequent poor spring growth and weed invasion.

Twenty percent of the hinds are artificially inseminated with sire selection focusing on quality venison production and reproduction. Twenty percent conceive before 20 March and 95 percent before March 28, which is more than 10 days earlier than most deer conception dates.

### TIM AITKEN AND LUCY ROBERTSHAWE

- Born and raised on farms in the Hawke's Bay.
- Have been in deer farming since 1988.
- Purchased the farm in 1993.
- Are involved in an innovative marketing company called "Firstlight Venison", providing off-shore customers with a year-round supply of venison.
- Have two children, Jim and Willa.



*One of the major benefits of their farming system is that they can de-stock in the late spring, the time of the year when in the future, the farm could be the most vulnerable to climate change effects.*

The Red deer on the property are of Eastern European origin, and research indicates that Eastern European deer can calve up to 13 days earlier than their Western European counterparts.

Dr Jason Archer, of AgResearch says that in addition to the choice of deer breed, the key to early calving is having hinds in sufficiently good condition (score 3–3.5) to be able to express their genetic potential.

Dr Archer believes that an early weaning pre rut is an important element for achieving good body condition scores. “Research has shown that hinds weaned in pre-rut will conceive seven days earlier than hinds weaned post-rut in a normal year, with the difference extending to 12 days in a dry year.”

Tim weans the fawns earlier than most on, or around, 20 February. “We focus on good autumn feeding of our deer, which has meant that we get some of our pure red spiker stags up to killable weights (95 kilograms live weight) at the beginning of September with most being sold at that weight by mid-November.”

#### **BENEFITS OF THE DEER BREEDING AND FINISHING SYSTEM**

The early calving of the fawns, subsequent good feeding and consequential growth rate is not only efficient in terms of feed

intake, with the majority of feed dedicated to weight gain, but Tim and Lucy also can market their venison during early and mid spring, the time of the year when the prices for venison are traditionally at their seasonal peak.

The other major benefit of their farming system is that they can de-stock in the late spring, the time of the year when in the future, the farm could be the most vulnerable to climate change effects due to the projected windy, dry springs.

#### **BULL BEEF**

“The bulls give us a flexibility and a buffer in our farm system” Lucy said, “We can sell the bulls early if the feed supply budgets show that we could run into a feed deficit, or take them on to heavier weights should the season allow.”

#### **FODDER CROPS**

Some fodder crops are grown on The Steyning with lucerne paddocks cut three times for hay before been grazed by weaner fawns. Specialist fodder crops are also grown with a chicory plantain mix being a favourite but there is also a mix of annual fodder crops that are grown forming part of a pasture renewal programme.



## **CLIMATE CHANGE PROJECTIONS FOR THE STEYNING**

- An expected average temperature rise of 1°C over the next 30 to 50 years, possibly more than 2°C in the longer term.
- Up to 10 percent stronger winds with higher wind runs in the spring, mostly from the west.
- Average rainfall of 1200 mm per annum may decrease by 2.5 percent (30mm), but rainfall events may be more irregular with the frequency of extreme events increasing.
- For the Hawke's Bay, the climate change modelling depicts warmer drier winters, and drier windier springs, as well as moister summers and autumns.

The couple like the perennials, as these avoid the complications and costs associated with annuals. The crops grown help ensure good weight gains through the summer and autumn, with up to 400 grams live weight gain per day being achieved.

“We use our own direct drill to sow the crops which means we can spray and drill when the time is just right, and we don’t run the risk of any wind blow on our lighter soils,” Tim says.

### **BENEFITS OF THE FODDER CROP SYSTEM**

The deep rooting nature of lucerne, chicory and plantain can give quality feed over most summers and autumns.

The use of minimum tillage techniques allows Tim and Lucy to optimise the timing of crop and pasture sowing, while protecting the light top soil from wind erosion, minimising any moisture loss and damage to the soil structure.

### **MONITORING FARM PERFORMANCE**

Using decision support software aids good planning and helps build more robust farm systems enabling farmers cope better with the vagrancies of the weather.

Tim and Lucy use a modelling tool called Farmax to constantly monitor the farm’s performance and run future scenarios. “We are predicting that this year we could run into a lower than optimal pasture cover in August, so we are looking to sell some bulls slightly early now – this means that in terms of pasture we are looking six months ahead!” Tim says.

“Using Farmax gives us some degree of confidence in our decision making,” comments Lucy.

Tim and Lucy’s farm system is robust, and the bull system offers a great buffer to manage variations in pasture growth, yet meet the market commitments of their core business – the deer enterprise.

Their combined knowledge, ability to recognise opportunities and their long-term commitment to the land and farming mean that The Steyning will continue to provide a prosperous living and yet be well husbanded so that its inherent sustainability will remain despite the projected climate change.

### **FOR MORE INFORMATION**

- To read about the Deer Industry NZ Focus Farms project or The Steyning visit [www.deernz.org](http://www.deernz.org)
- To contact Dr Jason Archer: [Jason.Archer@agresearch.co.nz](mailto:Jason.Archer@agresearch.co.nz)

## **Key points**

- 1 Tim and Lucy’s farm system is a robust combination of deer farming and bull beef.**
- 2 By ensuring an early and compact calving in their deer, along with high feeding levels for young stock, the pasture conversion to saleable product is efficient and their venison is marketed at the time of year when prices are at their seasonal high.**
- 3 An Eastern Red deer herd, superior sire selection and quality feeding are the keys to early calving and finishing.**
- 4 The introduction of bull beef provides flexibility and a buffer into the farm system – the couple can sell the bulls early if they predict that they will run into a feed deficit, or, take them on to heavier weights should they think the season will allow.**
- 5 The use of deep rooting fodder crops gives quality feed over most summers and autumns.**
- 6 Minimum tillage techniques allow Tim and Lucy to move rapidly and protect their soil moisture and organic matter.**

### **THIS IS ONE IN A SERIES OF CASE STUDIES CALLED ADAPTING TO A CHANGING CLIMATE**

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