

CASE STUDY 5



Robert and Helen Pattullo,
Newstead, Puketapu, Hawke's Bay

'The focus has been to develop greater flexibility to deal with dry periods'



Key facts

Farm size and type: 616ha hill country farm.

Production focus: This was a traditional Hawke's Bay sheep and cattle farm, but over the last decade the focus has shifted almost wholly to cattle. 530ha is effective grazing land, with 52ha in pines and the balance in housing, sheds etc.

Soil type and topography: There are three principal soil types on the farm: Tangoio complex/steep; Crownthorpe complex; Matapiro light sandy loam. The soil on the farm is generally free draining. The farm has a more-or-less easterly aspect and forms the head of a catchment that feeds into the Wairoaiti Creek, which flows through the Holt farm at Bay View.

Social: Robert and Helen own the farm as a company. Robert is responsible for the running of the farm. They have two teenage children. The farm has been in the family for 97 years, bought by Robert's great-grandfather at the beginning of the 20th century.

Main climate features and challenges

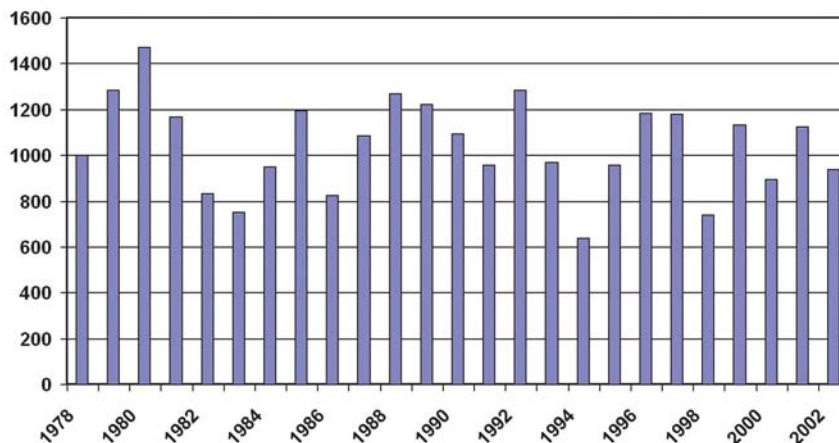
Westerly winds: Westerly winds in spring and autumn.

Summer dry: Traditionally Hawke's Bay has dry summers. This hasn't been the case so much over the last five years, with a sequence of wet summers.

Coolish winters: Winter conditions aren't a major problem at Newstead, with temperate, frost-free conditions.

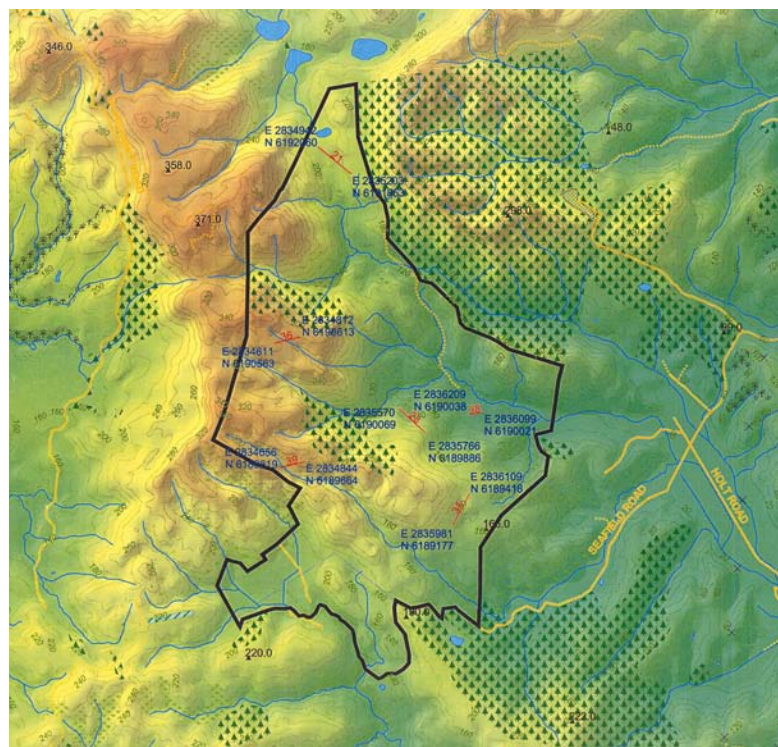
Robert generally feels that periods of extreme weather are more prevalent now.

Newstead Annual Rainfall, 1978 to 2002



Climate: Based on records for the last 25 years annual rainfall is about 1000mm, which is fairly evenly spread through the year. Wettest months, on average, are March and July. The farm is frost free, due to a combination of the coastal proximity, easterly aspect and air drainage through the stream catchments.

Water: There is ample water on the farm, through springs and streams. These were the basis for a natural water supply system until about 10 years ago. Since 1995 a water reticulation system has been developed, with water to 95 percent of the paddocks. This water is drawn from a relatively shallow (8m) well.



Historical development and influence of climate and weather extremes

Period

Production focus and major changes
Climate and weather effects

Early 1900s to the 1960s

A large, extensively farmed, sheep (Romneys) and cattle (Angus) farm. There was a bit of scrub clearing through this time.

1960s through to mid 1970s

The Border Leicester breed was introduced into the Romneys to give a higher lambing percentage. Cattle were changed to Simmental. An airstrip was built on the farm. There was a lot of fencing, with paddock size halved from 40ha to 20ha.

Mid 1970s until 1990

With the effects of Rogernomics and droughts, the management of the farm was in a holding pattern. Fertiliser use was lower than previously. It was during this time that the back catchment area of the farm began reverting to Kanuka scrub. The first pines were planted in 1980 and poplars were being introduced (now in the block still owned by Robert's father).

Drought in 1980s and 1990s had a lasting influence on the management of the farm. Their effects were compounded by the impact of Rogernomics and followed a period when farmers were encouraged to increase stock numbers. During the 1982 drought they were feeding maize to their sheep, they grazed a lot of the breeding cattle off site and were grazing roadsides.

Cyclone Bola, in March 1988, brought a total of 450mm of rain over a three-day period but there was minimal damage.

1990 to the present

A shift was made to more of a stock trading policy, to enable them to lighten off over the summer. Robert bought in to the farm in the mid 1990s. On the farm owned by Robert and Helen, the focus has been on fencing smaller paddocks, reticulating water to every paddock, more capital fertiliser inputs and stocking mix changes. They now run virtually all cattle. 95 percent of stock units are cattle (80 percent of which are trading stock) and 5 percent are sheep.



Adaptations to develop the resilience of the farm

The focus over the last decade has been to both use available water and land resources more effectively and provide greater flexibility to deal with dry periods in particular. Principal developments include a focus on subdivision and fencing, a more secure water supply reticulated through the farm, more intensive grazing with cattle and flexible livestock policies. Trees have been used strategically.

Having made the above changes, Robert is now starting to think about fencing and protecting areas of regenerating bush and riparian areas. He is working on progressive development of the farm and is open to new ideas. In general he feels that with the developments already in place and plans for the future he will be able to deal with any challenges from climate change.

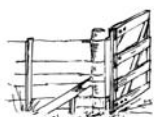
Forestry/trees:

Pines cover about nine percent of the farm. They have been planted on hard, dry, northerly faces, principally for longer-term financial benefits. The back part of the farm contains quite extensive Kanuka stands, with other natives evident in some places. Rather than eliminate the Kanuka completely, Robert is striving towards a balance between catchment protection and the need for stock access through the farm and productive land to make a living. The scrub is now seen to

provide benefits in terms of erosion control, and shelter and shade for stock. Fencing off catchment and riparian areas, that are presently dominated by Kanuka, would encourage quick regeneration and provide benefits in terms of improved water quality and protection of stream catchments. Robert's approach is to begin by doing what he can afford and manage, by fencing small riparian areas initially. Each year 150-200 poplar poles are being planted annually, mostly in wetter areas of the farm. Tree planting could be developed further, which is most likely to be influenced by overseas markets.



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Water: There is an abundance of water at Newstead. There is now a trough in virtually every paddock. There are four or five good spring-fed streams which flow year-round.

For the immediate future, Robert is looking at fencing off some streams where practicable. They have never been short of water, including during the 1982/83 drought, and

management system was developed for dry summer conditions, and particularly to give flexibility with drought. This creates pasture management challenges with wetter summers, as has been experienced in recent years.

Warmer conditions on the fringes of winter are providing better opportunities for

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are in a good position to harvest and store water if they have to in the future.

Soil: There has been an active fertiliser programme over the last decade. This has been done through Summit Quinphos who have supported the fertiliser programme with a series of farm environment maps.

Robert would consider approaching the Land Management Group at the Hawke's Bay Regional Council to get more detailed soil maps, and further refine his existing programme. This could also assist in refining land-use options.

Pasture management: The shift in stock policy was influenced by the predominance of ratstail on the northern faces. Grazing management was changed to better manage the grass species that were there. The aim is keep pasture in a growing state for longer. An outcome of this strategy is that there is a bit more ryegrass and clover coming through now.

The combined stock management/grazing

pasture growth than in the past, and there could be a transfer in the growing season if this trend continued with climate change.

Stock management: They have shifted to a trading stock policy, principally with Friesian bulls. These give flexibility and are fairly easy on the country. Numbers are reduced over summer, although with wetter summers more recently they have held on to stock to manage the grass surplus.

With possible warmer, drier, conditions in future this policy would be refined rather than radically changed.

Energy: Mains power is used to pump water. If power supply were to become less reliable, options could include more storage tanks around the farm possibly with solar power as an energy backup. Solar units are presently used for electric fencing further out on the farm.

Infrastructure: The contour of the farm limits what is possible.



Meso connections

The farm is at the top of a relatively short catchment, which feeds into the Wairoaiti Creek on the Holt farm. Robert is very open to discussions about the future management of the whole catchment area. They are presently away from the subdivision pressures that are taking place nearer to Napier but see this as an option for

part of their farm in the future.

Overall Robert's attitude is to be positive and proactive with people.



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