Wool production & biodiversity working together for James & Caroline Street

Testimonial

Above—James and Caroline Street at 'Blaxland'.

Background—'Blaxland' ewes.

'Blaxland'

Location

20 km north-west of Walcha, New England Tablelands NSW, Macleay (80%) and Namoi (20%) catchments

Property size

829 ha (2049 acres)

Paddocks

35 plus a central laneway

Average annual rainfall

762 mm (30 inches)

Main enterprises

Fine to superfine Merino wool (13.9-18.0 micron), beef cattle trading, contract hay storage

Stock numbers

6100 Merino sheep, 180 cattle

Stocking rate

12.7 DSE/ha (5.1 DSE/acre, combined sheep and cattle)

Main soil types

Meta-sedimentary or 'trap' (75%) and fine granite (25%) soils

Vegetation types

Formerly grassy open-forest of stringybark, and grassy woodland of rough-barked apple, Bendemeer white gum, Blakely's red gum, mountain gum, white gum, Moonbi apple box, yellow box and New England peppermint. Cleared and reduced by dieback to mainly open pasture; some scattered remnant trees and stands of open timber.

Elevation

1060-1151 m above sea level

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Introduction

'Blaxland' has been managed by James and Caroline Street since 1985, and was purchased by James' father in 1958. Their aim has been to develop the pastures and lift the productivity of 'Blaxland' to generate sufficient income for their family, repair environmental damage, develop a more sustainable farm ecosystem and enhance the property's natural values. Like many woolgrowers, they want to "leave the farm in a more sustainable state than when we took over."

This testimonial describes and illustrates James and Caroline's commitment and achievements towards their goal.

History

Since settlement, the natural hazards of low to moderate fertility soils that are prone to acidity, erosion, and alkali seepages and scalds, were exacerbated at 'Blaxland'. As James observes, "The farm was heavily ring-barked in the early 1900s, and was over-grazed and overrun by rabbits in the droughts of the 1940s and 50s. There was extensive soil erosion evident when my parents arrived."

Beginning in the 1950s, aerial fertiliser spreading and sown pasture development led to the widespread 'dieback' of scattered pasture trees and small stands of timber, a process that continues today.

When the Street family bought the property in 1958, it consisted of just five paddocks.

The Streets' response to these calamities was an ambitious program of erosion control, rabbit eradication, pasture improvement and paddock subdivision in the 1960s and 1970s, undertaken by James' parents. When James and Caroline took over, they continued with tree establishment, restoration of remnants, wetland establishment and riparian zone protection.

Enterprises

'Blaxland' wool

James and Caroline run a self-replacing Merino flock, producing soft handling, heavy cutting, long-staple wool of good lustre based on Yalgoo, Karori, Lorelmo and Merryshiels genetics. They aim for a wool of fine to superfine micron, targeting the spinners and best top makers markets.

According to James, "We select for large frame size, with ewes cutting an average of four kilograms plus per head."

Crops, pastures & grazing management

"We crop about 40 hectares of forage oats each year and usually bale some as wrap silage or square bales," says James. "After the oats, we sow pastures of fescue, rye grass and clovers and look after the sown pastures for a few years. Eventually paddocks lose their productivity, and we re-sow to oats.

"In order to run our livestock numbers, we fertilise with superphosphate annually at the rate of 125 kilograms per hectare," says James. "We avoid weed problems by not creating the bare ground that allows weeds in", adds Caroline.

"We have two native paddocks—one which has never been cultivated—that we don't want to spray and sow. In fact, a well balanced pasture with the sown winter-active species and

Below—James and Caroline inspect one of the many tree and shrub plantings.

valuable summer-growing natives like paddock lovegrass and redgrass, is ideal.

"We are thinking about more sustainable ways of pasture management with a view to maximising groundcover and retaining valuable native grasses—perhaps using pasture cropping," says James.

Stock are rotationally grazed after weaning and then set-stocked from joining onwards, to allow a record of all progeny from individual sires as part of the AI program.

"Intestinal parasites are an issue. Every five or six years, we have a Barber's Pole summer like this last one. Rotational grazing has definitely helped—one mob might have five paddocks to move through, and we move them every four to six weeks. Faecal egg count monitoring allows us to drench strategically."

Currently, stock are watered mainly by dams but a drought-proof watering system is being installed with 9.5 km of pipeline and 16 troughs. Water will be pumped from a reliable bore to a 91 kL tank on a high point towards the centre of the farm and reticulated to various paddocks.

Natural resource management

Soils and water

The Streets use wetlands and rock weirs to mend gully erosion, and have fenced off some of the dams as a nature conservation measure.

'Blaxland' has had several dryland alkaline scalds (the New England equivalent of dryland salinity) on the north-eastern boundary ever since James' father can remember. These have been fenced off to re-establish ground cover and heal the scalds. James is planning to plant an area to salt-tolerant grasses to see if they can be made more productive.

Tree planting

James and Caroline set about restoring tree cover at 'Blaxland' in the form of planted blocks and windbreaks. They estimate they have planted 90 000 trees so far, in 20 km of tree lines and 20 ha of block plantings.

"Our aim has been to provide shelter for both stock and wildlife, creating blocks and corridors, increasing biodiversity and encouraging a healthier ecosystem," says Caroline.

Cattle, pigs & hay

Although fine wool is the Streets' main enterprise, they also trade cattle. James explains, "We fatten 100-200 head of cattle annually and when feed permits, agist cattle as well. We like to buy in 250-280 kilogram steers and sell them when they reach 450-500 kilograms after about nine to ten months. Cows and calves, and also heifers, are bought and traded accordingly."

"Until recently, we were contract pig growers, and we now use the sheds for contract hay storage. They hold 1750 tonnes."

Above (before) and below (after)—Gully erosion, controlled with a cheap erosion control structure, battering of steep banks, a concrete weir, rocks to take the impact of falling water, fertiliser and pasture seed, tree and shrub planting, and stock exclusion. Photos by Caroline Street.

Below—A series of dams ('chain of ponds') fenced from stock to control gully erosion and create a more natural environment for native plants and animals.

"Blocks and tree lines cater for different livestock and wildlife needs. The blocks are useful for sheep off-shears while the windbreaks around each paddock shelter livestock and pastures no matter what the wind direction. The blocks provide habitat for small birds while the shrub and tree lines provide the protection to allow them to move across the property."

"We have saved thousands of dollars worth of stock each time we use the blocks for sheep off shears. In other words, we have paid for every tree we will ever plant," says James.

"We prefer to plant natives because they drive the local ecosystem, but introduced species grow well, too."

"Originally, we planted mainly trees, and very few shrubs, but we soon found that they can get pretty sparse, especially when they don't all survive," says Caroline. "So we moved on to planting shrubs with the trees to provide extra cover. We are now planting 60% trees and 40% shrubs."

"We have also moved from three-row to six-row windbreaks over the years in order to make room for the shrubs and to get better density, wind protection and biodiversity. Our standard tree line is now four rows of trees and two rows of shrubs on the lee side."

The Streets experimented with direct seeding early on. According to James, "Some areas worked pretty well, but there are a few gaps, often in the low spots."

Native regeneration areas

The Streets also fence out remnant native vegetation of high conservation value to help protect and enhance the natural values of such areas.

"The first area in 1990 was the eight-hectare Big Dam or Lagoon paddock. This was a rocky knob close to a large dam and belt of trees," says Caroline.

Research has shown that the rocky knob supports the original grassy woodland vegetation of the region. Kangaroo grass, native sorghum and tussock poa dominate the grass layer beneath some of the original tree species (e.g. mountain gum and white gum). A wide range of grazing-sensitive native forbs and monocots occur in the grass layer. These species disappear from fertilised or cultivated pastures under heavier grazing, and include flax and bulbine lilies,

Below—A block planting used for biodiversity and sheltering sheep off-shears.

Below—A new seven-row tree and shrub line, showing good weed control and strong growth.

Below—A 1993 direct-seeding site.

Below—Lagoon paddock and its rare remnant vegetation, with two species of flax lily (foreground).

lomandras, pimeleas and native mints, heaths, geraniums and violets.

"White gum is regenerating naturally in Lagoon paddock. But we also planted trees and shrubs after we fenced it off, so now it's a haven for small birds," says Caroline.

Natural regeneration has also been successful. A 1-km, 20-m strip of trees was fenced long ago because it was the boundary between the original 'Terrible Vale' and 'Ohio' runs. The strip has never been ploughed and probably not fertilised much, so the tree cover is thick and healthy. "My dad took the fence down on our side but we put it back eighteen months ago. We are seeing a few young trees regenerating. It's much cheaper and easier on the back than planting!" says James.

The old boundary reserve contains healthy Bendemeer white gum (*Eucalyptus elliptica*) and Moonbi apple box (*E. malacoxylon*) trees, both of which are 'Rare or Threatened Australian Plants' (ROTAPs) found only in this part of NSW.

The reserve also supports rough-barked apple, Blakely's red gum, mountain gum, stringybarks and a native cherry (*Exocarpos cupressiformis*). The grass layer is

Below—Blakely's red gum regenerating beneath mature mountain gum, red gum and Bendemeer white gum in the fenced boundary reserve.

Below—The stringybark regeneration area fenced out and planted with a wattle understorey in 2004.

Background—The dense shelter for live-stock and native animals inside a direct seeded site.

Below—Four-row multi-species windbreaks providing stock shelter, wildlife corridors and links between vegetated areas across the farm.

predominantly native, and regenerating Blakely's red gum, angophoras, silver wattle and fern-leaved wattle are all starting to emerge above grass height.

James and Caroline also fenced off a 6-ha area of mature stringybark trees near the centre of the property in 2004. "It was the largest, healthiest stand of trees left on the property," says Caroline. "We planted 300 wattles to provide an understorey in the short term for birds and native animals."

"The downside of plantings and regeneration areas is that they harbour foxes, rabbits and weeds, so there's a management cost."

There are no national parks between Uralla, Walcha and Bendemeer, so conservation of the original grassy woodlands and local rarities is largely dependent on interested land owners like the Streets. Unless more people emulate their efforts, we could lose these species forever.

Wildlife

The Streets' have a 'live and let live' attitude towards wildlife, including kangaroos. "We try to encourage wildlife. We have the occasional koala, and a few echidnas," says James.

"When we arrived, the property was severely lacking in habitat for native animals, so part of our goal has been to re-create it," says Caroline.

Positive results

Through all their work, Caroline and James have embarked on a major ecological restoration effort.

Despite the sparse remnant tree cover left in 1985, at least four species of declining woodland bird occur at 'Blaxland' today: dusky woodswallow, diamond firetail, restless flycatcher and rufous whistler. These species are becoming extinct in the NSW wheat-sheep belt through excessive clearing of habitat. Fortunately, through the efforts of woolgrowers like the Streets, they have a future in the grassy woodlands of the Northern Tablelands.

"We recently calculated that we have about 10% of the farm fenced off from stock, mainly in tree lines, planted tree blocks and the salt scalds," says James. "Because of the production benefits from the planted trees, we think we are further ahead than if we hadn't done it."

Above—A dusky woodswallow at 'Blaxland'.

Background—The Bendemeer white gum, a ROTAP species growing at 'Blaxland'.

"This has increased our profitability through higher stocking rates, wool cuts, lambing percentages, more grass growth and having areas to take good care of sheep off-shears in bad weather," says Caroline.

James and Caroline expect all these works to increase birdlife, native animals and frogs and help protect threatened native plants and vegetation communities in stock-excluded areas.

"All this contributes to a more valuable property—we have more money, more biodiversity and more personal satisfaction," says Caroline. "The biodiversity of our farm has skyrocketed since we did all this, and we suspect its capital value has too," adds James.

A vision

According to James and Caroline, the wool industry and Australia's other agricultural industries have to look after country for three very good reasons: inter-generational equity, national security and markets.

"We owe it to our children and grandchildren to pass on a healthier country than we inherited," says James. "That's only fair. We also need to maintain a healthy resource base to produce food and fibre. That's just plain, simple national security. And we need to start telling our clients and markets that we are environmentally and ethically responsible. We are producing food and fibre while looking after nature. Surely that's important enough for wool to secure a bigger market share?"

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improving farm profits through biodiversity

The Native Vegetation and Biodiversity sub-program of Land, Water & Wool is working with woolgrowers and demonstrating that biodiversity has a range of values, can add wealth to the farm business and can be managed as part of a productive and profitable commercial wool enterprise.

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