

## Making the move into electric fencing

### Background

When Alan Forrest diversified and introduced goats to his sheep and wool operation in the early 2000s, he also made the move to electric fencing and has not looked back since.

Alan is a firm believer that electricity is most cost effective way to maintain the integrity of fencing, by reducing the pressure from both stock and pests.

Mr Forrest runs Merino ewes and agistment cattle depending on the season, as well as up to 3000 goats on, 'Gordonvale' at Ilfracombe in Central Queensland, where he employs a full time manager. He and his family are based at his property 'Logancrail' between Warwick and

Inglewood in the Traprock, where he runs both sheep and goats.



An example of offset electric wires in an existing fence line.

"I believe you can achieve effective control with electricity, which is difficult to achieve even with a netting or hinge joint exclusion fence," he said. "You can very quickly make an existing fence viable by adding some hot wires or offset wires (outriggers) and removing the pressure from stock and native animals."

"For me it was to contain goats, but sometimes it takes a dog problem or a crop failure

due to kangaroos for people to get started, but I don't know anyone who has started out with electric fencing that is properly designed and erected and decided to stop. They always want to do more."



## Fence types

At 'Gordonvale', Mr Forrest has in place around 40km of electric fence consisting of five paddocks. He started by hot wiring a third of the property and then did the internal fences of that area. He then continued along the boundaries with about 70 per cent complete.

He is now planning the next section of boundary based on wild dog pressure on the southern end. The ultimate goal is electricity on all fences.

At 'Logancrail', the boundary fence is electric and the property is broken into three electric blocks.

"Anyone who has worked with livestock, particularly goats knows that they can be challenging to contain. When I started out the key challenge was to keep the stock in, now dog control is a main function of the fence.

"The fence type I use varies depending on the land type and the pressure from stock, kangaroos and predators. It will of course also depend on the type of stock to be kept in and whether the fence is new or being renewed. For example, a fence with little pig or dog pressure in open

country will have different needs to hilly country with feral goats."



A line of fencing with three hot wires.

In designing his fences Mr Forrest tries to balance costs against the role of the fence.

He has used in some fences 3.4mm wire for the hot wires to carry the maximum power and 2.5mm for the earth wires. A typical new fence design is eight plain wires with four hot; or seven wires and three hot if it's a fence line with lower pressure or a stand-off with existing fences.

"I use the same wire spacing as for a conventional plain wire suspension fence. Different designs can vary the results but not as much as choice of energizer and deciding whether to carry the earth or not.



It's important to carry the earth so that an animal is shocked when making a circuit with the wires irrespective of conductivity through the ground.

"Sometimes I need to add an extra double sided outrigger to a point where there is a lot of pressure from kangaroos or other predators, just to educate them and when they cannot get



through the fence at the pressure points, they are wary of the rest of the fence," he said.

**Costs vary significantly**

As with fence types, costs also vary significantly depending on a range of factors including land type, power supply and fence design.

"Costs vary so significantly that it's difficult to give a figure that will be relevant for everyone.

A double sided outrigger can be added to a point where there is extra pressure from kangaroos or stock

The advice I have for producers making the move into electric fencing is to speak to reps from fencing companies and start

your research there. "In my experience, it's more effective to go straight to a company rep as some re-sellers may not have the expertise that you'll need.

"In my own case, I have such a wide variety of fences that costs have varied significantly between projects. Costs can be controlled by using plain wire instead of hinge joint, or using existing netting fence and adding a hot wire," he said.

"For instance, a neighbor spent \$2500/km on materials for a seven line hingejoint with barb top and bottom of the fence, while it cost me \$1100/km for four earth, four live fence at the same time. In this case, I had the same existing old netting fence that he replaced and ran two hot wires inside it with the earth carried in the old fence, for less than \$250/km. Kangaroos still





push under the bottom barb on his while nothing has gone through mine in the six years since they were done.

### **Maintenance is crucial**

Mr Forrest says that time spent on maintenance can be reduced by using quality materials and always prioritising good power to the fence.

“In my experience, once kangaroos and pigs learn about the electric fence they tend to keep away and pressure on the fence is reduced, thus maintenance is reduced,” he said.



“There is likely to be more maintenance to the fence in the early days if kangaroos are used to travelling through the fence at a certain point.

“The time I spend on maintenance varies, but I monitor the units regularly and if there’s too much power going out it’s an indication that there could be a fault which requires an extra trip to rectify.”

Time spent on maintenance can be reduced by using quality materials.

I carry a tester with me when I’m checking water and stock on the property and always do a quick check on the fence when I stop to open a gate. This way there is very little extra time spent, all it takes is put the tester on the wire to make sure everything is working.

Mr Forrest has found maintenance of electric fences to be typically less than that of conventional fences, because animals are not constantly putting physical pressure on the wire, causing it to stretch and break.



“It takes a lot less time to check that there is power in the hot wires than repair holes and broken wires.

“When I fix a roo hole in a conventional mesh fence at Loganrail, three days later there is another hole right next to it. This doesn’t happen when there is an electric wire beside the same fence, so the labour cost of continually repairing holes disappears.

Another example is livestock putting their heads through a conventional fence to graze the fresh feed in the next paddock; I have had cattle almost flatten non electric fencing that way. One offset hot wire in addition to that fence cured the problem.

### **Effectiveness**

According to Mr Forrest, if a fence is designed to be effective enough to prevent kangaroos from breaching, it will control all other forms of livestock and predators.

“Reliable fencing affects everything from integrity in stock management, worm control, predator control and the ability to spell or improve country with confidence,” he said.

“In 2014 we had two mobs of merino ewes that were both 100 per cent scanned in lamb, a dog got into the non-electric paddock and resulted in 14 per cent less lambs marked compared to the other mob.

“The greater the physical barrier, such as an eight wire electric fence compared to a five wire electric fence, the less likely a dog is going to go through the fence. If dogs are used to travelling through fences, they are more likely to try and go through, not over an electric fence – but they will only do it once. I have some maremma dogs on the property and they have learnt about electricity and will not go near the fence.

“When stock are weaned or are new to the property, they spend some time being fed in yards with electric fencing so they start to learn good habits from day one. The yards have the electric wire around the inside so the animals get a shock when they go to investigate the fence.

“They learn very quickly to stay away from fences and this kind of stock management will give you a better result when the animals go out into the paddock,” he said.





## Future plans

The technology available for electric fencing is constantly improving and in the future Mr Forrest would like to invest in new remote technology for monitoring of units.

“You can use six remote points per unit, which would make checking fences less time consuming, especially where there are long distances involved. There is even technology available now that will send you an SMS if a fault is detected at one of the remote monitoring points.

“I have plans to continue fencing off more sections of the property with electric fences. My ultimate aim is to have no animal able to go through a fence.”

## Additional thoughts

- Buy the biggest unit that is available, even if you think you won't need it. Once you start using electric fencing, you will want to build more.
- Only use products that are designed for electric fencing. Spend the money and get the result that you require. It is still cheaper for the level of control that is achieved than the alternatives and will save you time and money in the long term if it is done properly the first time.
- I use mains power where possible – you will typically get 2.5 to three times the output for the same price compared to solar by the time you buy batteries and panels. In saying that, there are some very powerful solar units on the market now.
- Get advice directly from the supplier, on the most suitable design and set up for your needs.
- Talk to people who have done it before