



Empowering People

RCS Updates

Kangaroo Fencing in QLD



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Disclaimer

This document is designed to provide you with general information only and does not attempt to give you advice on any particular investment or to recommend any particular investment to you. If you have any doubt as to whether a particular investment is suitable for you, you should seek professional advice.



Kangaroos and grazing

Kangaroos are one of major pests affecting the productivity of graziers across Australia. In small numbers kangaroos add biodiversity which is highly desirable for a healthy ecosystem. However, in large numbers kangaroos can cause significant losses in production, mostly due to increased grazing pressure and land degradation. Kangaroos in large numbers will cause additional damage to fences and reduce a graziers' ability to rest plants/paddocks.

There are a number of ways kangaroo populations can be managed, including culling, deterrence and exclusion. This article will provide three case studies from RCS clients who have used exclusion fencing as a roo population control method.

The cost of large kangaroo burdens

It is difficult to calculate the exact impact roo burdens can have on the bottom line. Below is a worked example of how to calculate the cost. Obviously we can only estimate the roo population. The assumptions used for this example are based on a 50,000 hectare property with a conservative count of 10,000 roos and that one adult roo is equivalent to 0.1 of a Large Stock Unit (LSU - 450kg animal at maintenance).

10,000 kangaroos x 0.1 LSU equiv. = **1,000 LSU equiv. or 7000 dry sheep equiv. (DSE)**

Assuming 1 LSU can earn a gross margin of **\$100** per annum...

\$100pa x 1000 LSU = \$100,000 *loss of potential income per annum*

This example shows that kangaroos in large numbers should be managed for overall business profitability. The main consideration with kangaroo fencing is determining the return on the investment.

Will a kangaroo fence be profitable for your business?

For a kangaroo fence to be profitable, the extra income received from running more livestock must exceed the cost of building and maintaining the fence within a reasonable time frame.

Use the following steps to work out if a roo fence will be profitable to your business or not.

1. Calculate an accurate perimeter of the exclusion fence.
2. Determine the design and specifications of the fence that is best suited to your area
3. Calculate the total cost of erecting the fence. This includes line clearing, fencing



material, labour and all other related expenses.

4. Estimate the potential increase in livestock carrying capacity you may get once the roo population is under control.
5. Put a gross margin figure (per LSU or DSE) on these animals to determine the additional income which will come from the improved carrying capacity.
6. Return on Asset (ROA) = total gross margin ÷ cost to erect the fence.

Case Studies

The following case studies are from RCS clients who have implemented kangaroo exclusion fencing. They cover wire and post specifications, producer's thoughts on the fence and what could have been done better, approximate cost per kilometre of fence and an overall effectiveness rating of the fence itself after construction.

Case study 1 – Tambo, QLD

This fence was built in 2008 in the Tambo area. This producer started to see a return on his investment quite a few years later but still believes it was a good investment.

Wire

- 1500/150/15 pre-fabricated netting (1500mm tall = 5ft / 150mm between vertical wires / 15 horizontal wires).
- Netting did not have an apron attached.
- High tensile plain wire attached to the top and bottom of netting for support.
- No barb wires above netting

Posts

- 7 ft steel posts every 8 metres.
- Every 10th post was a MaxY steel post.
- Railway iron strainer posts approximately every 500 metres.

Producer's Thoughts

- A significant reduction in the kangaroo population has been noticed 6 years later.



- To see a faster return on the infrastructure this producer recommends managing the population of roos prior to the last section of fence being erected.
- Good ground and fence line preparation is paramount for a high quality and effective fence and will reduce maintenance costs in to the future.
- This producer believes 5ft netting without barb top wires is definitely high enough to keep kangaroos out.
- In hindsight this producer believes using ClipEx posts would have been more effective (Phone 1800 65 77 66 or visit website <http://www.clipex.com.au/>)
- This producer was very happy with a Western Australian company called *Southern Wire* (Phone 08 9279 9999 or visit website <http://www.southernwire.com.au>)

Cost per kilometre: \$8000 all inclusive

Overall effectiveness of the fence: 9/10



Case Study 2 – Bollon, QLD

This fence was built in 2007 in the Bollon area. In total 30,000 acres were fenced. It has been fairly successful; however this producer found they would change a few things about their fence.

Wire

- 4ft (1200mm) netting (6x4inch at top gradually getting smaller to 3x4inch at bottom).
- 2 barbed wires above netting to make the total height of the fence 5ft 8 inches.
- No apron attached.
- No wire attached to the top or bottom of netting for support

Posts

- Steel posts 15m apart.
- 4 inch round steel strainers.

Producer's Thoughts

- Post are too far apart for the amount of pressure this fence receives.
- Kangaroos can jump over the netting and through the top two barb wires.
- No wire attached to the top and bottom of the netting for support meant the netting has stretched and is now sagging. This has created more gaps between the top two barbed wires making it even easier for kangaroos to jump through.
- An apron is needed as kangaroos are able to dig under. This producer suggests possibly putting the apron just where the heavy kangaroo pressure is to save on cost.
- Overall, this producer is happy with the investment but can see many ways the design could have been improved.

Cost per kilometre: \$3000

Overall effectiveness of the fence: 5/10



Case Study 3 – Mitchell, QLD

This fence was built in 2005 and has been quite successful. There was 80km of fencing in total and this producer has noticed significant improvements in the business since erecting the fence.

Wire

- Used 1300/115/15 pre-fabricated netting.
- Two barbed wires above the netting to make the total height of the fence 5ft 4 inches.
- No wire attached to the top or bottom of netting for support

Posts

- 7 ft steel posts every 9m
- 4 inch round steel strainer every 500m

Producer's Thoughts

- This producer said the kangaroo fence was a great investment as it approximately doubled their carrying capacity in a few years.
- The fence could be improved with a bottom barbed wire or apron.
- This producer suggested the netting was too low and that higher netting would have been better for total kangaroo exclusion.
- This producer controlled the roo population on his property before the last section of fencing went up. He believes that this was the main reason the carrying capacity of the property increased so significantly.

Cost per kilometre: \$4600 all inclusive

Overall effectiveness of the fence: 8/10



Summary

The table below shows a summary of all three fences and compares fence specifications, cost and overall effectiveness. As you can see from the summary table below, Case Study 1 fence was the most effective; however it was significantly more expensive. The fence from Case Study 3 was still quite good as it excluded most kangaroos and was significantly cheaper, although this may be attributed to the population control prior to construction of the last section of fence. Case Study 2 fence was the cheapest to construct but had poor design and therefore poor effectiveness.

	Wire Specifications	Post Specifications	Cost per km	Overall effectiveness rating
Case Study 1 Tambo, QLD	1500mm netting No apron No top barb wires Netting support wires. Total fence height 5ft.	7ft steel every 8m. MaxY every 10 th post. Steel strainer every 500m.	\$8000	9/10
Case Study 2 Bollon, QLD	1200mm netting No apron 2 barbed top wires No netting support wires. Total fence height 5ft 8in.	7ft steel every 15m. Steel strainers every 500m	\$3000	5/10
Case Study 3 Mitchell QLD	1300mm netting No apron 2 barbed top wires No netting support wires Total fence height 5ft 4in.	7ft steel every 9m Steel strainer every 500m.	\$4600	8/10



General recommendations if considering exclusion fencing

Cost

- Know how much kangaroo overpopulation is costing you.
- Know how much your profitability would increase with a fence in place.
- Accurately determine the overall cost of building and maintaining the fence.
- Know how long it will be until the fence pays for itself
- Share with neighbours where possible to reduce costs

Preconstruction preparation

- Ground and line preparation is critical to improve exclusion effectiveness, to reduce future maintenance costs and improve longevity of the fence.
- To reduce the time it takes to pay off the fence, it is highly recommended that the kangaroo population on the property is managed/reduced before the last section of the fence is constructed.

Fence specifications

- Pre-fabricated 1500mm netting was the most effective at excluding the kangaroo population. The height is sufficient that no top barb wires are required.
- Posts 8 or 9 metres apart with strainers every 500m is recommended. A MaxY post every 10 posts will improve the durability of the fence.
- An apron or barbed bottom wire is necessary for full exclusion and to minimise the damage caused by roos digging under fence.
- The netting requires a top and bottom support wire to prevent stretching and/or sagging as the fence receives pressure and ages.



Examples of different exclusion fence designs

