



Government of Western Australia
Department of Regional Development



**BUSINESS CASE PROPOSAL:
FOR
COMPLETION OF THE MURCHISON REGION VERMIN CELL WITH
THE CONSTRUCTION OF 480KM OF VERMIN PROOF FENCING**

FROM THE SHIRE OF MOUNT MAGNET

FUNDING REQUESTED: \$4,534,000

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY	3
2.0 PROJECT SCOPE AND EVALUATION.....	8
2.1 PROJECT OUTCOME	8
2.1.1 <i>Statement of Purpose</i>	10
2.2 PROJECT DESCRIPTION	11
2.3 BACKGROUND	13
2.3.1 <i>The Duncan Review</i>	13
2.3.2 <i>The current impact of wild dogs</i>	16
2.4 POLICY AND STRATEGIC FRAMEWORK	17
2.5 KEY DELIVERABLES	19
2.6 STAKEHOLDER IDENTIFICATION	20
2.7 CRITICAL ASSUMPTIONS.....	21
2.8 ECONOMIC AND FINANCIAL ANALYSES.....	24
2.8.1 <i>The Projected Financial and Economic Benefits to Pastoral Businesses of the Proposed Murchison Region Vermin Cell</i>	28
2.8.2 <i>Private, environmental, regional, community and social benefits of the Murchison Region Vermin Cell</i>	43
2.9 ASSESSMENT OF OPTIONS.....	46
2.10 PREFERRED OPTION.....	47
2.11 FUNDING STRATEGY.....	48
2.11.1 <i>Pastoralists capital contribution schedule</i>	49
2.11.2 <i>Project Budget</i>	50
2.12 PROJECT TIMEFRAME AND KEY MILESTONES.....	51
2.13 RISK ANALYSIS	52
2.14 LOCAL CONTENT	54
3.0 IMPLEMENTATION STRATEGY	54
3.1 COMMUNICATION PLAN	54
3.2 PROCUREMENT STRATEGY	54
3.3 GOVERNANCE.....	55
3.4 SUPPORTING DOCUMENTS	56
4.0 RECOMMENDATION OF PREFERRED OPTION	56
4.1 SIGN-OFF	56
 5.0 APPENDICES	
5.1 LETTERS OF SUPPORT	
RANGELANDS NRM WA	
DEPARTMENT OF AGRICULTURE AND FOOD WA	
MURCHISON REGION VERMIN COUNCIL	
PASTORALISTS AND GRAZIERS ASSOCIATION	
MEEKATHARRA RANGELAND BIOSECURITY ASSOCIATION	
RANGELAND FIBRE AND PRODUCE GROUP	
 5.2 PASTORALIST MEETINGS 16-19 SEPTEMBER 2013	
CONFIRMATION OF SUPPORT	
SUMMARY OF MEETINGS	

1.0 EXECUTIVE SUMMARY

This Business Case has been developed to support an application to the Mid West Development Commission under the Royalties for Regions Mid West Investment Plan, for funding of \$4,534,000 to assist with the construction of 480km of vermin proof fencing to complete the Murchison Region Vermin Cell.

The final 480 km of vermin proof fence is required to join the existing No 2 Vermin Fence with the State Barrier Fence, which will result in 7,520,630 ha of land, 53 pastoral stations and 9 properties owned by the Department of Parks and Wildlife (DPW), being enclosed within the Vermin Cell. The length of fencing for the entire Murchison Region Vermin Cell is approximately 1,400 km, of which 920 km is already in place and has recently been upgraded to full vermin proof standard.

The total cost of completing the Murchison Region Vermin Cell is estimated to be \$5,822,000; \$4,534,000 of which is being sought from the Mid West Development Commission. The Mid West Investment Plan lists the construction of vermin proof fencing as a "flag ship project" in the category of Key Infrastructure and Services.

An application to the Department of Regional Development (DRD) as part of the Country Local Government Funding (CLGF) for \$1,022,000 is currently being processed. The balance of \$266,000 has been committed by Shire Councils located within the Vermin Cell.

At a recent series of meetings, attended by owners/representatives of 78% of pastoral properties within the cell, held to discuss various issues relating to the Vermin Cell (outcomes of these meetings are contained in Section 5.2), all in attendance agreed to contribute, financially and/or in-kind, approximately 50% of the \$4,534,000 being sought from the Royalties for Regions funded Mid West Investment Plan. The pastoralists' contribution will be payable in annual installments of \$1,800 per station over a period of 23 years. These contributions will be adjusted annually on 30 June each year by the Perth CPI. Contributions will commence in year 2 following completion of the Vermin Cell. The pastoralist contributions are expected to be levied under the Biosecurity and Agricultural Management Act 2007 "Industry Funding Scheme" and collected by the Office of State Revenue. It is expected that these funds will be managed and allocated by a joint cross representative governing group (yet to be established) with possible representation from the Murchison Local Government Authorities, Department of Agriculture and Food WA, Mid West Development Commission, and the pastoral industry. The pastoralists' contributions will be used for programs within the Vermin Cell which will enhance both productivity and environmental outcomes. The Shires of Mount Magnet, Cue and Yalgoo have committed a total of \$266,000 to the capital cost of the Vermin Cell, with further contributions being considered by the Shires of Sandstone and Murchison.

One hundred km of the new fence extending west from the existing No 2 Vermin Fence will be constructed on land that is a reserve managed by the Murchison Regional Vermin Council (MRVC) for the purposes of establishing a vermin fence. The remaining 380km of fence, from the end of this reserve to the State Barrier Fence in the west, will follow existing pastoral lease boundaries, or in some cases as negotiated with leaseholders, internal fencing to avoid difficult country such as breakaways and to exclude country deemed unsuitable for small stock enterprises.

The 100km of fencing to be constructed within the existing No 2 Vermin Fence reserve will come under the control of the MRVC which is already responsible for the maintenance of the No1 Vermin Fence and the No 2 Vermin Fence. The remaining 380km of fence to be constructed outside the existing reserve will be managed by a new Recognised Biosecurity Group (RBG) which is expected to be established to manage the construction of this section of fence, and fund and arrange maintenance and insurance of the fence. The majority of owners of the pastoral stations to be contained within the Murchison Region Vermin Cell have agreed to an increase in their vermin rates of between \$500 and \$1,000 per year. These rates will be levied by the new RBG under the Biosecurity and Agricultural Management Act 2007, and it is assumed that these rates will be matched dollar for dollar by the Department of Agriculture and Food WA (DAFWA).

The completion of the Murchison Region Vermin Cell will enable wild dog numbers to be reduced to the point of having no significant impact on livestock, thus enabling stations to rebuild their livestock enterprises and return to profitability. Pastoralists are acutely aware that the completion of the Vermin Cell alone will not result in wild dogs being reduced to insignificant numbers, but the solution to the wild dog problem requires the effective management of the parallel programs of strategic planning and monitoring, fencing, baiting, trapping and the implementation of new control technologies as they become available. There is also an understanding that total grazing pressure due to the existence of the Vermin Cell may be negatively impacted as a result of increased wild dog control enabling the populations of native and non-domestic grazers to increase; even though this scenario is generally considered to be a low risk as these grazers were not a significant problem prior to the explosion in wild dog numbers. Even so, the numbers of native and non-domestic grazers will be monitored closely with action taken to manage total grazing pressure when and where required. Pastoralists are aware that stocking rates relative to the carrying capacity of the country is the fundamental driver of productivity and profitability of their enterprises.

The survey of pastoralists conducted in October 2012 and detailed in Section 2.3.2 has indicated that sheep numbers are reducing at a rate of 14.5% per annum as a direct result of the impact of wild dogs. Should the Vermin Cell not be completed and the current rate of losses continues, then it is predicted that by 2018 the number of sheep on the pastoral leases within the Murchison Region Vermin Cell will be reduced to 49,404, which is approximately 10% of the current carrying capacity of this area. At a stocking rate of only 10% of carrying capacity, very few, if any, of the pastoral leases will remain financially viable, and local communities will face a parallel demise.

An in-depth financial and economic study of a small number of pastoral businesses within the proposed Murchison Region Vermin Cell was also conducted to determine their current levels of profitability, and projected profitability with the Vermin Cell in place and wild dogs controlled to insignificant numbers. The study as detailed in Section 2.8.1 showed that the profitability of these stations has been in steady decline over the past decade, the same period which has seen an explosion in wild dog numbers and attacks on livestock. Between 2000-01 and 2011-12 Return on Assets fell from 7.5% to -7.1%; despite significant improvements in commodity prices. This rate of decline cannot continue.

Projections for these businesses showed that in the absence of wild dogs, with the implementation of “best practice” management and with stations operating at full capacity, profitability will increase from the current -7.1% to 9.4%. The average increase in profit (earnings before interest and tax) is projected to be \$340,284 per annum. If this increase in profit is extrapolated across 80% of the 53 stations within the Vermin Cell, then the increase in profit within the Vermin Cell would be \$14,000,000.

The path back to profitability is not an easy or straightforward one, and will require commitment, knowledge, enthusiasm and persistence from the pastoralists, and support from financiers, to be achieved. With the knowledge that the region is close to having the means to control wild dogs via the construction of the Murchison Region Vermin Cell, there is a ground swell of enthusiasm for reinstating small stock enterprises, and implementing the latest cutting-edge technology and management ideas. Pastoralists understand that the implementation of best practice management must occur in parallel with the control of the wild dogs if their projected return to profitability is to be achieved. The pastoralists have stressed that they have an appetite for investigating and implementing new management technologies which will replace current management practices they believe are not producing desired outcomes in the areas of productivity, profitability and environmental sustainability. With this in mind, the pastoralists' contribution fund will provide the opportunity for *in situ* research of new technologies, and hence significant leverage on the funding being sought from the MWDC.

With the approval of this Business Case, a detailed implementation plan will be developed to provide the framework for project management, construction of the Vermin Cell, the implementation of new and additional governance requirements, and the management of wild dog control programs. At the same time a Southern Rangelands Pastoral Industry Assessment will be undertaken and culminating in an Action Plan with a focus on strategies that improve sustainability and productivity. It will be overseen by an interagency reference group.

Rangelands NRM WA have committed funds to engage a rural consultant to assist pastoralists plan and budget the rebuilding of their enterprises. This support will enable pastoralists to work through the various options available to them in terms of which enterprises to run, funding options for the capital and operating outlays required, and provide an avenue for challenging their current management practices so as to optimise livestock productivity, cost efficiencies, profitability, and environmental sustainability. Support of this nature will ensure the industry has the tools it requires to leverage the presence of the Vermin Cell and the absence of wild dogs. This support can then become an integral part of a planned future implementation strategy aimed at transformation within the pastoral industry; for example up skilling managers, information gathering, and monitoring economic and ecological effectiveness of new management technologies. This work with the individual pastoralists will form the basis of a program of on-going annual monitoring of the performance of the Vermin Cell, provide base-line data for *in situ* research conducted within the Vermin Cell, and can be used to feed into more global monitoring systems currently used by government agencies. In parallel with this individual support, the NRM funding will also enable the economic and social benefits to the region and local communities of a profitable pastoral industry resulting from the construction of the Murchison Region Vermin Cell, to be further quantified.

The benefits of constructing the Murchison Region Vermin Cell do not reside in station profitability alone. There will be environmental and biodiversity benefits derived from opportunities the Vermin Cell will provide for the management of total grazing pressure and the control of all non-native predators. These benefits include such things as protecting native flora and fauna; controlling weeds, enabling native vegetation to regenerate, reducing soil loss, and increasing the carrying capacity of the land. In turn, these benefits also provide the potential to further drive increases in the productivity and profitability of the pastoral industry.

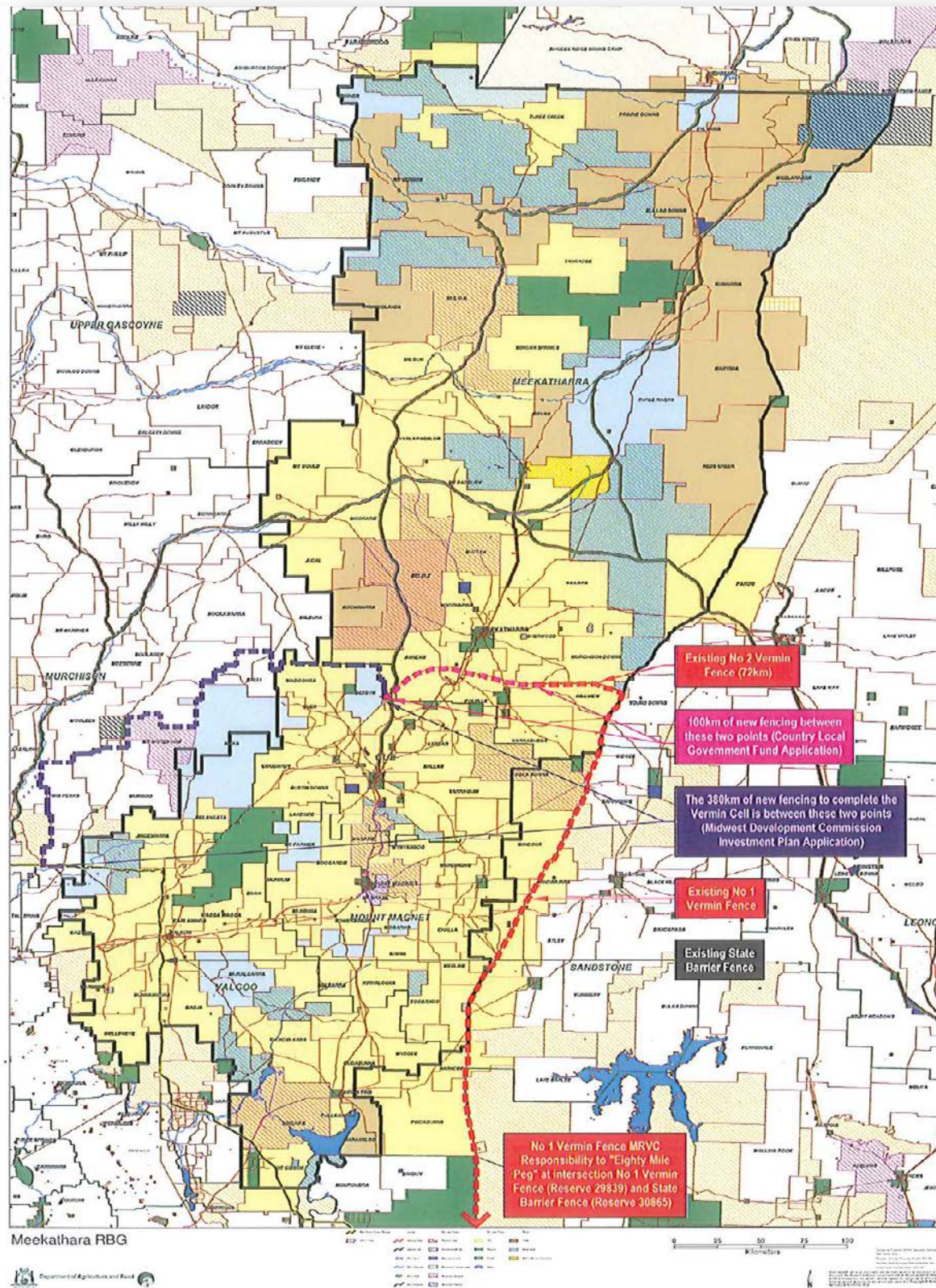
The construction of the Vermin Cell will rejuvenate local communities, which have been declining in parallel with the pastoral industry. With the reintroduction of small livestock enterprises into the region, many benefits will flow to the regional and local communities. Increased demand for livestock and produce transport, agricultural supplies, shearing contractors, both permanent and casual station labour will all help to significantly increase the profitability of local and regional businesses and lead to increases in the local population. The projected increase in small stock in the absence of wild dogs is predicted to require an additional 34 full time equivalent employees on pastoral stations. A rebuilding of livestock numbers towards capacity within the Vermin Cell is likely to see the re-opening of a Geraldton abattoir and the creation of approximately 40 new jobs. With this potential increase in local population, the social fabric of local communities will also be reignited. It is important that there is a vibrant and viable population in our regions to provide the pool of volunteers who are essential for the provision of essential services such as St John Ambulance, and Fire and Rescue Services.

If the pastoral industry is allowed to continue its decline, government will be forced to fund the management of vast tracts of land and provide essential regional services which are normally provided by local business and volunteers.

The Shire of Mount Magnet, on behalf of the Murchison Region and the Southern Rangelands, commend this project to the Mid West Development Commission.



Wether attacked and killed by wild dogs on Wondinong Station (Lara Jensen)



2.0 PROJECT SCOPE AND EVALUATION

2.1 Project Outcome

The provision of the funding requested in this Business Case will enable the construction of 480km of dog-proof fencing to complete the Murchison Region Vermin Cell; a fully enclosed Vermin Cell surrounding 53 pastoral stations (6,536,198 ha) plus 9 stations owned and managed by the Department of Parks and Wildlife (984,432 ha). This will result in a total of 7,520,630 ha, and the livestock enterprises within this area, being protected from the ravages of wild dogs.

One hundred kilometers of this new fence will be built on land that is part of the No.2 Vermin Fence Reserve vested in the MRVC for the purposes of establishing a vermin-proof fence, while the remaining 380km will follow existing pastoral lease boundaries or, in some sections, internal station fencing. Refer to the map in Section 1.0. The length of vermin fencing enclosing the Murchison Region Vermin Cell is some 1,400km. Approximately 450 km of cell fencing is already in place in the form of the State Barrier Fence and an additional 470 km of fencing is also in place in the form of the MRVC No1 Vermin Fence and No2 Vermin Fence.

A majority of pastoralists within the Murchison Region Vermin Cell have agreed to contribute, financially and/or in-kind, approximately 50% of the \$4,534,000 being sought from the Mid West Investment Plan. The pastoralists' contribution will be interest free, and payable in annual installments of approximately \$1,800 per station over a period of approximately 23 years. These contributions will be adjusted annually on 30th June each year by the Perth CPI. Contributions will commence in year 2 following completion of the Vermin Cell. It is expected that the pastoralist contribution will be levied under the Biosecurity & Agricultural Act 2007 "Industry Funding Scheme" and will be collected by the Office of State Revenue. It is expected that these funds will be managed and allocated by a joint cross representative governing group (yet to be established) with possible representation from the Murchison Local Government Authorities, Department of Agriculture and Food WA, Mid West Development Commission, and the pastoral industry. The pastoralists' contributions will be used for programs within the Vermin Cell which will enhance both productivity and environmental outcomes. The pastoralists have stressed that they have an appetite for investigating and implementing new management technologies which will replace current management practices they believe are not producing desired outcomes in the areas of productivity, profitability and environmental sustainability. With this in mind, the pastoralists' contribution fund will provide the opportunity for *in situ* research of new technologies, and hence significant leverage on the funding being sought from the MWDC.

The Shires of Mount Magnet, Cue and Yalgoo have committed a total of \$266,000 to the capital cost of the Vermin Cell, with further contributions being considered by the Shires of Sandstone and Murchison.

The 100km of the new fencing which will be constructed within the existing No 2 Vermin Fence reserve, will come under the control of the MRVC which is already responsible for the maintenance of the No1 Vermin Fence and No 2 Vermin Fence. Existing fence maintenance is funded through landholder fence rental payments, precepts from constituent Councils, and funds from the current RBG. A new RBG is expected to be formed to manage the construction of the remaining 380km of new fencing, and a majority of pastoralists have agreed to an increase in their vermin rates of between \$500 and \$1,000 per station per year to fund maintenance. It is assumed that these rates will be matched dollar for dollar by DAFWA. The new RBG will levy these rates under the Biosecurity and Agricultural Management Act 2007.

With the approval of this Business Case, a detailed implementation plan will be developed to provide the framework for project management, construction of the Vermin Cell, the implementation of new and additional governance requirements, and the management of wild dog control programs. In addition a key part of the project is the development of the Southern Rangelands Pastoral Industry Assessment culminating in an Action Plan with a focus on strategies that improve sustainability and productivity. It will be overseen by an interagency reference group.

Once the Murchison Region Vermin Cell is complete, the task of reducing wild dog numbers to insignificant numbers can intensify. The absence of wild dogs will enable pastoralists to re-establish profitable small stock enterprises, thus providing an enormous boost to the profitability of the pastoral stations. The benefits of this project do not only accrue to the pastoral industry. There will be significant benefits to the economic and social viability of the local regions and communities through the creation of new jobs in the pastoral industry and other industries such as transport, shearing, service sectors, and the re-opening of a local abattoir which was forced to close due in part to a reduction in the supply of livestock for processing. The increase in employment in the region will lead to a population increase in local communities which in turn serves to rejuvenate town businesses and enables the rebuilding of the social fabric of these communities. Organisations which provide a vital service in remote communities, (e.g. St John's Ambulance, Fire and Rescue Services) will once again have a viable pool of people from which volunteers will emerge.

The path back to profitability for the pastoral stations within the Murchison Region Vermin Cell will not be without its difficulties; and in some situations, adjustment out of the industry may be the only viable option. In order to assist pastoralists determine how best to rebuild their enterprises and livelihoods, Rangelands NRM WA have committed funds to engage a rural consultant to assist pastoralists plan and budget the rebuilding of their enterprises. This support will enable pastoralists to work through the various options available to them in terms of which enterprises to run, funding options for the capital and operating outlays required, and provide an avenue for challenging their current management practices so as to optimise livestock productivity, cost efficiencies, profitability, and environmental sustainability. Support of this nature will ensure the industry has the tools it requires to leverage the presence of the Vermin Cell and the absence of wild dogs. This support can then become an integral part of a planned future implementation strategy aimed at transformation within the pastoral industry; for example up skilling managers, information gathering, and monitoring economic and ecological effectiveness of new management technologies. This work with the individual pastoralists will form the basis of a program of on-going annual monitoring of the performance of the Vermin Cell, provide base-line data for *in situ* research conducted within the Vermin Cell, and can be used to feed into more global monitoring systems currently used by government agencies. In parallel with this individual support, the NRM funding will also enable the economic and social benefits to the region and local communities of a profitable pastoral industry resulting from the construction of the Murchison Region Vermin Cell, to be further quantified.

Much has already been achieved by various authorities towards the successful completion and operation of the Vermin Cell.

- DAFWA have recently upgraded approximately 450km of the State Barrier Fence (which forms part of the western boundary of the Vermin Cell) to dog-proof standard.
- The MRVC have recently upgraded of the No1 and No2 Vermin Fences with the construction of 171km of new fencing; which forms the eastern and part of the northern boundary of the Vermin Cell.
- An application is currently being processed by the Department of Regional Development for \$1,022,000, which based on recent vermin proof fence replacement contracts, will fund approximately 100km of new fencing for the Vermin Cell. These funds are the pooling of the 2012/13 CLGF Regional Group Funds from the Shires of Yalgoo, Mount Magnet, Cue, Sandstone and Wiluna.
- The current RBG has expended \$395,000 in 2012/2013, increasing to \$475,000 in 2014/2015 on wild dog control, the bulk of which is applied within the boundaries of the proposed Vermin Cell.
- The Minister for Agriculture has recently announced a bounty of \$100 per wild dog to commence on 1 January 2014. This scheme will be administered by the current RBG.

2.1.1 Statement of Purpose

The purpose of this Business Case is to support an application to the Mid West Development Commission for Royalties for Regions funding of \$4,534,000 to assist with the construction of 480km of vermin proof fencing to complete the Murchison Region Vermin Cell.

The purpose of the overall project is to create a vermin-proof cell surrounding 53 pastoral stations and 9 stations owned by the Department of Parks and Wildlife, covering a total of 7,520,630 ha, inside which wild dogs can be controlled and reduced to insignificant numbers. The control of vermin within the Cell will enable the revitalization of the pastoral industry through the re-introduction of small stock enterprises. There will be significant flow-on effects to the broader Southern Rangeland community through not only increased profitability of the pastoral industry, but also a revitalization of towns and communities with increased employment opportunities, expansion in businesses such as transport, rural suppliers, contract shearing teams, and downstream processing. In turn, increased population and profitability will result in the social fabric of the outback communities being reignited and revitalized.



Wild dog on the Sandstone Road (Lara Jensen)

2.2 Project Description

The project involves the construction of the Murchison Region Vermin Cell, incorporating part of the State Barrier Fence, part of the No 1 Vermin Fence and the No 2 Vermin Fence. (Refer to the map in Section 1). A total of 480 km of new fencing along the northern and western boundaries is required to complete the Vermin Cell. The total cost of the project is estimated at \$5,822,000; \$4,534,000 of which is the subject of this application to the Mid West Development Commission and \$266,000 from the Shire of Mount Magnet, Cue and Yalgoo. The remaining \$1,022,000 of funding required is to come from the combined Country Local Government Funds of the Shires of Sandstone, Mount Magnet, Cue, Wiluna and Yalgoo; the application for which is currently being processed by the Department of Regional Development.

A majority of pastoralists within the proposed Murchison Region Vermin Cell have agreed to commit approximately 50% of the \$4,534,000 being sought from the Mid West Investment Plan. The pastoralist contributions are expected to be levied under the Biosecurity and Agricultural Management Act 2007 "Industry Funding Scheme" and collected by The Office of State Revenue. It is expected that these funds will be managed and allocated by a joint cross representative governing group (yet to be established) with possible representation from the Murchison Local Government Authorities, Department of Agriculture and Food WA, Mid West Development Commission, and the pastoral industry. The pastoralists' contributions will be used for programs within the Vermin Cell which will enhance both productivity and environmental outcomes. The pastoralists have stressed that they have an appetite for investigating and implementing new management technologies which will replace current management practices they believe are not producing desired outcomes in the areas of productivity, profitability and environmental sustainability. With this in mind, the pastoralists' contribution fund will provide the opportunity for *in situ* research of new technologies, and hence significant leverage on the funding being sought from the MWDC.

The Shires of Mount Magnet, Cue and Yalgoo have committed \$266,000 to the capital cost of the Vermin Cell, with contributions also expected from the Shires of Sandstone and Murchison.

The Department of Agriculture and Food WA have recently completed a \$5,000,000 upgrade of the State Barrier Fence. The State Barrier Fence runs from Bremer Bay on the south coast to Kalbarri on the west coast. Some 450 km of the total length of 1,170 km of the State Barrier Fence forms the western boundary of the planned Murchison Region Vermin Cell.

In addition, DAFWA is providing over \$200,000 annually to the current RBG which has expended \$395,000 in 2012/2013, increasing to \$475,000 in 2014/2015 on wild dog control, the bulk of which is applied within the boundaries of the proposed Vermin Cell.

The Murchison Region Vermin Council has recently upgraded the No 1 Vermin Fence and No 2 Vermin Fence to a dog proof standard at a cost of \$1,645,000. Of these funds, all but \$110,000 were expended on *new* fencing forming the eastern and northern boundaries of the proposed Vermin Cell. The fencing has been designed for the extreme conditions of the Murchison and is of strong construction requiring little maintenance.



In the first five to ten years of the fence's life, it is expected that minimal maintenance will be required; although the pastoralists understand that certain events could result in major maintenance requirements in these early years. As is currently the case for the No 1 Vermin and No 2 Vermin Fences, the maintenance of the 100km to be constructed within the existing reserve will be managed by the MRVC. The maintenance of the remaining 380k of fence to be constructed will be the responsibility of a new RBG which is expected to be established, with a majority of pastoralists agreeing, at a round of meetings in September 2013, to have their vermin rates increased by between \$500 and \$1,000 per station per year for maintenance costs. It is expected that these rates will be matched dollar for dollar by DAFWA.

With the approval of this Business Case, a detailed implementation plan will be developed to provide the framework for project management, construction of the Vermin Cell, the implementation of new and additional governance requirements, and the management of wild dog control programs.

Through funding provided by NRM Rangelands WA, pastoralists will be assisted in determining their best way back to profitability. This support will enable pastoralists to work through the various options available to them in terms of which enterprises to run, funding options for the capital and operating outlays required, and provide an avenue for challenging their current management practices management so as to optimise livestock productivity, cost efficiencies, profitability, and environmental sustainability. Support of this nature will ensure the industry has the tools it requires to leverage the presence of the Vermin Cell and the absence of wild dogs. This support can then become an integral part of a planned future implementation strategy aimed at transformation within the pastoral industry; for example up skilling managers, information gathering, and monitoring economic and ecological effectiveness of new management technologies. This work with the individual pastoralists will form the basis of a program of on-going annual monitoring of the performance of the Vermin Cell, provide base-line data for *in situ* research conducted within the Vermin Cell, and can be used to feed into more global monitoring systems currently used by government agencies. In parallel with this individual support, the NRM funding will also enable the economic and social benefits to the region and local communities of a profitable pastoral industry resulting from the construction of the Murchison Region Vermin Cell, to be further quantified.

2.3 Background

In recent years the Murchison region has experienced a decline in sheep and goat production, whilst, in part, this can be attributed to dry weather conditions, there has been a significant increase in reported wild dog activity in the region over the past five years, and evidence of very significant reductions in livestock productivity as a result of dog attacks and harassment.

Enhanced wild dog control measures are considered necessary by the MRVC and the pastoralists in the region in order to allow the continuation of a viable pastoral industry. The decline in the pastoral industry is reflected by the high number of pastoral leases currently available for sale, and by the number of pastoralist engaging in off-station employment or contracting.

The impact of wild dogs is not restricted to the Murchison and is an issue that is felt throughout Australia where small stock grazing is prevalent. Wild dogs are responsible for a wide range of negative and undesired impacts on the livestock industry and have been regarded as pests since the start of the European livestock industry. Small stock (sheep and goats) are the most frequent prey, followed by cattle, and even station horses.

The extent of sheep loss is hard to determine, due to the extensive pasture lands in some parts of Australia. The numbers of cattle losses is much more variable and less well documented. Although loss of cattle can rise up to 30 per cent, the normal loss rate is about zero to 10 per cent. Thereby factors such as availability of native prey, as well as the defending behaviour and health of the cattle play an important role in the number of losses.

In many situations, pastoralists have liquidated their sheep enterprises due to the huge losses caused by wild dog attacks, and those still persisting with these enterprises are unable to run self-replacing flocks; hence the life expectancy of these enterprises is very short. Some rangeland goat enterprises have also ceased, while all pastoralists harvesting unmanaged rangeland goats report a drastic reduction in turnoff numbers.

The flow-on effects of these impacts are very significant. One down-stream processor has closed due in a large part to the lack of throughput of livestock caused by wild dog predation; fewer people are employed on stations; more and more owners are having to find off-station work to make ends meet resulting in less time being spent on land and livestock management and existing vermin control, less transport is required for livestock and produce such as wool, stock and station agents are selling less merchandise, businesses in the local towns are suffering as a result of reduced turnover, and the social fabric of towns and communities is decaying.

2.3.1 The Duncan Review

This Murchison Region Vermin Cell project builds on the recommendations of the Rangelands Pastoral Advisory Group Review of the Economic and Ecological Sustainability of Pastoralism in the Southern Rangelands of Western Australia 2009 (SRPAG) or "The Duncan Review".

"Much of the southern rangelands (of which the Murchison Region Vermin Cell is part) are particularly suited to enterprises based on small stock. However, the critical issue, and the catalyst for the Review, was the control of wild dogs. While the review did not believe a continuous barrier fence was the solution this did not rule out the use of cells to enclose the wild dog population and then the reduce dog numbers to insignificant levels within those cells. The review did conclude that it is the responsibility of all land users in the rangelands to contribute to the management of biosecurity threats such as wild dogs".

"The Group concluded that the value of the pastoral industry to the State of Western Australia is greater than the dollar value of its contribution to export income or domestic product. Most pastoralists, along with their Aboriginal neighbours, have an intimate knowledge and love of the rangelands. They willingly live in places that most Australians would turn their back on. With good management tools and skills, rangeland enterprises can be developed that are sustainable and have the potential to remain long after the mineral wealth is depleted".

The SRPAG recognised the relevance of previous reviews to the current situation in the southern rangelands and added to this knowledge by considering the most recent information available".

SRPAG review conclusions:

- Wild dog numbers have risen markedly over the last decade as a result of diminished control efforts.
- There is abundant scientific and experiential evidence that the presence of wild dogs is completely incompatible with a self replacing small stock (sheep or goats) flock (see Howard and Burnside 2009). Reproductive rates fall markedly, adult stock are preyed on and subsequently total flock numbers decline. Costs are attributed directly through production losses and the cost of control, and indirectly through reduced productivity arising from harassment of stock. Pastoral lessees also experience emotional anguish at injured and suffering stock.
- In general large stock (cattle) are considered more resistant to wild dog predation, although production losses are reported. Losses of calves and weaner cattle in the Rangelands vary from 0 to 30%. Producers also report that the value of sale cattle is reduced when evidence of attack is visible; missing ears, torn hides, damaged noses, tails and scarring.
- There is also evidence that indiscriminate dog control can be detrimental to cattle production as disturbance of dog social structure can lead to loss of normal hunting efficiency and subsequent increased attacks on livestock (see Howard and Burnside 2009).
- The Southern Rangelands small stock pastoral industry has been severely impacted by wild dog predation, particularly over the last decade. Predation by wild dogs also greatly limits the animal based alternatives available for lessees who elect to move away from Merino sheep.
- The increasing shift to pastoral cattle production, the increasing occurrence of lease ownership by non-pastoral entities and reduced control efforts are factors in the increase in wild dog predation. The magnitude of the problem is beyond the capacity of the industry alone to arrest.
- SRPAG believes it is of value to maintain capacity for a small stock industry in the Rangelands.
- SRPAG considers it a fundamental principle that the adequate control of feral animals, including wild dogs, by all land managers is necessary to prevent adverse impacts on neighbouring enterprises by incursions of unmanaged feral animals. The Department of Parks and Wildlife Good Neighbour Policy recognises this fundamental principle as does the WA Rangelands Wild Dog Management Policy.

Recommendations made by the "Duncan Review Committee" are:

- 4.3 Immediately increase direct investment in the control of wild dogs, camels and other declared pests by providing adequate resourcing to government agencies, with land management obligations, to manage declared pests on that land in line with 'good neighbour' principles such as those adopted by the Department of Environment and Conservation.
- 4.4 Provide funding and operational support to investigate contemporary and innovative

wild dog control methods and technologies. (e.g. guardian animals and fencing options).

Through interaction with three related vermin fencing projects being the State Barrier Fence, the No1 Vermin Fence and the No2 Vermin Fence, a unique opportunity has arisen to create a Wild Dog exclusion cell with a relatively low incremental investment.

As is demonstrated in the survey and study described in Sections 2.3.2 and 2.8, the financial returns generated from construction of the Murchison Region Vermin Cell are sufficient to support the required incremental investment. The benefit cost ratio could be in the order of 2.4:1.

It is recognised that downstream industries such as transport and abattoirs will also benefit from increased pastoral production generated by the Murchison Region Vermin Cell. These industries are key employers in rural communities and so the benefit will be multiplied through the retention and creation of further jobs.

2.3.2 The current impact of wild dogs

In undertaking the research to develop this business case it was considered important to survey existing pastoralists within the region and ascertain their views on the current situation.

In October 2012, a survey was developed and sent to 73 pastoral stations in the Shires of Cue, Mount Magnet, Sandstone and Yalgoo. These surveys were distributed via e-mail and post and a total of 24 (32%) were returned. This number of responses should provide results with a sampling error within +/- 5.5% at the 95% confidence level, however the results would tend to indicate that the responses received were mainly from pastoral stations that were still working and running stock, where as those not running stock did not respond.

For example, when considering the figures for the number of sheep grazed per station the average number for those running sheep (11 of the 24 respondents) was 4,685. However when considering the average number over all 24 respondents this figure drops to 2,147. Given that those not running small stock are less likely to respond to the survey then this average figure would drop further. Therefore the figure quoted should be considered to be an underestimate of the current situation.

The key findings from the survey were:

- The average property size is 173,790 hectares
- The average number of sheep grazed overall was 2,147
- The average number of cattle grazed was 446
- The average number of goats grazed was 3,125
- The average Dry Sheep Equivalent (DSE) was 9,675
- 95% advised they had wild dogs on their property
- The average number of wild dogs recorded was 9.88 per respondent
- 90.9% use baiting as the primary method of reducing dog numbers
- Average number of sheep lost due to wild dog attacks per annum per respondent 313
- Average number of cattle lost due to wild dog attacks per annum per respondent 9.25
- Average number of goats lost due to wild dog attacks per annum per respondent 1,160
- The average annual loss in monetary value due to dog attacks per respondent was \$90,490
- 85.7% of all respondents considered that a vermin proof cell in conjunction with the current wild dog control program would be an effective method of combating wild dogs.
- 86% also considered foxes to be vermin and present on their property.
- 55% have ceased to run small stock (sheep) as a result of wild dogs
- 81% of those who have ceased to run small stock would re-instate those enterprises again if the wild dogs were reduced to insignificant numbers.
- 90% consider that the reducing wild dog numbers to insignificant levels would have positive environmental and conservation benefits on their property.

From the survey we can conclude that 14.5% of all sheep, 2% of all cattle and 37% of all goats are being lost to wild dog attacks on an annual basis. (average number of sheep grazed 2,147 / estimated no sheep lost 313 x %)

2.4 Policy and Strategic Framework

This project meets the following the Royalties for Regions objectives:

- Building capacity in regional communities
- Retaining benefits in regional communities
- Attaining sustainability
- Expanding opportunity
- Growing prosperity

Building capacity in regional communities: A strong pastoral industry is essential to create demand for goods and services in regional communities. Currently the majority of pastoral stations are operating well below maximum output with the result that they are not creating additional employment and have a lower demand for the services that are available in regional communities.

This project will enable the re-establishment of small stock enterprises, ultimately to their full carrying capacity, which in turn will create employment and demand. Primarily the employment and demand will be created in the communities nearest to the stations and thereby the demand will build capacity.

Retaining benefits in regional communities: A strong pastoral industry with younger operators and increased numbers of employees will create demand in regional communities. This demand will be for public services such as schools and medical services, as well as private products and services such as food, vehicle servicing, and general maintenance services. This demand will assist the viability of offering services in regional communities and for those communities to retain vital services. Sustaining employment in the pastoral sector is critical to maintain and improve the economic diversity of the sub-region. (The Murchison Economic Development Strategy Draft (2013))

Attaining sustainability:- The average age of a pastoral lease holder in the Murchison is 54 years. In the current economic climate it is unlikely that the average age will reduce as very few new people are coming into the industry. Nor are the next generation seeing the pastoral industry as providing a viable future and are leaving the industry and region to pursue alternative career paths. If the current wild dog situation continues and no new investment is attracted to the industry, then in ten years' time the vast majority of pastoralists will have reached retirement age. This will create considerable financial hardship as they will be unable to sell their leases to fund their retirement due to lack of demand. The construction of the proposed Murchison Region Vermin Cell and the reduction in wild dog numbers to insignificant levels will revitalise the industry and present it as an attractive investment opportunity for younger people. These younger people will bring with them families, which in turn will strengthen not only the industry but also the regional communities and contribute to their sustainability.

Expanding opportunity: While the resources sector has created major opportunities in certain areas of the Murchison region in recent years it is the pastoral industry that is represented in every community throughout the region. Creating the Murchison Region Vermin Cell will lead to a revitalised pastoral industry which will attract new investment and people. This in turn will lead to opportunities in employment, processing, transport, maintenance services and agricultural supplies. These opportunities will develop particularly in regional communities that currently rely on the resource sector.

Growing prosperity: Pastoralists, like any other business owners need to generate a return on investment to sustain their business. At present this return on investment is minimal, with the result that there is no, or very little, investment in the industry. Completing the Murchison Region Vermin Cell will enable the pastoral industry to restock and work at capacity. Working at capacity will result in the generation of profits for individual pastoralists. Some of those profits will be reinvested in the industry thus growing the industry and its prosperity.

The pastoral industry in Western Australia and in particular in the Murchison region has been in decline for many years, due largely to the increase in stock losses due to the proliferation of wild dogs, and also due to poor seasons. This decline has had an ongoing impact throughout the Murchison and beyond, to the point where many pastoral stations are now marginal in their financial viability.

The industry has been supported in their efforts to reduce wild dog numbers at a state and local level through the following initiatives:

- Establishment of the Murchison Regional Vermin Council
- Department of Agriculture and Food upgrade works on the state barrier fence
- Department of Agriculture and Food providing \$200,000 annually to the Meekatharra Rangeland Biosecurity Association.

The strategic imperative for developing and implementing the completion of the Murchison Region Vermin Cell is the reduction in wild dog numbers to insignificant levels and the re-establishment of a viable pastoral industry within the Cell.

This project is the final stage of enclosing the cell and thereby creating an environment that is conducive to the re-establishment of the pastoral industry.

This project links to other projects that have already been completed or are being developed:

- Department of Agriculture and Food – State Barrier Fence - Provision of approximately 450km of fencing on the western boundary of the Vermin Cell – Recently upgraded and well maintained to a dog proof standard.
- Murchison Regional Vermin Council – No 1 Vermin Fence and No 2 Vermin Fence Provision of approximately 470km of fencing which since 1963 has been maintained by the Council as a dog proof fence and has been upgraded to ensure that it continues to be an effective barrier for many years to come

This project aligns with the Mid West Development Commission's Investment Plan and four of its desired outcomes:

Key Infrastructure & Services

Outcome 2 - Refreshed and Revitalised Mid West

Outcome 9 - Improved Regional infrastructure

Outcome 10 - Prosperous and Diverse Primary Industry

Outcome 14 - Valued and Protected Environment

2.5 Key Deliverables

Outcomes (Results Impacts)	Performance Measures
Reduction in wild dog numbers to insignificant levels in the Cell	Annual survey of impact (reduction in dog numbers)
Regeneration of the pastoral industry	Reduction in number of leases or sale Number of working leases (increase) Number of employees in the region Benchmark economic and financial viability of stations on an annual basis
Growth of small stock numbers	Annual survey of stock numbers
Use of pastoral leases	Measure carrying capacity and stocking rates Annual estimate of \$ losses to wild dogs (benchmark survey undertaken) Number of Dept Parks & Wildlife leases
Environmental issues: less soil degradation, increase in native flora & fauna; increase in carrying capacity	Rangeland condition surveys
Social benefits to community	Community stays together, population increases, community health increases. Increase in sporting teams
Economic benefits to local towns	Business numbers increase More casual labour available Increase in population
Downstream economic and population benefits	New businesses operating and population increases (Census data)

Outputs (what we do/did)	Performance Measures
Concept of the cell; upgrading of No 1 vermin cell and building No 2 Vermin Fence	Mapping and completion of previous fencing projects Various reports and feasibility studies to support the project
Build the new fence line to enclose the cell	Previous successful projects demonstrates the likely output
Consultation with key stakeholders Pastoralists Local Govt State representatives	Undertaken as part of this application

Performance measurements are a crucial part of this process and are in place to measure and evaluate the project at least annually.

The performance measurements have been put in place to:

1. *Evaluate* how well the program is performing.
2. *Control* – make sure that the project & management are doing the right thing
3. *Budget*
4. *Motivate* - to achieve and then use performance measures for -'output"- on improving internal processes and "outcome"- to motivate people to look outside (to seek ways to collaborate with individuals & organisations that may affect the outcome)
5. *Celebrate* – the need to commemorate accomplishments
6. *Promote* to be able to convince political superiors, legislators, stakeholders, journalists, and citizens of a job well done
7. *Learn* Learning is involved with some process
8. *Keep Improving*

2.6 Stakeholder Identification

The project is supported by the Shires of Wiluna, Sandstone, Mount Magnet, Cue, Yalgoo and Murchison all of whom are major stakeholders in the project.

Fifty three pastoral leases are located within the proposed vermin cell. These leases cover an approximate total area of 6,536,198 hectares. The pastoralists are all major stakeholders affected by the project.

Name	Area ha	Name	Area ha
Bimbijy,	87223	Boogardie	161355
Mouroubra,	130396	Hy Brazil	16618
Mt Gibson,	130598	Windsor	230755
Ninghan,	206046	Wondinong	77200
Pullagaroo,	76611	Wynyangoo	163592
Maranalgo,	68849	Wanarie	112474
Pindabunna,	238037	Mt Farmer,	62732
Narndee,	107201	Yarraquin,	131841
Wydgee,	170132	Twin Peaks	105114
Oudabunna,	92132	Annean	247458
Badja,	113653	Cogla Downs	199478
Muralgarra,	126778	Nallan	98858
Nalbarra,	141709	Yarrabubba	116511
Kirkalocka,	75747	Hillview	148609
Boodanoo	115990	Ka rba r	116182
Meeline	169656	l'olene	90168
Iowna	60613	Beebyn,	59815
Windimurra	260065	Austin Downs	165542
Challa	87488	Coodardy	166037
Wogarno	61724	The Glen	40170
Yoweragabbie	106328	Meka	364905
Mumbinia	32323	Melangata	45122
Carlaminda	59525	Jingimurra	110462
Wagga Wagga	89659	Mt Wittenoom	116366
Edah	103536	Murgoo	203317
Murrum	101123	Kalli (part)	98500
Madoonga (part)	73875		

The Department of Parks and Wildlife own and manage nine properties within the cell with a total approximate area of 984,432 Hectares. The properties owned and managed by Department of Parks and Wildlife are:

Name	Area ha
Twin Peaks, Narloo and Yuin (pt)	72,298
Lochada and Karara (pt)	150,000
Warriedar	71,863
Thundelarra	156,286
Burnerbinmah	59,908
Karroun Hill Nature Reserve	300,000
Lakeside	51,529
Dalgaranga	102,549
Noongal (pt)	20,000

Other stakeholders include:

* Department of Agriculture and Food WA

- Murchison Regional Vermin Council
- Meekatharra Rangeland Biosecurity Association (the current RBG)
- Pastoralist & Graziers Association
- Mid West Development Commission

In developing the business case a survey of all pastoralists within the region was undertaken (section 2.3) as well as face to face consultation with key stakeholders. A workshop for representatives of the five shires was also held.

2.7 Critical Assumptions

There is support for maintaining a pastoral industry — it is assumed that there is the political will to support a pastoral industry in the Southern Rangelands. Without a viable pastoral industry, it is unlikely that there will be sufficient land managers left in the region to carry out the important environmental work (e.g. pest and weed control) that is currently conducted by pastoralists. Without a viable pastoral industry local communities would in turn struggle to maintain businesses and services, and there would be an acceleration in the decline of the social fabric of these communities. The burden of providing services to those few who remain would fall more heavily on governments and the public purse.

The Vermin Cell will meet the objectives of a reduction in wild dogs to insignificant numbers (and subsequent growth in small stock numbers) — assumes that following completion of the Vermin Cell wild dogs are controlled, and pastoralists re-introduce small livestock enterprises. With the Vermin Cell in place, the motivation for concentrated and well-targeted programs to control wild dogs will escalate, and this in turn will provide the impetus to increase and reintroduce small stock enterprise. This motivation, together with the financial and economic advisory assistance to be provided to pastoralists by Rangelands NRM WA, gives the industry its best possible chance to return to productivity and profitability.

There will be productive land use (particularly as a food production area) in the future — Whilst conducting the financial and economic analysis of the Murchison Region Vermin Cell, as detailed in Section 2.8.1, it became evident that for productive land use in the region to continue and improve, more than just a reduction in wild dog numbers will be required. The pastoralists understand that the construction of the Vermin Cell will also give them the opportunity to effectively control total grazing pressure, which then enables good management of the fodder important for production. With stocking rates of all grazers managed so as to not exceed carrying capacity, livestock productivity can be optimized, which is one of the most important drivers of profitability. There is also a ground-swell of motivation amongst the pastoral community to evaluate and implement cutting-edge technology so as to improve their management efficiency and reduce operating costs. The pastoralists have stressed that they have an appetite for investigating and implementing new management technologies which will replace current management practices they believe are not producing desired outcomes in the areas of productivity, profitability and environmental sustainability. With this in mind, the pastoralists' contribution fund will provide the opportunity for *in situ* research of new technologies, and hence significant leverage on the funding being sought from the MWDC.

That a joint approach to wild dog control will be successful - it has been assumed that the joint effort to control wild dogs between pastoralists, and state and local government will continue and expand in the future. Pastoralists are acutely aware that the completion of the Vermin Cell alone will not result in wild dogs being reduced to insignificant numbers, but the solution to the wild dog problem requires the effective management of the parallel programs of strategic planning and monitoring, fencing, baiting, trapping and the implementation of new technologies as they become available.

That there will be sufficient funding available to construct the Vermin Cell, –To date \$5,000,000 has been provided by DAFWA to upgrade and extend the State Barrier Fence, and the No 1 and No 2 Vermin Proof Fences, all of which form part of the boundary of the proposed Murchison Region Vermin Cell; \$1,022,000 will be committed through the pooling of CLGF monies from the Mount Magnet, Wiluna, Sandstone, Yalgoo and Meekatharra Shires; and this Business Case requests \$4,534,000 in funding from Mid West Development Commission's Investment Plan. A majority of pastoralists who own stations to be contained within the Vermin Cell have agreed to contribute approximately 50% of the Mid West Investment Plan funds, which will be used to fund programs within the Cell that enhance productivity, profitability and environmental outcomes. The Shires of Mount Magnet, Cue and Yalgoo have also agreed to contribute \$266,000 to the capital cost of the Vermin Cell, with additional contributions expected from the Shires of Sandstone and Murchison. At an average cost of \$10,000 per km to build the new fence to required specifications, allowing for contingency of rising input prices during the construction phase, and also allowing for effective project management, these capital contributions are sufficient to complete the building of the Murchison Region Vermin Cell.

That the maintenance program will support the fence on an on-going basis — Funds will be collected from pastoralists and government sources to cover the cost of maintenance. A majority of pastoralists have agreed to an increase in their vermin rates of between \$500 and \$1,000 per station per year towards the on-going maintenance of the fence. This payment is in addition to their existing vermin rates and will be included as part of the exiting vermin rates levied under the Biosecurity and Agricultural Management Act 2007, to be levied by the new RBG. The new RBG will also carry insurance cover for the new fencing. It is expected that the Department of Agriculture and Food WA will continue to match these rates on a dollar for dollar basis.

That the pastoralists totally support the project. — pastoralists have shown that they are overwhelmingly in favour of the project. At a round of meetings held across the region in September 2013 to gauge pastoralists' support for the Vermin Cell and to discuss various issues, a total of 48 people attended, representing 39 stations or 76% of properties within the Vermin Cell. All attendees agreed to support the construction of the Vermin Cell, and agreed to make financial contributions to a fund (equivalent of approximately 50% of the funds sought from the Mid West Development Commission as well as to the on-going maintenance of the fence.

That the State Government accepts that there will be economic, social and environmental benefit flowing from the enclosed cell. Major benefits to local communities and the wider region include the creation of jobs through a local abattoir being able to re-open due to increased supply of livestock; additional jobs in shearing teams, casual and permanent labour on stations; and a general rejuvenation of small businesses in the regional communities. With an increase in work opportunities and hence population in these regional communities, comes a rebuilding of the social fabric of both the towns and rural communities. This in turn leads to additional benefits such as sporting clubs being revitalized and there being a greater pool of people to run essential volunteer organizations such as St John Ambulance, and the Fire and Rescue Services.

The economic evaluation conducted on a similar project in SW Queensland has indicated that for every one head of additional sheep run inside a vermin cell, a benefit of \$6 accrues to the local community through increased employment opportunities and the demand for products and services. For every one additional head of cattle run, there is a direct benefit of \$1 to the community. Part of the work being funded by Rangelands NRM WA will be to determine the community and social benefits accruing to the communities in the Southern Rangelands as a result of the construction of the Murchison Region Vermin Cell.



Ram attacked and killed by wild dogs, Hy Brazil Station (Lara Jensen)

2.8 Economic and Financial Analyses

The following analysis is based on data collected from the survey undertaken of the pastoral stations within the proposed Vermin Cell. Refer to Section 2.3.2 for details of this survey. A more detailed analysis of a small number of stations is contained in Section 2.8.1

This section is based on determining the current and potential stock levels within the cell and from these figures determining the economic benefits of completing the cell. These calculations are for sheep (meat) as it is considered that completion of the cell and a significant reduction in the population of wild dogs would have the biggest impact on sheep numbers.

Dry Sheep Equivalents (DSE)

The DSE is a standard unit frequently used to compare the feed requirements of different classes of stock or to assess the carrying capacity and potential productivity of a given station or area of grazing land. The DSE and other stock equivalent systems are only approximations. The feed requirements of livestock vary with their live weight, level of production, physiological state, land topography and climatic conditions.

The carrying capacity (total DSEs over the station) of a pastoral lease is commonly determined by expressing the number of stock which can be carried given the current feed supply.

Data

There are fifty one pastoral leases within the cell. These leases have a total approved DSE of 450,352 (Department of Agriculture and Food WA) therefore the potential carrying capacity for sheep of the leases within the cell is 450,352 DSE. This results in an average DSE per pastoral lease of 8,830. The survey undertaken indicates that the average number of sheep currently being grazed per lease is 2,147 which implies that on average pastoral leases are currently operating at 24% of their capacity. This means that only 24% of the potential number of sheep are being run. Therefore, within the cell, the current total number of DSEs is estimated at 108,084.

The estimated current annual decline in numbers due to dog attacks as identified from the survey for sheep is 14.5%. Therefore if nothing further is done to control the wild dogs in the cell, at the current rate of decline the following stock levels will apply for the next five years.

Year	Projected number of DSEs run in the Vermin Cell without dog control
2013	108,084
2014	92,412
2015	79,013
2016	67,557
2017	57,782
2018	49,404

If the cell is not completed, then in five year's time stock levels will have reached approximately 10% of carrying capacity.

Option A. Cost:benefit of completing the fully enclosed Vermin Cell

Year 1

Current sheep stock level (24% of carrying capacity) approximately 108,000 DSE

Potential revenue of \$3.2m¹

Cost of final section of fence \$5.8m

Net benefit \$0

Year 5

Assume that complete control of wild dogs by Year 3 of completing the fence Potential revenue of \$13.5m

Potential reduction in costs (10% of revenue) to manage wild dogs by pastoralists of \$1.3m.

Potential reduction in costs to manage wild dogs by MRBA \$0.475m

Potential benefit approx. \$15.265m

NPV (discount rate of 3%PA) of fence in year 5 is \$5.0m

Net benefit \$10m

A return to full carrying capacity of approx 450,000 DSEs indicates a positive benefit of potentially \$8m - \$10m per annum

Research has indicated that in other areas of Australia that there is a positive benefit from fence and cell construction. For example the Queensland Wild Dog Management Strategy 2011-16 (The State of Queensland, Department of Employment, Economic Development and Innovation, 2011) indicates the following.

Two Cost Benefit Analysis (CBA) have been completed on the barrier fences. EconSearch completed the first CBA in 2000, and DEEDI completed the most recent CBA in 2009. Both CBAs show the fences have a net benefit to society.

A full economic assessment of the WDBF (EconSearch 2000) estimated that, at the time, benefits derived from the fence were in the order of three times its cost. The estimated net benefit over a 20-year period was \$39.721 million (1997/98 value).

The 2009 analysis of the WDBF and wild dog fences also showed a positive benefit–cost ratio of 1.84:1, with \$1.84 in benefit generated for each dollar outlaid in fence administration and maintenance."

¹ Calculation from RSM Bird Cameron 2010 Feasibility Study of approximately \$30 revenue per sheep (eg 54,000 * \$30 = \$1,650,000 (rounded))

Option B. Cost benefit of not enclosing the cell (do nothing)

Year 1

Current sheep stock level (24% of carrying capacity) approximately. 108,000 Current revenue \$3.2m

Potential revenue with cell \$13.5m

Current costs (10% of revenue) to manage wild dogs by pastoralists of \$0.3m Costs to manage wild dogs by MRBA \$0.475m

Lost revenue \$10.3m

Net cost of doing nothing \$11.075m

Year 5

Assume continued sheep decline at current rate

Sheep stock approx. 50,000

Revenue of \$1.5m

Costs (10% of revenue) to manage wild dogs by pastoralists of \$0.15m. Costs to manage wild dogs by MRBA \$0.55m allowing for CPI. Potential revenue with cell \$13.5m

Net cost of do nothing \$12.7m

With no action, in five year's time, the total number of sheep within the cell will be approximately 10% of its total carrying capacity. The practical result of this is that there will

be no pastoral industry within the region.

This decline will also impact on downstream processing, transport and also on the social fabric of rural community where the demand for basic services will fall making their very existence marginal.

Completing the cell by building the last 480 kilometers of fencing will enable wild dog control programs to reduce wild dogs to a point where they no longer impact significantly on small stock. It is estimated that reducing wild dogs to insignificant levels will take approximately three years, although this could be less given the overwhelming enthusiasm and support from the pastoralists.

Once the wild dogs are controlled then, given reasonable seasons, small stock can return to the total carrying capacity DSE for the cell which is 450,352. This will be an increase of 342,268 DSEs from today's levels.

The present analysis indicates that given the cost of completing the cell of \$5,800,000 and that the cost of maintenance is covered through funding from the Department of Agriculture and Food WA, the Shires and the pastoralists within the Vermin Cell, the annual financial benefits significantly outweigh the cost.

Wild Dogs prey on livestock such as goats, sheep and cattle, in some cases to such an extent that they can threaten the economic viability of properties and given the projected decline in sheep numbers the economic viability will continue to be a significant issue for pastoralists.

The increasing shift to pastoral cattle production, the increasing occurrence of lease ownership by non pastoral entities and reduced control effort are factors contributing to the increase in wild dog predation. The magnitude of the problem is beyond the capacity of the industry alone to arrest.

It is estimated that the benefit of completing the Vermin Cell will begin to take effect within 3 years of its completion, while the full benefits could take up to 10 years to take effect due to the long term nature of the programs required to rebuild pastoral enterprises. Seasonal variability will also play a major role in determining the time for benefits to be realized.

There are also environmental and social costs of having an unviable pastoral industry.

Environmental Costs

Predation of wild dogs may have an impact on the survival of remnant populations of endangered fauna. For example, predation by wild dogs is a threat to 36 species listed in the NSW Threatened Species Conservation Act 1995 (Coutts-Smith et al 2007). Non target poisoning linked to the control of wild dogs is thought to be a threat to several species of small mammals. There are some who argue that wild dogs may play a constructive ecological role by controlling the population of other pest species, including, feral cats, feral pigs, wild goats, rabbits and rodents. Wild dogs may regulate the population of native fauna, for example, kangaroos and emus, which can have a major impact on total grazing pressure on stations.

If the pastoral industry is allowed to become unviable then there will be significantly fewer land managers in the region who currently manage this public land, and play a major role in controlling pests and weeds. Without these land managers operating station leases and living in the region, the task of managing these vast public lands will fall to government with funding for such activities, which are now largely privately funded, to come from the public purse.

Social Costs

Wild dogs pose a physical threat to humans. In the year ending December 2007, the Hunter Rural Lands Protection Board recorded three dog attacks on people, although the nature of these attacks *is unclear* (Fitzgerald and Wilkinson 2009). Attacks on people have also been reported in the Pilbara. The loss of station income due to wild dogs reduces the material quality of life for the farming household, disrupts the plans of landholders by restricting their options and impacts the rest of the community in the form of reduced spending (Fitzgerald and Wilkinson 2009).

Wild dogs are a source of community conflict and disharmony. For instance, conflicts arise from the non-involvement of landholders in community-based wild dog control efforts; and the contrasting opinions around wild dogs and the mechanisms to control them (e.g. 1080 baiting is viewed by some as inhumane). As a result, the reduction in community cohesion and sense of belonging can reduce family and personal wellbeing (Fitzgerald and Wilkinson 2009). There are several psychological impacts associated with wild dogs. For instance, landholders may feel upset, frustrated and/or angry due to loss of stock, loss of production, and suffering inflicted on stock which survive attacks from wild dogs. Landholders may also suffer from stress related to the management and financial costs of wild dogs. In addition, there is a sense of insecurity and uncertainty that landholders experience when wild dogs are present in the environment (Fitzgerald and Wilkinson 2009). Wild dogs vector rabies, and therefore, have the potential to have public health impacts (McLeod 2004).

In discussions with DAFWA and other authorities it became apparent that a more in-depth analysis was required to determine if the completion of the Murchison Region Vermin Cell would in-fact restore the profitability of the pastoral industry in the region, or if other measures would be required in addition to the control of wild dog numbers. Therefore in addition to the developing this Business Case, Rural Business Solutions Pty Ltd was contracted to report on the financial and economic benefits of the construction of the Vermin Cell, as well as document other initiatives pastoralists need to implement to ensure a return to profitability. The report is contained below in Section 2.8.1



Goat attacked and killed by wild dogs Challa Station (Lara Jensen)

2.8.1 The Projected Financial and Economic Benefits to Pastoral Businesses of the Proposed Murchison Region Vermin Cell.

The following report was prepared by Rural Business Solutions Pty Ltd for the Shire of Mount Magnet.

1.0 Summary

The construction of the proposed Murchison Region Vermin Cell and the subsequent control of wild dogs will enable pastoral businesses within the Cell to commence a return to profitability.

Currently, these businesses are unprofitable due to low livestock numbers, low livestock productivity and the resulting low turnover making it difficult to cover overhead costs. The low numbers and productivity are largely caused by wild dog predation, and overhead costs do not fall in proportion with the decline in stock numbers.

An analysis of 14% of the businesses within the proposed Murchison Region Vermin Cell showed them to be unprofitable in the 2011-12 financial year, with an average Return on Assets of -7.1%, and an average cash flow (excluding off-station income) of -\$139,120.

A comparison of business performance with those eleven years prior in 2000-01, when the impact of wild dogs was significantly less, reveals that these stations were then profitable despite much less favourable commodity prices. Return on Assets for these stations averaged 7.5% in 2000-01.

With the control of wild dogs, together with full implementation of the management and development plans each pastoralist has planned, Return on Assets is predicted to average 9.4% for the group. This turnaround in profitability is a result of increased livestock productivity, a reduction in the overhead cost structures of the businesses, and increases in stocking rates in concert with increases in carrying capacity.

Long term and sustainable profitability is achievable if stations introduce technology and infrastructure to facilitate improved management practices in parallel with wild dog control. The Vermin Cell alone will help to improve livestock productivity and turnover; however the parallel introduction of management innovations and technologies is essential for additional increases in productivity, reductions in overhead costs, and improvements in carrying capacity. It is well accepted that controlling wild dogs will lead to increases in the populations of non-domestic grazers. Control of these non-domestic grazers, their numbers and where they graze, is essential to rebuilding the perennial fodder base which enables stocking rates to increase and livestock enterprises to be more productive. Wild dog control and improved management must be addressed together to ensure long term and sustainable profitability.

These are the lines along which those involved in this analysis are planning their future. The enthusiasm and impetus to move forward and continue to implement these management improvements will come from the boost they receive from the benefits of a reduction in wild dogs.

It is also imperative for the pastoralists to consider the possible obstacles to the implementation of the proposed management improvements. The seasons can be a major impediment to the rate of change, and capital needs to be accessed to finance the development. These “hurdles” are added challenges, and need to be addressed as part of management innovation. For example, the impact of seasons can be substantially reduced through grazing management, and some lateral thinking can often negate the requirement for major capital expenditure.

With the additive benefits of wild dog control and the implementation of innovative management practices and technologies, the pastoral industry can look forward to a bright and profitable future.

2.0 How the analysis was conducted

An economic and financial analysis of stations within the proposed Murchison Region Vermin Cell was undertaken to determine if these businesses could return to profitability in the absence of wild dogs, together with improved management of the stations.

A template of the information required to conduct this analysis was emailed to stations within the Vermin Cell area. Fourteen percent of stations supplied the required information (within a very tight timeframe), and this data has been used in the analysis. While a 14% response rate may be considered low, the author believes that while additional data will change the KPIs to some extent, it will not alter the overall picture of the industry, the challenges it faces, or management priorities that must be addressed to improve profitability. The results from this study only confirm the findings from previous, much larger studies conducted across the region¹.

The information collected covered all station financial and enterprise information for the 2011-2012 financial year, as well as documentation of the pastoralists' knowledge of the productive and financial impact wild dogs are currently having on their businesses.

The pastoralists then documented how they plan to manage the stations once the wild dogs have been controlled. These plans covered

- Changes to management practices;
- Infrastructure requirements and technologies to be implemented;
- Enterprises they will run, including number of stock;
- The capital and operational costs (or savings) of implementing these changes; and,
- The expected improvements in livestock productivity and cost structure.

A range of financial and economic Key Performance Indicators (KPIs) for the 2011-12 year were then calculated for each station using the actual figures supplied; these figures being used as the base year for comparison of business performance post-Vermin Cell.

The KPIs presented cover the overall business and each of the livestock enterprises. All KPIs in this report are a weighted average of the group.

Any off-station income was not included in the calculation of the KPIs, although it is noted, while station tourism has been included as a separate station enterprise.

With the exception of one station, the stations involved in this study also took part in the Gascoyne Murchison Strategy funded Financial Benchmarking Project from 1999-00 to 2001-02¹. This has enabled a comparison of business performance to be made between the 2000-01 and 2011-12 financial years. This comparison is useful in showing how businesses performed prior to wild dogs becoming the problem they are today.

With the 2011-12 figures in place, the improvements in livestock productivity, changes in enterprise structure, station development, improvements in station management and changes in cost structure as described by the pastoralists were then applied to each station, and the KPIs in this post-Vermin Cell scenario compared with the 2011-12 figures.

The 2011-12 prices and unit costs for direct costs were maintained for each business so that changes in business performance between the 2011-12 and post-Vermin Cell scenarios were not influenced by these externally controlled factors. Overhead costs were altered according to the pastoralists' projections of how improvements in station management would change overhead cost structure.

The KPIs presented for the post-Vermin Cell scenario assume that the stations have reached their steady-state. That is, all changes are fully implemented and the stations are running at their desired level, in an average season.

The capital expenditure each station estimated to be required to reach their desired state has been added to the total debt of each station, interest payments adjusted accordingly, and the capital cost also added to the value of the station.

The same set of KPIs was then generated for the group, and compared with the 2011-12 base figures.

As shown in Table 1 below, the stations included in this analysis were, on average, larger than the average of the 51 stations inside the proposed Murchison Region Vermin Cell area in terms of both area and recommended carrying capacity.

Table 1: Average land area and recommended carrying capacity of pastoral stations included in the analysis

	All stations in Vermin Cell	Stations in this analysis
Average area (hectares)	122,381	131,555
Average recommended carrying capacity (DSE)	8,830	10,270

The enterprises run by the group in 2011-12 were

- Merinos;
- Meat sheep;
- Cattle;
- Harvesting of rangeland goats; and,
- Tourism.

3.0 Business performance in the 2011-12 financial year

Table 2 summarises the financial and economic KPIs for the stations included in this study. By way of comparison, Table 2 also includes the KPIs for the same stations (except one) for the 2000-01 financial year.

In 2011-12 the average profit (earnings before interest and tax) for the stations included in the analysis was -\$107,819 resulting in an average Return on Assets of -7.1%. Only one station returned a profit for the 2011-12 year.

Net Economic Profit for the 2011-12 year averaged -\$212,621. This means that the group would have been \$212,621 better off if they had sub-leased the station at 7.5% of market value, and sold the balance of assets investing the capital at 10%. While Net Economic Profit is an indicator that carries considerable controversy and is considered irrelevant by many, it is a very important indicator to monitor for those who view their station as a business investment, or consider where best to invest their capital.

The average station cash deficit was -\$139,120, and this was only partially alleviated by average off-station earnings of \$43,744. This would suggest that total debt is increasing.

Equity for the stations averaged 80.7%, although more instructive is the Finance Ratio of 33%. At this level, a business is considered to be in severe financial stress. A Finance Ratio of less than 10% indicates that debt can be comfortably serviced.

This absence of profitability has resulted from a number of factors, all of which interact with one another. These factors are considered below, although not necessarily in order of importance, as importance will vary from station to station.

Firstly there is the issue of turnover. Average livestock numbers run on these stations in 2011-12 were less than half that of their recommended carrying capacities: an average stocking rate of 4,620 DSEs versus a recommended carrying capacity of 10,270 DSEs. Seasonally, 2011-12 was considered to be an average year. With stock numbers so low, profitability is directly impacted through lack of turnover, that is, there are simply insufficient dollars being generated in the business to cover the overhead costs, and assets are not being used efficiently. The Turnover Ratio averaged 10% with the target being greater than 30% for a pastoral business.

Secondly overhead costs were a major issue. A reduction in stock numbers does not, unfortunately, result in the overhead costs of the business being reduced proportionally, if they can be reduced at all. The Overhead Ratio has averaged 541% meaning that overhead costs (including unpaid labour and depreciation, but excluding interest and tax) are 541% of the gross product (or turnover) of the business. Overhead costs per DSE managed were an exorbitant \$44.64, more than the average gross margin per DSE for any enterprise in 2011-12. Profit is not possible in this situation.

The third major factor effecting profitability is livestock productivity, which is reflected in the enterprise gross margins. The Gross Margin Ratio was low in 2011-12 at 55%, and the average gross margins of the livestock enterprises were less than desirable despite good commodity prices. Productivity – low reproduction rates, high mortality rates, low wool cuts and low growth rates of meat animals, are the drivers behind these low gross margins.

Analyses conducted as part of the Financial Benchmarking Project funded by the Gascoyne Murchison Strategy between 1999-00 and 2001-02¹, clearly demonstrated that the primary driver of business profitability is turnover, which in turn is driven by gross margins, and the primary drivers of gross margins are reproduction rates, mortality rates, and growth rates (of meat and wool). Productivity is driven primarily by nutrition and livestock management, and nutrition is all about stocking rate not exceeding carrying capacity. With all of these factors optimized, turnover increases, overhead costs are covered and profitability increases.

While prices received and direct costs also play a part in gross margins, they are not a key driver of profitability. The exception to this rule is the goat enterprises, only because of the way they have been analysed in this study. As goats are generally an unmanaged enterprise and are opportunistically harvested, the gross margin is simply calculated as price received less direct costs. No value is attached to the goats estimated to be on the station, nor are productivity measures accounted for. Hence the primary driver of the goat gross margin in this study (per DSE) is price received.

While the gross margins of the cattle enterprises were particularly poor, this was partly caused by very small enterprises still in a build-up phase. Even so, branding rates were very low at 50%, and kg of meat produced was low at only 62 kg per LSU, resulting in an excessive cost of production of \$12.47 per live kg of beef produced, compared with a price received of \$1.82 per kg live.

Merino enterprises had an average gross margin of \$22.32 per DSE and a cost of production of \$12.27 per kg of clean wool compared with a price received of \$11.14 per kg of clean wool. Profitability would have been much higher with higher productivity. Lambing percentages averaged only 53% and deaths were very high at 18%. Wool production was reasonable at 2.61 kg clean per DSE.

The longer term implications of these low reproduction rates and high mortality rates in the Merino enterprises are that flocks are not self-replacing and selection pressure cannot be applied to improve the genetics and productivity of the flock. This leads to the inevitable downward spiral of the enterprise.

Meat sheep enterprises, which are predominately Damaras, had an average gross margin of \$36.28 per DSE and a cost of production of \$2.15 per kg of meat produced, \$1.16/kg lower than the price received of \$3.31 per kg live weight. Lamb weaning rates were good at 108%, and mortality rates were half that of the Merinos; 18% compared with 9% for the meat sheep.

Table 2: KPIs for th 2000-01 and 2011-12 for a group of pastoral businesses within the Murchison Region Vermin Cell

Key Performance Indicator	Group average for 2000-01	Group average for 2011 12	Units
Overall Business Indicators			
Return on Capital	7.5%	-7.1%	
Profit (EBIT)	\$57,037	-\$107,819	
Assets - Total	\$757,363	\$1,518,056	
Liabilities	\$151,596	\$293,178	
Equity	80.0%	80.7%	
Net Economic Profit	\$5,291	-\$212,621	
Average DSE managed	11,081	4,620	
Expense Ratio	90%	605%	
Overhead Ratio	54%	541%	
Overhead Costs per DSE	\$9.57	\$44.64	\$ per DSE
Gross Margin Ratio	59%	55%	
Asset Turnover Ratio	32%	10%	
Finance Ratio	3%	33%	
Cashflow (excluding off-station)	\$25,576	-\$139,120	
Off-station income	\$22,682	\$43,744	
Enterprise Indicators			
Cattle			
Gross Margin - total	\$12,994	\$3,506	
Gross Margin per LSU	\$112.99	\$18.95	per LSU
LSUs managed	115	185	LSUs
Cost of production	\$1.32	\$12.47	per kg live weight
Price received	\$1.26	\$1.82	per kg live weight
Meat produced per LSU	114	62	kg live weight
Calving rates	69%	50%	
Death rate	3%	2%	
Sheep - Wool			
Gross Margin - total	\$142,192	\$77,015	
Gross Margin per DSE	\$13.03	\$22.32	per DSE
DSEs managed	10,913	3,451	DSEs
Cost of production	\$6.62	\$12.27	per kg clean
Wool price received	\$5.11	\$11.14	per kg clean
Sheep sale price received	\$28.00	\$95.00	per head gross
Wool produced per DSE	2.93	2.61	kg clean
Lambing rates	76%	53%	
Death rate	12%	18%	
Sheep - Meat			
Gross Margin - total	\$9,117	\$419,285	
Gross Margin per DSE	\$62.02	\$36.28	per DSE
DSEs managed	147	11,557	DSEs
Cost of production	\$1.11	\$2.15	per kg live weight
Price received	\$1.71	\$3.31	per kg live weight
Meat produced per DSE	17	20	kg live weight
Lambing rates	128%	108%	
Death rate	1%	9%	
Goats			
Gross Margin - total	\$47,224	\$35,373	
Gross Margin per DSE	\$15.40	\$20.29	per DSE
DSEs managed	3,066	1,743	DSEs
Price received	\$24.00	\$40.00	per head gross

3.1 The impact of wild dogs

Pastoralists reported wild dogs impacting their Merino enterprises in the order of 40% to 75% of the calculated deaths, causing a reduction in lambings of between 30% and 60%, and wool cuts being reduced by approximately 20%.

Those with meat sheep enterprises estimated lamb losses (from birth to weaning or sale) from wild dogs of around 15% to 20%, and losses in adult sheep as a result of dogs at around 10% to 12%.

The reported impact of the wild dogs on cattle enterprises ranged from “no effect”; “we don’t see the results, but calvings have fallen sharply in the last 5 years” to a 1% to 5% reduction in calving rates. Pastoralists also report a reduction in cattle sale weights through harassment and stress, although the weight reduction was difficult for pastoralists to quantify.

The harvesting of rangeland goats has also been significantly affected by the presence of wild dogs. Two pastoralists were unable to harvest any goats in 2011-12, down from as many as 2,000 head in previous years. Others report a reduction in kidding from 50% to “did not see any kids in the 2011-12 year”. Estimates of adult goat death rates caused by dogs range between 10% and 17% of the goats estimated to be on the station. As the goats are unmanaged, these can be difficult figures to quantify.

Despite the obvious difficulties in quantifying the actual losses caused by wild dogs in a rangeland environment, the economic and financial analysis of these stations clearly highlight the poor profitability, productivity and turnover; and a significant proportion of this must be caused by the impact of wild dogs.

In addition to the impact on livestock productivity, there is also the issue of the additional time and cost incurred in predator control, not to mention the personal toll due to stress and worry. One pastoralist reported spending 130 days per year on wild dog control. That doesn’t leave enough time for “best practice” management of the livestock enterprises.

4.0 Business performance in 2011-12 compared with 2000-01

All except one of the businesses involved in this analysis were also involved in the Financial Benchmarking Project of 1999-00 to 2001-02¹, a period prior to wild dogs having a significant impact on businesses, it is a valuable opportunity to compare their performance between these two periods. The financial year 2000-01 was selected as the base for comparison due to seasonal conditions being similar to 2011-12. The KPIs for these two years are summarised in Table 2.

In 2000-01, these stations were considerably more profitable than they were in 2011-12, with Return on Assets of 7.5% and -7.1% respectively.

Net Economic Profit in 2000-01 was an average of \$5,291 per station, compared with -\$212,621 in 2011-12, again indicating a severe reduction in viability in the previous 11 years.

Debt levels were 48% lower in 2000-01, (however the difference in debt levels between the two years has been skewed by one station changing ownership recently with its high debt in 2000-01 being eliminated in 2011-12), and with the higher turnover and productivity in 2000-01, this debt was comfortably serviced with an average Finance Ratio of just 3% compared with 33% in 2011-12.

The KPIs in Table 2 reveal that the higher profitability in 2000-01 was achieved despite considerably lower commodity prices, and was due to higher enterprise productivity, higher turnover, and lower overhead costs.

Between 2000-01 and 2011-12, overhead costs increased from an average of \$106,070 per station or \$9.57 per DSE in 2000-01 to \$206,215 per station or \$44.64 per DSE in 2011-12. Overhead costs are a major issue to be addressed by pastoral businesses if they are to be profitable in the long term.

The comparison of business performance between 2000-01 and 2011-12 paints a picture of how station businesses have been effected by the changing circumstances of the industry; notably a decrease in livestock productivity, a decline in the numbers of domestic stock being managed, both largely brought about by the increasing presence of wild dogs, the increasing cost structure businesses face, and what appears to be a general despondency as to future of their businesses.

4.1 The challenges faced in improving business performance

The challenges for pastoral businesses remain the same as those faced in 2000-01, only they are now ever more apparent. If survival is valued, these challenges must be addressed urgently, and the pastoralists certainly share that sense of urgency. Those challenges can be summarised as:

- Increasing livestock gross margins through improved productivity; i.e. increasing reproduction rates, decreasing mortality rates and increasing growth rates of meat and wool;
- Finding ways to restructure the business such that overhead costs can be reduced; and,
- Working within the constraints of seasonal conditions to improve the carrying capacity and robustness of the native vegetation, so that stocking rates can be increased and the turnover of businesses is subsequently improved.

The reduction in wild dog numbers and their subsequent long term effective control are an integral part of the solution to returning these stations to on-going profitability.

Control of wild dogs through the construction of the Murchison Region Vermin Cell will enable the productivity and profitability of these stations to be increased through a number of immediate avenues:

- Productivity will improve through a substantial reduction in predation rates; while wool cuts and livestock growth rates will also increase through less harassment of the livestock;
- It will be possible to reintroduce small stock enterprises on those stations which eliminated these enterprises due to the wild dog problem; and,
- Within the carrying capacity, livestock numbers can be increased.

These three avenues will substantially increase turnover and reduce the unit costs of overhead expenses in the businesses thus leading to an increase in profitability.

The larger and more long-term challenge is to then implement management practices and introduce state of the art technologies on stations that will build on the productivity improvements achieved through simply removing the wild dogs.

Such advancements are the critical factors required to provide the much needed breakthroughs in reducing overhead costs and an increase in business turnover.

The challenge is to implement a regime of management practices and excellent animal husbandry to facilitate productivity improvements, to nurse and nurture the rangeland such that carrying capacity increases, becomes more robust and provides the nutrition which enables livestock to express their full genetic potential, while at the same time implementing management and technologies that reduce the impact of ever increasing overhead costs.

These are the lines along which those involved in this analysis are planning their future. The enthusiasm and impetus to move forward and implement these management changes will come from the boost they receive from the benefits of a reduction in wild dog predation.

5.0 The proposed improvements to station management and technologies

The station development and management changes planned by those involved in this study are summarised below. It should be noted that the implementation of some of these plans has already begun, albeit at a slower than desirable pace due to the constraints of capital, cash flow and seasons.

It is important to note that the proposed management changes documented below, together with the resulting improvements in livestock productivity, cost structure and long term carrying capacity, are those presented to the author by the pastoralists.

It is difficult to delineate the various management strategies that are being put in place as one tends to facilitate the introduction of another and the benefits of that enable yet more technology to be introduced.

One of the major initiatives already underway on stations is the construction of additional paddocks. There are many approaches to “fencing for more paddocks”, and it enables a staged approach towards long term goals and outcomes. Even a few paddocks enable the control of the breeding herd or flock, facilitating controlled mating, easier and more timely access to livestock for time-critical husbandry operations and to take advantage of marketing opportunities. Not only are the benefits to productivity obvious, it also starts to address the issue of overhead costs – reducing labour requirements, mustering time and fuel.

As paddock numbers increase, resting country from grazing becomes more effective. Areas can be rested at critical times of the year to enable the regeneration and establishment of important pasture species; feed reserves can be built up for critical events such as spiking breeders prior to joining, lambing, and feeding weaners or growing out sale animals. With improved nutritional management of livestock comes an increase in productivity and hence profitability.

The ability to rest and regenerate country will build carrying capacity and hence enable stocking rates to be increased. With this increase in turnover comes an increase in profit.

With paddocks in place and waters controlled, a myriad of technologies become available to assist livestock management. The most obvious and already well used are Total Grazing Management (TGM) yards which have proven their ability to reduce mustering costs, control animals, provide the facilities for animal husbandry, and to control and re-direct non-domestic grazers.

This ability to control both non-domestic grazers and domestic livestock is the crux of controlling total grazing pressure in the rangelands and re-building the perennial pasture base that is critical to providing the nutrition required by livestock to be highly productive, and enabling carrying capacity to increase. The pastoralists are fully aware that the reduction in wild dog numbers will increase grazing pressure from non-domestic grazers such as kangaroos and goats, and if they are allowed to graze at will and numbers not controlled, there simply will be no long term increase in carrying capacity and hence stocking rates. The pastoralists involved in this study believe that the Vermin Cell is the initial phase in enabling them to control non-domestic grazing pressure, and the subsequent technologies and management that they then put in place are essential to provide the control of total grazing pressure required to build carrying capacity. Their projections, post Vermin Cell, assume this increase in carrying capacity has been achieved.

Infrastructure at waters then enables advancements in livestock management such as the use of electronic ear tags to record individual animal data, and automatic drafting. With information about individual animals now available, the ability to apply objective selection pressure to the breeding herd enables significant advances in animal productivity to be made, while technologies such as automatic drafting reduces overhead costs and also reduces stress on animals.

Good infrastructure also enables some animal husbandry operations to get back to the “good old basics”. The issue of higher weaner mortalities in Merino enterprises particularly has been partly attributed to a lack of handling and educating of animals post weaning, and with good infrastructure in place it is possible to readdress this with resulting reductions in mortalities and in post-weaning stress and weight losses.

At waters, telemetry can be installed to monitor waters remotely, again leading to a reduction in overhead costs through a reduction in vehicle costs and labour.

And nor do waters need to be fixed infrastructure. Capital requirements can be cut through the use of a few mobile waters, with the additional benefits being increased control of grazing pressure from all herbivores, and more effective resting of country.

This description by no means addresses all the technologies available to the pastoral industry, neither does it address all the benefits which accrue from their implementation as such coverage would render this document unwieldy. For a more thorough coverage of “best practice” livestock management and station technologies, readers are referred to detailed documents on the subject.^{2,3}

With these planned developments and technologies in place, there is a platform from which to build a productive and profitable business into the long term.

The stations involved in this study outlined what development was planned, the proposed changes to management and the costs and benefits of implementation.

The capital costs of the proposed station development range from \$36,000 to \$476,000 and average \$218,143. The range of capital costs reported are a reflection of the current level of station development and the amount of infrastructure required to implement the various plans. Full implementation is expected to take up to 10 years, although this will depend on seasonal conditions, and the availability of finance to complete the works.

In the current economic climate of the pastoral industry, financing these capital requirements will not be easy, but the challenge will not be insurmountable. It provides the opportunity for innovative thinking and the development of yet more management technologies. For example, can the way in which livestock are handled reduce the need for expensive infrastructure, and change their grazing habits and preferences in such a way that the recovery of native vegetation is expedited? Questions such as these are already being investigated by the pastoralists involved in this study.

Overhead costs are predicted to reduce by between 15% and 30% depending on the technology implemented. These savings are predominately in the areas of labour, fuel, and the operating costs of vehicles, plant and equipment.

Also included are changes to the enterprises being managed. Several intend to significantly reduce the number of goats on the station so they are able to concentrate more on, and have optimal feed for, their managed livestock enterprises. Another was intending to re-introduce a meat sheep enterprise. More importantly, there was an understanding that livestock numbers should be flexible to mimic the changes in carrying capacity, and hence livestock enterprises are being designed to incorporate a large portion of animals that are “optional” or “tourists on the station”; their presence being dictated by the seasonal conditions and feed availability.

The benefits of implementing these management technologies do not rest with the individual pastoral businesses alone, but accrue to the region as a whole in the following ways:

- With vermin controlled an improvement in regional biodiversity will result from a reduction in non-native predators such as wild dogs, cats and foxes;
- regeneration of native vegetation occurs through the control of grazing pressure;
- management of native flora and fauna which is particularly sensitive to grazing becomes possible through the strategic placement of domestic grazers;
- there is an improved ability to control problem weeds through the use of grazing management; and,
- more robust pastoral businesses contribute significantly to the vibrancy and economic stability of local communities.

It is beyond the scope of this study to model these regional economic benefits.

6.0 Projected business performance with wild dogs controlled and improved management and technologies implemented

The station businesses were re-analysed assuming the plans for improved management and technologies, as described above, had been implemented, and their projected improvements in productivity, carrying capacity and reductions in costs had been achieved. The resulting KPIs are summarised in Table 3.

Not presented here is an annual projection of financial and economic performance in the development years, i.e. from 2011-12 through until the post-Cell scenario. These are actually the most dangerous years for any business; the time when significant capital expenditure and changes to management must be made, but prior to the financial benefits being realised. It is imperative that businesses undertaking such a development and change phase very carefully budget these years to ensure they are able to weather the likely increase in debt from capital expenditure, and working capital requirements, together with the sometimes inevitable reduction in income (e.g. from structural changes to livestock enterprises).

With the wild dogs controlled and improved station management in place, the profitability of these stations is predicted to increase substantially.

Return on Assets is predicted to increase from -7.1% to 9.4%. This increase in profitability has come about in three main areas.

1. The Asset Turnover Ratio has increased from 10% to 25%. Turnover has increased through the ability to run more livestock, and more productive livestock. The reduction in wild dogs and the changes to management and infrastructure (and assuming average seasons), will enable these stations to increase their stock numbers in concert with carrying capacities. The results assume that considerable advances have been made in re-building the perennial grass base of the rangeland with subsequent significant increases in carrying capacity. Hence stocking rates in the post-Vermin Cell scenario are higher than the current recommended carrying capacities shown in Table 1. Also included in the analysis is the full complement of “negotiable livestock enterprises”, i.e. those that are on station only when seasons and feed availability allow.
2. Overhead costs have been reduced, both as a total, and per DSE. In 2011-12 overhead costs were \$44.64 per DSE, and under the new management regime, they are predicted to fall to \$12.00 per DSE. Most of the cost savings are expected to be in labour, fuel, mustering costs, and vehicle, plant and equipment repairs.
3. Gross margins will increase substantially through improvements in livestock productivity. Note that the unit prices and direct costs for each station have been kept constant from 2011-12 to the post-Vermin Cell scenario.

Reproduction rates in cattle enterprises are expected to rise from an average of 50% in 2011-12 to 76%, while meat production is predicted to increase from 62 kg per LSU to 99 kg per LSU.

In Merino enterprises, wool cuts will rise from 2.61 kg clean per DSE to 2.91 kg clean per DSE, while lambing rates are expected to increase from 53% to 80%. Mortality rates will halve from 18% to 9%. These productivity improvements together with a reduction in overhead costs will result in the cost of producing a kilogram of clean wool falling from \$12.27 per kg to \$9.02 per kg.

In the meat sheep enterprises, meat production is expected to rise by 1 kg per DSE, lamb weaning rates from 108% to 126%, and death rates in weaners and adult sheep from 9% down to 7%. Gross margins are actually predicted to fall, however this is largely due to enterprise structure between the pre- and post- Vermin Cell resulting in a significant reduction in the average price received.

Even with the costs of station development assumed to be funded through debt, the servicing of debt is predicted to be significantly more comfortable than it was in 2011-12, with the Finance Ratio falling from 33% to 12%.

Net Economic Profit is predicted to average \$38,434, up from -\$212,621 in 2011-12, which indicates that with good management, increased productivity and turnover, it is possible for a pastoral business to be very competitive with other forms of investment.

This analysis shows that stations within the Murchison Region Vermin Cell have the ability to be profitable and remain profitable in the long term with the control of wild dogs and a raft of management initiatives and station development in place.

The improvements in livestock productivity and turnover resulting from the control of wild dogs alone, is unlikely to bring about the long term profitability the industry requires. This is due to the significant and increasing impact of overhead costs on pastoral businesses. Their reduction must be tackled simultaneously with improvements in livestock productivity; and the major breakthroughs in overhead costs so desperately required will come from innovative livestock management and the use of appropriate technologies.

It will be pointless introducing new technology and management practices without simultaneously controlling the wild dogs; just as controlling the wild dogs without the parallel introduction of new technology and management practices is unlikely to lead to long term profitability across the industry. The two must go hand in hand.

Table 3: KPIs for 2011-12 and post Murchison Region Vermin Cell construction, wild dogs controlled and improved management practices implemented

Key Performance Indicator	Group average for 2011-12	Group average without wild dogs & improved management	Units
Overall Business Indicators			
Return on Assets	-7.1%	9.4%	
Profit (EBIT)	-\$107,819	\$232,465	
Assets - Total	\$1,518,056	\$2,460,400	
Liabilities	\$293,178	\$512,184	
Equity	80.7%	79.2%	
Net Economic Profit	-\$212,621	\$38,434	
Average DSE managed	4,620	16,625	
Expense Ratio	605%	97%	
Overhead Ratio	541%	62%	
Overhead Costs per DSE	\$44.64	\$12.00	\$ per DSE
Gross Margin Ratio	55%	63%	
Asset Turnover Ratio	10%	25%	
Finance Ratio	33%	12%	
Cashflow (excluding off-station)	-\$139,120	\$190,927	
Off-station income	\$43,744	\$43,744	
Enterprise Indicators			
Cattle			
Gross Margin - total	\$3,506	\$38,787	
Gross Margin per LSU	\$18.95	\$57.89	per LSU
LSUs managed	185	670	LSUs
Cost of production	\$12.47	\$2.04	per kg live weight
Price received	\$1.82	\$1.46	per kg live weight
Meat produced per LSU	62	99	kg live weight
Calving rates	50%	76%	
Death rate	2%	3%	
Sheep - Wool			
Gross Margin - total	\$77,015	\$194,187	
Gross Margin per DSE	\$22.32	\$27.49	per DSE
DSEs managed	3,451	7,063	DSEs
Cost of production	\$12.27	\$9.02	per kg clean
Wool price received	\$11.14	\$10.97	per kg clean
Sheep sale price received	\$95.00	\$65.00	per head gross
Wool produced per DSE	2.61	2.91	kg clean
Lambing rates	53%	80%	
Death rate	18%	9%	
Sheep - Meat			
Gross Margin - total	\$419,285	\$643,753	
Gross Margin per DSE	\$36.28	\$21.35	per DSE
DSEs managed	11,557	30,149	DSEs
Cost of production	\$2.15	\$0.72	per kg live weight
Price received	\$3.31	\$1.93	per kg live weight
Meat produced per DSE	20	21	kg live weight
Lambing rates	108%	126%	
Death rate	9%	7%	
Goats			
Gross Margin - total	\$35,373	\$73,457	
Gross Margin per DSE	\$20.29	\$27.33	per DSE
DSEs managed	1,743	2,688	DSEs
Price received	\$40.00	\$43.00	per head gross

Appendix 1: Explanation of Key Performance Indicators

Key Performance Indicator	Explanation
Asset values	These are closing values, e.g. at 30 th June 2012. The livestock and plant & equipment values are considered to be conservative market values. The land values are considered to be fair market value, bare of livestock, plant & equipment, and including fixed improvements. In the scenario with the Vermin Cell in place, the capital required to implement the desired development plans have been added to the asset value.
EBIT	Earnings before interest, tax and capital. A standard allowance is included in overhead costs for unpaid labour of \$60,000 per full-time equivalent, and depreciation of 15% of adjusted opening plant & equipment value is used.
Return on Assets	EBIT as a percentage of total closing assets
Liabilities	These are closing values e.g. at 30 th June 2012
Equity	Assets less liabilities as a percentage of total assets. The equity reported is at the end of the year e.g. 30 th June 2012.
Net Economic Profit	Is the difference between EBIT and the opportunity cost of leasing the station at 7.5% of market value and investing capital from livestock, plant and equipment at 10%.
Expense Ratio	Direct, overhead and finance costs as a percentage of gross product
Overhead Ratio	Overhead costs, including unpaid labour and depreciation as a percentage of gross product.
Overhead Costs per DSE	Overhead costs, including unpaid labour and depreciation divided by the average DSEs.
Gross Margin Ratio	Total gross margin as a percentage of the total gross product
Asset Turnover Ratio	Total gross product as a percentage of total closing assets
Finance Ratio	Finance costs (excluding debt repayment) as a percentage of total gross product
Cash flow	Cash income less cash expenditure, excluding off-station income
Gross Margin	Gross product (income adjusted for changes in opening and closing inventory valuation) for an enterprise less direct costs and opportunity cost (10% of opening value) of capital invested in the enterprise
LSU	Large stock unit. Used for cattle and is the equivalent of a 420 kg live weight steer at maintenance
DSE	Dry sheep equivalent. Used for sheep and goats and is the equivalent of a 50 kg live weight wether at maintenance
Cost of production	The total cost (direct, overheads, depreciation and unpaid labour allowance, excluding finance) to produce a live kilogram of beef or sheep meat; or a clean kilogram of wool
Prices received	These are a gross sale price –i.e. no costs deducted
Meat produced per LSU or DSE	Kg of meat (live weight) produced per LSU or DSE associated with the enterprise
Wool produced per DSE	Kg of clean wool produced per DSE associated with the enterprise
Calving and lambing rates	Natural increase as a percentage of cows or ewes joined
Death rates	Number of deaths as a percentage of opening number of stock in the enterprise

Appendix 2: References

1. Resource Consulting Services Pty Ltd, 2004. Final Report. Gascoyne Murchison Strategy Benchmarking, Financial Advice & Business Review Project.
2. NRM, Western Australia, 2009. Collection of Tools, Information and Experiences from the Building Partnerships to Improve Rangeland Management and Pastoral Productivity in Semi-Arid Australia Project.
3. Australian Wool Innovation Limited and Rural Directions Pty Ltd, 2010. Australian Pastoral Property Innovation Manual.

2.8.2 Private, environmental, regional, community and social benefits of the Murchison Region Vermin Cell

Private benefits. Projections for the businesses involved in the study detailed in Section 2.8.1 showed that in the absence of wild dogs, with the implementation of “best practice” management and with stations operating at full capacity, Return on Assets will increase from the current -7.1% to 9.4%. The average annual increase in profit (earnings before interest and tax) is projected to be \$340,284. If this increase in profit is extrapolated across 80% of the 53 stations within the Vermin Cell (not all stations will return to production in the absence of wild dogs), then the increase in profit within the Vermin Cell would be \$14,000,000, or a benefit to cost ratio of constructing the Cell of 2.4:1. No discounting has been applied to this figure as the time taken to return to profitability varies significantly between stations. Nor has any seasonal variability been taken into consideration.

The survey undertaken by Kirkgate Consulting in October 2012 suggests that if the region returns to a stocking rate equal to the current assessed carrying capacity, then a total of 450,352 DSEs could be managed in the absence of wild dogs. Currently there are an estimated 108,084 DSEs being run in the Vermin Cell area. If the productivity of the existing 108,084 DSEs improves in line with the findings from the study conducted by Rural Business Solutions, then the Gross Margin from these stock would increase by \$659,312 per year (an average increase in Gross Margin across Merinos and goats of \$6.10 per DSE. An additional 342,268 DSE with an average Gross Margin of \$27.41 per DSE would return an additional \$9,381,565 per annum; resulting in an additional return of \$10,040,877 due to increased livestock productivity and an increase in stocking rate to current carrying capacity. This is 1.7 times the capital cost of constructing the Vermin Cell.

The support being provided by Rangelands NRM WA will enable these private benefits to be more accurately projected, and monitored on an annual basis.

Environmental benefits: Other major benefits of the Vermin Cell are control of predators in general, and the management of total grazing pressure. When stocking rates, of all grazers – domestic and non-domestic - are controlled and kept within the carrying capacity of the land, there are significant environmental benefits, which are in addition to the benefits in livestock productivity. These benefits include:

- Native vegetation is able to regenerate thereby increasing water use efficiency and enabling a further increasing carrying capacity,
- The loss of soil through wind and water erosion is reduced; again improving water use efficiency, in turn allowing for regeneration of native vegetation, and once unproductive areas are able to support production
- Weeds can be controlled through the use of selective grazing management
- Threatened native flora can be protected from grazing, either permanently or at critical times
- Populations of native fauna which are sensitive to grazing can also be more effectively protected once total grazing pressure is controlled.
- Native fauna will benefit significantly from the control of predators; namely wild dogs, feral cats, and foxes.

All of these benefits will lead to a region with enhanced biodiversity values and an improved productive capacity.

The decline of the pastoral industry has seen a significant number of stations being sold to the government, formerly Department of Environment and Conservation, and now the Department of Parks and Wildlife. With this occurring, there is an added call on taxpayer funds and government resources to manage public lands; a function that could once again return to the private domain, generate a profit, and provide government revenue. With the successful completion of the Vermin Cell, there may be some pastoral leases which could return to private ownership and management.

Regional benefits: The flow-on effects from a revitalized pastoral industry are enormous. As shown above, there is the potential to increase profit in the pastoral industry by up to \$14,000,000 per year.

The increase in livestock numbers and the resulting increase in profitability in the region will result in increased demand for many goods and services. For example, if small stock numbers increase by around 300,000 head (equivalent of the 342,000 DSE current gap between stocking rate and carrying capacity), then the shearing industry would generate an additional \$1,500,000 (at an average shearing cost of \$5 per head); husbandry items supplied by the likes of stock and station agents would inject another \$900,000 into their businesses; transport operators would benefit to the tune of \$700,000 in livestock transport assuming one third of the additional stock would be turned-off each year, with an additional \$200,000 possible in wool freight.

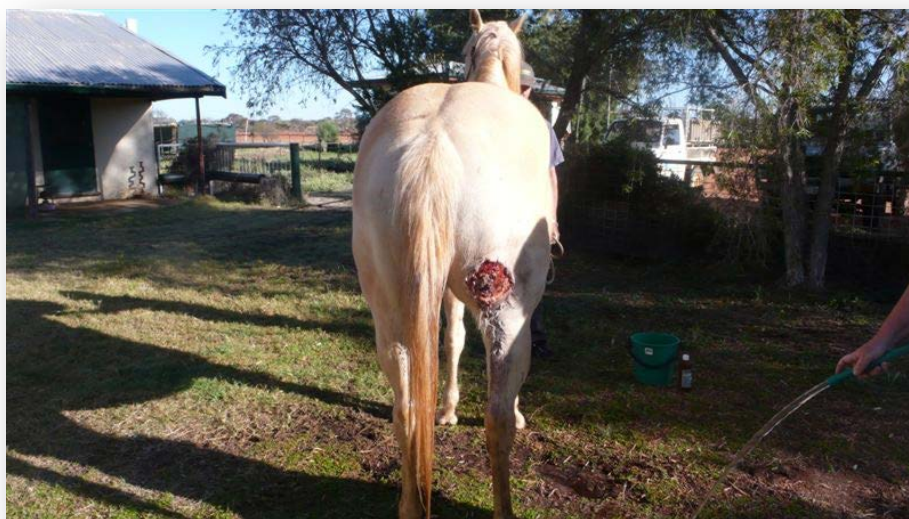
With additional stock being managed there will be an increased need for both permanent and casual station labour. With ideal labour use efficiency being around 10,000 DSE per full-time equivalent, there is the potential for the industry within the Vermin Cell to employ the equivalent of an additional 34 full-time staff. This has major benefits for local communities in terms of increased demand for goods and services, education, health services etc. This will provide a much needed boost for many local businesses, and encourage new businesses and service providers to open in the local towns; all leading to a further increase in the local population.

The increase in turn-off of small stock from the region is likely to see a re-opening of the Geraldton abattoir. It has been suggested that 40 new jobs would be created, and this number of people together with their families would provide a significant injection into the regional economy.

The construction of the 480km of fencing to complete the Vermin Cell will in itself provide a major boost to the local communities. While it is likely that the materials for the fence will be purchased outside the region, fencing contractors will require food, accommodation, fuel, machinery repairs and parts, etc, all of which can be sourced locally.

The SW Queensland NRM's preliminary analysis of community benefits for a similar Vermin Cell in the Charleville region suggests that for every additional sheep managed, a benefit of \$6 accrues to the local community, and every additional bovine contributes \$1 to the local community. The funding being provided by Rangelands NRM WA will enable comparable figures to be projected and monitored in the Murchison Region Vermin Cell.

Community and social benefits. As the pastoral industry has declined with the increase in the wild dog population, the fabric of local communities has suffered enormously. A revitalized pastoral industry will result in local populations increasing through means as described above. A larger population will provide the much needed pool of people from which volunteers can be drawn to run the many volunteer organizations which form the backbone of our local communities. Organisations such as St John Ambulance, and the Fire and Rescue Services rely on volunteers and without them the services must be propped up by government or forced to close. Many other local organizations operate with volunteers alone and form much of the fabric and support within a community, eg, Senior Citizen's Clubs, Service clubs such as Rotary, the CWA, sporting associations, etc. An increased community population would also see the likes of sporting clubs being able to field teams and run competitions again, revitalizing the social experiences these towns once enjoyed.



Station horse attacked by wild dogs, Meka Station (Rosemary Bartle)

2.9 Assessment of Options

1. **Do nothing** – the do nothing option equates to foregoing social, community, environmental and economic costs and benefits.
 - The pastoral industry continues to be decimated with the number of productive leases continuing to fall. Sheep numbers will continue to fall by at least 14% per year, and the state government may have to take over and manage and maintain more land.
 - Small towns lose their economic and social fabric.
 - The potential for private investment in the region is lost.
 - Morale in the region is poor.
 - Potential mental health issues as pastoralist and farmers suffer. There is growing incidence of suicide amongst pastoralists. The state cannot ignore the mental health of the community.
 - Downstream businesses continue to close.
 - Overseas export markets are lost.
 - The possible importation of meat and wool products into WA.
 - The spread and increase in numbers of wild dogs will see dogs move into neighboring areas and decimate the industry in those areas.
 - The evidence suggests that the physical size of the wild dogs has grown 25% in 30 years and this will present more problems unless contained.
2. **Partial Vermin Cell**
 - Will prolong the problem of wild dogs in the region and delay project benefits
 - Previous reviews did not support a "temporary" solution of a partial cell.
 - Allow wild dogs to continue to grow in numbers and increase their geographical spread.
 - Will continue the decline of the livestock industry and the local population making future recovery even more difficult.
 - Will continue the decline in downstream businesses.
 - The benefit will be limited to fewer businesses
3. **Complete the Vermin Cell**
 - Completing the Vermin Cell will result in social, community, environmental and economic benefits to the industry, and region.
 - Is a positive and strong commitment to the region.
 - Creates a unique opportunity for the region, industry and governments.
 - Allows for a quicker regeneration of the industry and communities.
 - Allows for more conclusive outcomes to be assessed and potentially used around Australia.
 - WA will be seen as having a positive and holistic approach to the problem of wild dogs.
 - Supports, and is consistent with, the recent studies referenced in this application.
 - Economic benefit (direct and down-stream) of the proposal highlights the positive impacts.
 - All tiers of government can demonstrate their commitment to the pastoral industry.
 - Will improve the sustainability of the pastoral industry.
 - The pastoral industry recognises the mutual benefit and support of this application.
 - There is recognition that the control of wild dogs requires all parties to maintain a united voice.
 - There is the potential export of meat and wool to the Asian market. Evidence points to the Asian and overseas countries buying large tracts of "food"

- producing areas of Australia.
- The demand for product will continue to grow.
- Allow the environmental benefits to begin earlier than the other options.
- Possibly allow the state government to sell and return pastoral leases back to the industry.

4. Undertake additional active control measures

Increasing the current baiting and dogging will only be effective when the program is undertaken consistently on all stations --- due to the number of absentee lease holders and the proportion of pastoralist who work “off farm” to survive financially, this proposal is unlikely to be effective

2.10 Preferred Option

The preferred option is **Option 3**. The completion of 480 km of new dog proof fencing between the No 2 Vermin Fence and the State Barrier Fence will fully enclose and complete the proposed Murchison Region Vermin Cell.

- This option will result in the social, community, environmental and economic benefits being maximised.
- Supports recent wild dog feasibility and government studies.
- Supports, and is consistent with, previous grant applications.
- The outcomes of these studies support the Vermin Cell being completed and fully enclosed.
- Supports the growth of viable pastoral activities, particularly small stock production.
- Supports and meets the Royalties for Regions objectives and aligns with key infrastructure strategies.
- The MRVC and pastoralists strongly support and commit to the business case.
- Appropriate planning and approval process will be managed.
- There is a strong commitment to the proper governance and administration of any funding.
- The proposed project will measure ongoing viability of pastoralist within the cell --- this trial data will provide valuable evidence as to the value of the ‘vermin free cell’ concept.

2.11 Funding Strategy

Funding Summary

Funding Source	Amount	Status
Capital for construction of 480km of vermin proof fencing		
Mid West Investment Plan (RfR)	\$4,534,000	This application
Shire of Mount Magnet	\$100,000	Resolved 1 JUN 2013 – Corporate Business Plan. Over 2 years 2013/2014 2014/2015
Shire of Cue	\$100,000	Resolved 20 AUG 2013. Over two years – 2014/2015 2015/2016
Shire of Yalgoo	\$66,000	Resolved 19 AUG 2013 Over two years – 2014/2015 2015/2016
Shire of Sandstone	TBA	Under consideration
Shire of Murchison	TBA	Under consideration
Country Local Government Fund	\$1,022,000	Being processed by Dept Regional Development
Total capital	\$5,822,000	
Pastoralists Contributions		
53 Pastoral stations within the Vermin Cell	\$2,194,000	Majority have agreed to contributions of \$1,800 per year (indexed) for 23 years commencing 2 years after fence completion. Expected to be placed in an Industry Fund for projects to improve environmental or productivity outcomes. Expressed in \$ of to-day.
Total Pastoralists contributions	\$2,194,000	

Note: The Department of Parks and Wildlife currently invest in wild dog control on the stations they own, and there may be potential for this contribution to increase.

The funding strategy is based on:

- The documented history of previous projects (costs, management and time)
- Clear and accountable outcomes and outputs
- That the project budget will meet the objectives set out for the region
- A clear assessment of the risks
- A commitment of leveraged funds from local councils
- Commitment to the ongoing maintenance of the fence

2.11.1 Pastoralists capital contribution schedule

The detailed schedule of capital contributions from pastoralists (50% of the MWDC funds less capital contributions from the Shires of Mount Magnet, Cue and Yalgoo) is shown in the table below. A portion of these contributions may be provided in-kind during the construction phase of the Vermin Cell. The final annual contribution and/or term may reduce following the commitment of any capital contributions from the Shires of Sandstone and Murchison.

Year	Capital contribution per station	Total annual contribution
2014	Contribution set – 53 pastoral properties @ \$1,800 each p.a.	
2017	Murchison Vermin Cell completed (Note: First contribution due two years after completion of fence construction)	
2019	2,087	110,595
2020	2,149	113,913
2021	2,214	117,330
2022	2,280	120,850
2023	2,349	124,475
2024	2,419	128,210
2025	2,492	132,056
2026	2,566	136,018
2027	2,643	140,098
2028	2,723	144,301
2029	2,804	148,630
2030	2,888	153,089
2031	2,975	157,682
2032	3,064	162,412
2033	3,156	167,284
2034	3,251	172,303
2035	3,349	177,472
2036	3,449	182,796
2037	3,552	188,280
2038	3,659	193,929
2039	3,769	199,746
2040	3,882	205,739
2041	3,998	211,911
Total		3,589,118

Note: Adjusted annually by the Perth CPI. In the table above CPI assumed of 3%.

2.11.2 Project Budget

The total estimated cost of \$5,822,000 is based on recently completed work on the No 1 and No 2 Vermin Fences carried out by the MRVC utilising 2010/2011 CLGF Group Funding of \$1,645,000. The MRVC developed a very cost effective fencing design for this project as shown in Section 2.2.

The work carried out by the MRVC involved the replacement of 135km of fencing on the No.1 Vermin Fence and 38km on the No.2 Vermin Fence.

The total cost of this work was \$1,645,076 or \$9,621 per kilometer. Components of this expenditure were on a percentage basis.

Clearing and Grading (to provide access and establish the line for the fence)	11%
Fencing Materials (purchased by the MRVC and supplied to fencing contractors)	45%
Fence Construction	39%
Field Supervision and Co-ordination	5%
	<hr/> 100%

The project was managed by the Shire of Mount Magnet in its capacity as administrator of the MRVC. Project Management involved the specification, calling and awarding of nine tenders, the payment of contractors and the overall financial management of the project. Notwithstanding that significant Shire of Mount Magnet staff time was involved in management of the project the Shire did not seek to recover these costs.

The following costings are based on 480 km of fencing being required to complete the Vermin Cell utilizing component percentages from the recent MRVC fence replacement works. The 100km of fencing to be constructed within the existing fence reserve is expected to be cheaper on a per km basis than the remaining 380km as this project will commence sooner and there is easier and shorter access thus reducing costs of transport and labour.

PROJECT ITEMS	CLGF Funds (\$)	MWDC / Shire Funds (\$)	Total Funds (\$)
Clearing & Grading	109,000	485,000	594,000
Fencing Materials	446,000	1,984,000	2,430,000
Fence Construction	386,000	1,719,000	2,105,000
Field Supervision /Co-ordination	49,000	220,000	269,000
Project Administration	-	240,000	240,000
Contingency	32,000	152,000	184,000
TOTAL	1,022,000	4,800,000	5,822,000

The Rate/km used in the above calculations is:

100km section in MRVC Reserve (3% increase on MRVC costing)	\$9,900
380km section following pastoral lease fencelines (20% increase on MRVC costings)	\$11,600

Royalties for Regions Funding Amount

[Specify the timing for the use of the funding. It should enable the development of a disbursement or drawdown schedule for the proposed funding.]

Main Activity	2014/2015 \$	2015/16 \$	2016/17 \$	Total 2014 to 2017 \$
Fence construction 380 km (MWIP)	500,000	2,500,000	1,534,000	4,534,000
Fence construction 100km (CLGF)	1,022,000			1,022,000
Total	1,522,000	2,500,000		5,556,000

The Shire of Mount Magnet will require additional resources to administer the construction of the 380km section over a two to three year period, hence the provision of a Project Administration budget amount of \$240,000.

2.12 Project Timeframe and Key Milestones

It is considered that the following timeframe is realistic and achievable.

Reporting will be in line with the guidelines set down the Mid West Development Commission and Department Regional Development.

Main Activities/Milestones	Milestone Date	Responsibility
CLGF Funding approval	Being processed	DRD
MWDC Funding approval	February 2014	MWDC
Fence Implementation Plan developed.	May 2014	Shire of Mount Magnet.
Southern Rangelands Pastoral Industry Assessment and Action Plan commenced		NRM & Interagency Reference Group
Start construction of the 100km of fencing in the existing fence reserve	August 2014	MRVC
Completion of the first 100km of fencing	August 2015	MRVC/Shire of Mount Magnet
Establish new RBG	December 2014	DAFWA; Minister for Agriculture

Order materials/Start construction of 380km of fence to complete the Vermin Cell. Southern Rangelands Pastoral Industry Action Plan endorsed	March 2015	Shire of Mount Magnet NRM & Interagency Reference Group.
Complete construction of 380km of fence	March 2017	Shire of Mount Magnet
Communication Plan	On-going	New RBG, MRVC & Shires
Official launch by ministers and dignitaries	March 2017	All
Completion of project/sign-off	March 2017	All

CLGF — Country Local Government Fund

MWDC — Mid West Development Commission

MRVC — Murchison Region Vermin Council

DRD — Department of Regional Development

New RBG – Recognised Biosecurity Group expected to be established to manage 380km of new fencing.

2.13 Risk Analysis

1. A perceived risk has been that pastoralists would return to the often unsustainable grazing practices of the past that resulted in the degradation of areas of grazing lands. This is **not** now considered a significant risk as the level of knowledge of pastoralists regarding the need for sustainable management practices, and there is a ground-swell of enthusiasm for implementing best practice technology to ensure station management is both efficient and profitable. These factors, coupled with stringent regulatory controls imposed on pastoral lessees will help ensure that overgrazing practices of the past are not repeated.
2. A perceived risk is that construction of part of the fence will occur on crown land subject to a pastoral lease rather than in a reserve specifically created for the purpose. CLGF guidelines make provision for the construction of assets not directly under the care and control of local government on the proviso that the benefits of the asset are accessible to all and ongoing maintenance is assured. As the 380 km section of the fence that will be constructed outside a reserve which will be under the management of a new RBG, compliance with this condition is achieved.
3. The project will be reliant on collaboration between participating local governments, pastoralists, State Government agencies, contractors and material suppliers. This is not considered a major risk due to the successful completion of previous projects similar in nature and their successful outcomes and outputs.
4. With the 480km of fencing required to complete the Vermin Cell, to be built either within the existing No 2 Vermin Fence Reserve (100km) or following existing pastoral lease boundaries, or in some cases as negotiated with leaseholders, internal fencing to avoid difficult country such as breakaways and to exclude country deemed unsuitable for small stock enterprises (380km), native title will not be invoked.
5. Some leases may lack the required carrying capacity to enable viability. Grasses are the limiting ingredient in this environment. Such an impediment would require supplementary feed production via opportunistic irrigation. This activity would require relaxation of the confined land-uses available to pastoralist at present.
6. Some pastoralists have insufficient capital to restock their leases and as a result are unable to become viable.

Risk	Level (low, medium, high)	Mitigation
Carrying capacity of leases are insufficient to be profitable	High	Pastoral leases are amalgamated to provide economies of scale. Supplementary fodder production is allowed within the pastoral region to improve viability
Some pastoralist have insufficient capital to restock	High	This is expected. It is presumed these pastoralists will leave the industry, and the lease either taken over by a new operator or amalgamated with larger or more economic pastoral unit
Calling of Tenders	Medium	Documentation is legally checked. As the cost will be over \$100,000 it will be necessary for the MRVC to call tenders for the provision of materials, services and labour. It is possible that suitable tenders may not be received in terms of availability of materials and value for money in regard to service and contractors.
Provision of fencing material	medium	Short supply may be an issue. Proper contact tendering. MRVC has a detailed fence specification prepared and approved by Department of Agriculture and Food
Fence specifications standards	low	Proper contact tendering. MRVC has a detailed fence specification prepared and approved by Department of Agriculture and Food.
Contract Supervision	low	Proper contact tendering
Unsustainable grazing practices	low	Modern management
Native Title Issues	low	Refer note above
Cross agency collaboration	low	Refer note above

2.14 Local Content

Separate tenders will be call in accordance with Part 4 Division 1 of the Local Government (Functions and General) Regulation 1996 for the supply of fencing materials, clearing and grading of the fence line and construction of the fence. This process is expected to insure a high level of local content.

It should be noted that the MRVC called tenders for the recent construction of the 171 kilometres of new fencing on the No.1 and No.2 Vermin Fences with the result that all construction works were carried out by regional contractors and all materials were supplied by a WA based agricultural company.

3.0 IMPLEMENTATION STRATEGY

3.1 Communication Plan

The project itself will have very visual results, being the erection of the fence.

The Shire of Mount Magnet will coordinate an ongoing awareness campaign throughout the Murchison to enable the community to appreciate that work is ongoing.

This will be achieved by:

- Regular media releases aimed at local press
- Information updated regularly on the five Shires' website. This will provide information on progress and where construction of the fence has progressed to.

A launch of the project will take place which the Minister for Agriculture will be invited to conduct. To coincide with the launch, media statements will be issued and the local press engaged. The launch could be the Minister bolting in the final section of fence, to signify "closing the gate" on the wild dogs. This would attract media attention

3.2 Procurement Strategy

In order to simplify matters, the procurement for the project will be undertaken by the MRVC and the new RBG on behalf of the Shire of Mount Magnet as the organisation responsible for financial management. Any tenders or requests for quotation will be in the name of the Shire of Mount Magnet.

Local government operates under the regulations contained within the Local Government Act. The following guidelines will be adhered to in relation to value of procurement (excluding GST) over the full contract period.

Up \$9,999	Direct purchase from suppliers
\$10,000 - \$39,000	Obtain at least two verbal or written quotes
\$40,000 - \$99,999	Obtain at least two written quotations containing price and specification of goods and services (with procurement decision based on all value for money considerations)
\$100,000 and above	Conduct a public tender process

The Shire of Mount Magnet on behalf of the five local government Shires will provide

progress reports on a quarterly basis or as determined from time to time by the Mid West Development Commission and Department Regional Development, until the completion of the Project. These reports shall include:

- a financial report certified by the Chief Financial Officer;
- an evaluation report showing how and to what extent the funding was spent and the extent to which the milestones and outcomes were achieved;
- an annual report on the Project based on a financial year ending 30 June which shall include;
- a financial report certified by the Chief Financial Officer outlining income and expenditure in respect to the Project
- an evaluation report showing how and to what extent the Funding was spent and the extent to which the Milestones and outcomes were achieved;

3.3 Governance

The MRVC is a statutory organization which operates under the provisions of the Local Government Act 1995. The MRVC was established in 1963 for the purpose of the rehabilitation and maintenance of the No 1 Vermin Fence.

The construction and maintenance of 100km of fencing within the existing No 2 Vermin Fence Reserve will be managed by the MRVC through the Chief Executive Officer (CEO) of the Shire of Mount Magnet who is also the CEO of the MRVC.

The construction and maintenance of the remaining 380km of fencing which is to follow station lease boundaries and internal fencing will be the responsibility of a new RBG.

The Shire of Mount Magnet, on behalf of the MRVC, has consulted widely within its community and with relevant stakeholders including pastoralists, Department of Agriculture and Food, Department of Regional Development and Lands, Mid West Development Commission, Meekatharra Rangelands Biosecurity Association and the Shires of Cue, Meekatharra, Sandstone, Yalgoo, Murchison, and Wiluna.

All local governments consulted have resolved to support the project.

A majority of pastoralists within the proposed Murchison Region Vermin Cell have agreed to commit approximately 50% of the \$4,534,000 being sought from the Mid West Development Commission. These contributions will be adjusted annually on 30 June each year by the Perth CPI. The pastoralist contributions are expected to be levied under the Biosecurity and Agricultural Management Act 2007 "Industry Funding Scheme" and collected by The Office of State Revenue. It is expected that these funds will be managed and allocated by a joint cross representative governing group (yet to be established) with possible representation from the Murchison Local Government Authorities, Department of Agriculture and Food WA, Mid West Development Commission, and the pastoral industry. The pastoralists' contributions will be used for programs within the Vermin Cell which will enhance both productivity and environmental outcomes.

For fencing under the control of the MRVC, as is currently the case for the No 1 Vermin Fence and No 2 Vermin Fence, maintenance costs will be funded by precepts from Shire Councils, fence rental payments from pastoralists and Rates collected by the Meekatharra Rangeland Biosecurity Association. Undertaking and subcontracting maintenance will be the responsibility of the MRVC.

Maintenance for the remaining 380km of fencing will be funded by an increase in vermin rates to be levied on pastoral stations within the Vermin Cell; with a majority of pastoralists

agreeing for this increase to be between \$500 and \$1,000 per station per year. It is expected that these rates will be matched dollar for dollar by DAFWA. The new RBG which is expected to be established will be responsible for fence maintenance and insurance, and also for administering the pastoralists' contribution fund.

3.4 Supporting Documents

This Business Case submission should be read in conjunction with the attached RSM Bird Cameron Murchison Region Vermin Cell Feasibility Study.

Resource Consulting Services Pty Ltd, 2004. Final Report. Gascoyne Murchison Strategy Benchmarking, Financial Advice & Business Review Project.

URS Benefit Cost Analysis of Biosecurity Fence Options to Protect Southern Rangelands from Wild Dog Impacts for further consideration of this issue.
<http://agric.firstsoftwaresolutions.com/fullRecord.jsp?recno=863>

Rangelands Pastoral Advisory Group Review of the Economic and Ecological Sustainability of Pastoralism in the Southern Rangelands of Western Australia 2009 (SRPAG) or "The Duncan review".

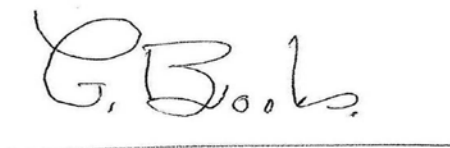
4.0 RECOMMENDATION OF PREFERRED OPTION

The preferred option for this project is for the completion of the 480 kilometers of fence between the No 2 Vermin Fence line and the State Barrier Fence which will complete the Murchison Region Vermin Cell. This will enable wild dogs to be reduced to levels that have an insignificant impact on livestock in an area of 7,520,630 ha of the Southern Rangelands, and hence enable pastoralists to move towards a return to profitability through the ability to reintroduce small stock enterprises, improve the level of station management and control of total grazing pressure.

The completion of the Murchison Region Vermin Cell will also result in a reinvigoration of local communities through increased employment, business opportunities, and a rebuilding of their social fabric.

4.1 Sign-off

Signed:



Mr Geoff Brooks
Position: Chief Executive Officer
Organisation: Shire of Mount Magnet

Signed:



Mr Ashley Dowden
Position: Shire President
Organisation: Shire of Mount Magnet

APPENDICES

LETTERS OF SUPPORT:

- RANGELANDS NRM WA
- DEPARTMENT OF AGRICULTURE AND FOOD WA
- MURCHISON REGION VERMIN COUNCIL
- PASTORALISTS AND GRAZIER'S ASSOCIATION
- MEEKATHARRA RANGELAND BIOSECURITY ASSOCIATION
- RANGELAND FIBRE AND PRODUCE GROUP

PASTORALIST MEETINGS 16-19 SEPTEMBER 2013

- CONFIRMATION OF SUPPORT
- SUMMARY OF MEETINGS

Mr Geoff Brooks
Chief Executive Officer
Shire of Mount Magnet
PO Box 62
MOUNT MAGNET WA 6638

Dear Geoff,

Re: Rangelands NRM WA support for the Murchison Region Vermin Cell

Rangelands NRM WA will provide funding to assist pastoralists within the Murchison Region to assess options for managing and effectively utilising the proposed Vermin Cell.

Rangelands NRM support is being designed to assist individual pastoralists, the industry, and the regional community in a number of ways. It will:

- Assist the individual pastoralists to determine the best options for returning their businesses to profitability following the construction of the Vermin Cell and with wild dogs controlled. For example, which enterprises to run, how to restructure the management and operation of their stations to maximize the potential for returning to profitability, how long will it take for the business to get back to profitability, and what funding will be required in the interim. Or, if some stations face the predicament of profitability being an unachievable goal, then determining what are their options.
- Provide on-going (annual) rigorous monitoring of the costs and benefits of the Vermin Cell. This will cover the financial, economic, livestock productivity, and environmental aspects at both a station and regional level.
- Conduct an analysis of the public, regional/community, and social benefits of controlling wild dogs and total grazing pressure as a result of the construction of the Vermin Cell. For example, determine the effect on the local community (in economic and social terms) of each additional small stock unit being managed within the Vermin Cell. Initially this will be presented as a projection, and as the annual monitoring progresses, projections can be updated to actual effects.

Additional benefits of this support are that we will have rigorous and consistent information to:

- Contribute to the evaluation of any trials (e.g. carbon sequestration opportunities, grazing pressure, productivity, land reclamation) that the industry wishes to conduct within the Vermin Cell;
- Provide information to support future funding submissions;
- Keep government and industry bodies abreast of industry and regional issues, and increase awareness of the impact of policy on both the pastoral industry and the local communities.

At the recent meetings held in Mount Magnet, Cue, Paynes Find and at Meka Station, pastoralists unanimously agreed that our support for this project was imperative for them to determine how best to return their industry to long term sustainable profitability, to provide



rigorous on-going monitoring of the project, determine the impact of the Vermin Cell on the local communities, and to provide supportive information for any future industry initiatives.

Rangelands NRM WA look forward to supporting the establishment of the Murchison Region Vermin Cell and will work with the local communities and the Shire of Mount Magnet to assist through the activities we propose above. We are very positive about the approach proposed and seeking support from the Mid-West Development Commission and other funders is critical to the proposed work.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Bill Mitchell", is written over a light blue rectangular background.

For

Bill Mitchell
Chair,
Rangelands NRM Coordinating Group Inc.

15 October 2013



6 August 2013

Mr Geoff Brooks
Chief Executive Officer
Shire of Mount Magnet
PO Box 62
MOUNT MAGNET WA 6638

Dear Mr Brooks

I am responding to your request to address two issues in relation to the proposal for Royalties for Regions funding to construct 100km of fencing as a part of the Murchison Regional Vermin Cell. It is understood that the existing No 1 fence has been upgraded to wild dog capacity and a further section of 72km has been constructed. It is further understood that additional funding will be sought for 380km to complete the cell with the assumption that the proposed additional fencing can adjoin the existing State Barrier Fence (SBF).

I have received the May 2013 version of the Business Case for the proposal as sent by you and have taken advice about its contents.

Response to the two issues about which you seek support from the Department of Agriculture and Food Western Australia (DAFWA) are:

1. Use of the State Barrier Fence as part of the Vermin Cell

As you will understand from previous advice, there is a requirement under the *Biosecurity and Agricultural Management Act (BAM Act)* Regulation 48 (Offence to use barrier fence without consent) that:

A person must not —

- (a) make use of; or
- (b) interfere with; or
- (c) attach any vertebrate animal trap, diversionary wing fence, gate, wire netting or other attachment to, a barrier fence unless the person has obtained the prior written consent of the Director General.

Penalty: a fine of \$10 000.

I advise that the Director General of DAFWA provides in principle consent for the proposed final section of the cell fencing to be connected the SBF on the basis that construction includes gates within the fence Reserve for the purpose of emu migration transit. The required gates are to be built according to specifications determined by DAFWA. Use of the gates within the Reserve for the purpose of emu migration transition would be at the discretion of the DAFWA. An Agreement between the DAFWA and those responsible for maintenance of the proposed fence about construction and operation of the gates within the Reserve will be required.

2. A recommendation to the Minister that under the BAM Act a Rate is levied for the purpose of maintaining the 380 km length of fencing forming the north west corner of the cell

It is understood that the maintenance costs will be funded by a combined arrangement including from Shire Councils, payments by pastoralists and rates collected by the Meekatharra Rangeland Biosecurity Association. DAFWA provides in-principle support for funding available to the Meekatharra RBA to be used as a contribution for fence maintenance.

I am available to discuss these issues further as may be required.

Yours sincerely



Viv Read
DIRECTOR
INVASIVE SPECIES

MURCHISON REGIONAL VERMIN COUNCIL



PO Box 62
Mount Magnet WA 6638

ABN: 28 431 267 089

p: 08 9963-3000
f: 08 9963-4133

31 May 2013

File Reference: MRVC

To Whom It May Concern

RE MURCHISON REGION VERMIN CELL

The Murchison Regional Vermin Council (MRVC) member Councils are the Shires of Sandstone, Mount Magnet, Cue, Yalgoo and Meekatharra. Pastoralist in all these Shires suffer to varying degrees from the destruction of small stock such as sheep and goats by wild dogs.

The MRVC owns and maintains the No. 1 and No. 2 Vermin Fences and will project manage the proposed 100km extension of the No. 2 Fences and own and maintain this fence on completion. Once the extension of the No. 2 Vermin Fence is completed it will form an important component of the Vermin Cell, without which small stock enterprises in the Rangelands will continue to struggle to survive.

I am happy to discuss this letter of support further should there be a requirement to do so.

Yours sincerely,

Murray McQuie
PRESIDENT





TO WHOM IT MAY CONCERN

The Pastoralists & Graziers Association of Western Australia recognises and is very aware of the huge problems wild dogs have and continue to create for the pastoral industry (both large and small stock units).

It is with this in mind that the PGA supports the erection of the vermin cells in conjunction with the traditional methods of control i.e. baiting/trapping for the control/eradication of wild dogs.

A handwritten signature in black ink, which appears to read 'Ruth Webb-Smith'. The signature is fluid and cursive, with a large, stylized 'R' and 'S'.

Ruth Webb-Smith
Chair – PGA Pastoral Committee

MEEKATHARRA RANGELANDS BIOSECURITY ASSOCIATION

31 May 2013

To Whom It May Concern

RE MURCHISON REGION VERMIN CELL

The Association is please to provide a letter of support for this very significant project. As indicated in the project Business Case the Association arranges and co-ordinates trapping and baiting of wild dogs within the area of the proposed Cell. These measures alone will not eradicate the wild dogs however.

Over the last five to ten years the problem of wild dogs has worsened significantly and today many stations within the proposed Cell have no income as all their stock have been killed by dogs.

The Vermin Cell, in conjunction with baiting and trapping, will over time enable the control of the wild dog population and see the re-establishment of small stock enterprise in the Rangelands.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'A. Dowden', is written over a horizontal line.

Ashley Dowden
CHAIRMAN

RANGELANDS FIBRE & PRODUCE ASSN. (INC)

A.B.N. 22 631 703 453

P.O. BOX 218
MOUNT MAGNET W.A. 6638

CHAIR JORGEN JENSEN 99 634 839
DEPUTY CHAIR ANDREW EDHOUSE 99 635 846
SECRETARY/TREASURER ANN PILKINGTON 99 635 827
EMAIL kirkalocka@bigpond.com

30th May 2013

TO WHOM IT MAY CONCERN :

The members of our association wish to express strong and united support for the construction of the proposed Vermin Cell fence.

The RF&P Association (Inc) is a grower group formed in the mid nineties which continues to operate with a current membership of ten properties within the Mount Magnet and Cue shires. All businesses are family operated, there are over 30 people involved and all are long term residents.

We participated in a full day workshop last weekend to set the direction for the group for the next five years.

The group resolved *"to invest in the pastoral system to provide a foundation for families to view the Southern Rangelands with a future"*. We want to achieve ecological and social sustainability, re – build pastoral production, develop respect from the WA community for the Southern Rangelands and above all, grow an adaptive and vibrant community. Members view the construction of the Vermin Cell fence as an essential step in the control of wild dogs.

We are well aware of the costs involved. Our members, however, remain firmly committed to the future of the Southern Rangelands and with our Strategic Plan 2013 – 18 now in place, know we have much work to do in developing our systems to go hand in hand with the Vermin Cell to ensure that it operates to its full potential. This work includes management of our precious natural resources and continued animal control.



Ann Pilkington
Secretary / Treasurer

Naturally,..... from the Outback.

[illegible]

MEEKATHARRA RANGELANDS BIOSECURITY ASSOCIATION

Mount
Magnet
17/09/2013

Judal Station, Via MEEKATHARRA WA 6642

I confirm my support for the Murchison Region Vermin Cell and my commitment to contribute on a financial and/or in-kind basis.

Name	Date	Property Name	Email	Phone
DEBBIE DOWDEN	17/9/13	CHALLA	debbiendashebigpond.com	99635361
JORGEN JENSEN	17/9/13	YONERACABBIE	jorgensen@hotmail.com	0427634223
CATHERINE JONES	17/9/13	BOOGARDIE	boogardie007@bigpond.com	0447 634 186
KAREN WAINWRIGHT	17/9/13	NALBARRA	nalbarra7a)bigpond.com	99635829
LIAM FITZPATRICK	17/9/13	Boogardie	liam.fitzpatrick1994@gmail.com	0457 309968
JASON HORTON	17/9/13	WONDINONG	Jason.R.Horton@bigpond.com	996 35 82 3
LARA JENSEN	17/9/13	WONDINONG	lara@dustytracksphotography.com.au	0429 386 182
JOHN JONES	"	BOOGARDIE MURRUM		0400 634 008
ANDREW EDHOUSE	17/9/13	WOGARNO	wogarno@reach.net.au	99635846
Geoff Pilkington	17/9/13	Kirkalocka	kirkalocka@bigpond.com	99635827
LEITH PESTKE	17-9-13	FODAN	leithpestke@bigpond.com	9474.186.
Sue Stok	17-9-13	Wynjany		
PAUL H JONES	17/9/13	BOOGARDIE MURRUM	boogardie.star@bigpond.com	
ERIC MOSES	17/9/13	WYDREE	mosesdrilling@hotmail.com	95746005
John Darcy	17/9/13	Nandee	Juden John@Hotmail.com	122
Judy HARVEY	17/9/13	Boodanoo		99637963
BRETT KANNU	17/9/13	WAGGA	brettkannu@westnet.com.au	
HENRY JONES	17/9/13	BOOGARDIE MURRUM	henry@boogardie.com	0428 634 005
Wayne Ennor	17/9/13	Singsteel Midwest Cop City - Modonga station	wennor@smc.com.au	94294 888
Tony Seivwright	17/9/13	HY BRADZIL		99634063

[illegible]

Che
18/09/13

[illegible]

[illegible]

SUMMARY OF MEETING

1. MEETINGS

- Monday 16 September 2013 - Meka Station
- Tuesday 17 September 2013 - Mount Magnet Shire Administration Office
- Wednesday 18 September 2013 - Cue Shire Administration Office
- Thursday 19 September 2013 - Paynes Find Tavern, Dining Room

2. ATTENDANCE

Meka Station

Nigel Sercombe	Department of Parks and Wildlife
Viv Read	Department of Agriculture and Food
Reg Seaman	Murgoo Station
Bridget Seaman	Murgoo Station
Manuel Iturbide	Jingemarra Station
Ruth Rowe	Carlaminda Station
Neil Grinham	YPG/Meka Station
Kathryn Peat	Meka Station
Bob Grinham	Meka Station
Michael Foulkes-Taylor	Yuin & Tardie Station
Jano Foulkes-Taylor	Yuin & Tardie Station

Mount Magnet

Karen Wainwright	Nalbarra Station
Liam Fitzpatrick	Dogger - Yalgoo South
Jason Homewood	Wondinong Station
Lara Jensen	Wondinong Station
John Jones	Boogardie Station
Andrew Edhouse	Wogarno Station
Geoff Pilkington	Kirkalocka Station
Mike Kendall	Mid West Development Commission
Leith Peskett	Edah Station
Wayne Ennor	SMC Ltd/Madoonga Station
Sue Stokes	Wynyangoo Station
Paul H Jones	Boogardie/Murru Station
Eric Moses	Wydgee Station
J Darcy	Narndee Station
Peter Morrissey	Munbinia Station
Henry Jones	Boogardie/Murru Station
Brett Kanny	Wagga Wagga Station
Tony Seivwright	Hy-Brazil Station
Andrea Seivwright	Hy-Brazil Station
Jorgen Jensen	Yowergabbie Station
Catherine Jones	Boogardie Station
Adrian Morrissey	Meeline Station
Judy Hartley	Boodanoo Station
Debbie Dowden	Challa Station

Cue

John Martin
Darren Cousens
Ross Ariti
Les Price
Dave Leach
Sandy Clinch
Tom Jackson
Dustin Clinch

Cogla Downs Station
Hillview Station
Kalli Station
Coodardy Station
Beebyn Station
Nallan Station
Austin Downs Station
Karbar Station

Paynes Find

Craig Robins
Leah Bell
Don Bell
Byron Parker
Kris Pascoe
Terry Cowley
Paul Kurti

Department of Agriculture and Food
Ninghan Station
Ninghan Station
Maranalgo Station
Pullagaroo Station
Oudabunna Station
Pindabunna Station

3. DISCUSSION ITEMS

- a) A full explanation of the Vermin Cell proposal.
- b) The route of the fence once it leaves the MRVC No. 2 Fence Reserve.
- c) The contribution that the pastoral industry will make to the construction of the final 380km of fencing required to complete the Vermin Cell.
- d) The funding by pastoralists of the cost of the ongoing maintenance of the final 380km section once complete.
- e) Any other issues.

4. DISCUSSION OUTCOMES

b) Route of the Fence once it leaves the No. 2 Vermin Fence Reserve

On the basis of discussion with relevant property lessees the route of the fence was altered as follows:

- To include most of the properties Kalli and Madoonga
- To exclude small part of the properties Meeka, Twin Peaks, Murgoo and Mount Wittenoom.

The alignment of the fence once it leaves the No. 2 Vermin Fence Reserve maintains the initial length of 380km. The attached plan shows the new more practical alignment of the fence as agreed during the meetings.

c) Pastoralist Capital Contribution to Construction of the Fence once it leaves the No. 2 Vermin Fence Reserve.

A range of cash or in-kind contributions between 35% and 50% to the estimated \$4.8 Million Capital Cost by pastoralists was considered by appropriate. Such contributions would be paid annually over a twenty to thirty year period. Key aspects of such an arrangement are:

- An annual cash contribution excluding GST per pastoral property of between \$1,500 to \$2,000 after an appropriate deduction for in-kind contributions during the construction phase. Contributions to commence in the second year after completion of the Vermin Cell.
 - Contributions to be levied under the Biosecurity and Agriculture Management Act 2007 by the Meekatharra Rangelands Biosecurity Association (MRBA).
 - Contributions collected by the MRBA to be used to fund programs within the Vermin Cell that enhance both productivity and environmental outcomes.
- d) **Maintenance of the Fence once it leaves the No.2 Vermin Fence Reserve**
Estimated ongoing fence maintenance costs were identified as between \$500 and \$1,000 excluding GST per pastoral property per year. This payment to be included as an additional part of the existing vermin rate levied under the Biosecurity & Agricultural Management Act 2007 levied by the MRBA.
- e) **Other Issues Raised at the Meeting**
- NRM funding is expected to be available to engage a rural consultant to assist each individual pastoral property prepare a business plan to enable a return to viability once wild dog numbers diminish. This work will involve the identification of changes in management practices that will be required in addition to the construction of the cell and eradication of the wild dog from within.
 - Confirmed Shire Capital contributions are Mount Magnet \$100,000, Cue \$100,000 and Yalgoo \$66,000. The Shire of Sandstone has confirmed support however it is yet to determine the size of any contribution. An approach will be made to the Shire of Murchison for a contribution.
 - The establishment of the Vermin Cell is expected to result in an alteration of boundaries between the Carnarvon and Meekatharra Rangeland Biosecurity Associations.
 - There is a requirement to generate more media attention.
 - It is expected that the new fencing will be insured by the MRBA.
 - Penalties should be introduced for the non payment of Vermin Rates.
 - For the \$13M State Barrier Fence Esperance Extension project being arranged by the Department of Agriculture and Food the contribution of the pastoral/agricultural industry is \$2M.
 - A contribution to the Vermin Cell should be made by the Department of Parks and Wildlife and also mining companies.