



## Major Economic Costs Associated with Wild Dogs in the Queensland Grazing Industry



September, 2009

## **Credits**

Credit should be given to the many people and organisations who contributed their information to enable this report to be generated.

Credit should also be given to the Queensland State Government, who through the Blueprint for the Bush funded this report.

Cover photography provided courtesy of Clynton Spencer.

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# Executive Summary

Wild dogs cause significant impacts on cattle, sheep and goat industries in Queensland through predation, disease transmission and lost production due to stress. The current major economic costs associated with wild dogs have been calculated by combining survey information provided by producers, saleyards, processors, and State and Local governments. The costs are summarised below and encompass cost associated with stock losses, wild dog management, bites from wild dogs, and disease impacts. From a whole-of-industry perspective, wild dogs are having a significant economic impact on Queensland grazing industries, costing an estimated \$67 million in 2008/09.

Major Economic Costs Associated with Wild Dogs in the Queensland Grazing Industry		
Cost Category		Costs 08/09
Cattle Producers	Calf livestock losses	\$22,840,000
	Product loss due to dog-bitten cattle (saleyards)	\$1,036,914
	Product loss due to dog-bitten cattle (processors)	\$1,031,441
	<i>Neospora caninum</i>	\$3,143,536
	Hydatids	\$2,057,685
	Wild dog management costs	\$11,460,498
Sheep/Goat Producers	Sheep/goat livestock losses and attacks	\$16,950,000
	Wild dog management costs	\$2,248,642
Local Government	Includes bounties and management program	\$2,623,543
Wild Dog Barrier Fence	Contributed from Local and State governments	\$1,870,316
Queensland State Government	Department of Employment, Economic Development and Innovation Queensland Parks and Wildlife	\$1,754,000
<b>TOTAL COST</b>		<b>\$67,016,575</b>

The social costs, opportunity losses associated with lost or damaged stock and in-kind contributions of producers toward wild dog management were not encapsulated by the study, and it is expected that these factors would have a substantial upwards impact on the total economic cost of wild dogs.

An examination of producers' behaviours and attitudes shows a range of opinions regarding wild dogs. These are categorised here as either strong positive (where agree and strongly agree responses approach or are greater than 50%); divided (where there is no clear trend in responses) or strong negative (where disagree and strongly disagree responses approach or are greater than 50%).

The following strong positive responses were received from the producer survey:

- Cattle producers believe that calf losses to wild dogs are a major concern;
- Cattle producers believe that dog-bitten beasts are a significant financial loss to their enterprise;
- Sheep/goat producers rate wild dog attacks on stock as a major concern;
- Most producers have managed wild dogs in some form over the last year. The most popular management method over the last year was shooting, followed by ground 1080 baiting, trapping, aerial 1080 baiting, guard animals and lastly exclusion fencing;
- Producers believe that 1080 is not as effective as it used to be;
- Producers believe that you have to be very experienced to trap wild dogs effectively;
- Producers believe that to manage wild dogs you must really understand their behaviour;
- Producers believe that more research needs to be done on managing wild dogs; and
- Producers believe that to better manage wild dogs we need to look at ways of encouraging coordinated control measures within neighbourhoods.

The following divided responses were received from the producer survey:

- Producers were divided about whether they would be more likely to use 1080 if there was an antidote; and
- Producers were divided about whether gun laws restrict their ability to control wild dogs.

The following strong negative responses were received from the producer survey:

- Most producers are not members of any wild dog syndicate or group;
- Producers do not believe that having a single dominant dog controls other wild dogs; and
- Producers do not believe that wild dogs control kangaroo numbers.

Responsible for 83% of Queensland's land area, the behaviours and beliefs of Queensland producers are fundamental to ensuring the management of wild dogs across Queensland. These producers are seeking relevant research on wild dogs and management methods. The report findings should be used to raise awareness of wild dog impacts and guide industry and government in determining the focus for research and extension to ensure they are both practical and tailored to the needs of Queensland producers.

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# 1.0 Introduction

## 1.1 Purpose of the Report

Wild dogs are found throughout Queensland and cause significant widespread impacts on the cattle, sheep and goat industries through predation, disease transmission and lost production due to stress. In addition to the intangible economic stress placed on producers due to wild dog predation, producers also suffer emotional distress associated with the loss and mauling of livestock.

In 2009, with anecdotal reports that the impacts of wild dogs on the grazing industries were rising, AgForce Queensland, the peak body for the Queensland grazing industries, recognised the need to quantify the major economic costs associated with wild dogs and provide producers with a current whole-of-industry cost.

Previously, the Whan Report<sup>1</sup> into the economic impact of dingoes and wild dogs in Queensland estimated the economic costs of wild dogs at \$33 million per year using 2002-2003 prices. This estimate included costs associated with wild dog control, livestock losses and the spread of disease. The figures released in the Whan Report were considered conservative at the time and identified that contrary to popular belief, it was cattle producers and not sheep producers that were bearing the majority of these costs.

AgForce Queensland was concerned that this existing data did not detail real costs associated with hydatids and dog-bitten cattle. Such information was considered critical in educating producers about the importance of wild dog control. To this end, AgForce sought and was successful in receiving project funding from the Queensland Government's Blueprint for the Bush (Pest Offensive) Program. One of the objectives of the project was to provide an up-to-date quantification of the major economic costs associated with wild dogs in the Queensland grazing industries while encapsulating these additional cost burdens. It was decided that a snapshot of producers' behaviours and beliefs should also be obtained in order to provide guidance on what extension, information, research and management is required to enable producers to best control wild dogs.

To satisfy these objectives, a study was undertaken, combining current survey data from producers, saleyards, processors, State and Local government. This report is a reflection of the observations and views of the survey respondents and illustrates the mix of enterprises within Queensland. The report does not attempt to forecast what could, should or would have been if wild dogs were not having an impact on the industry. Further, no attempt has been made to quantify social costs, opportunity losses associated with loss or damage to livestock, or in-kind contributions of producers toward wild dog management.

The results of this report will be used in raising the awareness of wild dog impacts, particularly amongst cattle producers. The qualitative findings of this report will guide industry and government in determining the focus for research and extension into wild dogs and wild dog control to ensure they are practical and tailored to the needs of Queensland producers.

## 1.2 Wild Dogs and the Queensland Grazing Industry

The sheep meat, wool, goat and beef industries combined at farmgate levels form Queensland's largest agricultural industry. With over 20,000 producers state-wide,<sup>2</sup> these industries account for \$3.647 billion gross value of production.<sup>3</sup> The primary industries sector in Queensland plays an

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<sup>1</sup> Rural Management Partners, Economic Assessment of the impact of dingoes/wild dogs in Queensland (2004)

<sup>2</sup> Australian Bureau of Statistics, Agricultural Commodities: Small Area Data, Australia, 2006-07 (2008). The measure of size used was the ABS's Estimated Value of Agricultural Operations (EVAO) where available; or where it was not available a Business Activity Statement (BAS) turnover size was derived. A minimum size cut-off of \$5,000, based on either EVAO or BAS Turnover, was used to determine number of enterprises regionally, and state-wide.

<sup>3</sup> Department of Employment, Economic Development and Innovation, Prospects for Queensland Primary Industries: June 2009 (2009)



integral role in Queensland's economy employing around 100,000 people and offering stability at a time when there are significant job losses in mining and tourism. In 2008/09, many Queensland producers are increasing their beef cattle production as a result of increasing beef prices. This combined with an increase in sheep meat production as a consequence of strong market demand is projected to offset the effect of a state-wide reduction in wool production.<sup>4</sup>

Queensland is Australia's second largest state with almost 144 of its 173 million hectares (or 83% of its land area) used for agriculture<sup>5</sup> – the highest proportion of land dedicated to agriculture in Australia. The behaviours and beliefs of all land managers are therefore fundamental to ensuring the management of wild dogs across Queensland.

The sheep industry in Queensland has been in steady decline over many years and whilst there are many reasons for this, the impact of wild dogs has been a major contributing factor for many exiting sheep producers. The regional economic impacts of removing sheep from rural areas are well-known and in numerous cases have resulted in the substantial decline of small rural communities. These communities, including schools, health facilities and business are dependent on the patronage of staff and families from the more labour-intensive sheep properties. While this report does not address these social flow-on effects, the economic costs incurred by the sheep industry, as demonstrated in this report, highlight the severity of the wild dog problem at hand.

Increasing demand for sheep meat has seen record prime lamb prices throughout the country and many Queensland producers have now diversified their enterprise and are running specially adapted dual purpose breeds to capitalise on this market. The widespread distribution and impacts of wild dogs however is preventing many Queensland producers from entering the sheep meat industry and there is a serious prospect that this industry may never reach its true potential in Queensland as a result.

Previous reports have in part highlighted impacts of predation and disease transmission by wild dogs on cattle. Whilst cattle are less susceptible than sheep or goats to predation by wild dogs, the loss of cattle at calf and weaner stage remains a concern for many producers.

The Kenny Review into Wild Dog Management in Queensland<sup>6</sup> reported the real apprehension that if the wild dog issues are not addressed immediately there would only be one industry remaining for graziers (cattle) and even then, breeding enterprises would still be at risk from predation at current wild dog numbers. The importance of maintaining a viable sheep industry and enterprise selection is reinforced by the consequences of a potential downturn in the cattle market. The ongoing trend towards pure cattle production is leading to cattle being introduced into tracts of land that have long been regarded as sheep-grazing country, and the long-term ecological costs and effects of this are yet to be realised.

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<sup>4</sup> ABARE, Australian farm survey results, 2006-07 and 2008-09 (2009)

<sup>5</sup> Prospects for Queensland's Primary Industries June 2009 (2009)

<sup>6</sup> Kenny, P., Wild Dog Management in Queensland: A review of the Queensland Wild Dog Strategy and the Memorandum of Understanding for the management of wild dogs inside the wild dog barrier fence and check fences. (2008)

## 2.0 Survey Delivery

This report provides a whole-of-industry cost of wild dogs on the Queensland grazing industry and details producers' behavioural preferences and beliefs relating to wild dogs and their management. Whan's<sup>7</sup> 2004 report was used as a basis for further refining economic costs, with the current survey also considering the cost of dog-bitten cattle and hydatids-affected offal lost at processors.

A structured survey questionnaire was developed by consultants EBC and this questionnaire was used to conduct the producers' survey, the results of which form the basis of this report.<sup>8</sup>

The survey aimed to gather information such as weaning rates, stock losses and management costs relating to wild dogs as well as beliefs regarding wild dog management, their associated costs and effectiveness. The survey underwent pre-testing prior to release and a small number of questions were altered and added.

The final survey followed the following broad themes:

1. The management methods utilised by producers as well as costs and effectiveness of these. This included trapping, 1080 aerial and ground baiting, fencing, shooting and the use of guard animals for stock protection.
2. The role of neighbours in wild dog management. This included questions on what management methods neighbouring properties use and whether there is any coordinated management either through a wild dog syndicate or management group.
3. Beliefs about wild dogs. Questions were asked about producers' beliefs regarding the role of 1080, dog behaviours, requirement for further research, trapping and coordinated management.
4. The respondent's property and other characteristics. This included questions on property size, location and the respondent's age.
5. Livestock characteristics of the respondent's property. Producers were asked to identify themselves into 4 categories: cattle only; cattle and sheep; sheep only; and sheep and/or goat producers. Producers calving rates, dog bites for cattle, stock losses and mismothering for sheep were also surveyed.

To maximise the accuracy and un-bias nature of the survey, survey responses were sought from various regions across Queensland utilising numerous collection methods. Firstly, a random sample of landholders was obtained through one-on-one surveys at agricultural trade shows, AgForce Queensland meetings and regional conferences, and by posting out survey forms to addresses found in the White Pages. In regions where survey responses were particularly low a small number of survey responses were obtained over the phone. Twenty-six percent of all producer responses were gathered in this random manner.

A second larger sample of producers was obtained through posting an e-survey on the AgForce website for a period of 6 weeks. This survey received state and local media attention to encourage survey responses and was also sent via email to AgForce members and members of NRM groups across Queensland. Seventy-four percent of all producer responses were gathered in this targeted manner. The high level of interest and survey respondents received via these targeted measures means there may be some bias in the responses due to the producers' significant personal experience with wild dogs. This is countered by the many producers who responded so that they could highlight their apathy for wild dogs.

Saleyards, processors, Local and State government information was obtained via a combination of phone, email and mail.

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<sup>7</sup> Rural Management Partners, Economic Assessment of the impact of dingoes/wild dogs in Queensland (2004)

<sup>8</sup> EBC. Wild Dog Control in Pastoral Queensland: An Analysis of Interviews with Sheep and Cattle Producers (2009).

## 2.1 Survey Respondents

The goal of the survey was to identify the major direct economic losses and costs associated with wild dogs on the Queensland grazing industry and also producers' beliefs surrounding wild dogs and wild dog management. Therefore, the following groups were included in the study:

1. Producers. This group provided information on stock losses, management costs, bites, and beliefs about wild dogs.
2. Saleyards. This group provided information on beasts presented with dog bites at saleyards.
3. Processors. This group provided information on beasts presented at processors with dog bites and also the incidence of hydatids in offal.
4. Local government. This group provided council expenditure on wild dogs (including the Wild Dog Barrier Fence).
5. State government. This group provided information on State government expenditure on wild dogs (including research, 1080 baiting, staff, costs associated with the Wild Dog Barrier Fence and management costs within state lands).

The demographics of the respondents to the producer survey are presented in Table 1. In total, 209 people responded to the producer survey. As there were some survey respondents that failed to complete all sections/questions of the survey, the number of responses to individual questions may differ.

The majority of producers surveyed were located within the Central West. Other survey respondents were located (in order of most to least respondents) South West, Darling Downs, Northern, Fitzroy, Brisbane/Moreton/Gold Coast/Sunshine Coast (South East), Wide Bay, Far North, North West and Mackay.

The majority of producers responding were within the 51 to 65 year old age bracket, followed by the 36 to 50 year old group, the 66 and over group and finally the 35 and under age bracket (Table 2).

The average property size surveyed was 26,452 ha.<sup>9</sup> The majority of respondents were cattle only producers.

**Table 1 – Demographic of Survey Respondents**

Demographic of Survey Respondents											
Commodity	SE	Wide Bay	Central West	Darling Downs	Far North	Fitzroy	Mackay	North West	Northern	South West	Grand Total
Cattle Only	14	11	13	14	6	15	3	5	14	9	104
Sheep and/or Goats only	0	0	2	2	0	1	0	0	0	2	7
Cattle and Sheep	2	1	30	18	0	1	1	1	4	29	87
Sheep Only	0	1	4	5	0	0	0	0	0	1	11
Grand Total	16	13	49	39	6	17	4	6	18	41	209

<sup>9</sup> This substantial property size is likely to be a reflection of the high number of survey respondents from Central West and Northern Statistical Districts.

**Table 2 – Age of Survey Respondents**

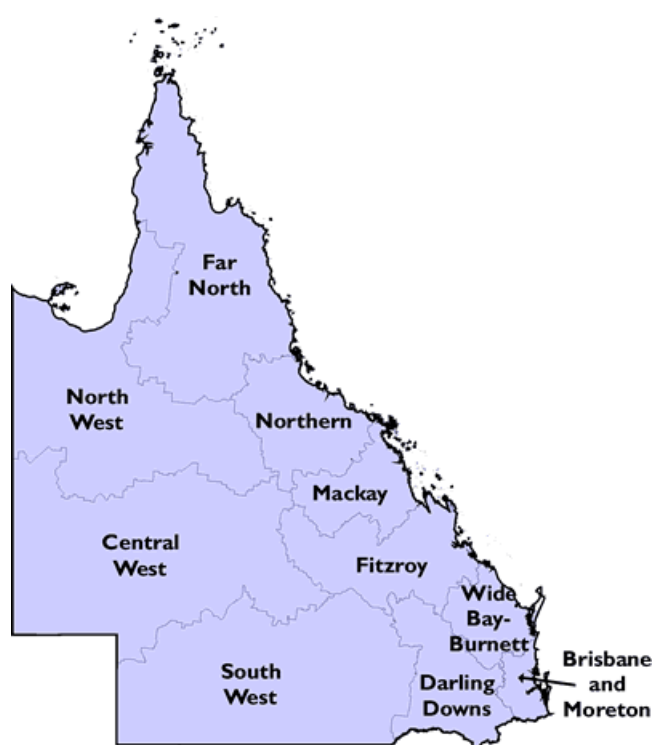
Age of Survey Respondents					
	35yrs and under	36 to 50 yrs	51 to 65 yrs	66 yrs and over	Grand Total
<b>Cattle Only</b>	10	35	44	15	104
<b>Sheep and/or Goats only</b>	0	3	4	0	7
<b>Cattle and Sheep</b>	7	32	42	6	87
<b>Sheep Only</b>	1	5	4	1	11
<b>Grand Total</b>	18	75	94	22	<b>209</b>

## 2.2 Survey Regions

In some areas, this study has classified data into the Australian Standard Geographical Classification Statistical Divisions (SDs) which represent large, general purpose, regional type geographic areas.

SD's represent relatively homogeneous regions by identifiable social and economic links between the inhabitants and the economic units within the region, under the unifying influence of one or more major towns or cities. They do not cross state boundaries and are the largest statistical building blocks of States and Territories. In some instances throughout the analysis, SDs like those in South-East Queensland were combined to compensate for small sample sizes.

The SDs utilised throughout the survey are shown in Figure 1.



**Figure 1 – Statistical Districts<sup>10</sup>**

<sup>10</sup> Source: Queensland Office of Economic and Social Research <http://www.oesr.qld.gov.au/queensland-by-theme/demography/profiles/qld-reg-profiles/historical/index.shtml>

## 3.0 Survey Findings

### 3.1 Economic

#### 3.1.1 Cattle Industry

A total of 191 cattle producers (comprised of 'cattle only' and 'cattle and sheep' enterprises) responded to the survey to provide information on how wild dogs affected their operations.

##### 3.1.1.1 Calf Losses to Wild Dogs

All cattle producers were asked if they had lost any calves to wild dogs over the last year. State-wide, 54% of producers responded that they had not or were unsure if they had lost calves to wild dogs within the last year (Table 3).

All cattle producers were then asked to estimate what their current calving rate was and what they thought their calving rate would be if they lost no calves to wild dogs.

To determine overall percentage calf losses to wild dogs per SD, the difference in the calving rates with and without wild dogs was multiplied by the proportion of producers who had lost calves in the preceding year (Figure 2, Table 3). ABS data on breeder numbers within SDs was then used to calculate the estimated number of calves lost to wild dogs per region and then state-wide.

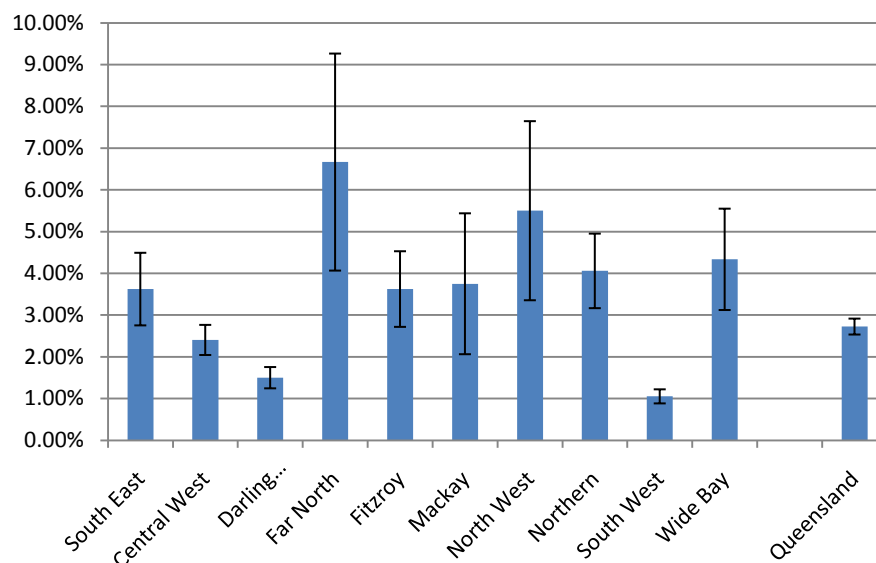
State-wide, the direct monetary cost of calf losses to wild dogs totals \$22,840,000 (Table 3, Figure 3).

**Table 3 – Calf Losses to Wild Dogs**

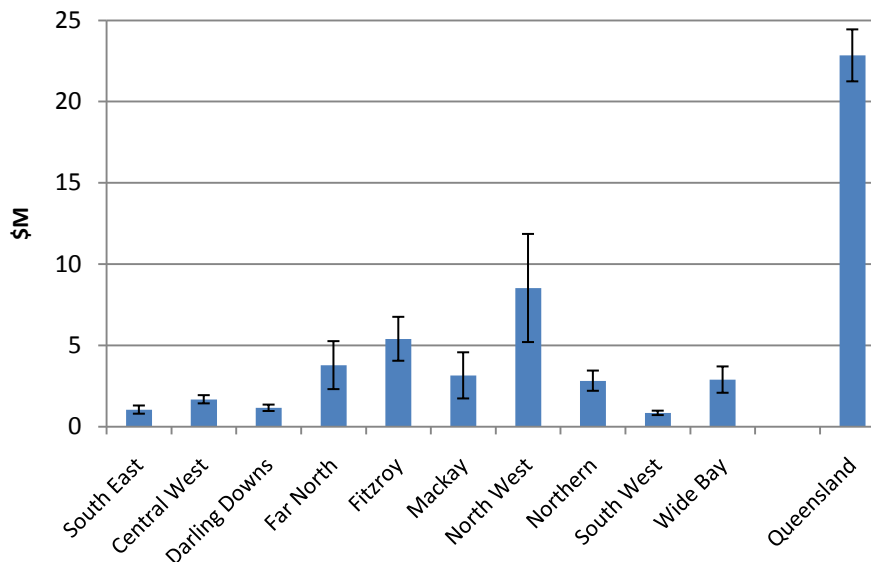
SD	Percentage of producers who lost calves to wild dogs in last year	Percentage calves lost to wild dogs in SD	Cost of lost calves per SD <sup>11</sup> (million \$)
South East (Moreton/Brisbane/Sunshine Coast/Gold Coast)	56.25%	3.62%	1.05
Central West	40.48%	2.40%	1.68
Darling Downs	31.25%	1.50%	1.16
Far North	50.00%	6.67%	3.78
Fitzroy	68.75%	3.62%	5.40
Mackay	50.00%	3.75%	3.15
North West	50.00%	5.50%	8.53
Northern	83.33%	4.06%	2.83
South West	21.05%	1.05%	0.85
Wide Bay	75.00%	4.34%	2.89
State-wide percentage of producers experiencing calf losses to wild dogs last year			45.79%
State-wide percentage calf loss to wild dogs			2.72%
Cost of calves losses (at \$150/calf)			\$22,840,000 <sup>12</sup>

<sup>11</sup> Calculated at \$150/calf. This cost was used as it was the original calf value used in Whan's report and represents the 'average' value of a calf that might be taken by wild dogs. It is noted that if a value for weaners was used this total would be at least two times higher.

<sup>12</sup> Calculated at 95% confidence level and 7.06% confidence interval



**Figure 2 – Percentage Calf Losses to Wild Dogs**



**Figure 3 – Monetary Cost of Calf Losses to Wild Dogs**

### 3.1.1.2 Dog-bitten Beasts

In an attempt to quantify both on and off-farm costs associated with dog-bitten beasts, data was obtained from a number of sources. Firstly, producers were surveyed about the incidence of dog-bitten beasts to obtain trends regarding prevalence of dog bites and handling of dog bitten cattle. To obtain an accurate and consistent representation of costs incurred by producers due to the sale of

dog-bitten cattle, saleyards and Queensland cattle processors were also interviewed to provide a full industry picture (Figure 4).

In quantifying the costs of dog-bitten cattle, quantities of bitten cattle through saleyards and processors were used rather than estimates provided by producers. To assist in the quantification of dog-bitten cattle through the processing industry, the total annual cattle throughput was calculated (refer to Figure 4).

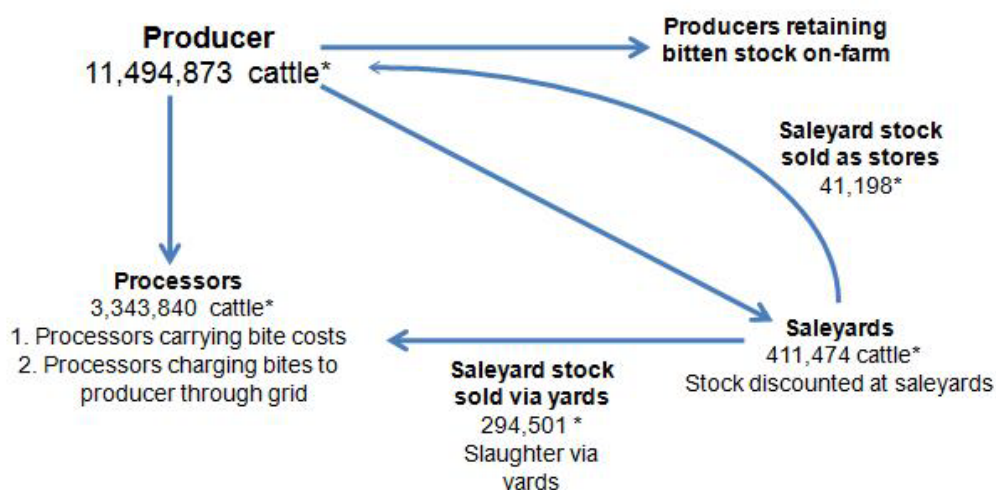


Figure 4 - Methodology for Determining Dog-bitten Beasts<sup>13</sup>

## Dog-bitten Beasts According to Producers

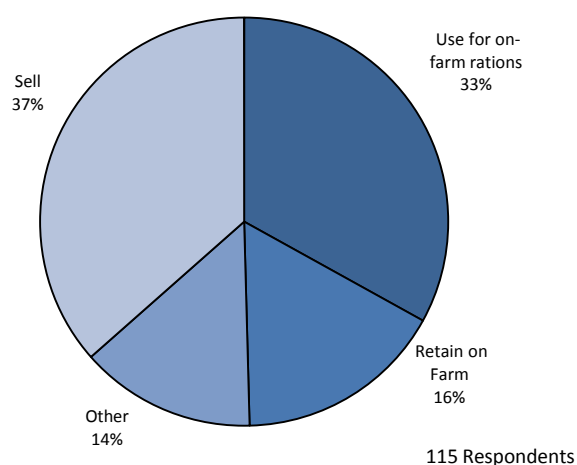
Producers were asked a series of questions about whether they had seen bitten cattle within the last year, and if so, what they did with these bitten cattle. Producers who responded that they had seen bitten cattle were then asked to provide the percentage of cattle that were bitten.

To determine the quantity of cattle bitten per SD, the percentage of producers who were experiencing wild dog bites and the percentage of bitten cattle for these producers was multiplied by the ABS data for cattle numbers in the region and state (Table 4). While this information was not ultimately used in determining costs due to dog bites, it indicates the prevalence of dog-bitten beasts in different regions. This data is presented in percentage terms in Figure 6. Figure 5 provides a representation of how producers deal with dog-bitten beasts. The survey indicates that 63% of producers retain dog-bitten beasts on-farm or use them as farm rations or for some other purpose in preference to sending them off-farm to sale. Figure 7 demonstrates the percentage of the cattle population that were sold with dog bites.

<sup>13</sup> \*From MLA's NRLS - 08/09 data

**Table 4 – Dog-bitten Beasts According to Producers**

SD	Percentage of producers who have seen dog bites in last year	Percentage of dog-bitten beasts for producers with bitten beasts	Number of beasts bitten per SD
South East (Moreton/Brisbane/Sunshine Coast/Gold Coast)	81.25%	3.96%	11707
Central West	39.53%	3.35%	12575
Darling Downs	46.88%	3.26%	20023
Far North	66.67%	5.50%	26252
Fitzroy	87.50%	2.38%	46224
Mackay	100.00%	3.50%	40660
North West	83.33%	5.40%	81009
Northern	83.33%	2.40%	20130
South West	44.74%	2.67%	12923
Wide Bay	91.67%	2.80%	22723
State-wide percentage of producers who have seen dog bites on beasts in last year			60.21% <sup>14</sup>
State-wide percentage of cattle population who are dog-bitten			1.92% <sup>15</sup>
State-wide number of beasts bitten by wild dogs			220,780 <sup>16</sup>
State-wide percentage of cattle population that were sold with dog bites			0.70% <sup>17</sup>



**Figure 5 – How Producers Deal with Dog-bitten Beasts**

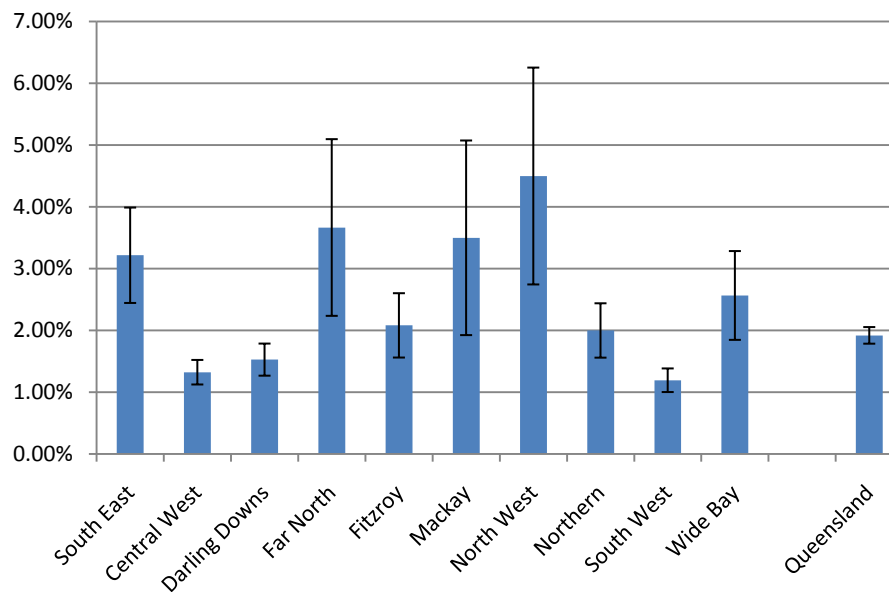
<sup>14</sup> Calculated at 95% confidence level and 7.06% confidence interval

<sup>15</sup> Calculated at 95% confidence level and 7.06% confidence interval

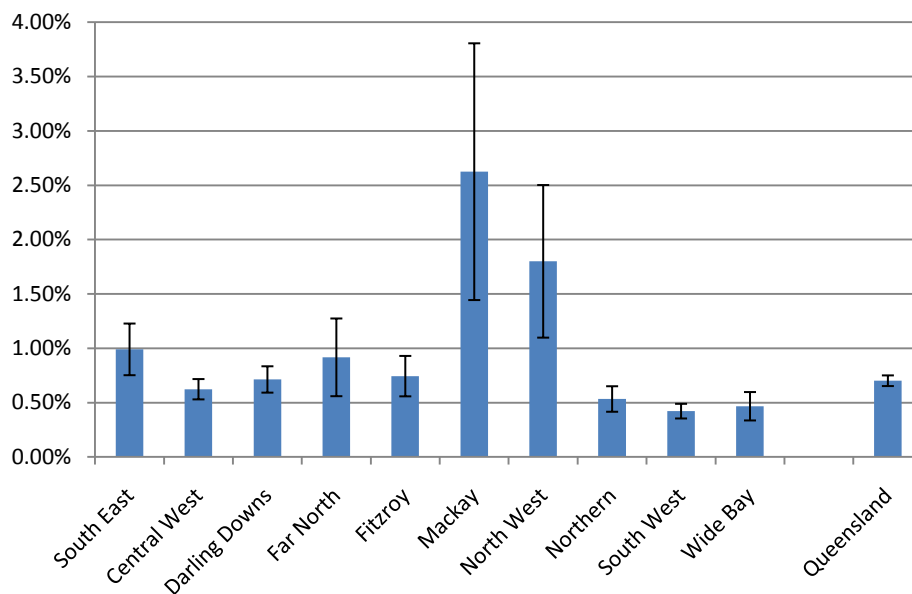
<sup>16</sup> Calculated at 95% confidence level and 7.06% confidence interval

<sup>17</sup> Calculated at 95% confidence level and 7.06% confidence interval





**Figure 6 –Percentage of Beasts Bitten by Wild Dogs  
(According to Producers)**



**Figure 7 – Percentage of Cattle Population that were Sold with Dog Bites  
(According to Producers)**

## Dog-bitten Beasts at Saleyards

A total of 11 saleyards across Queensland were randomly surveyed to provide information on dog-bitten beasts, trends and discounting methodologies. Table 5 summarises the findings of the saleyard survey.

These saleyards reported that the most common form of discounting for dog-bitten beasts consisted of a 30% downgrade over the entire beast. In some saleyards, discounting for dog-bites could be as high as 50%, or as low as 25% depending on the market and extent of damage. Two saleyards said that they would not receive bitten beasts where the damage was too expensive cuts of meat.

Most saleyards stated that they did not consider dog-bitten cattle a significant issue, nor had they seen any trends in the number of dog-bitten cattle received. Saleyards did however report receiving mobs where multiple animals were dog bitten and noted that particular areas/locations were known for providing bitten cattle. Saleyards were able to name several locations from which they were more likely to receive bitten cattle. Two saleyards reported receiving cattle where over 30% in the mob were dog-bitten.

The majority of saleyards admitted that they believed most producers were reluctant to send bitten cattle to saleyards due to the substantial discounting and that for this reason many bitten beasts were being retained on-farm. This observation is consistent with the producer survey findings that 63% of dog-bitten beasts are retained on farm (refer to Figure 5).

**Table 5 – Dog-bitten Cattle at Saleyards**

Queensland Saleyards <sup>18</sup>	
State-wide percentage of cattle through Queensland saleyards affected by dog bites	1.2%
Number of cattle through Queensland saleyards 08/09	411,474
Average value of beast through Queensland saleyards	\$700/beast <sup>19</sup>
Average downgrade applied to dog-bitten cattle in saleyards	30% discount
Cost of stock discounting at saleyards incurred by producers	\$1,036,914

## Dog-bitten Cattle at Processors

To determine the quantity of bitten cattle through processors, a random survey of six small, medium and large sized Queensland cattle processors was undertaken. This sample size was restricted to processors who agreed to share their information. Table 6 summarises the findings of the processor survey.

The processor survey revealed that there are two methodologies used by processors for capturing costs associated with dog-bites. These two methodologies are described below.

1. Processors who carry the loss of dog bites. These processors usually account for their losses in terms of 'pieces' or cuts of affected meat. Of the affected cut, the bitten area is trimmed off, and an average of 80% of meat is retained for sale. As these processors carry the costs of dog bites, they were able to provide the number of 'pieces' that were bitten for the year, the value of lost meat that was trimmed from the affected cut and the number of cattle processed during the last year. This data was used to calculate the cost of product loss associated with dog bites on a per head basis.

<sup>18</sup> Data was not presented regionally to preserve confidentiality

<sup>19</sup> A beast value of \$700 was used as it was considered that this represented the 'average' beast value at saleyard

The survey responses indicated that around 25% of cattle slaughtered in Queensland are through these processors (processors who carry the loss of dog bites).

2. Processors who account for dog-bitten beasts on the grid, billing any downgrades back to the vendor. These processors identify on the grid which side of the animal is bitten and apply a discount to that entire side. The discount varies between processors, but is best described by the processors as a discount down to a manufacture quality beast on the grid (see Appendix: Example Grid from Processor). In general, this means an average of 50c/kg downgrade applied to the affected side of the beast. It should be noted that depending on the type of beast, the discount varies and can be as high as \$1.20/kg off the affected side of the beast.

For the purpose of the analysis, an average beast of 300kg was assumed (a side of 150kg). It was estimated from survey data provided that 75% of cattle are sold through these processors who bill downgrades back to the vendor on the grid.

In 2008/09, 294,501 cattle were sold from Queensland saleyards into Queensland cattle processors.<sup>20</sup> As the downgrade costs for these cattle were accounted for at the saleyards (refer to previous section) at significant loss to the producer, these cattle are excluded from the following analysis.

**Table 6 – Dog-bitten Cattle at Processors**

<b>Queensland Cattle Processors<sup>21</sup></b>	
Total cattle through Queensland cattle processors	3,343,840
Total cattle through Queensland cattle processors excluding cattle via saleyards (294,500)	3,049,339
<b>1. Processors who carry loss of dog bites</b>	
Cost of lost product on per head basis	\$0.048/head
Cattle/year processed in these processors (25% of 3,049,339)	762,335
Total cost carried	\$36,594
<b>2. Processors who account for dog-bitten beasts on grid</b>	
Cattle/year processed in these processors (75% of 3,049,339)	2,287,004
Percentage of cattle through processors affected by dog bites	0.58%
Cost of discount calculated on 50c/kg off one side of average 300kg beast	\$994,847
Total cost of product loss due to dog-bitten cattle	\$1,031,441

### 3.1.1.3 *Neospora caninum*

*Neospora caninum* is a microscopic protozoan parasite which has been shown to be a major cause of bovine abortion worldwide.

There has been little published research on the incidence of *Neospora caninum* on Queensland beef cattle since the study of Landmann and Taylor<sup>22</sup> in 2003 which found that *Neospora caninum* was prevalent throughout Queensland beef herds at a rate approaching 15%. Landmann and Taylor also investigated over 1600 beef cattle from 40 central Queensland beef properties, and found over 15%

<sup>20</sup> MLA's NRLS - 08/09 data

<sup>21</sup> Data was not presented regionally to preserve confidentiality

<sup>22</sup> Landmann, J. & Taylor, L., Investigation of the prevalence of *Neospora caninum* in Queensland beef cattle. (2003)

of the animals were infected with only two properties not having a seropositive animal amongst those tested.<sup>23</sup>

In Whan's 2004 report, it was considered that one-quarter of all *Neospora caninum* could be attributed to wild dogs. In the absence of updated science on the prevalence of *Neospora caninum* and its vector, this report has replicated Whan's 2004 assumptions and methodology.<sup>24</sup> Whan's estimate assumed that 3.75% of Queensland's breeding cows are infected due to wild dogs, with an assumed 10% of these aborting at \$150/calf. Table 7 summarises the methodology used to calculate the cost of *Neospora caninum* on the Queensland cattle population.

**Table 7 – Estimated Cost of Calf Losses due to *Neospora caninum***

Estimated Cost of Calf Losses due to <i>Neospora caninum</i>	
Percentage Queensland breeding cattle infected	3.75%
Queensland cattle breeders	5,588,509
Abortion rate	10%
Calf value	\$150 <sup>25</sup> per head
Total cost of calf loss from <i>Neospora caninum</i> abortions	\$3,143,536

### 3.1.1.4 Hydatids

The hydatid tapeworm (*Echinococcus granulosus*) is one of many tapeworms known to infect dogs in Australia. The lifecycle of this parasite can involve a number of animals, including humans, but largely affects sheep, cattle, kangaroos and dogs. Grazing animals become infected when they swallow eggs from contaminated pasture. When hydatid eggs are swallowed by an intermediate host (sheep, cattle, kangaroos or humans), they migrate through the stomach wall into the bloodstream. They are then carried to various internal organs such as liver, lungs and brain.

Wild dogs are believed to be almost solely responsible for infecting livestock with hydatids, and initially contract the disease by feeding on the carcasses of infected macropods.

To determine accurate numbers of hydatid condemnations in Queensland cattle, a survey was undertaken of six Queensland cattle processors.

It should be noted that there was significant variation in the percentage of hydatid condemnations throughout the processors. This variation may be attributed to the geographic location of the source cattle or the accuracy with which hydatids are being recorded on the kill floor. These variations may also support research which indicates that the disease is most prevalent in areas where the average monthly rainfall is above 25mm for six months of the year.<sup>26</sup>

Processors provided guidance on the incidence of offal affected by hydatids and this was used to quantify the total cost of product loss due to hydatids (Table 8).

<sup>23</sup> Stoessel, Z., Taylor, L.F., McGowan, M.R., Coleman, G.T., Landmann, J.K., Prevalence of antibodies to *Neospora caninum* within Central Queensland beef cattle (2003)

<sup>24</sup> Rural Management Partners, Economic Assessment of the impact of dingoes/wild dogs in Queensland. (2004)

<sup>25</sup> It is noted that if a value for weaners was used this total would be at least two times higher.

<sup>26</sup> Gemmel, M.A., Hydatid disease in Australia: III. Observations on the incidence and geographical distribution of hydatidiasis in sheep in New South Wales. (1958)

**Table 8 – Cost of Product Loss due to Hydatids**

<b>Cost of Product Loss due to Hydatids<sup>27</sup></b>	
Basis: Percentage of processed cattle with hydatids-condemned livers	5.74%
Number of cattle through Queensland cattle processors with condemned livers (3,343,840 x 5.74%)	192057
Cost of condemned livers at 6.5kg/liver and average sell price of \$1.32/kg	\$1,647,849
Estimated number of cattle through Queensland cattle processors with condemned lungs (70% of cattle with condemned livers have condemned lungs)	134440
Cost of condemned lungs at 2.37kg/lung and average sell price of \$0.92/kg	\$293,133
Estimated number of cattle through Queensland cattle processors with condemned hearts (15% of cattle with condemned livers have condemned hearts)	28,809
Cost of condemned hearts at 1.835kg/heart and average sell price of \$1.68/kg	\$88,811
Estimated number of cattle through Queensland cattle processors with condemned kidneys (15% of cattle with condemned livers have condemned kidneys)	28,809
Cost of condemned kidneys at 1.03kg/kidney and average sell price of \$0.94/kg	\$27,892
Total Cost of Product Loss due to Hydatids	\$2,057,685

### 3.1.1.5 Wild Dog Management Costs – Cattle Producers

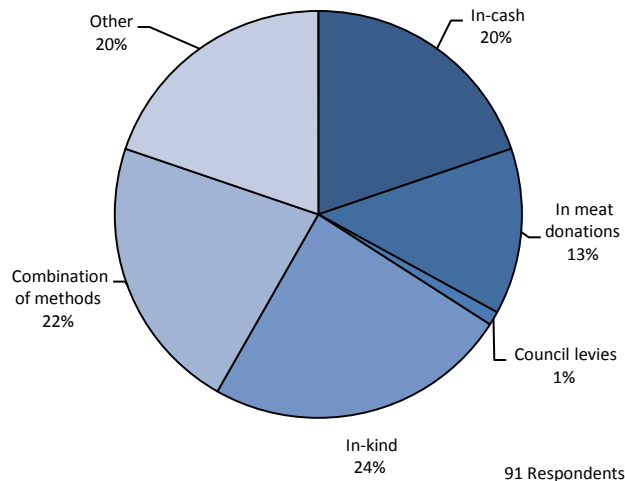
Cattle producers were asked whether they had participated in any form of wild dog management over the last year. As it was expected that sheep/goat producers were likely to be paying higher wild dog management costs, producers costs associated with management were classified into either cattle-only producers or sheep/goat-related producers.

Ninety percent of cattle-only producers responded that they had managed wild dogs over the last year. These producers were then asked how much this management had cost and in what form their participation was provided (in-kind, meat donations, levies, cash, other) (Figure 8).

To provide an economic cost, only those producers who had contributed money through levies, cash, or meat donations were considered. Survey responses indicated that only 29% of cattle only enterprises contributed in this manner. On a per-enterprise basis, the average annual cost to producers is \$574 averaged over all state enterprises. Extrapolating across Queensland, the total wild dog management costs for cattle only producers is **\$11,460,498.**<sup>28</sup>

<sup>27</sup> Product prices and yields provided by MLA, calculation assumes 100% recovery.

<sup>28</sup> Calculated at 95% confidence level and 9.58% confidence interval. Had in-kind costs been included this number would have been significantly higher.



**Figure 8 – Format of Management Payments for Cattle Only Enterprises**

### 3.1.2 Sheep/Goat Industry

A total of 105 sheep/goat producers (comprised of cattle and sheep, sheep only and sheep and/or goat producers) responded to the survey to provide information on how wild dogs affected their operations.

#### 3.1.2.1 Sheep and Goat Losses to Wild Dogs

To determine the costs associated with wild dog attacks, sheep/goat producers were asked if they had experienced any sheep/goat losses or attacks from wild dogs. The majority of producers (91%) responded that they have had sheep/goats taken or attacked by wild dogs over the last year.

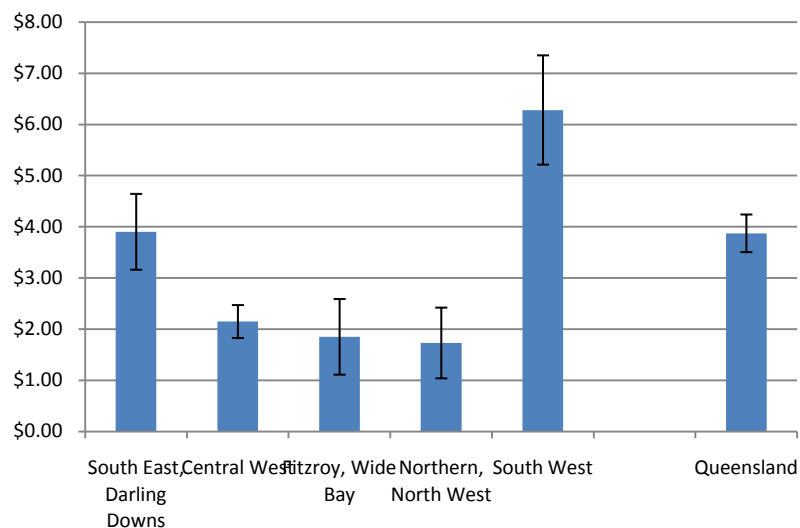
Producers who responded in the affirmative were asked to estimate the direct cost of stock losses due to wild dog attacks over the last year. Given the number of sheep/goats they ran, costs on a per head basis were calculated (Figure 9, Table 9) and extrapolated across the SD based on the percentage of affected enterprises and ABS livestock numbers. Regional and state-wide monetary costs for sheep/goat losses are represented in Figure 10. It was considered that by allowing producers to quantify their own costs, this would cater for variations in stock values between enterprises.

**Table 9 – Costs of Sheep/Goat Losses and Attacks**

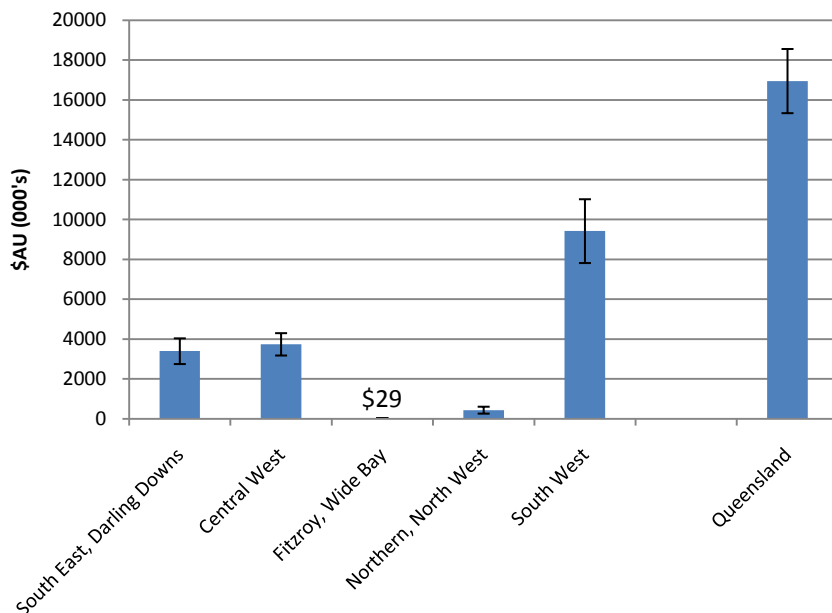
SD	Cost/head due to wild dog attacks (averaged over affected and non-affected enterprises)
South East, Darling Downs	\$3.90
Central West	\$2.15
Fitzroy, Wide Bay	\$1.85
Northern, North West	\$1.73
South West	\$6.28
Average state-wide cost per head	\$3.87
Sheep numbers (ABS) state-wide	4,378,429 <sup>29</sup>
Total cost of sheep/goat losses due to wild dogs	\$16,950,000 <sup>30</sup>

<sup>29</sup> The ABS data for the Queensland sheep flock was used despite the July 2009 Australian Wool Production Forecast Report which indicates that the Queensland sheep population is approaching 3,700,000 in 2009/10. The majority of goats were taken to be rangeland goats (as per Goat Industry Council of Australia website [http://www.gica.com.au/goat\\_industry.html](http://www.gica.com.au/goat_industry.html)) and hence only sheep numbers were used to calculate this figure.

<sup>30</sup> Calculated at 95% confidence level and 9.46% confidence interval.



**Figure 9 – Average Loss per head of Sheep/Goats due to Wild Dogs**

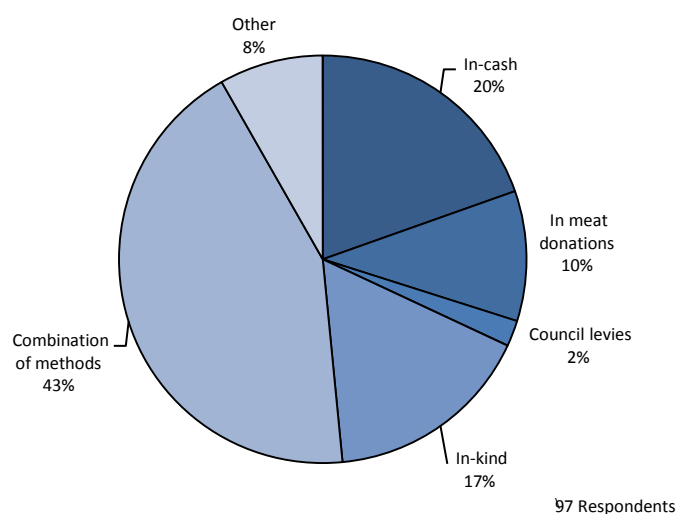


**Figure 10 – Monetary Cost of Sheep/Goat Attacks/Losses due to Wild Dogs**

### 3.1.2.2 Wild Dog Management Costs – Sheep/Goat Producers

Sheep-related producers (comprised of ‘sheep only,’ ‘cattle and sheep’ and ‘sheep and/or goat producers’) were asked whether they had participated in any form of wild dog management over the last year. Ninety-six percent of sheep-related producers responded that they had managed wild dogs over the last year. These producers were then asked how much this management had cost and in what form their participation was provided (in-kind, meat donations, combination, levies, cash, other) (Figure 11).

To provide an economic cost, only those producers who had contributed money through levies, cash, or meat donations were considered. Survey responses indicated that only 30% of sheep-related enterprises contributed in this manner. On a per-enterprise basis, the average annual cost to producers is \$1,306 averaged over all state enterprises. Extrapolating across Queensland, the total wild dog management costs for sheep related producers is **\$2,248,642**.<sup>31</sup>



**Figure 11 – Format of Cost Control Payment – Sheep-related Enterprises**

### 3.1.3 Local Government

Local governments were surveyed and asked to provide their costs associated with wild dogs in the 2008/09 financial year. As responses were not received from all councils, an average cost per council for each cost type was calculated and multiplied by the estimated number of predominately rural local government areas within Queensland. The Local government contributions to the Wild Dog Barrier Fence (WDBF) are stated separately in Section 3.1.4.

**Table 10 – Costs of Local Government 2008/09**

Shire	Baiting (\$)	Bounties (\$)	Other (\$)
Charters Towers Regional Council	40,820.80	Nil	Nil
Maranoa Regional Council	87,687.00	63,314.00	5,000.00
Gympie Regional Council	52,420.00	11,000.00	Nil
Goondiwindi Regional Council	25,503.00	3,136.00	38,991.00
Southern Downs Regional Council	Nil	15,000.00	1,500.00
Flinders Shire Council	104,042.35	13,729.00	835.00
Average cost per Local government	51,745.53	17,696.50	7,721.00
Total costs for Local Government 2008/09 (applied across 34 rural Local government areas)	\$ 2,623,543		

<sup>31</sup> Calculated at 95% confidence level and 9.46% confidence interval. Had in-kind costs been included this number would have been significantly higher.



### 3.1.4 Wild Dog Barrier Fence

The Queensland Government levies a precept on Local government areas benefitting from the maintenance of the WDBF. These payments are established under section 209 of the *Land Protection (Pest and Stock Route Management) Act 2002*. The Queensland State Government contributes an amount equal to the combined precept levies.

The money received as income is allocated to the fence as expenditure, through either employee expenses or supplies and services. Between 1985 and 2009 the total amount spent on the fence has been slowly decreasing and the Hyder Report points to more efficient processes and better technology as the reason behind this decrease.<sup>32</sup>

**Table 11 – Costs of Wild Dog Barrier Fence 2008/09**

Council	Precept 2008/09
Balonne	\$157,849
Barcoo	\$12,902
Roma Regional	\$234,543
Blackall Tambo Regional	\$64,258
Bulloo	\$41,246
Dalby Regional	\$73,366
Murweh	\$122,783
Paroo	\$120,460
Quilpie	\$107,750
Total contribution by Local government	\$935,158
Queensland government co-contribution	\$935,158
Total cost of WDBF	\$1,870,316

### 3.1.5 State Government

Currently, the management of wild dogs in Queensland is directed and co-ordinated through the Queensland Wild Dog Strategy and the Memorandum of Understanding (MOU) for the management of Wild Dogs inside the WDBF and Check fences. Biosecurity Queensland through their overarching body, the Department of Employment, Economic Development and Innovation (DEEDI), oversee this management of wild dogs and their costs for 2008/09 are outlined in Table 12.<sup>33</sup> The State government contributions to the WDBF are stated separately in Section 3.1.4.

As the manager of state lands in Queensland, Queensland Parks and Wildlife Services (QPWS) also contribute funding towards wild dog management. QPWS costs are provided as best estimates for 2008/09 (Table 12).

<sup>32</sup> Hyder Consulting, Review of the Management of Pest Animal Barrier Fences in Queensland – final report. (2009)

<sup>33</sup> Data provided by Biosecurity Queensland

**Table 12 – Costs of Queensland State Government**

Government Department	Cost Element	
DEEDI/Biosecurity Queensland	1080	\$15,000
	Co-ordination and bait making	\$450,000
	Invasive Plants and Animals office and Research and Development	\$700,000
QPWS <sup>34</sup>	Strategic Pest Management Program <sup>35</sup>	\$409,000
	Discretionary miscellaneous operational expenditures , e.g. – travel, vehicle costs, etc.	\$180,000
Total State Government	\$1,754,000	

### 3.1.6 Summary of Major Economic Costs 2008/09

To determine the overall direct cost of wild dogs, the major economic costs derived previously were combined to give an overall estimate (Table 13).

**Table 13 – Summary of Major Economic Costs of Wild Dogs**

Cost Category		Costs 08/09
Cattle Producers	Calf livestock losses	\$22,840,000
	Product loss due to dog-bitten cattle (saleyards)	\$1,036,914
	Product loss due to dog-bitten cattle (processors)	\$1,031,441
	<i>Neospora caninum</i>	\$3,143,536
	Hydatids	\$2,057,685
	Wild dog management costs	\$11,460,498
Sheep/Goat Producers	Sheep/goat livestock losses and attacks	\$16,950,000
	Wild dog management costs	\$2,248,642
Local Government	Includes bounties and management program	\$2,623,543
Wild Dog Barrier Fence	Contributed from Local and State governments	\$1,870,316
Queensland State Government	Department of Employment, Economic Development and Innovation Queensland Parks and Wildlife	\$1,754,000
<b>TOTAL COST</b>		<b>\$67,016,575</b>

<sup>34</sup> QPWS also undertake the Fraser Island Dingo Management Program at an estimated cost of \$1,000,000/year, however this figure was not included in the final QPWS costs as the Program does not affect the Queensland grazing industry.

<sup>35</sup> Projects include some that target feral pigs by aerial baiting with 'pig-strength' 1080 fresh meat baits.

## 3.2 Behaviours and Attitudes

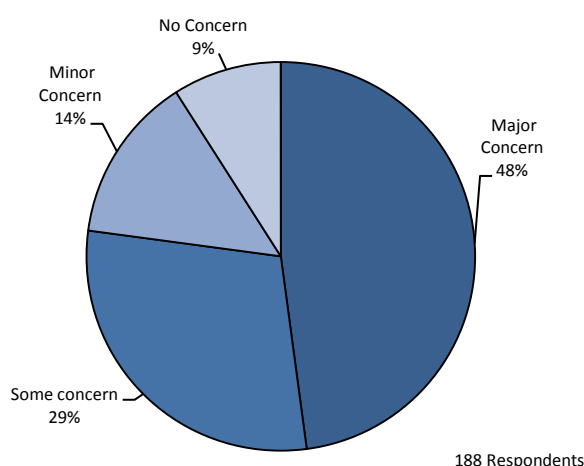
In addition to surveying economic impacts of wild dogs, survey respondents were asked to provide information relating to their management, attitudes and beliefs regarding wild dogs and wild dog management.

### 3.2.1 Cattle Producers

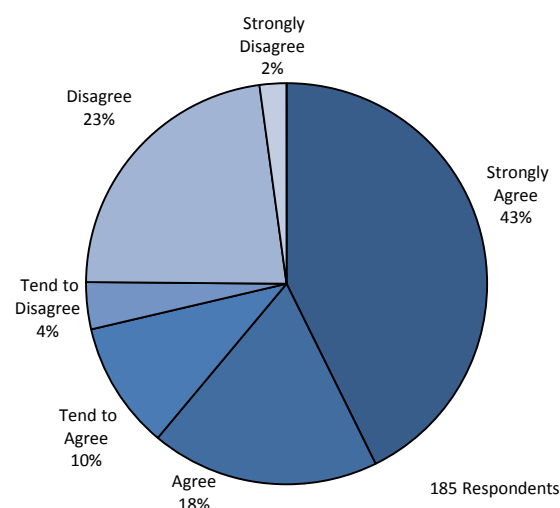
All cattle related producers were asked to rate their concern about calf losses (Figure 12). The majority of people believed that wild dogs are a major concern. Fifty-five percent of cattle-only producers said that calf losses to wild dogs were a major concern, as opposed to thirty-eight percent of cattle and sheep producers who consider it a major concern. Fourteen percent of cattle and sheep producers and 5% of cattle only producers said that they had no concerns about calf losses.

Sixty percent of all cattle producers responded that they had seen dog-bitten cattle over the last year.

The majority of cattle producers (61%) strongly agree or agree that dog-bitten cattle are a significant financial loss to their enterprise (Figure 13). Twenty-five percent of survey respondents disagree or disagree strongly that dog-bitten cattle are a significant financial loss to their enterprise.



**Figure 12 – Concern about Impact of Wild Dogs on Calving Rates (all Cattle-related Enterprises)**



**Figure 13 – Consider Wild Dog Bites a Significant Financial Loss to Enterprise**

### 3.2.2 Sheep and Goat Producers

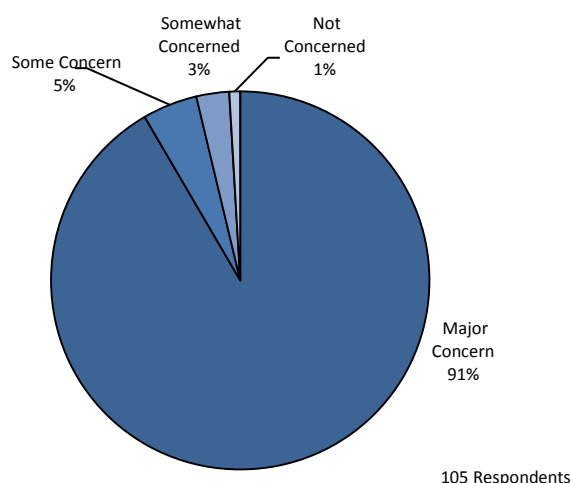
Sheep and goat producers were asked if they had any sheep/goats killed or attacked by wild dogs over the last year. Ninety-one percent of producers responded that they had indeed lost livestock to wild dogs.

The majority of sheep/goat producers indicated that they ran predominantly fibre/wool animals (66%) as opposed to predominantly meat animals.

Thirty percent of producers use penicillin to attempt to save animals following attacks from wild dogs.

Sheep/goat producers were asked if they had experienced any loss of lambs/kids due to mismothering or reduced lambing/kidding due to wild dog attacks over the last year. Seventy-eight percent of producers responded that they had experienced lamb/kid loss due to mismothering.

Sheep/goat producers were then asked to rate their overall concern about wild dog attacks on their sheep/goats enterprise. Ninety-one percent of sheep/goat producers rated wild dog attacks as a major concern (Figure 14).

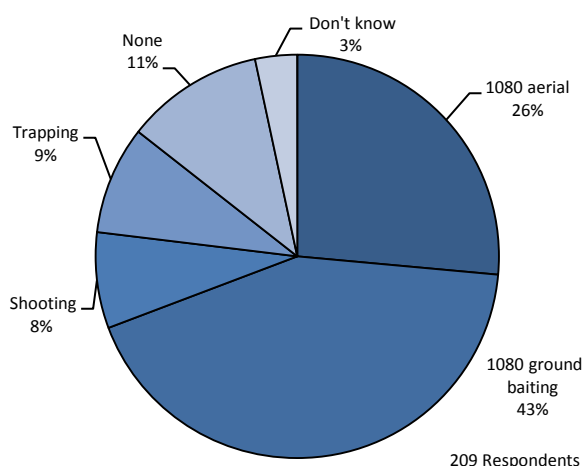


**Figure 14 – Concern about Impact of Wild Dogs on Sheep/goats**

### 3.2.3 Neighbours and Landscape Management

When producers were asked how many neighbours they share a boundary with, the majority responded that they have over 4 neighbours (73%). When producers were asked who they shared a boundary with, 45% responded that their neighbours were cattle only producers, 41% shared with mostly cattle neighbours, 11% had mostly sheep neighbours and 0.005% of producers shared boundaries with only sheep/goat producers. Analysis of the data showed that no significant correlation exists between type of neighbour and livestock losses due to wild dogs.

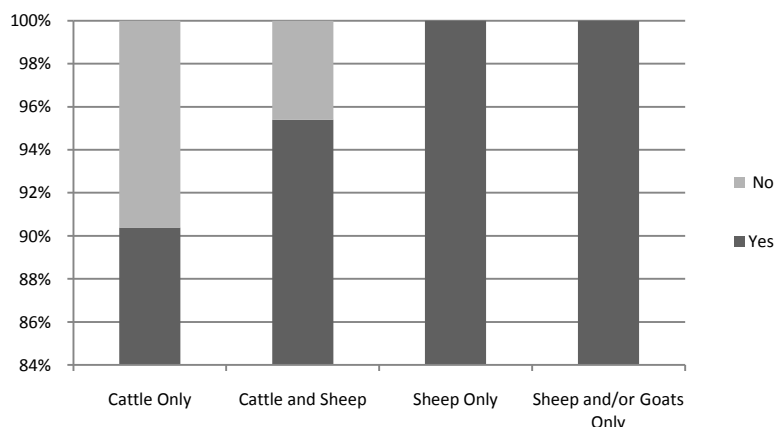
When producers were asked what they believed was their neighbours preferred form of wild dog management, 43% stated that 1080 ground baiting was the predominant management method, followed by 1080 aerial baiting (26%) (Figure 15).



**Figure 15 – Method of Wild Dog Management Used by Neighbours**

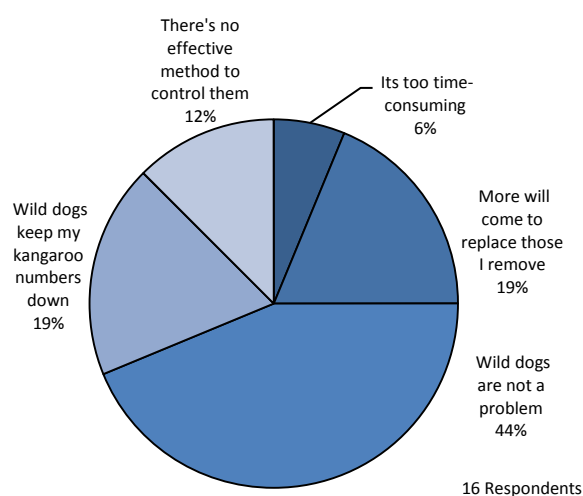
### 3.2.4 Wild Dog Management

Producers were asked if they had managed wild dogs in the last year. All sheep-only and sheep and goat producers responded that they had managed wild dogs, followed by 95% of cattle and sheep producers and 90% of cattle-only producers (Figure 16).



**Figure 16 – Producers who have Managed Wild Dogs over Last Year**

Producers who were not participating in any form of management were asked the reason for this. Forty-four percent of these producers responded that they did not manage wild dogs because they were not a problem (Figure 17). Some respondents stated their belief that wild dogs control their kangaroo populations.



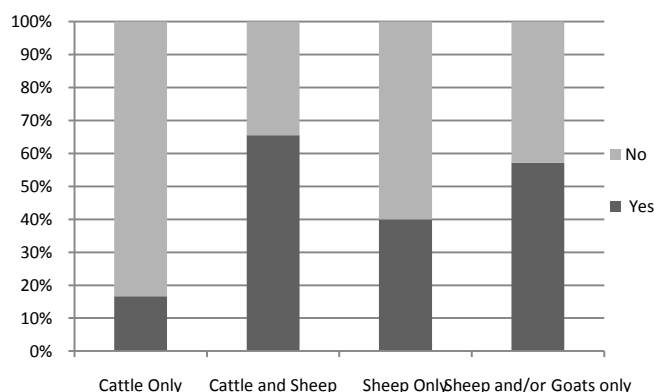
**Figure 17 – Reasons for not Managing Wild Dogs**

### 3.2.5 Syndicates, Wild Dog Groups and Levies

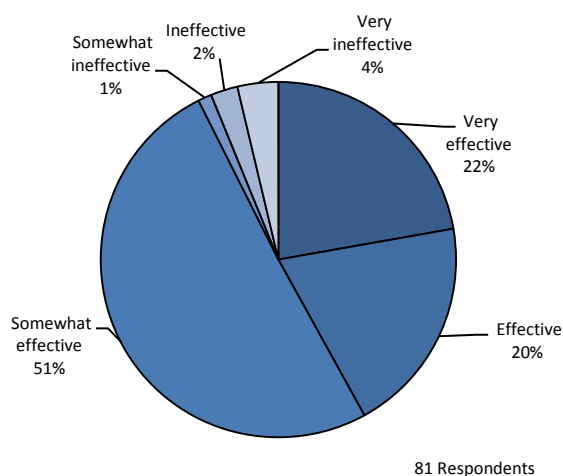
When producers were asked if they were part of a dedicated wild dog syndicate or management group, 60% responded that they were not. The highest incidence of membership was found amongst cattle and sheep enterprises (65%) followed by sheep and/or goat only enterprises (57%), sheep-only enterprises (40%), and cattle-only enterprises (17%) (Figure 18).

The producers who were part of a dedicated wild dog syndicate or group were asked how effective they considered these groups. The overwhelming majority (93%) believed that their group/syndicate was very effective, effective or somewhat effective (Figure 19).

The majority of producers surveyed do not contribute an additional levy to their council for wild dog management (76%).



**Figure 18 – Enterprises Participating in Wild Dog Management Syndicates or Groups**



**Figure 19 – Effectiveness of Wild Dog Syndicates/groups According to Participants**

### 3.2.6 Wild Dog Management Methods

#### 3.2.6.1 1080 Aerial Baiting

Producers were asked if they had participated in aerial 1080 baiting over the last year. The majority of producers surveyed did not perform aerial 1080 baiting over the last year.<sup>36</sup> The most unlikely producers to participate in aerial 1080 baiting identified themselves as sheep and/or goat producers (86% did not participate), followed by cattle-only producers (79% did not participate), sheep-only

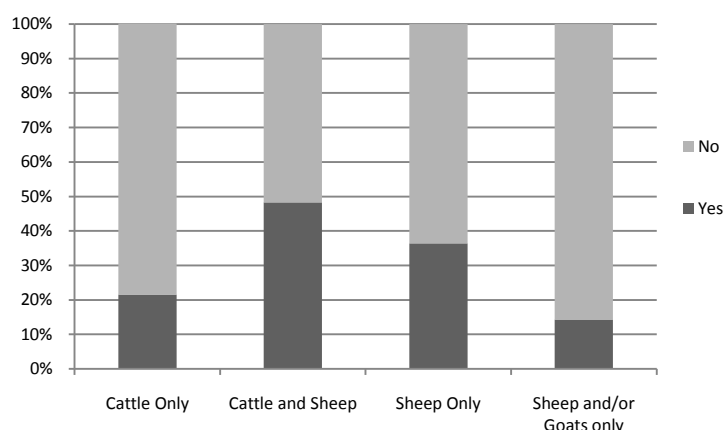
<sup>36</sup> As aerial 1080 baiting is only applicable to producers in particular areas, this may have contributed to the low percentage of participants.

producers (64% did not participate), and lastly cattle and sheep producers (51% did not participate) (Figure 20).

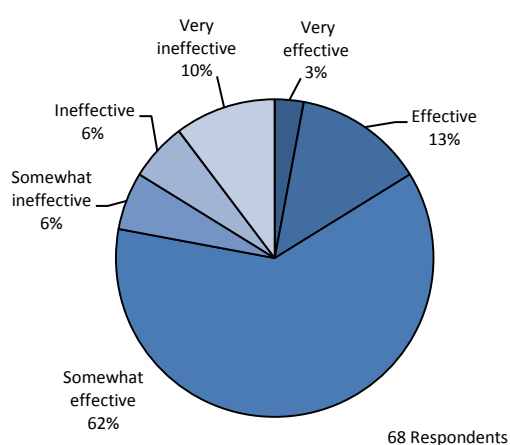
Of the producers who had conducted aerial baiting in the last year the majority said that this had been done through their shire or council (78%), followed by 13% who conducted aerial 1080 baiting through a syndicate, 7% who baited by themselves and with some neighbours and 2% who did so entirely by themselves.

The majority of producers who conducted aerial 1080 baiting in the last year felt that it had been somewhat effective (62%) (Figure 21).

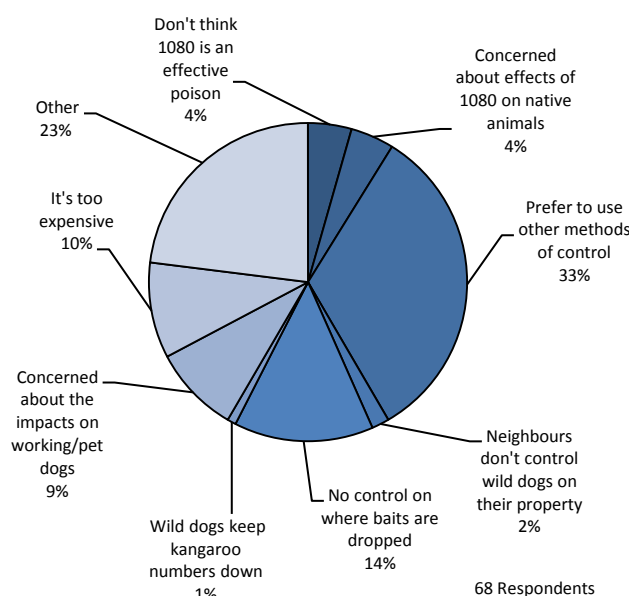
Of the producers who did not conduct aerial 1080 baiting over the last year, the majority responded that they preferred to use some other method of management (33%) or noted some other reason (23%) (Figure 22).



**Figure 20 – Enterprises Participating in Aerial 1080 Baiting over the Last Year**



**Figure 21 – Effectiveness of Aerial 1080 Baiting According to Participants**



**Figure 22 – Reason for not Participating in Aerial 1080 Baiting**

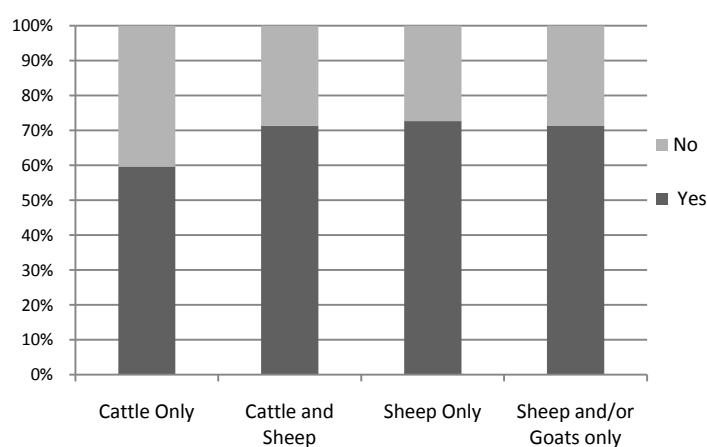
### 3.2.6.2 Ground Baiting

The majority of producers surveyed indicated that they conducted ground 1080 baiting over the last year (65%). This was highest amongst sheep-only producers (72%), followed closely by cattle and sheep and sheep and sheep and/or goat producers (71% each), then cattle-only producers (60%) (Figure 23).

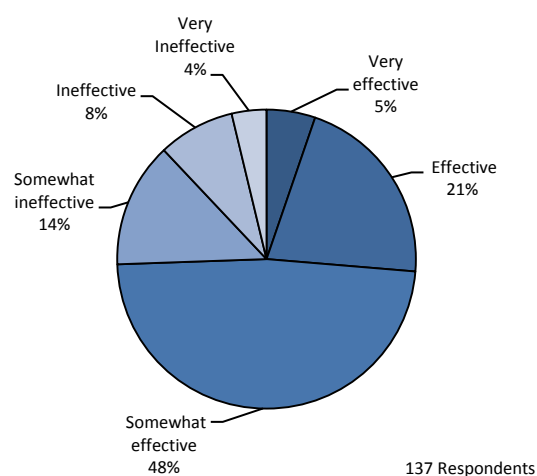
The majority of these producers use meat baits (81%) rather than manufactured baits (11%), with 8% using a combination of both.

The majority of producers using 1080 ground baiting replied that they consider it somewhat effective (48%) or effective (21%) (Figure 24).

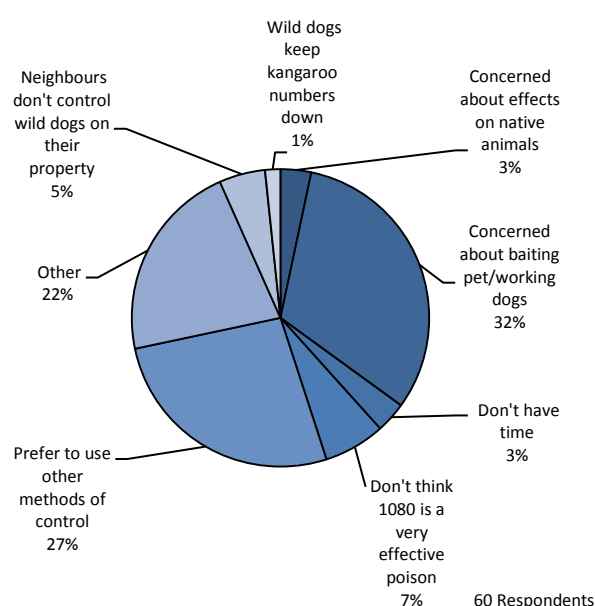
The majority of producers who did not conduct 1080 ground baiting said they did not bait because they were concerned about baiting their pet/working dogs (32%) or prefer to use other methods of management (27%) (Figure 25).



**Figure 23 – Enterprises Participating in Ground 1080 Baiting over the Last Year**



**Figure 24 – Effectiveness of 1080 Ground Baiting According to Participants**



**Figure 25 – Reason for not Participating in ground 1080 Baiting over the Last Year**



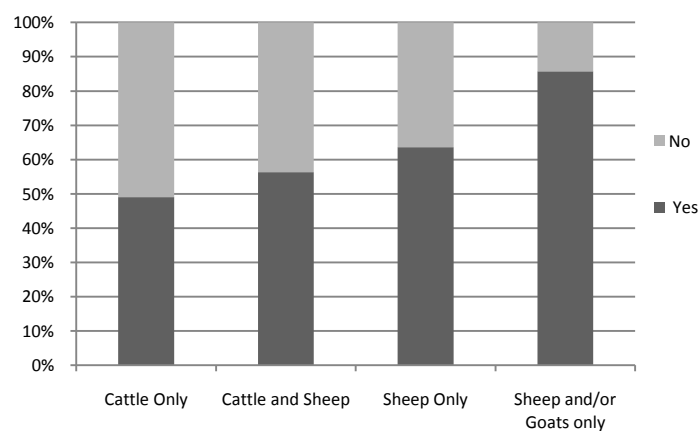
### 3.2.6.3 Trapping

Producers were split between having conducted trapping for wild dogs on their property (52%), and not having trapped (48%). Trapping was highest amongst sheep and/or goat producers (86%) (Figure 26).

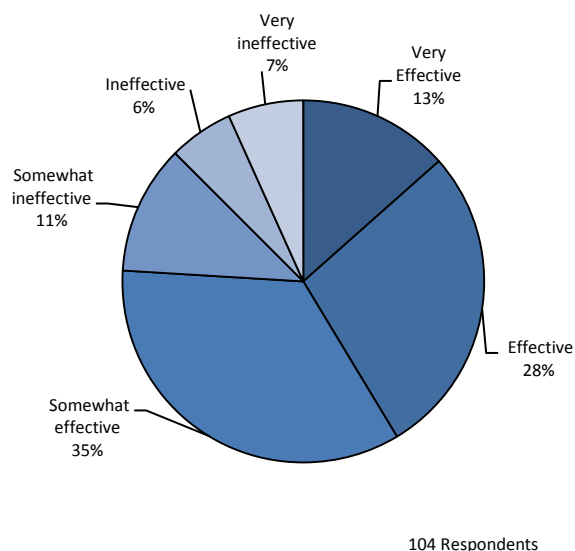
Of the producers who trap wild dogs, 67% do not use strychnine on their traps.

The majority of producers who trap believe that trapping was somewhat effective (35%) or effective (28%) (Figure 27).

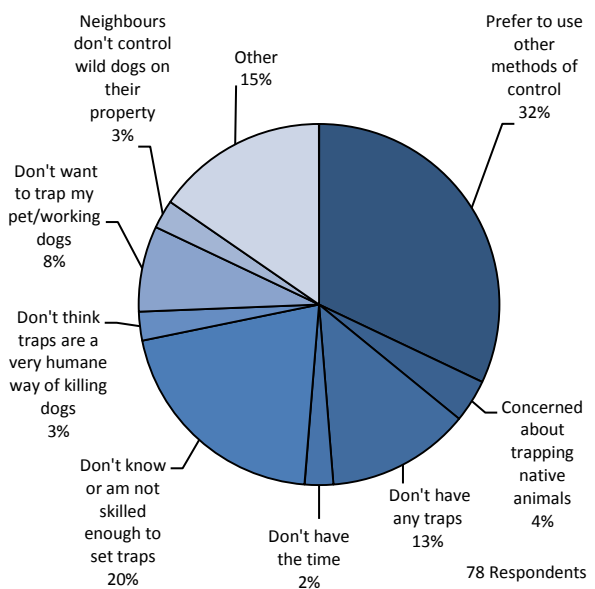
The majority of producers who did not trap wild dogs said this was because they preferred to use other methods of management (32%), did not know how or were not skilled enough to set traps (20%) or gave some other reason (15%) (Figure 28).



**Figure 26 – Enterprises Participating in Trapping Wild Dogs over the Last year**



**Figure 27 – Effectiveness of Trapping According to Participants**



**Figure 28 – Reason for Not Participating in Trapping over the Last Year**

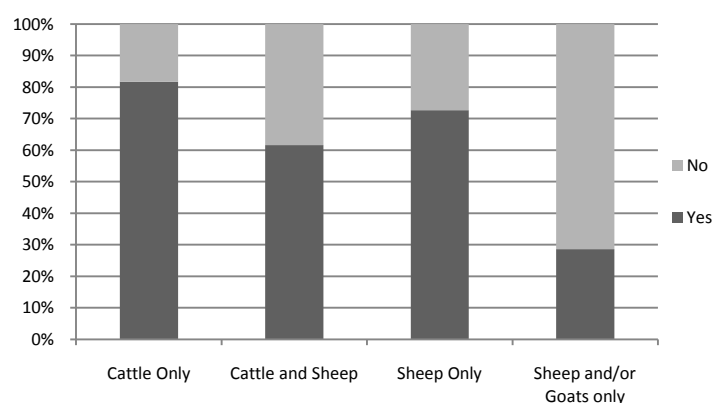
### 3.2.6.4 Shooting

The majority of producers surveyed responded that they had tried to shoot a wild dog within the last year (71%). Shooting was highest amongst cattle only producers (81%) (Figure 29).

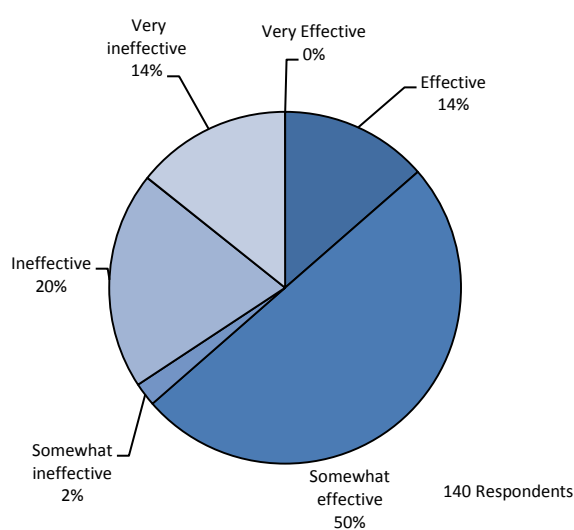
The majority of producers who had tried to shoot wild dogs indicated that this had occurred because the opportunity had arisen (84%), rather than because they had purposefully gone out to shoot wild dogs (16%).

The majority of producers indicated that they considered shooting wild dogs to be somewhat effective (50%) (Figure 30).

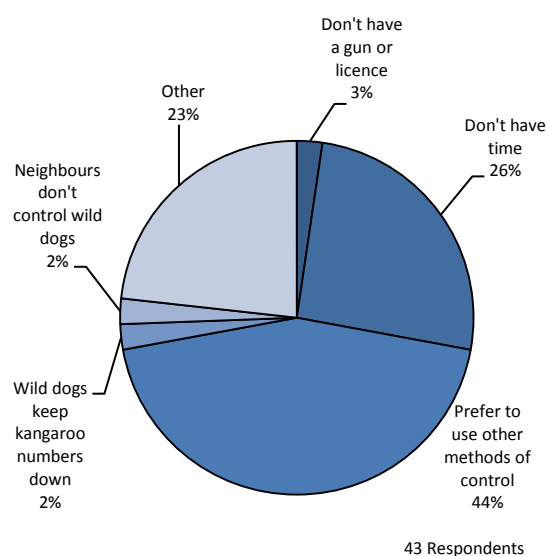
The majority of people who did not attempt to shoot wild dogs indicated that this was because they preferred to use other methods of management (44%), did not have time (26%) or gave some other reason (23%) (Figure 31).



**Figure 29 – Enterprises who have Shot Wild Dogs over the Last Year**



**Figure 30 – Effectiveness of Shooting According to Participants**



**Figure 31 – Reason for not Participating in Shooting over the Last Year**

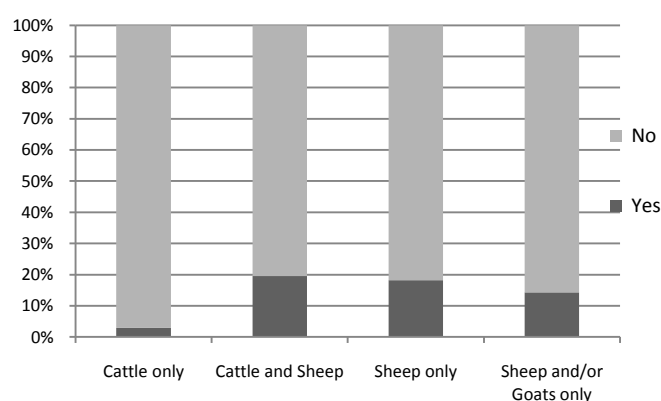
### 3.2.6.5 Fencing

The majority of producers indicated they did not have purpose built or electric fencing to exclude wild dogs erected within the last 5 years (89%). Of the producers who had constructed such fencing the majority identified themselves as sheep-related enterprises (Figure 32).

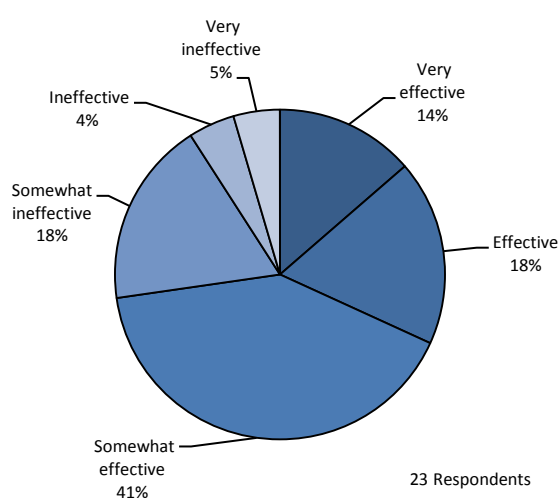
The majority of producers who had constructed wild dog fencing indicated that it was electric fencing (60%), rather than netted fencing (22%) or purpose built fencing (18%).

Of the producers who have constructed wild dog fencing, the majority indicated that they considered it somewhat effective (41%) (Figure 33).

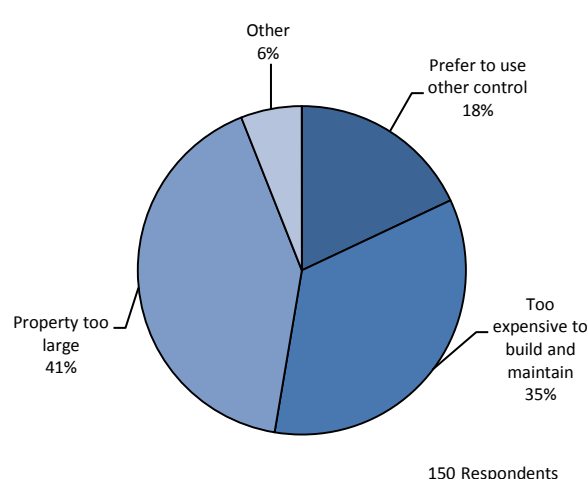
The majority of producers that have not constructed a wild dog fence said this was because their property was too large (41%) or that it would be too expensive to build and maintain (35%) (Figure 34).



**Figure 32 – Enterprises Participating in Exclusion Fencing for Wild Dogs over the Last Five Years**



**Figure 33 – Effectiveness of Exclusion Fencing According to Participants**



**Figure 34 – Reason for not Undertaking Exclusion Fencing**

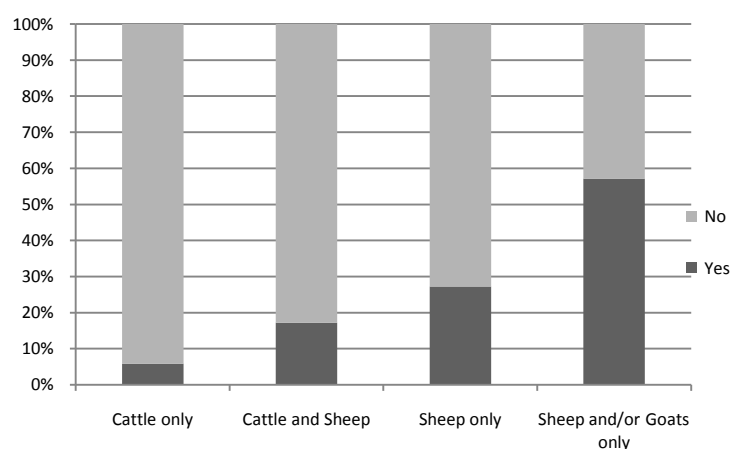
### 3.2.6.6 Guard Animals

The majority of producers surveyed have not used guard animals with their stock (87%). Of those who had used guardian animals. Sheep and goat producers were the most likely groups to have used guard animals (Figure 35).

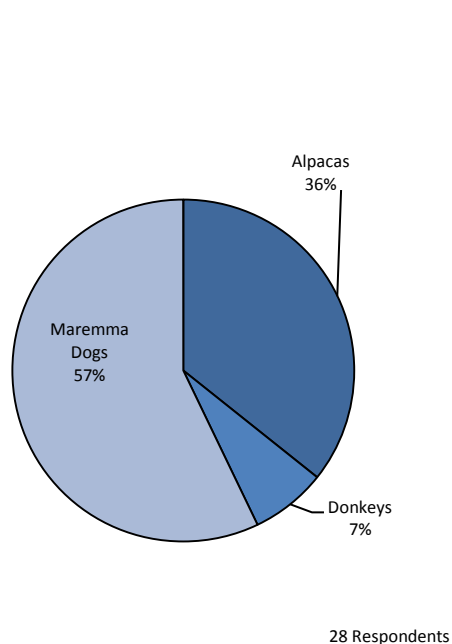
Of the producers which have used guard animals, the majority indicated that these were Maremma dogs (57%), rather than alpacas (36%) or donkeys (7%) (Figure 36).

Of the producers who have used guard animals with their stock the majority rated this use as either somewhat ineffective or somewhat effective (57%).

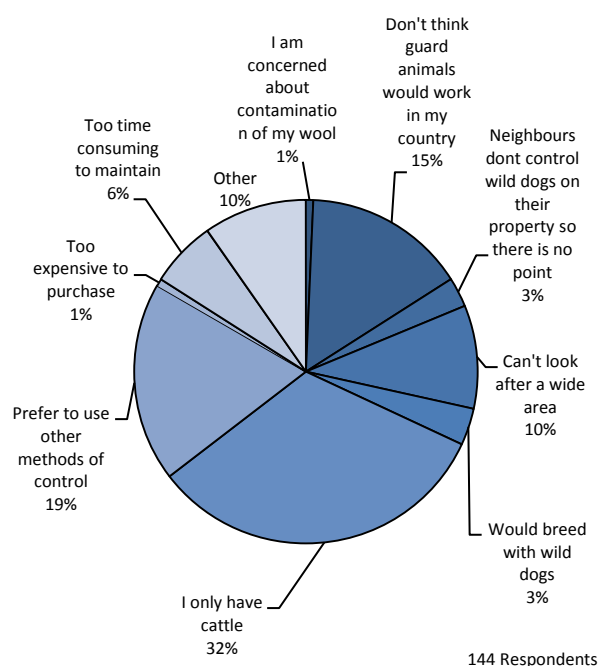
Of the producers who have not used guard animals, the majority responded that they did not because they only have cattle (32%), prefer to use other methods of management (19%), or didn't think guard animals would work in their country (15%) (Figure 37).



**Figure 35 – Enterprises Participating in Use of Guard Animals for Wild Dog Management**



**Figure 36 – Type of Guard Animal Utilised**

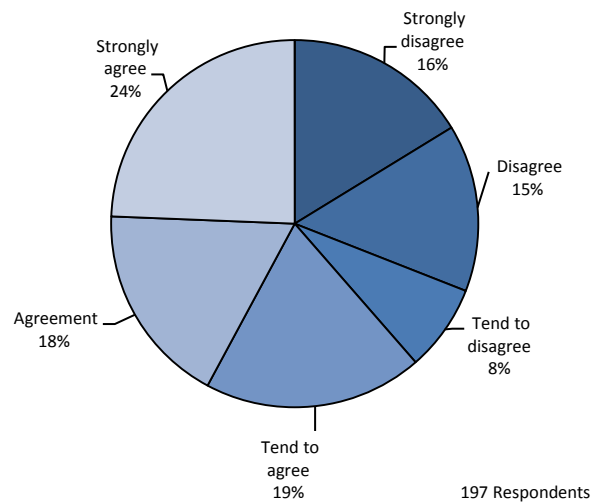


**Figure 37 – Reason for not Utilising Guard Animals**

### 3.2.7 Beliefs about Wild Dog Management

#### 3.2.7.1 1080 and Antidote

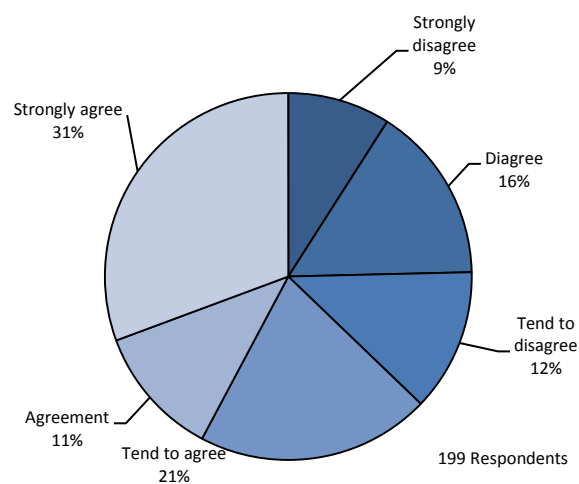
When asked if producers would be more likely to use 1080 baiting if there was an antidote or vaccine, 61% of producers surveyed said that they strongly agreed, agreed or tended to agree.<sup>37</sup>



**Figure 38 – I Would be More Likely to Use 1080 if There was an Antidote or Vaccine**

#### 3.2.7.2 Effectiveness of 1080

When producers were asked if they thought 1080 was not as effective as it used to be, the majority strongly agreed (31%) or tended to agree (21%) (Figure 39).

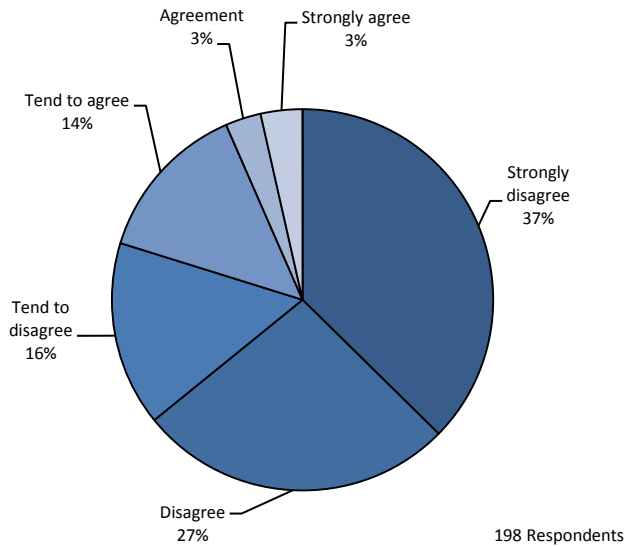


**Figure 39 – I Don't Think 1080 is as Effective as it Used To Be**

<sup>37</sup> The respondents who disagreed with this question may already be using 1080.

### 3.2.7.3 Single Dominant Dog

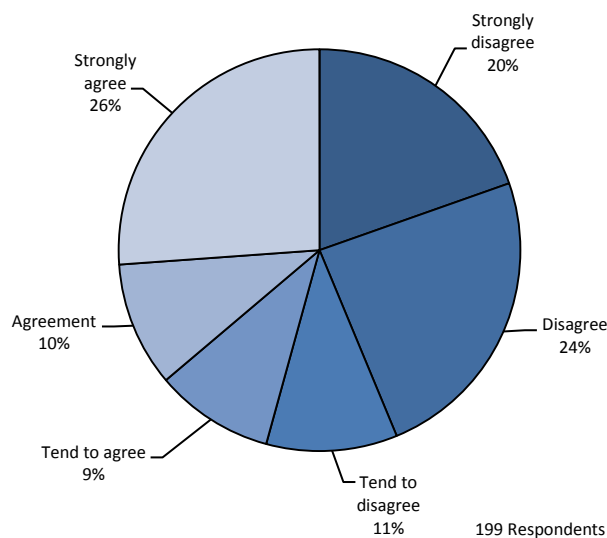
When producers were asked if they believed that having a single dominant dog on their property controls other wild dogs, the majority of producers responded that they strongly disagreed (37%) or disagreed (27%) (Figure 40).



**Figure 40 – Having a Single Dominant Wild Dog on my Property Will Control Other Wild Dogs**

### 3.2.7.4 Gun Laws

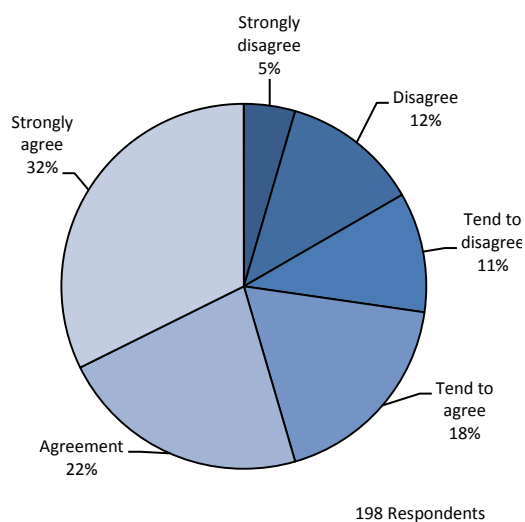
When producers were asked if they thought existing gun laws restricted their ability to shoot wild dogs, 26% said they strongly agreed and 24% said they disagreed (Figure 41).



**Figure 41 – Existing Gun Laws Restrict my Ability to Shoot Wild Dogs**

### 3.2.7.5 Trapping Experience

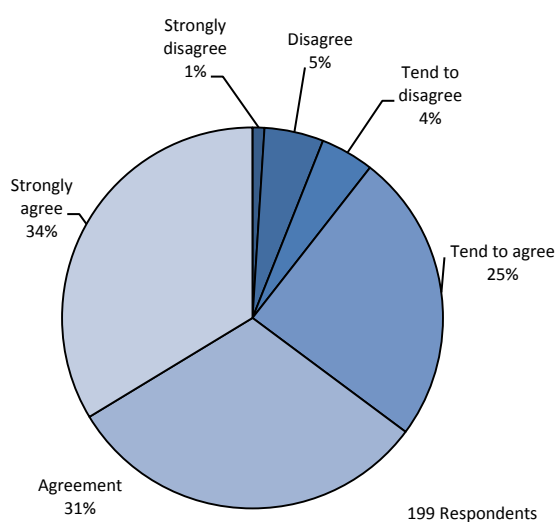
When asked whether producers believed that you had to be very experienced to use traps effectively, the majority of producers strongly agreed (32%), agreed (22%) or tended to agree (18%) (Figure 42).



**Figure 42 – You have to be Very Experienced to use Traps Effectively**

### 3.2.7.6 Wild Dog Behaviour

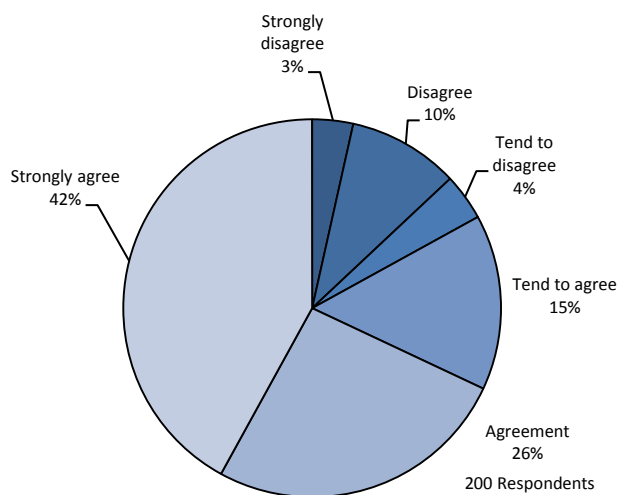
The majority of producers strongly agree that to manage wild dogs you must really understand their behaviour (34%), followed by those who agree (31%) and those who tend to agree (25%) (Figure 43).



**Figure 43 – To Manage Wild Dogs you must Really Understand the Behaviour of Wild Dogs**

### 3.2.7.7 Wild Dog Research

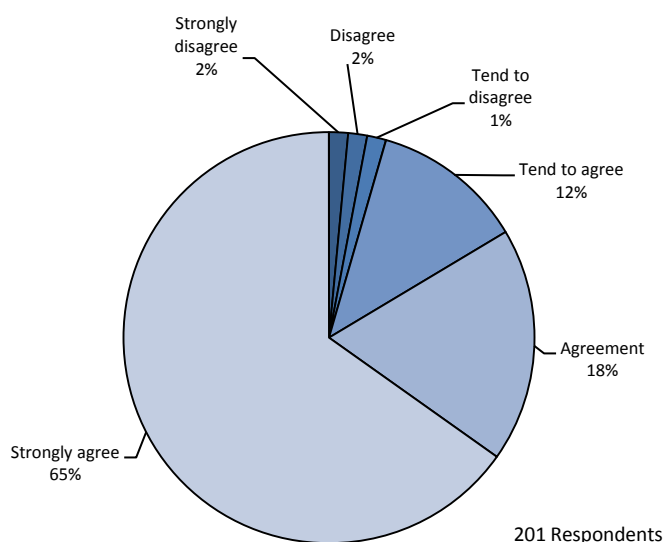
The majority of producers surveyed strongly agreed that more research needs to be undertaken on managing wild dogs (42%), followed by those who agreed (26%) and those who tended to agree (15%) (Figure 44).



**Figure 44 – More Research Needs to be Done on the Management of Wild Dogs**

### 3.2.7.8 Working with Neighbours to Manage Wild Dogs

The overwhelming majority of producers strongly agreed that to better manage wild dogs we need to look at ways of encouraging neighbours to work better together (65%), followed by those who agreed (18%) and those who tended to agree (12%) (Figure 45).

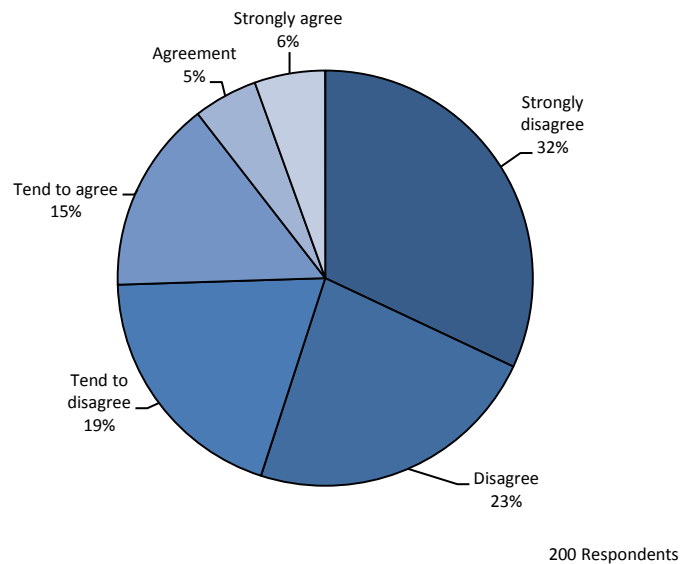


**Figure 45 – To Better Manage Wild Dogs we Need to Look at Ways of Encouraging Neighbours to Work Better Together**



### 3.2.7.9 Wild dogs and Kangaroos

The majority of producers strongly disagreed that wild dogs control their kangaroo numbers (32%), followed by those who disagreed (23%) (Figure 46).



**Figure 46 – I Believe that Wild Dogs Control My Kangaroo Numbers**

## 4.0 Conclusions

The survey findings provide significant cost incentives for all producers to manage wild dogs.

Stock losses, downgrades for dog-bitten stock, hydatids, *Neospora caninum* and management costs associated with wild dogs represent a real economic cost to the industry of over \$67 million in 2008/09. With condemned cattle offal from hydatids totalling \$2,057,685 and little, if any, feedback on this being reported to producers, this report highlights the need for improved communication between processors and producers and an education and advisory program on the stock and human effects of this disease.

The use of assumptions from Whan's 2004 report due to lack of new research on the incidence of *Neospora caninum* amongst Queensland cattle highlights the dire need for research in this area. While it is understood that Meat and Livestock Australia have been collating information on the prevalence of *Neospora caninum* in Queensland herds, what is required is a study which attempts to correlate this herd prevalence with prevalence in local dogs and the real abortion losses. The estimated cost of \$3,143,536 in abortions from *Neospora caninum* warrants that this research be undertaken as soon as possible.

This report has not attempted to cost the environmental impacts that wild dogs have. That there is limited information surrounding the environmental impacts of wild dogs and their interaction with other species is possibly the one issue that all ecologists can agree on. Further information in this area would assist in balancing the ecological ramifications of removing wild dogs from the environment with the significant cost savings gained from their removal.

The qualitative information obtained from Queensland producers emphasises the importance of an extension program which links science and practical wild dog management options. The survey shows that Queensland producers are interested in any information that can help them better manage wild dogs, and this would include management options, environmental and economic information.

Another key report finding was the overwhelming agreement amongst producers that to better manage wild dogs more work needs to be undertaken in encouraging neighbours to work better together, despite the admission that very few producers are part of any wild dog syndicate or group. Until recently, many producers lacked a framework to bring together landholders to manage and monitor wild dogs, however the nil-tenure system seems to be having some success. Through the implementation of the Wild Dog Offensive, Biosecurity Queensland staff who have already pledged significant time, effort and resources into wild dogs are well-placed to help promote and provide assistance to producers in forming and adopting a coordinated framework. The National Wild Dog Management Group holds an important role in replicating this coordinated framework across all States and Territories.

Clearly, there is no silver bullet to reduce the costs associated with wild dogs. While the ultimate success of wild dog management rests with every Queensland land manager, it is only through the combination of research, the continued assistance of State and Local government and on-ground management by landholders that any significant gain can be made towards reducing the impacts of wild dogs to the Queensland grazing industry.

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*Prevalence of antibodies to Neospora caninum within Central Queensland beef cattle.* URL:  
<http://era.deedi.qld.gov.au/112/1/StoesselPrevalenceAntibodies-SEC.pdf> (11/9/09)

## 6.0 Appendices

## Example Grid from Processor

From:

Date:

Mobile:

Limits:

Fax:

Email:

Telephone:

Below are prices we could offer you to kill on a weight and grade basis at \_\_\_\_\_ prior to \_\_\_\_\_

Grade	Fat	Teeth	Shape	Price															
<b>EU Eligible Heifers</b>				440+	420+	340+	320+	300+	280+	260+	240+	220+	200+	180+	160+	150+	130+	110+	-110
CH	7-17	0-4	A-C																
C6	18-22	0-4	A-C																
C7	23-32	0-4	A-C																
<b>Grass Trade Yearling Heifer</b>				440+	420+	340+	320+	300+	280+	260+	240+	220+	200+	180+	160+	150+	130+	110+	-110
YH	5-12	0-2	A-C			3.25	3.25	3.20	3.15	3.10	3.00	2.85	2.70	2.50					
Y6	13-17	0-2	A-C			3.23	3.23	3.18	3.13	3.08	2.98	2.83	2.68	2.48					
Y7	18-22	0-2	A-C			3.20	3.20	3.15	3.10	3.05	2.95	2.80	2.65	2.45					
Y8	23-32	0-2	A-C			3.15	3.15	3.10	3.05	3.00	2.90	2.75	2.60	2.40					
<b>Grass Fed Jap Heifer</b>				440+	420+	340+	320+	300+	280+	260+	240+	220+	200+	180+	160+	150+	130+	110+	-110
I1	7-22	0-4	A-C	2.40	2.70	3.00	3.00	3.00	2.95	2.90	2.85	2.75	2.55	2.30					
I8	23-32	0-4	A-C	2.35	2.65	2.95	2.95	2.95	2.90	2.85	2.80	2.70	2.50	2.25					
J1	7-22	0-6	A-C	2.35	2.65	2.95	2.95	2.95	2.90	2.85	2.80								
J8	23-32	0-6	A-C	2.30	2.60	2.90	2.90	2.90	2.85	2.80	2.75								
A1	7-22	0-7	A-C	2.35	2.65	2.95	2.95	2.95											
A8	23-32	0-7	A-C	2.30	2.60	2.90	2.90	2.90											
<b>Cow</b>				440+	420+	340+	320+	300+	280+	260+	240+	220+	200+	180+	160+	150+	130+	110+	-110
L/M/M9	3-12	8	A-D	2.25	2.55	2.75	2.75	2.75	2.70	2.65	2.60	2.50	2.35	2.10	1.00	0.45	0.30	0.20	0.10
N	13-22	8	A-D	2.25	2.55	2.70	2.70	2.70	2.65	2.60	2.55	2.45	2.30	2.05	0.95	0.40	0.30	0.20	0.10
O	23-32	8	A-D	2.25	2.55	2.65	2.65	2.65	2.60	2.55	2.50	2.40	2.25	2.00	0.90	0.35	0.30	0.20	0.10
P	0-32	8	A-E	2.25	2.55	2.60	2.60	2.60	2.55	2.50	2.45	2.35	2.20	1.95	0.85	0.30	0.30	0.20	0.10
ZC	33-42	0-8	A-E	1.85	2.25	2.45	2.45	2.45	2.40	2.35	2.30	2.20	2.05	1.80	0.70	0.30	0.30	0.20	0.10
ZE	43+	0-8	A-E	1.65	2.05	2.25	2.25	2.25	2.20	2.15	2.10	2.00	1.85	1.60	0.50	0.30	0.30	0.20	0.10
<b>Heifer</b>				440+	420+	340+	320+	300+	280+	260+	240+	220+	200+	180+	160+	150+	130+	110+	-110
D1	3-22	0-7	A-D	2.25	2.55	2.90	2.90	2.90	2.85	2.75	2.65	2.55	2.35	2.10	1.00	0.45	0.30	0.20	0.10
D8	23-32	0-7	A-D	2.25	2.55	2.85	2.85	2.85	2.80	2.70	2.60	2.50	2.30	2.05	0.95	0.40	0.30	0.20	0.10
F1	0-32	0-7	A-E	2.25	2.55	2.70	2.70	2.70	2.65	2.55	2.45	2.35	2.15	1.90	0.80	0.30	0.30	0.20	0.10

Please note the following:-

- (i) All consignments are to be from an accredited EU property (PIC);
- (ii) All animals are to have an approved NLIS ear tag attached, and this tag is to be registered to the PIC detailed on the EUVD accompanying the animals;
- (iii) Cattle with the Rumen Bolus device are unacceptable for this order, NLIS Ear Tag Device ONLY.
- (iv) All animals are to have a lime green E in the oval tail tag attached;
- (v) All consignments to be accompanied by a correctly completed First edition L.P.A EUVD.
- Maximum weight: EU 420Kg HSCW. Grass Trade 0-2 Teeth = 339kg HSCW.
- All carcasses are weighed, and graded in sides, and payments made on side weights.
- Downgrades will occur for conformation, fat & meat colour, fat distribution, bruising, dog bites.
- For carcasses which grade as EU eligible on the slaughter floor, individual carcasses will be chiller assessed, and need to meet a criteria of fat colour 0-4, meat colour 1B-4 - using AusMeat language.
- Product derived from these animals is free of all disease and contaminants i.e. buckshot/pesticide, and is passed as fit for human consumption in export markets.
- Proceeds payable 7 working days from date of slaughter.
- Detailed conditions set out in company memo 27/03/2000 (request copy if in doubt).
- Note EU minimum weight is 240 KG HSCW.

If these prices are acceptable, please confirm your acceptance prior to \_\_\_\_\_

Regards,

## Example Grid Feedback to Producer

Vendor:  
Book Type: Weight & Grade  
Tail Tag:

On Account of:

Booking: Reference:

Kill Date: 43 Head

		<-----Left Side----->					<-----Right Side----->					<-----Body----->	
Body	RFID/NLIS	Cat	Fat	MS	MC	FC	Bru	\$/Kg	Comments	Bru	\$/Kg		
		Comments	HotWt	Grs	Val			HotWt	Grd			(GST exc)	
		Den	Butt	HotWt	Grd			HotWt	Grd				
2324	951 000014827248	B 8	0	C		209.0	R	2.50	Colour	211.0	R	2.50	Colour
		420.0	\$1050.00										
2484	951 000010228457	M 2	15	C		150.0	Y1	3.33		148.0	Y1	3.28	
		298.0	\$984.94										
2485	951 000010088440	M 2	9	C		138.0	YO	3.20		133.5	YO	3.20	
		271.5	\$868.80										
2486	951 000006795889	M 4	25	C		164.5	I9	3.05		166.0	I9	3.05	330.5
		\$1008.03											
2487	951 000006795789	M 4	19	C		159.0	I	3.10		161.0	I	3.10	320.0
		\$992.00											
2488	951 000010185506	M 4	19	C		149.0	I	3.05		149.5	I	3.05	298.5
		\$910.43											
2489	951 000010185978	M 4	12	C		152.5	I	3.10		155.0	I	3.10	307.5
		\$953.25											
2490	951 000010152375	M 4	12	C		156.0	I	3.10		157.5	I	3.10	313.5
		\$971.85											
2491	951 000006795222	M 6	18	C		167.5	J	3.05		165.5	J	3.05	333.0
		\$1015.66											
2492	951 000010185289	M 2	8	C		174.5	I	3.10		176.0	I	3.10	350.5
		\$1086.55											
2493	951 000006795900	M 4	11	C		154.0	I	3.10		152.5	I	3.10	306.5
		\$950.15											
2494	951 000014827822	M 6	9	C		181.0	J	3.05		182.0	J	3.05	363.0
		\$1107.15											
2495	951 000006796134	M 4	11	C		154.0	I	3.10		155.5	I	3.10	309.5
		\$959.45											
2496	951 000006795267	M 4	11	C		162.0	I	3.10		163.5	I	3.10	325.5
		\$1009.05											
2497	951 000010227842	M 2	15	C		158.5	Y1	3.33		159.5	Y1	3.33	
		318.0	\$1058.95										
2498	951 000014827561	M 4	19	C		133.5	I	3.00		134.0	I	3.00	267.5
		\$802.50											
2499	951 000010186075	M 4	17	C		141.5	I	3.05		143.0	I	3.05	284.5
		\$867.73											
2500	951 000010089341	M 2	18	C		156.5	Y2	3.30		154.5	Y2	3.30	
		311.0	\$1026.30										
2501	951 000006796485	M 4	9	C		150.5	I	3.10		153.5	I	3.10	304.0
		\$942.40											



2502 951 000006795965 M 2 19 C	153.0	Y2	3.30	157.5	Y2	3.30
310.5 \$1024.65						
2503 951 000010089691 M 4 18 C	167.5	F	2.65 Dog Bite	170.5	I	3.10
338.0 \$972.43						
2504 951 000006795962 M 2 22 C	146.5	Y2	3.25	146.0	Y2	3.25
292.5 \$950.63						
2505 951 000006796308 M 4 15 C	147.5	I	3.05	146.0	I	3.05
\$895.18						293.5
2506 951 000010184873 M 4 16 C	154.0	I	3.10	156.0	I	3.10
\$961.00						310.0
2507 951 000010185546 M 4 25 C	183.5	I9	3.05	178.5	I9	3.05
\$1104.11						362.0
2508 951 000010089997 M 4 17 C	156.0	I	3.10	159.0	I	3.10
\$976.50						315.0
2509 951 000006795776 M 2 16 C	165.0	Y1	3.38	166.5	Y1	3.38
331.5 \$1120.47						
2510 951 000006796365 M 2 12 C	149.0	YO	3.30	152.5	YO	3.35
301.5 \$1002.58						
2511 951 000006796097 M 4 15 C	162.0	I	3.10	162.0	I	3.10
\$1004.40						324.0
2512 964 001002450182 M 0 13 C	138.5	Y1	3.18	139.5	Y1	3.18
278.0 \$884.04						
2513 951 000010088196 M 4 11 C	155.5	I	3.10	158.0 3	I9	3.05
\$963.95						313.5
2514 951 000010184775 M 4 15 C	137.5	I	3.00	137.5	I	3.00
\$825.00						275.0
2515 951 000010089276 M 2 18 C	139.5	Y2	3.15	139.0 3	Y2	3.15
278.5 \$877.28						
2516 951 000006796266 M 4 13 C	152.0	I	3.10	153.5	I	3.10
\$947.05						305.5
2521 951 000010089467 M 6 10 C	164.0	J	3.05	164.0	J	3.05
\$1000.40						328.0
2522 951 000010227163 M 2 13 C	163.5	Y1	3.38	163.5	Y1	3.38
327.0 \$1105.26						
2523 951 000010185068 M 2 15 C	157.5	Y1	3.33	157.0	Y1	3.33
314.5 \$1047.29						
2524 951 000010185005 M 4 16 C	150.0	I	3.10	149.5	I	3.05
\$920.98						299.5
2525 951 000010185622 M 2 6 C	145.0	YO	3.30	144.0	YO	3.30
289.0 \$953.70						
2526 951 000006796480 M 4 8 C	150.0	I	3.10	149.5	I	3.05
\$920.98						299.5
2527 951 000010088448 M 2 12 C	157.5	YO	3.35	161.0	YO	3.40
318.5 \$1075.03						
2528 951 000010185164 M 6 14 C	154.5	J	3.05	151.5	J	3.05
\$933.31						306.0
2530 951 000010185575 M 2 8 C	146.5	YO	3.30	146.5	YO	3.30
293.0 \$966.90						



Total for Kill Date 04/08/09 13436.5 \$41998.31

						Tot Val			
Category Summary		Bodies	%	Tot Wgt	Avg Wgt	Avg Val	Avg \$/Kg	(GST exc)	Condemns
BULL	1.0	2.3	420.0	420.0	1050.00	2.50	1050.00	0.0	
OX	42.0	97.7	13016.5	309.9	974.96	3.15	40948.31	0.0	
Total	43.0	100.0	13436.5	312.5	976.70	3.13	41998.31	0.0	

NOTE: ALL LIVESTOCK WEIGHTED & PURCHASED ON SIDE WEIGHT VALUE.

Grade Summary		OX		COW		BULL			
Grade	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt Avg Wgt
Condemns									
F	0.5	1.1	167.5						335.0
I	20.0	47.6	6135.5						306.8
I9	2.5	5.9	850.5						340.2
J	4.0	9.5	1330.0						332.5
R				1.0	100.0	420.0			420.0
Y1	6.0	14.2	1867.0						311.2
Y2	4.0	9.5	1192.5						298.1
YO	5.0	12.2	1473.5						294.7
Total	42.0	100.0	13016.5			1.0	100.0		420.0 312.5

Recognised Fat Measurer Codes

Weight Class Summary		OX		COW		BULL			
Range	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt
260-279.9kg	5.0	11.9	1370.5						
280-299.9kg	8.0	19.0	2347.0						
300-319.9kg	17.0	40.4	5264.0						
320-339.9kg	8.5	20.2	2789.0						
340-359.9kg	2.0	4.7	699.5						
360-379.9kg	1.5	3.8	546.5						
400-419.9kg						0.5 50.0			209.0
420kg&Over						0.5 50.0			211.0
Total	42.0	100.0	13016.5			1.0	100.0		420.0

Fat Class Summary		OX		COW		BULL			
Range	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt
0-2mm						1.0 100.0			420.0
4.1-6mm	1.0	2.3	289.0						
6.1-9mm	6.0	14.2	1881.5						

9.1-12mm	9.0	21.4	2824.0			
12.1-17mm	15.0	35.7	4580.0			
17.1-22mm	9.0	21.4	2749.5			
22.1-27mm	2.0	5.0	692.5			
<hr/>						
Total	42.0	100.0	13016.5		1.0	100.0 420.0
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Average Depth (mm) 14.38

Dentition Summary			OX			COW			BULL		
Teeth	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt	Bodies	% Tot Wgt
0	1.0	2.3	278.0								
1-2	15.0	35.7	4605.5								
3-4	22.0	52.3	6803.0								
5-6	4.0	9.7	1330.0								
7-8						1.0	100.0	420.0			
<hr/>											
Total	42.0	100.0	13016.5				1.0	100.0	420.0		
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Butt Shape Summary			OX			COW			BULL		
Shape	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt	Bodies	%	Tot Wgt	Bodies	% Tot Wgt
C Medium	42.0	100.0	13016.5				1.0	100.0	420.0		
<hr/>											
Total	42.0	100.0	13016.5				1.0	100.0	420.0		
<hr/>											

Bruising Summary			Bodies	Condemns	Left	Right
3 Loin	1 Bruise		1.0		1.0	
<hr/>						
Total			1.0	1.0		
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