Landholder's Perception of Wild Deer Survey

Report by Upper Murrumbidgee Landcare

Report prepared by Georgeanna Story for Upper Murrumbidgee Landcare with support from Local Land Services Community, Industry and Landscapes Fund grant.

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1. Executive Summary

The presence of introduced or wild deer is becoming more common throughout south-eastern Australia. With this more noticeable presence comes an increasing concern over deer impact on communities and the environment. To increase our understanding of the community perceptions of wild deer and gauge the impact and control efforts of landholders, Upper Murrumbidgee Landcare developed a community survey. The survey was open to landholders within south-eastern Australia and received responses from 669 landholders. The majority of people believe that wild deer are a pest species and should be managed as such. The most frequently observed deer species was Fallow deer in NSW and Sambar in Victoria. Deer were consistently present and increasing across the region. The impact of deer was most frequently observed on environmental values, pasture competition, revegetation activities and infrastructure. Conservative estimates measure the annual impact cost at $1 million, or $2,000 per person. Most of deer control was conducted through shooting by the landholder and participants in the last year culled approximately 7,000 deer. Participants expressed concern over current deer management, in particular the lack of carcass use. Overall, the survey results presented in this report highlight that landholders are deeply invested in the management of deer on their properties and incur substantial impacts and costs from deer.

2. Acknowledgments

Upper Murrumbidgee Landcare would like to thank the many people that assisted with the development and distribution of this survey. Within Landcare, members of Upper Murrumbidgee Landcare, Tony Robinson and Jo Gaha, Upper Snowy Landcare, Upper Shoalhaven Landcare and Upper Murray Landcare Network. Rebecca Bradley and Michelle Dawson (South East Local Land Service), David Forsyth (NSW Department of Primary Industries), Andrew Claridge (NSW Department of Environment and Heritage) and Jasmyn Lynch and Mike Braysher (University of Canberra) all provided invaluable contributions.

We would also like to thank all of the landholders that participated in the survey and provided such valuable insights into their perception of wild deer.

Cover photo credit: Grazing Fallow deer (*Dama dama*). Dr Andrew Claridge

Citation: Story G. (2108) Landholder's Perception of Wild Deer Survey. Report by Upper Murrumbidgee Landcare. Upper Murrumbidgee Landcare Committee, Michelago, NSW 2620.

3. Introduction

The presence of introduced or wild deer (hereafter referred to as deer) is becoming increasingly common throughout south-eastern Australia and no longer restricted to rural environments (Druce 2016; Rowley 2018; Wollongong City Council 2018). As a consequence, community concerns are increasing in their number and range. Deer can impact communities in a variety of ways, such as competition with stock and damage to crops and infrastructure. Deer also impact environmental activities through damage to native vegetation and revegetation areas. In suburban areas public safety and vehicle collision are more of a concern. While the range of impacts caused by deer is fairly well known, the extent of these impacts is less understood. In particular, for those reliant on agricultural enterprises there are concerns over the social and financial burden of deer impacts.

To increase our understanding, Upper Murrumbidgee Landcare developed a community survey to measure the community perceptions of wild deer. There were three components to the survey: to explore the community perceptions of wild deer, to determine the type, level and cost of deer impact and to assess the control effort currently undertaken and community expectations for future control.

The survey was available to all landholders within south-east NSW and the ACT and, after a request, to the Grampians area of Victoria. The survey was anonymous and available online for two months at the end of 2017. The full survey is can be found in the appendix.

4. Survey Results

4.1 Response distribution of surveys

There was a total of 669 surveys completed from across NSW, the ACT and south-east Victoria. Responses were pooled regionally using the South East Local Land Services area boundaries (Figure 1). Results were examined as total results and then separately for 4 areas that recorded more than 70 responses: Far South Coast, Yass/Palerang, Goulburn and Monaro. Other NSW and Victorian responses outside these areas were pooled into a NSW Other category. Victorian results were separated into either Gippsland or Victorian Other categories, and the ACT was classed as a single category. Figure 2 presents the distribution of participation across each area.

Since the number of responses varied across questions the total number of responses for each question is presented in italics beside the question heading.

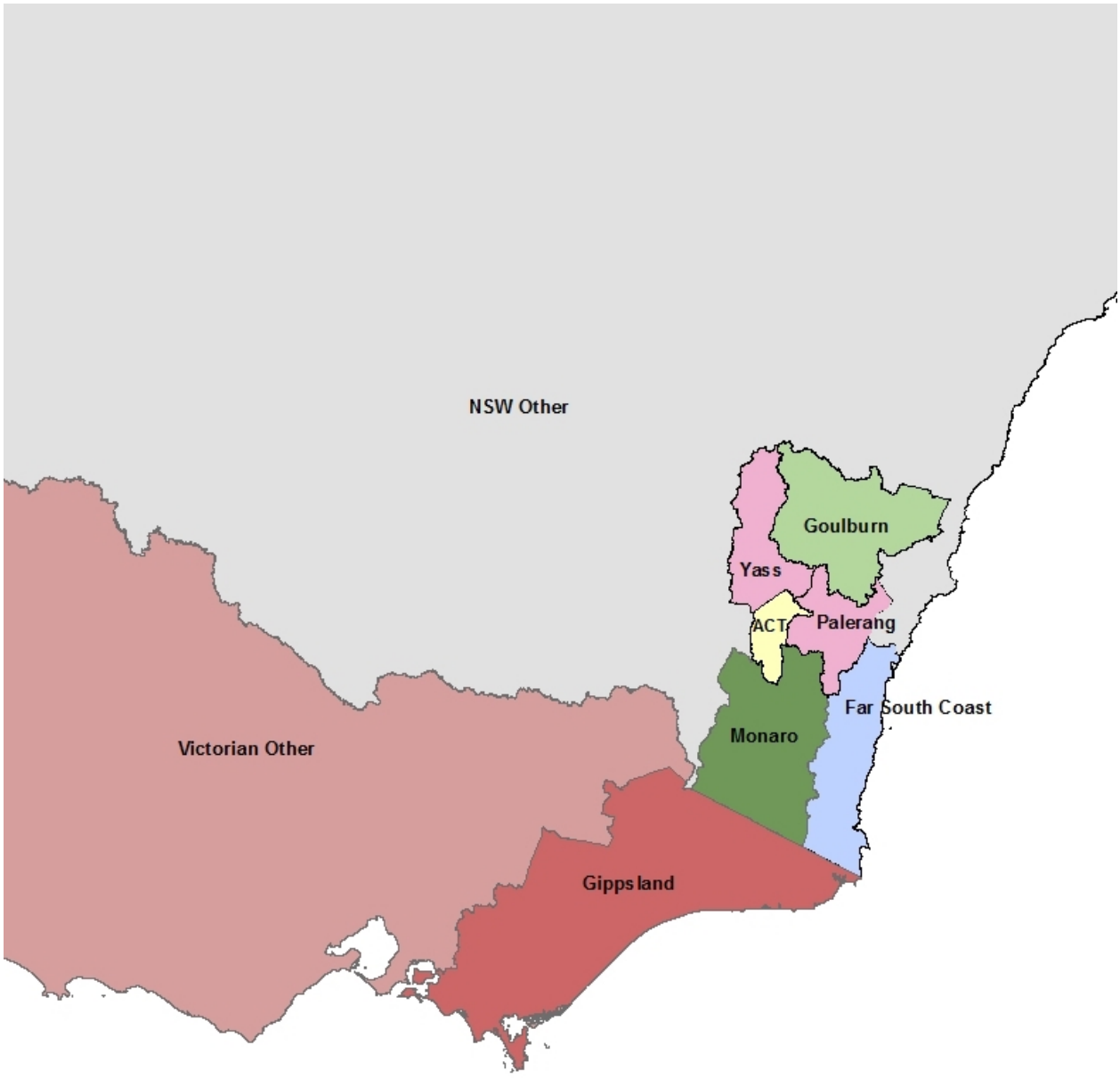


Figure 1. Area boundaries for pooled survey results.

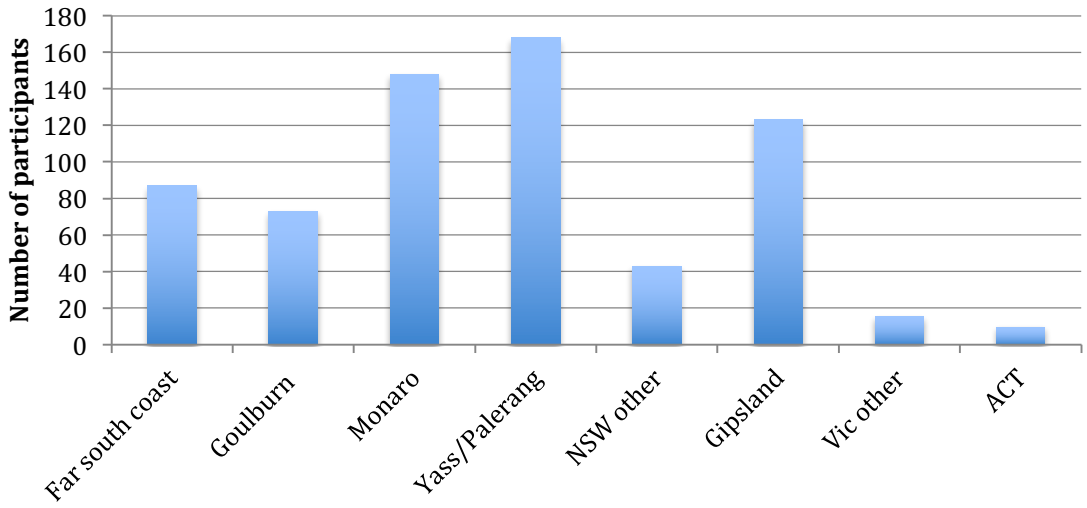


Figure 2. The number of survey participants in each area categories

4.2 Respondent details questions (Questions 1-4)

It was considered that the type of property and the use of that property would influence the participants detection and perception of wild deer, so it was important to understand the lifestyle of participants.

4.2.1 Property classification (669)

There were 4 categories offered to participants: Urban, Rural residential, Rural and Other. An overwhelming majority of participants lived in a rural setting (90.9%) across all regions (Figure 3).

4.2.2 Property use (669)

There were 6 categories offered to best describe the use of the property: Residential, Lifestyle, Agriculture-cropping, Agriculture-grazing, Agriculture-other and Other. Participants were able to check multiple responses. There was a similar response from those undertaking agricultural practices (47%) and those using their property for residential, lifestyle and other purposes (53%). Agriculture use was slightly higher in Goulburn, Monaro and Gippsland (Figure 4).

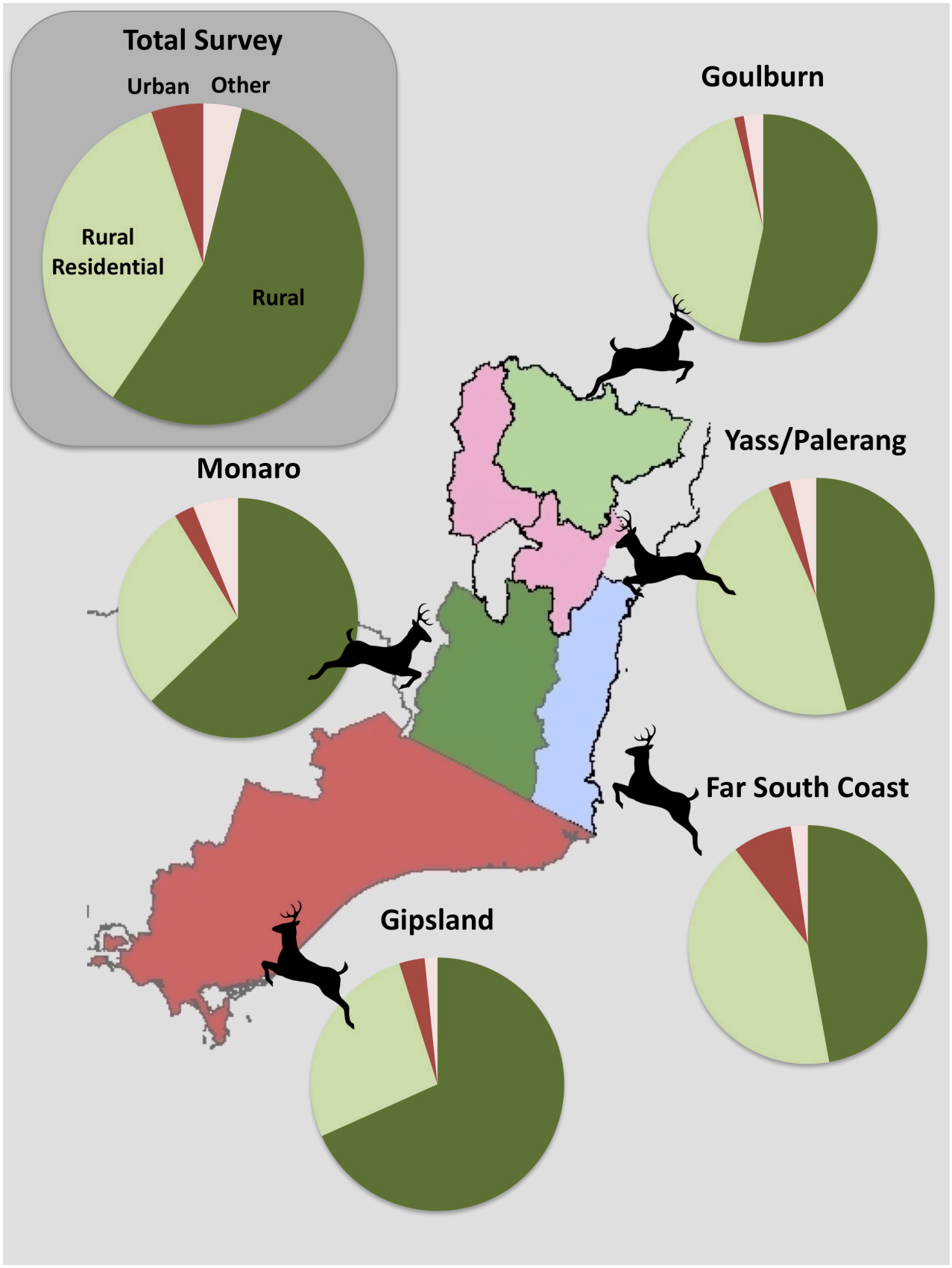


Figure 3. Property classifications for the total survey and each regional area.

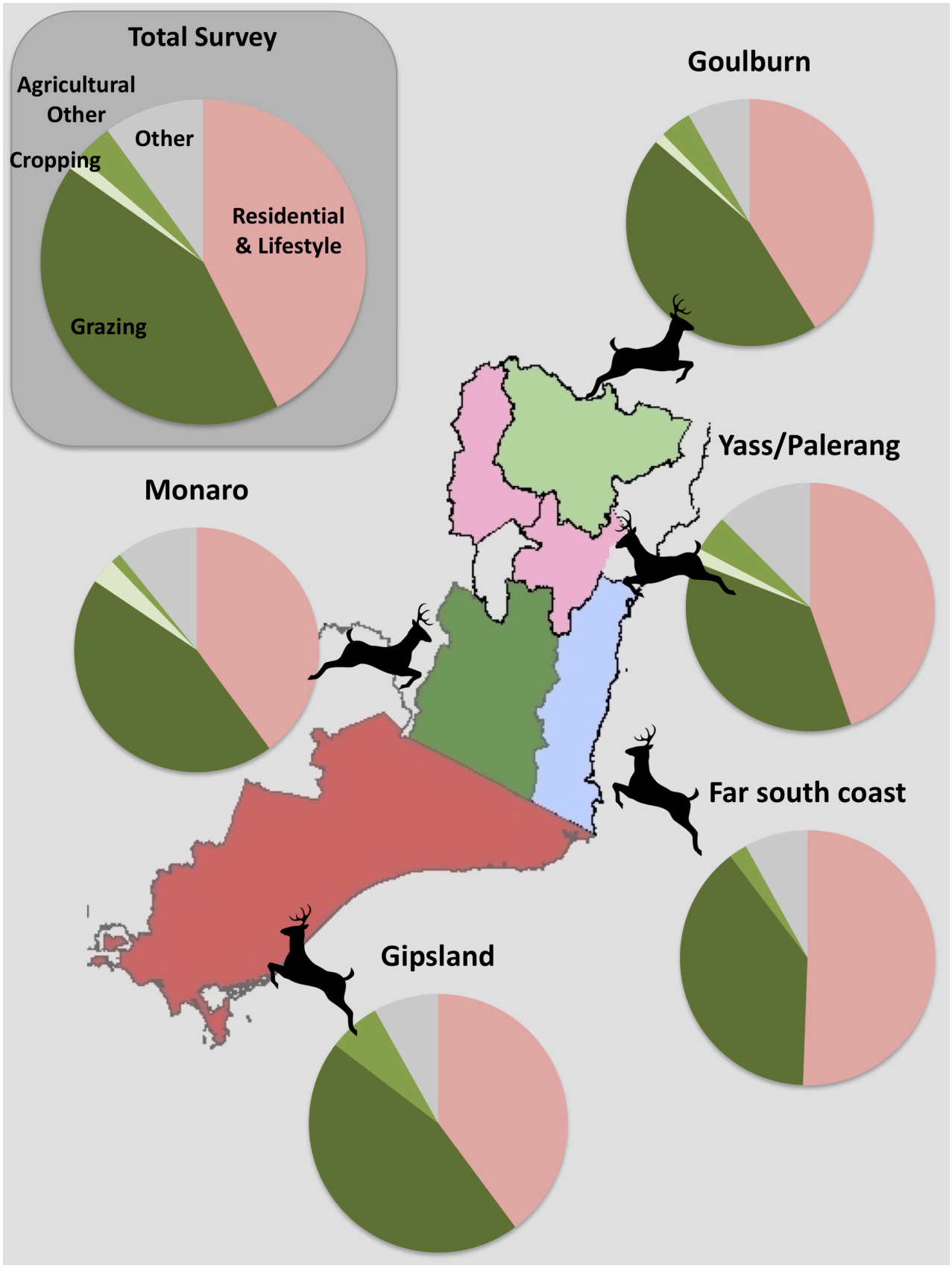


Figure 4. Property use for the total survey and each regional area.

4.3 Deer focus questions (Questions 5-11)

This section of the survey was interested in how people perceived deer and the frequency and abundance that they encounter different deer species. All participants were asked about their perception of deer, but only those that had encountered deer were asked the remaining questions that explored the frequency and abundance of deer encounters.

4.3.1 Perception of deer (658)

The overarching goal of this survey was to assess community views of deer. The survey offered the categories of Pest, Game, Native or Other species to best describe deer. A vast majority of the participants viewed deer as a pest or game species (94%) (Figure 5). Those that selected Other (7%) had the opportunity to explain their opinion. On examination, these opinions could be classified broadly as introduced pest and/or game animals or as introduced but not causing a problem. The responses that specifically mentioned pest or control were pooled with the Pest classification (14 responses). The responses that mentioned consumption of deer meat were reclassified as Game (4 responses). Nine comments classifying wild deer as introduced, remained in the other category. Very few people considered deer to be a native species (3%). Viewing deer as a pest or game species was a consistent response across regions, ranging from 88% in the Goulburn region to 96% in the Far South Coast. When asked directly if deer should be a declared pest, 76% of all participants agreed and this was again a consistent view held throughout the regions (Figure 5).

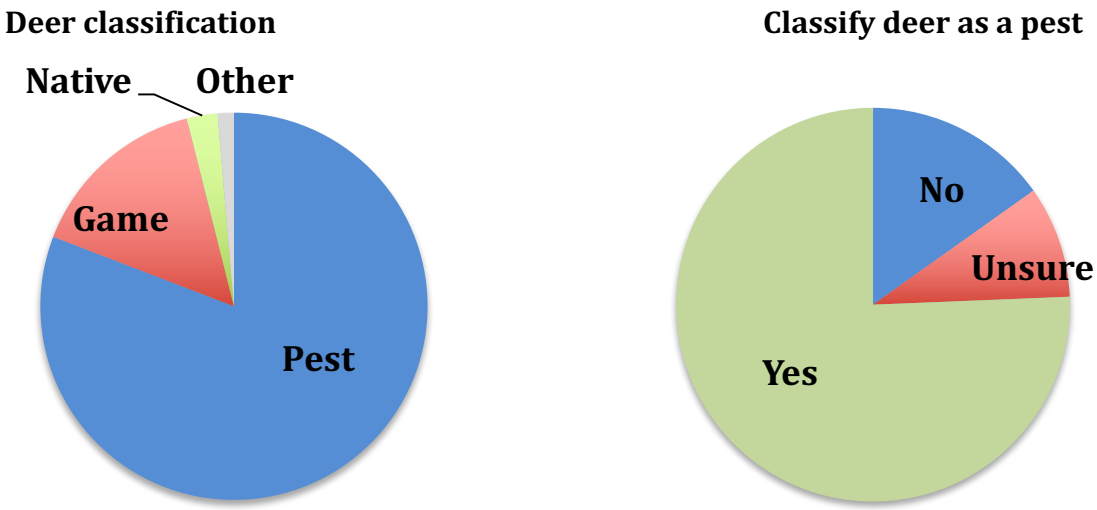


Figure 5. Total survey perceptions of deer and opinion on classification of deer as a pest.

4.3.2 Presence and frequency of deer (658 & 597)

The survey asked participants if deer were present in their region, using the categories, Yes always, Yes sometimes, No never and Unsure. If deer were present, participants were then asked to categorise how frequently they encounter deer and the number of years that they have been aware of deer presence. The categories for these questions were: Once, Occasionally, Monthly, Weekly or Daily and 0-2, 2-5, 5-10, 10-30, 30+yrs and Unsure. A

further question looked at whether participants had noticed a change in deer numbers over the last 5 years. The options given were Decreasing, No change, Increasing and Unsure.

Most participants had noticed deer on the property or surrounds (92%) (Figure 6) and almost two thirds were seeing deer at least monthly (62%) (Figure 7). There were some differences detected in the frequency of deer observations across regions. People living in the Monaro region thought that deer were always present (58%) and they encountered deer frequently (68% at least monthly). Conversely, only 33% of residents in the Yass/Palerang region thought that deer were always present and only 41% were seeing deer monthly or more.

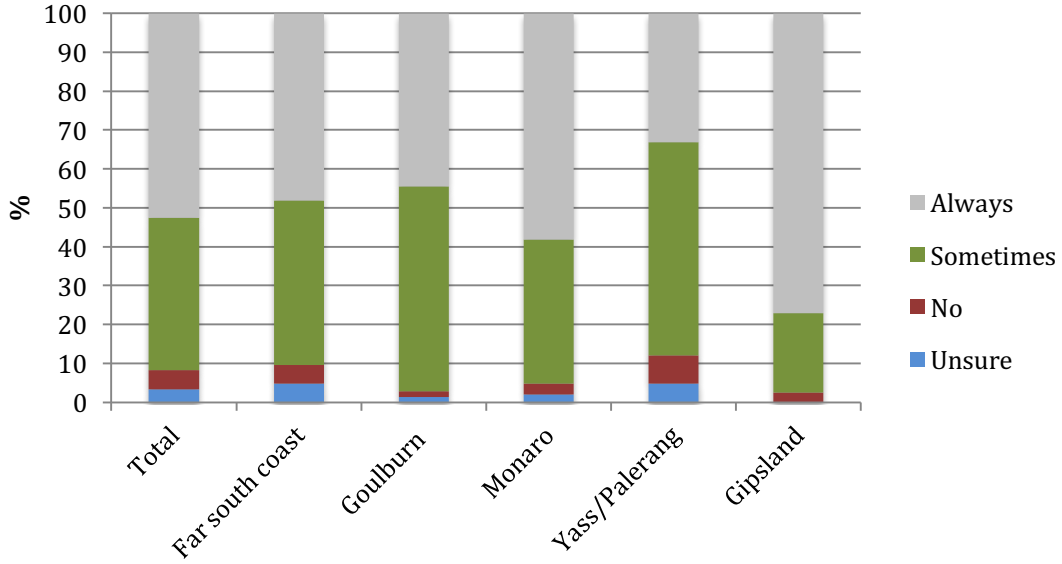


Figure 6. Frequency of deer presence for the total survey and within each region.

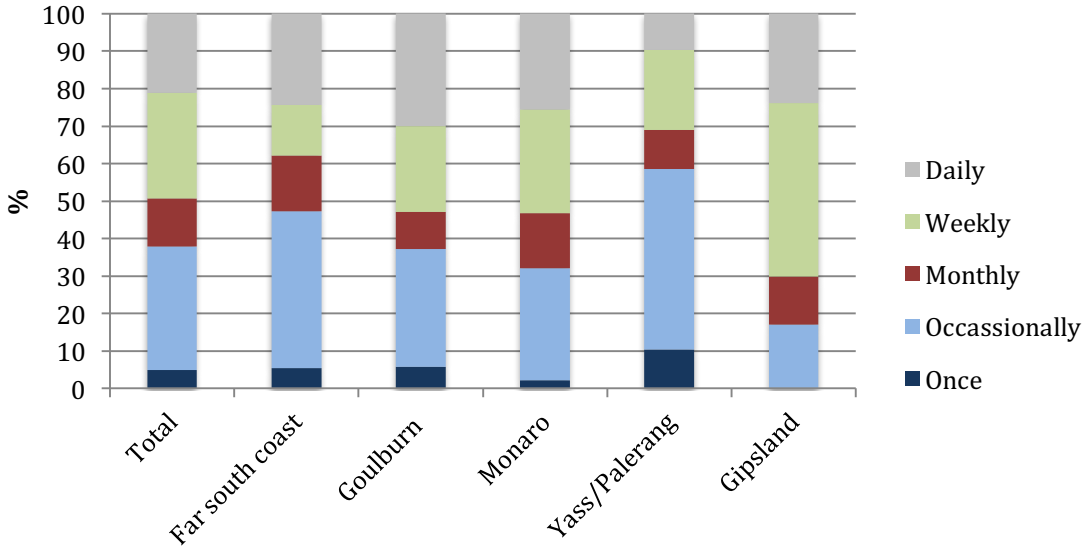


Figure 7. Frequency of deer encounters for the total survey and within each region.

When asked to comment on the numbers of deer seen as: Low/Few, Medium/Several or High/Many, the outcome was fairly similar across categories (Figure 8). The Medium or Several category had the largest response at 39%, followed by High (32%) and then Low (28%). Results within the regional areas ranged from higher numbers in Gippsland to lower numbers in Yass/Palerang. The response to the question about a change in deer numbers in the last 5 years was far more conclusive, with 79% of answers identifying an increase in deer numbers (Figure 9). The perceived increase in deer numbers was especially evident in the Gippsland and Monaro regions with 92% and 85% of responses nominating an increase.

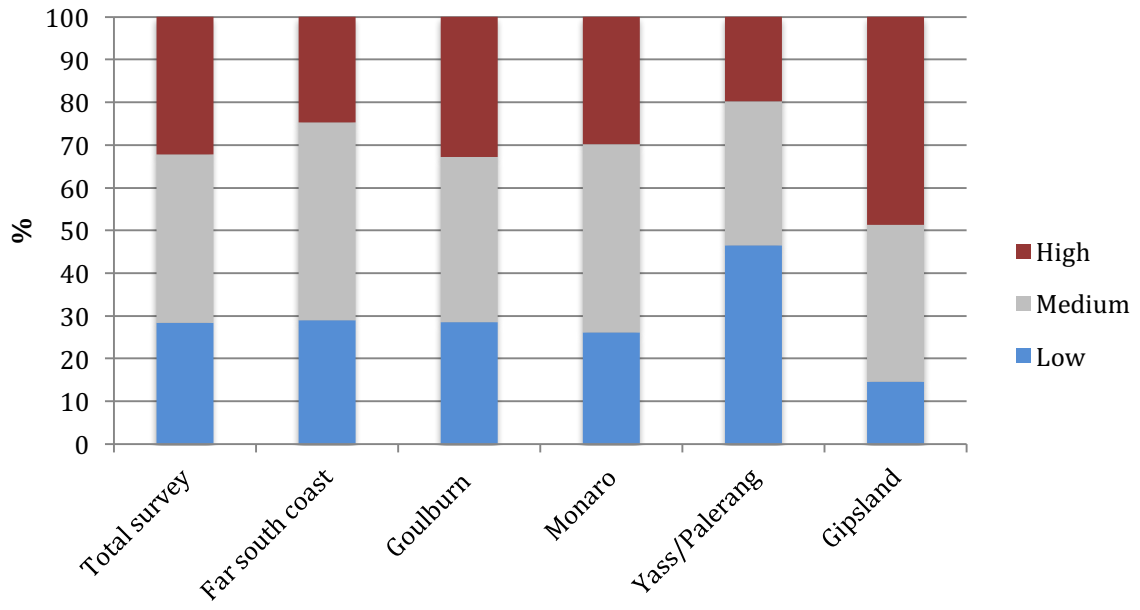


Figure 8. Abundance levels of deer across all areas and within each region.

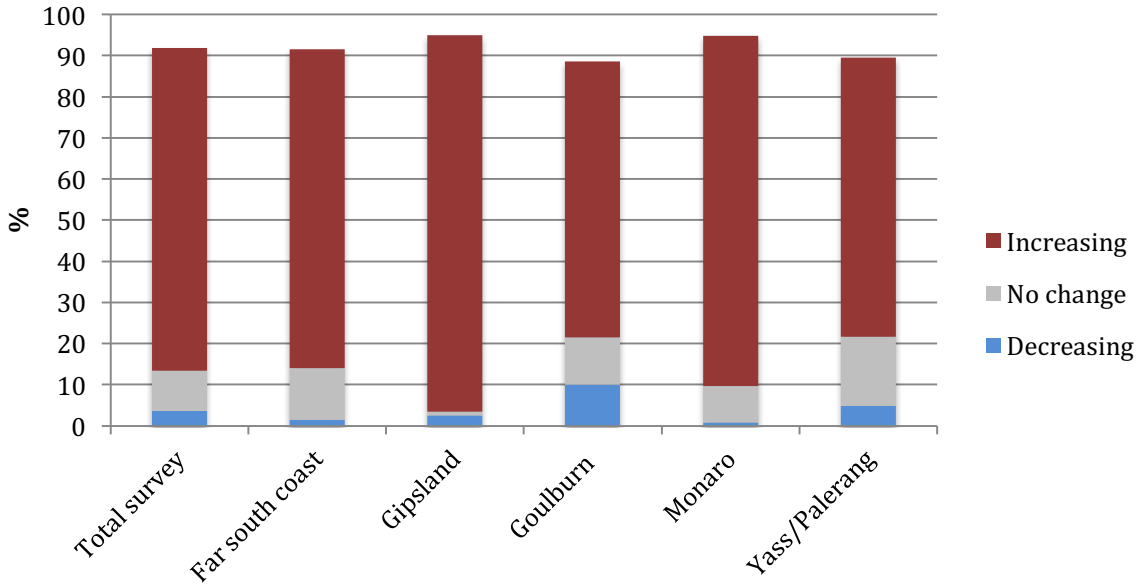


Figure 9. Change in deer abundance in the last 5 years across all areas and within each region.

When asked how many years deer have been present in the region, the majority of responses fell in the less than 30 years categories (97%) (Figure 10). The highest percentage of responses was recorded in the 5-10 year category and the least in the over 30 year category. There was a similar response recorded in the Far South Coast region, although the 5-10 year category peaked higher at 51%. Results from the Goulburn and Yass/Palerang showed less variation between all but the over 30-year category. The Monaro region was the only area to identify a higher level of detection of deer in the 2-5 year category. Caution should be taken with the interpretation of these results, as this may be an artefact of property ownership patterns and reflect a change in landowners, rather than solely due to an influx of deer.

Participants were given pictures of each deer species present in Australia and asked to identify which species of deer they have seen. The question also provided an Unsure option. The species observed most often was Fallow, recording close to half of the identifications. Sambar was the next most frequently observed species (19%) (Figure 11). All of the remaining species were observed but at far lower frequency. The dominance of Fallow and Sambar in the survey was an expected result, with the known distribution of these species overlapping with the survey regions. There was however identification of some deer species in areas where they are not expected to be present and may be a case of misidentification. Nineteen percent of participants were also unsure which deer species they had seen (Table 1). This uncertainty was higher for residents of the Goulburn and Far South Coast regions (31 and 27% respectively). We considered that sample size, the frequency of encountering deer or the length of time participants have been aware of deer might influence a respondent's ability to identify the different species, however there were no obvious trends observed.

Table 1 The level of unsure deer identifications across regions and for low levels of deer exposure (%).

	Number of Unsure identifications	% of Unsure identifications	% of Unsure infrequently observed (once and occasionally)	% of Unsure encountered in last 5 years
Far South Coast	20	27	60	50
Gippsland	7	6	43	29
Goulburn	22	31	41	50
Monaro	19	14	74	37
Yass/Palerang	34	24	85	59
Total	**111**	**19**	**64**	**51**

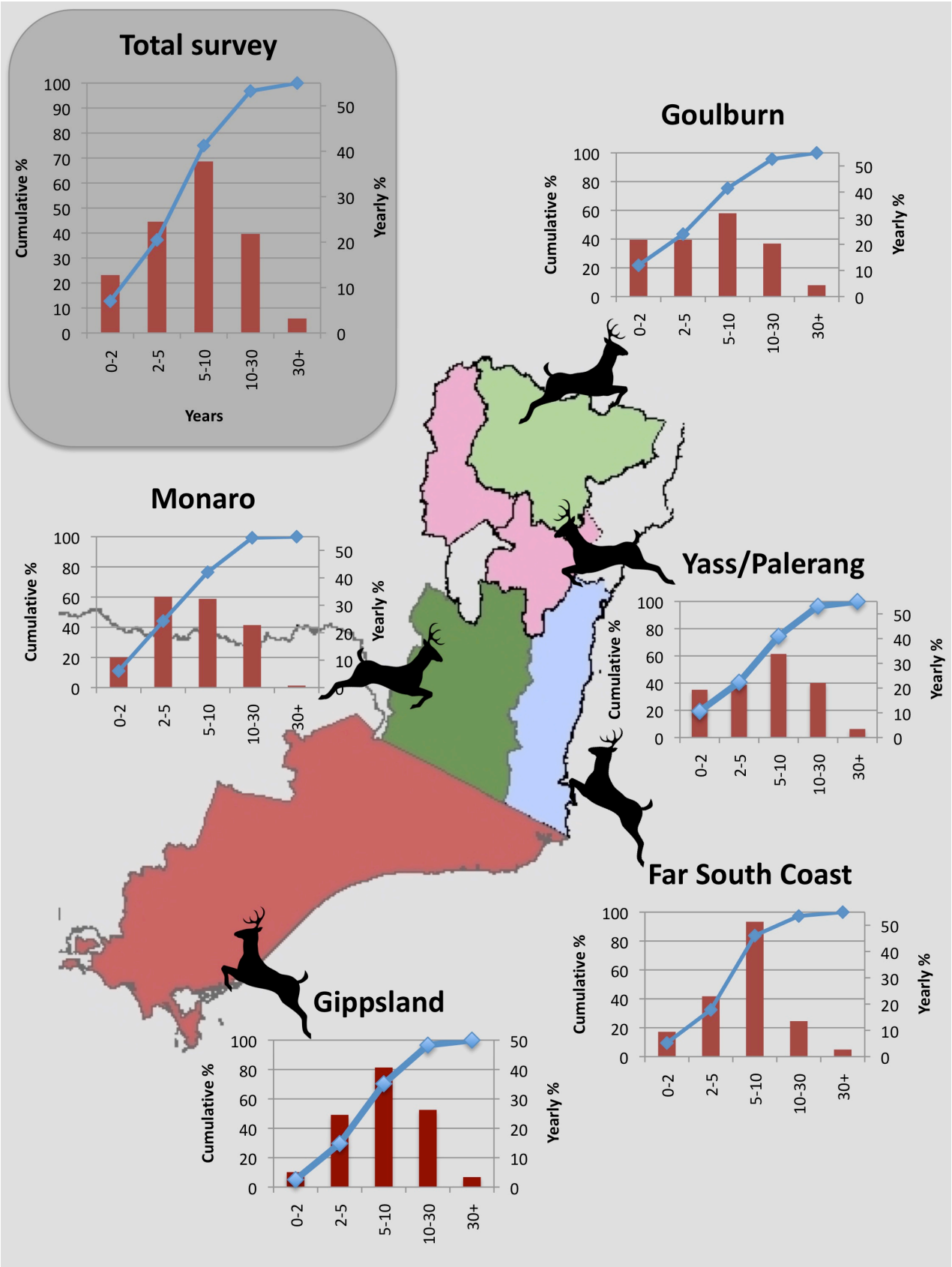


Figure 10. Years of deer presence for yearly categories (column) and cumulative (line) throughout the year categories.

4.4 Expectation questions (Questions 12-13)

This section of the survey focussed on respondent's attitudes towards deer and where they rank, compared with their perceptions of other wildlife in their region. All participants had the opportunity to answer these questions.

4.4.1 Deer expectations (584 & 54)

Participants were asked to consider what level of deer numbers they would like to see in their region, in relation to current levels. For people that had observed deer the options were, Present level, Slightly more, Slightly less, Many more, Many less, Complete removal or Unsure. For those that had not encountered deer the categories were, Yes some, Yes many, No and Unsure. A majority of participants would like to see a reduction at some level (78%) and more than half would like the complete removal of deer (57%) (Figure 12). Just over half of the participants (52%) that had not encountered deer also preferred to keep their area free of deer. The preference of participants for a reduction in deer numbers was similar whether they were involved in agriculture or not. A reduction in the number of deer was the dominant response across all regions, although there were some small variations observed.

Participants were then asked to consider whether they enjoy having deer on their property, categorised as: Yes always, Yes sometimes, No, No opinion and Unsure. While the majority of people did not enjoy deer in their region (65%), there was some variation between regions (Figure 13). In particular, Goulburn had 42% that would like to see deer at least sometimes. Whether or not the participant was a primary producer did not influence the response, with similar patterns observed across land use.

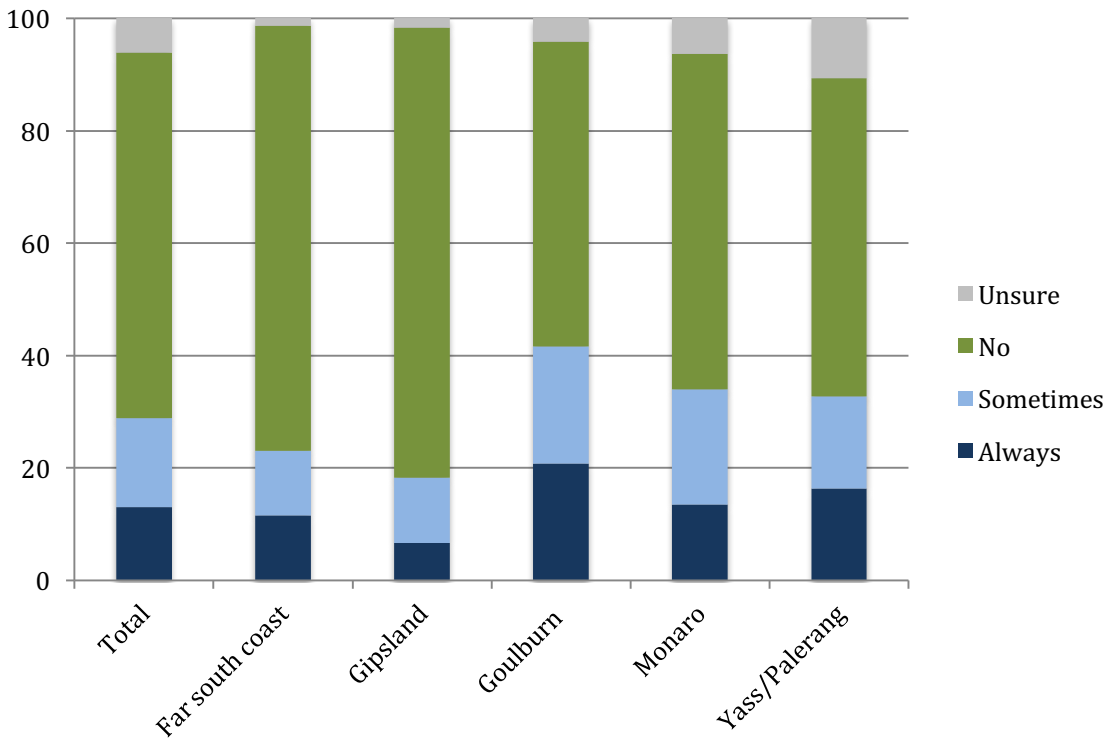


Figure 13. The level of enjoyment felt for deer across the total survey and within each region.

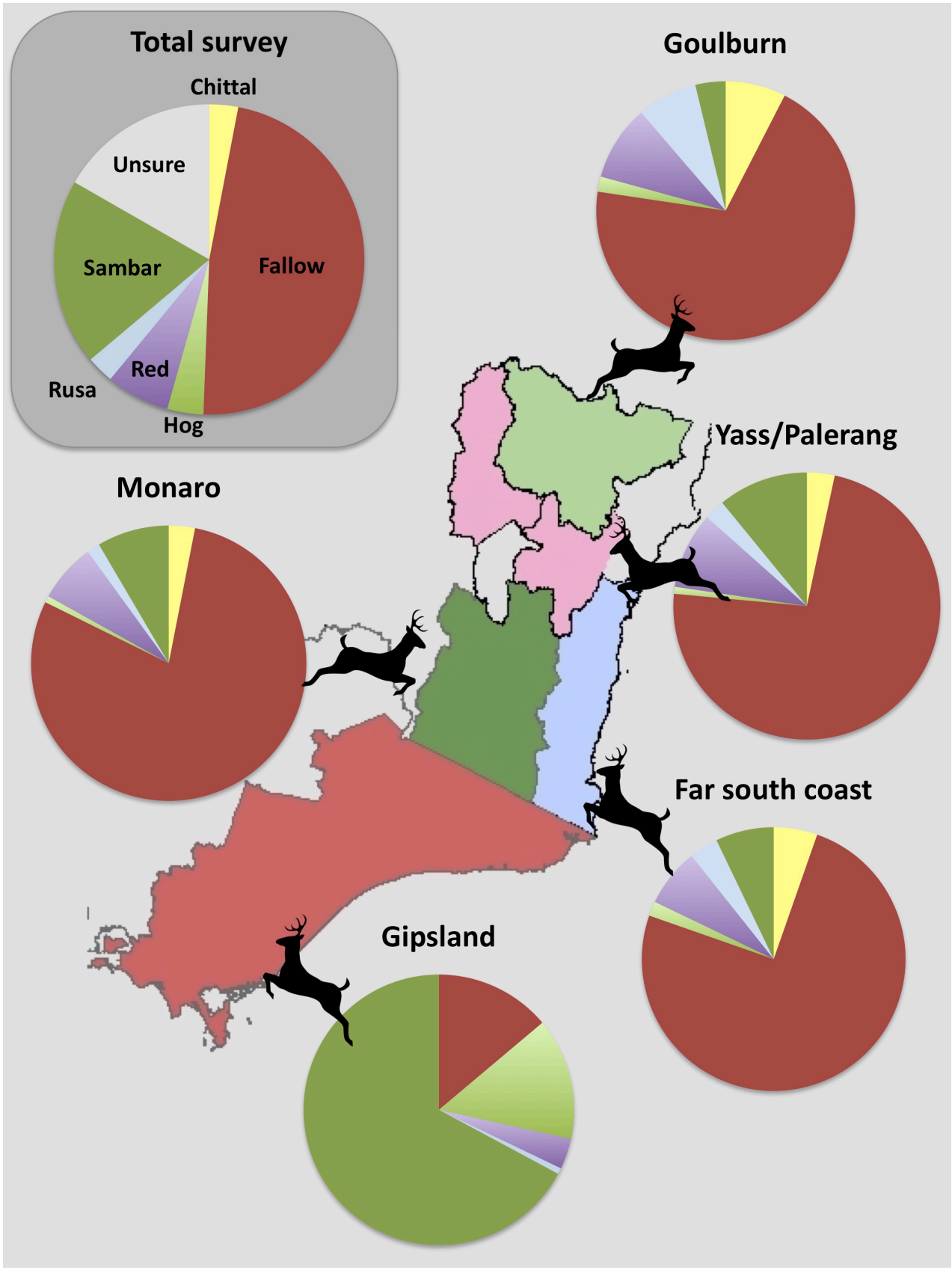


Figure 11. Percent of deer species observed across the survey and within each region. Unsure responses are not included in the regional graphs.

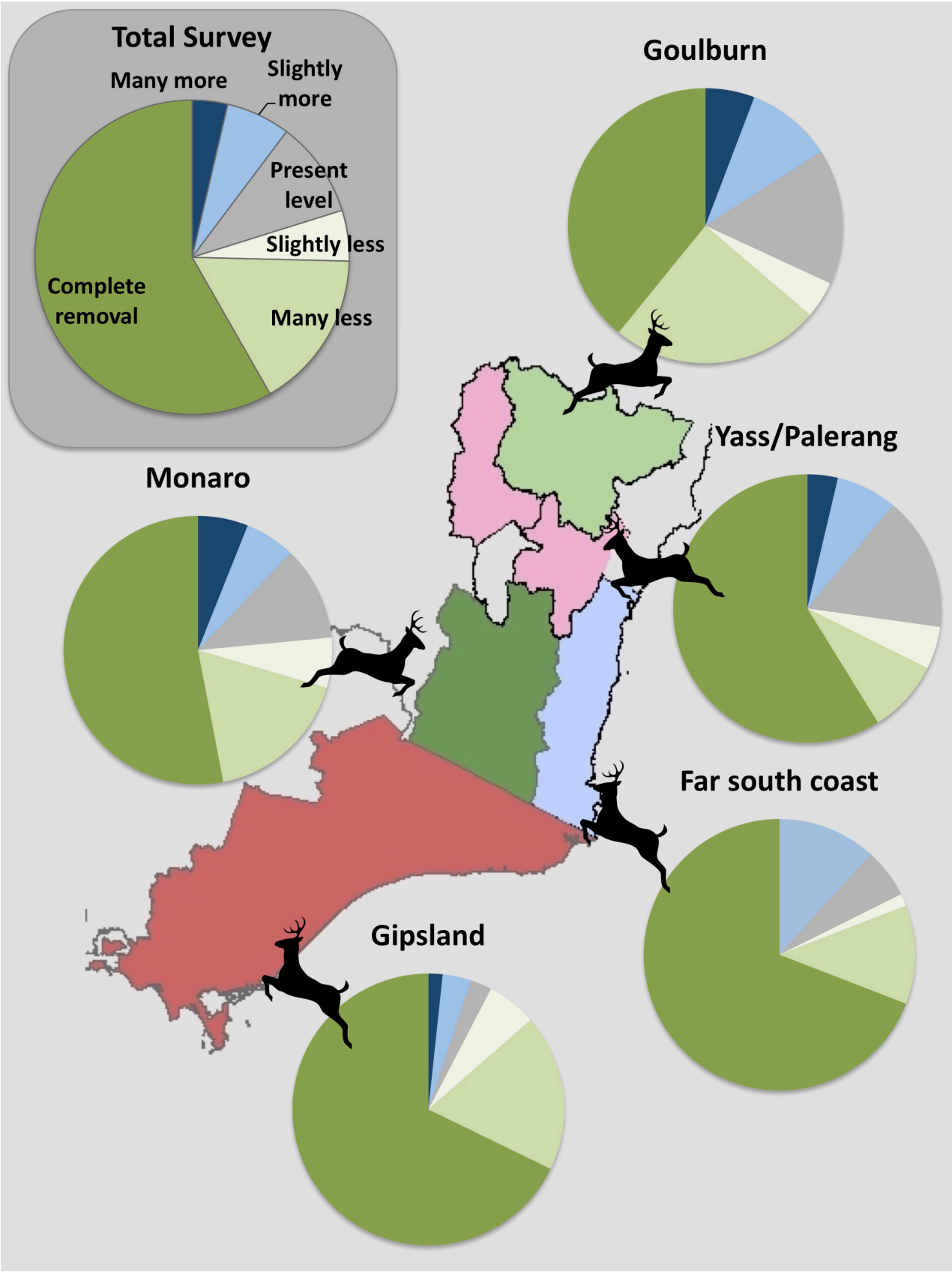


Figure 12. The level of deer numbers desired across the total survey and within each region.

4.5 Impact questions (Questions 14-25)

Investigations into the impact of deer examined respondents' perceptions of impact compared with other species and measured the frequency and cost of actual impact.

4.5.1 General deer impacts (584 & 54)

Participants were asked to consider the level of positive and negative impact deer were having within their region, ranked as either Frequent, Occasional, None and Unsure. Only 27% of people felt that deer were having a positive impact on their region, a perception consistent across regions (Figure 14). This was similar to the percentage of people that were unsure about the positive impact of deer (20%). When considering the negative impact of deer 79% of all participants thought there was a negative impact in their region (Figure 14). This perception was much higher in the Gippsland region, with 93% reporting a negative impact of deer.

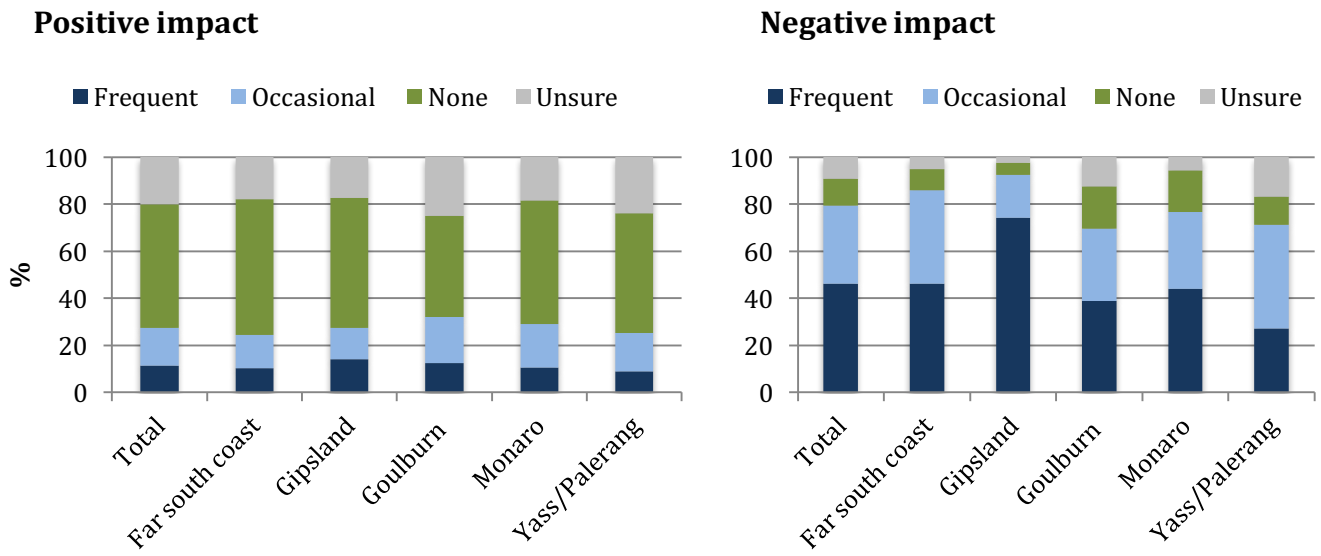


Figure 14. The percent level of impact by deer across the total survey and within each region.

The perception of whether or not deer have positive impacts was similar for those that did or did not encounter deer. A difference emerged when the negative impact of deer was considered, with 81% of those that encounter deer identifying a negative impact, compared with 60% of those that did not. Of those that recorded a negative impact, 50% identified that impact as occurring frequently.

Table 2. Response of survey participants to impacts of deer. Results are presented for groups that encounter (n=587) and don't encounter (n=57) deer (%).

	Yes		No		Unsure	
	Encounter	Don't encounter	Encounter	Don't encounter	Encounter	Don't encounter
Positive impact	28	23	52	54	20	23
Negative impact	81	60	11	21	8	19

When considering the relative impact of deer compared to other introduced herbivores, opinions were split fairly evenly between more, similar and less for those that encounter deer (Table 3). The main difference observed was that a greater proportion of people that encounter deer think that deer have a greater impact than other introduced herbivores compared with those that do not encountered deer. When considering the impact of deer compared with native herbivores, opinions were more similar, with over 40% believing that deer have more impact.

Table 3. Summary of the perceived impacts (%) of deer when compared with introduced and native herbivores. Results are presented for groups that encounter and don't encounter deer.

	More impact		Similar impact		Less impact		Unsure	
	Encounter	Don't encounter	Encounter	Don't encounter	Encounter	Don't encounter	Encounter	Don't encounter
Introduced species	29	9	34	52	31	35	6	4
Native herbivores	43	44	24	28	29	22	4	6

4.5.2 Specific deer impacts (584 & 54)

When considering the specific valued asset that deer may impact, participants were asked to consider: Private garden, Pasture competition, Crops, Orchards, Infrastructure, Vehicle collision, Illegal hunting, Environmental impact, Revegetation works, Weed dispersal and Water quality and whether the impact was Occasional, Frequent, none or Unsure. The category for Environmental impact, measured highest for overall (70%) and most frequent (44%) impact, and was consistent across the regions (Figure 15). Pasture competition, Revegetation works and Infrastructure were the next most impacted values. At a regional scale, participants in the Palerang/Yass and Goulburn regions felt that deer impacted the majority of values at a lower level than those in the Far South Coast and Gippsland.

When considering the difference in impact nominated by those that do and do not encounter deer, the level of perceived impact was consistently greater for those that do not encounter deer (Figure 16). The disparity was greatest for agricultural values. This might reflect the difficulty associated with qualitative assessments of impacts in the environmental area for those that encounter deer. Reflecting on this, the greatest level of uncertainty was found considering impacts on weed dispersal and water quality values at 29 and 35% respectively. Alternatively, it may mean that direct experience of impact is closer to reality than theory.

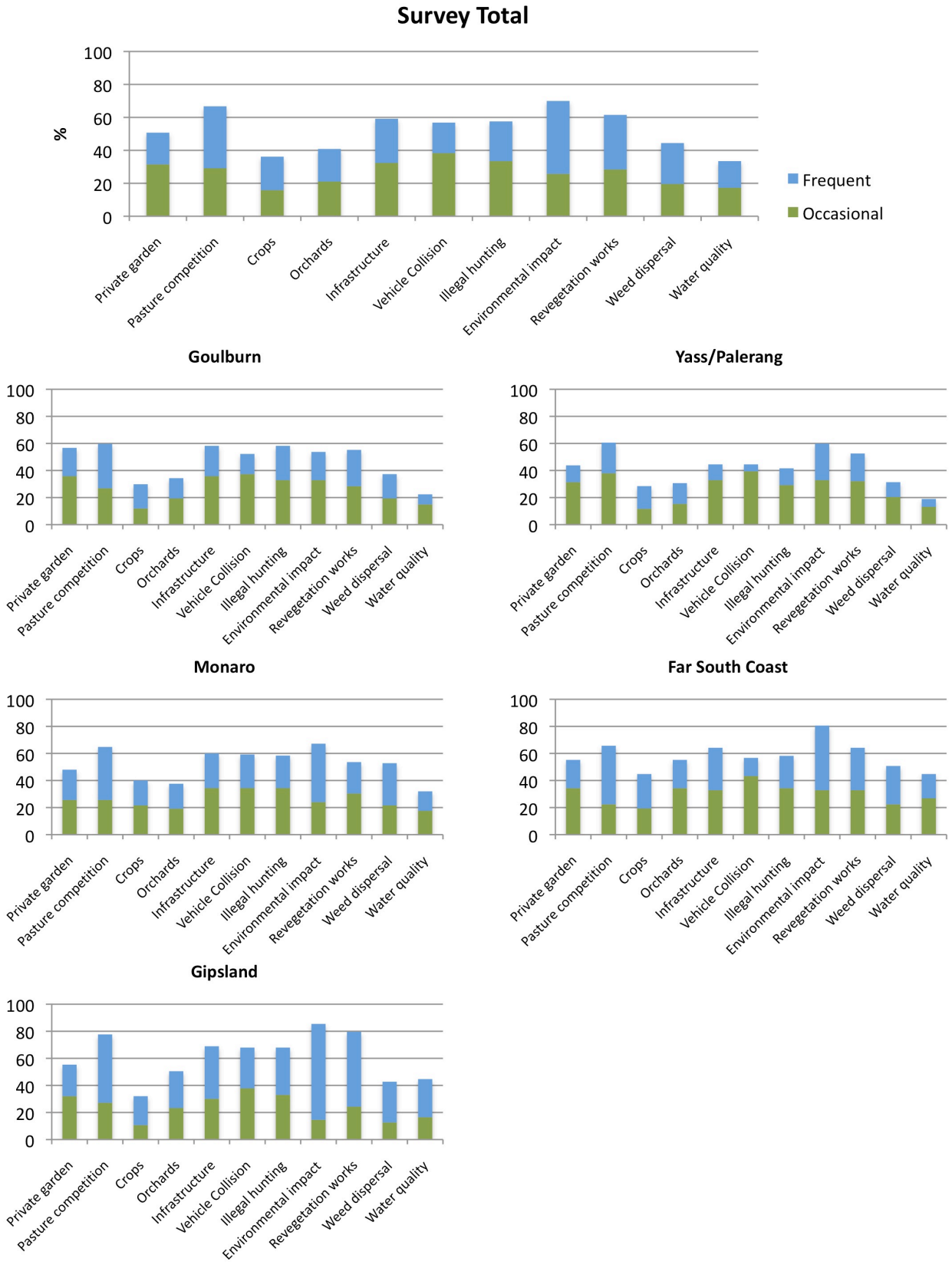


Figure 15. The percent frequency (Occasional and Frequent) of impact by deer on values across the survey and within each region.

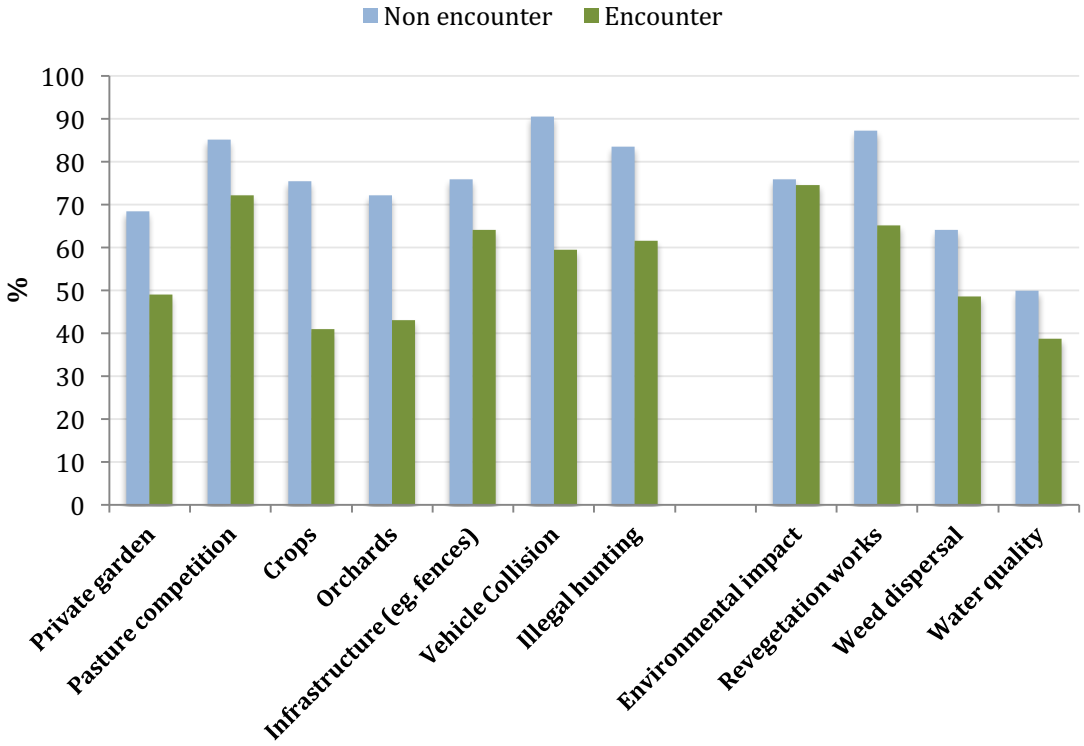


Figure 16. The difference in percent frequency of impact by deer on values across the survey as considered by those that do and so not encounter deer.

4.5.3 Cost of deer impacts (547)

Using the same value categories, participants that were impacted by deer were asked to nominate an annual cost of deer impact for each value. The categories offered were $0, <$100, $100-1000, >$1000 and Unsure. Respondents entered cost estimates in all value categories. Costs were most frequently directed towards infrastructure, environmental impact, pasture competition, revegetation and private gardens (Figure 17). Costs of more than $1,000 per year were also more frequently spent on pasture competition and infrastructure.

There was a high level of uncertainty reported when considering the cost of deer impact. Overall the number of unsure responses was 26%, however uncertainty was much higher for the environmental categories of environmental values, weed dispersal and water quality, at 37, 44 and 41% respectively.

A conservative value of annual cost for all participants was calculated. The number of responses were multiplied by $50 for <$100, $550 for $100-1000 and $1000 for the >$1,000 category. The total value was greater than one million dollars ($1 035 950), approximately $1,900 per person. Direct agricultural costs on pasture, crops and infrastructure contributed slightly more than environmental impacts and revegetation activities (Figure 18). Costs associated with private gardens, vehicle collision and illegal hunting were the lowest, but still recorded a cost ranging between $65-89,000 each category per year. The relative contribution of each value to the total cost was similar between regions, however the total cost was vastly different between regions (Figure 19).

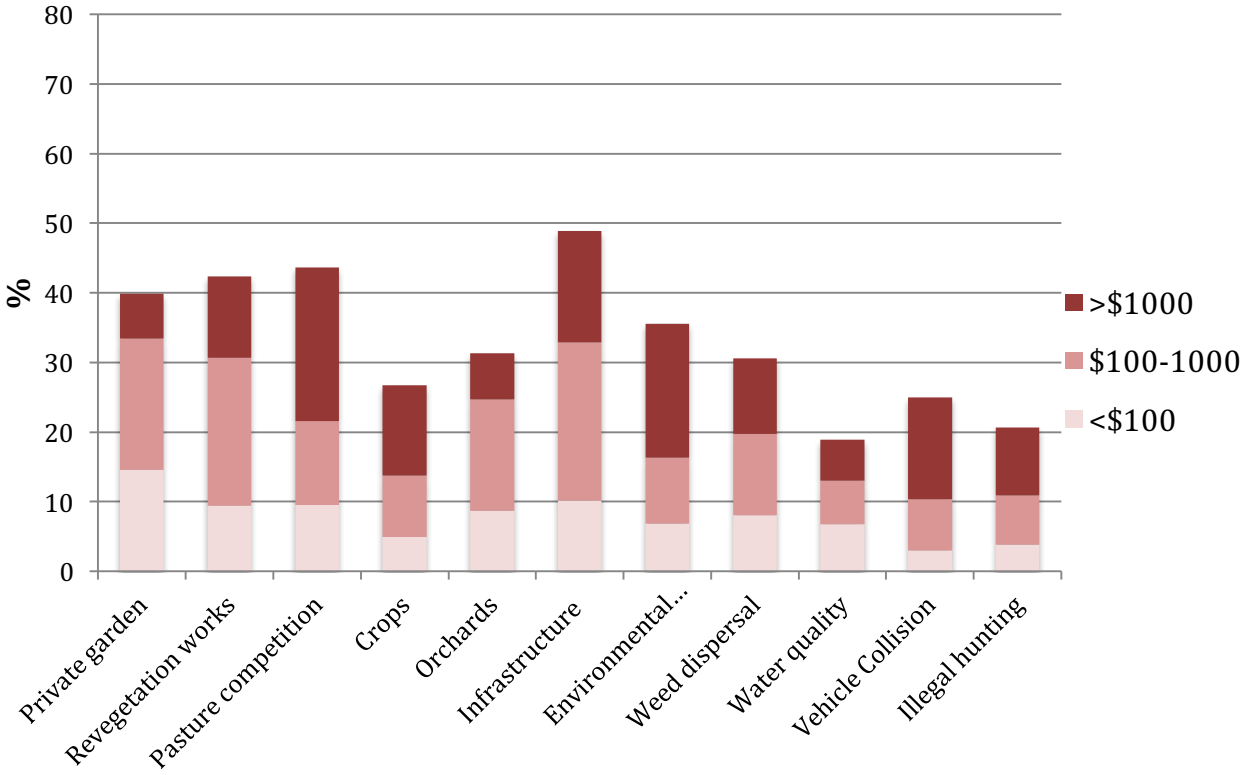


Figure 17. Percent allocation of spending for each cost category for each value.

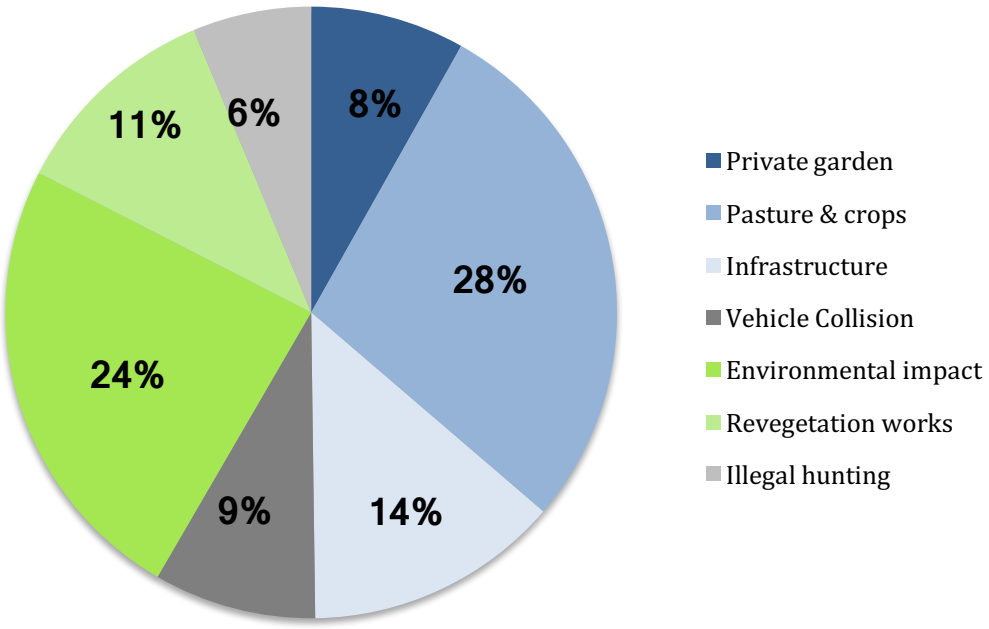


Figure 18. The percent contribution of each value towards the total cost of deer impact. Shades of blue indicate agricultural values, green indicate agricultural values and grey indicate social values.

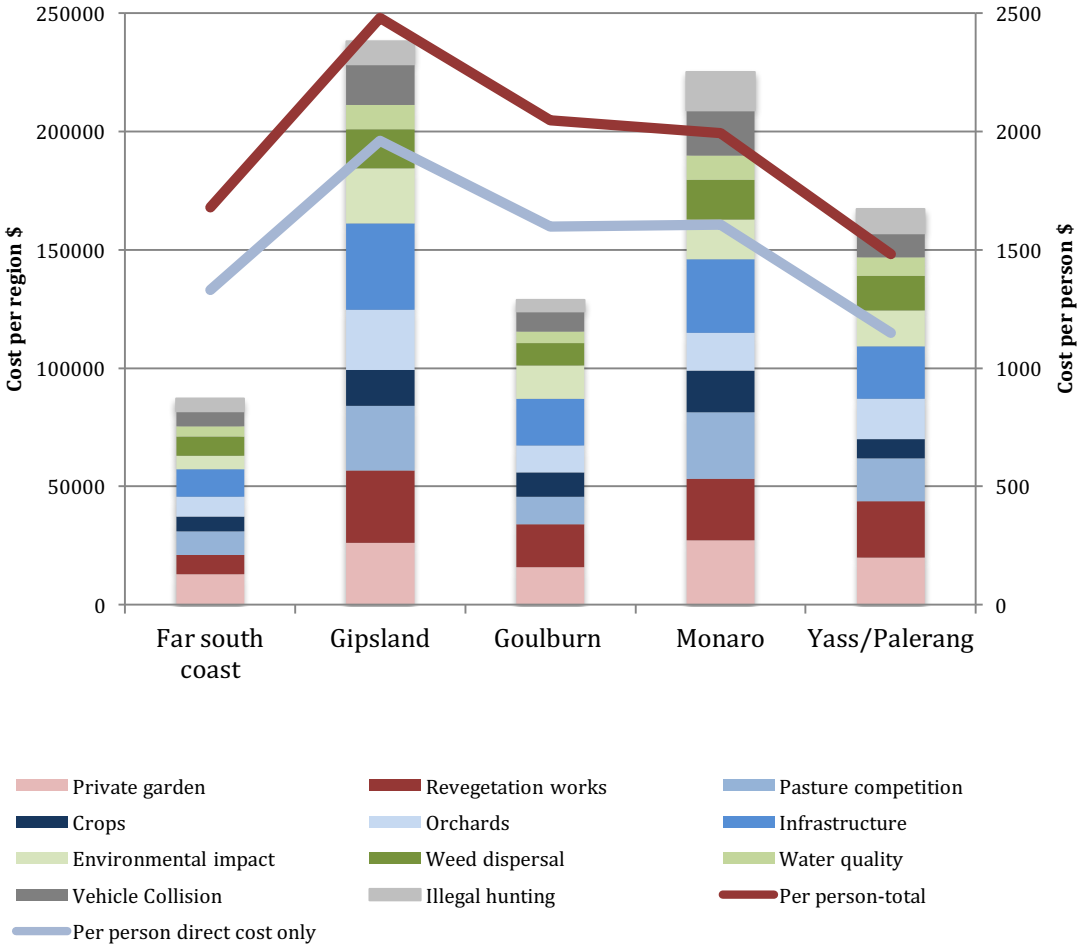


Figure 19. The estimated annual cost for each region (column) and per person within each region (line). The contribution of each value is also indicated, shades of blue indicate agricultural values, green indicate agricultural values and grey indicate social values.

4.6 Control questions (Questions 26-35)

This section investigated the frequency and types of control that are currently being used and explored the expectation of deer control for the future.

4.6.1 Deer Control (568)

Participants were asked if they control deer on their properties and if so, who conducts the control: Themselves, Professionals or Recreational shooters. Participants were also asked how the deer control was conducted: Shooting, Fencing, Trapping, Bow hunting or Deterrent. Overall, 238 (42%) participants controlled deer on their properties, ranging from a low of 31% in the Far South Coast to 49% in the Monaro and Gippsland regions. The majority (77%) conducted the control themselves. A third of people also allowed recreational hunting but very few engaged professional contractors. Shooting was the overwhelming control technique, followed by a much lower level of fencing. The survey then asked how frequently people controlled deer, either Daily, Weekly, Monthly or Yearly. Monthly control was the most common frequency (45%), followed by yearly and then weekly (Figure 20). There were a small percentage of participants that control for deer

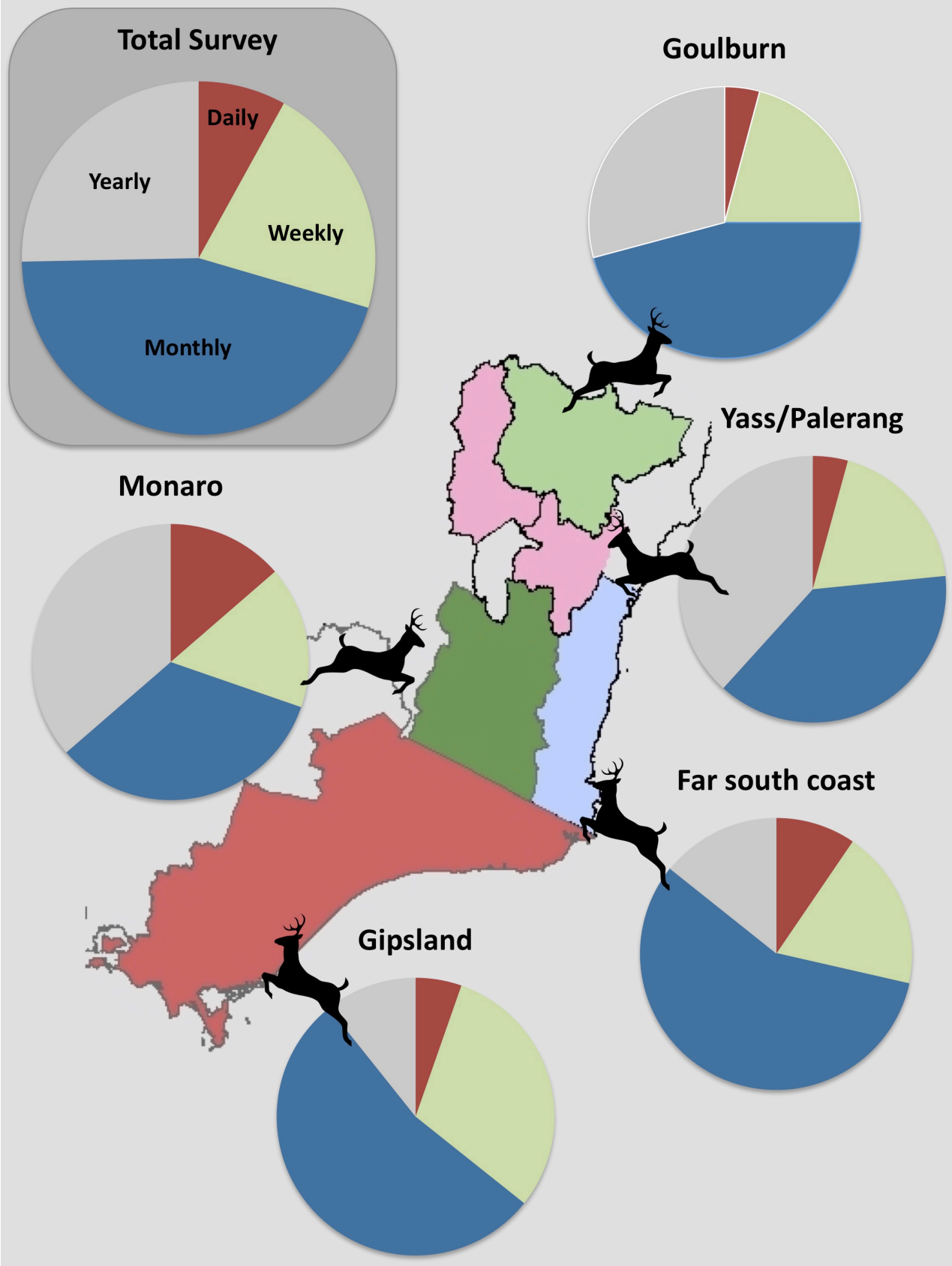


Figure 20. The percent of landholders that control deer at different frequencies across the total survey and for each region.

daily (19 people). In contrast, very few participants participate in recreational deer hunting, with only 13% participating, mostly on a monthly or yearly basis.

When asked to estimate the number of deer removed annually, three quarters of responses fell in the less than 50 categories (<10 and 10-50). There were a small number of participants that remove over a hundred deer a year. Many of these participants were the same people that were controlling daily. There were a small number of participants that were unsure how many deer they controlled. A conservative estimate of the number of deer culled annually by all of the participants was calculated. The number of responses were multiplied by 10 for <10, 30 for 10-50 and 75 for 50- 100 and 100 for the >100 category. Using these calculations at least 7000 deer were culled in the last year and almost a third of those were from the Monaro region (Figure 21).

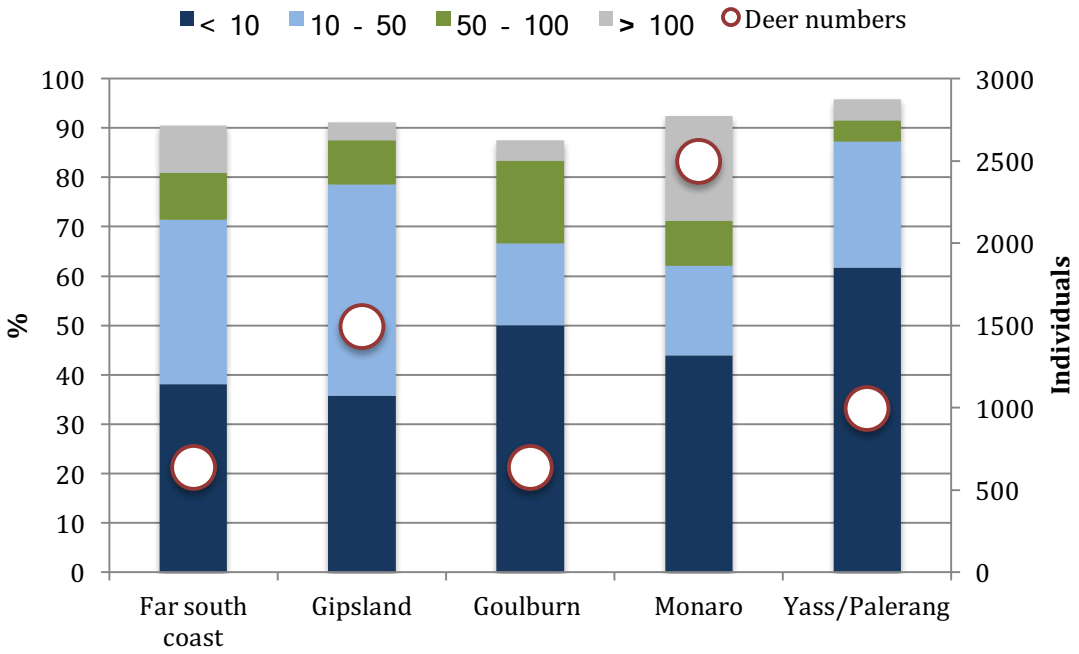


Figure 21. The percent of participants that cull deer at different annual rates (columns) and the total estimated number (o) of deer culled over the last year in each region.

4.6.2 Control expectations (619)

When considering how the community feels about deer control, participants were asked if they thought deer control was necessary and which techniques were acceptable: Professional shooting, Recreational shooting, Poisoning, Trapping, Exclusion fencing and Fertility control. Most people (77%) thought that control was needed and professional shooting was the most preferred technique (85%) followed by recreational shooting and fertility control. This response was consistent across the regions (Figure 22).

When asked what should happen with the deer carcass from culling all but 53 people (9%) thought that the carcass should be used for some purpose. Pet food and game meat were

most acceptable use, followed by wild dog and fox baiting programs (Figure 23). Responses varied only slightly across the regions.

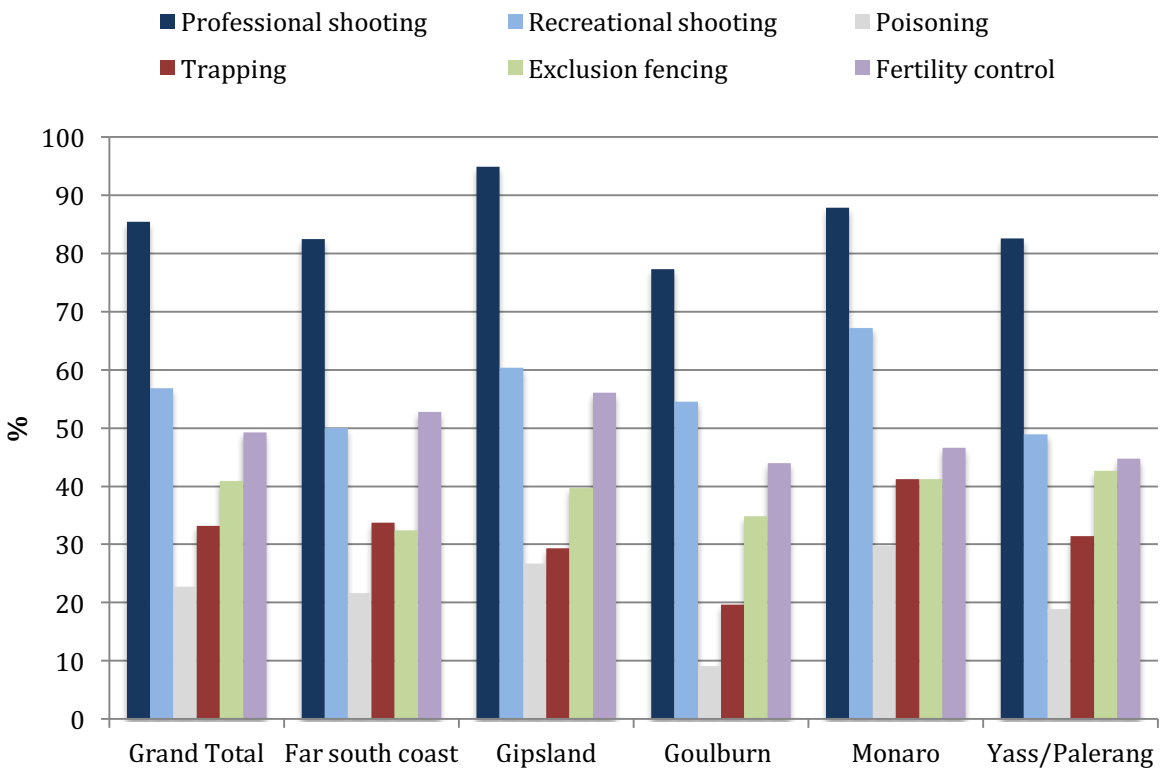


Figure 22. The level of acceptability for different control method options for the total survey and across each region.

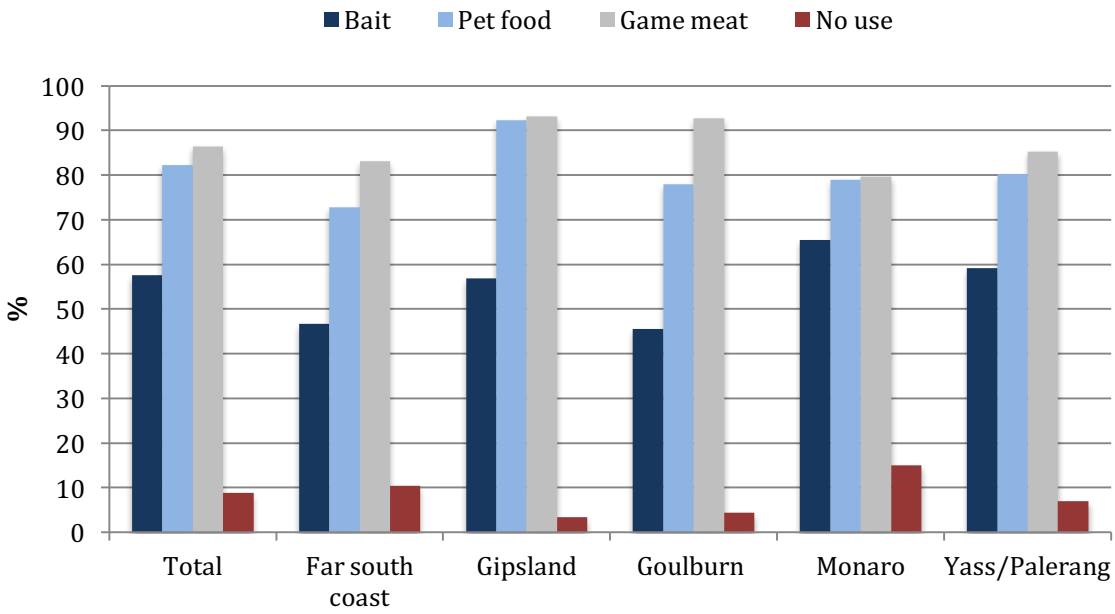


Figure 23. The level of acceptability for different carcass use options for the total survey and across each region.

4.7 Control concerns (Questions 36-37, *561*)

The last questions in the survey asked participants if they had concerns over the current management of deer in their area and if they would be interested in receiving more information. Over half of all participants (54%) expressed concern over current management (Figure 24). This response varied between regions, with Gippsland recording the highest level of concern at 69% and Yass/Palerang the least at 39%. The level of concern around deer management was also reflected in the level of request for further information, with over 200 people supplying their details.

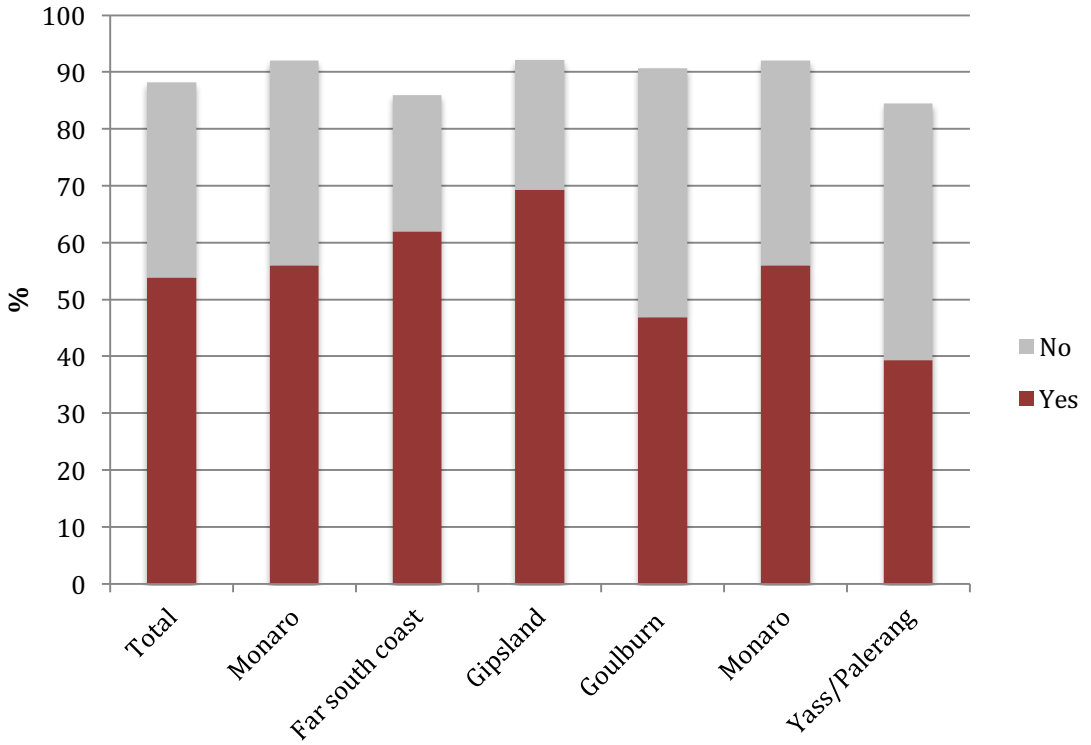


Figure 24. The level of concern over current deer management for the total survey and across each region. Yes- concerns over management, No - no concern.

5. Conclusion

The level and extent of responses to this survey has demonstrated a high level of concern over deer within the community. Despite the large geographic area that the survey covered, there was consistency in responses across the vast majority of questions. The key findings of this survey were:

- Three quarters of people believe that deer are pest species and should be classified as such;
- Deer have been present for over 30 years in all regions and are increasing across all areas;
- Deer are consistently present across south-east NSW and Gippsland and seen on a daily basis by at least 20% of participants;
- In NSW Fallow deer are the most frequently observed, while in Victoria Sambar are the most abundant;

- A majority of people do not enjoy having deer around and feel they have a negative impact in their region;
- The overall impact of deer is greatest on environmental values, pasture competition, revegetation activities and infrastructure;
- Survey participants spent an estimated $1 million dollars, or $2000 per person, on deer impact in the last year;
- Most deer control is undertaken by the landholder on a monthly basis and shooting is the main method of control;
- Approximately 7000 deer were culled by survey participants in the last year, with almost a third culled in the Monaro region;
- Shooting is the most acceptable method of deer control;
- Utilisation of the deer carcass for game meat, pet food or baiting programs is highly desirable; and
- All regions have high levels of concern over current deer management.

6. References

Druce A. (2016) Deer Plague Hits the Hip Pocket. The Land, Sydney.

Rowley T. (2018) Dangers of Deer. The Land, Sydney.

Wollongong City Council (2018) Deer Fact Sheet. Wollongong City Council, 41 Burelli Street, Wollongong NSW 2500

7. Appendix

Upper Murrumbidgee Landcare

Landholder's Perception of Wild Deer Survey

The presence of wild deer is of growing interest for many community members. To assess the perception of the community to wild deer, Upper Murrumbidgee Landcare and associated Landcare groups have developed the following survey. The survey results will help to voice community expectations on wild deer issues and guide community information events.

We would appreciate your taking the time to complete the following survey. It should take about 10 minutes of your time. Your responses are voluntary, anonymous and will be confidential. You may leave some questions blank. All responses will be pooled together and analysed as a group. A report on the results will be provided to the community and other relevant agencies through participating Landcare groups.

If you have any questions or concerns, please contact Georgeanna Story, Landcare Coordinator for Upper Murrumbidgee Landcare at 0429 779928 or upper.murrumbidgee@gmail.com. The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee (Protocol 2017/574). If you have any concerns or complaints about how this research has been conducted, please contact the ANU Human Research Ethics Manager on 6125 3427 or Human.Ethics.Officer@anu.edu.au.

Thank you,

Georgeanna Story
Upper Murrumbidgee Landcare Coordinator
0429 779928
upper.murrumbidgee@gmail.com

1. In what postcode is your property located?

2. What town is closest to your property?

3. What is the classification of your property?

☐ Rural ☐ Rural residental ☐ Rural

4. What is your property mainly used for? You can choose multiple answers.

☐ Residental ☐ Lifestyle ☐ Agriculture - cropping

☐ Agriculture - grazing ☐ Agriculture - other ☐ Other

5. How would you describe wild deer?

☐ Pest species ☐ Game species ☐ Native species ☐ Other (please specify)

6. Are wild deer present on your property and/or surrounding region?

☐ Yes, always ☐ Yes, sometimes ☐ No ☐ Unsure

If you answer No or Unsure, please skip to question 13.

7. How often do you see wild deer on your property and/or surrounding region?

☐ Once ☐ Occassionally throughout the year ☐ Monthly

☐ Weekly ☐ Daily

8. How many years have you been aware of wild deer on your property and/or surrounding region?

☐ 0-2 years ☐ 2-5 years ☐ 5-10 years

☐ 10-30 years ☐ 30+ years ☐ Unsure

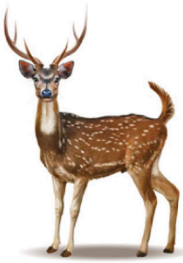
9. What deer species are present on your property and/or surrounding region?

☐ Chtal deer ☐ Fallow deer ☐ Hog deer

☐ Red deer ☐ Rusa deer ☐ Samba deer ☐ Unsure

Chital Deer
Female

Chital Deer
Male



Fallow Deer
Female

Fallow Deer
Male

Hog Deer
Female

Hog Deer
Male

Red Deer
Female

Red Deer
Male

Rusa Deer
Female

Rusa Deer
Male

Samba Deer
Female

Samba Deer
Male

10. In what abundance is wild deer found?

☐ Low - few individuals ☐ Medium - several individuals ☐ High - many individuals

11. Have you noticed changes in wild deer numbers in the last 5 years?

☐ No change ☐ Decreasing ☐ Increasing ☐ Unsure

12. What level of wild deer numbers would you like to see on your property?

☐ Present level ☐ Slightly more ☐ Slightly less ☐ Many more

☐ Many less ☐ Complete removal ☐ Unsure

13. Do you (or would you) enjoy having wild deer on your property and/or surrounding region?

☐ Yes, always ☐ Yes, sometimes ☐ No ☐ No opinion ☐ Unsure

14. Do (or do you think) wild deer have a positive impact on your property and/or surrounding region?

☐ Frequent impact ☐ Occasional impact ☐ No impact ☐ Unsure

15. Do (or do you think) wild deer have a negative impact on your property and/or surrounding region?

☐ Frequent impact ☐ Occasional impact ☐ No impact ☐ Unsure

16. What property and environmental values do (or would) wild deer impact and how frequent do you (or would you) experience this impact?

	Frequent	Occasional	None	Unsure
Private garden	○	○	○	○
Revegetation works	○	○	○	○
Pasture competition	○	○	○	○
Crops	○	○	○	○
Orchards	○	○	○	○
Infrastructure (eg. fences)	○	○	○	○
Environmental impact	○	○	○	○
Weed dispersal	○	○	○	○
Water quality	○	○	○	○
Vehicle collision	○	○	○	○
Illegal hunting	○	○	○	○

17. What is the estimated annual cost of wild deer impact impact for you in the last year?

	0	< $100	$100 - $1,000	> $1,000	Unsure
Private garden	○	○	○	○	○
Revegetation works	○	○	○	○	○
Pasture competition	○	○	○	○	○
Crops	○	○	○	○	○
Orchards	○	○	○	○	○
Infrastructure (eg. fences)	○	○	○	○	○
Environmental impact	○	○	○	○	○
Weed dispersal	○	○	○	○	○
Water quality	○	○	○	○	○
Vehicle collision	○	○	○	○	○
Illegal hunting	○	○	○	○	○

18. How does (or do you think) wild deer impact compare to other introduced species including pigs, horses, goats and rabbits?

☐ More impact ☐ Similar impact ☐ Less impact ☐ Unsure

19. How does (or do you think) wild deer impact compare to other marsupial herbivores including kangaroos, wallabies and wombats?

☐ More impact ☐ Similar impact ☐ Less impact ☐ Unsure

20. Do you control deer on your property?

☐ Yes ☐ No

If you answer No, please skip to question 25.

21. How do you control wild deer on your property?

☐ Control ourselves ☐ Recreational hunters ☐ Professional pest contractor

22. What methods do you use to control wild deer?

☐ Fencing ☐ Shooting ☐ Trapping ☐ Other (please specify)

☐

23. How frequently do you control wild deer?

☐ Daily ☐ Weekly ☐ Monthly ☐ Yearly

24. How many deer would you remove from your property in a year?

☐ <10 ☐ 10 - 50 ☐ 50 - 100 ☐ >100 ☐ Unsure

25. Do you participate in recreational deer hunting outside of your property?

☐ No ☐ Yes, weekly ☐ Yes, monthy ☐ Yes, yearly

If you do participate in recreational hunting, how many deer would you shoot a year?

26. Do you think deer should be a declared pest?

☐ Yes ☐ No ☐ Unsure

27. Do you believe that deer control is necessary in your area?

☐ Yes ☐ No ☐ Unsure

28. What deer control methods are acceptable to you? You can select multiple answers.

☐ Proffessional shooting ☐ Recreational shooting ☐ Poisoning ☐ Trapping

☐ Exclusion fencing ☐ Fertility control ☐ Other (please specify)

29. What use of the deer carcass from culling would be acceptable to you?
You can select multiple answers.

☐ No use ☐ Wild dog & fox baiting ☐ Pet food

☐ Game meat ☐ Other

30. Do you have any comments or concerns about deer management in your area? If yes, please specify

☐ Yes ☐ No ☐ Unsure

31. Would you be interested in attending a forum on wild deer management?

☐ Yes ☐ No ☐ Maybe

If you would like to be contacted about a forum in the future please provide your email.

Thank you for completing our survey. Results of the survey will be available on the Upper Murrumbidgee Landcare website from April 2018.

Our partner organisations include:

Upper Snowy Landcare
Upper Shoalhaven Landcare
Upper Murray Landcare
South East Local Land Services

Deer images were kindly supplied by the Victorian Government Game Management Authority.