“It will be a double whammy with the two new viruses out there”: Stakeholder perspectives on rabbit control as seen in the media

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Introduction

Rabbits are a main cause of soil erosion, and play a role in the reduction and extinction of native animals by competing for burrow space and food (Invasive Plants and Animals 2008). They are viewed as a pest that needs better implemented policy and increased attention. This report therefore is on rabbit management and control. It is a problem that needs studying because rabbits cost Australia between 600 million-1 billion dollars annually in environmental damage and lost agricultural production (Invasive Plants and Animals 2008; Saunders et al. 2010). They are one of Australia's biggest agricultural and environmental animal pests (Invasive Plants and Animals 2008). The media presents informative details and gives insight to public relations on the topic of rabbit management, hence it is important to research its outtake on rabbit management so that stakeholder and public opinions can be understood when trying to implement policy.

A gap in the literature of rabbit control is the lack of social policy, so the media analysis was done to address this. The aim of this research is to explore the roles and perspectives of rabbit pest management stakeholders as presented in the media. This will be done by using particular newspaper articles within the timeframe of May-September 2015. The research question for this report is: What are the differences in stakeholder perspectives on rabbit control as portrayed by the media? Finally, the research for this study was conducted by collecting newspapers in the previously mentioned time frame for information that could then be analysed for common themes. This will be explained more in the methodology section.

Literature Review and Rationale

What is already known about rabbits is that they were first brought to Australia from England in 1788, and then on multiple occasions in the next 70 years (Hayes and Richardson 2001; Invasive Plants and Animals 2008; Fenner 2010). The rabbit is therefore an introduced species not native to the land. At first the rabbit did not survive in its new habitat, but after a shipment of them had offspring, the rabbit survived and populated (Hayes and Richardson 2001).

Previous methods of control, in the form of rabbit viruses, have been studied in Australia. The key findings were that the viruses could not be controlled, as the

proposed method of infection (rabbit-to-rabbit contact) was not the one through which the virus spread, as it unintentionally spread through mosquitos (Hayes and Richardson 2001). Also errors in assumptions on the rate of infection raised the question on being able to predict invading organisms, and thus raised questions on being able to protect native environments from invasion (Hayes and Richardson 2001). This is an example of biosecurity policy in practice, as the literature is talking about the eradication of pests (Morgan 2014).

Lastly what was found about the diseases was that only one was highly infectious, diseases faded away inside a few generations, younger rabbits had a lower rate of being killed, and rabbits that survived developed antibodies against it (Hayes and Richardson 2001; Haselmayer and Jamieson 2001). Kills ranged from 0-95% showing effectiveness short term, but after that little is known about the long-term effects on rabbit populations (Haselmayer and Jamieson 2001).

In Australia, extensive planning and policy development go into the management of invasive species (Cooke 2012). One example of this is the policy established to reduce over-grazing in north-western Victoria's semiarid rangelands, which restored functional ecological communities (Cooke 2012). Rabbits cause damage that includes soil erosion, agricultural damage and land degradation, so it's important to combat them (Mclennan, C 2015a). Furthermore conversation agencies are on top of making and applying policies around what's needed for vegetation recovery (Cooke 2012).

For stakeholders, it's important to know that biological control agents like viruses, are not the sole answer to rabbit overpopulation (Invasive Plants and Animals 2008). Biological control agents need to be implemented with other control techniques in a management strategy, otherwise rabbit immunity can be developed to the strains of virus released (Invasive Plants and Animals 2008). A media analysis is needed to gain the perspectives of the stakeholders on what they think or what they've been using to control their rabbit problems – they could prefer warren ripping or perhaps just fencing for damage prevention. The media analysis is useful for this purpose because it gives an insight into what social policy could be implemented for rabbit pest control, on behalf of its stakeholders.

To reiterate, the research question driving this report is:
What are the differences in stakeholder perspectives on rabbit control as portrayed by the media?
After reviewing the texts on rabbits and their control, the literature only focuses on environmental, scientific or economic policy, lacking on social policy and not giving enough emphasis to it - this is the gap in literature that is seeking to be filled. For example the Australian Veterinary Association's policy on controlling wild rabbits gives no mention to the social aspects or effects or removing rabbits:

> Reducing adverse impacts of wild rabbits is a legitimate and necessary objective for those responsible for managing agricultural land, pastoral land, national parks and other land. Methods employed for the control of rabbits must be as humane as possible (Australian Veterinary Association: n.p.).

Due to this gap, the media analysis needed to be done to bring focus to social policy and how key stakeholders can have positive influence towards it.

Research Methodology.

A number of steps were involved to conduct the study. First the databases 'ProQuest Journals, Newspapers & Magazines', 'theland.com.au' and 'parlinfo.aph.gov.au' (in combination with google to find the articles based on the titles) were used to search for newspaper articles. The search terms used were 'rabbit pest' 'rabbit control' 'rabbit management' and 'bunny control'. Results not related to actual rabbits like sport teams and performance acts were encountered and had to be filtered out.

The time period of May 2015-September 2015 was selected for a number of reasons. It is current in the rabbit breakout, 2014-15 had the most articles published about rabbits, a 5 month frame gives a more focused look with articles written closer together, and because discussion around key developments in legislation took place, such as the biosecurity act 2015 in July.

Once the time period was set and the results came up, three different newspapers was the amount set for the study to cover local and rural publishers. The Land was

the first chosen because of its rural area publication and audience. Based off results, The Weekly Times and The Sydney Morning Herald were the next two chosen. The sampling method used was the non-probability form purposive sampling. Articles were sampled in a strategic way so that they were relevant to the method and report (Bryman 2012).

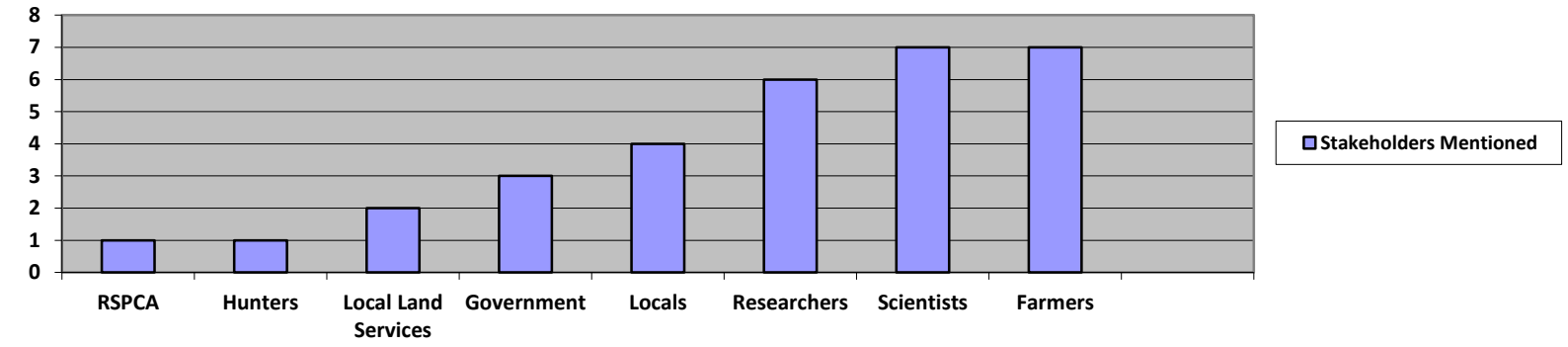
A data collection protocol was done to help organise the data collected. The information that was collected from the articles was the type of stakeholders involved, whether the article had a positive or negative perspective of rabbit control, and the themes of the article. A qualitative analysis was then conducted by using the software program Microsoft Excel, with information put through spreadsheet. The analysis focused more on themes in the articles.

Newspaper articles were chosen for the source and nature of the data because they are informative and give insight to public relations. An example of this is the state government issuing a warning to farmers this year to increase their rabbit management programs, because rabbit numbers increased in locations where they were previously low (McGrath 2015). To justify the method used, a media analysis gives both social perspectives and practical research perspectives. It shows public understanding, whose voices get through, and what policies are getting the most consideration.

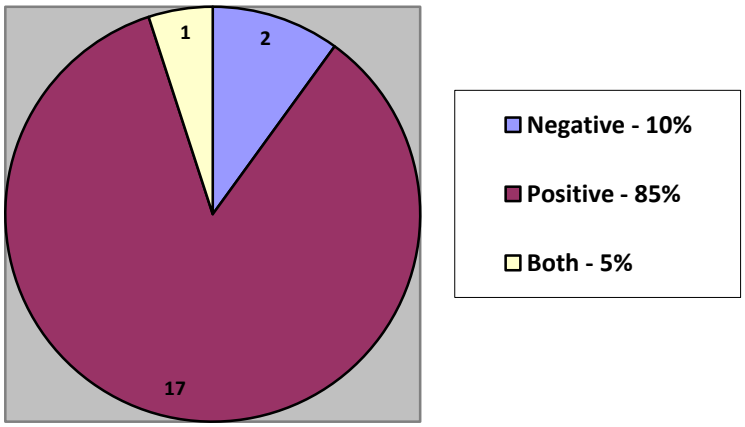
There were no ethical considerations that needed to be made for the research method. The limitation of the decisions made with coding were not being able to get the specific answers I wanted to know, obviously because I was not the one out there asking the questions, I had to get my information from secondary sources that had gotten their own responses. If there was no time or money limit, longer, detailed and specific qualitative interviews would have been carried out on rabbit control stakeholders.

Analysis

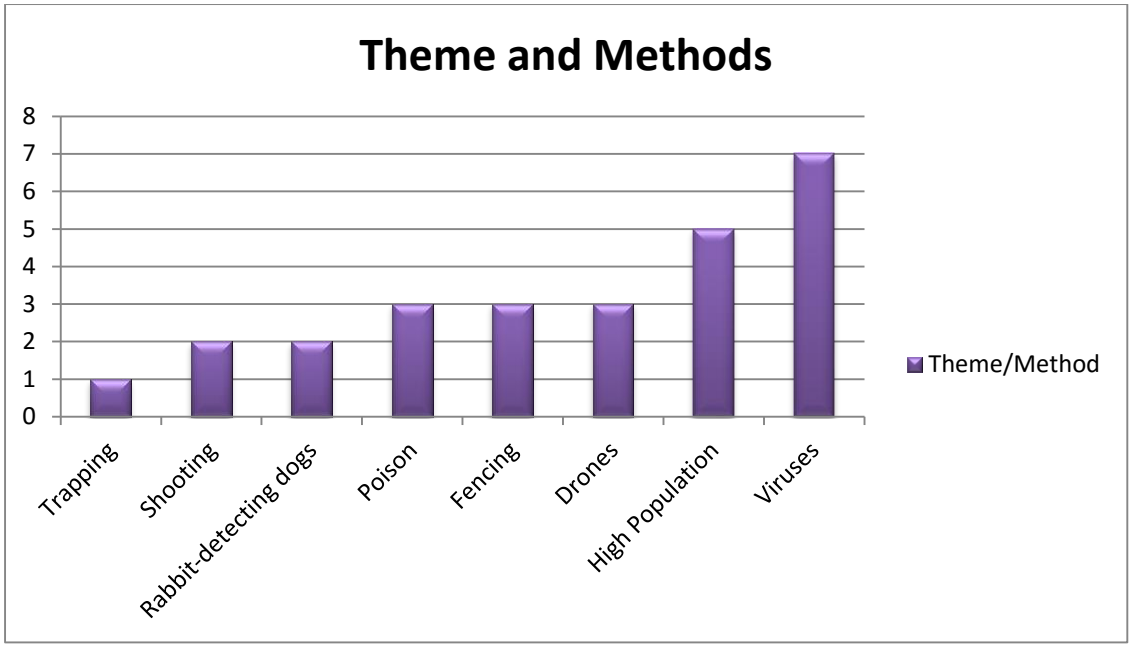
Several key findings emerged from the qualitative analysis. Eight key stakeholders relating to rabbits were identified, with the top three hits being in 6, 7, and 7 articles.



Articles published with a positive perspective to rabbit control greatly outnumber the ones that are negative. Stakeholders were for rabbit control in 17 of the 20 articles. Two articles had negative perspectives, being against the rabbits poisoning and the release of a killer virus. Then one sole article gave both sides of the attitudes towards wild rabbits from the stakeholders involved.



The key themes that emerged were the different methods of rabbit control. Seven different control methods were mentioned, with the problem of a high wild rabbit population being raised in five of the articles. Of the seven control methods viruses topped the results, appearing in seven of the newspaper articles.



A few articles made mention of using two methods. A spokesman for the City of Fremantle did this when saying by law, the City's public open reserves had to have the number of rabbits controlled:

> "…a combination of oats infused with a low dose poison and trapping. These methods were chosen as the most effective method given the characteristics of the site and its heavy use by visitors."(Sparvell 2015: 1).

Enthusiasm over the rabbit viruses is shown in one of the articles through the use of the colloquial language being captured:

> A French strain of the lethal calicivirus has been discovered in an infected but living rabbit near Canberra. "It will be a double whammy with the two new viruses out there", rabbit expert Tanya Cox said. (McLennan 2015a: 1).

The highly mentioned method of viruses was even found in one of articles that defended rabbits:

> "Australian rabbit breeders want to delay next autumn's release of a new overseas disease designed to attack wild rabbit populations. The breeders have launched a campaign to half release of a new Korean 'variant' of the lethal RHDV calicivirus" (McLennan 2015b: 1).

Important to note however is that the virus was mentioned in an opposing context, different to the other articles.

This negative aspect article was published in September by The Weekly Times. The other article against rabbit control methods was about young Fremantle girls campaigning for rabbits to be relocated elsewhere instead of killed, published by the Sydney Morning Herald in August. The one article that gave both sides was about a battle between the RSPCA and Hunters over allowing hunting in public places in WA. It too was published by the Sydney Morning Herald.

Out of the 13 articles that mentioned at least one of the top three stakeholders of scientists, farmers and researchers, all except three are in the three month range between July and September, with 9/10 articles being published by The Weekly Times, showing a boom at the time that the paper took advantage off to get stakeholder thoughts and inputs.

Discussion

It is known that poison baiting is best used either before warren ripping to reduce population, or after as a 'mop-up', and when it's not breeding season (Invasive Plants and Animals 2008: 5). Cage, foothold and barrel traps are also effective methods to be combined with biological control agents. It is not just coincidence that these types of methods were all found in the media analysis. The best control methods have gotten precedence in the media over other control methods such as harbour destruction and fumigation.

From the data, it can be seen rabbits are enough of an interest to be mentioned many times as they were in the articles gathered, of which are good in raising awareness of the rabbit problems to daily readers. The repetition of them in articles, especially by The Weekly Times, reinforces this. The articles relate to each other through this reinforcement of rabbits, day after day and week after week, publishing concerns or events that link back to them. They relate to the research question by identifying the various stakeholders, whether they have a positive or negative perspective to rabbit control methods, then enabling them to be compared to see the differences. Finally, the articles relate to the literature by highlighting actual

occasions when and where rabbit control methods have been employed:

> The City of Fremantle usually carries out an annual program over three weeks depending on the weather conditions. Target locations are natural areas and foreshore parklands where evidence of rabbits is found. (Sparvell 2015).

What has been found is different to previous research as stakeholders' perspectives from a social point had not been recently explored. As previously mentioned, this was because existing literature focused on environmental, scientific or economic factors of rabbit policy.

The reason that negative perspectives towards rabbit control are so outnumbered can be contributed to a number of reasons. One of the positive articles talks about young girls campaigning for rabbits to be relocated instead of killed, but relocation is a poor option, with chances are the rabbits not being wanted elsewhere, and could die soon afterwards anyway from either predation or starvation (Denver Urban Gardens 2015). The other negative article is of breeders who wanted a delay in the release of a rabbit virus because of worry about pets' immunisation. Perhaps a delay was wanted instead of a complete halt because the breeders knew the virus release is inevitable. The article that gives both a negative and positive perspective from two stakeholders is about a battle between the RSPCA and hunters over the shooting of rabbits, which was straightforward to see each of the sides in the debate.

Also interesting is the mention of scientists, the ones who are responsible for making the poisons, viruses and other rabbit control methods. They were mentioned the equal 1st highest amount of times in the media analysis out of the stakeholders. In a sense they are a forgotten stakeholder since when stakeholders for rabbits are thought of, those who appear on television like farmers, locals and the government are the ones who come to mind. So even though scientists are not seen, they are one of the most important stakeholders of rabbit control methods. What's still missing in this research is a stronger in-depth qualitative analysis done with more time and money, one that cannot be done by reading 50 online articles. In saying this but, contributions to knowledge have been made. By looking at social aspects of control policy, it is known that there are stakeholders who oppose the policy. While it is hard to satisfy everyone, it can be easier once specific targets are identified. Information like this can only be found by looking at social aspects of policy.

Conclusion and Recommendations

By doing a media analysis, what has been learned is who all the stakeholders of rabbit control policy are and what each of their perspectives towards control policy is. Trends of the newspaper companies in their publishing were also picking up, such as the land only publishing negative aspects, perhaps to do with having a strong rural audience and base.

Rabbit policy is evolving due to the amount of public discourse found this year. Different solutions have been seen from the media analysis such as baiting, rabbit detecting dogs, new viruses and drones. The research has implications for the direction of future research, and how this can consequently affect policy. By knowing which stakeholders and groups are firmly against wild rabbit populations and their preferred methods, policy for rabbit control can be built upon this knowledge and used to implement the policy better amongst those who will gain the most benefit.

The analysis contributes to the broader debates of policy recommendations, and this is how it's useful for informing policy in context. Policy should aim at ways to help the rabbit made viruses stay ahead in the evolutionary race with its host, as well as protect the gains made by the past successful biocontrol initiatives and to keep rabbit numbers below the damage threshold. A long term goal can be to repeatedly select tailored virus strains for subsequent releases, giving the virus a cutting edge in its battle against the rabbits.

Other policy recommendations that have emerged from the analysis are for more research focused on social dimensions to determine how collective action, raised public awareness, and encouragement of increased stakeholder participation can result in a cohesive strategy to control rabbits. This goes back to the gap in literature on social policy and how the priority has been on environmental policy. To be effective, rabbit control should be conducted in an integrated way, which means adopting a range of complementary control strategies in cooperation with neighbouring landholders, as a range of control methods were found in the analysis. Efforts should be concentrated on reducing the impact of rabbits rather than just focusing on killing rabbits in the short term. With fencing appearing in 3 of the media articles found, its use is because it's the best long term damage prevention way to

prevent rabbits from ruining plants and from digging is to fence them out. This is because fencing is the most relatively inexpensive while effective rabbit prevention method (Denver Urban Gardens 2015). Ultimately doing this media analysis has increased knowledge on rabbit control stakeholders, perspectives, and control methods. Further contributions can be made if future research builds on top of this, analysing the media for social policy that could then benefit the other areas of biosecurity policy.

Appendix A - Table of newspaper articles collected

ID	Date	Heading	Newspaper	Author
1	7/5/15	RSPCA bloodied rabbit photo 'disgraceful': WA Shooters Association	Sydney Morning Herald	Steve Holland
2	23/5/15	Pine Island Reserve rabbit control program to begin on Monday	Sydney Morning Herald	No author given – Published by Fairfax Media
3	3/8/15	Young Fremantle girls campaign to stop rabbit-baiting at Bathers Beach	Sydney Morning Herald	Ray Sparvell
4	19/5/15	Farms target for fun theft	The Land	Alan Dick
5	14/6/15	Life on the dingo fence	The Land	Emma Downey
6	3/7/15	Fox numbers explode to wreak havoc	The Land	Jessie Davies
7	13/7/15	Targeted attack on wild dog menace	The Land	Nick Heydon
8	24/7/15	War on feral cats needs an arsenal	The Land	Katherine Moseby
9	17/6/15	Nine still on loose after wild cattle cull in Snowy River park	The Weekly Times	Kath Sullivan
10	26/6/15	Double-barrel bunny attack	The Weekly Times	Chris McLennan
11	21/7/15	Drones patrol for feral animals	The Weekly Times	Chris Griffith
12	29/7/15	Foxes face air attack	The Weekly Times	Chris McLennan
13	3/8/15	Sydney company Ninox Robotics wants to use unmanned drones to target pests for destruction	The Weekly Times	Chris McLennan
14	19/8/15	New virus launch to cull rabbits	The Weekly Times	No author given – Published by News Digital Media
15	21/8/15	New weapon ready for launch against wild rabbits in Victoria	The Weekly Times	Chris McLennan
16	28/8/15	New French strain of calicivirus discovered in rabbit near Canberra	The Weekly Times	Chris McLennan
17	9/9/15	Concerns over calicivirus and rabbit control	The Weekly Times	No author given – Published by News Digital Media
18	9/9/15	Dogs have a nose for rabbits	The Weekly Times	Sarah Hudson
19	11/9/15	Mount Rothwell Conservation Centre use rabbit-detecting dogs in Australian first	The Weekly Times	Sarah Hudson
20	30/9/15	Breeders fight new rabbit killer release	The Weekly Times	Chris McLennan

Appendix B – Tables of analyses as done on Microsoft Excel

NO.	MAIN STAKEHOLDERS	POSITIVE/NEGATIVE PERSPECTIVE OF RABBIT CONTROL	NOTES/THEME
1.	RSPCA, Hunters	Both	Shooting
2.	Locals, Government	Positive	Poison
3.	Locals, Government	Negative	Poison, trapping
4.	Farmers	Positive	Shooting
5.	Locals	Positive	Fencing
6.	Local Land Services	Positive	Problem of high population
7.	Local Land Services	Positive	Poison
8.	Researchers, Government	Positive	Viruses, population
9.	Farmers	Positive	Problem of high population
10.	Scientists, Researchers	Positive	Viruses
11.	Scientists, Farmers	Positive	Drones
12.	Scientists, Farmers	Positive	Drones
13.	Scientists, Farmers	Positive	Drones
14.	Scientists, Farmers	Positive	Viruses
15.	Scientists, Farmers	Positive	Viruses
16.	Scientists, Researchers	Positive	Viruses
17.	Researchers	Positive	Viruses
18.	Researchers	Positive	Fencing, population, dogs
19.	Researchers	Positive	Fencing, population, dogs
20.	Rabbit Breeders(Locals)	Negative	Viruses

	Trapping	Shooting	Rabbit-detecting dogs	Poison	Fencing	Drones	High Population	Viruses
Theme/Method	1	2	2	3	3	3	5	7

	Negative	Positive	Both
Positive/Negative Perspective	1	17	2

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