

The distribution and community perceptions of the common wombat in New South Wales

Presented by
Alison Matthews

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Alison Matthews

Alison is a wildlife ecologist with research interests in a broad range of conservation and management issues, including the threatening processes of fire, logging, introduced predators, and urbanisation on native wildlife, particularly mammals. Prior to joining CSU, Alison worked for the NSW National Parks and Wildlife Service where much of her research was aimed at recovery programs for threatened fauna, wildlife management plans and restoration of degraded habitats on both state-owned and private lands. Her recent interests include the impact of climate change on wildlife in alpine areas.

The distribution and community perceptions of the common wombat in New South Wales

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The distribution of the common wombat in New South Wales has largely been gathered from the observations of state fauna authorities and naturalists and from museum specimens. In 2006, we posted a state-wide wildlife survey to a large sample of residents of rural NSW. The wombat was included as one of ten iconic species in the survey. This paper reports on the distribution of wombat records in NSW from this survey, and the perceptions of residents on its status. A total of 5426 mapped records of wombats, largely on private lands, allow a more detailed examination of the environmental factors underpinning the range of this species. For the first time, the value of community records has been formally recognised in monitoring the distribution of common wombats and that foreshadows an increasing and valuable interaction between research scientists and the community.



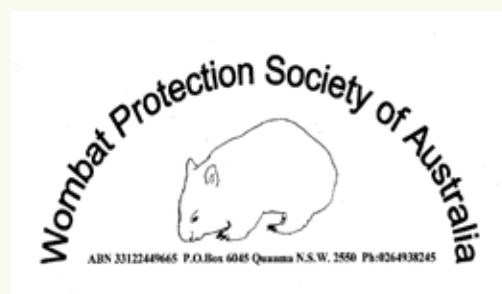
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Community perceptions of the occurrence and status of common wombats in New South Wales

Alison Matthews^a, Daniel Lunney^b, Matthew S. Crowther^{b,c} and Ian Shannon^b

^aInstitute for Land, Water and Society, Charles Sturt University, PO Box 789, Albury NSW 2640

^bOffice of Environment and Heritage (NSW), PO Box 1967, Hurstville NSW 2220

^cInstitute of Wildlife Research, School of Biological Sciences (A08), University of Sydney NSW 2006

Abstract

In 2006, we posted a state-wide wildlife survey to a large sample of residents of rural NSW. The wombat was included as one of ten iconic species in the survey. This paper reports on the questionnaire results of the survey and provides the perceptions of residents on the occurrence of wombats and their status. For the first time, the value of community information has been formally recognised in monitoring the distribution of common wombats and that foreshadows an increasing and valuable interaction between research scientists and the community.

Introduction

The common (or bare-nosed) wombat *Vombatus ursinus* is mostly regarded as an inhabitant of rural lands because clearing for agriculture has increased the availability of grass, on which it feeds. Consequently, it has a history as an agricultural pest and before 1974 it was the only formally unprotected marsupial in New South Wales. In 1971 the NSW National Parks and Wildlife Service conducted a survey to determine the distribution of the wombat in New South Wales and the problems it was causing in order to assess whether its protection was warranted (Pearse 1972). The survey showed the distribution was concentrated along the coast, south of Port Macquarie, and along the range and western slopes to Bathurst and Scone. The greatest amount of economic damage was found to occur in the southern corner of the Maitland Pastures Protection Board District where there were improved and irrigated pastures. Wombats were found to cause a variety of different types of economic damage but this was small in comparison to that caused by the large kangaroos (Pearse 1972). It was thus considered to be worthy of conservation and was removed from the schedule of unprotected species, thereby meaning that it was a protected species under the *NSW National Parks and Wildlife Act 1974*.


Conflicts between wombats and humans still exist. Pest status is a matter of perception, and may vary in meaning according to each individual (Lunney *et al.* 2007). Some people consider wombats to be a nuisance, causing noise, smell or destruction to property, while others consider wombats to be a pest due to a perceived risk of disease, such as mange. Wombats are also frequently seen as a pest in farming areas because their activities cause erosion and damage to pastures which can be an economic liability (Marks 1998; Triggs 2009). Understanding the particular views that people hold of wombats is needed to engage with the community and implement strategies to reduce or resolve the conflict.


In 2006, we posted a statewide wildlife survey to residents of rural and peri-urban New South Wales. The wombat was included as one of ten iconic species in the survey. This paper reports on the questionnaire results for wombats, including their occurrence throughout the state and the perceptions of residents on its status. Details of the distribution of wombats from map-based locations will be published elsewhere.


Methods


Detailed materials and methods of the wildlife survey and its distribution are provided in Lunney *et al.* (2009). A total of 213 685 surveys was sent throughout New South Wales using Australia Post's Unaddressed Mail Delivery Service. The survey consisted of a covering letter, a questionnaire seeking information on where wildlife had been seen, perceived changes in wildlife abundance and pest status, and a colour map to mark the locations of sightings. The survey form was large (A2 size) and restricted to postcode areas so there was a total of 26 different maps covering the state (Fig. 1).


NSW wildlife survey *Have you seen any of these animals in your area?*



Koala



Brush-tail possum



Echidna



Platypus



Spotted-tailed quoll


Wombat


Wild dog/Dingo


Fox


Deer


Cane toad

Dear Resident

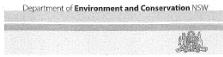
We are seeking your assistance in a statewide survey of wildlife. Even one sighting from you is a vital part of a bigger picture. By filling out this survey, you will be helping conserve and manage our wildlife. Without your help, our task would be much more difficult.

By completing this questionnaire and pinpointing your sightings on the map overleaf, you will help us locate where particular wildlife species occur and how their distribution has changed since previous surveys. The information gathered will be used to assist in conserving the state's native wildlife and managing pest species. For example, the recently completed plan for conserving koalas requires an up-to-date survey.

Please complete the survey, even if you have only one sighting to report, and return it by post (in the accompanying envelope, no stamp required) before Friday, **2 June 2006**.

In return for the time you spend completing the questionnaire and map – which we greatly appreciate – we shall happily send you a copy of this map as a memento of your participation in the survey. Simply tick the appropriate box in the questionnaire.

Yours faithfully
 Dan Lunney,
 Matthew Crowther,
 Jessica Bryant,
 Susan Rhind,
 Ian Shannon,
Vertebrate Ecology Team
 Policy and Science Division, NSW Department of Environment and Conservation



Please note: All information you supply, including your contact details, will remain strictly confidential. We will only use your contact details if we need to verify your sighting record. You can find out more about how the NSW Department of Environment and Conservation handles the personal information it collects by reading the department's privacy policy at www.environment.nsw.gov.au/about/rights.htm. Information about species sightings will be added to the Department of Environment and Conservation's Atlas of NSW Wildlife database. While data from the atlas database are provided to third parties under licence and made available on the atlas website, observer details are not provided outside the NSW Government. To view the atlas website, go to <http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/wallas.jsp>

Questionnaire

- What is your postcode?
- Please indicate where you live by drawing a solid triangle (▲) on the map over the page as shown in the map example. This is optional, but helps us to understand the distance between your home and the sightings.
- How many years have you lived in this area?
- In recent years, some species of wildlife have increased in number while some have decreased and others have remained the same. These changes can be different in different parts of the state. For your local area please put a tick (✓) in the appropriate box for the following questions:

Species	Does the species occur in your local area?		If present in your area, is it increasing in number, decreasing or staying the same?			In your view, is the species a pest in your area?	
	yes	no	increasing	decreasing	same	yes	no
Koala							
Brush-tail possum							
Echidna							
Platypus							
Spotted-tailed quoll							
Wombat							
Wild dog/Dingo							
Fox							
Deer							
Cane toad							

- Wildlife surveys should be carried out:

every year	<input type="checkbox"/>
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every 5 years	<input type="checkbox"/>
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every 10 years	<input type="checkbox"/>
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every 20 years	<input type="checkbox"/>
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Health issues for koalas in your area

- Did any of the koalas you saw appear to be unhealthy (for example, have weeping or pink eyes or wet or discoloured bottoms)? yes no
- Have you seen koalas in your area with young on their backs? yes no

Optional questions

- If you have anything you would like to add, we would appreciate your comments:

- If you would be willing to be contacted to provide additional details about your wildlife sightings and/or you would like a copy of this map as a memento of the survey, please tick the appropriate box(es) and provide your details below.
 YES, I would be willing to be contacted to provide additional details about my wildlife sightings.

Figure 1. The 2006 NSW wildlife survey, showing the cover letter and questionnaire on half of the A2 form. The wombat was identified as one of ten target species.

Survey responses were collated and sorted according to the postcode of the respondent. The Australia Post Postcode Boundaries was used to map responses according to postcode. These postcode areas vary in size and number of respondents, so the percentage of responses from each postcode was used to derive the maps.

Postcodes with fewer than five responses were excluded (denoted N/A), because low numbers could distort the percentages.

Results

The total number of survey replies was 16 693, and 5 079 respondents (30%) observed wombats in their local area. A total of 5 426 mapped records of wombats was entered into the Atlas of NSW Wildlife, managed by the Office of Environment and Heritage. These records greatly expanded the number of records on private lands, and show that the community is a valuable source of information for this species. These records and their attributes are not discussed further in this paper.

Questionnaire results: Wombats occur in local area

There were 12 058 replies to the questionnaire section on wombats from 286 postcodes. Of these, 268 postcodes replied that wombats occur in their local area. A greater percentage of respondents from postcodes in the south-east of the state were positive that wombats occurred in their local area, as indicated by the dark grey and black areas in Fig. 2.

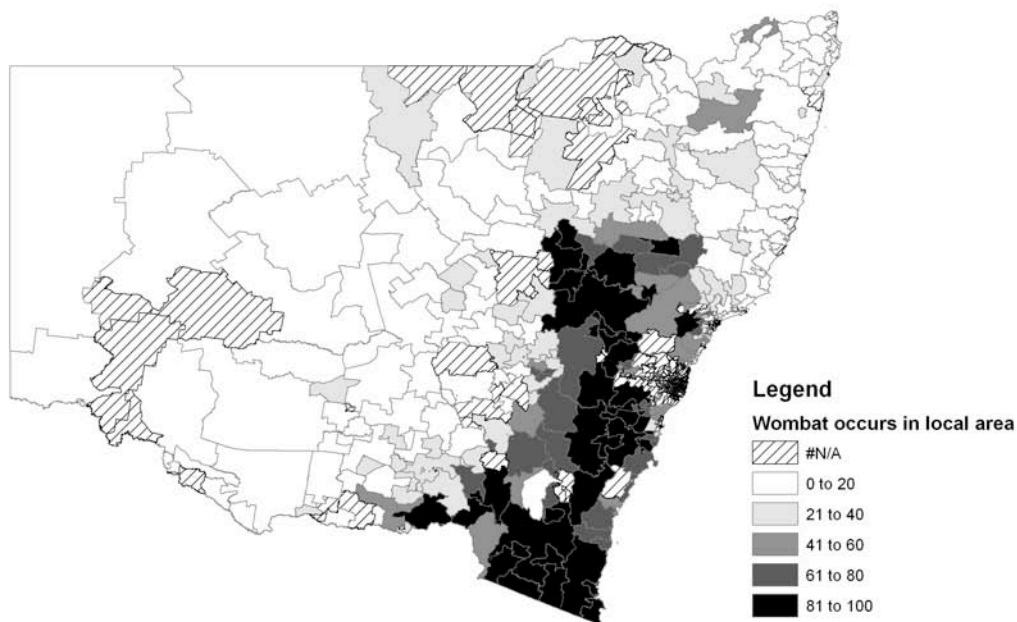


Figure 2. Wombat occurs in local area: % respondents reply 'yes' in local postcode area.

Perceived changes in wombat abundance

A total of 4 383 respondents to the questionnaire had an opinion on the change in numbers of wombats in the local area. Almost half (48%) of the respondents thought that numbers had stayed the same, while 28% considered that wombats had increased, and 23% considered that wombats had decreased in their local area.

These perceived changes in wombat abundance varied significantly with gender ($\chi^2 = 73.2$, 2 d.f., $P < 0.0001$) and age ($\chi^2 = 45.9$, 12 d.f., $P = 0.0008$). Male respondents were more likely to think that wombats had increased, while females were more likely to think that wombats had decreased (Fig. 3). When comparing responses among age categories, a higher percentage of respondents in the older age categories (particularly in the 60-69 years age class) thought that wombats had increased (Fig. 4).

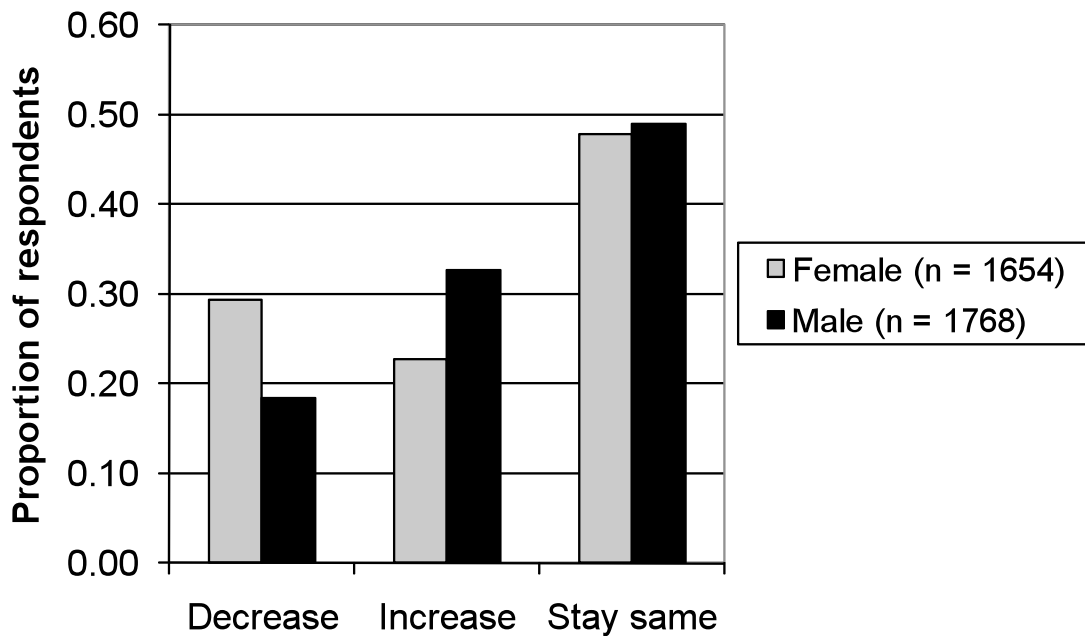


Figure 3. Gender differences in response to wombat status.

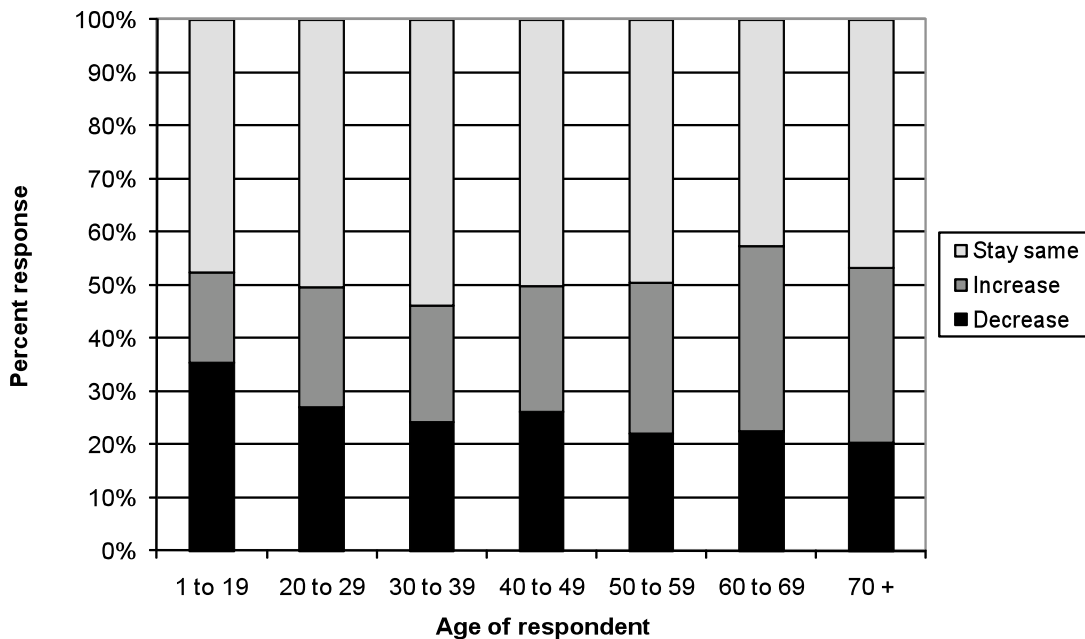


Figure 4. Age differences in response to wombat status.

Wombats are a pest in local area

A total of 4 995 respondents answered the question for wombats, “In your view, is the species a pest in your area?”. Most respondents (77%) replied no, wombats are not a pest. Conversely, 23% of respondents consider wombats are a pest in their local area, and these respondents were widespread throughout the postcodes where wombats occurred (Fig. 5). Wombats were also considered to be a pest in a few central-west postcodes where they do not occur. Perceived pest status was recorded from the majority of respondents (>50%) in the following postcode subregions, as shown by the dark grey and black areas on the map in Fig. 5: Snowy Mountains, Mid North Coast, South Coast, Central Tablelands, Southern Tablelands, North West Slopes, Central West Slopes, Murray and Riverina.

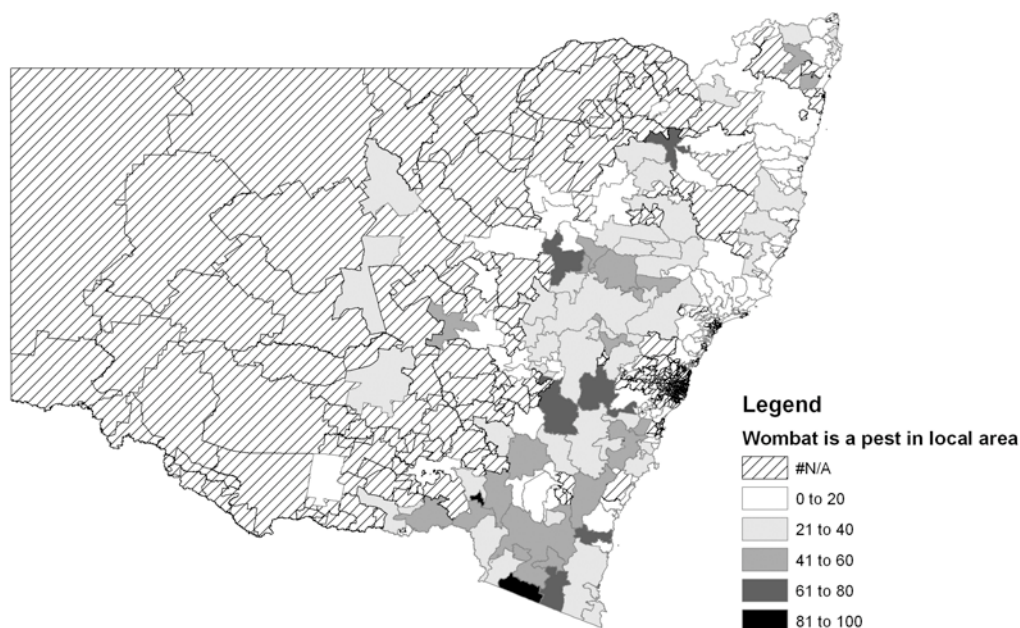


Figure 5. Wombat pest status: percentage of respondents per local postcode area that consider wombats to be pests.

There were significant gender and age differences in response to pest status. Males were significantly more likely than females to consider wombats a pest ($\chi^2 = 38.6$, 1 d.f., $P < 0.0001$; Fig. 6), and a greater than expected number of respondents in the older age classes (60-69 and 70+) replied that wombats were a pest ($\chi^2 = 46.7$, 6 d.f., $P < 0.0001$; Fig. 7).

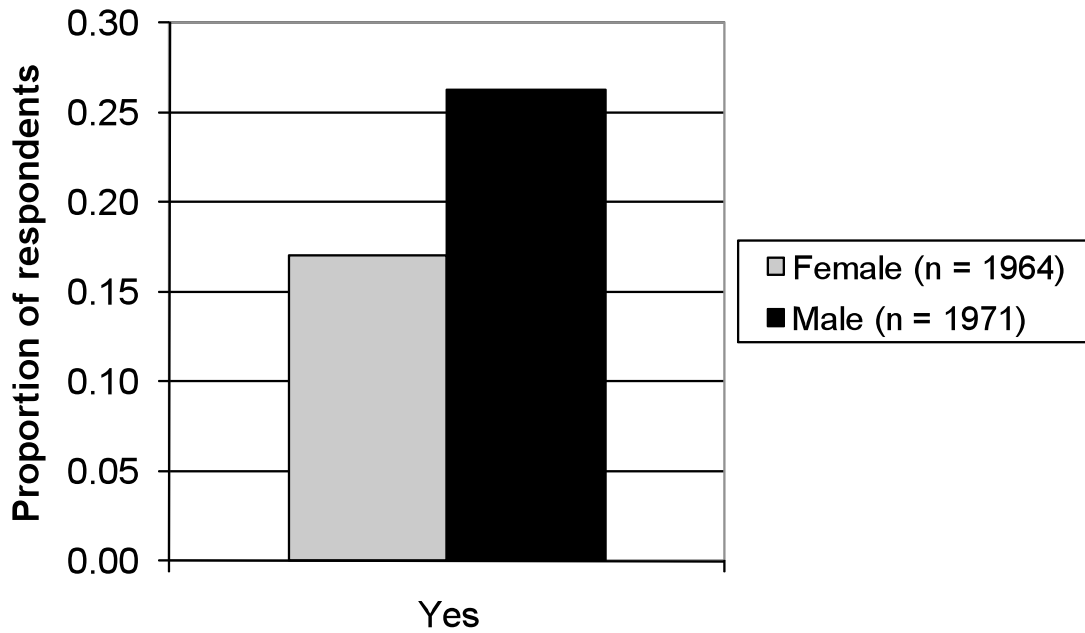


Figure 6. Gender differences in response to the question “Is the wombat a pest in your local area?”

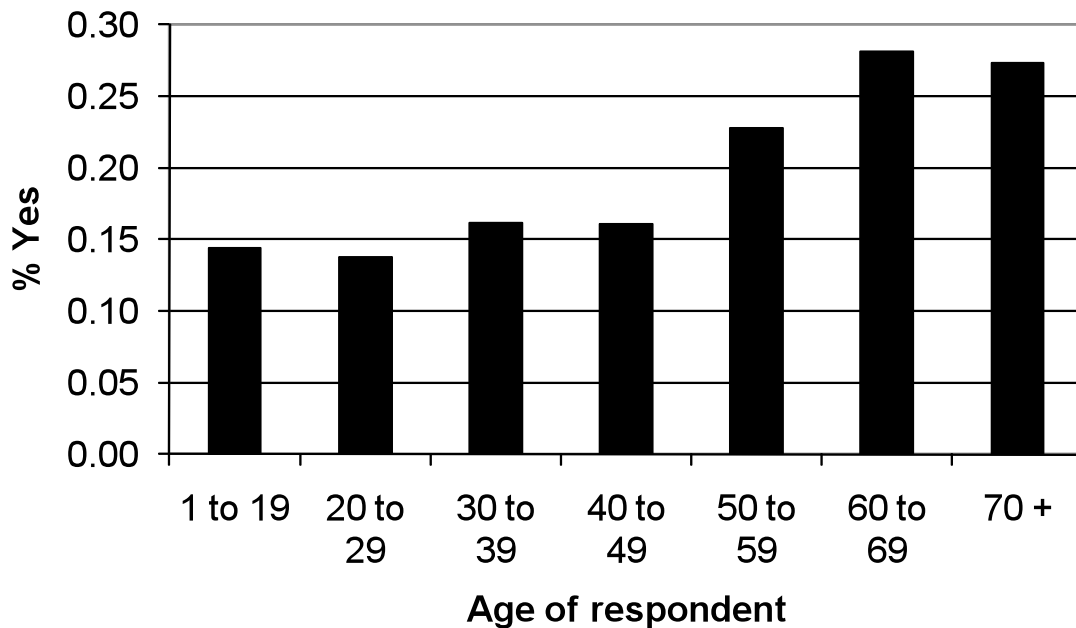


Figure 7. Age differences in response to the question “Is the wombat a pest in your local area?”.

Discussion

The distribution of the common wombat in Australia has contracted southwards and eastwards and has become more patchy since European settlement (McIlroy 1984). It

has declined severely in western Victoria (Williams and Menkhorst 1995) as well as South Australia (Mallett and Cooke 1986) and many parts of NSW (Triggs 2009). This decline is in the order of 10-50 % but because there are high numbers throughout other parts of its range the species is currently considered to be of least concern for conservation (Maxwell *et al.* 1996). Nonetheless, this range contraction is thought to have occurred as a response to the increasing aridity of the continent (Tindale-Biscoe 2005) so it is possible that the range will be further affected by increasing climate warming. It is therefore timely to examine the current distribution of wombats to gather baseline information that is needed for managing the species and monitoring further declines.

The 2006 community wildlife survey showed wombats to be present in 268 postcode areas in New South Wales. The distribution of these postcodes, particularly those with a large proportion of respondents identifying wombats in the area, is concentrated in the south-east and is similar to previously published maps of wombat distribution (including Marlow 1958, Pearse 1972, Triggs 1996, Lunney and Matthews 2004). Lunney and Matthews (2004) mapped records from the Atlas of NSW Wildlife and concluded that the common wombat is primarily a forest mammal in the southern part of the state since there were few records from the north coast. McIlroy (1984) also states that in northern NSW wombats occur only in sclerophyll forest above 600 m, and in the Nandewar-Liverpool Range of northern NSW they are considered to be regionally significant (Andren 2004).

Lunney and Matthews (2001) showed that postal surveys are a major source of previously overlooked sightings for some species, such as the spotted-tail quoll, that occur on private lands. The common wombat is also unique in appearance and fits into this category of ideal species for community-based surveys. Questionnaire information is also useful for gathering information on the perceptions of wildlife in particular sections of the community.

Marks *et al.* (1989 cited in Temby 1998) conducted a survey of community attitudes towards wombats in eastern Victoria and found that nearly half of 141 respondents wished to see them eliminated from their properties. Community attitudes in NSW from this 2006 survey appear to be more favourable with just 23% of respondents considering wombats to be a pest. Pest status was greatest in the south-east and central-west of the state, but it may not equate with economic damage. Importantly, there are particular age and gender classes within the community who hold stronger views on the pest status of wombats. In the 1940s and 1950s in NSW the wombat was regarded as a noxious animal by the Department of Agriculture and required landholders to destroy them (Pearse 1972). This may be one reason for the continued conflict between wombats and older members of the community because the noxious status is still within their memory, and it suggests that these attitudes could change with time and further education.

For the first time, the value of community information has been formally recognised in monitoring the distribution of common wombats and that foreshadows an increasing and valuable interaction between research scientists and the community. A follow-up online NSW Community Wildlife Survey was launched in 2009 to update and extend the findings from 2006. Wombats were included as one of nine target species, with the particular aim of exploring the extent of records in north-eastern

NSW. The outcomes of this survey will help support further research and environmental modelling of wombats in the state.

Acknowledgements

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